



BOR ACADEMIC AND STUDENT AFFAIRS COMMITTEE

AGENDA REVISED 4/29/2020

Friday, May 1, 2020 at 9:30 a.m.

Meeting conducted via remote participation; see call-in # below

DIAL: 1-650-479-3208

Meeting number access code – 198 819 850

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CT BOARD OF REGENTS FOR HIGHER EDUCATION

ACADEMIC & STUDENT AFFAIRS COMMITTEE

**Meeting – April 3, 2020
9:30 a.m. – via teleconference**

MINUTES

Regents Present: Aviva Budd, Naomi Cohen, Merle Harris, Holly Howery, Colena Sesanker

Regents Absent: None

Staff Present: Alison Buckley, Greg DeSantis, Jane Gates, Ken Klucznik, Lesley Mara, Steve Marcelynas, Steve McDowell, Pat Ryiz

Other Attendees: Shirley Adams (COSC), Candace Barriteau Phaire (CCSU), Mary Pat Bigley (CCSU), Jean Breny (SCSU), Sandy Bulmer (SCSU), Susan Chenard (GCC), Dauwalder, David (CCSU), Marianne Fallon (CCSU), Joe Farhat (CCSU), Angela Fierro (TxCC), Amy Feest (TxCC), Jennifer Hedlund (CCSU), Maureen Hogan (COSC), Brian Kaufman (QVCC), John Lewis (QVCC), Elsa Núñez (ECSU), Bill Salka (ESCU), Zulma, Toro (CCSU), Kristina Veselak (GCC), Karen Wosczyzna-Birch (TxCC - Next Generation Manufacturing), Shuju Wu (CCSU)

The meeting was called to order at 9:30 a.m. by Chair Merle Harris.

Chair Harris thanked the CSCU faculty and staff for their dedication and hard work during the COVID19 pandemic.

Chair Harris introduced two new regents serving on the BOR Academic and Student Affairs Committee, Holly Howery and Colena Sesanker.

Chair Harris talked about the shortened versions of the new program documentation and the difficulty accessing the full new program documentation forms in MS Teams. Chair Harris and Regent Budd will revise the short form to ensure that the Committee has the answers to the important questions regarding new programs that will alleviate having to go back and forth between the shortened form and the full program documentation in MS Teams. Chair Harris has asked Ben Barnes, CSCU CFO to work on revising and standardizing the Budget used in the academic program approval document.

1. Approval of Minutes

a. January 24, 2020

On a motion by N. Cohen and seconded by A. Budd, the minutes from the January 24, 2020 BOR ASA Committee meeting were approved.

2. Consent Items

a. Discontinuations

- i. Biological and Environmental Sciences – MA – Western CT State University
- ii. COT Technology Studies: Biomolecular Science Option – AS - Three Rivers CC
- iii. COT Technology Studies: CAD Option – AS - Three Rivers CC
- iv. COT Technology Studies: Technology and Engineering Education Option – AS – Three Rivers CC
- v. Applied Behavior Analysis – C2 Certificate – Naugatuck Valley CC
- vi. Mathematics Education Leadership – 6th Yr. Certificate – Central CT State University

b. Modifications

- i. Construction Technology – AAS – Three Rivers CC [Name Change]
- ii. Culinary Arts – Certificate – Manchester CC [Addition of one-credit course in Fall 2013. Approval required for financial aid.]
- iii. Exercise Science – BS - Southern CT State University [Name change to Physical Education (Pre-K to 12 Certification)]
- iv. Educational Leadership – 6th Year Diploma - Southern CT State University [Addition of off-site location – Branford School District]
- v. Master of Public Health - Health Promotion Concentration - MPH – Southern CT State University [Addition of online modality to traditional program delivery]
- vi. Environmental Education – MS - Southern CT State University [Name change to Environmental Studies]

On a motion by N. Cohen seconded by A. Budd, the consent items were approved.

3. Action Items

a. Modifications

- i. Health Science – BS – Southern CT State University [Significant Modification of Courses/Course Substitutions]

Chair Harris called for a motion to approve the modification of the Southern CT State University BS in Health Science. The motion was moved by N. Cohen and seconded by H. Howery.

Dr. Sandy Bulmer, Dean, College of Health and Human Services, presented the program for SCSU. The changes to the BS in Health Science consist of curriculum modifications and the addition of admissions standards. SCSU moved some courses out of the core to provide students with more diversity in electives and implemented a new admission process due to the limited number of seats in the program. Chair Harris asked if SCSU

was exceeding the projected enrollments in this program. Dean Bulmer responded that the projected enrollment was 40 and the actual enrollment is 62.

Chair Harris called for a vote to approve the modifications to the Southern CT State University BS in Health Science. A vote was taken and approval of the modifications to the BS in Health Science was unanimous.

ii. Management – BS - Central CT State University [Addition of an auxiliary site at Tunxis CC]

Chair Harris called for a motion to approve the modification of the Central CT State University BS in Management, specifically the addition of an auxiliary site at Tunxis CC. The motion was moved by H. Howery and seconded by A. Budd.

Dr. Marianne Fallon, Interim AVP of Planning and Resources, CCSU, Dr. Joe Farhat, Professor and Chair, Finance Dept., CCSU, and, Amy Feest, Interim Dean of Academic Affairs, Tunxis CC, presented the program for CCSU and Tunxis CC. The program modification will establish Tunxis CC as an auxiliary site of the CCSU BS in Management program and enable TxCC students who have completed their AS degree to finish CCSU's BS in Management degree at Tunxis CC.

Questions/Comments from the Committee included:

- a) *Are all classes the students need to complete the BS in Management offered at Tunxis CC?* Response: Yes. The CCSU courses will be taught by CCSU faculty. Students will acquire the full BS degree in Management at Tunxis CC.
- b) *Will current CCSU students go to Tunxis CC?* Response: This may happen.
- c) *How will the program be marketed and to whom?* Response: The program will be marketed to current Tunxis CC Business Administration and General Education students.
- d) *The financials are hard to follow. Is this the current AS degree enrollment that is presented?* Response: The entire budget is for the CCSU BS in Management program taught at Tunxis.
- e) *Will Tunxis CC get the revenue?* Response: There is a consortium agreement between CCSU and Tunxis CC.
- f) *How many courses are required at CCSU?* Response: Students take 30 CCSU credits and could transfer up to 90 credits.
- g) *What is the 2019-2020 enrollment in the existing AS degree at Tunxis CC?* Response: There are over 400 enrolled students. There are two degree tracks: 1) The TAP Business Studies program, and, 2) the standalone AS in Business Administration degree. There has been huge growth in enrollment in the TAP Business Studies program.
- h) *With only 10 projected enrollments, is this program worth it?* Response: We projected 10 students for the first cohort. This is a conservative estimate. We anticipate growth in the program and look at this as the first of several partnerships with Tunxis.

Chair Harris called for a substitute motion to approve the modification of the Central CT State University BS in Management, specifically the addition of an auxiliary site at Tunxis CC, with the request that CCSU submit an enrollment report after seven semesters. The substitute motion was moved by N. Cohen and seconded by H. Howery. A vote was taken and the substitute motion for

modifications to the CCSU BS in Management program, with the request that CCSU submit an enrollment report after seven semesters, was approved.

iii. Sport Management – BS – Southern CT State University [Significant Modification of Courses/Course Substitutions]

Chair Harris called for a motion to approve the modification of the Southern CT State University BS in Sport Management. The motion was moved by H. Howery and seconded by N. Cohen.

Dr. Sandy Bulmer presented the BS in Sport Management for SCSU. It has two tracks, 1) the BA in Sport Management, with 132 enrolled students, was modified to keep the program up-to-date and to align it to the standards of the accrediting body, and, 2) The program was modified so there is room for students to adopt a minor if students choose more courses out of the core requirements.

Chair Harris called for a vote to approve the modification of the Southern CT State University BS in Sport Management. A vote was taken and the vote was unanimous.

Before the CCSU BS in Electrical Engineering program was discussed, Regent Cohen made a general observation regarding adding new programs during the COVID19 pandemic. There is no way we can be sure for any new program what the enrollment will be in Fall 2020. She posed a question. Should the Committee consider approving the program and delaying the start date for a year to Fall of 2021? Chair Harris requested that each speaker address the anticipated start date of the program, Fall 2020 or later, and the potential financial investment for the new program.

b. New Programs

i. Electrical Engineering – BS – Central CT State University

Chair Harris called for a motion to approve the proposed new Central CT State University BS in Electrical Engineering. The motion was moved by H. Howery and seconded by A. Budd.

Provost Gates noted that the proposed BS in Electrical Engineering at CCSU is a 125-credit program. Chair Harris asked Provost Gates to explain why the exception to the normalization policy was approved. Provost Gates noted that the current number of credits for the program falls in the middle range of ABET (the Accrediting Body for Engineering and Technology) credit hours for approved programs. CCSU needs to be competitive and ensure that courses meet ABET requirements. Dr. Fallon and Dr. Shuju Wu, Professor and Chair, Computer Electronics and Graphics Technology, presented the program for CCSU. Dr. Fallon noted that this will be the third pure engineering degree. The program's emphasis is on renewable power sources. The start date of the proposed program is Fall 2020 with the first students graduating in 2024. Foundational courses are offered in the first two years of the program and the core courses in years three and four.

Questions/comments from the Committee included:

- a) *Does ABET say you need more than 120 credits?* Response: ABET does not have a specific credit requirement; but the ABET curriculum is very heavy on math courses. CCSU has five four-credit courses in order to match the ABET requirements.

- b) *Will the new Engineering Building be completed in 2021?* Response: The building is under construction and CCSU has the money for the construction. *Does this include the \$3 million in equipment?* Response: Pres. Toro noted that the money was there before the COVID-19 outbreak. The building should be completed by the end of 2021.
- c) *Do you have the enrollment to start in Fall 2020?* Response: The faculty support a Fall 2020 start date. Many students have lost jobs; starting the BS in Electrical Engineering may be a good incentive.
- d) *When will CCSU market the program?* Response: The program will be marketed as soon as it is approved. The program will attract students from the COT programs. Dr. Karen Wosczyzna-Birch, Executive Director, Regional Center for Next Generation Manufacturing, commented that the Electrical Engineering is a valuable pathway for CT Community College students. The workforce needs are there.
- e) *If the Committee approves the program with a start date of Fall 2020, will you have time to market the program?* Response: Changing the start date may dissuade new/prospective students from coming to CCSU or majoring in Electrical Engineering. We are in competition with other institutions. This may be an opportunity to take advantage of the high unemployment rate due to the COVID-19 outbreak. We will respect the decision of the ASA Committee.

Regent Cohen stated that there are two conversations. The people on the ground at CCSU before the COVID-19 outbreak and the pandemic itself. She feels that it is too soon to start new programs in Fall 2020. Chair Harris solicited comments from other regents. Regent Howery agreed that new programs will be handicapped by staff not being able to market in person and that institutions will not meet their enrollment projections.

Regent Cohen moved a substitute motion changing the start date of the proposed new Central CT State University BS in Electrical Engineering to Fall 2021. Regent Howery seconded the motion.

Regent Budd stated that the problem is a combination of the completion of the new building and the time to market the new program. Chair Harris stated that while the program has potential, CCSU will have more time to market the program and increase enrollment if the start date is delayed to Fall 2021. Regent Budd stated that if the program is approved with a start date of Fall 2020, students could take basic courses in the Fall. Regent Budd stated that it doesn't make much difference cost wise. The courses are already there.

Chair Harris asked Regent Cohen if she would withdraw her substitute motion.

Regent Cohen stated that she still has grave concerns about starting the program in Fall 2020. She will withdraw the substitute motion; but, will vote no on the program approval. Regent Howery will also withdraw the substitute motion; but, is not sure of her vote on the program.

The substitute motion was withdrawn. The original motion is amended to state that it will be left up to the institution to decide on the start date of the program and that the Committee requires an Application for Continued Accreditation in seven semesters.

Provost Gates agrees with the addition of allowing the institutions to decide on the start date of a new program and stated that we've had several institutions delay admissions for new programs.

Discussion continued on the completion of the new engineering building itself. President Toro responded that CCSU has the money to complete the building. Regent Budd asked if the new building will be completed by 2022. Existing labs will be used until the building is completed although they don't have the capacity as those planned for the new building. Later in the meeting, President Toro confirmed that the CCSU Engineering Building will be completed in March 2021.

Chair Harris called for a vote to approve the amended motion for the proposed new Central CT State University BS in Electrical Engineering which states that the institution will determine the start date of the program based on enrollment data. Regent Cohen voted no. Chair Harris, Regent Budd, and Regent Howery voted yes. The CCSU BS in Electrical Engineering program was approved.

Chair Harris asked the CSCU Academic and Student Affairs administration to create a consistent format for a recommendation for deciding when a program moves forward. Provost Gates stated that she will consult with the administration of each institution to develop a template and process that would respond to what the Committee is requesting. Regent Cohen stated that the Committee is requesting uniform guidelines. The decision about the start date of a program is not the BOR's decision. Provost Gates stated that she will move forward the request to the CSCU Academic Council to develop guidelines for approval. Regent Cohen asked if the guidelines will be available by the May 1 Academic and Student Affairs Committee meeting. Provost Gates stated that she can move forward a draft of the guidelines electronically and individually to the ASA Committee members at the beginning of next week before the April 16 BOR Meeting.

ii. Cannabis Studies – C2 Certificate - Quinebaug Valley CC

Chair Harris called for a motion to approve the proposed new Quinebaug Valley CC C2 Certificate in Cannabis Studies. The motion was moved by N. Cohen and seconded by H. Howery.

John Lewis, Interim Dean of Academic and Student Affairs and Professor of Chemistry, and, Dr. Brian Kaufman, Professor of English, presented the new program for QVCC. Dr. Lewis stated that the creation of the proposed new certificate program was in response to the legalization of medical marijuana in Connecticut and for medical and recreational marijuana in neighboring states, the growth of job opportunities in the emerging industry, and the success of courses/short programs offered at other colleges and universities. 100% of the certificate is stackable into a Business Administration degree.

Questions/comments from the Committee included:

- a) *Is the administrative cost an allocation or an additional cost?* Response: Allocation.
- b) *What is the cost to start the program with five students? What about additional students and related cost? Are we increasing revenue or breaking even?* Response: There will be an allocated cost for part-time faculty only if students enroll. There are two unique courses, Law and Policy and Horticulture. If there is no enrollment, the courses will not run and therefore, there will be no cost. The breakeven point is an enrollment of 12-13 students which will cover the cost of the instructor plus fringe benefits.
- c) *Is this program lucrative for only 5 projected students?* Response: The program will attract both transfers in, new students, and agriculture students. We talked with the surrounding towns and there is public interest. UCONN ran a course with

an enrollment of 400. UCONN and Yale held conferences on the subject and they were sold out.

Chair Harris noted that the decision as to whether the program should run and, if it runs, when it should start, will be left up to the institution per the guidelines, discussed earlier in the meeting.

Chair Harris called for a vote to approve the Quinebaug Valley CC C2 Certificate in Cannabis Studies. A vote was taken and the vote was unanimous.

iii. Human Performance – BS - Southern CT State University

Chair Harris called for a motion to approve the proposed new Southern CT State University BS in Human Performance. The motion was moved by H. Howery and seconded by A. Budd.

Dr. Sandy Bulmer presented the program for SCSU and noted that the institution is requesting to change the name of the BS in Human Performance to the BS in Exercise and Sport Science. In addition, the existing Exercise Science degree will be split into two degrees: 1) the BS in Human Performance, and, 2) the BS in Physical Education (Pre-K to 12 Certification) which was approved as a Consent Item, Modification. The new BS in Human Performance replaces the Human Performance concentration under the BS in Exercise Science degree. The current program has an enrollment of 200 students with high revenues and modest expenses. SCSU projects meeting the current enrollment with the creation of the two new programs.

Chair Harris called for a vote to approve the substitute motion for the proposed new Southern CT State University BS in Human Performance with a name change to the BS in Exercise and Sport Science. A vote was taken and the proposed new Southern CT State University BS in Exercise and Sport Science was approved.

iv. CSCU Pathway Transfer Degree (TAP) – Economics Studies – AA

Chair Harris called for a motion to approve the proposed new CSCU Pathway Transfer Degree (TAP) AA degree in Economics Studies. The motion was moved by N. Cohen and seconded by H. Howery.

Provost Gates explained the program. She introduced Steven Marcelynas, Director of the Office of Transfer and Articulation, who has recently assumed the position.

Chair Harris called for a vote to approve the CSCU Pathway Transfer Degree (TAP) AA degree in Economics Studies. A vote was taken and the vote to approve the CSCU Pathway Transfer Degree (TAP) AA degree in Economics Studies was unanimous.

v. Executive Master of Public Health – MPH - Southern CT State University

Chair Harris called for a motion to approve the proposed new Southern CT State University Executive Master of Public Health (MPH) degree. The motion was moved by H. Howery and seconded by N. Cohen.

In addition to Dr. Bulmer, Dr. Jean Breny, Professor and Chair, Public Health Dept., presented the program for SCSU which plans to launch this program in Summer 2021. This is a very successful MPH program. The online version of the program was approved as a consent item in today's meeting. Due to the COVID-19 crisis, the Public Health and Public Health leadership are experiencing employment shortages. The Executive MPH is

focused on leadership and tailored to working professionals in the Public Health field who do not have a Master's degree in Public Health.

Chair Harris called for a vote to approve the SCSU Executive MPH program. A vote was taken and the vote to approve the SCSU Executive MPH program was unanimous.

vi. Data Science Major – BA/BS – Eastern CT State University

Chair Harris called for a motion to approve the proposed new Eastern CT State University Data Science Major BA/BS degree. The motion was moved by N. Cohen and seconded by H. Howery.

Provost Bill Salka presented the new Data Science Major BA/BS degree for ECSU which is projecting a start date of Fall 2020. The new Data Science Major BA/BS degree has two components: 1) the BS Data Science Major with a focus on Math and Computer Science, and, 2) the BA Data Science Major which allows the student to double major with a second major in Data Science. President Elsa Núñez stated that ECSU is working closely with CIGNA on their data analytics needs.

Chair Harris called for a vote to approve the Eastern CT State University Data Science Major – BS/BA program amended with the guidelines indicating the institution's choice to start programs in Fall 2020 or to delay the program start date. A vote was taken and the vote to approve the Eastern CT State University Data Science Major – BS/BA program, with the institution's choice to start the program in Fall 2020 or to delay the start date, was unanimous.

vii. Human Resources Management – BS – Charter Oak State College

Chair Harris called for a motion to approve the proposed new Charter Oak State College Human Resources Management BS degree. The motion was moved by H. Howery and seconded by A. Budd.

Provost Shirley Adams presented for COSC which, as part of its strategic planning process, is moving its concentrations to BS degrees. The new BS in Human Resources Management is comprised of existing courses; therefore, there will be no new costs associated with the BS degree.

Chair Harris called for a vote to approve the new Charter Oak State College BS in Human Resources Management program. A vote was taken and the vote to approve the COSC BS in Human Management program was unanimous.

viii. Organizational Leadership - BS – Charter Oak State College

Chair Harris called for a motion to approve the proposed new Charter Oak State College Organizational Leadership BS degree. The motion was moved by H. Howery and seconded by N. Cohen.

Provost Adams stated that the rationale for the creation of this new program is that same as for the BS in Human Resources Management except that there is a new added course, Diversity in Business, which will be part of the BS in Organizational Leadership. Enrollment in the Organizational Leadership program is higher than that of the Human Resources Management program. The institution will incur no new costs for the BS in Organizational Leadership.

Chair Harris called for a vote to approve the new Charter Oak State College BS in Organizational Leadership program. A vote was taken and the vote to approve the COSC BS in Organizational Leadership program was unanimous.

ix. Paraprofessional Studies – AS – Charter Oak State College

Chair Harris called for a motion to approve the proposed new Charter Oak State College Professional Studies AS degree. The motion was moved by H. Howery and seconded by A. Budd.

Dr. Maureen Hogan, Director of the Early Childhood and Youth Programs, presented the proposed new Paraprofessional Studies AS degree which will replace the current Certificate in Paraprofessional Studies. The AS degree will be a pathway to teacher certification and eventually will lead to a BS degree and the alternate route to teacher certification. Students in the current Certificate in Paraprofessional Studies program are not eligible for financial aid. There is no additional cost to the institution for the new program. The new AS in Paraprofessional Studies is scheduled to start in Fall 2020 and will be marketed to school districts across the state.

Chair Harris called for a vote to approve the new Charter Oak State College AS in Paraprofessional Studies program. A vote was taken and the vote to approve the COSC AS in Paraprofessional Studies program was unanimous.

x. Paralegal – C2 Certificate – Tunxis CC [Replication of MCC's Paralegal Certificate Program]

Chair Harris called for a motion to approve the proposed new Tunxis CC Paralegal C2 Certificate. The motion was moved by A. Budd and seconded by N. Cohen.

Angela Fierro, M.S.W./J.D., Lecturer in Sociology and Political Science, presented the proposed new Paralegal C2 Certificate for Tunxis CC which is replacing the non-credit Legal Secretary program. The proposed new Paralegal C2 Certificate program is an exact replica of Manchester CC's Paralegal C2 Certificate.

Chair Harris called for a vote to approve the new Tunxis CC Paralegal C2 Certificate program. A vote was taken and the vote to approve the Tunxis CC Paralegal C2 Certificate program was unanimous.

xi. COT Technology Studies: Energy Management Option – AS – Tunxis CC

Chair Harris called for a motion to approve the proposed new Tunxis CC COT Technology Studies: Energy Management Option AS degree. The motion was moved by N. Cohen and seconded by A. Budd.

Provost Gates introduced the proposed new Tunxis CC COT Technology Studies: Energy Management Option 64-credit AS degree. The normalization for the 64-credit proposed new COT AS degree program was approved.

Mat Spinelli, Director, STEAM and Advanced Manufacturing, presented the proposed new program for Tunxis CC. The proposed new program replaces the former Energy Management program and is more robust with physics and math courses. The program is funded by the CT Department of Energy and Environmental Protection (DEEP).

Chair Harris called for a vote to approve the new Tunxis CC COT Technology Studies: Energy Management Option AS program. A vote was taken and the vote to

approve the new Tunxis CC COT Technology Studies: Energy Management Option AS program was unanimous.

xii. COT Energy Management – C2 Certificate – Tunxis CC

Chair Harris called for a motion to approve the proposed new Tunxis CC COT Energy Management C2 Certificate. The motion was moved by N. Cohen and seconded by H. Howery.

Chair Harris called for a vote to approve the new Tunxis CC COT Energy Management C2 Certificate. A vote was taken and the vote to approve the new Tunxis CC Energy Management C2 Certificate was unanimous.

After the vote, Regent Budd questioned the revenue of \$124,000 for the COT Energy Management programs. Director Mat Spinelli responded that the revenue is from the CT DEEP grant which is renewed annually.

xiii. English as a Second Language (ESL) – Certificate – Gateway CC

Chair Harris called for a motion to approve the proposed new Gateway CC English as a Second Language (ESL) Certificate. The motion was moved by H. Howery and seconded by A. Budd.

Susan Chenard, Professor and Program Coordinator, ESL, presented the new program for GCC. The new program will provide qualified immigrants with an accelerated path to an AS degree, career preparation and job opportunities. The courses in the proposed new ESL certificate will count toward an AS degree depending upon the major. However, it is expected that students enrolled in the new ESL Certificate program will already have a Bachelor's degree.

Chair Harris called for a vote to approve the new Gateway CC English as a Second Language (ESL) Certificate. A vote was taken and the vote to approve the new Gateway CC English as a Second Language (ESL) Certificate was unanimous.

xiv. Criminal Justice – AS – Gateway CC

Chair Harris called for a motion to approve the proposed new Gateway CC Criminal Justice AS degree. The motion was moved by N. Cohen and seconded by H. Howery.

Dr. Kristina Veselak, Instructor, Criminal Justice and Sociology, presented the proposed new AS in Criminal Justice degree for GCC. She stated that enrollment is growing and the proposed new degree is an alternate path to a Criminal Justice degree for students who want to enter the workforce but who don't want to transfer to a Bachelor's degree program. The program aligns with the TAP Pathways as much as possible. An internship is included at no extra cost.

Chair Harris asked if this degree should be an AOS (Associate of Occupational Science) since it is a career-track degree. Is the other degree for transfer an AA degree? How will students realize that they are not in the Transfer Path (TAP) degree? Dr. Ken Klucznik responded that the transfer degree is a TAP degree and it is not the practice to use a different name for non-TAP programs. Chair Harris responded that this should be reviewed.

Questions from the Committee included:

- a) *What is the \$64,000 in the budget for administrative cost?* Response: The cost is for the Program Coordinator who would teach part time and act as a Program Coordinator part time. The position would also oversee an internship course. The program needs a Program Coordinator. There is an additional cost for fringe benefits at a rate of 72%. The program is projected to break even in the first year and generate revenue by the third year.
- b) *No cost for Student Services is projected.* Response: Providing student services are included in the Program Coordinator's role.
- c) *The program cost in Year 1, 2020, is significant due to the Program Coordinator position. Will there be an option to delay the start of the program for another year?* Response: Yes. There is an option to delay the start of the program for another year.
- d) *Do interns get paid?* Response: Students are not paid interns. They receive credit for the internship.

Chair Harris called for a vote to approve an amended motion that the new Gateway CC Criminal Justice AS degree program will not hire a Program Coordinator if there is insufficient enrollment/revenue to support the position. A vote was taken on the amended motion for the new Gateway CC Criminal Justice AS degree program and the motion was approved with Regent Budd abstaining.

xv. Accelerated Criminology to Criminal Justice - BA to MS – Central CT State University

Chair Harris called for a motion to approve the proposed new Central CT State University Accelerated Criminology to Criminal Justice BA to MS degree. The motion was moved by H. Howery and seconded by N. Cohen.

Dr. Marianne Fallon and Dr. Jennifer Hedlund, Assoc. Professor and Dept. Chair, Criminology/Criminal Justice, presented the proposed program for CCSU which seeks approval for a five-year Accelerated BA to MS Criminology to Criminal Justice program. The basis of the new program are two established robust programs: 1) the BA in Criminology which has more than 500 enrollments; and, 2) the MS in Criminal Justice. Students will save \$10,000 by completing the combined BA and MS degrees in five years. CCSU will be marketing the accelerated option and increasing the number of sections due to anticipated enrollment. CCSU is planning to launch the program in Fall 2020.

Chair Harris called for a vote to approve the new Central CT State University Accelerated Criminology to Criminal Justice BA to MS degree. A vote was taken and the vote to approve the new Accelerated Criminology to Criminal Justice BA to MS degree was unanimous.

c. Accreditation of a Licensed Program

i. Early Childhood Studies and Infant/Toddler Mental Health – BS – Central CT State University

Chair Harris called for a motion to approve the accreditation of the Central CT State University BS in Early Childhood Studies and Infant/Toddler Mental Health. The motion was moved by N. Cohen and seconded by H. Howery.

Mary Pat Bigley, Interim Associate Dean, School of Education and Professional Studies, and, Dr. Candace Barriteau Phaire, Assistant Professor and Program Coordinator, Early Childhood Studies, presented the program for CCSU which is seeking accreditation for

the licensed program before the three-year timeframe because two students are graduating from the program in May 2020.

Chair Harris called for a vote to approve the accreditation of the Central CT State University Early Childhood Studies and Infant/Toddler Mental Health BS degree. A vote was taken and the vote to approve the accreditation of the Central CT State University Early Childhood Studies and Infant/Toddler Mental Health BS degree was unanimous.

d. Replication of a COT Program

i. COT Technology Studies: Data Science Option – AS – Gateway CC

Chair Harris called for a motion to approve the Gateway CC Replication of a COT Program, the COT Technology Studies: Data Science Option AS degree. The motion was moved by H. Howery and seconded by N. Cohen.

Chair Harris asked Provost Gates if the Committee needs to approve continued accreditation for a COT-replicated program after seven semesters. Provost Gates replied that, yes, the institution must apply for continued accreditation for a COT-replicated program after seven semesters.

Chair Harris called for an amended motion to approve the Gateway CC Replication of a COT Program, the COT Technology Studies: Data Science Option AS degree with the requirement that the institution apply for continued accreditation after seven semesters. The motion was moved by M. Harris and seconded by N. Cohen.

Chair Harris called for a vote to approve the amended motion for the accreditation of the Gateway CC Replication of a COT Program, the COT Technology Studies: Data Science Option AS degree with the requirement that the institution will apply for continued accreditation of the program after seven semesters. A vote was taken on the amended motion and the vote to approve the accreditation of the Gateway CC Replication of a COT Program, the COT Technology Studies: Data Science Option AS degree with the requirement that the institution will apply for continued accreditation of the program after seven semesters was unanimous.

e. CCSU Vision Statement in the Strategic Plan

Chair Harris commended Central CT State University on its Strategic Plan. She noted that the BOR has a statutory responsibility to approve an institution's Role and Scope Statement.

Chair Harris called for a motion to approve the Central CT State University Vision Statement in the Strategic Plan. The motion was moved by N. Cohen and seconded by A. Budd.

President Zulma Toro presented the Vision Statement in the CCSU Strategic Plan. Regent Budd questioned Metric # 1 on Page 11 – Target: Become a Hispanic Serving Institution. She asked if this should be reworded to read "Serving Hispanics and all students". Chair Harris noted that this is statutory, a defined term. President Toro stated that an Hispanic serving institution serves a population that is 25% Hispanic students. With this ratio, CCSU can apply for Title IV funding. Regent Budd stated that the institution should add, "as referenced by X Statute". President Toro agreed and stated that CCSU will add "per the Federal Government statute". Chair Harris stated that the General Vision Statement and the BOR Mission and Vision Statement determine that there is no conflict between CCSU and the BOR Vision Statement.

Chair Harris called for a vote to approve the Central CT State University Vision Statement in the Strategic Plan and the vote was unanimous.

f. CCSU Robert C. Vance Endowed Chair Appointment

Chair Harris called for a motion to approve the Central CT State University Robert C. Vance Endowed Chair Appointment. The motion was moved by N. Cohen and seconded by H. Howery. A vote was taken and the Central CT State University Robert C. Vance Endowed Chair Appointment was approved.

f. Honorary Degrees

Chair Harris called for a motion to approve the CSCU Honorary Degrees. The motion was moved by N. Cohen and seconded by H. Howery.

Chair Harris noted that there are no immediate dates for commencement due to COVID-19. Commencements may be held in Fall 2020.

Chair Harris called for a vote on the CSCU Honorary Degrees. A vote was taken and the CSCU Honorary Degrees were approved.

g. Proposed BOR Policy: Grading, Notations, and Academic Engagement

Chair Harris called for a motion to approve the proposed BOR Policy: Grading, Notations, and Academic Engagement. The motion was moved by N. Cohen and seconded by H. Howery.

Dr. Alison Buckley, VP Enrollment Management, and Steve McDowell, Director of Financial Aid Services, presented the proposed BOR Policy: Grading, Notations, and Academic Engagement. Dr. Buckley stated that the revised policy addresses two deficiencies in the current grading system in the community colleges that impact Federal funding, enrollment status reporting and capturing the activity of students who fail to begin participation in coursework. Chair Harris stated that this policy is necessary for Title IV funding. Director McDowell discussed the existing and proposed policies which included transcript notations, a method to determine a student's enrollment status in registered coursework, and, reporting and recordkeeping for an unofficial withdrawal from a course without notification. He discussed two transcript notations, the new NP - Never Participated notation with indicates that the student enrolled in the class but did not engage in academic activities. The UF – Unearned F notation was eliminated in the new policy. This change will increase retention and graduation rates and will comply with Federal Title IV requirements.

Chair Harris called for a vote to approve the proposed BOR Policy: Grading, Notations, and Academic Engagement and the vote was unanimous.

h. Proposed BOR Policy: Holistic Case Management Advising (HCMA)

Chair Harris called for a motion to approve the proposed BOR Policy: Holistic Case Management and Advising (HCMA). The motion was moved by N. Cohen and seconded by H. Howery.

Dr. Greg DeSantis, AVP Student Success Center and Academic Initiatives, discussed the components of the proposed Holistic Case Management Advising (HCMA) Policy. These include: 1) Reducing the ratio of students to advisors by Fall 2022 to 250:1; 2) Developing a Student Technology Platform to assist with the process; and, 3) Developing an Initial Implementation and Assessment Plan by December 2020.

Chair Harris called for a vote to approve the proposed BOR Policy: Holistic Case Management Advising (HCMA) and the vote was unanimous.

i. BOR Faculty Awards

Chair Harris called for a motion to approve the proposed BOR Faculty Awards. The motion was moved by N. Cohen and seconded by H. Howery.

Chair Harris noted that the BOR approved awarding Faculty Awards in 2013. She explained the three types of awards and the process and stated that the Selection Committee is comprised of previous year's Faculty Award recipients. Regent Cohen noted that the list of faculty award nominees is very impressive this year as it is every year. Chair Harris noted that her hope is to present the Faculty Awards in Fall.

Chair Harris called for a vote to approve the proposed BOR Faculty Awards and the vote was unanimous.

2. Informational Items

a. Below Threshold

- i. Health Information Management Technician: Certified Coding Specialist – C2 Certificate – Quinebaug Valley CC
- ii. Business Administration: Health Care Management – AS – Quinebaug Valley CC
- iii. Business and Management Administration - AS – Northwestern CT CC [Program Modifications required by accrediting organization]
- iv. eSports Management – Minor – Southern CT State University
- v. Health and Community Services – Concentration for BA in General Studies - Southern CT State University
- vi. Educational Studies - Concentration for the BA in General Studies - Southern CT State University
- vii. MS-School Health Education Accelerated Pathway – Concentration for the BS in Physical Education - Southern CT State University
- viii. Mathematics Education - Concentration for the Master of Arts in Teaching (MAT) – Southern CT State University
- ix. Applied Behavior Analysis - Post-Baccalaureate Certificate - Southern CT State University [Program Modification]
- x. Community Practice: Community, Organization, Policy, and Leadership – Concentration for the Master of Social Work (MSW) - Southern CT State University
- xi. Respiratory Care Program – AS - Naugatuck Valley CC [Program Modification]
- xii. Radiologic Technology – AS - Naugatuck Valley CC [Program Modification]
- xiii. Graphics Technology – Minor – Central CT State University
- xiv. Business Leadership – OCP – Central CT State University
- xv. Advanced Detective – OCP – Central CT State University
- xvi. Gerontology – OCP – Central CT State University

b. Students First Update

Provost Gates introduced the Students First Update as a response to the Commission's July 12 letter to ensure that the one college structure will fulfill the mission of the organization, particularly in the area of academic administration. Dr. Klucznik and Dr. Buckley presented the Students First Update. Dr. Klucznik, referring to the proposed College Provost and VP Enrollment Chart (Draft) stated how the proposed organizational

chart was created. He addressed the Vice President College Provost/CAO line. To create the organizational structure, the Students First team met with Academic Administration consultants (NCHEMS, NECHE), Community College Presidents, CEOs and Regional Presidents. In addition, the team benchmarked with colleges of comparable size. Dr. Buckley discussed the proposed Vice President of Enrollment Management and Student Affairs organizational structure. She stated that with the shift to one college, there will be a shift from generalist to specialist. The positions reporting up to the VP Enrollment Management and Student Affairs will be responsible for coordinating the specialization to ensure consistency of service regardless of location so that all students receive the same level of service and have the same access to support.

Questions from the Committee included:

- i. *Will there be more lines under the boxes where current campus staff will be slotted? Will some of the staff still be on campus?* Response: Yes. Our goal is to maintain or increase the number of staff on the campuses in the areas of Advising and Enrollment Management. We wanted to keep the organizational structure fairly flat to limit the levels between the students and the Cabinet.
- ii. *What is the relationship of the Academic Deans and the separation of that level and the centralized academic level?* Response: We are working on that right now. Currently curriculum is developed by faculty and departments at the individual colleges. We will move from a college to college approach to a single college approach. Referring to the organizational chart, curriculum development will be handled at the AVP of Academic Programs and Curriculum level which will change the role of the Academic Deans at the campus level.
- iii. *How will specific college needs be met at the local level?* Response: Sometimes the programs will be local programs at the college level. Departments will be at the colleges and programs will be administered at the local college. Students will be able to take courses at any college.
- iv. *How will a program like QVCC's Cannabis Studies, which we discussed today, be developed under the one college?* Response: The program will be developed at the campus then move to the one college level. We are still working on the shared governance process for curriculum development.

On a motion by N. Cohen and seconded by H. Howery, the Committee voted unanimously to adjourn the meeting of the BOR Academic and Student Affairs Committee at 12:45 p.m.

CT BOARD OF REGENTS FOR HIGHER EDUCATION

RESOLUTION

concerning

Program Discontinuation

May 14, 2020

RESOLVED: That the Board of Regents for Higher Education approve the immediate discontinuation of a program in Computer Information Systems: Mobile Application Developer (CIP Code: 50.0401 / OHE # 017998) leading to an Associate of Science at Capital Community College.

A True Copy:

Erin A. Fitzgerald, Secretary of the
CT Board of Regents for Higher Education

ITEM

Discontinuation of a program in Computer Information Systems: Mobile Application Developer leading to an Associate of Science at Capital Community College.

BACKGROUND

Capital developed the Computer Information Systems: Mobile Application Developer A.S. Option as part of Capital's participation in the Northeast Resiliency Consortium - a US Department of Labor Trade Adjustment Assistance Community College and Career Training (TAACCCT) grant.

Since the inception of the Computer Information Systems: Mobile Application Developer A.S. Degree Option, Capital faced challenges enrolling students into this program. Program enrollment never met the enrollment goals set forth in the original degree program proposal. Enrollment has remained low throughout the program history, despite significant efforts to market the program to area secondary schools, and despite prior outreach and partnership with local workforce boards. Currently, there are only 5 students in the program.

Capital seeks to discontinue and terminate the Computer Information Systems: Mobile Application Developer A.S. Degree Option program and redirect program resources and curriculum into the parent Computer and Information Systems A.S. degree program.

Unique courses in this program will remain in the Capital catalog and will be offered periodically to students in the Computer and Information Systems AS degree program and related certificate programs. Additionally, students enrolled in the Computer Information Systems: Mobile Application Developer A.S. Degree Option will be able to take required courses for graduation in an independent study format, or be provided the option (where appropriate) to substitute a different computer programming/computer technology course as needed.

RECOMMENDATION

It is the recommendation of the System's Provost and Senior Vice President for Academic and Student Affairs that the Board of Regents approve the discontinuation of this Associate of Science.

05/01/2020 – BOR -Academic and Student Affairs Committee

05/14/2020 – Board of Regents

CONNECTICUT BOARD OF REGENTS FOR HIGHER EDUCATION
Connecticut State Colleges & Universities
APPLICATION FOR DISCONTINUATION OF EXISTING PROGRAM

SECTION 1: GENERAL INFORMATION

Institution: Capital Community College	Date of Submission to CSCU Office of the Provost: Spring 2020
Discontinued Program: Computer and Information Systems: Mobile Application Developer, AS Option	
CIP: 500401 OHE#: 017998 BOR Accreditation Date:	
Phase Out /Teach Out Period Two Years Expected Date of Program Termination May 2022	
Program Characteristics	
Name of Program: Computer and Information Systems: Mobile Application Developer, AS Option	
Degree: Title of Award (e.g. Master of Arts) Associate in Science	
Degree Certificate: (specify type and level)	
Stand-Alone Certificate: (specify type and level)	
Modality of Program: <input checked="" type="checkbox"/> On ground <input type="checkbox"/> Online <input type="checkbox"/> Combined	
Locality of Program: <input checked="" type="checkbox"/> On Campus <input type="checkbox"/> Off Campus <input type="checkbox"/> Both	
Institution's Unit (e.g. School of Business) and Location (e.g. main campus) offering the Program: Business & Technology Dept.	
Institutional Contact for this Proposal: Dr. Miah LaPierre Dreger, EdD	Title: Dean of Academic and Student Affairs Tel.: 860-906-5011 e-mail: mlapierre-dreger@capitalcc.edu

SECTION 2: RATIONALE AND JUSTIFICATION FOR PROGRAM DISCONTINUATION

Narrative

Consider whether discontinuation: a) occurs in the context of a related academic improvement, e.g., the merging of programs with declining enrollment/completions into a new program that effectively addresses relevant state needs and students' interests; b) emerge as a result of the periodic Academic Program Review for all programs at each institution, under the guidance of existing BOR policy; c) other institutional considerations such as redirecting capacity, adoption of new mission, etc. Provide any quantitative information in support of the discontinuation, including any relevant financial information. Program discontinuation should not impact state priorities for workforce preparation.

Capital developed the Computer Information Systems: Mobile Application Developer A.S. Option as part of Capital's participation in the Northeast Resiliency Consortium - a US Department of Labor Trade Adjustment Assistance Community College and Career Training (TAACCCT) grant. The TAACCCT grant objective was to create programs that train Trade Adjustment Assistance (TAA)-impacted workers, veterans, unemployed workers, and under-employed workers for current and emerging jobs. As part of this grant, CCC partnered with local workforce representatives to determine workforce needs within the information technology industry. As a result, Mobile Application Developer was identified as an emerging occupation for which additional training programs are needed. The proposed degree option and certificate programs met the goals of the TAACCCT grant, in both developing highly skilled workers for the information technology industry, and in providing a menu of educational options ranging from certificates to associate degrees with the potential for transfer to bachelor degree programs. The TAACCCT grant provides funding to support many facets of the proposed programs, including instruction, prior-learning assessment, recruitment, retention, internships and job placement services.

Since the inception of the Computer Information Systems: Mobile Application Developer A.S. Degree Option, Capital faced challenges enrolling students into this program. Program enrollment never met the enrollment goals set forth in the original degree program proposal. Enrollment has remained low throughout the program history, despite significant efforts to market the program to area secondary schools, and despite prior outreach and partnership with local workforce boards. Currently, there are only 5 students in the program.

Capital seeks to discontinue and terminate the Computer Information Systems: Mobile Application Developer A.S. Degree Option program and redirect program resources and curriculum into the parent Computer and Information Systems A.S. degree program. The three mobile application development courses developed for this degree (CSC* 262 Programming

CONNECTICUT BOARD OF REGENTS FOR HIGHER EDUCATION

Connecticut State Colleges & Universities

APPLICATION FOR **DISCONTINUATION OF EXISTING PROGRAM**

Mobile Devices I, CSC* 272 Advanced Mobile Apps I, CSC* 284 Advanced Mobile Apps II) will be updated and offered periodically to students in the Computer and Information Systems degree program and related certificate programs.

Phase Out/Teach Out Strategy

Describe how the institution will ensure that students currently enrolled will be provided opportunities to complete the program. Provide quantitative information as needed (e.g. enrollments, any special resources needed, etc.)

Unique courses in this program will remain in the Capital catalog and will be offered periodically to students in the Computer and Information Systems AS degree program and related certificate programs. Additionally, students enrolled in the Computer Information Systems: Mobile Application Developer A.S. Degree Option will be able to take required courses for graduation in an independent study format, or be provided the option (where appropriate) to substitute a different computer programming/computer technology course as needed.

SECTION 3: RESOURCES

Close Out

What resources/costs would be employed and/or expended to discontinue program? What would be the total cost?

The only costs required to discontinue the Computer Information Systems: Mobile Application Developer A.S. Degree Option are the costs for phase out/teach out of the few students enrolled in the degree program, and the costs of updating the College marketing materials (brochure, website, etc.) The marketing costs will be negligible since they will be included in the existing marketing budgets for the department and college. Any independent study instructional costs will be covered through faculty AR time.

SECTION 4: LESSONS LEARNED

(A debriefing exercise):

NOTE: Lessons Learned is knowledge or understanding gained from experience(s) that might be positive or negative, that might underscore strengths or weaknesses of an undertaking's preparation, design or implementation.

Are there lessons learned – experiences distilled from: (a) circumstances that precipitated this program discontinuation, (b) institutional or programmatic action(s) in the face of the referenced circumstances, (c) institutional or programmatic inaction(s) in the face of the referenced circumstances, and/or (d) some other occurrence(s); that can be **beneficially** shared with / taken into account by current and future programs?

The primary lesson learned through our College's experience developing and offering this degree program is that evidence of industry need is not a predictor of student demand or interest for a given program. The primary impetus for developing this degree program option was to train trade-impacted employees, veterans, unemployed and under-employed individuals to fill a specific need within the Information Technology industry. However, our expectation that these targeted groups would gravitate to and enroll in our program never materialized. Part of this is due to a realization that many individuals in these targeted groups seek a significantly shorter-term training than an A.S. degree that takes at least two years to complete.

CT BOARD OF REGENTS FOR HIGHER EDUCATION

RESOLUTION

concerning

Program Discontinuation

May 14, 2020

RESOLVED: That the Board of Regents for Higher Education approve the immediate discontinuation of a program in Computer Information Systems: Web Publishing (CIP Code: 11.0401 / OHE # 007110) leading to an Associate of Science at Capital Community College.

A True Copy:

Erin A. Fitzgerald, Secretary of the
CT Board of Regents for Higher Education

ITEM

Discontinuation of a program in Computer Information Systems: Web Publishing leading to an Associate of Science at Capital Community College.

BACKGROUND

The Computer and Information Systems: Web Publishing A.S. Degree Option was developed to prepare graduates for entry level employment as web site designers and web programmers. While employment demand in this area remains high, Capital has had significant difficulty enrolling students into this A.S. degree option program. Capital seeks to discontinue the Computer and Information Systems: Web Publishing A.S. Degree Option due to decreased program enrollment. Currently, there are only 2 students in the program.

Capital seeks to discontinue and terminate the A.S. degree option program and redirect the program resources and curriculum into the parent Computer and Information Systems A.S. degree program. There are currently only two web design and development courses unique to this degree program - CST* 250 Web Design and Development II, and CST *258 Fundamentals of Internet Programming. These courses will remain in the Capital catalog and be offered periodically to students in the Computer and Information Systems degree program and related certificate programs.

Because of industry demand for graduates with skills in web design and web publishing, Capital will continue to offer coursework in this area, and will continue to offer a certificate program in this area. The certificate program is being modified to allow students to complete the certificate in a shorter time frame (12-months) as well as being revamped to align and prepare graduates for in-demand industry certifications.

Unique courses in this program will remain in the Capital catalog and will be offered periodically to students in the Computer and Information Systems AS degree program and related certificate programs. Additionally, students enrolled in the Computer Information Systems: Web Publishing A.S. Option will be able to take required courses for graduation in an independent study format, or be provided the option (where appropriate) to substitute a different computer programming/computer technology course as needed.

RECOMMENDATION

It is the recommendation of the System's Provost and Senior Vice President for Academic and Student Affairs that the Board of Regents approve the discontinuation of this Associate of Science.

CONNECTICUT BOARD OF REGENTS FOR HIGHER EDUCATION
Connecticut State Colleges & Universities
APPLICATION FOR DISCONTINUATION OF EXISTING PROGRAM

SECTION 1: GENERAL INFORMATION

Institution: Capital Community College	Date of Submission to CSCU Office of the Provost: Spring 2020	
Discontinued Program: Computer and Information Systems: Web Publishing, AS Option		
CIP: 110401 OHE#: 007110 BOR Accreditation Date:		
Phase Out /Teach Out Period Two Years Expected Date of Program Termination May 2022		
Program Characteristics		
Name of Program: Computer and Information Systems: Web Publishing, AS Option		
Degree: Title of Award (e.g. Master of Arts) Associate in Science		
Degree Certificate: (specify type and level)		
Stand-Alone Certificate: (specify type and level)		
Modality of Program: <input checked="" type="checkbox"/> On ground <input type="checkbox"/> Online <input type="checkbox"/> Combined		
Locality of Program: <input checked="" type="checkbox"/> On Campus <input type="checkbox"/> Off Campus <input type="checkbox"/> Both		
Institution's Unit (e.g. School of Business) and Location (e.g. main campus) offering the Program: Business & Technology Dept.		
Institutional Contact for this Proposal: Dr. Miah LaPierre Dreger, EdD	Title: Dean of Academic and Student Affairs	Institutional Contact for this Proposal: Dr. Miah LaPierre Dreger, EdD

SECTION 2: RATIONALE AND JUSTIFICATION FOR PROGRAM DISCONTINUATION

Narrative

Consider whether discontinuation: a) occurs in the context of a related academic improvement, e.g., the merging of programs with declining enrollment/completions into a new program that effectively addresses relevant state needs and students' interests; b) emerge as a result of the periodic Academic Program Review for all programs at each institution, under the guidance of existing BOR policy; c) other institutional considerations such as redirecting capacity, adoption of new mission, etc. Provide any quantitative information in support of the discontinuation, including any relevant financial information. Program discontinuation should not impact state priorities for workforce preparation.

The Computer and Information Systems: Web Publishing A.S. Degree Option was developed to prepare graduates for entry-level employment as web site designers and web programmers. While employment demand in this area remains high, Capital has had significant difficulty enrolling students into this A.S. degree option program. Capital seeks to discontinue the Computer and Information Systems: Web Publishing A.S. Degree Option due to decreased program enrollment. Currently, there are only 2 students in the program.

Capital seeks to discontinue and terminate the A.S. degree option program and redirect the program resources and curriculum into the parent Computer and Information Systems A.S. degree program. There are currently only two web design and development courses unique to this degree program - CST* 250 Web Design and Development II, and CST *258 Fundamentals of Internet Programming. These courses will remain in the Capital catalog and be offered periodically to students in the Computer and Information Systems degree program and related certificate programs.

Because of industry demand for graduates with skills in web design and web publishing, Capital will continue to offer coursework in this area, and will continue to offer a certificate program in this area. The certificate program is being modified to allow students to complete the certificate in a shorter time frame (12-months) as well as being revamped to align and prepare graduates for in-demand industry certifications.

CONNECTICUT BOARD OF REGENTS FOR HIGHER EDUCATION
Connecticut State Colleges & Universities
APPLICATION FOR DISCONTINUATION OF EXISTING PROGRAM

Phase Out/Teach Out Strategy

Describe how the institution will ensure that students currently enrolled will be provided opportunities to complete the program. Provide quantitative information as needed (e.g. enrollments, any special resources needed, etc.)

Unique courses in this program will remain in the Capital catalog and will be offered periodically to students in the Computer and Information Systems AS degree program and related certificate programs. Additionally, students enrolled in the Computer Information Systems: Web Publishing A.S. Option will be able to take required courses for graduation in an independent study format, or be provided the option (where appropriate) to substitute a different computer programming/computer technology course as needed.

SECTION 3: RESOURCES

Close Out

What resources/costs would be employed and/or expended to discontinue program? What would be the total cost?

The only costs required to discontinue the Computer Information Systems: Web Publishing A.S. Degree Option are the costs for phase out/teach out of the few students enrolled in the degree program, and the costs of updating the College marketing materials (brochure, website, etc.) The marketing costs will be negligible since they will be included in the existing marketing budgets for the department and college. Any independent study instructional costs will be covered through faculty AR time.

SECTION 4: LESSONS LEARNED

(A debriefing exercise):

NOTE: Lessons Learned is knowledge or understanding gained from experience(s) that might be positive or negative, that might underscore strengths or weaknesses of an undertaking's preparation, design or implementation.

Are there lessons learned – experiences distilled from: (a) circumstances that precipitated this program discontinuation, (b) institutional or programmatic action(s) in the face of the referenced circumstances, (c) institutional or programmatic inaction(s) in the face of the referenced circumstances, and/or (d) some other occurrence(s); that can be **beneficially** shared with / taken into account by current and future programs?

Prior to being a separate degree option, coursework in web design and development was offered as part of the Computer and Information Systems parent degree as computer electives. In developing the Web Publishing degree option, Capital decided to develop and offer additional required web design courses for Web Publishing majors. While the program enrollment in the Web Publishing has varied over time, the enrollment never truly met a threshold to warrant a separate degree option. By discontinuing the degree option, Capital is returning to a prior strategy of having one parent degree program, with specific course sequences (areas of specializations) for students to choose from. This will increase enrollment in the parent program and make program administration more manageable.

A second lesson learned is that coursework that directly aligns with an industry-need, and targeted to non-traditional, trade-impacted, unemployed and/or under-employed individuals must be offered in a format targeted to those individuals. Capital never successfully engaged this audience with our Computer and Information Systems: Web Publishing A.S. Degree Option because the degree takes too long for individuals to complete. As mentioned above, Capital does seek to better reach and serve this population and will continue to offer a certificate program in this area. The certificate program is being modified to allow students to complete the certificate in a shorter time frame (12-months) as well as being revamped to align and prepare graduates for in-demand industry certifications.

CT BOARD OF REGENTS FOR HIGHER EDUCATION

RESOLUTION

concerning

Program Discontinuation

May 14, 2020

RESOLVED: That the Board of Regents for Higher Education approve the immediate discontinuation of a program in Computer Support Specialist (CIP Code: 11.1006 / OHE # 013650) leading to an Associate of Science at Capital Community College.

A True Copy:

Erin A. Fitzgerald, Secretary of the
CT Board of Regents for Higher Education

ITEM

Discontinuation of a program in Computer Support Specialist leading to an Associate of Science at Capital Community College.

BACKGROUND

The Computer Support Specialist AS degree was developed to prepare graduates for entry-level support Information Technology support roles, such as Help Desk Technician, Technical Support Specialist, and Customer Service Representative. While employment demand in this area remains high, Capital has had significant difficulty enrolling students into this A.S. degree program. Capital seeks to discontinue the Computer Support Specialist degree due to decreased program enrollment. Currently, there are only 7 students in the program.

Capital seeks to discontinue and terminate the Computer Support Specialist AS degree program and redirect the resources and curriculum into the existing Computer and Information Systems AS degree program. There are currently only three unique computer support courses in this degree program: CST* 125 Help Desk Concepts, CST* 140 Intro to Computer Hardware, and CST* 240 Advanced Computer Hardware. These courses will remain in the Capital catalog and will be offered periodically to students in the Computer and Information Systems AS degree program and related certificate programs.

Unique courses in this program will remain in the Capital catalog and will be offered periodically to students in the Computer and Information Systems AS degree program and related certificate programs. Additionally, students enrolled in the Computer Support Specialist AS degree will be able to take required courses for graduation in an independent study format, or be provided the option (where appropriate) to substitute a different computer programming / computer technology course as needed.

We also anticipate that many of the 7 students remaining in this program will likely switch to one of the other computer-related degree programs at the college, however this (and other options) will be discussed with each student when they meet with their faculty advisor.

RECOMMENDATION

It is the recommendation of the System's Provost and Senior Vice President for Academic and Student Affairs that the Board of Regents approve the discontinuation of this Associate of Science.

CONNECTICUT BOARD OF REGENTS FOR HIGHER EDUCATION
Connecticut State Colleges & Universities
APPLICATION FOR DISCONTINUATION OF EXISTING PROGRAM

SECTION 1: GENERAL INFORMATION

Institution: Capital Community College	Date of Submission to CSCU Office of the Provost: Spring 2020
Discontinued Program: Computer Support Specialist, AS	
CIP: 111006 OHE#: 013650 BOR Accreditation Date:	
Phase Out /Teach Out Period Two Years Expected Date of Program Termination May 2022	
Program Characteristics	
Name of Program: Computer Support Specialist	
Degree: Title of Award (e.g. Master of Arts) Associate in Science	
Degree Certificate: (specify type and level)	
Stand-Alone Certificate: (specify type and level)	
Modality of Program: <input checked="" type="checkbox"/> On ground <input type="checkbox"/> Online <input type="checkbox"/> Combined	
Locality of Program: <input checked="" type="checkbox"/> On Campus <input type="checkbox"/> Off Campus <input type="checkbox"/> Both	
Institution's Unit (e.g. School of Business) and Location (e.g. main campus) offering the Program: Business & Technology Dept.	
Institutional Contact for this Proposal: Dr. Miah LaPierre Dreger, EdD	Title: Dean of Academic and Student Affairs
Tel.: 860-906-5011 e-mail: mlapierre-dreger@capitalcc.edu	

SECTION 2: RATIONALE AND JUSTIFICATION FOR PROGRAM DISCONTINUATION

Narrative

Consider whether discontinuation: a) occurs in the context of a related academic improvement, e.g., the merging of programs with declining enrollment/completions into a new program that effectively addresses relevant state needs and students' interests; b) emerge as a result of the periodic Academic Program Review for all programs at each institution, under the guidance of existing BOR policy; c) other institutional considerations such as redirecting capacity, adoption of new mission, etc. Provide any quantitative information in support of the discontinuation, including any relevant financial information. Program discontinuation should not impact state priorities for workforce preparation.

The Computer Support Specialist AS degree was developed to prepare graduates for entry-level support Information Technology support roles, such as Help Desk Technician, Technical Support Specialist, and Customer Service Representative. While employment demand in this area remains high, Capital has had significant difficulty enrolling students into this A.S. degree program. Capital seeks to discontinue the Computer Support Specialist degree due to decreased program enrollment. Currently, there are only 7 students in the program.

On the other hand, program enrollment in other computer technology areas at the college has increased and remained relatively steady. Specifically, enrollment in the Computer Information Systems AS degree program has remained steady, while enrollment in the Computer Science Transfer program and the Computer Networking/Cybersecurity degree, related option, and certificate have significantly increased. Additionally, students in these other computer-technology related programs are often as prepared, if not more prepared, for entry-level employment in the areas described above.

Capital seeks to discontinue and terminate the Computer Support Specialist AS degree program and redirect the resources and curriculum into the existing Computer and Information Systems AS degree program. There are currently only three unique computer support courses in this degree program: CST* 125 Help Desk Concepts, CST* 140 Intro to Computer Hardware, and CST* 240 Advanced Computer Hardware. These courses will remain in the Capital catalog and will be offered periodically to students in the Computer and Information Systems AS degree program and related certificate programs.

Capital will continue to produce graduates for entry-level IT support positions through our other computer-related degrees and certificates. Specifically, completers of the Computer Science TAP degree, Computer Information Systems AS, Computer Networking/Cybersecurity AS, and related options and certificate programs are each well-poised to fill these openings.

CONNECTICUT BOARD OF REGENTS FOR HIGHER EDUCATION
Connecticut State Colleges & Universities
APPLICATION FOR DISCONTINUATION OF EXISTING PROGRAM

Phase Out/Teach Out Strategy

Describe how the institution will ensure that students currently enrolled will be provided opportunities to complete the program. Provide quantitative information as needed (e.g. enrollments, any special resources needed, etc.)

Unique courses in this program will remain in the Capital catalog and will be offered periodically to students in the Computer and Information Systems AS degree program and related certificate programs. Additionally, students enrolled in the Computer Support Specialist AS degree will be able to take required courses for graduation in an independent study format, or be provided the option (where appropriate) to substitute a different computer programming/computer technology course as needed.

We also anticipate that many of the 7 students remaining in this program will likely switch to one of the other computer-related degree programs at the college, however this (and other options) will be discussed with each student when they meet with their faculty advisor.

SECTION 3: RESOURCES

Close Out

What resources/costs would be employed and/or expended to discontinue program? What would be the total cost?

The only costs required to discontinue the Computer Support Specialist AS degree are the costs for phase out/teach out of the few students enrolled in the degree program, and the costs of updating the College marketing materials (brochure, website, etc.) The marketing costs will be negligible since they will be included in the existing marketing budgets for the department and college. Any independent study instructional costs will be covered through faculty AR time.

SECTION 4: LESSONS LEARNED

(A debriefing exercise):

NOTE: Lessons Learned is knowledge or understanding gained from experience(s) that might be positive or negative, that might underscore strengths or weaknesses of an undertaking's preparation, design or implementation.

Are there lessons learned – experiences distilled from: (a) circumstances that precipitated this program discontinuation, (b) institutional or programmatic action(s) in the face of the referenced circumstances, (c) institutional or programmatic inaction(s) in the face of the referenced circumstances, and/or (d) some other occurrence(s); that can be **beneficially** shared with / taken into account by current and future programs?

The computer technology industry is one of the fastest changing industries in the world. The Computer Support Specialist AS degree was developed at Capital at a time when there were significant needs for Hardware Repair Technicians to re-build and repair PCs, as well as a time when companies employed large, on-site, help-desk teams to respond and reply to employee IT issues. Technological changes such as virtualization and cloud-computing, outsourcing, decreased technology costs, and automation have all dramatically changed this landscape. Additionally, the labor market has changed to require that even "entry-level" jobs require more technical skill/specialization. All of these changes have led our Computer Support Specialist AS degree program to be less competitive for graduates and less desirable for employers.

Capital is developing new curriculum and otherwise investing more resources into our other existing degree programs – Computer Science TAP, Computer Information Systems AS, Computer Networking/Cybersecurity AS - which are keeping up with IT industry changes. Rather than adopt this similar approach for the Computer Support Specialist degree, we feel it wiser to phase this degree out and redirect resources into existing programs that are meeting the needs of students and employers.

CT BOARD OF REGENTS FOR HIGHER EDUCATION

RESOLUTION

concerning

Program Discontinuation

May 14, 2020

RESOLVED: That the Board of Regents for Higher Education approve the immediate discontinuation of a program in Computer Support Specialist: Hardware (CIP Code: 11.1006 / OHE # 012298) leading to an Associate of Science at Capital Community College.

A True Copy:

Erin A. Fitzgerald, Secretary of the
CT Board of Regents for Higher Education

ITEM

Discontinuation of a program in Computer Support Specialist: Hardware leading to an Associate of Science at Capital Community College.

BACKGROUND

The Computer Support Specialist: Hardware Support A.S. Degree Option was developed to prepare graduates for entry-level support Information Technology support roles, such as Help Desk Technician, Technical Support Specialist, and Customer Service Representative. In recent years, changes such as virtualization and cloud-computing, outsourcing, decreased technology costs, and automation have all dramatically changed the employment landscape for Hardware Support technicians, in that, even “entry-level” jobs require more technical skill/specialization. In addition, Capital has had significant difficulty enrolling students into this A.S. degree option program. Currently, there are only 7 students in the program. Thus, Capital seeks to discontinue the Computer Support Specialist: Hardware Support AS Option due to low enrollment.

Capital seeks to discontinue and terminate the Computer Support Specialist: Hardware Support A.S. Option and redirect program resources and curriculum into the Computer and Information Systems A.S. degree program. There are currently only three computer support courses unique to this degree program - CST* 125 Help Desk Concepts, CST* 140 Intro to Computer Hardware, and CST* 240 Advanced Computer Hardware. These courses will remain in the Capital catalog and be offered periodically to students in the Computer and Information Systems degree program and related certificate programs.

Unique courses in this program will remain in the Capital catalog and will be offered periodically to students in the Computer and Information Systems AS degree program and related certificate programs. Additionally, students enrolled in the Computer Support Specialist: Hardware Support A.S. Option will be able to take required courses for graduation in an independent study format, or be provided the option (where appropriate) to substitute a different computer programming/computer technology course as needed.

RECOMMENDATION

It is the recommendation of the System’s Provost and Senior Vice President for Academic and Student Affairs that the Board of Regents approve the discontinuation of this Associate of Science.

05/01/2020 – BOR -Academic and Student Affairs Committee

05/14/2020 – Board of Regents

CONNECTICUT BOARD OF REGENTS FOR HIGHER EDUCATION
Connecticut State Colleges & Universities
APPLICATION FOR DISCONTINUATION OF EXISTING PROGRAM

SECTION 1: GENERAL INFORMATION

Institution: Capital Community College	Date of Submission to CSCU Office of the Provost: Spring 2020	
Discontinued Program: Computer Support Specialist: Hardware Support, AS Option		
CIP: 111006 OHE#: 012298 BOR Accreditation Date:		
Phase Out /Teach Out Period Two Years Expected Date of Program Termination May 2022		
Program Characteristics		
Name of Program: Computer Support Specialist: Hardware Support, AS Option		
Degree: Title of Award (e.g. Master of Arts) Associate in Science		
Degree Certificate: (specify type and level)		
Stand-Alone Certificate: (specify type and level)		
Modality of Program: <input checked="" type="checkbox"/> On ground <input type="checkbox"/> Online <input type="checkbox"/> Combined		
Locality of Program: <input checked="" type="checkbox"/> On Campus <input type="checkbox"/> Off Campus <input type="checkbox"/> Both		
Institution's Unit (e.g. School of Business) and Location (e.g. main campus) offering the Program: Business & Technology Dept.		
Institutional Contact for this Proposal: Dr. Miah LaPierre Dreger, EdD	Title: Dean of Academic and Student Affairs	Institutional Contact for this Proposal: Dr. Miah LaPierre Dreger, EdD

SECTION 2: RATIONALE AND JUSTIFICATION FOR PROGRAM DISCONTINUATION

Narrative

Consider whether discontinuation: a) occurs in the context of a related academic improvement, e.g., the merging of programs with declining enrollment/completions into a new program that effectively addresses relevant state needs and students' interests; b) emerge as a result of the periodic Academic Program Review for all programs at each institution, under the guidance of existing BOR policy; c) other institutional considerations such as redirecting capacity, adoption of new mission, etc. Provide any quantitative information in support of the discontinuation, including any relevant financial information. Program discontinuation should not impact state priorities for workforce preparation.

The Computer Support Specialist: Hardware Support A.S. Degree Option was developed to prepare graduates for entry-level support Information Technology support roles, such as Help Desk Technician, Technical Support Specialist, and Customer Service Representative. In recent years, changes such as virtualization and cloud-computing, outsourcing, decreased technology costs, and automation have all dramatically changed the employment landscape for Hardware Support technicians, in that, even "entry-level" jobs require more technical skill/specialization. In addition, Capital has had significant difficulty enrolling students into this A.S. degree option program. Currently, there are only 7 students in the program. Thus, Capital seeks to discontinue the Computer Support Specialist: Hardware Support AS Option due to low enrollment.

On the other hand, program enrollment in other computer technology areas at the college has increased and remained relatively steady. Specifically, enrollment in the Computer Information Systems AS degree program has remained steady, while enrollment in the Computer Science Transfer program and the Computer Networking/Cybersecurity degree, related option, and certificate have significantly increased. Additionally, students in these other computer-technology related programs are often as prepared, if not more prepared, for entry-level employment in the areas described above.

Capital seeks to discontinue and terminate the Computer Support Specialist: Hardware Support A.S. Option and redirect program resources and curriculum into the Computer and Information Systems A.S. degree program. There are currently only three computer support courses unique to this degree program - CST* 125 Help Desk Concepts, CST* 140 Intro to Computer Hardware, and CST* 240 Advanced Computer Hardware. These courses will remain in the Capital catalog and be offered periodically to students in the Computer and Information Systems degree program and related certificate programs.

Capital will continue to produce graduates for entry-level IT support positions through our other computer-related degrees and

CONNECTICUT BOARD OF REGENTS FOR HIGHER EDUCATION

Connecticut State Colleges & Universities

APPLICATION FOR DISCONTINUATION OF EXISTING PROGRAM

certificates. Specifically, completers of the Computer Science TAP degree, Computer Information Systems AS, Computer Networking/Cybersecurity AS, and related options and certificate programs are each well-poised to fill these openings.

Phase Out/Teach Out Strategy

Describe how the institution will ensure that students currently enrolled will be provided opportunities to complete the program. Provide quantitative information as needed (e.g. enrollments, any special resources needed, etc.)

Unique courses in this program will remain in the Capital catalog and will be offered periodically to students in the Computer and Information Systems AS degree program and related certificate programs. Additionally, students enrolled in the Computer Support Specialist: Hardware Support A.S. Option will be able to take required courses for graduation in an independent study format, or be provided the option (where appropriate) to substitute a different computer programming/computer technology course as needed.

SECTION 3: RESOURCES

Close Out

What resources/costs would be employed and/or expended to discontinue program? What would be the total cost?

The only costs required to discontinue the Computer Support Specialist: Hardware Support Option are the costs for phase out/teach out of the few students enrolled in the degree program, and the costs of updating the College marketing materials (brochure, website, etc.) The marketing costs will be negligible since they will be included in the existing marketing budgets for the department and college. Any independent study instructional costs will be covered through faculty AR time.

SECTION 4: LESSONS LEARNED

(A debriefing exercise):

NOTE: Lessons Learned is knowledge or understanding gained from experience(s) that might be positive or negative, that might underscore strengths or weaknesses of an undertaking's preparation, design or implementation.

Are there lessons learned – experiences distilled from: (a) circumstances that precipitated this program discontinuation, (b) institutional or programmatic action(s) in the face of the referenced circumstances, (c) institutional or programmatic inaction(s) in the face of the referenced circumstances, and/or (d) some other occurrence(s); that can be **beneficially** shared with / taken into account by current and future programs?

The computer technology industry is one of the fastest changing industries in the world. The Computer Support Specialist: Hardware Support Option was developed at Capital at a time when there were significant needs for Hardware Repair Technicians to re-build and repair PCs, as well as a time when companies employed large, on-site, help-desk teams to respond and reply to employee IT issues. Technological changes such as virtualization and cloud-computing, outsourcing, decreased technology costs, and automation have all dramatically changed this landscape. Additionally, the labor market has changed to require that even “entry-level” jobs require more technical skill/specialization. All of these changes have led our Computer Support Specialist degree program to be less competitive for graduates and less desirable for employers.

Capital is developing new curriculum and otherwise investing more resources into our other existing degree programs - Computer Science TAP, Computer Information Systems AS, Computer Networking/Cybersecurity AS - which are keeping up with IT industry changes. Rather than adopt this similar approach for the Computer Support Specialist: Hardware Option degree, we feel it wiser to phase this degree out and continue expending resources in existing programs that are meeting the needs of students and employers.

CT BOARD OF REGENTS FOR HIGHER EDUCATION

RESOLUTION

concerning

Program Discontinuation

May 14, 2020

RESOLVED: That the Board of Regents for Higher Education approve the immediate discontinuation of a program in Computer Hardware Support Specialist (CIP Code: 11.1006 / OHE # 012299) leading to a C2 Certificate at Capital Community College.

A True Copy:

Erin A. Fitzgerald, Secretary of the
CT Board of Regents for Higher Education

ITEM

Discontinuation of a program in Computer Hardware Support Specialist leading to a C2 Certificate at Capital Community College.

BACKGROUND

The computer technology industry is one of the fastest changing industries in the world. The Computer Hardware Support Specialist certificate was developed at Capital at a time when there were significant needs for Hardware Repair Technicians to re-build and repair PCs, as well as a time when companies employed large, on-site, help-desk teams to respond and reply to employee IT issues. Technological changes such as virtualization and cloud-computing, outsourcing, decreased technology costs, and automation have all dramatically changed this landscape. Additionally, the labor market has changed to require that even “entry-level” jobs require more technical skill/specialization. All of these changes have led our Computer Hardware Support Specialist certificate to be less competitive for graduates and less desirable for employers. Additionally, Capital has had significant difficulty enrolling students into this certificate program in recent years. Currently, there are 0 students in the program. Thus, Capital seeks to discontinue the Computer Hardware Support Specialist certificate due to low enrollment.

RECOMMENDATION

It is the recommendation of the System’s Provost and Senior Vice President for Academic and Student Affairs that the Board of Regents approve the discontinuation of this C2 Certificate.

05/01/2020 – BOR -Academic and Student Affairs Committee

05/14/2020 – Board of Regents

CONNECTICUT BOARD OF REGENTS FOR HIGHER EDUCATION
Connecticut State Colleges & Universities
APPLICATION FOR DISCONTINUATION OF EXISTING PROGRAM

SECTION 1: GENERAL INFORMATION

Institution: Capital Community College	Date of Submission to CSCU Office of the Provost: Spring 2020
Discontinued Program: Computer Hardware Support Specialist Certificate	
CIP: 111006 OHE#: 012299 BOR Accreditation Date:	
Phase Out /Teach Out Period Two Years Expected Date of Program Termination May 2022	
Program Characteristics	
Name of Program: Computer Hardware Support Specialist	
Degree: Title of Award (e.g. Master of Arts)	
Degree Certificate: (specify type and level) Certificate	
Stand-Alone Certificate: (specify type and level)	
Modality of Program: <input checked="" type="checkbox"/> On ground <input type="checkbox"/> Online <input type="checkbox"/> Combined	
Locality of Program: <input checked="" type="checkbox"/> On Campus <input type="checkbox"/> Off Campus <input type="checkbox"/> Both	
Institution's Unit (e.g. School of Business) and Location (e.g. main campus) offering the Program: Business & Technology Dept.	
Institutional Contact for this Proposal: Dr. Miah LaPierre Dreger, EdD	Title: Dean of Academic and Student Affairs
Institutional Contact for this Proposal: Dr. Miah LaPierre Dreger, EdD	

SECTION 2: RATIONALE AND JUSTIFICATION FOR PROGRAM DISCONTINUATION

Narrative

Consider whether discontinuation: a) occurs in the context of a related academic improvement, e.g., the merging of programs with declining enrollment/completions into a new program that effectively addresses relevant state needs and students' interests; b) emerge as a result of the periodic Academic Program Review for all programs at each institution, under the guidance of existing BOR policy; c) other institutional considerations such as redirecting capacity, adoption of new mission, etc. Provide any quantitative information in support of the discontinuation, including any relevant financial information. Program discontinuation should not impact state priorities for workforce preparation.

The computer technology industry is one of the fastest changing industries in the world. The Computer Hardware Support Specialist certificate was developed at Capital at a time when there were significant needs for Hardware Repair Technicians to re-build and repair PCs, as well as a time when companies employed large, on-site, help-desk teams to respond and reply to employee IT issues. Technological changes such as virtualization and cloud-computing, outsourcing, decreased technology costs, and automation have all dramatically changed this landscape. Additionally, the labor market has changed to require that even "entry-level" jobs require more technical skill/specialization. All of these changes have led our Computer Hardware Support Specialist certificate to be less competitive for graduates and less desirable for employers. Additionally, Capital has had significant difficulty enrolling students into this certificate program in recent years. Currently, there are 0 students in the program. Thus, Capital seeks to discontinue the Computer Hardware Support Specialist certificate due to low enrollment.

Capital will continue to produce graduates for entry-level IT support positions through our other computer-related degrees and certificates at the College. Specifically, completers of the Computer Science TAP degree, Computer Information Systems AS, Computer Networking/Cybersecurity AS, and related options and certificate programs are each well-poised to fill these openings.

CONNECTICUT BOARD OF REGENTS FOR HIGHER EDUCATION
Connecticut State Colleges & Universities
APPLICATION FOR DISCONTINUATION OF EXISTING PROGRAM

Phase Out/Teach Out Strategy

Describe how the institution will ensure that students currently enrolled will be provided opportunities to complete the program. Provide quantitative information as needed (e.g. enrollments, any special resources needed, etc.)

There are no students currently enrolled in this certificate program, however if needed, students enrolled in the Computer Hardware Support Specialist certificate will be able to take required courses for graduation in an independent study format, or be provided the option (where appropriate) to substitute a different computer programming/computer technology course as needed.

SECTION 3: RESOURCES

Close Out

What resources/costs would be employed and/or expended to discontinue program? What would be the total cost?

The only costs required to discontinue the Computer Support Specialist: Hardware Support Option are the costs for phase out/teach out of any students enrolled in the degree program, and the costs of updating the College marketing materials (brochure, website, etc.) The marketing costs will be negligible since they will be included in the existing marketing budgets for the department and college. Any independent study instructional costs would be covered through faculty AR time, however, this is not likely since there are currently 0 students in the program.

SECTION 4: LESSONS LEARNED

(A debriefing exercise):

NOTE: Lessons Learned is knowledge or understanding gained from experience(s) that might be positive or negative, that might underscore strengths or weaknesses of an undertaking's preparation, design or implementation.

Are there lessons learned – experiences distilled from: (a) circumstances that precipitated this program discontinuation, (b) institutional or programmatic action(s) in the face of the referenced circumstances, (c) institutional or programmatic inaction(s) in the face of the referenced circumstances, and/or (d) some other occurrence(s); that can be **beneficially** shared with / taken into account by current and future programs?

The primary lesson learned in our experience with the Computer Hardware Support Specialist certificate is that certificate design must align with the target population the certificate is designed for. Specifically, certificates for individuals seeking re-training must be 12-months or less to complete. Certificates in the computer technology areas should also clearly align and prepare students for industry-certifications required for entry-level employment.

CT BOARD OF REGENTS FOR HIGHER EDUCATION

RESOLUTION

concerning

Program Suspension

May 14, 2020

RESOLVED: That the Board of Regents for Higher Education approve the suspension of a program in Computer Software Support Specialist (CIP Code: 11.1006 / OHE # 013650) leading to a C2 Certificate at Capital Community College until May 2022.

A True Copy:

Erin A. Fitzgerald, Secretary of the
CT Board of Regents for Higher Education

ITEM

Suspension of a program in Computer Software Support Specialist leading to a C2 Certificate at Capital Community College until May 2022.

BACKGROUND

The Computer Software Support Specialist Certificate was developed to prepare students for the positions of Help Desk Technician, Technical and Support Specialist, and Customer Service Representative. Additionally, the certificate was designed to provide graduates technical skills to diagnose and resolve software-related computer problems for clients in person, via phone or via teleconferencing.

While employment demand in this area remains high, in recent years, Capital has had significant difficulty enrolling students into Computer Software Support Specialist certificate and parent AS degree program. Currently, there is only 1 student in the program.

Capital seeks to discontinue the parent Computer Support Specialist A.S. degree program but only suspend the Computer Software Support Specialist Certificate. Our plan is to revamp and redesign the certificate, so that the Computer Software Support Specialist Certificate can be completed in 12-months (which it currently cannot). We also need to update the curriculum to align with specific industry-credentials.

During the certificate program suspension, Capital faculty will work with industry representatives on our Computer Advisory Board and analyze industry trends to determine the best curricular changes and focus area(s), to ensure the certificate sufficiently prepares graduates for entry-level employment and meets industry needs.

Students enrolled in the Computer Software Support Specialist certificate will be able to take any required courses for graduation in an Independent Study format, or be provided the option (where appropriate) to substitute a different computer technology course as needed.

RECOMMENDATION

It is the recommendation of the System's Provost and Senior Vice President for Academic and Student Affairs that the Board of Regents approve the suspension of this C2 Certificate.

05/01/2020 – BOR -Academic and Student Affairs Committee

05/14/2020 – Board of Regents

CONNECTICUT BOARD OF REGENTS FOR HIGHER EDUCATION
Connecticut State Colleges & Universities System Office
APPLICATION FOR SUSPENSION OF EXISTING PROGRAM

SECTION 1: GENERAL INFORMATION

Institution: Capital Community College	Date of Submission to CSCU Office of the Provost: Spring 2020	
Program: Computer Software Support Specialist Certificate CIP: 111006 OHE#: 013650 BOR Accreditation Date: Date Program will be reinstated or deleted (one, two, or three years maximum): Two Years - May 2022		
Program Characteristics Name of Program: Computer Software Support Specialist Degree: Title of Award (e.g. Master of Arts) Degree Certificate: (specify type and level) Certificate Stand-Alone Certificate: (specify type and level) Modality of Program: X On ground Online Combined Locality of Program: X On Campus Off Campus Both		
Institution's Unit (e.g. School of Business) and Location (e.g. main campus) offering the Program: Business & Technology Dept.		
Institutional Contact for this Proposal: Dr. Miah LaPierre Dreger, EdD	Title: Dean of Academic and Student Affairs	Institutional Contact for this Proposal: Dr. Miah LaPierre Dreger, EdD

SECTION 2: RATIONALE AND JUSTIFICATION FOR PROGRAM SUSPENSION

Narrative

Please provide reason for requested suspension and plans for follow-up including the sunset date as indicated above.

The Computer Software Support Specialist Certificate was developed to prepare students for the positions of Help Desk Technician, Technical and Support Specialist, and Customer Service Representative. Additionally, the certificate was designed to provide graduates technical skills to diagnose and resolve software-related computer problems for clients in person, via phone or via teleconferencing.

While employment demand in this area remains high, in recent years, Capital has had significant difficulty enrolling students into Computer Software Support Specialist certificate and parent AS degree program. Currently, there is only 1 student in the program.

Capital seeks to discontinue the parent Computer Support Specialist A.S. degree program but only suspend the Computer Software Support Specialist Certificate. Our plan is to revamp and redesign the certificate, so that the Computer Software Support Specialist Certificate can be completed in 12-months (which it currently cannot). We also need to update the curriculum to align with specific industry-credentials.

During the certificate program suspension, Capital faculty will work with industry representatives on our Computer Advisory Board and analyze industry trends to determine the best curricular changes and focus area(s), to ensure the certificate sufficiently prepares graduates for entry-level employment and meets industry needs.

CONNECTICUT BOARD OF REGENTS FOR HIGHER EDUCATION

Connecticut State Colleges & Universities System Office

APPLICATION FOR SUSPENSION OF EXISTING PROGRAM

Phase Out/Teach Out Strategy

Please describe how the institution will ensure that students currently enrolled will be provided opportunities to complete the program. Provide quantitative information as needed (e.g. enrollments, any special resources needed, etc.)

Students enrolled in the Computer Software Support Specialist certificate will be able to take any required courses for graduation in an Independent Study format, or be provided the option (where appropriate) to substitute a different computer technology course as needed.

SECTION 3: RESOURCES

Close Out

What resources/costs would be employed and/or expended to suspend program:

The only costs required to suspend the Computer Software Support Specialist certificate are the costs for phase out/teach out of the few students enrolled in the degree program, and the costs of updating the College marketing materials (brochure, website, etc.) The marketing costs will be negligible since they will be included in the existing marketing budgets for the department and college. Any independent study instructional costs will be covered through faculty AR time.

SECTION 4: LESSONS LEARNED

(A debriefing exercise):

NOTE: Lessons Learned is knowledge or understanding gained from experience(s) that might be positive or negative, that might underscore strengths or weaknesses of an undertaking's preparation, design or implementation.

Are there lessons learned – experiences distilled from: (a) circumstances that precipitated this program suspension, (b) institutional or programmatic action(s) in the face of the referenced circumstances, (c) institutional or programmatic inaction(s) in the face of the referenced circumstances, and/or (d) some other occurrence(s); that can be **beneficially** shared with / taken into account by current and future programs?

The primary lesson learned in our experience with the Computer Software Support Specialist certificate is that certificate design must align with the target population the certificate is designed for. Specifically, certificates for individuals seeking re-training must be able to complete in 12-months or less. Certificates in the computer technology areas should also clearly align and prepare students for industry-certifications required for entry-level employment.

CT BOARD OF REGENTS FOR HIGHER EDUCATION

RESOLUTION

concerning

Program Suspension

May 14, 2020

RESOLVED: That the Board of Regents for Higher Education approve the suspension of a program in Mobile Application Developer (CIP Code: 50.0401 / OHE # 017997) leading to a C2 Certificate at Capital Community College until May 2022.

A True Copy:

Erin A. Fitzgerald, Secretary of the
CT Board of Regents for Higher Education

ITEM

Suspension of a program in Mobile Application Developer leading to a C2 Certificate at Capital Community College until May 2022.

BACKGROUND

Capital developed the Mobile Application Developer Certificate and parent Computer Information Systems: Mobile Application Developer A.S. Option as part of Capital's participation in the Northeast Resiliency Consortium - a US Department of Labor Trade Adjustment Assistance Community College and Career Training (TAACCCT) grant. The TAACCCT grant objective was to create programs that train Trade Adjustment Assistance (TAA)-impacted workers, veterans, unemployed workers, and under-employed workers for current and emerging jobs. As part of this grant, CCC partnered with local workforce representatives to determine workforce needs within the information technology industry. As a result, Mobile Application Developer was identified as an emerging occupation for which additional training programs are needed. The proposed degree option and certificate programs met the goals of the TAACCCT grant, in both developing highly skilled workers for the information technology industry, and in providing a menu of educational options ranging from certificates to associate degrees with the potential for transfer to bachelor degree programs. The TAACCCT grant provides funding to support many facets of the proposed programs, including instruction, prior-learning assessment, recruitment, retention, internships and job placement services.

Since the inception of the Mobile Application Developer Certificate program, Capital faced challenges enrolling students into this program. Program enrollment never met the enrollment goals set forth in the original degree program proposal. Enrollment has remained low throughout the program history, despite significant efforts to market the program to area secondary schools, and despite prior outreach and partnership with local workforce boards. Currently, there are 0 students in the program.

Capital seeks to suspend the Mobile Application Developer Certificate program while we take time to re-tool it and bring it back at a future date with a different course sequence and alignment with the college's regular Computer Information Systems parent program. There are currently three mobile application development courses unique to this certificate program (CSC* 262 Programming Mobile Devices I, CSC* 272 Advanced Mobile Apps I, CSC* 284 Advanced Mobile Apps II). Our plan is to revamp and redesign the curriculum, so that the Mobile Application Developer Certificate can be completed in 12-months. We also plan to update the curriculum to align with specific industry-credentials.

RECOMMENDATION

It is the recommendation of the System's Provost and Senior Vice President for Academic and Student Affairs that the Board of Regents approve the suspension of this C2 Certificate.

05/01/2020 – BOR -Academic and Student Affairs Committee
05/14/2020 – Board of Regents

CONNECTICUT BOARD OF REGENTS FOR HIGHER EDUCATION
Connecticut State Colleges & Universities System Office
APPLICATION FOR SUSPENSION OF EXISTING PROGRAM

SECTION 1: GENERAL INFORMATION

Institution: Capital Community College	Date of Submission to CSCU Office of the Provost: Spring 2020
Discontinued Program: Mobile Application Developer Certificate	
CIP: 500401 OHE#: 017997 BOR Accreditation Date:	
Date Program will be reinstated or deleted (one, two, or three years maximum): Two Years - May 2022	
Program Characteristics	
Name of Program: Mobile Application Developer	
Degree: Title of Award (e.g. Master of Arts)	
Degree Certificate: (specify type and level) Certificate	
Stand-Alone Certificate: (specify type and level)	
Modality of Program: <input checked="" type="checkbox"/> On ground <input type="checkbox"/> Online <input type="checkbox"/> Combined	
Locality of Program: <input checked="" type="checkbox"/> On Campus <input type="checkbox"/> Off Campus <input type="checkbox"/> Both	
Institution's Unit (e.g. School of Business) and Location (e.g. main campus) offering the Program: Business & Technology Dept.	
Institutional Contact for this Proposal: Dr. Miah LaPierre Dreger, EdD	Title: Dean of Academic and Student Affairs
Institutional Contact for this Proposal: Dr. Miah LaPierre Dreger, EdD	

SECTION 2: RATIONALE AND JUSTIFICATION FOR PROGRAM SUSPENSION

Narrative

Please provide reason for requested suspension and plans for follow-up including the sunset date as indicated above.

Capital developed the Mobile Application Developer Certificate and parent Computer Information Systems: Mobile Application Developer A.S. Option as part of Capital's participation in the Northeast Resiliency Consortium - a US Department of Labor Trade Adjustment Assistance Community College and Career Training (TAACCCT) grant. The TAACCCT grant objective was to create programs that train Trade Adjustment Assistance (TAA)-impacted workers, veterans, unemployed workers, and under-employed workers for current and emerging jobs. As part of this grant, CCC partnered with local workforce representatives to determine workforce needs within the information technology industry. As a result, Mobile Application Developer was identified as an emerging occupation for which additional training programs are needed. The proposed degree option and certificate programs met the goals of the TAACCCT grant, in both developing highly skilled workers for the information technology industry, and in providing a menu of educational options ranging from certificates to associate degrees with the potential for transfer to bachelor degree programs. The TAACCCT grant provides funding to support many facets of the proposed programs, including instruction, prior-learning assessment, recruitment, retention, internships and job placement services.

Since the inception of the Mobile Application Developer Certificate program, Capital faced challenges enrolling students into this program. Program enrollment never met the enrollment goals set forth in the original degree program proposal. Enrollment has remained low throughout the program history, despite significant efforts to market the program to area secondary schools, and despite prior outreach and partnership with local workforce boards. Currently, there are 0 students in the program.

Capital seeks to suspend the Mobile Application Developer Certificate program while we take time to re-tool it and bring it back at a future date with a different course sequence and alignment with the college's regular Computer Information Systems parent program. There are currently three mobile application development courses unique to this certificate program (CSC* 262 Programming Mobile Devices I, CSC* 272 Advanced Mobile Apps I, CSC* 284 Advanced Mobile Apps II). Our plan is to revamp and redesign the curriculum, so that the Mobile Application Developer Certificate can be completed in 12-months. We also plan to update the curriculum to align with specific industry-credentials.

CONNECTICUT BOARD OF REGENTS FOR HIGHER EDUCATION

Connecticut State Colleges & Universities System Office

APPLICATION FOR SUSPENSION OF EXISTING PROGRAM

Phase Out/Teach Out Strategy

Please describe how the institution will ensure that students currently enrolled will be provided opportunities to complete the program. Provide quantitative information as needed (e.g. enrollments, any special resources needed, etc.)

Unique courses in this program will remain in the Capital catalog and will be updated and offered periodically to students in the parent Computer and Information Systems AS degree program and related certificate programs. Additionally, students enrolled in the Mobile Application Developer Certificate will be able to take required courses for graduation in an independent study format, or be provided the option (where appropriate) to substitute a different computer programming/computer technology course as needed.

SECTION 3: RESOURCES

Close Out

What resources/costs would be employed and/or expended to suspend program:

The only costs required to suspend the Mobile Application Developer Certificate are the costs for phase out/teach out of any students enrolled in the degree program, and the costs of updating the College marketing materials (brochure, website, etc.) The marketing costs will be negligible since they will be included in the existing marketing budgets for the department and college. Currently, there are 0 students in the program, but any future independent study instructional costs will be covered through faculty AR time.

SECTION 4: LESSONS LEARNED

(A debriefing exercise):

NOTE: Lessons Learned is knowledge or understanding gained from experience(s) that might be positive or negative, that might underscore strengths or weaknesses of an undertaking's preparation, design or implementation.

Are there lessons learned – experiences distilled from: (a) circumstances that precipitated this program suspension, (b) institutional or programmatic action(s) in the face of the referenced circumstances, (c) institutional or programmatic inaction(s) in the face of the referenced circumstances, and/or (d) some other occurrence(s); that can be **beneficially** shared with / taken into account by current and future programs?

The primary lesson learned in our experience with the Mobile Application Developer Certificate is that certificate design must align with the target population the certificate is designed for. Specifically, certificates for individuals seeking re-training must be able to complete the certificate in 12-months or less. Certificates in the computer technology areas should also clearly align and prepare students for industry-certifications required for entry-level employment.

CT BOARD OF REGENTS FOR HIGHER EDUCATION

RESOLUTION

concerning

Modification of a Program

May 14, 2020

RESOLVED: That the Board of Regents for Higher Education approve the modification of a degree program – Robotics and Mechatronics Engineering Technology (CIP Code: 15.0405 / OHE #16962), including an approval for an exception to the Credit Normalization Policy – leading to a Bachelor of Science at Central Connecticut State University.

A True Copy:

Erin A. Fitzgerald, Secretary of the
CT Board of Regents for Higher Education

ITEM

Program modification of a program, Robotics and Mechatronics Engineering Technology, including an approval for an exception to the Credit Normalization Policy, leading to a Bachelor of Science at Central Connecticut State University.

BACKGROUND

The BS in Robotics and Mechatronics Engineering Technology was accredited in 2012. Since then, the fields of Robotics, Mechatronics, machine vision, and programmable logical controllers have rapidly advanced, necessitating curriculum updates. These changes were informed by our Industrial Advisory Board to meet industry and market requirements. Further, these changes will better position the program for reaccreditation by ABET. The proposed curriculum will also open more industrial opportunities to CCSU students.

The Robotics and Mechatronics Engineering Technology BS received exemption from BR# 14-111 to offer this program at 130 credits.

RECOMMENDATION

Following its review and deliberative process, it is the recommendation of the Academic Council that the Board of Regents approve this program modification. The System's Provost and Senior Vice President for Academic and Student Affairs concurs with this recommendation.

05/01/2020 – BOR -Academic and Student Affairs Committee

05/14/2020 – Board of Regents

CONNECTICUT BOARD OF REGENTS FOR HIGHER EDUCATION
Connecticut State Colleges & Universities
APPLICATION FOR MODIFICATION OF ACCREDITED PROGRAM

SECTION 1: GENERAL INFORMATION

Institution: Central Connecticut State University **Date of Submission to CSCU Office of the Provost:** March 25, 2020

Most Recent NECHE Institutional Accreditation Action and Date: April 12, 2019

Original Program Characteristics

CIP Code No. 15.0405 Title of CIP Code Robotics Technology/Technician
Name of Program: Robotics and Mechatronics Engineering Technology
Degree: Title of Award (e.g. Master of Arts) **BS**
Stand-Alone Certificate: (specify type and level)
Date Program was Initiated: Fall 2012 OHE#: 16962
Modality of Program: X On ground Online Combined
If "Combined", % of fully online courses?
Locality of Program: X On Campus Off Campus Both

Original Program Credit Distribution

Credits in General Education: 42-48
Credits in Program Core Courses: 45
Credits of Electives in the Field: 1-7
Credits of Free Electives: 0
Cr Special Requirements (include internship, etc.): 36
Total # Cr in the Program (sum of all #Cr above): 130
From "Total # Cr in the Program" above, enter #Cr that are part of/belong in an already approved program(s) at the institution: 130

Type of Program Modification Approval Being Sought (mark all that apply):

X Significant Modification of Courses/Course Substitutions*
Offering of Program at Off-Campus Location (specify new location)
Offering of Program Using an Alternate Modality (e.g. from on ground to online)

X Change of Degree Title or Program Title

***Significant** is defined as "more than 15 credits in a previously approved undergraduate degree program or more than 12 credits in a previously approved graduate degree program.

Modified Program Characteristics

Name of Program: Robotics and Mechatronics Engineering Technology
Degree: Title of Award (e.g. Master of Arts) **BS**
Certificate¹: (specify type and level)
Program Initiation Date: Fall 2020
Modality of Program: X On ground Online Combined
If "Combined", % of fully online courses?
Locality of Program: X On Campus Off Campus Both

Modified Program Credit Distribution

Credits in General Education: 42-48
Credits in Program Core Courses: 55
Credits of Electives in the Field: 6-9
Credits of Free Electives: 0-3
Cr Special Requirements (include internship, etc.): 24
Total # Cr in the Program (sum of all #Cr above): 130
From "Total # Cr in the Program" above, enter #Cr that are part of/belong in an already approved program(s) at the institution: 108

Total Number of courses and course credits to be modified by this application: 16 courses; 42 credits

If program modification is concurrent with discontinuation of related program(s), list information for such program(s):

Program Discontinued: CIP: OHE#: Accreditation Date:
Phase Out Period Date of Program Termination

Other Program Accreditation:

- If seeking specialized/professional/other accreditation, name of agency and intended year of review: ETAC-ABET
- If program prepares graduates eligibility to state/professional license, please identify:

(As applicable, the documentation in this request should address the standards of the identified accrediting body or licensing agency)

¹ If creating a Stand-Alone Certificate program from existing courses belonging to a previously approved baccalaureate/associate degree program, enter information about that program in the "Original Program" section.

CONNECTICUT BOARD OF REGENTS FOR HIGHER EDUCATION
Connecticut State Colleges & Universities
APPLICATION FOR MODIFICATION OF ACCREDITED PROGRAM

Institutional Contact for this Proposal: Ravindra Thamma Title: Chair Tel.: 860-832-3516 e- mail: thammarav@ccsu.edu
Institution's Unit (e.g. School of Business) and Location (e.g. main campus) Offering the Program: School of Engineering, Science, and Technology. Main campus in New Britain.

SECTION 2: BACKGROUND, RATIONALE AND NATURE OF MODIFICATION

(Please Complete Sections as Applicable)

Background and Rationale *(Please provide the context for and need for the proposed modification, and the relationship to the originally approved program)*

The BS in Robotics and Mechatronics Engineering Technology was accredited in 2012. Since then, the fields of Robotics, Mechatronics, machine vision, and programmable logical controllers have rapidly advanced, necessitating curriculum updates. These changes were informed by our Industrial Advisory Board to meet industry and market requirements. Further, these changes will better position the program for reaccreditation by ABET. The proposed curriculum will also open more industrial opportunities to CCSU students.

As applicable, please describe:

How does the program address CT workforce needs and/or the wellbeing of CT society/communities? *(Succinctly present as much factual evidence and evaluation of stated needs as possible):*

Courses prepare students for employment in the fields of Robotics, Mechatronics, General Automation, Controls, Manufacturing Automation, Programmable Logic Controllers, and Electromechanical Industry.

Local industry including United Technologies and Lockheed Martin regularly employ graduates with this degree.

- How does the program make use of the strengths of the institution (e.g. curriculum, faculty, resources) and of its distinctive character and/or location?

CCSU's BS in Robotics and Mechatronics Engineering Technology was the first such program in the Northeast and the fifth in the United States. Many current faculty are founding members of this program. The curriculum emphasizes a 2+2 model (2 hours in the classroom and 2 hours in the laboratory), which balances strong theory and hands-on application with high-impact educational practices including a senior capstone, internship, and experiential learning. Our graduates are prepared to directly enter the workforce.

The new engineering building scheduled to open in Fall 2021 will house three new Robotics and Mechatronics Engineering Technology laboratories with state-of-the-art equipment mirroring that used by local industry.

With United Technologies headquartered in Farmington, CCSU's robotics and mechatronics program is in an ideal location to supply an educated workforce to its central location and to its affiliates including Pratt and Whitney and Collins Aerospace.

The two closest competitors are currently Worcester Polytechnic Institute and Western New England University. However, their programs are full engineering programs; CCSU is still the only institution in the local area to support an application-based engineering technology program. Notably, University of Hartford is implementing a Robotics Engineering BS in Fall 2020.

CONNECTICUT BOARD OF REGENTS FOR HIGHER EDUCATION
Connecticut State Colleges & Universities
APPLICATION FOR MODIFICATION OF ACCREDITED PROGRAM

- Please describe any transfer agreements with CSCU institutions that will become instituted as a result of the approval of this program *(Please highlight details in the Quality Assessment portion of this application, as appropriate):*

Current transfer agreements will continue.

- Please indicate what similar programs exist in other institutions within the CSCU System, and how unnecessary duplication is being avoided

None.

- Please provide a description/analysis of employment prospects for graduates of this proposed program:

By their junior year, 100% of students in this program have internships. Employment for program graduates has been outstanding: 98% of program graduates have secured employment before graduation; the remaining 2% secured employment within 3 months.

Job titles for recent graduates include Automation Engineer, Controls Engineer, Robotics Engineer, Mechatronics Engineer, Instrumentation Specialist, Fluid Power System Designer, Workcell Architect, and System Integrator. The closest analogs to these job titles and their employment outlooks are listed in the following table:

Job Title	# of Postings on Jan 2020	CT Companies	Average Annual Wages Statewide	Growth Rate / Annual Job Openings
Mechatronics Engineer	4	ASML, Cybercoders, United Technologies	\$101,975	1.2%/122
Robotics Engineer	0		\$101,975	1.2%/122
Electromechanical Technician	5	United Technologies, General Dynamics Information Technology, Northrop Grumman, Coherent	\$58,969	2.5%/n/a
Computer Numerically Controlled Machine Tool Programmers	10	Randstad, QuEST Global, Belcan, United Technologies, Kelly Services, CyberCoders, Electro-Methods	\$67,057	2.9%/111

Data from [CareerOneStop](https://careeronestop.com), sponsored by the U.S. Department of Labor.

Students with Robotics and Mechatronics degrees learn skills that are essential in a post-pandemic world. 3D printing is a central facet of the curriculum. Students would have the knowledge and expertise to handle medical equipment, instruments, and machines, including the mobile robots that use UV waves to disinfect hospitals. Robots are used with increasing frequency in medicine, from nanorobots in medical procedures to robotic prosthetics to automation and production lines within pharmaceuticals. Mobile robots might even supplement nursing care. As manufacturing returns to the United States, students with degrees in robotics and mechatronics would be in high demand because of their knowledge of automation.

CONNECTICUT BOARD OF REGENTS FOR HIGHER EDUCATION
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APPLICATION FOR MODIFICATION OF ACCREDITED PROGRAM

Present side-by-side listing of curricular modification: (From **Original** to **Modified**)

Original Course	Course Type	Credits	Modified	Course Type	Credits
CHANGE ROBO 260: Programmable Controllers	Core	3	TO ROBO 260: Programmable Controllers	Core	3+1
CHANGE ROBO 330: Fluid Power Systems	Core	3	TO ROBO 320: Fluid Power Control	Core	4
CHANGE ROBO 380: Mechatronics	Core	3	TO ROBO 380: Mechatronics	Core	3+1
REMOVE ET 251: Applied Mechanics I – Statics	Special Requirement	3	ADD ROBO 210: Engineering Mechanics for Automation	Core	4
REMOVE ET 252: Applied Mechanics II - Dynamics	Special Requirement	3	ADD ROBO 340: Modeling and Simulation in Mechatronics	Core	3
REMOVE ET 357: Strength of Materials	Special Requirement	3	ADD ROBO 390: Robotics, Theory and Application	Core	3
REMOVE ET 358: Applied Thermodynamics	Special Requirement	3	ADD ROBO 425: Advance Programmable Logic Controllers	Electives in the Field	3
			ADD ROBO 440: Machine Vision and Image Processing	Electives in the Field	3
MOVE ROBO 450: Autonomous and Intelligent Mobile Robots	Core	3	TO ROBO 450: Autonomous and Intelligent Mobile Robots	Electives in the Field	3
MOVE ROBO 470: Robotics Systems Engineering and Analysis	Core	3	TO ROBO 470: Robotics Systems Engineering and Analysis	Electives in the Field	3

The addition of one credit to two existing 3-credit courses fulfills the 2+2 nature of the curriculum for classes that are heavily dependent on hands-on lab work, which increases student contact hours.

Description of Related Modification (Provide a summary of other changes necessitated by curricular modification such as admissions or graduation requirements, mode of delivery, etc., and concisely describe how the institution will support these changes.)

None.

Description of Resources Needed (As appropriate please summarize faculty and administrative resources, library holdings, specialized equipment, etc. Details to be provided in the next section, as appropriate)

The only incremental expense for this modification is 12 credits of additional part-time faculty support per academic year. If enrollments significantly increase, we would consider adding one full-time faculty member to meet demand.

Other Considerations

The Robotics and Mechatronics Engineering Technology BS received exemption from BR# 14-111 to offer this program at 130 credits. University of Hartford's new program is 131 credits. Our next closest competitor, Worcester Polytechnic Institute, is on a quarter system making direct credit comparisons difficult. Widener University in Chester, PA also offers a 130-credit degree program. Thus, CCSU's program is comparable to other programs' credit requirements while offering the most affordable option.

CONNECTICUT BOARD OF REGENTS FOR HIGHER EDUCATION
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APPLICATION FOR MODIFICATION OF ACCREDITED PROGRAM

Previous Three Years Enrollment and Completion for the Program being Modified

ACTUAL Enrollment	Fall Term, 2017		Fall Term, 2018		Fall Term, 2019	
	Full Time	Part Time	Full Time	Part Time	Full Time	Part Time
Transfers In						
New Students	13	1	15	0	16	3
Returning Students	27	6	29	10	28	9
ACTUAL Headcount Enrollment	40	7	44	10	44	12
Fall FTE accounted for by Program Majors	42.7		48.7		49.5	
Size of Credentialed Group(s) for Given Year	4		6		9	

Curriculum Details for a Program Modification (to be used as appropriate for specific modification request)²						
Course Number and Name ³	L.O. #	Pre-Requisite	Cr Hrs	Course Number and Name	L.O. #	Cr Hrs
Program Core Courses				Other Related/Special Requirements		
ROBO 110 Introduction to Robotics and Mechatronics	1,8,9,10,11	None	3	CET 236 Circuit Analysis	--	3
ROBO 210 Engineering Mechanics for Automation*	2,3,4,5	PHYS125	4	CET 270 Electronic Circuits and Devices for Robotics	--	3
ROBO 220 Parametric Modeling and Simulation	2	None	3	CET 363 Digital Circuits	--	3
ROBO 240 Electric Machines	2,3,7	CET236	3	MATH 221 Calc. II	--	4
ROBO 260 Programmable Controllers	2,3,7	None	4	MATH 226 Linear Algebra and Probability for Engineers -OR- MATH 228 Introduction to Linear Algebra	--	4
ROBO 280 Embedded Systems Design	2,3	CET363	3	MATH 355 - Introduction to Differential Equations	--	4
ROBO 310 Data Acquisition & Processing	2,3,6,7	CET270 & CET363	3	MM 216 Manufacturing Processes	--	3
ROBO 320 Fluid Power Control*	2,3,6,7	ROBO 210	4			
ROBO 340 Modeling and Simulation in Mechatronics	2	MATH 221 and CET236	3			

² Details of course changes for Community College institutions should be provided with enough detail to introduce necessary changes in the centralized programmatic database for that system.

³ Make any detailed annotations for individual courses as needed to understand the curricular modifications taking place

CONNECTICUT BOARD OF REGENTS FOR HIGHER EDUCATION
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APPLICATION FOR MODIFICATION OF ACCREDITED PROGRAM

Course Number and Name ⁴	L.O. #	Pre-Requisite	Cr Hrs	Course Number and Name	L.O. #	Cr Hrs
ROBO 350 Applied Control Systems I	2,3,6,7,11	MATH355, ROBO260 & ROBO320	3			
ROBO 370 Mechanisms for Automation	2,3,6	ROBO220, ROBO210, MATH226 & MM216	3			
ROBO 380 Mechatronics	2,3,6,11	ROBO240, ROBO280 & ROBO350	4			
ROBO 390 Robotics, Theory and Application*	2,3,10, 11	ROBO370 & ROBO280	3			
ROBO 460 Applied Control Systems II	2,3,6,7,11	ROBO350	3			
ROBO 480 Industrial Robotics	2,3,6, 10,11	ROBO310 & ROBO390	3			
ROBO 496 Industrial Internship			3			
ROBO 497 Capstone: Senior Project	2,5,8,9,10,11		3			
Core Course Prerequisites				Elective Courses in the Field		
PHYS 125			4	ROBO 425 Advanced Programmable Logic Controllers*	2,3,7,8,10	3
MATH 152 Calc. I			4	ROBO 440 Machine Vision and Image Processing	2,3,6,7	3
MATH 221 Calc. II			4	ROBO 450 Autonomous and Intelligent Mobile Robots	2,3,4,5,6,10,11	3
MATH 226 Linear Algebra and Probability for Engineers - OR- MATH 228 Introduction to Linear Algebra			4	ROBO 470 Robotics Systems Engineering and Analysis	5,8,9,10, 11	3
MATH 355 Introduction to Differential Equations			4			
CET 236 Circuit Analysis			3			
CET 270 Electronic Circuits and Devices for Robotics			3			
CET 363 Digital Circuits			3			
MM 216 Manufacturing Processes			3			
Total Other Credits Required to Issue Modified Credential						
1) An ability to select and apply the knowledge, techniques, skills, and modern tools of the discipline to broadly-defined engineering technology activities;						
2) An ability to select and apply a knowledge of mathematics, science, engineering, and technology to engineering technology problems that require the application of principles and applied procedures or methodologies;						

⁴ Make any detailed annotations for individual courses as needed to understand the curricular modifications taking place

CONNECTICUT BOARD OF REGENTS FOR HIGHER EDUCATION

Connecticut State Colleges & Universities

APPLICATION FOR MODIFICATION OF ACCREDITED PROGRAM

3) An ability to conduct standard tests and measurements; to conduct, analyze, and interpret experiments; and to apply experimental results to improve processes;
4) An ability to design systems, components, or processes for broadly-defined engineering technology problems appropriate to program educational objectives;
5) An ability to function effectively as a member or leader on a technical team;
6) An ability to identify, analyze, and solve broadly-defined engineering technology problems;
7) An ability to apply written, oral, and graphical communication in both technical and non-technical environments; and an ability to identify and use appropriate technical literature;
8) An understanding of the need for and an ability to engage in self-directed continuing professional development;
9) An understanding of and a commitment to address professional and ethical responsibilities including a respect for diversity;
10) A knowledge of the impact of engineering technology solutions in a societal and global context; and
11) A commitment to quality, timeliness, and continuous improvement.

*New Courses

ROBO 210: Engineering Mechanics for Automation. The course objective is to introduce the basic knowledge with application in robotics and automation and it includes the following topics: Forces, Moments, and Couples. Equilibrium. Center of mass. Moment of inertia. Friction. Beams, Cables. Kinematics and kinetics. Newton's laws. Work-Energy. Impulse-Momentum. Conservation laws. Rigid body dynamics. Reflected inertia. Gyroscopic motion. Free and excited vibration. Transmissibility and Isolation. Credits: 4. Prerequisite: Physics 121 or 125

ROBO 320: Fluid Power Control. Study of the design and fabrication of fluid-based power systems, including hydraulics and pneumatics. Study includes fluid statics and dynamics, Bernoulli equation, momentum, energy, different types of flow, pipes, pumping systems, actuators and valves. Thermal control of mechatronics devices and implementing of control systems for real industrial systems. Credits: 4. Prerequisite: ROBO 210.

ROBO 390: Robotics, Theory and Applications. The course will cover topics such as: Joints, Drives, Transmission, and Sensors. Joint and space frames. Forward and Inverse kinematics. Lagrange-Euler dynamics. Jacobian. Static and dynamic joints' forces and torques. Path generation. Robot control methods. Interaction with the environment. Credits: 3. Prerequisite ROBO 210.

ROBO 425: Advanced Programmable Logic Controllers. Programming technique, addressing formats, input/output instructions, development of advanced ladder logic, sequential flow logic. Implementation of controllers, Supervisory control & data acquisition, DCS, communication protocol and networking, and development for process system. Credits: 3. Prerequisites: ROBO 260 or Permission of Instructor.

SECTION 3: RESOURCE AND FINANCIAL CONSIDERATIONS

Cost Effectiveness and Availability of Adequate Resources

(Please complete the Pro-Forma Budget – Projected Revenues and Expenditures on the following page. Provide any necessary annotations for the Pro-Forma Budget and other commentary regarding the cost effectiveness and availability of adequate resources for the proposed modification below:

CONNECTICUT BOARD OF REGENTS FOR HIGHER EDUCATION
Connecticut State Colleges & Universities
APPLICATION FOR MODIFICATION OF ACCREDITED PROGRAM

Projected Enrollment	Fall Term, 2020		Fall Term, 2021		Fall Term, 2022	
	Full Time	Part Time	Full Time	Part Time	Full Time	Part Time
Transfers In						
New Students	18	1	20	1	22	1
Returning Students	25	11	25	10	25	10
ACTUAL Headcount Enrollment	43	12	45	11	47	11

ⁱProjected enrollments are based on actual enrollment trends. Despite the overall enrollment decline in Fall 2019, students enrolled in the Robotics and Mechatronics BS actually increased. Considering that CCSU's program is the only Robotics baccalaureate degree offered at a public institution in Connecticut, we expect sustained enrollment with modest growth. Further, the opening of the new Robotics facilities in Fall 2021 could draw additional students to the program.

ⁱⁱTuition revenues are based on AY 2019 in-state undergraduate rates and include tuition per semester (\$2,962) plus the University General Fee less accident insurance (\$1908). We assume that PT students will take 7 credits per semester, which would result in \$3,815 of revenue (\$58 registration fee plus \$545 per credit: \$247 tuition, \$298 General Fee per credit). No tuition increases for 2020-22 are assumed. Because the program is 130 credits, faculty recommend taking two summer classes to graduate within 4 years.

ⁱⁱⁱStudents pay a \$40 lab fee for each lab course with a maximum of \$80 per semester. For each Fall semester, all FT undergraduates are expected to pay \$80 in lab fees. PT students are expected to pay \$40 in lab fees each semester.

^{iv}A program coordinator from the full-time faculty will receive one credit of reassigned time per Fall and Spring semester for managing the program. Replacement costs of a part-time Class B lecturer with 31% fringe would be \$2,311 (\$1,764 in wages; \$547 in fringe).

^vWe estimated instructional costs assuming that 36 credits would be offered each Fall with 20 credits taught by full-time faculty and 16 credits taught by part-time faculty. We estimated FT salary using the median FY20 salary of current faculty teaching with the program (\$93,724) and median fringe (\$89,506). We estimated PT instruction as a Class B lecturer (\$1,764 per credit) with 31% fringe (\$547 per credit). Projected increases in enrollment can be fully absorbed by the current estimates.

^{vi}An administrative professional is anticipated to spend approximately 25% of their time in direct support of this program. We have projected expenses based on current salary and fringe and anticipate a 3% COLA each year (\$28,862). In addition, a lab technician and a computer technician each devote approximately 5% of their time in direct service of the program. Building in a 3% COLA, these costs are \$6,988 and \$10,439, respectively.

^{vii}Replacement costs for equipment are nearly covered by the lab fees collected as revenue.

^{viii}Other costs include a 3-year marketing plan. Given that the University of Hartford is launching their Robotics BS in Fall 2020, CCSU is committed to solidly positioning this program. Marketing efforts include submitting a press release; advertising on radio, video, digital, and/or print platforms; and developing a program brochure, posters, and/or flyers. The Office of Enrollment Management purchases the names of SAT and ACT test takers and develops communications plans to introduce them to the University. Admissions staff also spend a significant amount of time recruiting in the high schools and community colleges throughout the state and region. The Office of Enrollment Management will also be working with university and recruitment partners overseas to recruit international students into the program. We expect to spend up to \$2,500 in Year 1, \$2,000 in Year 2, and \$1,000 in Year 3.

CONNECTICUT BOARD OF REGENTS FOR HIGHER EDUCATION
Connecticut State Colleges & Universities
APPLICATION FOR MODIFICATION OF ACCREDITED PROGRAM

PRO FORMA Budget - Projected Revenues and Expenditures
(Whole Dollars Only)

PROJECTED Program Revenueⁱ	Fall 2020	Fall 2021	Fall 2022
Tuition (do not include internal transfers) ⁱⁱ	\$ 259,806	\$ 265,793	\$ 275,693
Program-Specific Fees ⁱⁱⁱ	\$ 3,920	\$ 4,040	\$ 4,200
Other Revenue (Annotate in narrative)	\$ -	\$ -	\$ -
Total Estimated Program Revenue	\$ 263,726	\$ 269,833	\$ 279,893

PROJECTED Program Expenditures*	Fall 2020	Fall 2021	Fall 2022
Administration (Chair or Coordinator) ^{iv}	\$ 2,311	\$ 2,311	\$ 2,311
Faculty (Full-time, total for program) ^v	\$ 152,692	\$ 152,692	\$ 152,692
Faculty (Part-time, total for program) ^v	\$ 36,973	\$ 36,973	\$ 36,973
Support Staff ^{vi}	\$ 44,299	\$ 45,628	\$ 46,997
Library Resources Program	\$ -	\$ -	\$ -
Equipment (List as needed) ^{vii}	\$ 4,500	\$ 4,500	\$ 4,500
Other (e.g. student services) ^{viii}	\$ 2,500	\$ 2,000	\$ 1,000
Estimated Indirect Costs (e.g. student services, operations, maintenance)	\$ -	\$ -	\$ -
Total Estimated Program Expenditures	\$ 243,275	\$ 244,104	\$ 244,473

*Note: Capital outlay costs, institutional spending for research and services, etc. can be excluded.

This PRO FORMA Budget provides reasonable assurance that the proposed program modification can be established and is sustainable. Some assumptions and/or formulaic methodology may be used and annotated in narrative on page 4 of Application.

CT BOARD OF REGENTS FOR HIGHER EDUCATION

RESOLUTION

concerning

Approval of a New Program

May 14, 2020

RESOLVED: That the Board of Regents for Higher Education approve the licensure of a program in Mechanical Engineering-MS with OCPs in Advanced Manufacturing Technology and in Additive Manufacturing Technology (CIP Code: 14.1901) – leading to a Master of Science in Mechanical Engineering at Central Connecticut State University; and grant its accreditation for a period of seven semesters beginning with its initiation.

A True Copy:

Erin A. Fitzgerald, Secretary of the
CT Board of Regents for Higher Education

ITEM

Establishment of a new program leading to a Master of Science in Mechanical Engineering in Bachelor of Science in Mechanical Engineering-MS with OCPs in Advanced Manufacturing Technology and in Additive Manufacturing Technology at Central Connecticut State University.

BACKGROUND

The Engineering Department within the School of Engineering, Science, and Technology at Central Connecticut State University proposes to dissolve its Master of Science in Engineering Technology (MSET) degree program with two specializations and instead offer two independent Master of Science in Engineering degrees: a Master of Science in Civil Engineering (MSCE) and a Master of Science in Mechanical Engineering (MSME). The MSME will eventually afford students the option of three concentrations: (1) Mechanical Design, Materials, and manufacturing; (2) Thermo-fluids and Energy; and (3) Control, Dynamics, and Aerospace Systems. The Engineering Department intends to first offer the “Mechanical Design, Materials, and Manufacturing” concentration given our current and initially proposed resources. With continued growth, additional faculty members could be added to achieve full-scale program implementation across all three concentrations.

This proposal also includes two embedded 12-credit Official Certificate Programs in Additive Manufacturing Engineering and in Advanced Manufacturing Engineering. All credits of either OCP can be applied to the MSME. These OCPs also serve an important function of providing continuing education opportunities to licensed professional engineers.

The Master of Science in Engineering Technology (MSET) was developed prior to CCSU offering any engineering degrees. Enrollments within the program have steadily declined from 11 students in Fall 2015 to 1 student in Fall 2018. The MSET tends to draw only from the CCSU Bachelor of Science in Engineering Technology programs and a Master’s degree is generally not sought by professionals having that credential since it is generally not needed to secure a position.

The Master of Science in engineering programs (MSCE and MSME) are more appropriate next steps to our very successful and more analytical engineering degrees now offered. Over the past 3 years, the Mechanical Engineering BS program averages 308 students in Fall headcount enrollment and graduates an average of 49 students per year. Many of our graduates have needed to seek advanced degrees at other institutions. The MSME will draw students from a larger number of in-State graduates and professionals holding a BS in Mechanical Engineering. International students may also find the degree attractive to bolster their credentials for work in the US.

RECOMMENDATION

Following its review and deliberative process, it is the recommendation of the Academic Council that the Board of Regents approve this new program. The System’s Provost and Senior Vice President for Academic and Student Affairs concurs with this recommendation.

05/01/2020 – BOR -Academic and Student Affairs Committee
05/14/2020 – Board of Regents

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SECTION 1: GENERAL INFORMATION

Institution: Central Connecticut State University	Date of Submission to CSCU Office of the Provost: March 25, 2020
Most Recent NECHE Institutional Accreditation Action and Date: Accredited April 12, 2019	
Program Characteristics Name of Program: Mechanical Engineering Degree: Title of Award (e.g. Master of Arts) Master of Science in Mechanical Engineering (MSME) Degree Certificate: (specify type and level) Two embedded Official Certificate Program (OCP) possibilities below. Anticipated Program Initiation Date: Fall 2021 Anticipated Date of First Graduation: December 2022 Modality of Program: X On ground Online Combined If "Combined", % of fully online courses? Locality of Program: X On Campus Off Campus Both	Program Credit Distribution # Credits in General Education: 0 # Credits in Program Core Courses: 15 # Credits of Electives in the Field: 9 # Credits of Other Electives: 0 # Cr Special Requirements (include internship, etc.): 6 Thesis <u>Total # Cr in the Program (sum of all #Cr above): 30</u> From "Total # Cr in the Program" above, enter #Cr that are part of/belong in an already approved program(s) at the institution: 18 in initial concentration
Program Characteristics Name of Program: Official Certificate Program in Additive Manufacturing Engineering Stand-Alone Certificate: (specify type and level) Official Certificate Program Anticipated Program Initiation Date: Fall 2021 Anticipated Date of First Graduation: December 2022 Modality of Program: X On ground Online Combined If "Combined", % of fully online courses? Locality of Program: X On Campus Off Campus Both	Program Credit Distribution # Credits in General Education: 0 # Credits in Program Core Courses: 12 # Credits of Electives in the Field: 0 # Credits of Other Electives: 0 # Cr Special Requirements (include internship, etc.): 0 <u>Total # Cr in the Program (sum of all #Cr above): 12</u> From "Total # Cr in the Program" above, enter #Cr that are part of/belong in an already approved program(s) at the institution: 3
Program Characteristics Name of Program: Official Certificate Program in Advanced Manufacturing Engineering Stand-Alone Certificate: (specify type and level) Official Certificate Program Anticipated Program Initiation Date: Fall 2021 Anticipated Date of First Graduation: December 2022 Modality of Program: X On ground Online Combined If "Combined", % of fully online courses? Locality of Program: X On Campus Off Campus Both	Program Credit Distribution # Credits in General Education: 0 # Credits in Program Core Courses: 12 # Credits of Electives in the Field: 0 # Credits of Other Electives: 0 # Cr Special Requirements (include internship, etc.): 0 <u>Total # Cr in the Program (sum of all #Cr above): 12</u> From "Total # Cr in the Program" above, enter #Cr that are part of/belong in an already approved program(s) at the institution: 3
NOTE: All applications to establish a new program will be considered for both Licensure and Accreditation by the BOR	
CIP Code Number 14.1901 Title of CIP Code Mechanical Engineering	

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<p>If establishment of the new program is concurrent with discontinuation of related program(s), please list for each program: Program Discontinued: Engineering Technology MS CIP: 15.0000 OHE#: 009299 BOR Accreditation Date: 10/17/2001 Phase Out Period 3 years Date of Program Termination Spring 2023</p>		
<p>Institution's Unit (<i>e.g. School of Business</i>): School of Engineering, Science, and Technology Location (<i>e.g. main campus</i>) Offering the Program: CCSU main campus</p>		
<p>Other Program Accreditation:</p> <ul style="list-style-type: none"> If seeking specialized/professional/other accreditation, name of agency and intended year of review: Engineering Accreditation Commission of Accreditation Board for Engineering and Technology (EAC of ABET) 2022-2023 If program prepares graduates eligibility to state/professional license, please identify: Professional Engineering (PE) licensure in many States requires continuing education credits beyond the BS degree in engineering. The Master of Science in Mechanical Engineering (MSME) would typically satisfy and the would OCPs partially satisfy these requirements. <p><i>(As applicable, the documentation in this request should addresses the standards of the identified accrediting body or licensing agency)</i></p>		
<p>Institutional Contact for this Proposal: Peter F. Baumann, Ph.D.</p>	<p>Title: Professor (Former Chair), Engineering Department</p>	<p>Tel.: 860-832-0086 e-mail: baumannp@ccsu.edu</p>

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SECTION 2: PROGRAM PLANNING ASSESSMENT

Alignment of Program with Institutional Mission, Role and Scope

(Provide concise statements)

The Engineering Department within the School of Engineering, Science, and Technology at Central Connecticut State University proposes to dissolve its Master of Science in Engineering Technology (MSET) degree program with two specializations and instead offer two independent Master of Science in Engineering degrees: a Master of Science in Civil Engineering (MSCE) and a Master of Science in Mechanical Engineering (MSME).

With continued growth, additional faculty members could be added to achieve full-scale program implementation across all three concentrations.

This proposal also includes two embedded 12-credit Official Certificate Programs in Additive Manufacturing Engineering and in Advanced Manufacturing Engineering. All credits of either OCP can be applied to the MSME. These OCPs also serve an important function of providing continuing education opportunities to licensed professional engineers.

The Mission of Central Connecticut State University:

Central Connecticut State University is a community of learners dedicated to teaching and scholarship that emphasizes development and application of knowledge and ideas through research and outreach activities, and prepares students to be thoughtful, responsible and successful citizens. As a comprehensive public university, we provide broad access to quality degree programs at the baccalaureate, master's, and doctoral levels.

The Mission of the School of Engineering, Science, and Technology (SEST):

*The School of Engineering, Science & Technology will strive to provide an innovative and unique educational experience to every student, **develop the most qualified engineers**, scientists and technologists. The School will maintain academic excellence in a wide variety of traditional disciplines and develop innovative disciplines in emerging fields, creating interdisciplinary educational and research programs, and **building the infrastructure to support the expansion of programs**.*

The School will be a leader in developing cross-disciplinary initiatives that combine and expand the talents of its students and faculty in all disciplines and prepares our graduates for a multidisciplinary world through a flexible and diverse curriculum; and, meets the needs for a well-educated and skilled workforce.

*The School of Engineering, Science, and Technology will provide premier undergraduate and graduate programs in engineering, technology, computing, life and physical sciences, and mathematics. The School will provide a technology-rich, and interdisciplinary learning environment that **offers students a rewarding academic experience through experiential and active learning that embraces the concept of "thinking, learning, and doing."***

*The School will strive to **serve a student population that mirrors the diversity of the region and includes many international students**. The School aspires to be a leading force in offering a number of creative outreach programs designed to encourage and support all students to pursue careers in science and engineering.*

Alignment with SEST's mission:

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Developing the Most Qualified Engineers

The Master of Science in Engineering Technology (MSET) was developed prior to CCSU offering any engineering degrees. Enrollments within the program have steadily declined from 11 students in Fall 2015 to 1 student in Fall 2018. The MSET tends to draw only from the CCSU Bachelor of Science in Engineering Technology programs and a Master's degree is generally not sought by professionals having that credential since it is generally not needed to secure a position.

Building the Infrastructure to Support the Expansion of Programs

The MSME will begin offering a single concentration in Mechanical Design, Materials, and Manufacturing. The curriculum is designed to support additional concentrations in Thermo-fluids and Energy and in Control Dynamics and Aerospace Systems.

Serving a Student Population That Mirrors the Diversity of the Region and Includes Many International Students

The Master of Science in engineering programs (MSCE and MSME) are more appropriate next steps to our very successful and more analytical engineering degrees now offered. Over the past 3 years, the Mechanical Engineering BS program averages [308 students in Fall headcount enrollment](#) and [graduates an average of 49 students per year](#). Many of our graduates have needed to seek advanced degrees at other institutions. The MSME will draw students from a larger number of in-State graduates and professionals holding a BS in Mechanical Engineering. International students may also find the degree attractive to bolster their credentials for work in the US.

Offering students a rewarding academic experience through experiential and active learning that embraces the concept of "thinking, learning, and doing."

Attracting Masters-level engineering students allows faculty opportunities to undertake more challenging research including industrial community outreach through company-sponsored projects. [REDACTED]

Consistent with CCSU's mission, the proposed MSME provides educational advancement through learning-centered environments designed to engage students and faculty in the discovery, application, and dissemination of knowledge. Advancing students' knowledge base and professional achievements transform students from generalists to specialists in their respective fields. Our curricular experiences and pedagogy are centered around finding solutions to technological, human, and environmental challenges that improve the quality of life.

Addressing Identified Needs

- How does the program address CT workforce needs and/or the wellbeing of CT communities – and include a description/analysis of employment prospects for graduates of this proposed program (*Succinctly present as much factual evidence and evaluation of stated needs as possible*)

We expect our MS graduates to help fill the state-wide demand for mechanical engineers and take on jobs requiring advanced abilities and responsibility.

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State of Connecticut market feasibility – *The State of Connecticut Occupational Projections: 2016-2026* reported that employment of mechanical engineers is strong and is projected to grow over the next decade. Mechanical engineering is expected to be in high demand. The State of Connecticut employment projections are shown in Table 1 and these include the need for professionals with MS degrees. Although the minimum education is a Bachelor's degree, the need for professionals with more advanced degrees (OCPs and MS) should grow at comparable rates.

Table 1: State of Connecticut Occupational Projections: 2016-2026

Occupational Title	Estimated Employment 2016	Projected Employment 2026	10 Year Net Change	10 Year Percent Change	Annual Growth Openings	Annual Total Openings	Median Annual Wage	Minimum Education
Mechanical Engineers	6,206	7,684	1,478	23.8	148	578	\$85,299	Bachelor's degree

<https://www1.ctdol.state.ct.us/lmi/projections2016.asp>

According to JobsEQ, Connecticut added 387 jobs in mechanical engineering over the past 3 years since Q3 of 2019. Over the last 180 days from January 30, 2020, JobsEQ reported 278 job postings in Connecticut for occupations related to mechanical engineering. JobsEQ projects that approximately 68% of currently employed mechanical engineers in Connecticut do not have an advanced degree. The advanced OCPs may also be attractive for already employed Mechanical Engineers to efficiently build skills and become current in the field.

National market feasibility – The federal Employment Projections program in the U.S. Department of Labor's Bureau of Labor Statistics provides the national data on civil and mechanical engineering disciplines employment and forecasts for future hiring needs. As shown in Table 2, these projections include growth and replacement openings. Growth is expected to be 8.8% in mechanical engineering. According to the DOL data, earnings are also expected to remain very strong.

Table 2: National occupational employment and job openings data, projected 2016 and projected 2026, and worker characteristics, 2016 (Numbers in thousands)

Occupational Title	Employment		Employment Change, 2016-26		Average annual job openings due to growth and replacements, 2016-26	Typical education needed for entry
	2016	2026	Number	Percent		
Mechanical Engineers	288.8	314.1	25.3	8.8	21.2	BS

<https://projectionscentral.com/Projections/LongTerm>

The [American Society of Mechanical Engineers](#) reports that the majority of engineers surveyed were working smoothly and efficiently during the pandemic: 92% reported that they were working remotely, although 12% were on a modified schedule. Overall, engineers and engineering teams had been prepared for such a shift in work habits for some time, suggesting that jobs of mechanical engineers—particularly those involving design—are resilient and robust. The [Institution of Mechanical Engineers](#) noted that mechanical engineers can play an important role in fighting coronavirus. For example, mechanical engineers can help design and manufacture diagnostic kits and improve logistics to distribute them faster. Further, [research in internal combustion engines](#) is informing the development of alternatives to N95 masks.

In the light of scarcity of medical devices, PPEs, and a lack of treatment options for COVID-19, the mechanical engineering community nationwide is at the forefront in investigating innovative solutions to address supply shortages. For example, mechanical engineers have been utilizing 3-D printing technology to manufacture masks, face shields, ventilator parts and other critical equipment and hardware that help stop the spread of the virus (e.g., hands-free door-openers).

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- How does the program make use of the strengths of the institution (*e.g. curriculum, faculty, resources*) and of its distinctive character and/or location?

Institutional Strength – CCSU's academic infrastructure emphasizes science, engineering, and technology. CCSU is the only university in the CSCU system that offers baccalaureate engineering degrees. All full-time tenured or tenure-track faculty members in the Engineering Department earned an engineering doctorate which is required for teaching at the graduate level.

Our new planned engineering building slated for open in Fall 2021 will provide additional needed laboratory space and equipment for research (described below).

Location – CCSU's location in the center of Connecticut and near two urban areas (New Britain and Hartford) provides the opportunity for broad access across the state. Also, we intend to offer both day and evening courses to be mindful of both traditional full-time students as well as industry professionals seeking advanced credentials. The fact that many companies reimburse employees' graduate study makes it plausible for students employed in local industry to take advantage of this financial incentive to take evening classes. In addition, many of the envisioned research projects will involve faculty and students collaborating side-by-side with local industry, which in turn paves the way for funding through contracts and grants from industry.

- Equity (eliminating achievement disparities among different ethnic/racial, economic and gender groups) is one of the Board of Regents' Goals. In addition to current institutional efforts already underway, what distinct actions will the proposed program undertake to advance equitable student success?

In accordance with the Mission of The School of Engineering, Science, and Technology, the School will strive to serve a student population that mirrors the diversity of the region and includes many international students. The School aspires to be a leading force in offering a number of creative outreach programs designed to encourage and support all students to pursue careers in science and engineering. There are also efforts to provide broader access and greater flexibility to students with families. The planned drop-in center for child care may be a game changer particularly for women in STEM. There may also be opportunity to offer graduate assistantships to support students from historically underrepresented populations. The program will allow all enrolled students to pursue more focused engineering study which will enable program graduates greater potential to succeed in their careers as problem solvers, designers, communicators, professionals, experimenters, and life-long learners.

Consistent with recent trends in graduate school admissions requirements nationwide, the GREs will not be required for acceptance to the MSME program. Eliminating the GRE requirement will remove financial barriers and potentially increase socioeconomic, racial, and gender diversity among our students

Classes are scheduled to enable full-time working students to complete their programs. Generally, the classes will be scheduled in the evening hours. We have planned the programs to be offered onground and on campus, but are open to offering hybrid, online, and off-campus options pending sufficient demand.

The Department of Engineering strives to improve the diversity of the undergraduate engineering pipeline which is an important feeder of the proposed program. These initiatives include an all-girls summer program, National Summer Transportation Institute Program at CCSU, tours for high-school students, and offering classes to high school-students at CCSU.

We have embedded two OCPs within the MSME to provide stackable credentials for students who find that their careers are best served by additional coursework, but not a thesis. The chosen OCPs in Additive Manufacturing Engineering and

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Advanced Manufacturing Engineering are proposed in response to local industry needs and these cutting-edge engineering certificates consolidate coursework where the CCSU Engineering Department has expertise.

- Describe any transfer agreements with other CSCU institutions that will be instituted as a result of the approval of this program *(Please highlight details in the Quality Assessment portion of this application, as appropriate)*

n/a

- Indicate what similar programs exist in other CSCU institutions, and how unnecessary duplication is being avoided.

No similar programs exist at other CSCU institutions.

Cost Effectiveness and Availability of Adequate Resources

(Complete the PRO FORMA Budget – Resources and Expenditure Projections on page 6 and provide a narrative below regarding the cost effectiveness and availability of adequate resources for the proposed program. Add any annotations for the budget form below, as well.)

ⁱProjected enrollments built in attrition at the rate of 1 full-time student each Spring semester. We assumed that all OCP students would be part-time and that 20% of part-time students would cease their studies after completing an OCP.

ⁱⁱTuition revenue was estimated with a 4% increase from AY 2020-21 in-state graduate rates. For full-time graduate students, tuition was estimated at \$3,990 per term plus the University General Fee less accident insurance (\$2,049). We assumed that PT students would take six credits per semester, resulting in \$4,520 of revenue per student (\$441 tuition per credit, \$301.50 general fee per credit, and \$65 registration fee). Conservative tuition increases of 4% were built into each subsequent year.

ⁱⁱⁱThe program will pursue instituting a program fee every semester of \$250 for full-time students and \$125 for part-time students. We intend to propose this program fee during the FY22 fee cycle.

^{iv}A program coordinator from the full-time faculty will receive three credits of reassigned time per semester for coordinating the program. . This cost reflects ¼ of Dr. Ned Moore's anticipated AY 20-21 salary plus 73.28% fringe. No changes in faculty salary were assumed from AY 2021 to AY 2023.

^vInstructional costs scale with the number of credits expected to be offered, with the assumption that the 12 credits of core classes would be offered every semester. We anticipate 21 credits to be offered in the Spring semester of Year 1. Starting in Year 2, Semester 1 (Fall 2022), we estimated 30 instructional credits per semester. We estimated FT salary using the anticipated median FY21 salary of current faculty teaching with the program and the starting salaries for two expected new faculty. A 73.28% fringe rate was applied. In Year 1, three core courses (ENGR 501, ENGR 557, and ENGR 592) will combine MSME students with MS Civil Engineering students. Consequently, the true instructional estimates for Year 1 are scaled: 15 credits of instructional cost at 60% and 18 credits of instructional cost at 100%.

^{vi}An administrative professional is anticipated to spend approximately 10% of their time in direct support of the MS in Mechanical Engineering. With 73.28% fringe and a 3% COLA added each year, expected expenses range from \$11,554 to \$12,258. In addition, a computer technician is expected to support the program approximately 10% of the time. With 73.28% fringe, anticipated expenses range from \$113,745 to \$14,582. Further, the Engineering Department would hire two Graduate Assistants to support the program and report to the Program Coordinator: one in Year 1 and two in the following

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two years. Total stipends were projected at \$4,800 per academic year for each Graduate Assistant.

vii Additional books on mechanical design, materials, and manufacturing engineering may be needed. Given that the Library resources already support our robust undergraduate program, additional requests for the MS program would occur through the Library's typical requisition process and would not require additional funds to support.

viii Replacement costs for non-capital equipment are covered by program fees collected as revenue less the stipends for graduate assistants.

ix Other costs include a 3-year marketing plan of approximately \$5,000 in Year 1, \$2,500 in Year 2, and \$2,500 in Year 3. As this marketing plan involves a joint venture with the MS in Civil Engineering, some savings were built into these estimates. Further additional costs included an incremental increase in the demand for software licenses (described below). Although CCSU already supports all of the anticipated software for this program, there could be incremental increases due to increased enrollment. We estimated \$100 in incremental increased expense per FTE resulting in projected expenses of \$1,900 in Year 1, \$3,300 in Year 2, and \$3,600 in Year 3.

Student Recruitment / Student Engagement

What are the sources for the program's projected enrollments? Describe the marketing, advisement and other student recruitment activities to be undertaken to ensure the projected enrollments are achieved. If applicable, what student engagement strategies will be employed to advance student retention and completion in program?

Projected Enrollments –

Part of our enrollment will come from students in our undergraduate program progressing directly to the graduate degree. Degree conferrals over the past 5 years for the BS in Mechanical Engineering are:

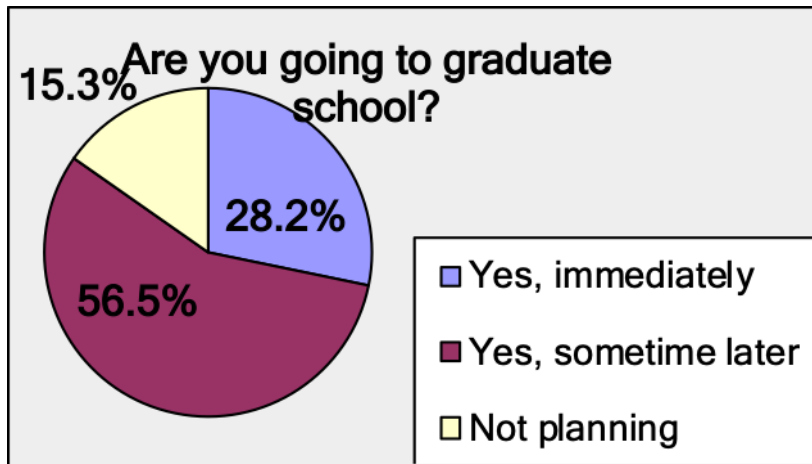
2014-15	2015-16	2016-17	2017-18	2018-19
37	36	44	53	49

Analysis of the exit interview data below for our B.S. graduates shows that the majority are either pursuing a master's degree immediately after graduation or in the near future:

CCSU – FA 13 - FA 16 ME Program Exit Interview Questionnaire

Are you going to graduate school?		
Answer Options	Response Percent	Response Count
Yes, immediately	28.2%	24
Yes, sometime later	56.5%	48
Not planning	15.3%	13
<i>answered question</i>		85

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Approximately 48% of our graduates would qualify for admission to the graduate program. If we take the cumulative number of CCSU BSME graduates over the past 5 years (219) and—to be conservative—the percentage of those who desire to pursue an MS immediately (28.2%), and the fraction that would qualify for admissions ($219 \times 0.282 \times 0.48$), we could expect 30 former students from CCSU to be amongst the first to enroll in the program.

Additionally, BS programs at Fairfield University, University of Connecticut, University of Hartford, University of New Haven, U.S. Coast Guard Academy, and Yale University are potential feeder schools within the State. CCSU's program would provide a high-quality, cost-effective alternative to existing programs in the state.

The following table contains IPEDS data for degree completions across other schools in CT that offer Bachelor's and Master's programs in Mechanical Engineering.

Bachelor's Mechanical Engineering

Institution	AY 2013-2014	AY 2014-15	AY 2015-16	AY 2017-18	AY 2018-19
Fairfield University	19	24	25	20	32
Quinnipiac University	0	0	12	9	20
United States Coast Guard Academy	30	15	10	39	34
University of Bridgeport	n/a	n/a	n/a	0	0
University of Connecticut	111	118	124	150	146
University of Hartford	24	51	57	47	47
University of New Haven	20	32	39	54	36
Yale University	11	7	20	17	14

Master's Mechanical Engineering

Institution	AY 2013-2014	AY 2014-15	AY 2015-16	AY 2017-18	AY 2018-19
Fairfield University	5	6	27	18	17
Quinnipiac University	n/a	n/a	n/a	n/a	n/a
United States Coast Guard Academy	n/a	n/a	n/a	n/a	n/a
University of Bridgeport	17	23	68	79	84
University of Connecticut	16	25	25	16	16
University of Hartford	21	17	58	24	13
University of New Haven	10	15	16	32	32
Yale University	5	8	6	20	9

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This degree can also attract students from across New England and internationally.

Marketing, Advisement and other Student Recruitment Activities – In an effort to secure projected enrollment for this program, the Department, assisted by the School and University, will embark on a 3-year multifaceted marketing, advisement, and recruitment strategy. Funds to support these activities are designated on the budget.

Within the Department, program coordinators will gather lists of bachelor's program alumni and graduating seniors which would meet the admission requirements for direct e-mail contact. The local professional organizations in the engineering fields (ASME) will also be contacted as a vehicle for communication of advertising materials. This engagement will consist of the development of print publications and email communications as well as campus visits and invitations to events at CCSU.

We hope to also highlight our new program through our University's standard advertising. With the help of our University's Office of Marketing and Communication, the MSME Program will be advertised through:

- 1) Press Release
- 2) Advertisements
- 3) Mailers (Brochures), E-mail
- 4) Website Updates and Redesign
- 5) Social Professional Media (Linked-in)
- 6) Engineering Company Contacts
- 7) International Agents / Exchange Programs

Whenever possible, we will facilitate communication through our faculty to maximize the appeal. With the help of our University's School of Graduate Studies, we hope to also secure superior turnout of participants interested in Engineering at the Graduate Open House events.

CCSU also plans to develop several digital marketing campaigns including ads on social media, Google, and graduate recruitment sites such as Gradschools.com and Petersons.com. CCSU's digital campaigns will periodically be supported by print campaigns on local billboards, mass transit, and newspapers as well as radio campaigns targeting specific recruitment events.

Finally, CCSU looks to develop marketing materials including pamphlets and brochures for distribution at college and career fairs, campus events, and through mailings to inquiries and leads generated through advertising and outreach.

SECTION 3: PROGRAM QUALITY ASSESSMENT

Learning Outcomes - L.O. *(Please list up to seven of the most important student learning outcomes for the program and concisely describe assessment methodologies to be used in measuring the outcomes. If the program will seek external accreditation or qualifies graduates to opt for a professional/occupational license, please frame outcomes in attention to such requirements. With as much detail as possible, please map these learning outcomes to courses listed under the "Curriculum" section of this application)*

The Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (EAC of ABET) requires MS graduates to show the same learning outcomes as BS recipients for accreditation. To distinguish the undergraduate from the graduate outcomes, we would expect that graduates with an MS degree to show "increased" ability in all ABET outcomes. The MS in Mechanical Engineering at CCSU would measure the following learning outcomes in fulfillment of ABET expectations:

1. Increased ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.

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2. Increased ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.
3. Increased ability to communicate effectively with a range of audiences.
4. Increased ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.
5. Increased ability to function effectively, with faculty advising committee guidance, to establish goals, plan tasks, and meet objectives.
6. Increased ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.
7. Increased ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

Students earning the OCPs are expected to show “increased” ability in the first two learning outcomes.

Program Administration *(Describe qualifications and assigned FTE load of administrator/faculty member responsible for the day-to-day operations of the proposed academic program. Identify individual for this role by name or provide time frame for prospective hiring)*

The Chair of the Engineering Department (Dr. Nidal Al-Masoud, Chair) would have overall responsibility for Program Administration assisted by a dynamic MSME Program Coordinator needing up to 3 reassigned load credits per semester to be responsible for the day-to-day operations of the new proposed academic program. Dr. Edward (Ned) Moore is recommended for this role.

Faculty *(Please complete the faculty template provided below to include current full-time members of the faculty who will be teaching in this program and, as applicable, any anticipated new positions/hires during the first three years of the program and their qualifications)*

How many new full-time faculty members, if any, will need to be hired for this program?

The program will require two new full-time faculty members for initial implementation: one in Year 1 and a second in Year 2 or 3. As the program is modified with additional concentrations, faculty will be added accordingly.

What percentage of the credits in the program will they teach?

New faculty will teach 20% of this new program and will be assigned courses in the baccalaureate program normally covered by more senior faculty eager to teach at the graduate level.

What percent of credits in the program will be taught by adjunct faculty?

0%

Describe the minimal qualifications of adjunct faculty, if any, who will teach in the program

Minimum qualifications will be consistent with the requirements of our Graduate School (i.e., an Engineering Doctorate in Mechanical, Aerospace or Manufacturing Engineering or a closely related field).

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Special Resources *(Provide a brief description of resources that would be needed specifically for this program and how they will be used, e.g. laboratory equipment, specialized library collections, etc. Please include these resources in the Resources and Expenditures Projections spreadsheet)*

This program will utilize laboratories and equipment within the new engineering building at CCSU, in addition to existing and renovated facilities in Copernicus. In the new engineering building, the following mechanical engineering laboratories will be available for use by the MSME program: Computation Space, Fluids Lab, Engineering Materials Lab, Materials Science Lab, Engineering Mechanics Lab, Dynamics and Controls Lab, Thermal and Energy Lab, and an ME Design Lab. Capital lab equipment is partially bonded through the building project. Maintenance of equipment including repair, service contracts, and calibration is required. The proposed program fees will offset such costs.

CCSU already supports the software needs of the Engineering programs. Program faculty anticipate using the following software: MATLAB, MAPLE, Mathematica, MiniTab, Ansys, Siemens NX, Solid Works, National Instruments LabView, PCT, BOWin, Autodesk (free), Livermore LSDYNA, CSI SAP2000, Bentley, CNC Software Mastercam, CGTech Vericut, and IBM SPSS. Because increased enrollment could produce increased need for licenses, we estimated the additional incremental expense of each FTE student in the MSME at \$100 per year.

CONNECTICUT BOARD OF REGENTS FOR HIGHER EDUCATION
Connecticut State Colleges & Universities
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Full-Time Faculty Teaching in this Program

Faculty Name and Title	Institution of Highest Degree	Area of Specialization/Pertinent Experience	Other Administrative or Teaching Responsibilities
Dr. Nidal A. Al-Masoud, Professor & Chair	University of Buffalo, Ph.D., 2002	Mechanical Engineering/ 19 yrs. teaching, 13 yrs. professional practice	Engineering Department Chair
Dr. Luz Amaya, Assoc. Professor	City University of New York, Ph.D., 2010	Mechanical Engineering/ 9 yrs. teaching, 3 yrs. professional practice	Coordinator BS Mechanical Engineering
Dr. Peter F. Baumann, Professor (Former Chair)	NYU Polytechnic School of Engineering, Ph.D., 1997	Materials Engineering/ 18 yrs. teaching, 20 yrs. professional practice	
Dr. Alfred Gates, Professor	University of Connecticut, Ph.D., 1992	Mechanical Engineering/ 25 yrs. teaching, 10 yrs. professional practice	Coordinator MS Engineering Technology
Dr. Reza Ghodsi, Professor	University of British Columbia, Ph.D., 2004	Mechanical Engineering/ 12 yrs. teaching, 5 yrs. professional practice	
Dr. Khaled J. Hammad, Professor	NYU Polytechnic School of Engineering, Ph.D., 1996	Mechanical Engineering/ 10 yrs. teaching, 14 yrs. professional practice	
Dr. Steven C. Johnson, Asst. Professor	The Ohio State University, Ph. D., 1997	Materials Science and Engineering/ 12 yrs. teaching, 14 yrs. Prof. practice	
Dr. Steven J. Kirstukas, Professor	University of Minnesota, Ph.D., 1995	Mechanical Engineering/ 14 yrs. teaching, 13 yrs. professional practice	Coordinator BS Mechanical Engineering Technology
Dr. Edward Moore, Assoc. Professor	University of Connecticut, Ph.D., 2011	Mechanical Engineering/ 9 yrs. teaching, 5 yrs. professional practice	Planned Coordinator MS Mechanical Engineering
Dr. Viatcheslav Naoumov, Professor	Kazan St. Tech. Univ., Dr. Sci., 1994 Kazan Aviation Inst., Ph.D., 1981	Aerospace Engineering/ 38 yrs. teaching, 18 yrs. professional practice	
Dr. Zbigniew Prusak, Professor	University of Connecticut, Ph.D., 1998	Mechanical Engineering/ 25 yrs. teaching, 6 yrs. professional practice	Coordinator BS Manufacturing Engineering Technology
Dr. Thomas J. Vasko, Professor	University of Connecticut, Ph.D., 1992	Mechanical Engineering/ 11 yrs. teaching, 31 yrs. professional practice	
Dr. Fu-Shang (John) Wei, Assoc. Professor	Washington University, Ph.D., 1978	Mechanical Engineering/ 9 yrs. teaching, 32 yrs. professional practice	
To be hired, Asst./Assoc. Professor		ME / Minimum 2 yrs. professional practice (Replacement for current vacancy)	
To be hired, Asst./Assoc. Professor		ME / Minimum 2 yrs. professional practice (Replacement for current vacancy)	

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To be hired, Asst./Assoc. Professor (NEW)		ME/2 yrs. Min Prof. Practice (MSME)	
To be hired, Asst./Assoc. Professor (NEW)		ME/2 yrs. Min Prof. Practice (MSME)	

CONNECTICUT BOARD OF REGENTS FOR HIGHER EDUCATION
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APPLICATION FOR NEW PROGRAM APPROVAL
PRO FORMA Budget - Resources and Expenditures Projections (whole dollars only)

PROJECTED Enrollment ¹	2021-22						2022-23						2023-24					
	Fall Semester		Spring Semester		Summer		Fall Semester		Spring Semester		Summer		Fall Semester		Spring Semester		Summer	
	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT
Internal Transfer (from other programs)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New Students (first time matriculating)	10	10	10	10	0	0	10	10	10	10	0	0	10	10	10	10	0	0
Continuing Students progressing to credential	0	0	9	10	0	0	19	18	18	26	0	0	19	34	18	34	0	0
Headcount Enrollment	10	10	19	20	0	0	29	28	28	36	0	0	29	44	28	44	0	0
Total Estimated FTE per Year¹	18.4						34.5						38.5					
PROJECTED Program Revenue	2020-21						2021-22						2022-23					
	Fall Semester		Spring Semester		Summer		Fall Semester		Spring Semester		Summer		Fall Semester		Spring Semester		Summer	
	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT
Tuition ^{2, ii}	\$60,393	\$45,204	\$114,746	\$90,407	\$0	\$0	\$182,145	\$131,560	\$175,864	\$169,149	\$0	\$0	\$189,430	\$214,892	\$182,898	\$214,892	\$0	\$0
Tuition from Internal Transfer ²	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Program Specific Fees (lab fees, etc.) ⁱⁱⁱ	\$2,500	\$1,500	\$4,750	\$3,000	\$0	\$0	\$7,250	\$4,200	\$7,000	\$5,400	\$0	\$0	\$7,250	\$6,600	\$7,000	\$6,600	\$0	\$0
Other Revenue (annotate in narrative)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total Annual Program Revenue	\$322,500						\$682,567						\$829,564					
PROJECTED Program Expenditures ³	2021-22						2022-23						2023-24					
	Fall Semester		Spring Semester		Summer		Fall Semester		Spring Semester		Summer		Fall Semester		Spring Semester		Summer	
	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT
Administration (Chair or Coordinator) ^{4 iv}	\$44,812		\$44,812		\$44,812		\$44,812		\$44,812		\$44,812		\$44,812		\$44,812		\$44,812	
Faculty (Full-time, total for program) ^{4, v}	\$211,180		\$469,288		\$469,288		\$211,180		\$469,288		\$469,288		\$211,180		\$469,288		\$469,288	
Faculty (Part-time, total for program) ⁴	\$0		\$0		\$0		\$0		\$0		\$0		\$0		\$0		\$0	
Support Staff (lab or grad assist, tutor) ^{vi}	\$30,100		\$35,659		\$36,440		\$30,100		\$35,659		\$36,440		\$30,100		\$35,659		\$36,440	
Library Resources Program ^{vii}	\$0		\$0		\$0		\$0		\$0		\$0		\$0		\$0		\$0	
Equipment (List in narrative) ^{viii}	\$6,950		\$14,250		\$17,850		\$6,950		\$14,250		\$17,850		\$6,950		\$14,250		\$17,850	
Other ^{ix}	\$6,900		\$6,000		\$6,400		\$6,900		\$6,000		\$6,400		\$6,900		\$6,000		\$6,400	
Estimated Indirect Costs ⁶																		
Total Expenditures per Year	\$299,942		\$570,009		\$574,791		\$299,942		\$570,009		\$574,791		\$299,942		\$570,009		\$574,791	

NOTE: Existing regulations require that: "an application for a new program shall include a complete and realistic plan for implementing and financing the proposed program during the first cycle of operation, based on projected enrollment levels; the nature and extent of instructional services required; the availability of existing resources to support the program; additional resource requirements; and projected sources of funding. If resources to operate a program are to be provided totally or in part through reallocation of existing resources, the institution shall identify the resources to be employed and explain how existing programs will be affected. Reallocation of resources to meet new and changing needs is encouraged, provided such reallocation does not reduce the quality of continuing programs below acceptable levels."

- 1 1 FTE = 15 credit hours for undergraduate programs; 1 FTE = 12 credit hours for graduate programs; both for Fall & Spring
- Formula for conversion of part-time enrollments to Full-Time Equivalent (FTE): Divide part-time enrollment by 3, and round to the nearest tenth - for example 20 part-time enrollees equals 20 divided by 3 equals 6.67 or 6.7 FTE.
- 2 Revenues from all courses students will be taking.
- 3 Capital outlay costs, instructional spending for research and services, etc. can be excluded.
- 4 If full-time person is solely hired for this program, use rate time; otherwise, use a percentage. Indicate if new hires or existing faculty/staff. Record Salary and Fringe Benefits, accordingly.
- 5 e.g. student services. Course development would be direct payment or release time; marketing is cost of marketing that program separately.
- 6 Check with your Business Office - community colleges have one rate; the others each have their own. Indirect Cost might include such expenses as student services, operations and maintenance.

CT BOARD OF REGENTS FOR HIGHER EDUCATION

RESOLUTION

concerning

Approval of a New Program

May 14, 2020

RESOLVED: That the Board of Regents for Higher Education approve the licensure of a program in Civil Engineering (CIP Code: 14.0801) – leading to a Master of Science at Central Connecticut State University; and grant its accreditation for a period of seven semesters beginning with its initiation.

A True Copy:

Erin A. Fitzgerald, Secretary of the
CT Board of Regents for Higher Education

ITEM

Establishment of a new program leading to a Master of Science in Civil Engineering at Central Connecticut State University.

BACKGROUND

The Engineering Department within the School of Engineering, Science, and Technology at Central Connecticut State University will transition its Master of Science in Engineering Technology (MSET) degree program with two specializations and instead offer two independent Master of Science in Engineering degrees: a Master of Science in Civil Engineering (MSCE) and a Master of Science in Mechanical Engineering (MSME). The MSCE will eventually afford students the option of three concentrations: (1) Structures; (2) Transportation; and (3) Environmental and Water Resources Engineering. The Engineering Department intends to first offer the “Structures” concentration given our current and initially proposed resources. With continued growth, additional faculty members could be added to achieve full-scale program implementation across all three concentrations.

The Master of Science in engineering programs (MSCE and MSME) are more appropriate next steps to our very successful and more analytical engineering degrees now offered. Over the past 3 years, the Civil Engineering BS program averages 113 students in Fall headcount enrollment and graduates an average of 27 students per year. Many of our graduates have needed to seek advanced degrees at other institutions. The MSCE will draw students from a larger number of in-State graduates and professionals holding a BS in Civil Engineering. International students may also find the degree attractive to bolster their credentials for work in the US.

Attracting Masters-level engineering students allows faculty opportunities to undertake more challenging research including industrial community outreach through company-sponsored projects. The two-term Thesis requirement provides the curricular opportunity for graduate students to perform such research in consultation with their faculty advisor.

Consistent with CCSU’s mission, the proposed MSCE provides educational advancement through learning-centered environments designed to engage students and faculty in the discovery, application, and dissemination of knowledge. Advancing students’ knowledge base and professional achievements transform students from generalists to specialists in their respective fields. Our curricular experiences and pedagogy are centered around finding solutions to technological, human, and environmental challenges that improve the quality of life.

RECOMMENDATION

Following its review and deliberative process, it is the recommendation of the Academic Council that the Board of Regents approve this new program. The System’s Provost and Senior Vice President for Academic and Student Affairs concurs with this recommendation.

05/14/2020 – Board of Regents

CONNECTICUT BOARD OF REGENTS FOR HIGHER EDUCATION
Connecticut State Colleges & Universities
APPLICATION FOR NEW PROGRAM APPROVAL

SECTION 1: GENERAL INFORMATION

Institution: Central Connecticut State University	Date of Submission to CSCU Office of the Provost: March 25, 2020	
Most Recent NECHE Institutional Accreditation Action and Date: Accredited April 12, 2019		
Program Characteristics Name of Program: Civil Engineering Degree: Title of Award (e.g. <i>Master of Arts</i>) Master of Science in Civil Engineering (MSCE) Degree Certificate: (specify type and level) Stand-Alone Certificate: (specify type and level) Anticipated Program Initiation Date: Fall 2021 Anticipated Date of First Graduation: December 2022 Modality of Program: X On ground Online Combined If "Combined", % of fully online courses? Locality of Program: X On Campus Off Campus Both	Program Credit Distribution # Credits in General Education: 0 # Credits in Program Core Courses: 6 # Credits of Electives in the Field: 18 # Credits of Other Electives: 0 # Cr Special Requirements (include internship, etc.): 6 Thesis <u>Total # Cr in the Program</u> (sum of all #Cr above): 30 From "Total # Cr in the Program" above, enter #Cr that are part of/belong in an already approved program(s) at the institution: 9 in initial concentration	
NOTE: All applications to establish a new program will be considered for both Licensure and Accreditation by the BOR		
CIP Code Number 14.0801 Title of CIP Code Civil Engineering, General		
If establishment of the new program is concurrent with discontinuation of related program(s), please list for each program: Program Discontinued: MS Engineering Technology CIP: 15.0000 OHE#: 009299 BOR Accreditation Date: 10/17/2001 Phase Out Period 3 years Date of Program Termination Spring 2023		
Institution's Unit (e.g. <i>School of Business</i>) School of Engineering, Science, and Technology Location (e.g. <i>main campus</i>) Offering the Program: CCSU main campus.		
Other Program Accreditation: <ul style="list-style-type: none"> If seeking specialized/professional/other accreditation, name of agency and intended year of review: Engineering Accreditation Commission of Accreditation Board for Engineering and Technology (EAC of ABET) 2022-2023 If program prepares graduates eligibility to state/professional license, please identify: Professional Engineering (PE) licensure in many States requires continuing education credits beyond the BS degree in engineering. The Master of Science in Civil Engineering (MSCE) would typically satisfy these requirements. (As applicable, the documentation in this request should address the standards of the identified accrediting body or licensing agency)		
Institutional Contact for this Proposal: Peter F. Baumann, Ph.D.	Title: Professor (Former Chair), Engineering Department	Tel.: 860-832-0086 e-mail: baumannp@ccsu.edu

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SECTION 2: PROGRAM PLANNING ASSESSMENT

Alignment of Program with Institutional Mission, Role and Scope

(Provide concise statements)

Proposal:

The Engineering Department within the School of Engineering, Science, and Technology at Central Connecticut State University will transition its Master of Science in Engineering Technology (MSET) degree program with two specializations and instead offer two independent Master of Science in Engineering degrees: a Master of Science in Civil Engineering (MSCE) and a Master of Science in Mechanical Engineering (MSME).

With continued growth, additional faculty members could be added to achieve full-scale program implementation across all three concentrations.

The Mission of Central Connecticut State University:

Central Connecticut State University is a community of learners dedicated to teaching and scholarship that emphasizes development and application of knowledge and ideas through research and outreach activities, and prepares students to be thoughtful, responsible and successful citizens. As a comprehensive public university, we provide broad access to quality degree programs at the baccalaureate, master's, and doctoral levels.

The Mission of the School of Engineering, Science, and Technology (SEST):

The School of Engineering, Science & Technology will strive to provide an innovative and unique educational experience to every student, **develop the most qualified engineers**, scientists and technologists. The School will maintain academic excellence in a wide variety of traditional disciplines and develop innovative disciplines in emerging fields, creating interdisciplinary educational and research programs, and **building the infrastructure to support the expansion of programs**.

The School will be a leader in developing cross-disciplinary initiatives that combine and expand the talents of its students and faculty in all disciplines and prepares our graduates for a multidisciplinary world through a flexible and diverse curriculum; and, meets the needs for a well-educated and skilled workforce.

The School of Engineering, Science, and Technology will provide premier undergraduate and graduate programs in engineering, technology, computing, life and physical sciences, and mathematics. The School will provide a technology-rich, and interdisciplinary learning environment that **offers students a rewarding academic experience through experiential and active learning that embraces the concept of "thinking, learning, and doing."**

The School will strive to **serve a student population that mirrors the diversity of the region and includes many international students**. The School aspires to be a leading force in offering a number of creative outreach programs designed to encourage and support all students to pursue careers in science and engineering.

Alignment with SEST's mission:

Developing the Most Qualified Engineers

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APPLICATION FOR NEW PROGRAM APPROVAL

The Master of Science in Engineering Technology (MSET) was developed prior to CCSU offering any engineering degrees. Enrollments within the program have steadily declined from 11 students in Fall 2015 to 1 student in Fall 2018. The MSET tends to draw only from the CCSU Bachelor of Science in Engineering Technology programs and a Master's degree is generally not sought by professionals having that credential since it is generally not needed to secure a position. Also, CCSU transitioned its B.S. in Civil Engineering Technology degree into a B.S. in Civil Engineering eliminating the primary source of students for the Civil Specialization of the MSET.

Building the Infrastructure to Support the Expansion of Programs

The MSCE will begin offering a single concentration in Structures. The curriculum is designed to support additional concentrations in Transportation and in Environmental & Water Resources Engineering.

Serving a Student Population That Mirrors the Diversity of the Region and Includes Many International Students

The Master of Science in engineering programs (MSCE and MSME) are more appropriate next steps to our very successful and more analytical engineering degrees now offered. Over the past 3 years, the Civil Engineering BS program averages [113 students in Fall headcount enrollment](#) and [graduates an average of 27 students per year](#). Many of our graduates have needed to seek advanced degrees at other institutions. The MSCE will draw students from a larger number of in-State graduates and professionals holding a BS in Civil Engineering. International students may also find the degree attractive to bolster their credentials for work in the US.

Offering students a rewarding academic experience through experiential and active learning that embraces the concept of "thinking, learning, and doing."

Attracting Masters-level engineering students allows faculty opportunities to undertake more challenging research including industrial community outreach through company-sponsored projects. The two-term Thesis requirement provides the curricular opportunity for graduate students to perform such research in consultation with their faculty advisor.

Consistent with CCSU's mission, the proposed MSCE provides educational advancement through learning-centered environments designed to engage students and faculty in the discovery, application, and dissemination of knowledge. Advancing students' knowledge base and professional achievements transform students from generalists to specialists in their respective fields. Our curricular experiences and pedagogy are centered around finding solutions to technological, human, and environmental challenges that improve the quality of life.

Addressing Identified Needs

- How does the program address CT workforce needs and/or the wellbeing of CT communities – and include a description/analysis of employment prospects for graduates of this proposed program (*Succinctly present as much factual evidence and evaluation of stated needs as possible*)

We expect our MS graduates to help fill the state-wide demand for civil engineers and take on jobs requiring advanced abilities and responsibility.

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State of Connecticut market feasibility – *The State of Connecticut Occupational Projections: 2016-2026* reported that employment of civil engineers is solid and is projected to grow over the next decade. The State of Connecticut employment projections are shown in

Table 1 and these include the need for professionals with MS degrees. Although the minimum education is a Bachelor's degree, the need for professionals with MS degrees should grow at comparable rates.

Table 1: State of Connecticut Occupational Projections: 2016-2026

Occupational Title	Estimated Employment 2016	Projected Employment 2026	10 Year Net Change	10 Year Percent Change	Annual Growth Openings	Annual Total Openings	Median Annual Wage	Minimum Education
Civil Engineers	3,441	3,776	335	9.7	34	290	\$90,915	Bachelor's degree

<https://www1.ctdol.state.ct.us/lmi/projections2016.asp>

According to JobsEQ Connecticut added 182 jobs in civil engineering over the past 3 years since Q3 of 2019. Over the last 180 days from January 30, 2020, Jobs EQ reported 199 job postings in Connecticut for occupations related to civil engineering. Further, there were 58 postings for transportation engineers, a planned concentration. Jobs EQ projects that approximately 61.5% of currently employed civil engineers in Connecticut do not have an advanced degree. The State of Connecticut tends to import civil engineers, reflecting a need for a more highly trained workforce.

National market feasibility – The federal Employment Projections program in the U.S. Department of Labor's Bureau of Labor Statistics provides the national data on civil and mechanical engineering disciplines employment and forecasts for future hiring needs. As shown in Table 2, these projections include growth and replacement openings. Growth is expected to be 10.6% in civil engineering. According to the DOL data, earnings are also expected to remain very strong.

Table 2: National occupational employment and job openings data, projected 2016 and projected 2026, and worker characteristics, 2016 (Numbers in thousands)

Occupational Title	Employment		Employment Change, 2016-26		Average annual job openings due to growth and replacements, 2016-26	Typical education needed for entry
	2016	2026	Number	Percent		
Civil Engineers	303.5	335.7	32.2	10.6	25.9	BS

<https://projectionscentral.com/Projections/LongTerm>

In a post-pandemic economy, civil engineers should fare well. Indeed, the [American Society for Civil Engineers](#) considers coronavirus a “wake-up call”. The foundations of global health hinge on appropriate water, sanitation, and hygiene systems. Civil engineers are also contributing to the design of reusable PPE and are at the heart of building and rebuilding infrastructure.

- How does the program make use of the strengths of the institution (e.g. curriculum, faculty, resources) and of its distinctive character and/or location?

Institutional Strength – CCSU's academic infrastructure emphasizes science, engineering, and technology. CCSU is the only university in the CSCU system that offers baccalaureate engineering degrees. All full-time tenured or tenure-track

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faculty members in the Engineering Department earned an engineering doctorate which is required for teaching at the graduate level.

Our new planned engineering building slated for opening in Fall 2021 will provide additional needed laboratory space and equipment for research (described below).

Location – CCSU's location in the center of Connecticut and near two urban areas (New Britain and Hartford) provides the opportunity for broad access across the state. Also, we intend to offer both day and evening courses to be mindful of both traditional full-time students as well as industry professionals seeking advanced credentials. The fact that many companies reimburse employees' graduate study makes it plausible for students employed in local industry to take advantage of this financial incentive to take evening classes. In addition, many of the envisioned research projects will involve faculty and students collaborating side-by-side with local industry, which in turn paves the way for funding through contracts and grants from industry.

- Equity (eliminating achievement disparities among different ethnic/racial, economic and gender groups) is one of the Board of Regents' Goals. In addition to current institutional efforts already underway, what distinct actions will the proposed program undertake to advance equitable student success?

In accordance with the Mission of The School of Engineering, Science, and Technology, the School will strive to serve a student population that mirrors the diversity of the region and includes many international students. The School aspires to be a leading force in offering a number of creative outreach programs designed to encourage and support all students to pursue careers in science and engineering. There are also efforts to provide broader access and greater flexibility to students with families. The planned drop-in center for child-care may be a game changer particularly for women in STEM. There may also be opportunity to offer graduate assistantships to support students from historically underrepresented populations. The program will allow all enrolled students to pursue more focused engineering study which will enable program graduates greater potential to succeed in their careers as problem solvers, designers, communicators, professionals, experimenters, and life-long learners.

Consistent with recent trends in graduate school admissions requirements nationwide, the GREs will not be required for acceptance to the MSME program. Eliminating the GRE requirement will remove financial barriers and potentially increase socioeconomic, racial, and gender diversity among our students

Classes are scheduled to enable full-time working students to complete their programs. Generally, the classes will be scheduled in the evening hours. We have planned the programs to be offered onground and on campus, but are open to offering hybrid, online, and off-campus options pending sufficient demand.

The Department of Engineering strives to improve the diversity of the undergraduate engineering pipeline which is an important feeder of the proposed program. These initiatives include an all-girls summer program, National Summer Transportation Institute Program at CCSU, tours for high-school students, and offering classes to high school-students at CCSU.

- Describe any transfer agreements with other CSCU institutions that will be instituted as a result of the approval of this program *(Please highlight details in the Quality Assessment portion of this application, as appropriate)*

None.

- Indicate what similar programs exist in other CSCU institutions, and how unnecessary duplication is being avoided

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No similar program exists at other CSCU institutions.

Cost Effectiveness and Availability of Adequate Resources

(Complete the PRO FORMA Budget – Resources and Expenditure Projections on page 6 and provide a narrative below regarding the cost effectiveness and availability of adequate resources for the proposed program. Add any annotations for the budget form below, as well.)

ⁱProjected enrollments built in attrition at the rate of 1 full-time student each Spring semester.

ⁱⁱFor AY 2021-22, tuition revenue was estimated with a 4% increase from AY 2020-21 in-state graduate rates. For full-time graduate students, tuition was estimated at \$3,990 per term plus the University General Fee less accident insurance (\$2,049). We assumed that PT students would take six credits per semester, resulting in \$4,520 of revenue per student (\$41 tuition per credit, \$301.50 general fee per credit, and \$65 registration fee). Conservative tuition increases of 4% were built into each subsequent year.

ⁱⁱⁱThe program will pursue instituting a program fee every semester of \$250 for full-time students and \$125 for part-time students. We intend to propose this program fee during the FY22 fee cycle.

^{iv}A program coordinator from the full-time faculty will receive up to three credits of reassigned time per semester for coordinating the program. AY 2021-22 cost reflects $\frac{1}{4}$ of Dr. Young Sohn's anticipated AY 2020-21 salary plus 73.28% fringe. Yearly increases of 5% in salary and 2% in fringe were applied.

^vInstructional costs scale with the number of credits expected to be offered, with the assumption that ENGR 501 and ENGR 592 would be offered every semester. We anticipate 27 credits offered in Year 1. In Year 2, we expect to offer 33 credits, and 36 credits in Year 3. We estimated FT salary using the anticipated median median AY2021-22 salary of current faculty teaching within the program and the starting salaries for two expected new faculty. A 77.28% fringe rate for AY2021-22 was used. Yearly increases of 5% in salary and 2% in fringe were applied. In Year 1, two core courses (ENGR 501, ENGR 592) and one elective (ENGR 557) will combine MSME students with MS Civil Engineering students. Consequently, the true instructional estimates for Year 1 are scaled: 15 credits of instructional cost at 40% and 12 credits of instructional cost at 100%.

^{vi}An administrative professional is anticipated to spend approximately 5% of their time in direct support of the MS in Civil Engineering. With 73.28% fringe and a 3% COLA added each year, expected expenses range from \$5,777 to \$6,129. In addition, a computer technician is expected to support the program approximately 5% of the time. With 73.28% fringe and 3% yearly COLA, anticipated expenses range from \$6,873 to \$7,291. Further, the Engineering Department would hire one Graduate Assistant to support the program and report to the Program Coordinator. Total stipend was projected at \$4,800 per academic year.

^{vii}Additional books on design, materials, and structural engineering may be needed. Given that the Library resources already support our robust undergraduate program, additional requests for the MS program would occur through the Library's typical requisition process and would not require additional funds to support.

^{viii}Replacement costs for non-capital equipment are covered by the program fees collected as revenue less the stipend for the graduate assistant.

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^{ix}Other costs include a 3-year marketing plan of approximately \$5,000 in Year 1, \$2,500 in Year 2, and \$2,500 in Year 3. As this marketing plan involves a joint venture with the MS in Mechanical Engineering, some savings were built into these estimates. Further additional costs included an incremental increase in the demand for software licenses (described below). Although CCSU already supports all of the anticipated software for this program, there could be incremental increases due to increased enrollment. We estimated \$100 in incremental increased expense per FTE resulting in projected expenses of \$1,000 in Year 1, \$1,800 in Year 2, and \$2,000 in Year 3.

Student Recruitment / Student Engagement

What are the sources for the program's projected enrollments. Describe the marketing, advisement and other student recruitment activities to be undertaken to ensure the projected enrollments are achieved. If applicable, what student engagement strategies will be employed to advance student retention and completion in program?

Projected Enrollments –

Part of our enrollment will come from students in our undergraduate program progressing directly to the graduate degree. [Degree conferrals over the past 5 years](#) for the BS in Civil Engineering are:

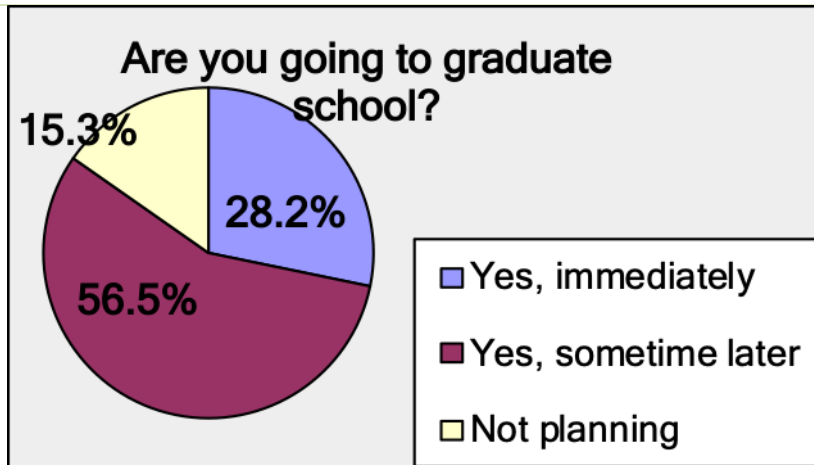
2014-15	2015-16	2016-17	2017-18	2018-19
17	20	20	22	27

Analysis of the exit interview data below for our B.S. graduates shows that the majority are either pursuing a master's degree immediately after graduation or in the near future:

CCSU – FA 13 - FA 16 ME Program Exit Interview Questionnaire

Are you going to graduate school?		
Answer Options	Response Percent	Response Count
Yes, immediately	28.2%	24
Yes, sometime later	56.5%	48
Not planning	15.3%	13
<i>answered question</i>		85

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Approximately 42% of our undergraduates would qualify for admission to the graduate program. If we take the cumulative number of CCSU BSCE graduates over the past 5 years (106) and—to be conservative—the percentage of those who desire to pursue an MS immediately (28.2%), and the fraction that would qualify for admission ($106 \times 0.282 \times 0.42$), we could expect 13 former students from CCSU to be amongst the first to enroll in the program. Given that CCSU would be one of only four institutions in the state to offer an MS in Civil Engineering, we could reasonably expect two recent graduates from Quinnipiac, University of Connecticut, University of Hartford, or University of New Haven to pursue the MSCE. CCSU's program would provide a high-quality, cost-effective alternative to existing programs in the state.

The following table contains IPEDS data for degree completions across other schools in CT that offer BS and/or MS programs in Civil Engineering.

BS Civil Engineering

Institution	AY 2013-2014	AY 2014-15	AY 2015-16	AY 2017-18	AY 2018-19
Quinnipiac University	0	0	1	5	7
United States Coast Guard Academy	39	29	36	25	21
University of Connecticut	60	65	75	100	75
University of Hartford	18	25	27	24	48
University of New Haven	11	19	21	19	11

MS Civil Engineering

Institution	AY 2013-2014	AY 2014-15	AY 2015-16	AY 2017-18	AY 2018-19
Quinnipiac University	n/a	n/a	n/a	n/a	n/a
United States Coast Guard Academy	n/a	n/a	n/a	n/a	n/a
University of Connecticut	14	19	17	16	12
University of Hartford	10	14	25	13	7
University of New Haven	n/a	n/a	n/a	0	0

This degree can also attract students from across New England and internationally.

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Marketing, Advisement and other Student Recruitment Activities – In an effort to secure projected enrollment for this program, the Department, assisted by the School and University, will embark on a 3-year multifaceted marketing, advisement, and recruitment strategy. Funds to support these activities are designated on the budget.

Within the Department, program coordinators will gather lists of bachelor's program alumni and graduating seniors which would meet the admission requirements for direct e-mail contact. The local professional organizations in the engineering fields (ASCE) will also be contacted as a vehicle for communication of advertising materials.

We hope to also highlight our new program through our University's standard advertising. With the help of our University's Office of Marketing and Communication, the MSCE Program will be presented through:

- 1) Press Release
- 2) Advertisements
- 3) Mailers (Brochures), E-mail
- 4) Website Updates and Redesign
- 5) Social Professional Media (Linked-in)
- 6) Engineering Company Contacts
- 7) International Agents / Exchange Programs

Whenever possible, we will facilitate communication through our faculty to maximize the appeal. With the help of our University's Graduate School Office, through some of the above listed means, we hope to also secure superior turnout of participants interested in Engineering at the Graduate Open House events.

CCSU also plans to develop several digital marketing campaigns including ads on social media, Google, and graduate recruitment sites such as Gradschools.com and Petersons.com. CCSU's digital campaigns will periodically be supported by print campaigns on local billboards, mass transit, and newspapers as well as radio campaigns targeting specific recruitment events.

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SECTION 3: PROGRAM QUALITY ASSESSMENT

Learning Outcomes - L.O. *(Please list up to seven of the most important student learning outcomes for the program and concisely describe assessment methodologies to be used in measuring the outcomes. If the program will seek external accreditation or qualifies graduates to opt for a professional/occupational license, please frame outcomes in attention to such requirements. With as much detail as possible, please map these learning outcomes to courses listed under the "Curriculum" section of this application)*

The Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (EAC of ABET) requires MS graduates to show the same learning outcomes as BS recipients for accreditation. To distinguish the undergraduate from the graduate outcomes, we would expect that graduates with an MS degree to show "increased" ability in all ABET outcomes. The MSCE has the following learning outcomes in fulfillment of ABET expectations:

1. Increased ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
2. Increased ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.
3. Increased ability to communicate effectively with a range of audiences.
4. Increased ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.
5. Increased ability to function effectively, with faculty advising committee guidance, to establish goals, plan tasks, and meet objectives.
6. Increased ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.
7. Increased ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

Capstone thesis rubrics will measure the outcomes.

Program Administration *(Describe qualifications and assigned FTE load of administrator/faculty member responsible for the day-to-day operations of the proposed academic program. Identify individual for this role by name or provide time frame for prospective hiring)*

The Chair of the Engineering Department (Dr. Nidal Al-Masoud) would have overall responsibility for Program Administration assisted by a dynamic MSCE Program Coordinator needing up to 3 reassigned load credits per semester to be responsible for the day-to-day operations of the new proposed academic program. Dr. Young Moo Sohn is recommended for this role.

Faculty *(Please complete the faculty template provided below to include current full-time members of the faculty who will be teaching in this program and, as applicable, any anticipated new positions/hires during the first three years of the program and their qualifications)*

How many new full-time faculty members, if any, will need to be hired for this program?

The program will require two new full-time faculty members for initial implementation: one in Year 1 and a second in Year 2 or 3. As the program is modified with additional concentrations, faculty will be added accordingly.

What percentage of the credits in the program will they teach?

New faculty will teach 20% of this new program and will be assigned courses in the baccalaureate program normally covered by more senior faculty eager to teach at the graduate level.

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What percent of credits in the program will be taught by adjunct faculty?

0%

Describe the minimal qualifications of adjunct faculty, if any, who will teach in the program

Minimum qualifications will be consistent with the requirements of our Graduate School (i.e., an Engineering Doctorate in Civil Engineering or a closely related field).

Special Resources *(Provide a brief description of resources that would be needed specifically for this program and how they will be used, e.g. laboratory equipment, specialized library collections, etc. Please include these resources in the Resources and Expenditures Projections spreadsheet)*

This program will utilize laboratories and equipment within the new engineering building at CCSU, in addition to existing and renovated facilities in Copernicus. In the new engineering building, the following civil engineering and general engineering laboratories will be available for use by the MSCE program: Computation Space, Concrete Lab, Engineering Materials Lab, Materials Science Lab, Engineering Mechanics Lab, Structures Lab, Fluids and Thermal Science Lab, Survey & Transportation Lab, and Civil Design Lab. Capital lab equipment is partially bonded through the building project. Maintenance of equipment including repair, service contracts, and calibration is required. The proposed program fees will offset such costs.

CCSU already supports the software needs of the Engineering programs. Program faculty anticipate using the following software: MATLAB, MAPLE, Mathematica, MiniTab, Ansys, Siemens NX, Solid Works, National Instruments LabView, PCT, BIOWin, Autodesk (free), Livermore LSDYNA, CSI SAP2000, Bentley, CNC Software Mastercam, CGTech Vericut, and IBM SPSS. Because increased enrollment could produce increased need for licenses, we estimated the additional incremental expense of each FTE student in the MSCE at \$100 per year.

NOTE: The PRO FORMA Budget on the last page should provide reasonable assurance that the proposed program can be established and is sustainable. Some assumptions and/or formulaic methodology may be used and annotated in the “Cost Effectiveness ...” narrative on page 5.

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Full-Time Faculty Teaching in this Program (Note: If you anticipate hiring new faculty members for this program you may list "to be hired" under name and title. Provide required credentials, experience, and other responsibilities for each new position anticipated over the first three years of implementation of the program)

Faculty Name and Title	Institution of Highest Degree	Area of Specialization/Pertinent Experience	Other Administrative or Teaching Responsibilities
Dr. Nidal A. Al-Masoud, Professor & Chair	University of Buffalo, Ph.D., 2002	Mechanical Engineering/ 19 yrs. teaching, 13 yrs. professional practice	Engineering Department Chair
Dr. Luz Amaya, Assoc. Professor	City University of New York, Ph.D., 2010	Mechanical Engineering/ 9 yrs. teaching, 3 yrs. professional practice	Coordinator BS Mechanical Engineering
Dr. Clifford Anderson, Assoc. Professor	University of New Mexico, Ph.D., 2004	Civil Engineering/ 14 yrs. teaching, 30 yrs. professional practice	
Dr. Swamy Basim, Assoc. Professor	New Jersey Institute of Technology, Ph.D., 1999	Civil Engineering/ 29 yrs. teaching, 12 yrs. professional practice	Coordinator BS Civil Engineering
Dr. Peter F. Baumann, Professor (Former Chair)	NYU Polytechnic School of Engineering, Ph.D., 1997	Materials Engineering/ 18 yrs. teaching, 20 yrs. professional practice	
Dr. Young M. Sohn, Asst. Professor	Purdue University, Ph.D., 2012	Structural Engineering/ 6 yrs. teaching, 5 yrs. professional practice	Planned Coordinator MS Civil Engineering
Dr. Bin (Brenda) Zhou, Assoc. Professor	The University of Texas at Austin, Ph.D., 2009	Civil Engineering/ 11 yrs. teaching, 1 yr. professional practice	
To be hired, Asst./Assoc. Professor		Civil Engineering/ Minimum 2 yrs. professional practice (Replacement for current vacancy)	
To be hired, Asst./Assoc. Professor (NEW)		Civil Engineering/ Minimum 2 yrs. professional practice (For MSCE)	
To be hired, Asst./Assoc. Professor (NEW)		Civil Engineering/ Minimum 2 yrs. professional practice (For MSCE)	

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Connecticut State Colleges & Universities
APPLICATION FOR NEW PROGRAM APPROVAL
PRO FORMA Budget - Resources and Expenditures Projections (whole dollars only)

PROJECTED Enrollment ¹	2021-22						2022-23						2023-24					
	Fall Semester		Spring Semester		Summer		Fall Semester		Spring Semester		Summer		Fall Semester		Spring Semester		Summer	
	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT
Internal Transfer (from other programs)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New Students (first time matriculating)	7	6	3	3	0	0	7	6	3	3	0	0	7	6	3	3	0	0
Continuing Students progressing to credential	0	0	6	6	0	0	9	9	9	15	0	0	9	18	9	18	0	0
Headcount Enrollment	7	6	9	9	0	0	16	15	12	18	0	0	16	24	12	21	0	0
Total Estimated FTE per Year¹	9.8						17.3						19.3					
PROJECTED Program Revenue	2021-22						2022-23						2023-24					
	Fall Semester		Spring Semester		Summer		Fall Semester		Spring Semester		Summer		Fall Semester		Spring Semester		Summer	
	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT
Tuition ^{2, ii}	\$42,275	\$27,122	\$54,354	\$40,683	\$0	\$0	\$100,494	\$70,479	\$75,370	\$84,574	\$0	\$0	\$104,513	\$117,214	\$78,385	\$102,562	\$0	\$0
Tuition from Internal Transfer ²	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Program Specific Fees (lab fees, etc.) ⁱⁱⁱ	\$1,750	\$900	\$2,250	\$1,350	\$0	\$0	\$4,000	\$2,250	\$3,000	\$2,700	\$0	\$0	\$4,000	\$3,600	\$3,000	\$3,150	\$0	\$0
Other Revenue (annotate in narrative)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total Annual Program Revenue	\$170,684						\$342,867						\$416,425					
PROJECTED Program Expenditures ³	2021-22						2022-23						2023-24					
	Fall Semester		Spring Semester		Summer		Fall Semester		Spring Semester		Summer		Fall Semester		Spring Semester		Summer	
	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT
Administration (Chair or Coordinator) ^{4, iv}	\$38,944		\$41,824		\$44,405													
Faculty (Full-time, total for program) ^{4, v}	\$117,005		\$278,393		\$322,444													
Faculty (Part-time, total for program) ⁴	\$0		\$0		\$0													
Support Staff (lab or grad assist, tutor) ^{vi}	\$17,450		\$17,829		\$18,220													
Library Resources Program ^{vii}	\$0		\$0		\$0													
Equipment (List in narrative) ^{viii}	\$1,450		\$7,150		\$18,550													
Other ^{ix}	\$6,000		\$4,300		\$4,500													
Estimated Indirect Costs ⁵																		
Total Expenditures per Year	\$180,849		\$349,496		\$408,119													

NOTE: Existing regulations require that: "an application for a new program shall include a complete and realistic plan for implementing and financing the program during the first cycle of operation, based on projected enrollment levels; the nature and extent of instructional services required; the availability of resources to support the program; additional resource requirements; and projected sources of funding. If resources to operate a program are to be provided in part through reallocation of existing resources, the institution shall identify the resources to be employed and explain how existing programs will be affected. Reallocation of resources to meet new and changing needs is encouraged, provided such reallocation does not reduce the quality of continuing programs to acceptable levels."

1 1 FTE = 15 credit hours for undergraduate programs; 1 FTE = 12 credit hours for graduate programs; both for Fall & Spring

Formula for conversion of part-time enrollments to Full-Time Equivalent (FTE): Divide part-time enrollment by 3, and round to the nearest tenth. For example 20 part-time enrollees equals 20 divided by 3 equals 6.67 or 6.7 FTE.

2 Revenues from all courses students will be taking.

3 Capital outlay costs, instructional spending for research and services, etc. can be excluded.

4 If full-time person is solely hired for this program, use rate time; otherwise, use a percentage. Indicate if new hires or existing faculty/staff. Recalculate Salary and Fringe Benefits, accordingly.

5 e.g. student services. Course development would be direct payment or release time; marketing is cost of marketing that program separately.

6 Check with your Business Office – community colleges have one rate; the others each have their own. Indirect Cost might include such expenses as student services, operations and maintenance.

CT BOARD OF REGENTS FOR HIGHER EDUCATION

RESOLUTION

concerning

Approval of a New Program

May 14, 2020

RESOLVED: That the Board of Regents for Higher Education approve the licensure of a program in Applied and Computational Mathematics (CIP Code: 27.03.4) – leading to a Bachelor of Science at Western Connecticut State University; and grant its accreditation for a period of seven semesters beginning with its initiation.

A True Copy:

Erin A. Fitzgerald, Secretary of the
CT Board of Regents for Higher Education

ITEM

Establishment of a new program leading to a Bachelor of Science in Applied and Computational Mathematics at Western Connecticut State University.

BACKGROUND

The BS in Applied and Computational Mathematics supports the mission of Western Connecticut State University by providing educational experiences that connect our broad-based liberal arts curriculum with opportunities for professional opportunities. Graduates of this degree will be prepared for myriad career opportunities as well as graduate study. In addition, the emphasis on applied capstone experiences, in which students have the opportunity to pursue research and/or participate in an internship, connects their work to real world problems. As our liberal arts degrees evolve, this program will serve as a model for weaving career applications into the curriculum.

Since the employment applications of this option are so broad and often emergent, no single CIP code is general enough to capture even a small range of potential jobs. As per SIAM, math careers outside of academia rarely carry a simple title of "Mathematician" and are often coupled with a specialty. Drawing from SIAM Careers in Applied Mathematics, BIGMath Network (a society that connects mathematical scientists in business, industry, government and academia), AMS/SIAM advertisement as well as other sources, we have compiled a document, (in the appendix), that includes over 130 possible job types that are realistic for graduates of this program to obtain.

The options of the program were chosen by, among other things, considering the specializations / qualifications of the current faculty within the mathematics department and university at large and the opportunities in the geographical region defined by New York City, Hartford, and Boston. This will ensure strong research projects with WCSU faculty, and the availability of internship opportunities in the region.

It should be noted that we are also leveraging existing technologies. The new program will expose students to data science and machine learning techniques, mathematical modeling, numerical analysis, and computational math by, including, but not limited to, using software the university already has access to, such as MATLAB, Mathematica, Python, LaTeX and others.

RECOMMENDATION

Following its review and deliberative process, it is the recommendation of the Academic Council that the Board of Regents approve this new program. The System's Provost and Senior Vice President for Academic and Student Affairs concurs with this recommendation.

05/01/2020 – BOR -Academic and Student Affairs Committee

05/14/2020 – Board of Regents

**CONNECTICUT BOARD OF REGENTS FOR HIGHER EDUCATION
CSCU APPLICATION FOR NEW PROGRAM APPROVAL**

SECTION 1: GENERAL INFORMATION

Institution: WCSU	Date of Submission to CSCU Office of the Provost: 2/27/2020	
Most Recent NECHE Institutional Accreditation Action and Date: 2013		
Program Characteristics Name of Program: Applied and Computational Mathematics (A&CM) Degree (Title of Award) Bachelor of Science (BS) Degree Certificate: n/a Stand-Alone Certificate: n/a Anticipated Program Initiation Date: Fall 2020 Anticipated Date of First Graduation: Spring 2023 Modality of Program: On ground Locality of Program: Danbury Campus	Program Credit Distribution # Credits in General Education: 40 # Credits in Program Core Courses: 64-66 (varies by option) # Credits of Electives in the Field: 0 # Credits of Other Electives: 14-16 (free electives, varies by option) # Cr Special Requirements 0 <u>Total # Cr in the Program:</u> 120 From "Total # Cr in the Program" above, enter #Cr that are part of/belong in an already approved program(s) at the institution: Out of the required 64-66 Cr in the new program: 34 Cr (Existing BA in math) and 12-14 Cr (existing programs outside math department, part of the options)	
NOTE: All applications to establish a new program will be considered for both Licensure and Accreditation by the BOR		
CIP Code Number 27.03.4 Title of CIP Code Computational and Applied Mathematics		
If establishment of the new program is concurrent with discontinuation of related program(s), please list for each program: N/A		
Institution's Unit: Macricostas School of Arts and Sciences (MSAS)		
Location Offering the Program: Main Campus		
Other Program Accreditation: N/A		
Institutional Contact for this Proposal: Stavros Christofi, PhD	Title: Associate Professor	Tel.: 203-837-9351 e-mail: christofis@wcsu.edu

SECTION 2: PROGRAM PLANNING ASSESSMENT

Alignment of Program with Institutional Mission, Role and Scope

Western Connecticut State University changes lives by providing all students with a high quality education that fosters their growth as individuals, scholars, professionals, and leaders in a global society.

To achieve this, we

- 1. Offer undergraduate and graduate programs that weave together liberal arts and professional education and instill a desire for life-long learning.*

The BS in Applied and Computational Mathematics supports this mission by providing educational experiences that connect our broad-based liberal arts curriculum with opportunities for professional opportunities. Graduates of this degree will be prepared for myriad career opportunities as well as graduate study. In addition, the emphasis on applied capstone experiences, in which students have the opportunity to pursue

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research and/or participate in an internship, connects their work to real world problems. As our liberal arts degrees evolve, this program will serve as a model for weaving career applications into the curriculum.

Addressing Identified Needs

How does the program address CT workforce needs and/or the wellbeing of CT communities – and include a description/analysis of employment prospects for graduates of this proposed program

Looking at the prospects for each option within this program we find the following:

According to a January 2019 report from LinkedIn, the job of a **Data Scientist** is the no. 1 most promising job in America for 2019. Moreover, Data Scientist topped Glassdoor's list of Best Jobs in America for the past three years, with professionals in the field reporting high demand, high salaries, and high job satisfaction. According to the same LinkedIn report, Data Scientists have a median base salary of \$130,000, and saw 56% more job openings this year than last.

The prospect for job placement and entry salary for the **Actuarial Science** are also excellent as the region (encompassing NYC, Boston, Hartford, and surrounding counties) includes several major actuarial and financial firms. In fact, Hartford has long been the city with the highest concentration of actuaries in the US. Based on forecasted results obtained by JobsEQ: As of 2019Q3, the unemployment rate for actuaries is 0.00% and there are 3294 actuaries employed with an average annual wage of \$133,300 in this geographical region. Chmura predicts that there will be a need for 1882 newly trained actuaries in this region over the next seven years.

The prospect for job placement and entry salary for the **Applied Differential Equations and Scientific Computing** option students are healthy due to the potential application in a wide range of areas, for instance in chemistry (in particular within physical chemistry), meteorology (in particular within weather and climate forecasting), biological sciences (in particular the spatial spread of genes and of diseases), investment banking (in particular in option pricing), and movie animation. Moreover, most, if not all, of the 10 big ideas, identified by the NSF as crucial to the Nation's future, will comprise some type of numerical computation involving differential equation(s). Since the employment applications of this option are so broad and often emergent, no single CIP code is general enough to capture even a small range of potential jobs. As per SIAM, math careers outside of academia rarely carry a simple title of "Mathematician" and are often coupled with a specialty. Drawing from SIAM Careers in Applied Mathematics, BIGMath Network (a society that connects mathematical scientists in business, industry, government and academia), AMS/SIAM advertisement as well as other sources, we have compiled a document, (in the appendix), that includes over 130 possible job types that are realistic for graduates of this program to obtain.

Despite the emergent nature of these fields, the JobsEQ profile for applied mathematics in Connecticut describes the present employment demand as follows:

As of 2019Q3, total employment for occupations linked to Applied Mathematics, General in Connecticut was 2,596. Over the past three years, linked occupations added 131 jobs in the region and are expected to need in aggregate approximately 1,419 newly trained workers over the next seven years.

Nearly half of those jobs are projected to be in Fairfield County, where WCSU is located. Our proximity to New York broadens the reach of the job projections. In the region of New York closest to us, the projections growth in opportunities is 1,736. The Jobs EQ Report for the larger region states:

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CSCU APPLICATION FOR NEW PROGRAM APPROVAL

As of 2019Q3, total employment for occupations linked to Computational and Applied Mathematics in Connecticut and in the aforementioned geographical region (encompassing NYC, Boston, Hartford, and surrounding counties) were 2,586 and 19,860, respectively. Over the past three years, linked occupations added 132 and 2,069 jobs in the two regions, respectively, and are expected to need in aggregate approximately 1,413 and 12,150 newly trained workers over the next seven years, respectively.

How does the program make use of the strengths of the institution (e.g. curriculum, faculty, resources) and of its distinctive character and/or location?

Out of the required 64-66 credits within the new program, 34 credits are part of the existing BA in Math program at WCSU and 12-14 credits are part of existing programs outside the mathematics department as applications areas (Biology, Chemistry, Computer Science, Economics, Meteorology). Most of the new courses developed (7 new, 1 revised) are shared by all three options, ensuring reasonable enrollments in all classes. In developing the program, we revised existing courses, removed outdated ones from rotation, and replaced them with new courses addressing modern trends. This minimizes the incremental cost of the degree and leverages the talents of our existing faculty.

The options of the program were chosen by, among other things, considering the specializations/qualifications of the current faculty within the mathematics department and university at large and the opportunities in the geographical region defined by New York City, Hartford, and Boston. This will ensure strong research projects with WCSU faculty, and the availability of internship opportunities in the region.

It should be noted that we are also leveraging existing technologies. The new program will expose students to data science and machine learning techniques, mathematical modeling, numerical analysis, and computational math by, including, but not limited to, using software the university already has access to, such as MATLAB, Mathematica, Python, LaTeX and others.

Equity (eliminating achievement disparities among different ethnic/racial, economic and gender groups) is one of the Board of Regents' Goals. In addition to current institutional efforts already underway, what distinct actions will the proposed program undertake to advance equitable student success?

Upon approval of the program, we plan to submit science, technology, engineering, and mathematics (STEM) related grant proposals (such as to NSF) to help provide scholarships for students in the program. Several such grant solicitations specify underrepresented and/or low-income academically talented students with demonstrated financial need who are pursuing associate, baccalaureate, or graduate degrees in STEM as eligible/targeted demographics. The department is already participating in a collaborative application with the other three CSUs, for the NSF Louis Stokes Alliances for Minority Participation (LSAMP) grant to remove minority achievement barriers in foundational mathematics, with the aim of developing a pipeline for underrepresented and low-income students into the proposed program.

WCSU has a robust Early College program that offers Statistics and Calculus in area high schools. With this new program, we hope to reach into those courses to recruit a diverse pool of students, particularly from Danbury, which has a very diverse student body. The applied focus is likely to be a stronger enticement than the more theoretical BA. After launch, we will also explore opportunities to develop summer programs designed to give prospective students an opportunity to do small applied-math projects, to foster their interest in a math degree. We will work closely with our Upward Bound program to recruit students to this program.

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Describe any transfer agreements with other CSCU institutions that will be instituted as a result of the approval of this program

The CSCU Transfer Articulation Policy Pathway (TAP) agreements already in place for the BA in Mathematics program works well for transfer into the BS in Applied and Computational Mathematics program. We will simply note the additional transfer opportunity. In addition, the College of Technology approved programs and the recently approved Data Analysis degrees at the community colleges are excellent pathways to this program. We will work to formalize those pathways as part of the launch of this degree.

Indicate what similar programs exist in other CSCU institutions, and how unnecessary duplication is being avoided

Our program distinguishes itself from other applied math programs, especially in CT and within the CSU system by allowing flexibility through the 3 unique options, each of which delves into major subfields of Applied and Computational Math. No other school in CT offers a program that encompasses all three options. In fact, in the geographical region defined by New York City, Hartford, and Boston, according to JobsEQ software, of the 30 institutions with Applied Mathematics programs, only 3 (namely U Mass Dartmouth, Bryant University, and CUNY Brooklyn College) specifically offer Applied and Computational Math programs.

To elaborate further, within the CSU system:

Eastern Connecticut State University recently began offering a BS in Mathematics with concentrations in Data Science, Actuarial Science, and Mathematical Structures Applications. While there is some overlap between our core mathematical foundation courses and theirs, ECSU's program does not have the applied flavor and computational aspects of our 3 options. Our options require courses that expose students to mathematical modeling, differential equations, numerical analysis, computational mathematics, machine learning techniques, and culminating experiences.

Central Connecticut State University offers a BA in Mathematics with Specialization in Actuarial Science. However, it does not require courses in data science and machine learning techniques, mathematical modeling, numerical analysis, and computational math.

Southern Connecticut State University offers a BS in Data Science and a BS Concentration Applied. SCSU's program is more computer science driven, requiring 9 CSC courses, whereas WCSU's has 5 computer science courses that are specific to data science and machine learning, with more opportunities to focus on math.

In sum, there are portions of our proposed program available elsewhere in the CSU system, but each has its own distinct flavor. It should be noted, however, that there is ample demand for graduates with applied math skills for all such programs to be relevant.

Cost Effectiveness and Availability of Adequate Resources

This program has been designed to maximize our existing resources (excellent facilities and highly qualified faculty). The total number of new courses is six. We have revised two existing courses to better support both the existing BA in Math and the BS. All other courses are part of existing programs, giving us the opportunity to build enrollment over time with minimal incremental costs. There are seats available in most of our BA classes. We may need additional seats in Calculus if we are successfully in growing this program.

Student Recruitment / Student Engagement

What are the sources for the program's projected enrollments. Describe the marketing, advisement and other student recruitment activities to be undertaken to ensure the projected enrollments are achieved.

Evidence from similar programs discussed at the Society of Industrial & Applied Math (SIAM) conference, suggests that moving from a more theoretically oriented BA to an applied math program is likely to yield a

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CSCU APPLICATION FOR NEW PROGRAM APPROVAL

growth in enrollment. Indeed, Brigham Young started a similar program and moved from 15 majors to over 100 in just three years. While our environment is significantly different from that of Brigham Young, we believe that our location on the border of New York, our recent efforts to recruit new students in NY and NJ, and the projected market demand for graduates, makes our projections of approximately 14 students per years, an achievable goal. We base this both on the history of enrollments in the BA and the education degree (which historically was between 50-80 students, but recently has hovered around 60 students total), and the potential to attract new students who have a greater interest in the applications of mathematics, that is driven by employment opportunities.

A survey of recent alumni suggested that they supported the launch of this new program. Their comments included:

- *"I believe that this program will provide students with an amazing opportunity that extends beyond what any other university's undergraduate program offers" – a U Conn PhD Applied Math recipient*
- *"I can attest that this program will certainly well prepare students interested in pursuing applied mathematics" – Stony Brook University Applied Math PhD candidate*
- *"I was ecstatic that WCSU would be offering this exact program at the exact semester I intend to go back to school!" – Peoples United Bank employee*
- *"I think the three option specific BS in Applied and Computational Math has great potential." – Chair of Mathematics, Concordia College, NY*
- *"WCSU is affordable and has great professors in the Math Department, but it was missing a B.S. program in Applied Math." – a U Conn PhD candidate in Computer Science*
- *"Please keep me in mind as a contact for students interested in the actuarial field. We are always looking for good interns and entry level candidates!" –Oliver Wyman Actuary.*

We should add that we have had tremendous growth in Computer Science at WCSU over the past 6 years. We believe that some of that growth reflects the understanding of the applications of the coding work from the start. Our hope is that this new degree will have a similar impact on recruitment for the math department.

Nevertheless, WCSU will need to invest in a strong recruiting plan. In addition to routine outreach to area high schools, we anticipate taking the following steps for the class entering in 2021.

- WCSU has a robust Early College program that offers Statistics and Calculus in area high schools. With this new program, we hope to reach into those courses to recruit a diverse pool of students. The applied focus is likely to be a stronger enticement than the more theoretical BA.
- Working with our upward bound program, and then expanding the offering to other students, we will create a summer math program for high school students.
- WCSU is host to a highly successful and exciting American Mathematical Society's (AMS) *Who Wants to Be a Mathematician* competition for High School students¹ every two years. This competition is combined with a Math Fair to promote the department's work to CT and NY high school students, their math teachers, and their families: So far:
 - April 5, 2016: 14 CT public high school student-contestants, over 200 attendees
 - May 31, 2018: 13 CT public high school student-contestants, over 300 attendees
 - We were to host this again, on May 28, 2020, but will reschedule for next year.
- WCSU offers in-state tuition for full-time undergraduate NY and NJ students and 40% of the counties showing growth in demand for this degree are in the parts of NY and NJ that are in close proximity to WCSU. Given the

¹ See <http://www.ams.org/publicoutreach/students/wwtbam/wcsu>

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regional employment prospects, we will be reaching out to math faculty and guidance counselors in this region to promote our program.

- Given our proximity to the NY metropolitan area, there is great potential to attract well-prepared international students to our program. To gauge interest in our program from international students, we surveyed 2 high schools in Changchun City, China and we received 50 encouraging responses. We will continue exploring this recruiting opportunity.
- One of the Applied and Computational Math Faculty members regularly does outreach work in local communities to help further develop the mathematical talents of precocious middle and high school student as well as prepare them for competitions such as the Mathematical Association of America's (MAA) American Mathematics Competitions and MATHCOUNTS competition of the MATHCOUNTS Foundation. This interaction may be used as a promotional tool for the new program.
- We plan to promote the new program to high school students at events such as the CT STEM Fair, organized by the Connecticut STEM Foundation, Inc. and the (NY) Tri-County Science & Technology Fair, organized by the Putnam Children's Discovery Center, where math faculty members serve as high school student poster judges.

For fall 2020, we would like to have a limited launch of the program. We will recruit from the entering class and those admitted in fall 2019. Students must start this curriculum by sophomore year if they hope to graduate in four years. Given the timeliness of this curriculum, and the high demand for these kinds of quantitative skills, we would prefer not to wait another year. This is both for the benefit of our students, and to allow us to stay competitive in the region. Our budget reflects this adjustment.

If applicable, what student engagement strategies will be employed to advance student retention and completion in program?

For students who may have an interest but need support to get started on the Calculus track, WCSU has several options, which include a summer course in pre-calculus, or a slower paced version of Calculus I, that takes two semesters to complete. This should broaden access to this program, for students who were not aiming for STEM careers in high school.

Research suggests that participation in co-curricular opportunities enhances retention. Building on this data, we will engage students in the program through the following means:

- Encouragement of active student participation in:
 - Career Events and networking with successful alumni.
 - The Consortium of Mathematics and its Applications (COMAP) annual Mathematical Contest in Modeling (MCM).
 - The $\Sigma\Xi$ WCSU Chapter (Scientific Honor Research Society), where two of the Applied and Computational Math faculty members belong to and have served as chapter officers.
 - Western Research Day (WRD) an event where students at Western may present their undergraduate research, scholarship, and creative inquiry to the University Community.
 - Volunteerism in relevant math department events or events department members typically participate in, such as Who Wants to Be a Mathematician @ WCSU, Pi-Day activities, Open House, Accepted Students Day, and other.
- The creation of a Society of Industrial and Applied Mathematics (SIAM) student chapter.
- The nomination of students for free membership with the Society of Industrial and Applied Mathematics (SIAM).

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- The requirement to complete a Culminating Experience through working on research projects with applied and computational math faculty members, internship, or MAT 453

SECTION 3: PROGRAM QUALITY ASSESSMENT

Learning Outcomes - L.O. The BS in Applied and Computational Math program **will graduate students who will:**

1. Demonstrate possession of a resilient mathematical foundation that allows them to reason rigorously in mathematical arguments and that is adaptable to current and future trends. This foundation encompasses the core areas of:
 - a. Real and numerical analysis
 - b. Differential equations
 - c. Linear algebra
 - d. Probability and statistics
2. Connect different areas of mathematics with other disciplines and demonstrate proficiency in at least one of the following modern applications:
 - a. Data Science and Machine Learning
 - b. Applied Differential Equations and Scientific Computing (coupled with a specific discipline/application area)
 - c. Actuarial Science.
3. Demonstrate an ability to synthesize and apply major theoretical and/or computational techniques and concepts to analyze, construct, and solve realistic models of practical importance and:
 - a. Recognize the limitations of the theoretical concepts in building solutions to real-world problems
 - b. Adapt theoretical ideas to develop efficient numerical solutions to real-world problems
 - c. Adapt theoretical ideas to develop efficient algorithms that can be applied to real-world problems.
4. Use relevant software and technology (such as MATLAB, Mathematica, Python, and LaTeX) and/or write computer programs to construct, visualize, analyze, and interpret solutions to applied mathematical problems.
5. Be able to apply concepts learned during program experiences to write mathematical reports that effectively communicate findings to others and that can serve as the basis for possible publications. Program learning experiences encompass:
 - a. Working independently or collaboratively
 - b. Relevant coursework, possible internships, and/or research projects with faculty
 - c. Communicating to other classmates and/or attendees at local/international conferences or research symposia such as Western Research Day

Assessment Plan: Student attainment of expected Learning Outcomes will be assessed at the following junctures of the program, to occur at regular intervals in the course rotation:

- foundational course(s);
- key option course(s);
- and the program capstone course.

Specific instruments designed to assess corresponding SLOs are expected to include artifacts of student work (e.g., final exam, designated homework assignments, and/or capstone project/research paper); scores on industry certification exams; internship/employment reflections; and alumni surveys. The department will develop a cycle in which its Assessment Committee will assess one to two program SLOs at the conclusion of each academic year, and then submit a report on findings and recommendations for closing the loop to the department and the Dean of School.

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Program Administration

To launch this program, we plan to dedicate 1.5 credits of reassigned time per semester to develop outreach programs for recruiting (in particular, to support regular contact with our Early College partners in STEM and to develop a summer enrichment program.) After year one, we anticipate that the management of this program will become part of the routine operations overseen by the department chair. However, we may need to continue offering some reassigned time if the summer programs are successful.

Faculty: How many new full-time faculty members, if any, will need to be hired for this program?

Pending sufficient enrollment after the first two years, we plan to request a faculty line in the third year. This is indicated in the pro-forma budget. This applied and computational math faculty member will have a specialization in the mathematics of data science, such as a mathematical and computational statistician. This new faculty member will teach 9 of the 52 credits in the program (17.3%) according to the specialization needed. This faculty member will be expected to be full-time and teach courses within all programs of the department and/or general education math classes based on departmental and university needs.

What percentage of the credits in the program will they teach? 17.3%

What percent of credits in the program will be taught by adjunct faculty?

No more than 20%. This would only take place in the lower level calculus and statistics foundations. It may also occur in some of the option courses as part of the routine rotations. However, we currently have qualified full-time faculty for all of the curriculum.

Describe the minimal qualifications of adjunct faculty, if any, who will teach in the program?

MA/MS for lower level courses, PhD for upper level courses.

Special Resources: No additional technology, software, or hardware are necessary. The university already has access to the software MATLAB, Mathematica, Python, LaTeX and other.

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NOTE on COVID-19

Our program is particularly useful and emerging as it stresses applications of math in today's technologically advanced, but challenging environment. The current COVID-19 pandemic demonstrates the need for development of scientific and mathematical models that can guide scientists and politicians in making well-informed crucial decisions based on the models and real-life data sets. In fact, as COVID-19 spreads worldwide, leaders are relying on mathematical models to make public health and economic decisions.

One new Mathematical model that resulted from NSF funded research has predicted the effect of social distancing, namely its effect on "flattening the curve" and another can more effectively track epidemics. For the former please refer to *NSF Research News, Social distancing only the first step toward stopping coronavirus, Scientists find further steps needed to plan for possible resurgence at* https://www.nsf.gov/discoveries/disc_summ.jsp?cntn_id=300355 and the latter to *NSF Research News, New mathematical model can more effectively track epidemics, Model could allow leaders to evaluate the effects of countermeasures to epidemics at* https://www.nsf.gov/discoveries/disc_summ.jsp?cntn_id=300277&WT.mc_id=USNSF_1 and <https://www.pnas.org/content/117/11/5664>. Also, regarding the latter model, Phillip Regalia, a program director at NSF states "Recent events have brought epidemiology into the spotlight. Its underlying *mathematical models* are, in many ways, similar to the concepts that have moved forward wireless, sensor and other networks. NSF funds such foundational networking research because it provides the backbone that connects the country."

This period has been one of those moments that it should be clear "what will I use this math for?" On the other hand, Mathematics departments need to deliver more relevant programs and applications of math to make it clearer to students that mathematics is useful in all walks of life. To us a simple concept such as properties of exponential functions makes things clear as to what is currently happening. But, as per a *Forbe's* magazine article, "Is Poor Math Literacy Making It Harder For People To Understand COVID-19 Coronavirus?" <https://www.forbes.com/sites/marshallshepherd/2020/03/23/is-the-math-too-hard-for-people-to-understand-covid-19-coronavirus/#fa609966a9c8>

Modeling is in fact an integral part of our program, where, for example, MAT 380 "Math Modeling with Symbolic & Scientific Computations" is a required course for all options. Moreover, Learning Outcome 3 of section 3 of this document emphasizes that the graduates of this program will be able to demonstrate an ability to synthesize and apply major theoretical and/or computational techniques and concepts to analyze, construct, and solve realistic models of practical importance. Please refer to the specific Learning Outcome for more details. Furthermore, relevant modeling job titles from the document, (in the appendix), that includes over 130 possible job types that are realistic for graduates of this program to obtain include, but are not limited to: Biostatistician, Computational Scientist, Data Scientist, Epidemiologist, Machine Learning Engineer, Modeler, Modeling Engineer, Operations Researcher, Pharmacokinetic/Pharmacodynamic (PKPD) Modeler, Pharmacokineticist, Quantitative Pharmacologist, Quantitative Scientist, Simulation Engineer, Statistical Geneticist, and Statistician."

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Full-Time Faculty Teaching in this Program *(Note: If you anticipate hiring new faculty members for this program you may list “to be hired” under name and title. Provide required credentials, experience, and other responsibilities for each new position anticipated over the first three years of implementation of the program)*

Faculty Name and Title	Institution of Highest Degree	Area of Specialization/Pertinent Experience	Other Administrative or Teaching Responsibilities
Stavros Christofi – Associate Professor	PhD - Brown University	Applied & Computational Mathematics	Department Chair
Michael Shoushani – Assistant Professor	PhD – University of Delaware	Applied & Computational Mathematics	
Xiaodi Wang – Associate Professor	PhD – Michigan State University	Applied & Computational Mathematics	
David Burns – Professor	PhD – North Dakota State University	Pure Mathematics / Math Education	Associate Chair
Becky Hall – Professor	PhD – Wesleyan University	Pure Mathematics / Math Education	Assistant Dean
Senan Hayes – Professor	PhD – Teachers College, Columbia University	Math Education	
Samuel Lightwood – Associate Professor	PhD – University of Maryland	Pure Mathematics	
Amanda Lubell – Assistant Professor	PhD – University of Maryland	Pure Mathematics	
Paula Maida – Professor	PhD – American University	Math Education	
Charles Rocca – Professor	PhD – SUNY Albany	Pure Mathematics	
Todd Trimble – Visiting Assistant Professor on special appointment	PhD – Rutgers University	Pure Mathematics	
To be hired (in the third year and pending success of the program after the first two years.)	PhD -	Applied & Computational Mathematics (Specialization: The Math of Data Science, such as Computational Statistician, Mathematical Statistician)	

CONNECTICUT BOARD OF REGENTS FOR HIGHER EDUCATION
CSCU APPLICATION FOR NEW PROGRAM APPROVAL

PROFORMA Budget - Resources and Expenditures Projections (whole dollars only)

PROJECTED Enrollment	First Year						Second Year						Third Year					
	Fall Semester		Spring Semester		Summer/ Intercession		Fall Semester		Spring Semester		Summer/ Intercession		Fall Semester		Spring Semester		Summer/ Intercession	
	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT
Internal Transfer (from other programs)	5																	
New Students (first time matriculating)	5						14						14					
Continuing Students progressing to credential			10				8		22			10	20		34			10
Headcount Enrollment	10		10				22		22			10	34		34			10
Total Estimated FTE per Year ¹	10		10.0				22.0		22.0			2.5	34.0		34.0			2.5
PROJECTED Program Revenue	First Year						Second Year						Third Year					
	Fall Semester		Spring Semester		Summer/ Intercession		Fall Semester		Spring Semester		Summer/ Intercession		Fall Semester		Spring Semester		Summer/ Intercession	
	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT
Tuition ²	15,405		15,405				57,114		57,114			\$16,800	98,040		98,040			17,820
Tuition from Internal Transfer ²	15,405		15,405				12,692		12,692				13,072		13,072			
Program Specific Fees (lab fees, etc.)																		
Other Revenue (annotate in narrative)																		
Total Annual Program Revenue	\$61,620						\$156,412						\$240,044					
PROJECTED Program Expenditures ³							1 1 FTE = 12 credit hours for undergraduate programs; both for Fall & Spring. (Each FT student taking 12 credits per semester) 2 Revenues from all courses students will be taking. 3 Capital outlay costs, instructional spending for research and services, etc. can be excluded. 4 If full-time person is solely hired for this program, use rate time; otherwise, use a percentage. Indicate if new hires or existing faculty/staff. 5 e.g. student services. Course development would be direct payment or release time; marketing is cost of marketing that program separately. 6 Check with your Business Office – community colleges have one rate; the others each have their own. Indirect Cost might include such expenses as student services, operations and maintenance. Program Assumptions: 1.Instructional: Assume Adjunct Faculty (Rate C) Fall/Spring. Intercession, Assume Assoc. Prof rate. 2. Coordinator: 1.5 FWLC for each Fall and Spring semester. Assume back filled by adjunct 3. Student Labor: to be determined. 4a. MAT 181 currently run with 2 sections in Fall semester. Potential to add additional Fall section if enrollment allows. 4b. MAT 182 currently run with 2 sections in Spring 1 semester. Potential to add additional Spring section if enrollment allows. 5. *Enrollment Fall/Spring: Assume 10% drop from Year 1 to Year 2 for each Cohort (approx. 2). 6. Intercession (credit hour): Assume Each Cohort takes MAT 470 once in third year, second course rotation.											
	First Year	Second Year	Third Year															
Administration (Chair or Coordinator) ⁴	8,021	8,447	0															
Faculty (Full-time, total for program) ⁴			101,475															
Faculty (Part-time, total for program) ⁴	8,021	34,949	1,223															
Support Staff (lab or grad assist, tutor)																		
Library Resources Program																		
Equipment (List in narrative)																		
Other ⁵	3,000																	
Estimated Indirect Costs ⁶	5,501	14,695	30,103															
Total Expenditures per Year	\$24,543		\$ 58,091	\$132,801														

- 1 1 FTE = 12 credit hours for undergraduate programs; both for Fall & Spring. (Each FT student taking 12 credits per semester)
- 2 Revenues from all courses students will be taking.
- 3 Capital outlay costs, instructional spending for research and services, etc. can be excluded.
- 4 If full-time person is solely hired for this program, use rate time; otherwise, use a percentage. Indicate if new hires or existing faculty/staff.
- 5 e.g. student services. Course development would be direct payment or release time; marketing is cost of marketing that program separately.
- 6 Check with your Business Office – community colleges have one rate; the others each have their own. Indirect Cost might include such expenses as student services, operations and maintenance.
- Program Assumptions:
- 1.Instructional: Assume Adjunct Faculty (Rate C) Fall/Spring. Intercession, Assume Assoc. Prof rate.
2. Coordinator: 1.5 FWLC for each Fall and Spring semester. Assume back filled by adjunct
3. Student Labor: to be determined.
- 4a. MAT 181 currently run with 2 sections in Fall semester. Potential to add additional Fall section if enrollment allows.
- 4b. MAT 182 currently run with 2 sections in Spring 1 semester. Potential to add additional Spring section if enrollment allows.
5. *Enrollment Fall/Spring: Assume 10% drop from Year 1 to Year 2 for each Cohort (approx. 2).
6. Intercession (credit hour): Assume Each Cohort takes MAT 470 once in third year, second course rotation.

No **Industries (Adapted From SIAM Careers in Applied Mathematics, BIGMath Network, AMS/SIAM Advertisements, and other sources)**

more at <https://www.siam.org/Students-Education/Programs-Initiatives/Thinking-of-a-Career-in-Applied-Mathematics/Profiles#edinger>

- 1 Academic Institutions
- 2 Accounting
- 3 Airline
- 4 Airport
- 5 Aerospace
- 6 Analytics and Forecasting
- 7 Architecture
- 8 Biomedical
- 9 Biopharmaceutical
- 10 Chemical Manufacturers
- 11 Climatology
- 12 Communication Service Providers
- 13 Computer Animation and Digital Imaging
- 14 Computer Information and Software Firms
- 15 Consumer Product Companies
- 16 Cybersecurity
- 17 Data Processing
- 18 Defence
- 19 Electronics and Computer Manufacturers
- 20 Energy
- 21 Energy System Firms
- 22 Engineering Research Organizations
- 23 Financial Services
- 24 Federal, State, and Private Agencies
- 25 Government (Local, State, Federal)
- 26 Government Labs
- 27 Insurance Consulting
- 28 Insurance
- 29 Internet Security
- 30 Investment and Commercial Banking
- 31 Investment Management

- 32 Management Consulting
- 33 Market Research
- 34 Medical Device Companies
- 35 Military
- 36 Movie
- 37 Nanoelectronics
- 38 Oil and Gas
- 39 Petroleum Product Producers
- 40 Petroleum Producers
- 41 Pharmaceutical Manufacturers
- 42 Portfolio Management
- 43 Research Institutes
- 44 Scientific Consulting
- 44 Semiconductor
- 45 Software Companies
- 46 Technical Consulting
- 47 Telecommunications
- 48 Transportation Equipment Manufacturers
- 49 Trading
- 50 Video Game

CT BOARD OF REGENTS FOR HIGHER EDUCATION

RESOLUTION

concerning

Program Accreditation

May 14, 2020

RESOLVED: That the Board of Regents for Higher Education grant accreditation of a Mechatronics Automation Technician (CIP Code: 14.4201 OHE # 19029) leading to a C2 Certificate at Quinebaug Valley Community College.

A True Copy:

Erin A. Fitzgerald, Secretary of the
CT Board of Regents for Higher Education

ITEM

Continued Accreditation of a Mechatronics Automation Technician program leading to a C2 Certificate at Quinebaug Valley Community College.

BACKGROUND

Per the BOR's Academic Programming Approval policy, programs previously licensed and accredited by the Board must submit an Application for Continued Accreditation during its seventh semester if the institution elects to recommend its continuation.

PERFORMANCE INDICATORSStudent Enrollment

The Mechatronics Automation Certificate is still in its beginning stages for enrollment. QVCC's lab has limited equipment to hold larger size classes and the plan is to recruit interested high school students who would be available for daytime classes. This field of automation is an important part of filling those jobs that business and industry has had trouble finding skilled individuals. Apprenticeship is relatively new in this field as well and QVCC sees great opportunities to attract more businesses sending incumbent workers for more training.

Cost Effectiveness

The program has had a positive fiscal impact. Revenue exceeded expenditures by \$35,448 in the program's first 3 years.

Learning Outcomes

Student learning outcomes are assessed in each course with a combination of in-class activities, hands-on skill demonstrations, quizzes, and exams. The Mechatronics advisory board is consulted regularly to ensure that the assessed learning outcomes adequately prepare program graduates with skills and knowledge appropriate for the work force.

PROGRAM CHANGES

There are no changes to the program courses or alignment of disciplines.

RECOMMENDATION

Following its review and deliberative process, it is the recommendation of the Academic Council that the Board of Regents grant accreditation of this program. The System's Provost and Senior Vice President for Academic and Students Affairs concurs with this recommendation.

05/01/2020 – BOR Academic & Student Affairs Committee

05/14/2020 – Board of Regents

CONNECTICUT BOARD OF REGENTS FOR HIGHER EDUCATION
Connecticut State Colleges & Universities System Office
APPLICATION FOR CONTINUED ACCREDITATION

SECTION 1: GENERAL INFORMATION

Institution: Quinebaug Valley Community College **Date of Submission to CSCU Office of the Provost:** 3/25/2020

Most Recent NECHE Institutional Accreditation Action and Date: Continued in Accreditation - 2011

Two Year Progress Report Accepted - 2019

Program Characteristics

Name of Program: Mechatronics Automation Technician
Degree: Title of Award (e.g. Master of Arts) N/A
Degree's Associated Certificate(s) (if any) Credit Certificate
Stand-Alone Certificate: (specify type and level) C2: 15-30 credits
Semester Date Program was Initiated: Fall 2017
Year 3 Semester Date: FA19/SP20
Date of First Graduation: May 2018
Modality of Program: X On ground Online Combined
If "Combined", % of fully online courses?
Locality of Program: X On Campus Off Campus Both

Program Credit Distribution

Credits in General Education: 0
Credits in Program Core: 30
Credits of Electives in the Field: 0
Credits of Other Electives: 0
Cr Special Requirements (include internship, etc.): 0

Total # Cr in the Program (sum of all #Cr above): 30
From "Total # Cr in the Program" above, enter #Cr that are part of/belong in an already approved program(s) at the institution: 0

Date of BOR Approval: 5/2017 **CIP:** 14.4201 **OHE#:** 19029

Institutional Contact for this Proposal: Jodi Clark

Title: Assistant Director

Tel.: 860-932-4128
e-mail: jclark1@qvcc.edu

SECTION 2: PERFORMANCE INDICATORS

Student Enrollment

Time Period	Projected Enrollment Total FTE	Actual Enrollment Total FTE	Difference Total FTE
1 st Year: FA17/SP18	36	33.33	2.67
2 nd Year: FA18/SP19	36	30.67	5.33
3 rd Year: FA19/SP20	36	23.67	12.33
4 th Year: Semester 7 (specify)	36	TBD	TBD

NOTE: Compare actual enrollment for Semester 7 to projected enrollment for Semester 5.

NOTE: Formula for conversion of part-time enrollments to Full-Time Equivalent (FTE): Divide part-time enrollment by 3, and round to the nearest tenth - for example 20 part-time students equal 20 divided by 3 equal 6.67 or 6.7 FTE. With 20 full-time students, Total FTE would equal 26.7.

CONNECTICUT BOARD OF REGENTS FOR HIGHER EDUCATION
Connecticut State Colleges & Universities System Office
APPLICATION FOR CONTINUED ACCREDITATION

Cost Effectiveness

Total Revenue generated by program during its Year 1:	88,141
Total Expenditures apportioned to program in its Year 1:	65,105
Total profit/loss Year 1:	23,036
Total Revenue generated by program during its Year 2:	85,264
Total Expenditures apportioned to program in its Year 2:	69,655
Total Profit/Loss Year 2:	15,609
Total Revenue generated by program during its Year 3:	70,743
Total Expenditures apportioned to program in its Year 3:	73,940
Total Profit/Loss Year 3:	<3197>

Combination Profit/Loss 3 years combined: 35,448

Learning Outcomes

Summarize assessment of student learning outcomes at end of program's Year 3:

Student learning outcomes are assessed in each course with a combination of in-class activities, hands-on skill demonstrations, quizzes, and exams. The Mechatronics advisory board is consulted regularly to ensure that the assessed learning outcomes adequately prepare program graduates with skills and knowledge appropriate for the work force.

SECTION 3: UPDATE OF PROGRAM CHANGES (if any)

Curricular and Other Program Changes *(Describe any changes since program was initiated, in curriculum, admission and/or completion requirements, program administration, faculty, and resources, or any other significant changes). If needed, provide details on curricular changes in the table below).*

There are no changes to the program courses or alignment of disciplines.

Other Narrative Background to be Considered Since Approval (As needed, discuss other changes such as program need and demand, transfer agreements developed, etc.)

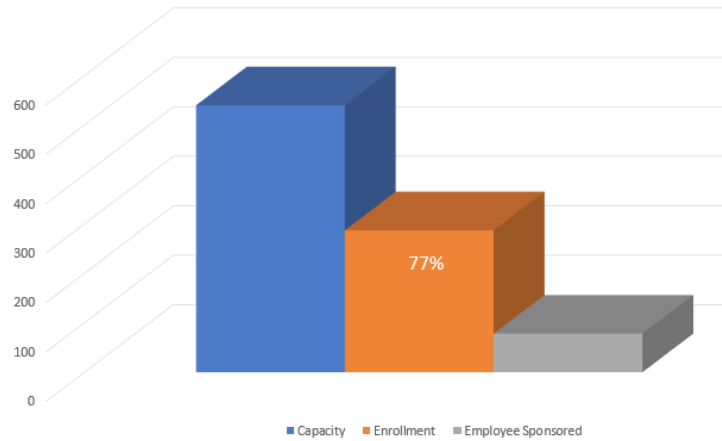
The Mechatronics Automation Certificate is still in its beginning stages for enrollment. The graphs below show the business support for the need for training in these disciplines listed.

With the latest challenge of the COVID 19 virus, businesses around the world are thinking differently about their workforce. For years, manufacturers have struggled to close their labor gap. The recent unexpected downtime for many businesses have made it difficult to maintain productivity levels. Business leaders around the world are faced with the same dilemma: how do they keep their team healthy without compromising production?

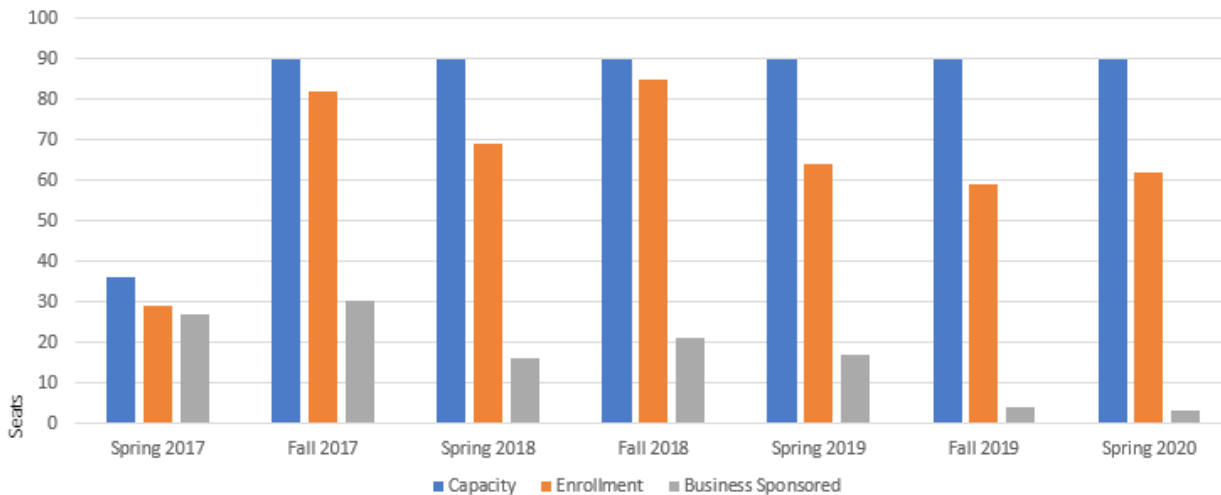
Now more than ever, the benefits of automation are clear. Whether it's one sick employee, or mandated team isolation, robotic automation solutions help keep production on track without compromising the well being of your team. Automation practices are sure to expand as we evaluate the infrastructure to ensure the supply chain is not stressed as it is in today's pandemic.

CONNECTICUT BOARD OF REGENTS FOR HIGHER EDUCATION
Connecticut State Colleges & Universities System Office
APPLICATION FOR CONTINUED ACCREDITATION

Mechatronics Enrollment vs Capacity 2017-2020



Mechatronics Capacity vs Enrollment 2017-2020



QVCC's lab has limited equipment to hold larger size classes and the plan is to recruit interested high school students who would be available for daytime classes. This field of automation is an important part of filling those jobs that business and industry has had trouble finding skilled individuals. Apprenticeship is relatively new in this field as well and QVCC sees great opportunities to attract more businesses sending incumbent workers for more training. The Manufacturing Innovation Fund has funding resources to promote growth for Registered Apprenticeships. The program is self-sufficient from a cost basis formula providing full enrollment is achieved. The Advanced Manufacturing Technology Center has formed a separate Mechatronics Advisory Board that meets to discuss progress or changes and ideas that need to be addressed.

Compliance with Special Requirements Given at the time of Program Approval (As applicable, please summarize how the program responded to requirements issued by the BOR, at the time it was licensed. Include any attachments as necessary.)

Not applicable (no special requirements)

CONNECTICUT BOARD OF REGENTS FOR HIGHER EDUCATION
Connecticut State Colleges & Universities System Office
APPLICATION FOR CONTINUED ACCREDITATION

Details of Curriculum Changes for a Licensed Program *(to be use as needed)*

Course Number and Name	L.O. #	Pre-Requisite	Cr Hrs.	Course Number and Name	L.O. #	Cr Hrs.
Program Core Courses				Other Related/Special Requirements*		
MFG 133 Math for Electricity and Electronics	1,3	Math Competency*	3	N/A		
MFG 138 Digital Fundamentals	1,2,3,4	Math Competency*	3			
MFG 140 Robotics	1,2,3,4	Math Competency*, MFG*143, MFG*146, co-req: MFG*138	3			
MFG 142 Electronic Circuits & Devices	1,2,3,4	Math Competency*	3			
MFG 143 Industrial Motor Controls	1,2,3,4	Math Competency*	3			
MFG 144 Hydraulics & Pneumatics	2,3,4	Math Competency*	3			
MFG 145 Electronic Variable Speed Drives	1,2,3,4	Math Competency*	3			
MFG 146 Programmable Logic Controllers	1,2,3,4	Math Competency*	3			
MFG 159 Industrial Maintenance	1,2,3,4	Math Competency*	3			
MFG 162 CNC Maintenance & Repair	1,2,3,4	Math Competency*	3			
TOTAL			30			
Core Course Prerequisites				Elective Courses in the Field		
<i>Math Competency* means: Completion of MAT*085 or higher with a C or better, or Accuplacer Arithmetic score of 230 or better.</i>				N/A		
Total Other Credits Required to Issue Credential						0

Other Narrative Background Since Licensure Approval (As needed, consider other changes such as program need and demand, transfer agreements developed, etc.)

N/A

Learning Outcomes - L.O. *(Discuss any significant changes in the Learning Outcomes and relevant curricular changes; if any)*

There are no changes to the learning outcomes; they remain:

1. Apply knowledge of theory and principles related to mechanics, electronics, computer science, and process control.
2. Apply critical thinking and problem-solving skills to troubleshoot electromechanical, hydraulic, and pneumatic automation systems.
3. Apply logical reasoning and mathematics to analysis of automation systems and their components.
4. Communicate technical information clearly.

CONNECTICUT BOARD OF REGENTS FOR HIGHER EDUCATION
Connecticut State Colleges & Universities System Office
APPLICATION FOR CONTINUED ACCREDITATION

SECTION 4: EXPLANATORY & CORRECTIVE ACTION PLAN

Fiscal Impact – succinctly disclose the financial impact upon institution of negative *Difference* within Cost Effectiveness
The program has had a positive fiscal impact (see Cost Effectiveness).

Improvement Plan

If negative *Difference*(s) reported above for **Student Enrollment** and/or **Cost Effectiveness**, present plan(s) for corrective actions:

Not applicable (see Cost Effectiveness)

Curricular Change

If institution/program is not satisfied with the degree to which the Learning Outcomes have been achieved, what course of action is planned for improvement of teaching and learning:

Not applicable (learning outcomes are being adequately achieved).

SECTION FIVE: FUTURE PROGRAM RESOURCES AND COST ESTIMATES

(For the next three years to be specified, please complete the Resources and Cost Estimates form below, and provide a narrative below regarding the financial sustainability of the program)

The resources and cost estimates are real numbers from the previous 3 years. It's important to note that this program is cost effective now in its early stages. The Mechatronics term is just starting to take hold in this ever- changing world of automation. QVCC has been the leader by putting a Mechatronics Automation Certificate for short term training in this growing field. We are confident that other community colleges will be following this model. Most of the costs associated with setting the lab up with the appropriate equipment are complete. QVCC is part of the CAPRA (Connecticut Apprenticeship Program in Robotics and Automation) Grant that will be working with area business and industry to place trainees in employment opportunities in this rapidly growing discipline. The program will benefit by filling the classes to the capacity of 18. This is a piece that marketing should be able to rectify through promotion and awareness. The projected numbers for the next three years will be similar if not increased through enhanced enrollment. Our fixed cost will remain stable and it's possible to expand our offerings as business demands. There is no faculty or staff dedicated solely to this program. It is housed under the Advanced Manufacturing Technology Center and is under the administration of the Director and the Assistant Director of the Advanced Manufacturing Technology Center.

CONNECTICUT BOARD OF REGENTS FOR HIGHER EDUCATION
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APPLICATION FOR CONTINUED ACCREDITATION

Resources and Costs Estimates Form
(Whole Dollars Only)

Program Revenue	FA17/SP18		FA18/SP19		FA19/SP20	
	Full Time	Part Time	Full Time	Part Time	Full Time	Part Time
Tuition (do not include internal transfers)	36,601	46,899	37,519	42,696	31,542	35,937
Program-Specific Fees (usage fees)	TOTAL	4,641	TOTAL	5,049	TOTAL	3,264
Other Revenue (Annotate in narrative)						
Total Program Revenue		88,141		85,264		70,743

Program Expenditures*	FA17/SP18		FA18/SP19		FA19/SP20	
	Number	Amount	Number	Amount	Number	Amount
Administration (Chair or Coordinator part time)	1	11,500	1	12,375	1	13,250
Faculty (Full-time, total for program)						
Faculty (Part-time Adjuncts total for program)	10	43,830	10	46,380	10	48,930
Support Staff	1	4,500	1	4,950	1	5,235
Graduate Assistants						
Library Resources Program						
Equipment (List as needed)	All purchased and in place					
Other (e.g. student services)	Listed in support staff					
Estimated Indirect Costs (e.g. student services, operations, maintenance)	Normal maintenance and supplies	5,275		5,950		6,525
Total Annual Expenditures		65,105		69,655		73,940

*Note: Capital outlay costs, institutional spending for research and services, etc. can be excluded.

Please provide any necessary annotations below:

CT BOARD OF REGENTS FOR HIGHER EDUCATION

RESOLUTION

concerning

Accreditation of a Licensed Program

May 14, 2020

RESOLVED: That the Board of Regents for Higher Education approve the accreditation of a licensed program – Computer Networking (CIP Code: 11.1001 / OHE #018103) – leading to an Associate of Science at Capital Community College.

A True Copy:

Erin A. Fitzgerald, Secretary of the
CT Board of Regents for Higher Education

ITEM

Continued accreditation of a licensed program in Computer Networking leading to an Associate of Science at Capital Community College.

BACKGROUND

In Spring 2019, a request for continued accreditation of this program was submitted to the BOR in tandem with other programs across the CSCU system due to expired licensures. After consideration of that joint proposal, the ASA Committee requested that a full proposal for continued accreditation of this program be submitted during Spring 2020. The following data reflects the current status of the program.

PERFORMANCE INDICATORSStudent Enrollment

Projected full-time equivalent (FTE) enrollment for the Computer Networking AS (parent) degree's Year 3: 15

Actual full-time equivalent (FTE) enrollment for Computer Networking AS (parent) degree's most recent semester: 7.9

Difference: -7.1

Cost Effectiveness

Total Revenue generated by the Computer Networking AS (parent) degree during its most recent year: \$39,121

Total Expenditures apportioned to the Computer Networking AS (parent) degree in its most recent year: \$27,401

Difference (Net Gains): \$11,720

PROGRAM CHANGES

Capital has improved the resources of the Computer Networking AS (parent) degree curriculum since program inception through becoming an approved Cisco Networking Academy. Cisco is an industry leader in computer networking technology. Through becoming a Cisco Academy, Capital has access to equipment and resources from Cisco that are utilized in all of the networking courses.

Additionally, Capital has upgraded and enhanced the computer networking laboratory by designing and hosting our own private virtual cloud that allows students to design and deploy virtual networks and machines to build and practice related networking skills.

There have also been several curricular changes to the Computer Networking AS (parent) degree since program inception.

- The original degree proposal consisted of MAT 137 (Intermediate Algebra or higher) plus a 3-credit Math Elective course. Based on feedback from transfer institutions, these were changed to MAT 184 (Trigonometry with Embedded Algebra) plus MAT 167 (Statistics)

- The original degree proposal consisted of COM* 173 Public Speaking as an option. This course was dropped since the program advisory board recommended BMG 202 (Business Communications) as a more appropriate option and courses were repositioned within the program to provide room for a second technical elective (CSA*, CSC*, CST* elective)
- Effective Fall 2020, Capital is removing the 4th course in the Cisco Networking curriculum – CST 283 Data Communication & Networking IV. This change is due in part to a change to the Cisco Academy curriculum, which Capital is an approved institution.
- Based on feedback from the program Advisory Council, employers and student interest, Capital is replacing CST 283 with a new course in virtualization and cloud computing (CST xxx – Virtualization and Cloud Computing I) that provides students foundational skills in managing and deploying virtualized data platforms and virtual machines. The new course prepares students for the entry-level VMWare Certified Associate industry credential. The Computer Networking A.S. (parent) Degree learning outcomes have been updated to incorporate knowledge and skills in this competency.

RECOMMENDATION

Following its review and deliberative process, it is the recommendation of the Academic Council that the Board of Regents approve the accreditation of this program. The System's Provost and Senior Vice President for Academic and Student Affairs concurs with this recommendation.

05/01/2020– BOR -Academic and Student Affairs Committee
05/14/2020 – Board of Regents

CONNECTICUT BOARD OF REGENTS FOR HIGHER EDUCATION
Connecticut State Colleges & Universities System Office
APPLICATION FOR CONTINUED ACCREDITATION

SECTION 1: GENERAL INFORMATION

Institution: Capital Community College Date of Submission to CSCU Office of the Provost: **Spring 2020**

Most Recent NECHE Institutional Accreditation Action and Date: **Continued Accreditation 2016-17 (10-year)**

Program Characteristics

Name of Program: **Computer Networking**
Degree: Title of Award (e.g. Master of Arts) **Associate in Science**
Degree's Associated Certificate(s) (if any)
Stand-Alone Certificate: (specify type and level)
Semester Date Program was Initiated: **Fall 2015**
Year 3 – 7th Semester Date: **Fall 2018**
Date of First Graduation: **n/a** (Spring 20 anticipated)
Modality of Program: On ground Online **X** Combined
If "Combined", % of fully online courses? **Up to 100%**
Locality of Program: **X** On Campus Off Campus Both

Program Credit Distribution

Credits in General Education: **25-26**
Credits in Program Core: **21**
Credits of Electives in the Field: **0**
Credits of Other Electives: **15-16**
Cr Special Requirements (include internship, etc.): **0**

Total # Cr in the Program (sum of all #Cr above): **61-63**
From "Total # Cr in the Program" above, enter #Cr that are part of/belong in an already approved program(s) at the institution: **61-63**

Date of BOR Approval: **06/25/15** CIP: **111001** OHE#: **018103**

Institutional Contact for this Proposal:
Dr. Miah LaPierre Dreger, EdD

Title: **Dean of Academic and Student Affairs**

Tel.: **860-906-5011**
e-mail: **mlapierre-dreger@capitalcc.edu**

Note: In Spring 2019, a request for continued accreditation of this program was submitted to the BOR in tandem with other programs across the CSCU system due to expired licensures. After consideration of that joint proposal, the ASA Committee requested that a full proposal for continued accreditation of this program be submitted during Spring 2020. The following data reflects the current status of the program.

SECTION 2: PERFORMANCE INDICATORS

Student Enrollment

Projected full-time equivalent (FTE) enrollment for the Computer Networking AS (parent) degree's Year 3: **15**
(Note: 2017-18 was Year 3)

Actual full-time equivalent (FTE) enrollment for Computer Networking AS (parent) degree's most recent semester: **7.9**
(Note: Fall 2019 was the AS parent degree's 9th semester)

Difference: **-7.1**

Note: Even though the Computer Networking AS FTE was 7.9 in Fall 2019, the combined headcount was 12 (6 FT and 6 PT students). Also, the Computer Networking AS degree is the parent program of a larger array of related program options which includes a Computer Networking: Cybersecurity AS degree option plus three certificates (Computer Networking, Cybersecurity, and Cisco Certified Networking Associate - CCNA). In total, the entire Computer Networking program (including parent degree and related option and certificates) had a combined FTE of 36.2 (combined headcount of 64) in Fall 2019. This total exceeded the 3-year combined FTE of 33.6 that was projected at the time of initial program approval.

CONNECTICUT BOARD OF REGENTS FOR HIGHER EDUCATION

Connecticut State Colleges & Universities System Office

APPLICATION FOR CONTINUED ACCREDITATION

Cost Effectiveness

Total Revenue generated by the Computer Networking AS (parent) degree during its most recent year: **\$39,121**
(Note: 2018-19 was Year 4)

Total Expenditures apportioned to the Computer Networking AS (parent) degree in its most recent year: **\$27,401**
(Note: 2018-19 was Year 4)

Difference (Net Gains): **\$11,720**

Note: This Computer Networking AS degree is the parent program of a larger array of related program options which includes a Computer Networking: Cybersecurity AS degree option plus three certificates (Computer Networking, Cybersecurity, and Cisco Certified Networking Associate - CCNA). In total, the entire Computer Networking program (including parent degree and related option and certificates) had a total revenue of \$208,108 and a total expense of \$121,634 during the 2018-2019 academic year, resulting in a difference of \$86,474 net gain overall. These gains are expected to remain steady in 2019-20 since the combined program FTE in Fall 2019 (36.2) remained nearly the same as Fall 2018 (36.9) with additional enrollment increases anticipated in future semesters due to new marketing strategies, increasing local/regional employment prospects, and a new state program called the "Pledge to Advance Connecticut" (PACT) that was designed to attract more full-time students to the CT community colleges.

Learning Outcomes

Summarize assessment of student learning outcomes at end of program's Year 3:
(Note: Information below pertains to the most current Year 5, 2019-20)

Capstone activities in identified course work are designed to assess student learning of the learning outcomes listed below. In addition to the acquisition of general education competencies, graduates that complete the Computer Networking AS (parent) degree will be able to:

1. Demonstrate an understanding of the fundamentals of information technology and information systems and their importance and impact in business and society. (Assessments: CST 171, CST 201, CST 231, CST 264, CST 281, CST 282)
2. Identify and describe basic communication technologies, devices, and components used in Local and Wide Area Networks. (Assessments: CST 171, CST 201, CST 231, CST 264, CST 281, CST 282)
3. Identify and describe various types of analog and digital communication transmission media including coax, twisted pair, fiber, and wireless media. (Assessments: CST 231)
4. Demonstrate the use of appropriate tools to assist with administering and troubleshooting computers, media, and devices on a network. (Assessments: CST 171, CST 231, CST 281, CST 282, CST xxx)
5. Setup, configure, and administer network servers and client workstations in workgroups and domain-based networks. (Assessments: CST 171, CST 264, CST xxx)
6. Design, build, and manage multilayer-switched networks and scalable internetworks using routers, switches, hubs, computers, servers, transmission media, network protocols, and network security. (Assessments: CST 231, CST 264, CST 281, CST 282, CST xxx)
7. Apply comprehensive theoretical knowledge, problem-solving skills, and ethical principles to address case studies and practical applications in networking and information technology. (Assessments: CST 171, CST 201, CST 231, CST 264, CST 281, CST 282, CST xxx)
8. Deploy, configure and manage virtualized data center environments and create, deploy, clone and manage virtual machines. (Assessments: CST xxx Virtualization and Cloud Computing I)

Though there have not been any graduates of the Computer Networking (parent) AS degree so far, there have been 14 graduates of the Computer Networking: Cybersecurity AS degree option, 6 graduates of the Cybersecurity Certificate, and 2 graduates of the Cisco Certified Networking Associate (CCNA) Certificate. In total, 22 students have graduated from the entire Computer Networking program (including parent degree and related option and certificates). Many of the certificate graduates will likely pursue the parent degree or related degree option as well.

CONNECTICUT BOARD OF REGENTS FOR HIGHER EDUCATION

Connecticut State Colleges & Universities System Office

APPLICATION FOR CONTINUED ACCREDITATION

SECTION 3: UPDATE OF PROGRAM CHANGES (if any)

Curricular and Other Program Changes *(Describe any changes since program was initiated, in curriculum, admission and/or completion requirements, program administration, faculty, and resources, or any other significant changes). If needed, provide details on curricular changes in the table below).*

Capital has improved the resources of the Computer Networking AS (parent) degree curriculum since program inception through becoming an approved Cisco Networking Academy. Cisco is an industry leader in computer networking technology. Through becoming a Cisco Academy, Capital has access to equipment and resources from Cisco that are utilized in all of the networking courses.

Additionally, Capital has upgraded and enhanced the computer networking laboratory by designing and hosting our own private virtual cloud that allows students to design and deploy virtual networks and machines to build and practice related networking skills.

There have also been several curricular changes to the Computer Networking AS (parent) degree since program inception.

- The original degree proposal consisted of MAT 137 (Intermediate Algebra or higher) plus a 3-credit Math Elective course. Based on feedback from transfer institutions, these were changed to MAT 184 (Trigonometry with Embedded Algebra) plus MAT 167 (Statistics)
- The original degree proposal consisted of COM* 173 Public Speaking as an option. This course was dropped since the program advisory board recommended BMG 202 (Business Communications) as a more appropriate option and courses were re-positioned within the program to provide room for a second technical elective (CSA*, CSC*, CST* elective)
- Effective Fall 2020, Capital is removing the 4th course in the Cisco Networking curriculum – CST 283 Data Communication & Networking IV. This change is due in part to a change to the Cisco Academy curriculum, which Capital is an approved institution.
- Based on feedback from the program Advisory Council, employers and student interest, Capital is replacing CST 283 with a new course in virtualization and cloud computing (CST xxx – Virtualization and Cloud Computing I) that provides students foundational skills in managing and deploying virtualized data platforms and virtual machines. The new course prepares students for the entry-level VMWare Certified Associate industry credential. The Computer Networking A.S. (parent) Degree learning outcomes have been updated to incorporate knowledge and skills in this competency.

Note: These changes are also detailed in the "Details of Curriculum Changes for a Licensed Program" section on page 6 below.

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APPLICATION FOR CONTINUED ACCREDITATION

Other Narrative Background to be Considered Since Approval (As needed, discuss other changes such as program need and demand, transfer agreements developed, etc.)

Program Need Based on Regional and National Data, Market Data, and Industry Trends:

According to the *Bureau of Labor Statistics, U.S. Department of Labor, Occupational Outlook Handbook*, employment for network and computer system administrators industry-wide is projected to increase by 5% (as fast as average) over the next 10 years:

Table 1: 10-year National Occupational Outlook, March 2020:

Occupation	10-Year Anticipated Growth
Network and Computer System Administrators ¹	5%

While employment projections industry-wide are 5%, employment of network administrators in the computer systems design and related services industry is projected to grow 24 percent over the same time period. Additionally, U.S. Department of Labor analysts note favorable job prospects for applicants who possess a bachelors degree and are up-to-date in the newest technologies, including cloud computing.

Similarly, according to the *CT Department of Labor, 2016 - 2026 State of Connecticut Occupational Projections*, occupations in networking and system administration and network support are projected to increase over the next ten years.

Table 2: 10-year CT Occupational Outlook (2016-2026)²:

Occupation	10-Year Anticipated Growth
Network and Computer Systems Administrators (15-1142)	4.3%
Computer Network Support Specialists (15-1152)	7.7%

Data from JobsEQ, *Occupation Snapshot in Connecticut, 2019q3*³, differs from the CT DOL projections and indicates negative growth in these occupational areas. However, JobsEQ estimates the CT award output for these occupational areas is below the national norm, indicating CT may be an importer of jobs for these occupations. Specifically, in 2017-2018, JobsEQ estimated that CT degree-granting institutions awarded 86 awards in network and computer systems administration, compared to 120 nationally. Similarly, CT degree-granting institutions awarded 40 awards in computer network support specialist, compared to 54 nationally.

Additionally, in mid-March 2020, on *CareerOneStop.org* there were 296 job postings related to Network and Computer Systems Administrators, and 49 job postings relating to Computer Network Support Specialists.

Transferability and Uniqueness to the Region:

Capital Community College is one of five CT Community Colleges that offers an Associate of Science in Computer Networking. The similar A.S. programs offered statewide include:

- Gateway Community College, Computer Science – Networking Option A.S.
- Manchester Community College, Computer Network Technician A.S.
- Quinebaug Valley Community College, Computer Networking A.S.
- Tunxis Community College, CIS: Network Admin Option A.S.

¹ Bureau of Labor Statistics, U.S. Department of Labor, *Occupational Outlook Handbook*, Network and Computer Systems Administrators, on the Internet at <https://www.bls.gov/ooh/computer-and-information-technology/network-and-computer-systems-administrators.htm> (visited February 21, 2020).

² CT Department of Labor, *2016 - 2026 State of Connecticut Occupational Projections*, Civil Engineering Technicians Occupation on the Internet at <https://www1.ctdol.state.ct.us/lmi/projections2016/computers.asp> (Retrieved March 2020)

³ JobsEQ Chmura Economics and Analytics, *Occupation Snapshot in Connecticut, 2019q2*, All Occupations on the Internet at <https://jobseq.egsuite.com/analytics/occupation-snapshot> (Retrieved September 2019)

CONNECTICUT BOARD OF REGENTS FOR HIGHER EDUCATION

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APPLICATION FOR CONTINUED ACCREDITATION

The Computer Networking A.S. (parent) degree at Capital is 100% transferrable to the Bachelor of Science in Networking Information Technology at Central Connecticut State University.

Program Promotes Equity and Diversity in the Information Technology Industry:

African Americans, Latinos and females are each underrepresented groups within the Information Technology industry, and broader Science and Engineering workforce⁴. In line with the College's Mission statement, the Computer Networking program (including parent degree and related option and certificates) seeks to engage a diverse student population and prepares our predominately African American, Latino, and female student population for entry-level employment in this industry. Moreover, while the information technology industry has traditionally been dominated by males, 25% of the students enrolled in the Computer Networking program overall at Capital (including parent degree and related option and certificates) during Fall 2019 were female.

In our marketing, outreach, and partnerships with secondary schools throughout Greater Hartford, Capital speaks to communities about the importance of broadening participation in computing and IT fields, and the importance of diversity in the IT workforce.

Compliance with Special Requirements Given at the time of Program Approval (As applicable, please summarize how the program responded to requirements issued by the BOR, at the time it was licensed. Include any attachments as necessary.)

There were no special requirements issued by the BOR at the time of licensure.

⁴ <https://nces.nsf.gov/pubs/nsb20198/demographic-trends-of-the-s-e-workforce>

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Details of Curriculum Changes for a Licensed Program (to be use as needed)

Course Number and Name	L.O. #	Pre-Requisite	Cr Hrs	Course Number and Name	L.O. #	Cr Hrs
Program Core Courses				Other Related/Special Requirements		
CST 201 Introduction to MIS*	1,2,7		3	COM 173 Public Speaking OR BBG 210 Business Communications OR ECN 102 Principles of Microeconomics CSA, CSC, or CST Elective*		3
CST 171 LAN System Management *	1,2,4,5,7		3	BBG 202 Principles of Management* OR BMK 201 Principles of Marketing* OR BMG 202 Business Communication*		3
CST 231 Data Communications and Networking I*	1,2,3,4,6,7		3	ACC 115 Financial Accounting* OR BBG 294 Business Internship		3/4
CST 281 Data Communications and Networking II*	1,2,4,6,7	CST 231	3	Math Elective MAT 167 Principles of Statistics*		3
CST 282 Data Communications and Networking III*	1,2,4,6,7	CST 281	3	Business, CSA, CSC, or CST Elective*		3
CST 283 Data Communications and Networking IV* CST xxx Virtualization & Cloud Computing*	1,2,4,6,7 4,5,6,7,8	CST 281 CST 171 and CST 231	3			
CST 264 Unix/Linux System Administration*	1,2,5,6,7		3			
		TOTAL:	21		TOTAL:	15/16
Core Courses (General Education*)				Elective Courses in the Field		
ENG 101 Composition			3			
MAT 137 Intermediate Algebra OR Higher MAT 184 Trigonometry with Embedded Algebra			4			
ENG 102 Composition and Literature			3			
ECN 101 Principles of Macroeconomics OR ECN 102 Principles of Microeconomics			3			
____ Social Science Elective			3			
____ Science Elective			3/4			
____ Fine Arts Elective			3			
____ Humanities Elective			3			
			25/26			
				Total Other Credits Required to Issue Credential:		
				61-63		

* Note: Courses designated with an * can be taught either on ground or online.

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Other Narrative Background Since Licensure Approval (As needed, consider other changes such as program need and demand, transfer agreements developed, etc.)

No additional information in this area. (See previous "Other Narrative Background" section on pages 4-5 for details.)

Learning Outcomes - L.O. (Discuss any significant changes in the Learning Outcomes and relevant curricular changes; if any)

Since the time of licensure there has been one change to the program learning outcomes. A new outcome related to virtualization and cloud computing was added, to reflect the new required course CST xxx Virtualization and Cloud Computing I. This degree outcome was added based on feedback from representatives on our Program Advisory Council who identified this as a required skill and competency for program graduates.

1. Demonstrate an understanding of the fundamentals of information technology and information systems and their importance and impact in business and society.
2. Identify and describe basic communication technologies, devices, and components used in Local and Wide Area Networks.
3. Identify and describe various types of analog and digital communication transmission media including coax, twisted pair, fiber, and wireless media.
4. Demonstrate the use of appropriate tools to assist with administering and troubleshooting computers, media, and devices on a network.
5. Setup, configure, and administer network servers and client workstations in workgroups and domain-based networks.
6. Design, build, and manage multilayer-switched networks and scalable internetworks using routers, switches, hubs, computers, servers, transmission media, network protocols, and network security.
7. Apply comprehensive theoretical knowledge, problem-solving skills, and ethical principles to address case studies and practical applications in networking and information technology.
8. Deploy, configure and manage virtualized data center environments and create, deploy, clone and manage virtual machines.
(new program outcome)

CONNECTICUT BOARD OF REGENTS FOR HIGHER EDUCATION
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APPLICATION FOR CONTINUED ACCREDITATION

SECTION 4: EXPLANATORY & CORRECTIVE ACTION PLAN

Fiscal Impact – succinctly disclose the financial impact upon institution of negative *Difference* within Cost Effectiveness

The Computer Networking (parent) AS degree FTE was 7.9 in Fall 2019 (the program's 9th semester) with a combined headcount of 12 (6 FT and 6 PT students). The program has also seen positive net gains for the past three subsequent years (2016-2019) totaling \$22,319.

The Computer Networking AS (parent) degree is the parent program of a larger array of related program options which includes a Computer Networking: Cybersecurity AS degree option plus three certificates (Computer Networking, Cybersecurity, and Cisco Certified Networking Associate - CCNA).

In total, the entire Computer Networking program (including parent degree and related option and certificates) had a combined FTE of 36.2 in Fall 2019 with a combined headcount of 64. This total exceeded the 3-year combined FTE of 33.6 that was projected at the time of initial program approval.

Likewise, during the 2018-2019 academic year, the entire Computer Networking program (including parent degree and related option and certificates) had a total revenue of \$208,108 and a total expense of \$121,634, resulting in a difference of \$86,474 net gain overall.

These gains are expected to remain steady in 2019-20 since the combined program FTE in Fall 2019 (36.2) remained nearly the same as Fall 2018 (36.9) with additional enrollment increases anticipated in future semesters (*see Table 5*) due to new marketing strategies, increasing local/regional employment prospects, and a new state program called the "Pledge to Advance Connecticut" (PACT) that was designed to attract more full-time students to the CT community colleges.

Table 5: Computer Networking (parent) program enrollment trends and projections.

Prior Enrollment Trends			Future Enrollment Projections		
<i>Computer Networking AS parent degree only</i>			<i>Computer Networking AS parent degree only</i>		
Fall 2016	Fall 2017	Fall 2018	Fall 2019	Fall 2020	Fall 2021
4.5 FTE	6.3 FTE	6.9 FTE	7.9 FTE	8.8 FTE	10.0 FTE
<i>Computer Networking parent degree and related option and certificates combined</i>			<i>Computer Networking parent degree and related option and certificates combined</i>		
Fall 2016	Fall 2017	Fall 2018	Fall 2019	Fall 2020	Fall 2021
17.9 FTE	29.4 FTE	36.9 FTE	36.2 FTE	40.8 FTE	46.8 FTE

Based on conservative enrollment increase projections over the next three years and anticipated revenue and expense projections, we anticipate that the combined projected net earnings for the Computer Networking program overall (including parent degree, related option, and certificates) will total at least \$343,593:

Table 6: Computer Networking (parent) program projected net gains.

	3-Year Net Gain Projections			
	Y1 (2019-20)	Y2 (2020-21)	Y3 (2021-22)	TOTAL
<i>Computer Networking AS parent degree only</i>	\$13,643	\$22,887	\$24,380	\$60,910
<i>Entire Computer Networking Program (parent degree, related option and certificates combined)</i>	\$77,864	\$117,414	\$148,315	\$343,593

CONNECTICUT BOARD OF REGENTS FOR HIGHER EDUCATION

Connecticut State Colleges & Universities System Office

APPLICATION FOR CONTINUED ACCREDITATION

Improvement Plan

If negative *Difference(s)* reported above for **Student Enrollment** and/or **Cost Effectiveness**, present plan(s) for corrective actions:

The institution recognizes that the Computer Networking (parent) AS degree is still a low completer, however the program is still relatively new and the combined number of completers for the entire Computer Networking program (including parent degree, related option, and certificates) exceeded the low completer threshold in the most recent academic year (2018-19). Moreover, current and projected enrollment numbers (*see table 5*) suggest that program completion numbers will increase steadily over the coming years. **Thus, we recommend approval for continued accreditation with the following improvement plan:**

Increase in Student Attainment of Industry Certifications

Graduates of our Computer Networking, Cybersecurity, and other Information Technology degree and certificate programs need to acquire related industry certifications to be competitive for entry-level job openings. This is based on feedback from employers, as well as experiences of graduating students. Over the past two academic years, faculty teaching all information technology courses at Capital have identified industry certifications that graduating students can prepare for during their course studies, and begun to update and align coursework to these certifications.

Historically, students in the Computer Networking program (including parent degree and related option and certificates) have only prepared for the Cisco CCENT and Cisco CCNA certifications. Beginning in Fall 2020, students will also be prepared to take the industry certifications in additional networking and system administration areas including Windows Server, Linux, Security Fundamentals and Cloud Computing. These certifications will greatly increase our graduates' competitiveness in the job market and employability.

To better support and streamline students' ability to take networking and cyber security related certificates, Capital is currently applying to become a certified testing center that will enable our campus to provide discounted certification tests to students, as well as providing instructor resources to Capital faculty. As part of our efforts to improve program marketing, Capital will highlight these certifications in our marketing materials and program web sites.

Reduced Certificate Completion Time and Alignment with Non-Credit

Capital faculty have updated the Computer Networking program curriculum (including parent degree and related option and certificates) to shorten time to completion for students pursuing certificates. The changes being made will allow all certificate programs to be completed within 12-months. Many potential and current students have communicated concerns with certificate programs that last longer than this time period. By shortening the time to completion for certificates, as well as highlighting the industry certifications students can acquire upon program completion, we are confident we will be able to attract more non-traditional students and individuals seeking re-training into our programs.

Additionally, Capital faculty are coordinating with our Division of Workforce Development and Continuing Education to provide ways to offer computer technology coursework in a dual credit and non-credit format. The dual-format courses will be advertised specifically to businesses in Downtown Hartford, to current employees interested in upskilling. The courses will also be advertised and shared with our local workforce development boards to serve and benefit adult learners and dislocated workers pursuing job re-training.

Continued Program Need:

Industry labor market projections indicate continued program need. (*See the "Program Need" data in the "Other Narrative Background" section on pages 4-5 for details.*)

Additional Program Alignment with Industry Needs:

Annual meetings with Capital's Computer Technology Advisory Council are vital to ensure our program curriculum is aligned with current industry-specific requirements. Members of this advisory council include information technology professionals and hiring managers throughout Greater Hartford, transfer institution representatives and current Capital students. Capital faculty rely on feedback from the

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Advisory Council for curriculum development, curriculum review, and curriculum alignment with industry needs. Feedback from the Advisory Council was instrumental in the development of new cloud computing curriculum as well as recent new computer programming curriculum in Python and .NET.

Projected Increases in Enrollees and Completers:

As was explained in the "Fiscal Impact" section (see page 8), enrollment in the Computer Networking AS (parent) degree program is expected to remain steady in the 2019-20 academic year since the combined Computer Networking FTE (including parent degree, related option, and certificates) in Fall 2019 (36.2) remained nearly the same as Fall 2018 (36.9) with additional enrollment increases anticipated in future semesters due to new marketing strategies, increasing local/regional employment prospects, and a new state program called the "Pledge to Advance Connecticut" (PACT) that was designed to attract more full-time students to the CT community colleges (see Table 5 for enrollment details). Furthermore, program completion is also expected to increase as the program continues to grow (see Table 7):

Table 7: Computer Networking (parent) program completer trends and projections.

Prior Completion Trends			Future Completion Projections		
Computer Networking AS parent degree only			Computer Networking AS parent degree only		
2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
0	0	0	6	7	8
Entire Computer Networking Program (parent degree, related option and certificates combined)			Entire Computer Networking Program (parent degree, related option and certificates combined)		
2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
2	9	9	21	28	36

Thus, based on conservative enrollment increase projections over the next three years and anticipated revenue and expense projections, we anticipate that the combined projected net earnings for the Computer Networking program overall (including parent degree, related option, and certificates) will total at least \$343,593 (see Table 6 for details).

Improved Instructional Facilities:

Since the program inception, Capital has made significant improvements and upgrades to the networking and cybersecurity lab environments to support student learning on-site and remotely. Capital faculty received dedicated training and professional development which enabled Capital to become an approved Cisco Academy. As a Cisco Academy, Capital has access to equipment and resources from Cisco that are utilized in all of the networking and cybersecurity courses. This curriculum is state-of-the-art and directly aligned with in-demand industry certifications.

Additionally, Capital has upgraded and enhanced the computer networking laboratory by designing and hosting our own private virtual cloud that allows students to design and deploy virtual networks and machines to build and practice related networking and cybersecurity skills. Students can access our virtual cloud remotely, which greatly facilitates student learning outside of class time and effectively supports distance learning.

Expanded Marketing and Program Outreach

Through new leadership at the college and a new Director of Marketing and Public Relations, funding and resources have been increased to improve program marketing across the College. Our Computer Networking and Cybersecurity Program Coordinator is working with the new Director of Marketing to update the program and certificate brochures and web sites to reflect the new curriculum changes and highlight the new industry-certifications aligned to the program.

The Computer Networking and Cybersecurity Program Coordinator will also continue to expand outreach to local high schools to promote

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the networking/cybersecurity program. The Coordinator is partnering with secondary schools through Capital's College Career Pathways program to articulate introductory networking courses with local high schools. The Program Coordinator also actively and consistently presents and teaches short min-sessions to participating secondary students who come to Capital for the day from area secondary schools.

Curricular Change

If institution/program is not satisfied with the degree to which the Learning Outcomes have been achieved, what course of action is planned for improvement of teaching and learning:

Capital Community College is satisfied with the degree to which the learning outcomes have been achieved in this program. Nonetheless, program faculty will continue to engage in continuous improvement efforts to enhance their instruction through professional development, Center for Teaching (CFT) workshops, industry certification training events, and other opportunities for learning best practices that many enhance program teaching and learning.

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SECTION FIVE: FUTURE PROGRAM RESOURCES AND COST ESTIMATES

(For the next three years to be specified, please complete the Resources and Cost Estimates form below, and provide a narrative below regarding the financial sustainability of the program)

Resources and Costs Estimates Form
(Whole Dollars Only)

PROJECTED Program Revenue	Year 1 (2019-20)		Year 2 (2020-21)		Year 3 (2021-22)	
	Full Time	Part Time	Full Time	Part Time	Full Time	Part Time
Tuition (do not include internal transfers)	\$23,904	\$11,952	\$28,588	\$16,336	\$29,302	\$23,012
Program-Specific Fees	\$2,160	\$864	\$2,520	\$1,152	\$2,520	\$1,584
Other Revenue (Annotate in narrative)	\$3,432	\$1,824	\$4,102	\$2,496	\$4,200	\$3,520
Total Program Revenue	\$29,496	\$14,640	\$35,210	\$19,984	\$36,022	\$28,116
	\$44,136		\$55,194		\$64,138	

PROJECTED Program Expenditures*	Year 1		Year 2		Year 3	
	Number	Amount	Number	Amount	Number	Amount
Administration (Chair or Coordinator) (Includes salary plus fringe)	0.20 FTE	\$19,544	0.20 FTE	\$20,776	0.20 FTE	\$22,092
Faculty (Full-time, total for program)	0	0	0	0	0	0
Faculty (Part-time, total for program)	2 PTL	\$10,524	2 PTL	\$11,106	3 PTL	\$17,241
Support Staff	0	0	0	0	0	0
Graduate Assistants	0	0	0	0	0	0
Library Resources Program	0	0	0	0	0	0
Equipment (List as needed)	0	0	0	0	0	0
Other (Marketing)	0	\$425	0	\$425	0	\$425
Estimated Indirect Costs (e.g. student services, operations, maintenance)	0	0	0	0	0	0
Total Annual Expenditures		\$30,493		\$32,307		\$39,758

*Note: Capital outlay costs, institutional spending for research and services, etc. can be excluded.

Please provide any necessary annotations below:

Based on conservative enrollment increase projections over the next three years and anticipated revenue and expense projections, the total projected net earnings over the next three years for the Computer Networking (parent) AS degree will total at least \$60,910.

The combined projected net earnings for the Computer Networking program overall (including parent degree, related option, and certificates) will total at least \$343,593.

Additional expenses relating to laboratory materials and equipment are funded by Perkins grant funding.

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RESOLUTION

concerning

Accreditation of a Licensed Program

May 14, 2020

RESOLVED: That the Board of Regents for Higher Education approve the accreditation of a licensed program – Computer Networking: Cybersecurity (CIP Code: 11.1003 / OHE #018105) – leading to an Associate of Science at Capital Community College.

A True Copy:

Erin A. Fitzgerald, Secretary of the
CT Board of Regents for Higher Education

ITEM

Continued accreditation of a licensed program in Computer Networking: Cybersecurity leading to an Associate of Science at Capital Community College.

BACKGROUND

In Spring 2019, a request for continued accreditation of this program was submitted to the BOR in tandem with other programs across the CSCU system due to expired licensures. After consideration of that joint proposal, the ASA Committee requested that a full proposal for continued accreditation of this program be submitted during Spring 2020. The following data reflects the current status of the program.

PERFORMANCE INDICATORSStudent Enrollment

Projected full-time equivalent (FTE) enrollment for the Computer Networking: Cybersecurity AS Degree Option's Year 3: 14.4

Actual full-time equivalent (FTE) enrollment for this CN: Cybersecurity AS Degree Option's most recent semester: 24.1

Difference: up 9.7

Cost Effectiveness

Total Revenue generated by the CN: Cybersecurity AS Degree Option during its most recent year: \$140,567

Total Expenditures apportioned to the CN: Cybersecurity AS Degree Option in its most recent year: \$82,312

Difference (Net Gains): \$58,255

PROGRAM CHANGES

Capital has improved the resources of the CN: Cybersecurity AS Degree Option curriculum since program inception through becoming an approved Cisco Networking Academy. Cisco is an industry leader in computer networking technology. Through becoming a Cisco Academy, Capital has access to equipment and resources from Cisco that are utilized in all of the networking / cybersecurity courses.

Additionally, Capital has upgraded and enhanced the computer networking laboratory by designing and hosting our own private virtual cloud that allows students to design and deploy virtual networks and machines to build and practice related networking/ cybersecurity skills.

There have also been several curricular changes to the CN: Cybersecurity AS Degree since program inception.

- The original degree proposal consisted of MAT 137 (Intermediate Algebra) as the sole mathematics requirement. Based on feedback from transfer institutions, this was replaced with MAT 137 (Intermediate Algebra) OR MAT 184 (Trigonometry with Embedded Algebra) OR MAT 167 (Principles of Statistics)

- Based on feedback from transfer institutions, ECN 102 (Principles of Microeconomics) was added as an optional course for students interested in pursuing transfer
- The original degree proposal consisted of COM* 173 Public Speaking as an option. This course was dropped since the program advisory board recommended BMG 202 (Business Communications) as a more appropriate option and courses were repositioned within the program to provide room for a second technical elective (CSA*, CSC*, CST* elective)

RECOMMENDATION

Following its review and deliberative process, it is the recommendation of the Academic Council that the Board of Regents approve the accreditation of this program. The System's Provost and Senior Vice President for Academic and Student Affairs concurs with this recommendation.

05/01/2020– BOR -Academic and Student Affairs Committee

05/14/2020 – Board of Regents

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APPLICATION FOR CONTINUED ACCREDITATION

SECTION 1: GENERAL INFORMATION

Institution: Capital Community College	Date of Submission to CSCU Office of the Provost: Spring 2020
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Most Recent NECHE Institutional Accreditation Action and Date: **Continued Accreditation 2016-17 (10-year)**

Program Characteristics

Name of Program: **Computer Networking: Cybersecurity Option**

Degree: Title of Award (e.g. Master of Arts) **Associate in Science**

Degree's Associated Certificate(s) (if any)

Stand-Alone Certificate: (specify type and level)

Semester Date Program was Initiated: **Fall 2015**

Year 3 – 7th Semester Date: **Fall 2018**

Date of First Graduation: **Spring 2016**

Modality of Program: On ground Online **X** Combined

If "Combined", % of fully online courses? **Up to 100%**

Locality of Program: **X** On Campus Off Campus Both

Program Credit Distribution

Credits in General Education: **24-26**

Credits in Program Core: **27**

Credits of Electives in the Field: **0**

Credits of Other Electives: **9-10**

Cr Special Requirements (include internship, etc.): **0**

Total # Cr in the Program (sum of all #Cr above): **60-63**

From "Total # Cr in the Program" above, enter #Cr that are part of/belong in an already approved program(s) at the institution: **60-63**

Date of BOR Approval: **06/25/15** CIP: **111003** OHE#: **018105**

Institutional Contact for this Proposal:
Dr. Miah LaPierre Dreger, EdD

Title: **Dean of Academic and Student Affairs**

Tel.: **860-906-5011**
e-mail: **mlapierre-dreger@capitalcc.edu**

Note: In Spring 2019, a request for continued accreditation of this program was submitted to the BOR in tandem with other programs across the CSCU system due to expired licensures. After consideration of that joint proposal, the ASA Committee requested that a full proposal for continued accreditation of this program be submitted during Spring 2020. The following data reflects the current status of the program.

SECTION 2: PERFORMANCE INDICATORS

Student Enrollment

Projected full-time equivalent (FTE) enrollment for the Computer Networking: Cybersecurity AS Degree Option's Year 3: **14.4**
 (Note: 2017-18 was Year 3)

Actual full-time equivalent (FTE) enrollment for this CN: Cybersecurity AS Degree Option's most recent semester: **24.1**
 (Note: Fall 2019 was the AS degree option's 9th semester)

Difference: **up 9.7**

Note: Even though the Computer Networking: Cybersecurity AS degree option FTE was 24.1 in Fall 2019, the combined headcount was 43 (13 FT and 30 PT students). Also, this program is an option under a larger Computer Networking parent program. In total, the entire Computer Networking program (including parent degree and related option and certificates) had a combined FTE of 36.2 (combined headcount of 64) in Fall 2019. This total exceeded the 3-year combined FTE of 33.6 that was projected at the time of initial program approval.

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Cost Effectiveness

Total Revenue generated by the CN: Cybersecurity AS Degree Option during its most recent year: **\$140,567**

(Note: 2018-19 was Year 4)

Total Expenditures apportioned to the CN: Cybersecurity AS Degree Option in its most recent year: **\$82,312**

(Note: 2018-19 was Year 4)

Difference (Net Gains): **\$58,255**

Note: This program is an option under a larger Computer Networking parent program. In total, the entire Computer Networking program (including parent degree and related option and certificates) had a total revenue of \$208,108 and a total expense of \$121,634 during the 2018-2019 academic year, resulting in a difference of \$86,474 net gain overall. These gains are expected to remain steady in 2019-20 since the combined program FTE in Fall 2019 (36.2) remained nearly the same as Fall 2018 (36.9) with additional enrollment increases anticipated in future semesters due to new marketing strategies, increasing local/regional employment prospects, and a new state program called the "Pledge to Advance Connecticut" (PACT) that was designed to attract more full-time students to the CT community colleges.

Learning Outcomes

Summarize assessment of student learning outcomes at end of program's Year 3:

(Note: Information below pertains to the most current Year 5, 2019-20)

Capstone activities in identified course work are designed to assess student learning of the learning outcomes listed below. In addition to the acquisition of general education competencies, graduates that complete the CN: Cyber security AS Degree Option will be able to:

1. Demonstrate an understanding of the fundamentals of information security technology and information systems and their importance and impact in business and society. (Assessments: CST 171, CST 201, CST 231, CST 246, CST 247, CST 263, CST 264, CST 267, CST 281)
2. Identify and describe basic secured communication technologies, devices, and components used to protect the confidentiality, integrity, and availability of data in Local and Wide Area Networks. (Assessments: CST 171, CST 201, CST 231, CST 264, CST 281)
3. Demonstrate the use of appropriate tools to assist with administering and troubleshooting computers, media, and detect malicious network traffic. (Assessments: CST 171, CST 231, CST 246, CST 247, CST 263, CST 264, CST 267, CST 281)
4. Design, build, and maintain scalable and secured networks using routers, switches, firewalls, network intrusion detection systems, proxies, secured transmission media, patch management, and vulnerability assessment tools. (Assessments: CST 231, CST 246, CST 247, CST 263, CST 264, CST 267, CST 281)
5. Identify and describe information assurance fundamentals and techniques used to protect the confidentiality, integrity, and availability of data. (Assessments: CST 171, CST 231, CST 246, CST 247, CST 263, CST 264, CST 267)
6. Establish and enforce corporate/organizational security policies and procedures. (Assessments: CST 171, CST 246, CST 247, CST 263, CST 264, CST 267, CST 281)
7. Identify appropriate security controls and mitigation strategies. (Assessments: CST 171, CST 231, CST 246, CST 247, CST 263, CST 267, CST 281)

There have been 14 graduates of the Computer Networking: Cybersecurity AS degree option so far. In addition, there have been 6 graduates of the Cybersecurity Certificate and 2 graduates of the Cisco Certified Networking Associate (CCNA) Certificate. In total, 22 students have graduated from the entire Computer Networking program (including parent degree and related option and certificates). Many of the certificate graduates will likely pursue the parent degree or related degree option as well.

SECTION 3: UPDATE OF PROGRAM CHANGES (if any)

Curricular and Other Program Changes (Describe any changes since program was initiated, in curriculum, admission and/or completion requirements, program administration, faculty, and resources, or any other significant changes). If needed, provide details on curricular changes in the table below).

Capital has improved the resources of the CN: Cybersecurity AS Degree Option curriculum since program inception through becoming an approved Cisco Networking Academy. Cisco is an industry leader in computer networking technology. Through becoming a Cisco

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Academy, Capital has access to equipment and resources from Cisco that are utilized in all of the networking/cybersecurity courses.

Additionally, Capital has upgraded and enhanced the computer networking laboratory by designing and hosting our own private virtual cloud that allows students to design and deploy virtual networks and machines to build and practice related networking/ cybersecurity skills.

There have also been several curricular changes to the CN: Cybersecurity AS Degree since program inception.

- The original degree proposal consisted of MAT 137 (Intermediate Algebra) as the sole mathematics requirement. Based on feedback from transfer institutions, this was replaced with MAT 137 (Intermediate Algebra) OR MAT 184 (Trigonometry with Embedded Algebra) OR MAT 167 (Principles of Statistics)
- Based on feedback from transfer institutions, ECN 102 (Principles of Microeconomics) was added as an optional course for students interested in pursuing transfer
- The original degree proposal consisted of COM* 173 Public Speaking as an option. This course was dropped since the program advisory board recommended BMG 202 (Business Communications) as a more appropriate option and courses were re-positioned within the program to provide room for a second technical elective (CSA*, CSC*, CST* elective)

Note: These changes are also detailed in the "Details of Curriculum Changes for a Licensed Program" section on page 5 below.

Other Narrative Background to be Considered Since Approval (As needed, discuss other changes such as program need and demand, transfer agreements developed, etc.)

Program Need Based on Regional and National Data, Market Data, and Industry Trends:

Within the CT Department of Labor, the Information Security Analyst occupation is designated as one of the fastest growing occupations in the State of CT with projected 23% increase in employment between 2016 and 2026.¹

Nationally, the most relevant occupations to the Computer Networking: Cybersecurity degree option are Computer Network Architects, Network and Computer Systems Administrators, and Information Security Analysts. According to the *Bureau of Labor Statistics, U.S. Department of Labor, Occupational Outlook Handbook*, employment for each of these occupations is projected to increase, with information security analysts projected to have the largest increase (32% - much faster than average) over the next 10 years:

Table 3: 10-year National Occupational Outlook, March 2020:

Occupation	10-Year Anticipated Growth
Information Security Analysts ²	32%
Computer Network Architects ³	5%
Network and Computer System Administrators ⁴	5%

Similarly, according to the *CT Department of Labor, 2016- 2026 State of Connecticut Occupational Projections*, the occupations Computer Network Architects, Network and Computer Systems Administrators, and Computer Network Support Specialists are projected to increase over the next ten years.

¹ CT Department of Labor, *2016-2026 State of Connecticut Occupational Projections*, Information Security Analysts Occupation on the Internet at <https://www1.ctdol.state.ct.us/jcc/profile.asp?strMethod=keyword&sstrOccupationCode=151122> (Retrieved March 2020)

² Bureau of Labor Statistics, U.S. Department of Labor, *Occupational Outlook Handbook*, Information Security Analysts on the Internet at <https://www.bls.gov/ooh/computer-and-information-technology/information-security-analysts.htm> (visited February 21, 2020).

³ Bureau of Labor Statistics, U.S. Department of Labor, *Occupational Outlook Handbook*, Computer Network Architects, on the Internet at <https://www.bls.gov/ooh/computer-and-information-technology/computer-network-architects.htm> (visited February 21, 2020).

⁴ Bureau of Labor Statistics, U.S. Department of Labor, *Occupational Outlook Handbook*, Network and Computer Systems Administrators, on the Internet at <https://www.bls.gov/ooh/computer-and-information-technology/network-and-computer-systems-administrators.htm> (visited February 21, 2020).

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Table 4: 10-year CT Occupational Outlook (2016-2026):

Occupation	10-Year Anticipated Growth
Computer Network Architects (15-1143)	5.5%
Network and Computer Systems Administrators (15-1142)	4.3%
Computer Network Support Specialists (15-1152)	7.7%

Data from JobsEQ, Occupation Snapshot in Connecticut, 2019q3, differs from the CT DOL projections and indicates negative growth in the Computer Network Architect, Network and Computer Systems Administrators, and Computer Network Support Specialists occupational areas. However, JobsEQ estimates the CT award output for these occupational areas is below the national norm, indicating CT may be an importer of jobs for these occupations. Specifically, in 2017-2018, JobsEQ estimated that CT degree-granting institutions awarded 86 awards in network and computer systems administration, compared to 120 nationally. Similarly, CT degree-granting institutions awarded 40 awards in computer network support specialist, compared to 54 nationally, and 45 awards in computer network architects compared to 64 nationally.

Additionally, in mid-March 2020, on *CareerOneStop.org* there were 1,561 job postings related to information security, 296 job postings related to Network and Computer Systems Administrators, and 49 job postings relating to Computer Network Support Specialists.

Transferability and Uniqueness to the Region:

Capital Community College is one of four CT Community Colleges that offers an Associate of Science in Cybersecurity. The similar A.S. programs offered statewide include:

- Gateway Community College, Data Security Specialist A.S.
- Naugatuck Valley Community College, Cybersecurity A.S.
- Quinebaug Valley Community College, Cybersecurity A.S.

The CN: Cybersecurity AS Degree Option at Capital is 100% transferrable to the Bachelor of Science in Networking Information Technology at Central Connecticut State University.

Program Promotes Equity and Diversity in the Information Technology Industry:

African Americans, Latinos and females are each underrepresented groups within the Information Technology industry, and broader Science and Engineering workforce⁵. In line with the College's Mission statement, the Computer Networking program (including parent degree and related option and certificates) seeks to engage a diverse student population and prepares our predominately African American, Latino, and female student population for entry-level employment in this industry. Moreover, while the information technology industry has traditionally been dominated by males, 26% of the students enrolled in the CN: Cybersecurity AS Option at Capital during Fall 2019 were female.

In our marketing, outreach, and partnerships with secondary schools throughout Greater Hartford, Capital speaks to communities about the importance of broadening participation in computing and IT fields, and the importance of diversity in the IT workforce.

Compliance with Special Requirements Given at the time of Program Approval (As applicable, please summarize how the program responded to requirements issued by the BOR, at the time it was licensed. Include any attachments as necessary.)

There were no special requirements issued by the BOR at the time of licensure.

⁵ <https://nces.nsf.gov/pubs/nsb20198/demographic-trends-of-the-s-e-workforce>

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Details of Curriculum Changes for a Licensed Program (to be use as needed)						
COMPUTER NETWORKING: CYBERSECURITY Degree Option						
Course Number and Name	L.O. #	Pre-Requisite	Cr Hrs	Course Number and Name	L.O. #	Cr Hrs
Program Core Courses				Other Related/Special Requirements		
CST 171 LAN System Management *	1,2,3,5,6,7		3	COM 173 Public Speaking OR BBG 210 Business Communications CSA, CSC, or CST Elective*		3
CST 201 Introduction to MIS*	1,2		3	BBG 202 Principles of Management* OR BMK 201 Principles of Marketing* OR BMG 202 Business Communication*		3
CST 231 Data Communications and Networking I*	1,2,3,4,5,7		3	ACC 115 Financial Accounting* OR BBG 294 Business Internship		3/4
CST 246 Networking Security*	1,2,3,4,5,6,7	CST 231	3			
CST 247 Information Assurance and Risk Management*	1,3,4,5,6,7	CST 231	3			
CST 263 Computer Forensics and Network Intrusions*	1,3,4,5,6,7	CST 246	3			
CST 264 Unix/Linux System Administration*	1,2,3,4,5,6		3			
CST 267 Ethical Hacking and Network Defense*	1,3,4,5,6,7	CST 246	3			
CST 281 Data Communications and Networking II*	1,2,3,4,6,7	CST 231	3			
Core Course Prerequisites			27	Elective Courses in the Field		9/10
General Education Courses*						
ENG 101 Composition			3			
MAT 137 Intermediate Algebra OR Higher MAT 184 Trigonometry with Embedded Algebra OR MAT 167 Principles of Statistics			3/4			
ENG 102 Composition and Literature			3			
ECN 101 Principles of Macroeconomics OR ECN 102 Principles of Microeconomics			3			
____ Social Science Elective			3			
____ Science Elective			3/4			
____ Fine Arts Elective			3			
____ Humanities Elective			3			
			24/26			
Total Other Credits Required to Issue Credential (e.g. GenEd/Liberal Arts Core/Liberal Ed Program)						60-63
* Note: Courses designated with an * can be taught either on ground or online.						

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Other Narrative Background Since Licensure Approval (As needed, consider other changes such as program need and demand, transfer agreements developed, etc.)

No additional information in this area. (See previous "Other Narrative Background" section on pages 3-4 for details.)

Learning Outcomes - L.O. (Discuss any significant changes in the Learning Outcomes and relevant curricular changes; if any)

There have been no changes to the program learning outcomes since the time of licensure:

1. Demonstrate an understanding of the fundamentals of information security technology and information systems and their importance and impact in business and society.
2. Identify and describe basic secured communication technologies, devices, and components used to protect the confidentiality, integrity, and availability of data in Local and Wide Area Networks.
3. Demonstrate the use of appropriate tools to assist with administering and troubleshooting computers, media, and detect malicious network traffic.
4. Design, build, and maintain scalable and secured networks using routers, switches, firewalls, network intrusion detection systems, proxies, secured transmission media, patch management, and vulnerability assessment tools.
5. Identify and describe information assurance fundamentals and techniques used to protect the confidentiality, integrity, and availability of data.
6. Establish and enforce corporate/organizational security policies and procedures.
7. Identify appropriate security controls and mitigation strategies.

SECTION 4: EXPLANATORY & CORRECTIVE ACTION PLAN

Fiscal Impact – succinctly disclose the financial impact upon institution of negative *Difference* within Cost Effectiveness

The Computer Networking: Cybersecurity AS degree option FTE was 24.1 in Fall 2019 (the program's 9th semester) with a combined headcount of 43 (13 FT and 30 PT students). The program has also seen positive net gains over the past three subsequent years (2016-2019) totaling \$88,448.

This program is an option under a larger Computer Networking parent program which also includes three related certificates (Computer Networking, Cybersecurity, and Cisco Certified Networking Associate - CCNA).

In total, the entire Computer Networking program (including parent degree and related option and certificates) had a combined FTE of 36.2 in Fall 2019 with a combined headcount of 64. This total exceeded the 3-year combined FTE of 33.6 that was projected at the time of initial program approval.

Likewise, during the 2018-2019 academic year, the entire Computer Networking program (including parent degree and related option and certificates) had a total revenue of \$208,108 and a total expense of \$121,634, resulting in a difference of \$86,474 net gain overall.

These gains are expected to remain steady in 2019-20 since the combined program FTE in Fall 2019 (36.2) remained nearly the same as Fall 2018 (36.9) with additional enrollment increases anticipated in future semesters (see Table 5) due to new marketing strategies, increasing local/regional employment prospects, and a new state program called the "Pledge to Advance Connecticut" (PACT) that was designed to attract more full-time students to the CT community colleges.

Table 5: Cybersecurity AS degree option enrollment trends and projections.

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APPLICATION FOR CONTINUED ACCREDITATION

Prior Enrollment Trends			Future Enrollment Projections		
Cybersecurity AS Degree Option only			Cybersecurity AS Degree Option only		
Fall 2016	Fall 2017	Fall 2018	Fall 2019	Fall 2020	Fall 2021
11.6 FTE	20.1 FTE	25.0 FTE	24.1 FTE	25.6 FTE	28.8 FTE
Computer Networking parent degree and related option and certificates combined			Computer Networking parent degree and related option and certificates combined		
Fall 2016	Fall 2017	Fall 2018	Fall 2019	Fall 2020	Fall 2021
17.9 FTE	29.4 FTE	36.9 FTE	36.2 FTE	40.8 FTE	46.8 FTE

Based on conservative enrollment increase projections over the next three years and anticipated revenue and expense projections, we anticipate that the combined projected net earnings for the Computer Networking program overall (including parent degree, related option, and certificates) will total at least \$343,593:

Table 6: Cybersecurity AS degree option projected net gains.

	3-Year Net Gain Projections			
	Y1 (2019-20)	Y2 (2020-21)	Y3 (2021-22)	TOTAL
Cybersecurity AS Degree Option only	\$47,206	\$65,004	\$83,884	\$196,094
Entire Computer Networking Program (parent degree, related option and certificates combined)	\$77,864	\$117,414	\$148,315	\$343,593

Improvement Plan

If negative *Difference(s)* reported above for **Student Enrollment** and/or **Cost Effectiveness**, present plan(s) for corrective actions:

The institution recognizes that the Computer Networking: Cybersecurity AS degree option is still a low completer, however the program is still relatively new and the combined number of completers for the entire Computer Networking program (including parent degree, related option, and certificates) exceeded the low completer threshold in the most recent academic year (2018-19). Moreover, current and projected enrollment numbers (see table 5) suggest that program completion numbers will increase steadily over the coming years. **Thus, we recommend approval for continued accreditation with the following improvement plan:**

Increase in Student Attainment of Industry Certifications

Graduates of our Computer Networking, Cybersecurity, and other Information Technology degree and certificate programs need to acquire related industry certifications to be competitive for entry-level job openings. This is based on feedback from employers, as well as experiences of graduating students. Over the past two academic years, faculty teaching all information technology courses at Capital have identified industry certifications that graduating students can prepare for during their course studies, and begun to update and align coursework to these certifications.

Historically, students in the Computer Networking program (including parent degree and related option and certificates) have only prepared for the Cisco CCENT and Cisco CCNA certifications. Beginning in Fall 2020, students will also be prepared to take the industry certifications in additional networking and system administration areas including Windows Server, Linux, Security Fundamentals and Cloud Computing. These certifications will greatly increase our graduates' competitiveness in the job market and employability.

To better support and streamline students' ability to take networking and cybersecurity related certificates, Capital is currently applying to become a certified testing center that will enable our campus to provide discounted certification tests to students, as well as providing instructor resources to Capital faculty. As part of our efforts to improve program marketing, Capital will highlight these certifications in our marketing materials and program web sites.

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Reduced Certificate Completion Time and Alignment with Non-Credit

Capital faculty have updated the Computer Networking program curriculum (including parent degree and related option and certificates) to shorten time to completion for students pursuing certificates. The changes being made will allow all certificate programs to be completed within 12-months. Many potential and current students have communicated concerns with certificate programs that last longer than this time period. By shortening the time to completion for certificates, as well as highlighting the industry certifications students can acquire upon program completion, we are confident we will be able to attract more non-traditional students and individuals seeking re-training into our programs.

Additionally, Capital faculty are coordinating with our Division of Workforce Development and Continuing Education to provide ways to offer computer technology coursework in a dual credit and non-credit format. The dual-format courses will be advertised specifically to businesses in Downtown Hartford, to current employees interested in upskilling. The courses will also be advertised and shared with our local workforce development boards to serve and benefit adult learners and dislocated workers pursuing job re-training.

Continued Program Need:

Industry labor market projections indicate continued program need. (See the "Program Need" data in the "Other Narrative Background" section on pages 3-4 for details.)

Additional Program Alignment with Industry Needs:

Annual meetings with Capital's Computer Technology Advisory Council are vital to ensure our program curriculum is aligned with current industry-specific requirements. Members of this advisory council include information technology professionals and hiring managers throughout Greater Hartford, transfer institution representatives and current Capital students. Capital faculty rely on feedback from the Advisory Council for curriculum development, curriculum review, and curriculum alignment with industry needs. Feedback from the Advisory Council was instrumental in the development of new cloud computing curriculum as well as recent new computer programming curriculum in Python and .NET.

Projected Increases in Enrollees and Completers:

As was explained in the "Fiscal Impact" section (see pages 6-7), enrollment in the Cybersecurity AS degree option program is expected to remain steady in the 2019-20 academic year since the combined Computer Networking FTE (including parent degree, related option, and certificates) in Fall 2019 (36.2) remained nearly the same as Fall 2018 (36.9) with additional enrollment increases anticipated in future semesters due to new marketing strategies, increasing local/regional employment prospects, and a new state program called the "Pledge to Advance Connecticut" (PACT) that was designed to attract more full-time students to the CT community colleges (see Table 5 for enrollment details). Furthermore, program completion is also expected to increase as the program continues to grow (see Table 7):

Table 7: Cybersecurity AS degree option completer trends and projections.

Prior Completion Trends			Future Completion Projections		
Cybersecurity AS degree option only			Cybersecurity AS degree option only		
2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
0	5	8	10	12	15
Entire Computer Networking Program (parent degree, related option and certificates combined)			Entire Computer Networking Program (parent degree, related option and certificates combined)		
2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
2	9	9	21	28	36

Thus, based on conservative enrollment increase projections over the next three years and anticipated revenue and expense projections, we anticipate that the combined projected net earnings for the Computer Networking program overall (including parent degree, related

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option, and certificates) will total at least \$343,593 (see Table 6 for details).

Improved Instructional Facilities:

Since the program inception, Capital has made significant improvements and upgrades to the networking and cybersecurity lab environments to support student learning on-site and remotely. Capital faculty received dedicated training and professional development which enabled Capital to become an approved Cisco Academy. As a Cisco Academy, Capital has access to equipment and resources from Cisco that are utilized in all of the networking and cybersecurity courses. This curriculum is state-of-the-art and directly aligned with in-demand industry certifications.

Additionally, Capital has upgraded and enhanced the computer networking laboratory by designing and hosting our own private virtual cloud that allows students to design and deploy virtual networks and machines to build and practice related networking and cybersecurity skills. Students can access our virtual cloud remotely, which greatly facilitates student learning outside of class time and effectively supports distance learning.

Expanded Marketing and Program Outreach

Through new leadership at the college and a new Director of Marketing and Public Relations, funding and resources have been increased to improve program marketing across the College. Our Computer Networking and Cybersecurity Program Coordinator is working with the new Director of Marketing to update the program and certificate brochures and web sites to reflect the new curriculum changes and highlight the new industry-certifications aligned to the program.

The Computer Networking and Cybersecurity Program Coordinator will also continue to expand outreach to local high schools to promote the networking/cybersecurity program. The Coordinator is partnering with secondary schools through Capital's College Career Pathways program to articulate introductory networking courses with local high schools. The Program Coordinator also actively and consistently presents and teaches short min-sessions to participating secondary students who come to Capital for the day from area secondary schools.

Curricular Change

If institution/program is not satisfied with the degree to which the Learning Outcomes have been achieved, what course of action is planned for improvement of teaching and learning:

Capital Community College is satisfied with the degree to which the learning outcomes have been achieved in this program. Nonetheless, program faculty will continue to engage in continuous improvement efforts to enhance their instruction through professional development, Center for Teaching (CFT) workshops, industry certification training events, and other opportunities for learning best practices that many enhance program teaching and learning.

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SECTION FIVE: FUTURE PROGRAM RESOURCES AND COST ESTIMATES

(For the next three years to be specified, please complete the Resources and Cost Estimates form below, and provide a narrative below regarding the financial sustainability of the program)

Resources and Costs Estimates Form
(Whole Dollars Only)

PROJECTED Program Revenue	Year 1 (2019-20)		Year 2 (2020-21)		Year 3 (2021-22)	
	Full Time	Part Time	Full Time	Part Time	Full Time	Part Time
Tuition (do not include internal transfers)	\$51,792	\$59,760	\$61,260	\$69,428	\$75,348	\$75,312
Program-Specific Fees	\$4,680	\$4,320	\$5,400	\$4,896	\$6,480	\$5,184
Other Revenue (Annotate in narrative)	\$7,436	\$9,120	\$8,790	\$10,608	\$10,800	\$11,520
Total Program Revenue	\$63,908	\$73,200	\$75,450	\$84,932	\$92,628	\$92,016
	\$137,108		\$160,382		\$184,644	

PROJECTED Program Expenditures*	Year 1		Year 2		Year 3	
	Number	Amount	Number	Amount	Number	Amount
Administration (Chair or Coordinator) (Includes salary plus fringe)	0.70 FTE	\$68,404	0.70 FTE	\$72,716	0.70 FTE	\$77,322
Faculty (Full-time, total for program)	0	0	0	0	0	0
Faculty (Part-time, total for program)	4 PTL	\$21,048	4 PTL	\$22,212	4 PTL	\$22,988
Support Staff	0	0	0	0	0	0
Graduate Assistants	0	0	0	0	0	0
Library Resources Program	0	0	0	0	0	0
Equipment (List as needed)	0	0	0	0	0	0
Other (Marketing)	0	\$450	0	\$450	0	\$450
Estimated Indirect Costs (e.g. student services, operations, maintenance)	0	0	0	0	0	0
Total Annual Expenditures		\$89,902		\$95,378		\$100,760

*Note: Capital outlay costs, institutional spending for research and services, etc. can be excluded.

Please provide any necessary annotations below:

Based on conservative enrollment increase projections over the next three years and anticipated revenue and expense projections, the total projected net earnings over the next three years for the Cybersecurity AS degree option will total at least \$196,094.

The combined projected net earnings for the Computer Networking program overall (including parent degree, related option, and certificates) will total at least \$343,593.

Additional expenses relating to laboratory materials and equipment are funded by Perkins grant funding.

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RESOLUTION

concerning

Accreditation of a Licensed Program

May 14, 2020

RESOLVED: That the Board of Regents for Higher Education approve the accreditation of a licensed program – Computer Networking (CIP Code: 11.1001 / OHE #018104) – leading to a C2 Certificate at Capital Community College.

A True Copy:

Erin A. Fitzgerald, Secretary of the
CT Board of Regents for Higher Education

ITEM

Continued accreditation of a licensed program in Computer Networking leading to a C2 Certificate at Capital Community College.

BACKGROUND

In Spring 2019, a request for continued accreditation of this program was submitted to the BOR in tandem with other programs across the CSCU system due to expired licensures. After consideration of that joint proposal, the ASA Committee requested that a full proposal for continued accreditation of this program be submitted during Spring 2020. The following data reflects the current status of the program.

PERFORMANCE INDICATORSStudent Enrollment

Projected full-time equivalent (FTE) enrollment for the Computer Networking Certificate's Year 3: 0.9

Actual full-time equivalent (FTE) enrollment for Computer Networking Certificate's most recent semester: 0.8

Difference: -0.1

Cost Effectiveness

Total Revenue generated by the Computer Networking Certificate during its most recent year: \$3,426

Total Expenditures apportioned to the Computer Networking Certificate in its most recent year: \$917

Difference (Net Gains): \$2,509

PROGRAM CHANGES

Capital has improved the resources of the Computer Networking Certificate curriculum since program inception through becoming an approved Cisco Networking Academy. Cisco is an industry leader in computer networking technology. Through becoming a Cisco Academy, Capital has access to equipment and resources from Cisco that are utilized in all of the networking courses.

Additionally, Capital has upgraded and enhanced the computer networking laboratory by designing and hosting our own private virtual cloud that allows students to design and deploy virtual networks and machines to build and practice related networking skills.

There are also several curricular changes underway to the Computer Networking Certificate since program inception.

- Effective Fall 2020, Capital is removing the 4th course in the Cisco Networking curriculum – CST 283 Data Communication & Networking IV. This change is due in part to a change to the Cisco Academy curriculum, which Capital is an approved institution.

- Based on feedback from the program Advisory Council, employers and student interest, Capital is replacing CST 283 with a new course in virtualization and cloud computing (CST xxx – Virtualization and Cloud Computing I) that provides students foundational skills in managing and deploying virtualized data platforms and virtual machines. The new course prepares students for the entry-level VMWare Certified Associate industry credential. The Computer Networking A.S. (parent) Degree learning outcomes have been updated to incorporate knowledge and skills in this competency.

RECOMMENDATION

Following its review and deliberative process, it is the recommendation of the Academic Council that the Board of Regents approve the accreditation of this program. The System's Provost and Senior Vice President for Academic and Student Affairs concurs with this recommendation.

05/01/2020– BOR -Academic and Student Affairs Committee

05/14/2020 – Board of Regents

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SECTION 1: GENERAL INFORMATION

Institution: Capital Community College	Date of Submission to CSCU Office of the Provost: Spring 2020	
Most Recent NECHE Institutional Accreditation Action and Date: Continued Accreditation 2016-17 (10-year)		
Program Characteristics Name of Program: Computer Networking Degree: Title of Award (e.g. Master of Arts) Degree's Associated Certificate(s) (if any) Certificate Stand-Alone Certificate: (specify type and level) Semester Date Program was Initiated: Fall 2015 Year 3 – 7 th Semester Date: Fall 2018 Date of First Graduation: n/a (Spring 20 anticipated) Modality of Program: On ground Online X Combined If "Combined", % of fully online courses? Up to 100% Locality of Program: X On Campus Off Campus Both	Program Credit Distribution # Credits in General Education: 0 # Credits in Program Core: 21 # Credits of Electives in the Field: 0 # Credits of Other Electives: 0 # Cr Special Requirements (include internship, etc.): 0 <u>Total # Cr in the Program</u> (sum of all #Cr above): 21 From "Total # Cr in the Program" above, enter #Cr that are part of/belong in an already approved program(s) at the institution: 21	
Date of BOR Approval: 06/25/15 CIP: 111001 OHE#: 018104		
Institutional Contact for this Proposal: Dr. Miah LaPierre Dreger, EdD	Title: Dean of Academic and Student Affairs	Tel.: 860-906-5011 e-mail: mlapierre-dreger@capitalcc.edu
<p>Note: In Spring 2019, a request for continued accreditation of this program was submitted to the BOR in tandem with other programs across the CSCU system due to expired licensures. After consideration of that joint proposal, the ASA Committee requested that a full proposal for continued accreditation of this program be submitted during Spring 2020. The following data reflects the current status of the program.</p>		

SECTION 2: PERFORMANCE INDICATORS

Student Enrollment	
Projected full-time equivalent (FTE) enrollment for the Computer Networking Certificate's Year 3: (Note: 2017-18 was Year 3)	0.9
Actual full-time equivalent (FTE) enrollment for Computer Networking Certificate's most recent semester: (Note: Fall 2019 was the certificate's 9 th semester)	0.8
	Difference: -0.1
<p>Note: Even though the Computer Networking certificate FTE in Fall 2019 in was 0.8 (headcount: 1 FT student), this certificate is a stacked and latticed feeder pipeline for the Computer Networking A.S. (parent) degree and most students are included in the FTE for the parent program or related option instead. In total, the entire Computer Networking program (including parent degree and related option and certificates) had a combined FTE of 36.2 (combined headcount of 64) in Fall 2019. This total exceeded the 3-year combined FTE of 33.6 that was projected at the time of initial program approval.</p>	

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Cost Effectiveness

Total Revenue generated by the Computer Networking Certificate during its most recent year: **\$3,426**
(Note: 2018-19 was Year 4)

Total Expenditures apportioned to the Computer Networking Certificate in its most recent year: **\$917**
(Note: 2018-19 was Year 4)

Difference (Net Gains): \$2,509

Note: This certificate is a stacked and latticed feeder pipeline for the Computer Networking A.S. (parent) degree and most students are included in the FTE for the parent program or related option instead. In total, the entire Computer Networking program (including parent degree and related option and certificates) had a total revenue of \$208,108 and a total expense of \$121,634 during the 2018-2019 academic year, resulting in a difference of \$86,474 net gain overall. These gains are expected to remain steady in 2019-20 since the combined program FTE in Fall 2019 (36.2) remained nearly the same as Fall 2018 (36.9) with additional enrollment increases anticipated in future semesters due to new marketing strategies, increasing local/regional employment prospects, and a new state program called the "Pledge to Advance Connecticut" (PACT) that was designed to attract more full-time students to the CT community colleges.

Learning Outcomes

Summarize assessment of student learning outcomes at end of program's Year 3:
(Note: Information below pertains to the most current Year 5, 2019-20)

Capstone activities in identified course work are designed to assess student learning of the learning outcomes listed below. In addition to the acquisition of general education competencies, graduates that complete the Computer Networking Certificate will be able to:

1. Demonstrate an understanding of the fundamentals of information technology and information systems and their importance and impact in business and society. (Assessments: CST 171, CST 231, CST 246, CST 264, CST 281, CST 282)
2. Identify and describe basic communication technologies, devices, and components used in Local and Wide Area Networks. (Assessments: CST 171, CST 231, CST 246, CST 264, CST 281, CST 282)
3. Identify and describe various types of analog and digital communication transmission media including coax, twisted pair, fiber, and wireless media. (Assessments: CST 231)
4. Demonstrate the use of appropriate tools to assist with administering and troubleshooting computers, media, and devices on a network. (Assessments: CST 171, CST 231, CST 281, CST 282, CST xxx)
5. Setup, configure, and administer network servers and client workstations in workgroups and domain-based networks. (Assessments: CST 171, CST 264, CST xxx)
6. Design, build, and manage multilayer-switched networks and scalable internetworks using routers, switches, hubs, computers, servers, transmission media, network protocols, and network security. (Assessments: CST 231, CST 246, CST 264, CST 281, CST 282, CST xxx)
7. Apply comprehensive theoretical knowledge, problem-solving skills, and ethical principles to address case studies and practical applications in networking and information technology. (Assessments: CST 171, CST 231, CST 246, CST 264, CST 281, CST 282, CST xxx)
8. Deploy, configure and manage virtualized data center environments and create, deploy, clone and manage virtual machines. (Assessments: CST xxx Virtualization and Cloud Computing I) *new program outcome

Though there have not been any graduates of the Computer Networking Certificate so far, there have been 14 graduates of the Computer Networking: Cybersecurity AS degree option, 6 graduates of the Cybersecurity Certificate, and 2 graduates of the Cisco Certified Networking Associate (CCNA) Certificate. In total, 22 students have graduated from the entire Computer Networking program (including parent degree and related option and certificates). Many of the certificate graduates will likely pursue the parent degree or related degree option as well.

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SECTION 3: UPDATE OF PROGRAM CHANGES (if any)

Curricular and Other Program Changes *(Describe any changes since program was initiated, in curriculum, admission and/or completion requirements, program administration, faculty, and resources, or any other significant changes). If needed, provide details on curricular changes in the table below).*

Capital has improved the resources of the Computer Networking Certificate curriculum since program inception through becoming an approved Cisco Networking Academy. Cisco is an industry leader in computer networking technology. Through becoming a Cisco Academy, Capital has access to equipment and resources from Cisco that are utilized in all of the networking courses.

Additionally, Capital has upgraded and enhanced the computer networking laboratory by designing and hosting our own private virtual cloud that allows students to design and deploy virtual networks and machines to build and practice related networking skills.

There are also several curricular changes underway to the Computer Networking Certificate since program inception.

- Effective Fall 2020, Capital is removing the 4th course in the Cisco Networking curriculum – CST 283 Data Communication & Networking IV. This change is due in part to a change to the Cisco Academy curriculum, which Capital is an approved institution.
- Based on feedback from the program Advisory Council, employers and student interest, Capital is replacing CST 283 with a new course in virtualization and cloud computing (CST xxx – Virtualization and Cloud Computing I) that provides students foundational skills in managing and deploying virtualized data platforms and virtual machines. The new course prepares students for the entry-level VMWare Certified Associate industry credential. The Computer Networking A.S. (parent) Degree learning outcomes have been updated to incorporate knowledge and skills in this competency.

Note: These changes are also detailed in the “Details of Curriculum Changes for a Licensed Program” section on page 5 below.

Other Narrative Background to be Considered Since Approval *(As needed, discuss other changes such as program need and demand, transfer agreements developed, etc.)*

Program Need Based on Regional and National Data, Market Data, and Industry Trends:

According to the *Bureau of Labor Statistics, U.S. Department of Labor, Occupational Outlook Handbook*, employment for network and computer system administrators industry-wide is projected to increase by 5% (as fast as average) over the next 10 years:

Table 1: 10-year National Occupational Outlook, March 2020:

Occupation	10-Year Anticipated Growth
Network and Computer System Administrators ¹	5%

While employment projections industry-wide are 5%, employment of network administrators in the computer systems design and related services industry is projected to grow 24 percent over the same time period. Additionally, U.S. Department of Labor analysts note favorable job prospects for applicants who possess a bachelors degree and are up-to-date in the newest technologies, including cloud computing.

Similarly, according to the *CT Department of Labor, 2016- 2026 State of Connecticut Occupational Projections*, occupations in networking and system administration and network support are projected to increase over the next ten years.

Table 2: 10-year CT Occupational Outlook (2016-2026)²:

¹ Bureau of Labor Statistics, U.S. Department of Labor, *Occupational Outlook Handbook*, Network and Computer Systems Administrators, on the Internet at <https://www.bls.gov/ooh/computer-and-information-technology/network-and-computer-systems-administrators.htm> (visited February 21, 2020).

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Occupation	10-Year Anticipated Growth
Network and Computer Systems Administrators (15-1142)	4.3%
Computer Network Support Specialists (15-1152)	7.7%

Data from JobsEQ, Occupation Snapshot in Connecticut, 2019q3³, differs from the CT DOL projections and indicates negative growth in these occupational areas. However, JobsEQ estimates the CT award output for these occupational areas is below the national norm, indicating CT may be an importer of jobs for these occupations. Specifically, in 2017-2018, JobsEQ estimated that CT degree-granting institutions awarded 86 awards in network and computer systems administration, compared to 120 nationally. Similarly, CT degree-granting institutions awarded 40 awards in computer network support specialist, compared to 54 nationally.

Additionally, in mid-March 2020, on *CareerOneStop.org* there were 296 job postings related to Network and Computer Systems Administrators, and 49 job postings relating to Computer Network Support Specialists.

Transferability and Uniqueness to the Region:

Capital Community College is one of eight CT Community Colleges that offers a Certificate related to computer networking. The similar certificates offered statewide include:

- Gateway Community College, Computer Science: Networking Certificate
- Gateway Community College, Computer Science: Networking Administrator Certificate
- Housatonic Community College, Computer Information Systems Certificate: Network Technology
- Manchester Community College, Computer Network Technician Certificate
- Middlesex Community College, Communications Networking Certificate
- Naugatuck Valley Community College, Computer Networking Certificate
- Quinebaug Valley Community College, Senior Network Specialist A.S.
- Tunxis Community College, Network Administration Certificate A.S.

The Computer Networking certificate is 100% stackable into the Computer Networking A.S. (parent) degree at Capital, which is also 100% transferrable to the Bachelor of Science in Networking Information Technology at Central Connecticut State University.

Program Promotes Equity and Diversity in the Information Technology Industry:

African Americans, Latinos and females are each underrepresented groups within the Information Technology industry, and broader Science and Engineering workforce⁴. In line with the College's Mission statement, the Computer Networking program (including parent degree and related option and certificates) seeks to engage a diverse student population and prepares our predominately African American, Latino, and female student population for entry-level employment in this industry. Moreover, while the information technology industry has traditionally been dominated by males, 25% of the students enrolled in the Computer Networking program overall at Capital (including parent degree and related option and certificates) during Fall 2019 were female.

In our marketing, outreach, and partnerships with secondary schools throughout Greater Hartford, Capital speaks to communities about the importance of broadening participation in computing and IT fields, and the importance of diversity in the IT workforce.

Compliance with Special Requirements Given at the time of Program Approval (As applicable, please summarize how the program responded to requirements issued by the BOR, at the time it was licensed. Include any attachments as necessary.)

There were no special requirements issued by the BOR at the time of licensure.

² CT Department of Labor, 2016 - 2026 State of Connecticut Occupational Projections, Civil Engineering Technicians Occupation on the Internet at <https://www1.ctdol.state.ct.us/lmi/projections2016/computers.asp> (Retrieved March 2020)

³ JobsEQ Chmura Economics and Analytics, Occupation Snapshot in Connecticut, 2019q2, All Occupations on the Internet at <https://jobseq.egsuite.com/analytics/occupation-snapshot> (Retrieved September 2019)

⁴ <https://nces.nsf.gov/pubs/nsb20198/demographic-trends-of-the-s-e-workforce>

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Details of Curriculum Changes for a Licensed Program (to be use as needed)						
COMPUTER NETWORKING Certificate						
Course Number and Name	L.O. #	Pre-Requisite	Cr Hrs	Course Number and Name	L.O. #	Cr Hrs
Program Core Courses				Other Related/Special Requirements		
CST 171 LAN System Management*	1,2,4,5,7		3			
CST 231 Data Communications and Networking I*	1,2,3,4,6,7		3			
CST 281 Data Communications and Networking II*	1,2,4,6,7	CST 231	3			
CST 246 Networking Security*	1,2,6,7	CST 231	3			
CST 282 Data Communications and Networking III*	1,2,4,6,7	CST 281	3			
CST 283 Data Communications and Networking IV*	1,2,4,6,7	CST 281	3			
CST xxx Virtualization & Cloud Computing*	4,5,6,7,8	CST 171 and CST 231	3			
CST 264 Unix/Linux System Administration*	1,2,5,6,7		3			
Core Course Prerequisites			21	Elective Courses in the Field		0
Total Other Credits Required to Issue Credential (e.g. GenEd/Liberal Arts Core/Liberal Ed Program)						21
* Note: Courses designated with an * can be taught either on ground or online.						

Other Narrative Background Since Licensure Approval (As needed, consider other changes such as program need and demand, transfer agreements developed, etc.)

No additional information in this area. (See previous "Other Narrative Background" section on pages 3-4 for details.)

Learning Outcomes - L.O. (Discuss any significant changes in the Learning Outcomes and relevant curricular changes; if any)

Since the time of licensure there has been one change to the program learning outcomes. A new outcome related to virtualization and cloud computing was added, to reflect the new required course CST xxx Virtualization and Cloud Computing I. This degree outcome was added based on feedback from representatives on our Program Advisory Council who identified this as a required skill and competency for program graduates.

1. Demonstrate an understanding of the fundamentals of information technology and information systems and their importance and impact in business and society.
2. Identify and describe basic communication technologies, devices, and components used in Local and Wide Area Networks.
3. Identify and describe various types of analog and digital communication transmission media including coax, twisted pair, fiber, and wireless media.
4. Demonstrate the use of appropriate tools to assist with administering and troubleshooting computers, media, and devices on a network.
5. Setup, configure, and administer network servers and client workstations in workgroups and domain-based networks.
6. Design, build, and manage multilayer-switched networks and scalable internetworks using routers, switches, hubs, computers, servers, transmission media, network protocols, and network security.
7. Apply comprehensive theoretical knowledge, problem-solving skills, and ethical principles to address case studies and practical applications in networking and information technology.
8. Deploy, configure and manage virtualized data center environments and create, deploy, clone and manage virtual machines.
(*new program outcome)

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SECTION 4: EXPLANATORY & CORRECTIVE ACTION PLAN

Fiscal Impact – succinctly disclose the financial impact upon institution of negative *Difference* within Cost Effectiveness

Even though the Computer Networking Certificate FTE was 0.8 in Fall 2019 (the program's 9th semester) with a headcount of 1 FT student, the program experienced positive net gains in the 2018-19 academic year totaling \$2,509.

This certificate is a stacked and latticed feeder pipeline for the Computer Networking A.S. (parent) degree and most students are included in the FTE for the parent program or related option instead.

In total, the entire Computer Networking program (including parent degree and related option and certificates) had a combined FTE of 36.2 in Fall 2019 with a combined headcount of 64. This total exceeded the 3-year combined FTE of 33.6 that was projected at the time of initial program approval.

Likewise, during the 2018-2019 academic year, the entire Computer Networking program (including parent degree and related option and certificates) had a total revenue of \$208,108 and a total expense of \$121,634, resulting in a difference of \$86,474 net gain over all.

These gains are expected to remain steady in 2019-20 since the combined program FTE in Fall 2019 (36.2) remained nearly the same as Fall 2018 (36.9) with additional enrollment increases anticipated in future semesters (see Table 5) due to new marketing strategies, increasing local/regional employment prospects, and a new state program called the "Pledge to Advance Connecticut" (PACT) that was designed to attract more full-time students to the CT community colleges.

Table 5: Computer Networking Certificate enrollment trends and projections.

Prior Enrollment Trends			Future Enrollment Projections		
Computer Networking Cert only			Computer Networking Cert only		
Fall 2016	Fall 2017	Fall 2018	Fall 2019	Fall 2020	Fall 2021
0.0 FTE	0.0 FTE	0.6 FTE	0.8 FTE	1.2 FTE	1.6 FTE
Computer Networking parent degree and related option and certificates combined			Computer Networking parent degree and related option and certificates combined		
Fall 2016	Fall 2017	Fall 2018	Fall 2019	Fall 2020	Fall 2021
17.9 FTE	29.4 FTE	36.9 FTE	36.2 FTE	40.8 FTE	46.8 FTE

Based on conservative enrollment increase projections over the next three years and anticipated revenue and expense projections, we anticipate that the combined projected net earnings for the Computer Networking program overall (including parent degree, related option, and certificates) will total at least \$343,593:

Table 6: Computer Networking Certificate projected net gains.

	3-Year Net Gain Projections			
	Y1 (2019-20)	Y2 (2020-21)	Y3 (2021-22)	TOTAL
Computer Networking Cert only	\$2,937	\$5,425	\$8,024	\$16,386
Entire Computer Networking Program (parent degree, related option and certificates combined)	\$77,864	\$117,414	\$148,315	\$343,593

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Improvement Plan

If negative *Difference(s)* reported above for **Student Enrollment** and/or **Cost Effectiveness**, present plan(s) for corrective actions:

The institution recognizes that the Computer Networking Certificate is still a low completer, however the program is still relatively new and the combined number of completers for the entire Computer Networking program (including parent degree, related option, and certificates) exceeded the low completer threshold in the most recent academic year (2018-19). Moreover, current and projected enrollment numbers (see table 5) suggest that program completion numbers will increase steadily over the coming years. **Thus, we recommend approval for continued accreditation with the following improvement plan:**

Increase in Student Attainment of Industry Certifications

Graduates of our Computer Networking, Cybersecurity, and other Information Technology degree and certificate programs need to acquire related industry certifications to be competitive for entry-level job openings. This is based on feedback from employers, as well as experiences of graduating students. Over the past two academic years, faculty teaching all information technology courses at Capital have identified industry certifications that graduating students can prepare for during their course studies, and begun to update and align coursework to these certifications.

Historically, students in the Computer Networking program (including parent degree and related option and certificates) have only prepared for the Cisco CCENT and Cisco CCNA certifications. Beginning in Fall 2020, students will also be prepared to take the industry certifications in additional networking and system administration areas including Windows Server, Linux, Security Fundamentals and Cloud Computing. These certifications will greatly increase our graduates' competitiveness in the job market and employability.

To better support and streamline students' ability to take networking and cyber security related certificates, Capital is currently applying to become a certified testing center that will enable our campus to provide discounted certification tests to students, as well as providing instructor resources to Capital faculty. As part of our efforts to improve program marketing, Capital will highlight these certifications in our marketing materials and program web sites.

Reduced Certificate Completion Time and Alignment with Non-Credit

Capital faculty have updated the Computer Networking program curriculum (including parent degree and related option and certificates) to shorten time to completion for students pursuing certificates. The changes being made will allow all certificate programs to be completed within 12-months. Many potential and current students have communicated concerns with certificate programs that last longer than this time period. By shortening the time to completion for certificates, as well as highlighting the industry certifications students can acquire upon program completion, we are confident we will be able to attract more non-traditional students and individuals seeking re-training into our programs.

Additionally, Capital faculty are coordinating with our Division of Workforce Development and Continuing Education to provide ways to offer computer technology coursework in a dual credit and non-credit format. The dual-format courses will be advertised specifically to businesses in Downtown Hartford, to current employees interested in upskilling. The courses will also be advertised and shared with our local workforce development boards to serve and benefit adult learners and dislocated workers pursuing job re-training.

Continued Program Need:

Industry labor market projections indicate continued program need. (See the "Program Need" data in the "Other Narrative Background" section on pages 3-4 for details.)

Additional Program Alignment with Industry Needs:

Annual meetings with Capital's Computer Technology Advisory Council are vital to ensure our program curriculum is aligned with current industry-specific requirements. Members of this advisory council include information technology professionals and hiring managers throughout Greater Hartford, transfer institution representatives and current Capital students. Capital faculty rely on feedback from the

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Advisory Council for curriculum development, curriculum review, and curriculum alignment with industry needs. Feedback from the Advisory Council was instrumental in the development of new cloud computing curriculum as well as recent new computer programming curriculum in Python and .NET.

Projected Increases in Enrollees and Completers:

As was explained in the "Fiscal Impact" section (see page 6), enrollment in the Computer Networking Certificate program is expected to remain steady in the 2019-20 academic year since the combined Computer Networking FTE (including parent degree, related option, and certificates) in Fall 2019 (36.2) remained nearly the same as Fall 2018 (36.9) with additional enrollment increases anticipated in future semesters due to new marketing strategies, increasing local/regional employment prospects, and a new state program called the "Pledge to Advance Connecticut" (PACT) that was designed to attract more full-time students to the CT community colleges (see Table 5 for enrollment details). Furthermore, program completion is also expected to increase as the program continues to grow (see Table 7):

Table 7: Computer Networking Certificate completer trends and projections.

Prior Completion Trends			Future Completion Projections		
Computer Networking Certificate only			Computer Networking Certificate only		
2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
0	0	0	1	2	3
Entire Computer Networking Program (parent degree, related option and certificates combined)			Entire Computer Networking Program (parent degree, related option and certificates combined)		
2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
2	9	9	21	28	36

Thus, based on conservative enrollment increase projections over the next three years and anticipated revenue and expense projections, we anticipate that the combined projected net earnings for the Computer Networking program overall (including parent degree, related option, and certificates) will total at least \$343,593 (see Table 6 for details).

Improved Instructional Facilities:

Since the program inception, Capital has made significant improvements and upgrades to the networking and cybersecurity lab environments to support student learning on-site and remotely. Capital faculty received dedicated training and professional development which enabled Capital to become an approved Cisco Academy. As a Cisco Academy, Capital has access to equipment and resources from Cisco that are utilized in all of the networking and cybersecurity courses. This curriculum is state-of-the-art and directly aligned with in-demand industry certifications.

Additionally, Capital has upgraded and enhanced the computer networking laboratory by designing and hosting our own private virtual cloud that allows students to design and deploy virtual networks and machines to build and practice related networking and cybersecurity skills. Students can access our virtual cloud remotely, which greatly facilitates student learning outside of class time and effectively supports distance learning.

Expanded Marketing and Program Outreach

Through new leadership at the college and a new Director of Marketing and Public Relations, funding and resources have been increased to improve program marketing across the College. Our Computer Networking and Cybersecurity Program Coordinator is working with the new Director of Marketing to update the program and certificate brochures and web sites to reflect the new curriculum changes and highlight the new industry-certifications aligned to the program.

The Computer Networking and Cybersecurity Program Coordinator will also continue to expand outreach to local high schools to promote the networking/cybersecurity program. The Coordinator is partnering with secondary schools through Capital's College Career Pathways

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program to articulate introductory networking courses with local high schools. The Program Coordinator also actively and consistently presents and teaches short min-sessions to participating secondary students who come to Capital for the day from area secondary schools.

Curricular Change

If institution/program is not satisfied with the degree to which the Learning Outcomes have been achieved, what course of action is planned for improvement of teaching and learning:

Capital Community College is satisfied with the degree to which the learning outcomes have been achieved in this program. Nonetheless, program faculty will continue to engage in continuous improvement efforts to enhance their instruction through professional development, Center for Teaching (CFT) workshops, industry certification training events, and other opportunities for learning best practices that may enhance program teaching and learning.

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SECTION FIVE: FUTURE PROGRAM RESOURCES AND COST ESTIMATES

(For the next three years to be specified, please complete the Resources and Cost Estimates form below, and provide a narrative below regarding the financial sustainability of the program)

Resources and Costs Estimates Form
(Whole Dollars Only)

PROJECTED Program Revenue	Year 1 (2019-20)		Year 2 (2020-21)		Year 3 (2021-22)	
	Full Time	Part Time	Full Time	Part Time	Full Time	Part Time
Tuition (do not include internal transfers)	\$3,984	\$0	\$4,084	\$2,042	\$4,186	\$4,184
Program-Specific Fees	\$360	\$0	\$360	\$144	\$360	\$288
Other Revenue (Annotate in narrative)	\$572	\$0	\$586	\$312	\$600	\$640
Total Program Revenue	\$4,916	\$0	\$5,030	\$2,498	\$5,146	\$5,112
	\$4,916		\$7,528		\$10,258	

PROJECTED Program Expenditures*	Year 1		Year 2		Year 3	
	Number	Amount	Number	Amount	Number	Amount
Administration (Chair or Coordinator) (Includes salary plus fringe)	0.02 FTE	\$1,954	0.02 FTE	\$2,078	0.02 FTE	\$2,209
Faculty (Full-time, total for program)	0	0	0	0	0	0
Faculty (Part-time, total for program)	0	0	0	0	0	0
Support Staff	0	0	0	0	0	0
Graduate Assistants	0	0	0	0	0	0
Library Resources Program	0	0	0	0	0	0
Equipment (List as needed)	0	0	0	0	0	0
Other (Marketing)	0	\$25	0	\$25	0	\$25
Estimated Indirect Costs (e.g. student services, operations, maintenance)	0	0	0	0	0	0
Total Annual Expenditures		\$1,979		\$2,103		\$2,234

*Note: Capital outlay costs, institutional spending for research and services, etc. can be excluded.

Please provide any necessary annotations below:

Based on conservative enrollment increase projections over the next three years and anticipated revenue and expense projections, the total projected net earnings over the next three years for the Computer Networking Certificate will total at least \$16,386.

The combined projected net earnings for the Computer Networking program overall (including parent degree, related option, and certificates) will total at least \$343,593.

Additional expenses relating to laboratory materials and equipment are funded by Perkins grant funding.

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RESOLUTION

concerning

Accreditation of a Licensed Program

May 14, 2020

RESOLVED: That the Board of Regents for Higher Education approve the accreditation of a licensed program – Cybersecurity (CIP Code: 11.1003 / OHE #018106) – leading to a C2 Certificate at Capital Community College.

A True Copy:

Erin A. Fitzgerald, Secretary of the
CT Board of Regents for Higher Education

ITEM

Continued accreditation of a licensed program in Cybersecurity leading to a C2 Certificate at Capital Community College.

BACKGROUND

In Spring 2019, a request for continued accreditation of this program was submitted to the BOR in tandem with other programs across the CSCU system due to expired licensures. After consideration of that joint proposal, the ASA Committee requested that a full proposal for continued accreditation of this program be submitted during Spring 2020. The following data reflects the current status of the program.

PERFORMANCE INDICATORSStudent Enrollment

Projected full-time equivalent (FTE) enrollment for the Cybersecurity Certificate's Year 3: 1.6

Actual full-time equivalent (FTE) enrollment for the Cybersecurity Certificate's most recent semester: 2.4

Difference: up 0.8

Cost Effectiveness

Total Revenue generated by the Cybersecurity Certificate during its most recent year: \$22,710

Total Expenditures apportioned to the Cybersecurity Certificate in its most recent year: \$10,087

Difference (Net Gains): \$12,623

PROGRAM CHANGES

Capital has improved the resources of the Cybersecurity Certificate curriculum since program inception through becoming an approved Cisco Networking Academy. Cisco is an industry leader in computer networking technology. Through becoming a Cisco Academy, Capital has access to equipment and resources from Cisco that are utilized in all of the networking/cybersecurity courses.

Additionally, Capital has upgraded and enhanced the computer networking laboratory by designing and hosting our own private virtual cloud that allows students to design and deploy virtual networks and machines to build and practice related networking/cybersecurity skills.

No curricular changes have been made to the Cisco Certified Network Associate (CCNA) Certificate since program inception.

RECOMMENDATION

Following its review and deliberative process, it is the recommendation of the Academic Council that the Board of Regents approve the accreditation of this program. The System's Provost and Senior Vice President for Academic and Student Affairs concurs with this recommendation.

05/01/2020– BOR -Academic and Student Affairs Committee
05/14/2020 – Board of Regents

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SECTION 1: GENERAL INFORMATION

Institution: Capital Community College Date of Submission to CSCU Office of the Provost: **Spring 2020**

Most Recent NECHE Institutional Accreditation Action and Date: **Continued Accreditation 2016-17 (10-year)**

Program Characteristics

Name of Program: **Cybersecurity**
Degree: Title of Award (e.g. Master of Arts)
Degree's Associated Certificate(s) (if any) **Certificate**
Stand-Alone Certificate: (specify type and level)
Semester Date Program was Initiated: **Fall 2015**
Year 3 – 7th Semester Date: **Fall 2018**
Date of First Graduation: **Spring 2016**
Modality of Program: On ground Online **X** Combined
If "Combined", % of fully online courses? **Up to 100%**
Locality of Program: **X** On Campus Off Campus Both

Program Credit Distribution

Credits in General Education: 0
Credits in Program Core: **24**
Credits of Electives in the Field: 0
Credits of Other Electives: 0
Cr Special Requirements (include internship, etc.): **0**

Total # Cr in the Program (sum of all #Cr above): **24**
From "Total # Cr in the Program" above, enter #Cr that are part of/belong in an already approved program(s) at the institution: **24**

Date of BOR Approval: **06/25/15** CIP: **111003** OHE#: **018106**

Institutional Contact for this Proposal:
Dr. Miah LaPierre Dreger, EdD

Title: **Dean of Academic
and Student Affairs**

Tel.: **860-906-5011**
e-mail: **mlapierre-dreger@capitalcc.edu**

Note: In Spring 2019, a request for continued accreditation of this program was submitted to the BOR in tandem with other programs across the CSCU system due to expired licensures. After consideration of that joint proposal, the ASA Committee requested that a full proposal for continued accreditation of this program be submitted during Spring 2020. The following data reflects the current status of the program.

SECTION 2: PERFORMANCE INDICATORS

Student Enrollment

Projected full-time equivalent (FTE) enrollment for the Cybersecurity Certificate's Year 3: **1.6**
(Note: 2017-18 was Year 3)

Actual full-time equivalent (FTE) enrollment for the Cybersecurity Certificate's most recent semester: **2.4**
(Note: Fall 2019 was the certificate's 9th semester)

Difference: **up 0.8**

Note: Even though the Cybersecurity certificate FTE in Fall 2019 was 2.4 (headcount of 6 PT students), there have already been 6 graduates of this certificate so far. This is because this certificate is a stacked and latticed feeder pipeline for the Computer Networking A.S. (parent) degree and most students are included in the FTE for the parent program or related Computer Networking Cybersecurity A.S. degree option instead. In total, the entire Computer Networking program (including parent degree and related option and certificates) had a combined FTE of 36.2 (combined headcount of 64) in Fall 2019. This total exceeded the 3-year combined FTE of 33.6 that was projected at the time of initial program approval.

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Cost Effectiveness

Total Revenue generated by the Cybersecurity Certificate during its most recent year: **\$22,710**

(Note: 2018-19 was Year 4)

Total Expenditures apportioned to the Cybersecurity Certificate in its most recent year: **\$10,087**

(Note: 2018-19 was Year 4)

Difference (Net Gains): **\$12,623**

Note: This certificate is a stacked and latticed feeder pipeline for the Computer Networking A.S. (parent) degree and most students are included in the FTE for the parent program or related option instead. In total, the entire Computer Networking program (including parent degree and related option and certificates) had a total revenue of \$208,108 and a total expense of \$121,634 during the 2018-2019 academic year, resulting in a difference of \$86,474 net gain overall. These gains are expected to remain steady in 2019-20 since the combined program FTE in Fall 2019 (36.2) remained nearly the same as Fall 2018 (36.9) with additional enrollment increases anticipated in future semesters due to new marketing strategies, increasing local/regional employment prospects, and a new state program called the "Pledge to Advance Connecticut" (PACT) that was designed to attract more full-time students to the CT community colleges.

Learning Outcomes

Summarize assessment of student learning outcomes at end of program's Year 3:

(Note: Information below pertains to the most current Year 5, 2019-20)

Capstone activities in identified course work are designed to assess student learning of the learning outcomes listed below. In addition to the acquisition of general education competencies, graduates that complete the Cybersecurity Certificate will be able to:

1. Demonstrate an understanding of the fundamentals of information security technology and information systems and their importance and impact in business and society. (Assessments: CST 171, CST 201, CST 231, CST 246, CST 247, CST 263, CST 264, CST 267, CST 281)
2. Identify and describe basic secured communication technologies, devices, and components used to protect the confidentiality, integrity, and availability of data in Local and Wide Area Networks. (Assessments: CST 171, CST 201, CST 231, CST 264, CST 281)
3. Demonstrate the use of appropriate tools to assist with administering and troubleshooting computers, media, and detect malicious network traffic. (Assessments: CST 171, CST 231, CST 246, CST 247, CST 263, CST 264, CST 267, CST 281)
4. Design, build, and maintain scalable and secured networks using routers, switches, firewalls, network intrusion detection systems, proxies, secured transmission media, patch management, and vulnerability assessment tools. (Assessments: CST 231, CST 246, CST 247, CST 263, CST 264, CST 267, CST 281)
5. Identify and describe information assurance fundamentals and techniques used to protect the confidentiality, integrity, and availability of data. (Assessments: CST 171, CST 231, CST 246, CST 247, CST 263, CST 264, CST 267)
6. Establish and enforce corporate/organizational security policies and procedures. (Assessments: CST 171, CST 246, CST 247, CST 263, CST 264, CST 267, CST 281)
7. Identify appropriate security controls and mitigation strategies. (Assessments: CST 171, CST 231, CST 246, CST 247, CST 263, CST 267, CST 281)

There have been 6 graduates of the Cybersecurity Certificate so far. In addition, there have been 14 graduates of the Computer Networking: Cybersecurity AS degree option and 2 graduates of the Cisco Certified Networking Associate (CCNA) Certificate. In total, 22 students have graduated from the entire Computer Networking program (including parent degree and related option and certificates). Many of the certificate graduates will likely pursue the parent degree or related degree option as well.

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APPLICATION FOR CONTINUED ACCREDITATION

SECTION 3: UPDATE OF PROGRAM CHANGES (if any)

Curricular and Other Program Changes (Describe any changes since program was initiated, in curriculum, admission and/or completion requirements, program administration, faculty, and resources, or any other significant changes). If needed, provide details on curricular changes in the table below).

Capital has improved the resources of the Cybersecurity Certificate curriculum since program inception through becoming an approved Cisco Networking Academy. Cisco is an industry leader in computer networking technology. Through becoming a Cisco Academy, Capital has access to equipment and resources from Cisco that are utilized in all of the networking/cybersecurity courses.

Additionally, Capital has upgraded and enhanced the computer networking laboratory by designing and hosting our own private virtual cloud that allows students to design and deploy virtual networks and machines to build and practice related networking/cybersecurity skills.

No curricular changes have been made to the Cisco Certified Network Associate (CCNA) Certificate since program inception.

Note: These changes are also detailed in the "Details of Curriculum Changes for a Licensed Program" section on page 5 below.

Other Narrative Background to be Considered Since Approval (As needed, discuss other changes such as program need and demand, transfer agreements developed, etc.)

Program Need Based on Regional and National Data, Market Data, and Industry Trends:

Within the CT Department of Labor, the Information Security Analyst occupation is designated as one of the fastest growing occupations in the State of CT with projected 23% increase in employment between 2016 and 2026.¹

Nationally, the most relevant occupations to the Computer Networking: Cybersecurity degree option are Computer Network Architects, Network and Computer Systems Administrators, and Information Security Analysts. According to the *Bureau of Labor Statistics, U.S. Department of Labor, Occupational Outlook Handbook*, employment for each of these occupations is projected to increase, with information security analysts projected to have the largest increase (32% - much faster than average) over the next 10 years:

Table 3: 10-year National Occupational Outlook, March 2020:

Occupation	10-Year Anticipated Growth
Information Security Analysts ²	32%
Computer Network Architects ³	5%
Network and Computer System Administrators ⁴	5%

Similarly, according to the *CT Department of Labor, 2016-2026 State of Connecticut Occupational Projections*, the occupations Computer Network Architects, Network and Computer Systems Administrators, and Computer Network Support Specialists are projected to increase over the next ten years.

Table 4: 10-year CT Occupational Outlook (2016-2026):

Occupation	10-Year Anticipated Growth
------------	----------------------------

¹ CT Department of Labor, 2016-2026 State of Connecticut Occupational Projections, Information Security Analysts Occupation on the Internet at <https://www1.ctdol.state.ct.us/jcc/profile.asp?strMethod=keyword&sstrOccupationCode=151122> (Retrieved March 2020)

² Bureau of Labor Statistics, U.S. Department of Labor, *Occupational Outlook Handbook*, Information Security Analysts on the Internet at <https://www.bls.gov/ooh/computer-and-information-technology/information-security-analysts.htm> (visited February 21, 2020).

³ Bureau of Labor Statistics, U.S. Department of Labor, *Occupational Outlook Handbook*, Computer Network Architects, on the Internet at <https://www.bls.gov/ooh/computer-and-information-technology/computer-network-architects.htm> (visited February 21, 2020).

⁴ Bureau of Labor Statistics, U.S. Department of Labor, *Occupational Outlook Handbook*, Network and Computer Systems Administrators, on the Internet at <https://www.bls.gov/ooh/computer-and-information-technology/network-and-computer-systems-administrators.htm> (visited February 21, 2020).

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Computer Network Architects (15-1143)	5.5%
Network and Computer Systems Administrators (15-1142)	4.3%
Computer Network Support Specialists (15-1152)	7.7%

Data from JobsEQ, Occupation Snapshot in Connecticut, 2019q3, differs from the CT DOL projections and indicates negative growth in the Computer Network Architect, Network and Computer Systems Administrators, and Computer Network Support Specialists occupational areas. However, JobsEQ estimates the CT award output for these occupational areas is below the national norm, indicating CT may be an importer of jobs for these occupations. Specifically, in 2017-2018, JobsEQ estimated that CT degree-granting institutions awarded 86 awards in network and computer systems administration, compared to 120 nationally. Similarly, CT degree-granting institutions awarded 40 awards in computer network support specialist, compared to 54 nationally, and 45 awards in computer network architects compared to 64 nationally.

Additionally, in mid-March 2020, on *CareerOneStop.org* there were 1,561 job postings related to information security, 296 job postings related to Network and Computer Systems Administrators, and 49 job postings relating to Computer Network Support Specialists.

Transferability and Uniqueness to the Region:

Capital Community College is the only CT Community Colleges that offers a Certificate related to Cybersecurity.

The Cybersecurity Certificate at Capital is 100% stackable into the CN: Cyber security AS Degree Option at Capital, which is also 100% transferrable to the Bachelor of Science in Networking Information Technology at Central Connecticut State University.

Program Promotes Equity and Diversity in the Information Technology Industry:

African Americans, Latinos and females are each underrepresented groups within the Information Technology industry, and broader Science and Engineering workforce⁵. In line with the College's Mission statement, the Computer Networking program (including parent degree and related option and certificates) seeks to engage a diverse student population and prepares our predominately African American, Latino, and female student population for entry-level employment in this industry. Moreover, while the information technology industry has traditionally been dominated by males, 33% of the students enrolled in the Cybersecurity Certificate program at Capital during Fall 2019 were female.

In our marketing, outreach, and partnerships with secondary schools throughout Greater Hartford, Capital speaks to communities about the importance of broadening participation in computing and IT fields, and the importance of diversity in the IT workforce.

Compliance with Special Requirements Given at the time of Program Approval (As applicable, please summarize how the program responded to requirements issued by the BOR, at the time it was licensed. Include any attachments as necessary.)

There were no special requirements issued by the BOR at the time of licensure.

⁵ <https://nces.nsf.gov/pubs/nsb20198/demographic-trends-of-the-s-e-workforce>

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Details of Curriculum Changes for a Licensed Program <i>(to be use as needed)</i>						
CYBERSECURITY Certificate						
Course Number and Name	L.O. #	Pre-Requisite	Cr Hrs	Course Number and Name	L.O. #	Cr Hrs
Program Core Courses				Other Related/Special Requirements		
CST 171 LAN System Management *	1,2,3,5,6,7		3			
CST 231 Data Communications and Networking I*	1,2,3,4,5,7		3			
CST 246 Networking Security*	1,2,3,4,5,6,7	CST 231	3			
CST 247 Information Assurance and Risk Management*	1,3,4,5,6,7	CST 231	3			
CST 263 Computer Forensics and Network Intrusions*	1,3,4,5,6,7	CST 246	3			
CST 264 Unix/Linux System Administration*	1,2,3,4,5,6		3			
CST 267 Ethical Hacking and Network Defense*	1,3,4,5,6,7	CST 246	3			
CST 281 Data Communications and Networking II*	1,2,3,4,6,7	CST 231	3			
Core Course Prerequisites			24	Elective Courses in the Field		0
Total Other Credits Required to Issue Credential <i>(e.g. GenEd/Liberal Arts Core/Liberal Ed Program)</i>						24
* Note: Courses designated with an * can be taught either on ground or online.						

Other Narrative Background Since Licensure Approval (As needed, consider other changes such as program need and demand, transfer agreements developed, etc.)

No additional information in this area. *(See previous "Other Narrative Background" section on pages 3-4 for details.)*

Learning Outcomes - L.O. *(Discuss any significant changes in the Learning Outcomes and relevant curricular changes; if any)*

There have been no changes to the program learning outcomes since the time of licensure:

1. Demonstrate an understanding of the fundamentals of information security technology and information systems and their importance and impact in business and society.
2. Identify and describe basic secured communication technologies, devices, and components used to protect the confidentiality, integrity, and availability of data in Local and Wide Area Networks.
3. Demonstrate the use of appropriate tools to assist with administering and troubleshooting computers, media, and detect malicious network traffic.
4. Design, build, and maintain scalable and secured networks using routers, switches, firewalls, network intrusion detection systems, proxies, secured transmission media, patch management, and vulnerability assessment tools.
5. Identify and describe information assurance fundamentals and techniques used to protect the confidentiality, integrity, and availability of data.
6. Establish and enforce corporate/organizational security policies and procedures.)
7. Identify appropriate security controls and mitigation strategies.

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Connecticut State Colleges & Universities System Office

APPLICATION FOR CONTINUED ACCREDITATION

SECTION 4: EXPLANATORY & CORRECTIVE ACTION PLAN

Fiscal Impact – succinctly disclose the financial impact upon institution of negative *Difference* within Cost Effectiveness

Even though the Cybersecurity certificate FTE was 2.4 in Fall 2019 (the program's 9th semester) with a headcount of 6 PT students, the program has seen positive net gains over the past three subsequent years (2016-2019) totaling \$20,251.

This certificate is a stacked and latticed feeder pipeline for the Computer Networking A.S. (parent) degree and most students are included in the FTE for the parent program or related option instead.

In total, the entire Computer Networking program (including parent degree and related option and certificates) had a combined FTE of 36.2 in Fall 2019 with a combined headcount of 64. This total exceeded the 3-year combined FTE of 33.6 that was projected at the time of initial program approval.

Likewise, during the 2018-2019 academic year, the entire Computer Networking program (including parent degree and related option and certificates) had a total revenue of \$208,108 and a total expense of \$121,634, resulting in a difference of \$86,474 net gain overall.

These gains are expected to remain steady in 2019-20 since the combined program FTE in Fall 2019 (36.2) remained nearly the same as Fall 2018 (36.9) with additional enrollment increases anticipated in future semesters (see *Table 5*) due to new marketing strategies, increasing local/regional employment prospects, and a new state program called the "Pledge to Advance Connecticut" (PACT) that was designed to attract more full-time students to the CT community colleges.

Table 5: Cybersecurity Certificate enrollment trends and projections.

Prior Enrollment Trends			Future Enrollment Projections		
<i>Cybersecurity Certificate only</i>			<i>Cybersecurity Certificate only</i>		
Fall 2016	Fall 2017	Fall 2018	Fall 2019	Fall 2020	Fall 2021
1.2 FTE	3.0 FTE	4.0 FTE	2.4 FTE	3.6 FTE	4.4 FTE
<i>Computer Networking parent degree and related option and certificates combined</i>			<i>Computer Networking parent degree and related option and certificates combined</i>		
Fall 2016	Fall 2017	Fall 2018	Fall 2019	Fall 2020	Fall 2021
17.9 FTE	29.4 FTE	36.9 FTE	36.2 FTE	40.8 FTE	46.8 FTE

Based on conservative enrollment increase projections over the next three years and anticipated revenue and expense projections, we anticipate that the combined projected net earnings for the Computer Networking program overall (including parent degree, related option, and certificates) will total at least \$343,593:

Table 6: Cybersecurity Certificate program projected net gains.

	3-Year Net Gain Projections			
	Y1 (2019-20)	Y2 (2020-21)	Y3 (2021-22)	TOTAL
<i>Cybersecurity Certificate only</i>	\$9,704	\$17,238	\$22,577	\$49,519
<i>Entire Computer Networking Program (parent degree, related option and certificates combined)</i>	\$77,864	\$117,414	\$148,315	\$343,593

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Improvement Plan

If negative *Difference(s)* reported above for **Student Enrollment** and/or **Cost Effectiveness**, present plan(s) for corrective actions:

The institution recognizes that the Cybersecurity certificate is still a low completer, however the program is still relatively new and the combined number of completers for the entire Computer Networking program (including parent degree, related option, and certificates) exceeded the low completer threshold in the most recent academic year (2018-19). Moreover, current and projected enrollment numbers (see table 5) suggest that program completion numbers will increase steadily over the coming years. ***Thus, we recommend approval for continued accreditation with the following improvement plan:***

Increase in Student Attainment of Industry Certifications

Graduates of our Computer Networking, Cybersecurity, and other Information Technology degree and certificate programs need to acquire related industry certifications to be competitive for entry-level job openings. This is based on feedback from employers, as well as experiences of graduating students. Over the past two academic years, faculty teaching all information technology courses at Capital have identified industry certifications that graduating students can prepare for during their course studies, and begun to update and align coursework to these certifications.

Historically, students in the Computer Networking program (including parent degree and related option and certificates) have only prepared for the Cisco CCENT and Cisco CCNA certifications. Beginning in Fall 2020, students will also be prepared to take the industry certifications in additional networking and system administration areas including Windows Server, Linux, Security Fundamentals and Cloud Computing. These certifications will greatly increase our graduates' competitiveness in the job market and employability.

To better support and streamline students' ability to take networking and cyber security related certificates, Capital is currently applying to become a certified testing center that will enable our campus to provide discounted certification tests to students, as well as providing instructor resources to Capital faculty. As part of our efforts to improve program marketing, Capital will highlight these certifications in our marketing materials and program web sites.

Reduced Certificate Completion Time and Alignment with Non-Credit

Capital faculty have updated the Computer Networking program curriculum (including parent degree and related option and certificates) to shorten time to completion for students pursuing certificates. The changes being made will allow all certificate programs to be completed within 12-months. Many potential and current students have communicated concerns with certificate programs that last longer than this time period. By shortening the time to completion for certificates, as well as highlighting the industry certifications students can acquire upon program completion, we are confident we will be able to attract more non-traditional students and individuals seeking re-training into our programs.

Additionally, Capital faculty are coordinating with our Division of Workforce Development and Continuing Education to provide ways to offer computer technology coursework in a dual credit and non-credit format. The dual-format courses will be advertised specifically to businesses in Downtown Hartford, to current employees interested in upskilling. The courses will also be advertised and shared with our local workforce development boards to serve and benefit adult learners and dislocated workers pursuing job re-training.

Continued Program Need:

Industry labor market projections indicate continued program need. (See the "Program Need" data in the "Other Narrative Background" section on pages 3-4 for details.)

Additional Program Alignment with Industry Needs:

Annual meetings with Capital's Computer Technology Advisory Council are vital to ensure our program curriculum is aligned with current industry-specific requirements. Members of this advisory council include information technology professionals and hiring managers throughout Greater Hartford, transfer institution representatives and current Capital students. Capital faculty rely on feedback from the

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Advisory Council for curriculum development, curriculum review, and curriculum alignment with industry needs. Feedback from the Advisory Council was instrumental in the development of new cloud computing curriculum as well as recent new computer programming curriculum in Python and .NET.

Projected Increases in Enrollees and Completers:

As was explained in the "Fiscal Impact" section (see page 6), enrollment in the Cybersecurity Certificate program is expected to remain steady in the 2019-20 academic year since the combined Computer Networking FTE (including parent degree, related option, and certificates) in Fall 2019 (36.2) remained nearly the same as Fall 2018 (36.9) with additional enrollment increases anticipated in future semesters due to new marketing strategies, increasing local/regional employment prospects, and a new state program called the "Pledge to Advance Connecticut" (PACT) that was designed to attract more full-time students to the CT community colleges (see Table 5 for enrollment details). Furthermore, program completion is also expected to increase as the program continues to grow (see Table 7):

Table 7: Cybersecurity Certificate completer trends and projections.

Prior Completion Trends			Future Completion Projections		
Cybersecurity Certificate only			Cybersecurity Certificate only		
2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
2	3	0	2	4	6
Entire Computer Networking Program (parent degree, related option and certificates combined)			Entire Computer Networking Program (parent degree, related option and certificates combined)		
2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
2	9	9	21	28	36

Thus, based on conservative enrollment increase projections over the next three years and anticipated revenue and expense projections, we anticipate that the combined projected net earnings for the Computer Networking program overall (including parent degree, related option, and certificates) will total at least \$343,593 (see Table 6 for details).

Improved Instructional Facilities:

Since the program inception, Capital has made significant improvements and upgrades to the networking and cybersecurity lab environments to support student learning on-site and remotely. Capital faculty received dedicated training and professional development which enabled Capital to become an approved Cisco Academy. As a Cisco Academy, Capital has access to equipment and resources from Cisco that are utilized in all of the networking and cybersecurity courses. This curriculum is state-of-the-art and directly aligned with in-demand industry certifications.

Additionally, Capital has upgraded and enhanced the computer networking laboratory by designing and hosting our own private virtual cloud that allows students to design and deploy virtual networks and machines to build and practice related networking and cybersecurity skills. Students can access our virtual cloud remotely, which greatly facilitates student learning outside of class time and effectively supports distance learning.

Expanded Marketing and Program Outreach

Through new leadership at the college and a new Director of Marketing and Public Relations, funding and resources have been increased to improve program marketing across the College. Our Computer Networking and Cybersecurity Program Coordinator is working with the new Director of Marketing to update the program and certificate brochures and web sites to reflect the new curriculum changes and highlight the new industry-certifications aligned to the program.

The Computer Networking and Cybersecurity Program Coordinator will also continue to expand outreach to local high schools to promote the networking/cybersecurity program. The Coordinator is partnering with secondary schools through Capital's College Career Pathways

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program to articulate introductory networking courses with local high schools. The Program Coordinator also actively and consistently presents and teaches short min-sessions to participating secondary students who come to Capital for the day from area secondary schools.

Curricular Change

If institution/program is not satisfied with the degree to which the Learning Outcomes have been achieved, what course of action is planned for improvement of teaching and learning:

Capital Community College is satisfied with the degree to which the learning outcomes have been achieved in this program. Nonetheless, program faculty will continue to engage in continuous improvement efforts to enhance their instruction through professional development, Center for Teaching (CFT) workshops, industry certification training events, and other opportunities for learning best practices that many enhance program teaching and learning.

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SECTION FIVE: FUTURE PROGRAM RESOURCES AND COST ESTIMATES

(For the next three years to be specified, please complete the Resources and Cost Estimates form below, and provide a narrative below regarding the financial sustainability of the program)

Resources and Costs Estimates Form
(Whole Dollars Only)

PROJECTED Program Revenue	Year 1 (2019-20)		Year 2 (2020-21)		Year 3 (2021-22)	
	Full Time	Part Time	Full Time	Part Time	Full Time	Part Time
Tuition (do not include internal transfers)	\$0	\$11,952	\$0	\$18,378	\$4,186	\$18,828
Program-Specific Fees	\$0	\$864	\$0	\$1,296	\$360	\$1,296
Other Revenue (Annotate in narrative)	\$0	\$1,824	\$0	\$2,808	\$600	\$2,880
Total Program Revenue	\$0	\$14,640	\$0	\$22,482	\$5,146	\$23,004
	\$14,640		\$22,482		\$28,150	

PROJECTED Program Expenditures*	Year 1		Year 2		Year 3	
	Number	Amount	Number	Amount	Number	Amount
Administration (Chair or Coordinator) (Includes salary plus fringe)	0.05 FTE	\$4,886	0.05 FTE	\$5,194	0.05 FTE	\$5,523
Faculty (Full-time, total for program)	0	0	0	0	0	0
Faculty (Part-time, total for program)	0	0	0	0	0	0
Support Staff	0	0	0	0	0	0
Graduate Assistants	0	0	0	0	0	0
Library Resources Program	0	0	0	0	0	0
Equipment (List as needed)	0	0	0	0	0	0
Other (Marketing)	0	\$50	0	\$50	0	\$50
Estimated Indirect Costs (e.g. student services, operations, maintenance)	0	0	0	0	0	0
Total Annual Expenditures		\$4,936		\$5,244		\$5,573

*Note: Capital outlay costs, institutional spending for research and services, etc. can be excluded.

Please provide any necessary annotations below:

Based on conservative enrollment increase projections over the next three years and anticipated revenue and expense projections, the total projected net earnings over the next three years for the Cybersecurity Certificate will total at least \$49,519.

The combined projected net earnings for the Computer Networking program overall (including parent degree, related option, and certificates) will total at least \$343,593.

Additional expenses relating to laboratory materials and equipment are funded by Perkins grant funding.

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RESOLUTION

concerning

Accreditation of a Licensed Program

May 14, 2020

RESOLVED: That the Board of Regents for Higher Education approve the accreditation of a licensed program – Cisco Certified Networking Associate (CIP Code: 11.1002 / OHE #018180) – leading to a C1 Certificate at Capital Community College.

A True Copy:

Erin A. Fitzgerald, Secretary of the
CT Board of Regents for Higher Education

ITEM

Continued accreditation of a licensed program in Cisco Certified Networking Associate leading to a C1 Certificate at Capital Community College.

BACKGROUND

In Spring 2019, a request for continued accreditation of this program was submitted to the BOR in tandem with other programs across the CSCU system due to expired licensures. After consideration of that joint proposal, the ASA Committee requested that a full proposal for continued accreditation of this program be submitted during Spring 2020. The following data reflects the current status of the program.

PERFORMANCE INDICATORSStudent Enrollment

Projected full-time equivalent (FTE) enrollment for the Cisco Certified Networking Assoc (CCNA) Certificate's Year 3: 1.7

Actual full-time equivalent (FTE) enrollment for the Cisco Certified Net. Assoc (CCNA) Certificate's most recent semester: 1.0

Difference: -0.7

Cost Effectiveness

Total Revenue generated by the Cisco Certified Networking Assoc (CCNA) Certificate during its most recent year: \$2,284

Total Expenditures apportioned to the Cisco Certified Networking Assoc (CCNA) Certificate in its most recent year: \$917

Difference (Net Gains): \$1,367

PROGRAM CHANGES

Capital has improved the resources of the Cisco Certified Network Associate (CCNA) Certificate curriculum since program inception through becoming an approved Cisco Networking Academy. Cisco is an industry leader in computer networking technology. Through becoming a Cisco Academy, Capital has access to equipment and resources from Cisco that are utilized in all of the networking courses.

Additionally, Capital has upgraded and enhanced the computer networking laboratory by designing and hosting our own private virtual cloud that allows students to design and deploy virtual networks and machines to build and practice related networking skills.

There are also several curricular changes underway to the Cisco Certified Network Associate (CCNA) Certificate since program inception.

- Effective Fall 2020, Capital is removing the 4th course in the Cisco Networking curriculum – CST 283 Data Communication & Networking IV. This change is due in part to a change to the Cisco Academy curriculum, which Capital is an approved institution. In order to ensure this

certificate maintains financial aid eligibility, a computer elective (CSA, CSC, or CST) course is being added.

RECOMMENDATION

Following its review and deliberative process, it is the recommendation of the Academic Council that the Board of Regents approve the accreditation of this program. The System's Provost and Senior Vice President for Academic and Student Affairs concurs with this recommendation.

05/01/2020– BOR -Academic and Student Affairs Committee

05/14/2020 – Board of Regents

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APPLICATION FOR CONTINUED ACCREDITATION

SECTION 1: GENERAL INFORMATION

Institution: Capital Community College Date of Submission to CSCU Office of the Provost: **Spring 2020**

Most Recent NECHE Institutional Accreditation Action and Date: **Continued Accreditation 2016-17 (10-year)**

Program Characteristics

Name of Program: **Cisco Certified Networking Associate (CCNA)**

Degree: Title of Award (e.g. Master of Arts)

Degree's Associated Certificate(s) (if any) **Certificate**

Stand-Alone Certificate: (specify type and level)

Semester Date Program was Initiated: **Fall 2015**

Year 3 – 7th Semester Date: **Fall 2018**

Date of First Graduation: **Spring 2018**

Modality of Program: On ground Online **X** Combined

If "Combined", % of fully online courses? **Up to 100%**

Locality of Program: **X** On Campus Off Campus Both

Program Credit Distribution CCNA Cert

Credits in General Education: 0

Credits in Program Core: **12**

Credits of Electives in the Field: 0

Credits of Other Electives: 0

Cr Special Requirements (include internship, etc.): **0**

Total # Cr in the Program (sum of all #Cr above): **12**

From "Total # Cr in the Program" above, enter #Cr that are part of/belong in an already approved program(s) at the institution: **12**

Date of BOR Approval: **06/25/15** CIP: **111002** OHE#: **018180**

Institutional Contact for this Proposal:

Dr. Miah LaPierre Dreger, EdD

Title: **Dean of Academic**

and Student Affairs

Tel.: **860-906-5011**

e-mail: **mlapierre-dreger@capitalcc.edu**

Note: In Spring 2019, a request for continued accreditation of this program was submitted to the BOR in tandem with other programs across the CSCU system due to expired licensures. After consideration of that joint proposal, the ASA Committee requested that a full proposal for continued accreditation of this program be submitted during Spring 2020. The following data reflects the current status of the program.

SECTION 2: PERFORMANCE INDICATORS

Student Enrollment

Projected full-time equivalent (FTE) enrollment for the Cisco Certified Networking Assoc (CCNA) Certificate's Year 3: **1.7**
 (Note: 2017-18 was Year 3)

Actual full-time equivalent (FTE) enrollment for the Cisco Certified Net. Assoc (CCNA) Certificate's most recent semester: **1.0**
 (Note: Fall 2019 was the certificate's 9th semester)

Difference: **-0.7**

Note: Even though the Cisco Certified Networking Associate (CCNA) certificate FTE in Fall 2019 was 1.0 (headcount of 2 students: 1 FT and 1 PT) and there have been 2 graduates of this certificate so far, this certificate is a stacked and latticed feeder pipeline for the Computer Networking A.S. (parent) degree and most students are included in the FTE for the parent program or related option instead. In total, the entire Computer Networking program (including parent degree and related option and certificates) had a combined FTE of 36.2 (combined headcount of 64) in Fall 2019. This total exceeded the 3-year combined FTE of 33.6 that was projected at the time of initial program approval.

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Cost Effectiveness

Total Revenue generated by the Cisco Certified Networking Assoc (CCNA) Certificate during its most recent year: **\$2,284**
(Note: 2018-19 was Year 4)

Total Expenditures apportioned to the Cisco Certified Networking Assoc (CCNA) Certificate in its most recent year: **\$917**
(Note: 2018-19 was Year 4)

Difference (Net Gains): **\$1,367**

Note: This certificate is a stacked and latticed feeder pipeline for the Computer Networking A.S. (parent) degree and most students are included in the FTE for the parent program or related option instead. In total, the entire Computer Networking program (including parent degree and related option and certificates) had a total revenue of \$208,108 and a total expense of \$121,634 during the 2018-2019 academic year, resulting in a difference of \$86,474 net gain overall. These gains are expected to remain steady in 2019-20 since the combined program FTE in Fall 2019 (36.2) remained nearly the same as Fall 2018 (36.9) with additional enrollment increases anticipated in future semesters due to new marketing strategies, increasing local/regional employment prospects, and a new state program called the "Pledge to Advance Connecticut" (PACT) that was designed to attract more full-time students to the CT community colleges.

Learning Outcomes

Summarize assessment of student learning outcomes at end of program's Year 3:
(Note: Information below pertains to the most current Year 5, 2019-20)

Capstone activities in identified course work are designed to assess student learning of the learning outcomes listed below. In addition to the acquisition of general education competencies, graduates that complete the Cisco Certified Networking Assoc (CCNA) Certificate will be able to:

1. Demonstrate an understanding of the fundamentals of information technology and information systems and their importance and impact in business and society. (Assessments: CST 231, CST 281, CST 282)
2. Identify and describe basic communication technologies, devices, and components used in Local and Wide Area Networks. (Assessments: CST 231, CST 281, CST 282)
3. Identify and describe various types of analog and digital communication transmission media including coax, twisted pair, fiber, and wireless media. (Assessments: CST 231)
4. Demonstrate the use of appropriate tools to assist with administering and troubleshooting computers, media, and devices on a network. (Assessments: CST 231, CST 281, CST 282)
5. Design, build, and manage multilayer-switched networks and scalable internetworks using routers, switches, hubs, computers, servers, transmission media, network protocols, and network security. (Assessments: CST 231, CST 281, CST 282)
6. Apply comprehensive theoretical knowledge, problem-solving skills, and ethical principles to address case studies and practical applications in networking and information technology. (Assessments: CST 231, CST 281, CST 282)

There have been 2 graduates of the Cisco Certified Networking Associate (CCNA) Certificate so far. In addition, there have been 14 graduates of the Computer Networking: Cybersecurity AS degree option and 6 graduates of the Cybersecurity Certificate. In total, 22 students have graduated from the entire Computer Networking program (including parent degree and related option and certificates). Many of the certificate graduates will likely pursue the parent degree or related degree option as well.

SECTION 3: UPDATE OF PROGRAM CHANGES (if any)

Curricular and Other Program Changes (Describe any changes since program was initiated, in curriculum, admission and/or completion requirements, program administration, faculty, and resources, or any other significant changes). If needed, provide details on curricular changes in the table below).

Capital has improved the resources of the Cisco Certified Network Associate (CCNA) Certificate curriculum since program inception through becoming an approved Cisco Networking Academy. Cisco is an industry leader in computer networking technology. Through becoming a Cisco Academy, Capital has access to equipment and resources from Cisco that are utilized in all of the networking courses.

Additionally, Capital has upgraded and enhanced the computer networking laboratory by designing and hosting our own private virtual

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cloud that allows students to design and deploy virtual networks and machines to build and practice related networking skills.

There are also several curricular changes underway to the Cisco Certified Network Associate (CCNA) Certificate since program inception.

- Effective Fall 2020, Capital is removing the 4th course in the Cisco Networking curriculum – CST 283 Data Communication & Networking IV. This change is due in part to a change to the Cisco Academy curriculum, which Capital is an approved institution. In order to ensure this certificate maintains financial aid eligibility, a computer elective (CSA, CSC, or CST) course is being added.

Note: These changes are also detailed in the “Details of Curriculum Changes for a Licensed Program” section on page 5 below.

Other Narrative Background to be Considered Since Approval (As needed, discuss other changes such as program need and demand, transfer agreements developed, etc.)

Program Need Based on Regional and National Data, Market Data, and Industry Trends:

According to the *Bureau of Labor Statistics, U.S. Department of Labor, Occupational Outlook Handbook*, employment for network and computer system administrators industry-wide is projected to increase by 5% (as fast as average) over the next 10 years:

Table 1: 10-year National Occupational Outlook, March 2020:

Occupation	10-Year Anticipated Growth
Network and Computer System Administrators ¹	5%

While employment projections industry-wide are 5%, employment of network administrators in the computer systems design and related services industry is projected to grow 24 percent over the same time period. Additionally, U.S. Department of Labor analysts note favorable job prospects for applicants who possess a bachelors degree and are up-to-date in the newest technologies, including cloud computing.

Similarly, according to the *CT Department of Labor, 2016 - 2026 State of Connecticut Occupational Projections*, occupations in networking and system administration and network support are projected to increase over the next ten years.

Table 2: 10-year CT Occupational Outlook (2016-2026)²:

Occupation	10-Year Anticipated Growth
Network and Computer Systems Administrators (15-1142)	4.3%
Computer Network Support Specialists (15-1152)	7.7%

Data from JobsEQ, *Occupation Snapshot in Connecticut, 2019q3*³, differs from the CT DOL projections and indicates negative growth in these occupational areas. However, JobsEQ estimates the CT award output for these occupational areas is below the national norm, indicating CT may be an importer of jobs for these occupations. Specifically, in 2017-2018, JobsEQ estimated that CT degree-granting institutions awarded 86 awards in network and computer systems administration, compared to 120 nationally. Similarly, CT degree-granting institutions awarded 40 awards in computer network support specialist, compared to 54 nationally.

Additionally, in mid-March 2020, on *CareerOneStop.org* there were 296 job postings related to Network and Computer Systems Administrators, and 49 job postings relating to Computer Network Support Specialists.

¹ Bureau of Labor Statistics, U.S. Department of Labor, *Occupational Outlook Handbook*, Network and Computer Systems Administrators, on the Internet at <https://www.bls.gov/ooh/computer-and-information-technology/network-and-computer-systems-administrators.htm> (visited February 21, 2020).

² CT Department of Labor, *2016 - 2026 State of Connecticut Occupational Projections*, Civil Engineering Technicians Occupation on the Internet at <https://www1.ctdol.state.ct.us/lmi/projections2016/computers.asp> (Retrieved March 2020)

³ JobsEQ Chmura Economics and Analytics, *Occupation Snapshot in Connecticut, 2019q2*, All Occupations on the Internet at <https://jobseq.egsuite.com/analytics/occupation-snapshot> (Retrieved September 2019)

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Transferability and Uniqueness to the Region:

Capital Community College is one of eight CT Community Colleges that offers a Certificate related to computer networking. The similar certificates offered statewide include:

- Gateway Community College, Computer Science: Networking Certificate
- Gateway Community College, Computer Science: Networking Administrator Certificate
- Housatonic Community College, Computer Information Systems Certificate: Network Technology
- Manchester Community College, Computer Network Technician Certificate
- Middlesex Community College, Communications Networking Certificate
- Naugatuck Valley Community College, Computer Networking Certificate
- Quinebaug Valley Community College, Senior Network Specialist A.S.
- Tunxis Community College, Network Administration Certificate A.S.

The Cisco Certified Networking Assoc (CCNA) Certificate is 100% stackable into the Computer Networking A.S. (parent) degree at Capital, which is also 100% transferrable to the Bachelor of Science in Networking Information Technology at Central Connecticut State University.

Program Promotes Equity and Diversity in the Information Technology Industry:

African Americans, Latinos and females are each underrepresented groups within the Information Technology industry, and broader Science and Engineering workforce⁴. In line with the College's Mission statement, the Computer Networking program (including parent degree and related option and certificates) seeks to engage a diverse student population and prepares our predominately African American, Latino, and female student population for entry-level employment in this industry. Moreover, while the information technology industry has traditionally been dominated by males, 25% of the students enrolled in the Computer Networking program overall at Capital (including parent degree and related option and certificates) during Fall 2019 were female.

In our marketing, outreach, and partnerships with secondary schools throughout Greater Hartford, Capital speaks to communities about the importance of broadening participation in computing and IT fields, and the importance of diversity in the IT workforce.

Compliance with Special Requirements Given at the time of Program Approval (As applicable, please summarize how the program responded to requirements issued by the BOR, at the time it was licensed. Include any attachments as necessary.)

There were no special requirements issued by the BOR at the time of licensure.

⁴ <https://nces.nsf.gov/pubs/nsb20198/demographic-trends-of-the-s-e-workforce>

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Details of Curriculum Changes for a Licensed Program (to be use as needed)

CCNA Certificate

Course Number and Name	L.O. #	Pre-Requisite	Cr Hrs	Course Number and Name	L.O. #	Cr Hrs
Program Core Courses				Other Related/Special Requirements		
CST 231 Data Communications and Networking I*	1,2,3,4,5,6		3			
CST 281 Data Communications and Networking II*	1,2,4,5,6	CST 231	3			
CST 282 Data Communications and Networking III*	1,2,4,5,6	CST 281	3			
CST 283 Data Communications and Networking IV* CSA, CSC, or CST Elective*	1,2,4,5,6 varies	CST 281	3			
Core Course Prerequisites			12	Elective Courses in the Field		0
Total Other Credits Required to Issue Credential (e.g. GenEd/Liberal Arts Core/Liberal Ed Program)						12
* Note: Courses designated with an * can be taught either on ground or online.						

Other Narrative Background Since Licensure Approval (As needed, consider other changes such as program need and demand, transfer agreements developed, etc.)

No additional information in this area. (See previous "Other Narrative Background" section on pages 3-4 for details.)

Learning Outcomes - L.O. (Discuss any significant changes in the Learning Outcomes and relevant curricular changes; if any)

There have been no changes to the program learning outcomes since the time of licensure:

1. Demonstrate an understanding of the fundamentals of information technology and information systems and their importance and impact in business and society.
2. Identify and describe basic communication technologies, devices, and components used in Local and Wide Area Networks.
3. Identify and describe various types of analog and digital communication transmission media including coax, twisted pair, fiber, and wireless media.
4. Demonstrate the use of appropriate tools to assist with administering and troubleshooting computers, media, and devices on a network.
5. Design, build, and manage multilayer-switched networks and scalable internetworks using routers, switches, hubs, computers, servers, transmission media, network protocols, and network security.
6. Apply comprehensive theoretical knowledge, problem-solving skills, and ethical principles to address case studies and practical applications in networking and information technology.

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SECTION 4: EXPLANATORY & CORRECTIVE ACTION PLAN

Fiscal Impact – succinctly disclose the financial impact upon institution of negative *Difference* within Cost Effectiveness

Even though the Cisco Certified Networking Associate (CCNA) certificate FTE was 1.0 in Fall 2019 (the program's 9th semester) with a headcount of 2 students (1 FT and 1 PT), the program experienced positive net gains over the past three subsequent years (2016-2019) totaling \$1,862.

This certificate is a stacked and latticed feeder pipeline for the Computer Networking A.S. (parent) degree and most students are included in the FTE for the parent program or related option instead.

In total, the entire Computer Networking program (including parent degree and related option and certificates) had a combined FTE of 36.2 in Fall 2019 with a combined headcount of 64. This total exceeded the 3-year combined FTE of 33.6 that was projected at the time of initial program approval.

Likewise, during the 2018-2019 academic year, the entire Computer Networking program (including parent degree and related option and certificates) had a total revenue of \$208,108 and a total expense of \$121,634, resulting in a difference of \$86,474 net gain overall.

These gains are expected to remain steady in 2019-20 since the combined program FTE in Fall 2019 (36.2) remained nearly the same as Fall 2018 (36.9) with additional enrollment increases anticipated in future semesters (*see Table 5*) due to new marketing strategies, increasing local/regional employment prospects, and a new state program called the "Pledge to Advance Connecticut" (PACT) that was designed to attract more full-time students to the CT community colleges.

Table 5: CCNA Certificate enrollment trends and projections.

Prior Enrollment Trends			Future Enrollment Projections		
CCNA Cert only			CCNA Cert only		
Fall 2016	Fall 2017	Fall 2018	Fall 2019	Fall 2020	Fall 2021
0.6 FTE	0.0 FTE	0.4 FTE	1.0 FTE	1.6 FTE	2.0 FTE
Computer Networking parent degree and related option and certificates combined			Computer Networking parent degree and related option and certificates combined		
Fall 2016	Fall 2017	Fall 2018	Fall 2019	Fall 2020	Fall 2021
17.9 FTE	29.4 FTE	36.9 FTE	36.2 FTE	40.8 FTE	46.8 FTE

Based on conservative enrollment increase projections over the next three years and anticipated revenue and expense projections, we anticipate that the combined projected net earnings for the Computer Networking program overall (including parent degree, related option, and certificates) will total at least \$343,593:

Table 6: CCNA Certificate projected net gains.

	3-Year Net Gain Projections			
	Y1 (2019-20)	Y2 (2020-21)	Y3 (2021-22)	TOTAL
CCNA Cert only	\$4,374	\$6,860	\$9,450	\$20,684
Entire Computer Networking Program (parent degree, related option and certificates combined)	\$77,864	\$117,414	\$148,315	\$343,593

CONNECTICUT BOARD OF REGENTS FOR HIGHER EDUCATION

Connecticut State Colleges & Universities System Office

APPLICATION FOR CONTINUED ACCREDITATION

Improvement Plan

If negative *Difference(s)* reported above for **Student Enrollment** and/or **Cost Effectiveness**, present plan(s) for corrective actions:

The institution recognizes that the Cisco Certified Networking Associate (CCNA) certificate is still a low completer, however the program is still relatively new and the combined number of completers for the entire Computer Networking program (including parent degree, related option, and certificates) exceeded the low completer threshold in the most recent academic year (2018-19). Moreover, current and projected enrollment numbers (*see table 5*) suggest that program completion numbers will increase steadily over the coming years. **Thus, we recommend approval for continued accreditation with the following improvement plan:**

Increase in Student Attainment of Industry Certifications

Graduates of our Computer Networking, Cybersecurity, and other Information Technology degree and certificate programs need to acquire related industry certifications to be competitive for entry-level job openings. This is based on feedback from employers, as well as experiences of graduating students. Over the past two academic years, faculty teaching all information technology courses at Capital have identified industry certifications that graduating students can prepare for during their course studies, and begun to update and align coursework to these certifications.

Historically, students in the Computer Networking program (including parent degree and related option and certificates) have only prepared for the Cisco CCENT and Cisco CCNA certifications. Beginning in Fall 2020, students will also be prepared to take the industry certifications in additional networking and system administration areas including Windows Server, Linux, Security Fundamentals and Cloud Computing. These certifications will greatly increase our graduates' competitiveness in the job market and employability.

To better support and streamline students' ability to take networking and cyber security related certificates, Capital is currently applying to become a certified testing center that will enable our campus to provide discounted certification tests to students, as well as providing instructor resources to Capital faculty. As part of our efforts to improve program marketing, Capital will highlight these certifications in our marketing materials and program web sites.

Reduced Certificate Completion Time and Alignment with Non-Credit

Capital faculty have updated the Computer Networking program curriculum (including parent degree and related option and certificates) to shorten time to completion for students pursuing certificates. The changes being made will allow all certificate programs to be completed within 12-months. Many potential and current students have communicated concerns with certificate programs that last longer than this time period. By shortening the time to completion for certificates, as well as highlighting the industry certifications students can acquire upon program completion, we are confident we will be able to attract more non-traditional students and individuals seeking re-training into our programs.

Additionally, Capital faculty are coordinating with our Division of Workforce Development and Continuing Education to provide ways to offer computer technology coursework in a dual credit and non-credit format. The dual-format courses will be advertised specifically to businesses in Downtown Hartford, to current employees interested in upskilling. The courses will also be advertised and shared with our local workforce development boards to serve and benefit adult learners and dislocated workers pursuing job re-training.

Continued Program Need:

Industry labor market projections indicate continued program need. (*See the "Program Need" data in the "Other Narrative Background" section on pages 3-4 for details.*)

Additional Program Alignment with Industry Needs:

Annual meetings with Capital's Computer Technology Advisory Council are vital to ensure our program curriculum is aligned with current industry-specific requirements. Members of this advisory council include information technology professionals and hiring managers throughout Greater Hartford, transfer institution representatives and current Capital students. Capital faculty rely on feedback from the

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APPLICATION FOR CONTINUED ACCREDITATION

Advisory Council for curriculum development, curriculum review, and curriculum alignment with industry needs. Feedback from the Advisory Council was instrumental in the development of new cloud computing curriculum as well as recent new computer programming curriculum in Python and .NET.

Projected Increases in Enrollees and Completers:

As was explained in the "Fiscal Impact" section (see page 6), enrollment in the CCNA Certificate program is expected to remain steady in the 2019-20 academic year since the combined Computer Networking FTE (including parent degree, related option, and certificates) in Fall 2019 (36.2) remained nearly the same as Fall 2018 (36.9) with additional enrollment increases anticipated in future semesters due to new marketing strategies, increasing local/regional employment prospects, and a new state program called the "Pledge to Advance Connecticut" (PACT) that was designed to attract more full-time students to the CT community colleges (see Table 5 for enrollment details). Furthermore, program completion is also expected to increase as the program continues to grow (see Table 7):

Table 7: CCNA Certificate completer trends and projections.

Prior Completion Trends			Future Completion Projections		
CCNA Certificate only			CCNA Certificate only		
2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
0	1	1	2	3	4
Entire Computer Networking Program (parent degree, related option and certificates combined)			Entire Computer Networking Program (parent degree, related option and certificates combined)		
2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
2	9	9	21	28	36

Thus, based on conservative enrollment increase projections over the next three years and anticipated revenue and expense projections, we anticipate that the combined projected net earnings for the Computer Networking program overall (including parent degree, related option, and certificates) will total at least \$343,593 (see Table 6 for details).

Improved Instructional Facilities:

Since the program inception, Capital has made significant improvements and upgrades to the networking and cybersecurity lab environments to support student learning on-site and remotely. Capital faculty received dedicated training and professional development which enabled Capital to become an approved Cisco Academy. As a Cisco Academy, Capital has access to equipment and resources from Cisco that are utilized in all of the networking and cybersecurity courses. This curriculum is state-of-the-art and directly aligned with in-demand industry certifications.

Additionally, Capital has upgraded and enhanced the computer networking laboratory by designing and hosting our own private virtual cloud that allows students to design and deploy virtual networks and machines to build and practice related networking and cybersecurity skills. Students can access our virtual cloud remotely, which greatly facilitates student learning outside of class time and effectively supports distance learning.

Expanded Marketing and Program Outreach

Through new leadership at the college and a new Director of Marketing and Public Relations, funding and resources have been increased to improve program marketing across the College. Our Computer Networking and Cybersecurity Program Coordinator is working with the new Director of Marketing to update the program and certificate brochures and web sites to reflect the new curriculum changes and highlight the new industry-certifications aligned to the program.

The Computer Networking and Cybersecurity Program Coordinator will also continue to expand outreach to local high schools to promote the networking/cybersecurity program. The Coordinator is partnering with secondary schools through Capital's College Career Pathways

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APPLICATION FOR CONTINUED ACCREDITATION

program to articulate introductory networking courses with local high schools. The Program Coordinator also actively and consistently presents and teaches short min-sessions to participating secondary students who come to Capital for the day from area secondary schools.

Curricular Change

If institution/program is not satisfied with the degree to which the Learning Outcomes have been achieved, what course of action is planned for improvement of teaching and learning:

Capital Community College is satisfied with the degree to which the learning outcomes have been achieved in this program. Nonetheless, program faculty will continue to engage in continuous improvement efforts to enhance their instruction through professional development, Center for Teaching (CFT) workshops, industry certification training events, and other opportunities for learning best practices that may enhance program teaching and learning.

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APPLICATION FOR CONTINUED ACCREDITATION

SECTION FIVE: FUTURE PROGRAM RESOURCES AND COST ESTIMATES

(For the next three years to be specified, please complete the Resources and Cost Estimates form below, and provide a narrative below regarding the financial sustainability of the program)

Resources and Costs Estimates Form
(Whole Dollars Only)

PROJECTED Program Revenue	Year 1 (2019-20)		Year 2 (2020-21)		Year 3 (2021-22)	
	Full Time	Part Time	Full Time	Part Time	Full Time	Part Time
Tuition (do not include internal transfers)	\$3,984	\$1,992	\$4,084	\$4,084	\$4,186	\$6,276
Program-Specific Fees	\$360	\$144	\$360	\$288	\$360	\$432
Other Revenue (Annotate in narrative)	\$572	\$304	\$586	\$624	\$600	\$960
Total Program Revenue	\$4,916	\$2,440	\$5,030	\$4,996	\$5,146	\$7,668
	\$7,356		\$10,026		\$12,814	

PROJECTED Program Expenditures*	Year 1		Year 2		Year 3	
	Number	Amount	Number	Amount	Number	Amount
Administration (Chair or Coordinator) (Includes salary plus fringe)	0.03 FTE	\$2,932	0.03 FTE	\$3,116	0.03 FTE	\$3,314
Faculty (Full-time, total for program)	0	0	0	0	0	0
Faculty (Part-time, total for program)	0	0	0	0	0	0
Support Staff	0	0	0	0	0	0
Graduate Assistants	0	0	0	0	0	0
Library Resources Program	0	0	0	0	0	0
Equipment (List as needed)	0	0	0	0	0	0
Other (Marketing)	0	\$50	0	\$50	0	\$50
Estimated Indirect Costs (e.g. student services, operations, maintenance)	0	0	0	0	0	0
Total Annual Expenditures		\$2,982		\$3,166		\$3,364

*Note: Capital outlay costs, institutional spending for research and services, etc. can be excluded.

Please provide any necessary annotations below:

Based on conservative enrollment increase projections over the next three years and anticipated revenue and expense projections, the total projected net earnings over the next three years for the CCNA Certificate will total at least \$20,684.

The combined projected net earnings for the Computer Networking program overall (including parent degree, related option, and certificates) will total at least \$343,593.

Additional expenses relating to laboratory materials and equipment are funded by Perkins grant funding.

CT BOARD OF REGENTS FOR HIGHER EDUCATION

RESOLUTION

concerning

Replication of a College of Technology Program

May 14, 2020

RESOLVED: That the Board of Regents for Higher Education approve the replication of a College of Technology Program in Technology Studies: Data Science Option (CIP Code: 27.0304) – leading to an Associate of Science at Tunxis Community College; and grant its accreditation for a period of seven semesters beginning with its initiation.

A True Copy:

Erin A. Fitzgerald, Secretary of the
CT Board of Regents for Higher Education

ITEM

Approval of the replication of an Associate of Science: College of Technology Program in Technology Studies: Data Science Option at Tunxis Community College.

BACKGROUND

Per Board of Regents Policy, Community colleges may replicate a College of Technology's Engineering Science or Technology Studies academic program (Associate of Science degree, Certificate, and Program Option) or modification previously approved by the Board of Regents for another Community College. Tunxis Community College intends to create a Technology Studies: Data Science Option that mirrors the program and curriculum at Northwestern Community College approved by the Board of Regents on September 19, 2019.

Data Scientists are becoming increasingly in demand in the business industry. Data Science, also known as Data Analytics, is one of the fastest growing fields according to the U.S. Bureau of Labor and Statistics. Statisticians are projected to grow the fastest of any occupation in this mathematical group, at 33.8 percent from 2016 to 2026. The field of data science will be a source of particularly high demand for these workers. This program would allow our students to enter this growing field, either by entering the field with an Associate's Degree and being mentored by senior data scientists or continuing on to obtain a Bachelor's degree in the field. Many of the CSU's are beginning to offer programs in Data Science and our students would be poised to transfer to these programs. New Bachelor's programs in Data Analytics are also being offered at St. Joseph's University and University of Hartford, increasing the opportunities for transfer for our students.

RECOMMENDATION

Following its review and deliberative process, it is the recommendation of the Academic Council that the Board of Regents approve the replication of this College of Technology Program. The System's Provost and Senior Vice President for Academic and Student Affairs concurs with this recommendation.

05/01/2020– BOR -Academic and Student Affairs Committee

05/14/2020 – Board of Regents

January 30, 2020

Dr. Karen Wosczyzna-Birch
State Director, College of Technology
Connecticut State College and Universities
271 Scott Swamp Road
Farmington, CT 06032

Dear Dr. Wosczyzna-Birch,

As CEO of Tunxis Community College, I am requesting approval from the College of Technology (COT) and the Connecticut Board of Regents for Higher Education (BOR) for the implementation of COT programs at Tunxis Community College using the BOR resolution for the expedited replication of COT programs approved on February 1, 2018. The Data Science option and certificate were previously approved by the BOR and is currently offered at Northwestern Connecticut Community College.

The specific COT certificates and options under the Technology Studies Associate Degree that are being requested for approval for implementation at Tunxis Community College are:

Option:

- Technology Studies: Data Science Option

Certificate:

- Data Science Certificate

This will also be an opportunity for us to grow our STEAM programs and in particular to focus on women and minorities in STEAM.

Enclosed you will also find an operational plan and budget, as well as the application form to replicate an existing COT program. Thank you very much for your time and consideration.

Sincerely



Dr. Darryl Reome
Campus CEO
Tunxis Community College

Tunxis Community College
271 Scott Swamp Road
Farmington, CT 06032
860.255.3500
tunxis.commnet.edu
A Connecticut Community College

CONNECTICUT BOARD OF REGENTS FOR HIGHER EDUCATION
Connecticut State Colleges & Universities
APPLICATION FOR NEW PROGRAM APPROVAL – REPLICATION OF A COT PROGRAM

SECTION 1: GENERAL INFORMATION

Institution: Tunxis Community College	Date of Submission to CSCU Office of the Provost:
Most Recent NECHE Institutional Accreditation Action and Date: 3/29/16	
Program Characteristics Name of Program: Technology Studies: Data Science Option Degree: Title of Award (e.g. Master of Arts) Associate of Science Degree Certificate: (specify type and level) Stand-Alone Certificate: (specify type and level) Anticipated Program Initiation Date: Fall 2020 Anticipated Date of First Graduation: Spring 2022 Modality of Program: On ground Online X Combined If "Combined", % of fully online courses? 71-76% Locality of Program: X On Campus Off Campus Both	Program Credit Distribution # Credits in General Education: 21 # Credits in Program Core Courses: 28 # Credits of Electives in the Field: 18 # Credits of Other Electives: 0 # Cr Special Requirements (include internship, etc.): 0 <u>Total # Cr in the Program</u> (sum of all #Cr above): 67 From "Total # Cr in the Program" above, enter #Cr that are part of/belong in an already approved program(s) at the institution: 61
Replicated College of Technology Program Characteristics Name of Program: Technology Studies: Data Science Option Institution: Tunxis Connecticut Community College CIP Code No. 27.0304 Title of CIP Code - Data Science	
If establishment of the new program is concurrent with discontinuation of related program(s), please list for each program: Program Discontinued: CIP: OHE#: BOR Accreditation Date: Phase Out Period Date of Program Termination	
Other Program Accreditation: <ul style="list-style-type: none"> • If seeking specialized/professional/other accreditation, name of agency and intended year of review: • If program prepares graduates eligibility to state/professional license, please identify: (As applicable, the documentation in this request should address the standards of the identified accrediting body or licensing agency)	
Institutional Contact for this Proposal: Mat Spinelli	Title: Program Director STEAM and Advanced Manufacturing Tel.: 860-773-1672 e-mail: mspinelli@tunxis.edu
Institution's Unit (e.g. School of Business): STEAM Location (e.g. main campus) Offering the Program: Main Campus	
Background and Rationale: (Provide the context for and need for the proposed replication) Data Scientists are becoming increasingly in demand in the business industry. Data Science, also known as Data Analytics, is one of the fastest growing fields according to the U.S. Bureau of Labor and Statistics. Statisticians are projected to grow the fastest of any occupation in this mathematical group, at 33.8 percent from 2016 to 2026. The field of data science will be a source of particularly high demand for these workers. This program would allow our students to enter this growing field, either by entering the field with an Associate's Degree and being mentored by senior data scientists or continuing on to obtain a Bachelor's degree in the field. Many of the CSU's are beginning to offer programs in Data Science and our students would be poised to transfer to these programs. New Bachelor's programs in Data Analytics are also being offered at St. Joseph's University and University of Hartford, increasing the opportunities for transfer for our students. Forbes reports that 59% of all Data Science and Analytics job demand is in Finance and Insurance, Professional Services, and IT. Tunxis' physical location, close to Hartford and Farmington's insurance and finance corporations, would allow us to address the growing needs of these employers looking for employees in the data science field.	

CONNECTICUT BOARD OF REGENTS FOR HIGHER EDUCATION

Connecticut State Colleges & Universities

APPLICATION FOR NEW PROGRAM APPROVAL – REPLICATION OF A COT PROGRAM

SECTION 2: PROGRAM QUALITY ASSESSMENT

Cost Effectiveness and Availability of Adequate Resources

(Please complete the PRO FORMA Budget – Resources and Expenditure Projections on page 6 and provide a narrative below regarding the cost effectiveness and availability of adequate resources for the proposed program. Add any annotations for the budget form.)

Program Administration

The program will be administered under the Program coordinator for Tech Studies, Dr. Asheka Rahman. Professors Nicholas Stugard and Susan Lounsbury from the Math department will also help with advising of students. The program falls under our STEAM (Science, Technology, Engineering, Art and Math) department which is headed up by Mathew Spinelli.

Faculty (Please complete the faculty template provided below to include current full-time members of the faculty who will be teaching in this program and, as applicable, any anticipated new positions/hires during the first three years of the program and their qualifications)

How many new full-time faculty members, if any, will need to be hired for this program?

None - With no new hires needed for this program, the entirety of the program will be taught by current full-time and adjunct faculty members.

What percentage of the credits in the program will they teach?

N/A

What percent of credits in the program will be taught by adjunct faculty?

Varies by semester

Describe the minimal qualifications of adjunct faculty, if any, who will teach in the program

Master's degree in Mathematics, Statistics, or a related field. Courses in R if they are teaching the DST courses

Special Resources (Provide a brief description of resources that would be needed specifically for this program and how they will be used, e.g. laboratory equipment, specialized library collections, etc. Please include these resources in the Resources and Expenditures Projections spreadsheet)

Existing Laboratory and Computer Classrooms will be used for some classes.

*Special Requirements include co-curriculum activities – structured learning activities that complement the formal curriculum – such as internships, innovation activities and community involvement.

NOTE: The PRO FORMA Budget on the last page should provide reasonable assurance that the proposed program can be established and is sustainable. Some assumptions and/or formulaic methodology may be used and annotated in the “Cost Effectiveness ...” narrative on page 3.

CONNECTICUT BOARD OF REGENTS FOR HIGHER EDUCATION

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APPLICATION FOR NEW PROGRAM APPROVAL – REPLICATION OF A COT PROGRAM

Full-Time Faculty Teaching in this Program (Note: If you anticipate hiring new faculty members for this program you may list "to be hired" under name and title. Provide required credentials, experience, and other responsibilities for each new position anticipated over the first three years of implementation of the program)

Faculty Name and Title	Institution of Highest Degree	Area of Specialization/Pertinent Experience	Other Administrative or Teaching Responsibilities
Professor Nicholas Stugard	Rowan University	Mathematics/ training in R programming	
Professor Hendree Milward	Central Connecticut	Mathematics/ training in R programming	

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Connecticut State Colleges & Universities

APPLICATION FOR NEW **PROGRAM APPROVAL** – **REPLICATION OF A COT PROGRAM**

PRO FORMA Budget - Resources and Expenditures Projections (whole dollars only)

PROJECTED Enrollment	First Year						Second Year						Third Year					
	Fall Semester		Spring Semester		Summer		Fall Semester		Spring Semester		Summer		Fall Semester		Spring Semester		Summer	
	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT
Internal Transfer (from other programs)	9		9				3		3				3		3			
New Students (first time matriculating)	3		3				12		12				17		17			
Continuing Students progressing to credential			12				24		39				42		50			
Headcount Enrollment	12		24				39		54				62		70			
Total Estimated FTE per Year ¹	36																	
PROJECTED Program Revenue	First Year						Second Year						Third Year					
	Fall Semester		Spring Semester		Summer		Fall Semester		Spring Semester		Summer		Fall Semester		Spring Semester		Summer	
	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT
Tuition ²	5976		29880				71712		101592				117528		133464			
Tuition from Internal Transfer ²	17928		17928				5976		5976				5976		5976			
Program Specific Fees (lab fees, etc.)																		
Other Revenue (annotate in narrative)																		
Total Annual Program Revenue	71712						185256						262944					
PROJECTED Program Expenditures ³							NOTE: Existing regulations require that: “an application for a new program shall include a complete and realistic plan for implementing and financing the proposed program during the first cycle of operation, based on projected enrollment levels; the nature and extent of instructional services required; the availability of existing resources to support the program; additional resource requirements; and projected sources of funding. If resources to operate a program are to be provided totally or in part through reallocation of existing resources, the institution shall identify the resources to be employed and explain how existing programs will be affected. Reallocation of resources to meet new and changing needs is encouraged, provided such reallocation does not reduce the quality of continuing programs below acceptable levels.” 1 1 FTE = 12 credit hours for undergraduate programs; 1 FTE = 12 credit hours for graduate programs; both for Fall & Spring 2 Revenues from all courses students will be taking. 3 Capital outlay costs, instructional spending for research and services, etc. can be excluded. 4 If full-time person is solely hired for this program, use rate time; otherwise, use a percentage. Indicate if new hires or existing faculty/staff. Record Salary and Fringe Benefits, accordingly. 5 e.g. student services. Course development would be direct payment or release time; marketing is cost of marketing that program separately. 6 Check with your Business Office – community colleges have one rate; the others each have their own. Indirect Cost might include such expenses as student services, operations and maintenance.											
	First Year		Second Year		Third Year													
Administration (Chair or Coordinator) ⁴	7933		7933		7933													
Faculty (Full-time, total for program) ⁴			45528		60704													
Faculty (Part-time, total for program) ⁴																		
Support Staff (lab or grad assist, tutor)																		
Library Resources Program																		
Equipment (List in narrative)																		

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APPLICATION FOR NEW PROGRAM APPROVAL – REPLICATION OF A COT PROGRAM

Other ⁵				
Estimated Indirect Costs ⁶		20482	27309	
Total Expenditures per Year	7933	73943	95946	

CT BOARD OF REGENTS FOR HIGHER EDUCATION

RESOLUTION

concerning

Replication of a College of Technology Program

May 14, 2020

RESOLVED: That the Board of Regents for Higher Education approve the replication of a College of Technology Program in Data Science (CIP Code: 27.0304) – leading to a C2 Certificate at Tunxis Community College; and grant its accreditation for a period of seven semesters beginning with its initiation.

A True Copy:

Erin A. Fitzgerald, Secretary of the
CT Board of Regents for Higher Education

ITEM

Approval of the replication of a C2 Certificate in Data Science at Tunxis Community College.

BACKGROUND

Per Board of Regents Policy, Community colleges may replicate a College of Technology's Engineering Science or Technology Studies academic program (Associate of Science degree, Certificate, and Program Option) or modification previously approved by the Board of Regents for another Community College. Tunxis Community College intends to create a C2 Certificate in Data Science that mirrors the program and curriculum at Northwestern Community College approved by the Board of Regents on September 19, 2019.

Data Scientists are becoming increasingly in demand in the business industry. Data Science, also known as Data Analytics, is one of the fastest growing fields according to the U.S. Bureau of Labor and Statistics. Statisticians are projected to grow the fastest of any occupation in this mathematical group, at 33.8 percent from 2016 to 2026. The field of data science will be a source of particularly high demand for these workers. This program would allow our students to enter this growing field, either by entering the field with an Associate's Degree and being mentored by senior data scientists or continuing on to obtain a Bachelor's degree in the field. Many of the CSU's are beginning to offer programs in Data Science and our students would be poised to transfer to these programs. New Bachelor's programs in Data Analytics are also being offered at St. Joseph's University and University of Hartford, increasing the opportunities for transfer for our students.

RECOMMENDATION

Following its review and deliberative process, it is the recommendation of the Academic Council that the Board of Regents approve the replication of this College of Technology Program. The System's Provost and Senior Vice President for Academic and Student Affairs concurs with this recommendation.

05/01/2020– BOR -Academic and Student Affairs Committee
05/14/2020 – Board of Regents

CONNECTICUT BOARD OF REGENTS FOR HIGHER EDUCATION
Connecticut State Colleges & Universities
APPLICATION FOR NEW PROGRAM APPROVAL – REPLICATION OF A COT PROGRAM

SECTION 1: GENERAL INFORMATION

Institution: Tunxis Community College	Date of Submission to CSCU Office of the Provost:	
Most Recent NECHE Institutional Accreditation Action and Date: 3/29/16		
Program Characteristics Name of Program: Technology Studies: Data Science Option Degree: Title of Award (e.g. Master of Arts) Degree Certificate: (specify type and level) Data Science Certificate Stand-Alone Certificate: (specify type and level) Anticipated Program Initiation Date: Fall 2020 Anticipated Date of First Graduation: Fall 2021 Modality of Program: On ground Online X Combined If "Combined", % of fully online courses? 50-75% Locality of Program: X On Campus Off Campus Both	Program Credit Distribution # Credits in General Education: # Credits in Program Core Courses: 12 # Credits of Electives in the Field: 3(4) # Credits of Other Electives: 3 # Cr Special Requirements (include internship, etc.): 0 <u>Total # Cr in the Program</u> (sum of all #Cr above): 18(19) From "Total # Cr in the Program" above, enter #Cr that are part of/belong in an already approved program(s) at the institution: 12	
Replicated College of Technology Program Characteristics Name of Program: Technology Studies: Data Science Option Institution: Tunxis Connecticut Community College CIP Code No. 27.0304 Title of CIP Code - Data Science		
If establishment of the new program is concurrent with discontinuation of related program(s), please list for each program: Program Discontinued: CIP: OHE#: BOR Accreditation Date: Phase Out Period Date of Program Termination		
Other Program Accreditation: <ul style="list-style-type: none"> • If seeking specialized/professional/other accreditation, name of agency and intended year of review: • If program prepares graduates eligibility to state/professional license, please identify: (As applicable, the documentation in this request should address the standards of the identified accrediting body or licensing agency)		
Institutional Contact for this Proposal: Mat Spinelli	Title: Program Director STEAM and Advanced Manufacturing	Tel.: 860-773-1672 e-mail: mspinelli@tunxis.edu
Institution's Unit (e.g. School of Business): STEAM Location (e.g. main campus) Offering the Program: Main Campus		
Background and Rationale: (Provide the context for and need for the proposed replication) This certificate will allow for an extra credential to be added to our current mathematics, computer science, or business degree students. For these students, they only need to take an additional two courses to receive the certificate. For employability, this concentration is very attractive to any employer as it would be a parallel to the Data Science Associates Degree. The certificate itself can also be taken by students already working in the field who are looking to increase their job skills or find a new career path in their current job. Forbes reports that 59% of all Data Science and Analytics job demand is in Finance and Insurance, Professional Services, and IT. Tunxis' physical location, close to Hartford and Farmington's insurance and finance corporations, would allow us to address the growing needs of these employers looking for employees in the data science field. From Jobs IQ – For these jobs, training required: 29% require a certificate, 33% require an associate's degree: Computer Systems Analysts, Applications Analyst, Business Analyst, Business Systems Analyst, Computer Analyst, Computer Systems Analyst, Computer Systems Consultant, Information Systems Analyst (ISA), Information Technology Analyst (IT Analyst), System Analyst, Systems Analyst		

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APPLICATION FOR NEW PROGRAM APPROVAL – REPLICATION OF A COT PROGRAM

Job projections for the above:

- Median wages (2018) \$42.66 hourly, \$88,740 annual
- Employment (2018) 634,000 employees
- Projected growth (2018-2028) Faster than average (7% to 10%)
- Projected job openings (2018-2028) 53,400

This certificate is also stackable into our newly proposed Data Science Associates Degree. This certificate will help students in seeing their success as they progress through their degree program and is intended to assist with retention.

CONNECTICUT BOARD OF REGENTS FOR HIGHER EDUCATION

Connecticut State Colleges & Universities

APPLICATION FOR NEW PROGRAM APPROVAL – REPLICATION OF A COT PROGRAM

SECTION 2: PROGRAM QUALITY ASSESSMENT

Cost Effectiveness and Availability of Adequate Resources

(Please complete the PRO FORMA Budget – Resources and Expenditure Projections on page 6 and provide a narrative below regarding the cost effectiveness and availability of adequate resources for the proposed program. Add any annotations for the budget form.)

Program Administration

The program will be administered under the Program coordinator for Tech Studies, Dr. Asheka Rahman. Professors Nicholas Stugard and Susan Lounsbury from the Math department will also help with advising of students. The program falls under our STEAM (Science, Technology, Engineering, Art and Math) department which is headed up by Mathew Spinelli.

Faculty (Please complete the faculty template provided below to include current full-time members of the faculty who will be teaching in this program and, as applicable, any anticipated new positions/hires during the first three years of the program and their qualifications)

How many new full-time faculty members, if any, will need to be hired for this program?

None - With no new hires needed for this program, the entirety of the program will be taught by current full-time and adjunct faculty members.

What percentage of the credits in the program will they teach?

N/A

What percent of credits in the program will be taught by adjunct faculty?

Varies by semester

Describe the minimal qualifications of adjunct faculty, if any, who will teach in the program

Master's degree in Mathematics, Statistics, or a related field. Courses in R if they are teaching the DST courses

Special Resources (Provide a brief description of resources that would be needed specifically for this program and how they will be used, e.g. laboratory equipment, specialized library collections, etc. Please include these resources in the Resources and Expenditures Projections spreadsheet)

Existing Laboratory and Computer Classrooms will be used for some classes.

*Special Requirements include co-curriculum activities – structured learning activities that complement the formal curriculum – such as internships, innovation activities and community involvement.

NOTE: The PRO FORMA Budget on the last page should provide reasonable assurance that the proposed program can be established and is sustainable. Some assumptions and/or formulaic methodology may be used and annotated in the "Cost Effectiveness ..." narrative on page 3.

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Program Outline *(Please provide a summary of program requirements including total number of credits for the degree, special admission requirements, capstone or special project requirements, etc. Indicate any requirements and arrangements for clinical affiliations, internships, and practical or work experience. For example:*

See attached Plan of Study

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Full-Time Faculty Teaching in this Program (Note: If you anticipate hiring new faculty members for this program you may list "to be hired" under name and title. Provide required credentials, experience, and other responsibilities for each new position anticipated over the first three years of implementation of the program)

Faculty Name and Title	Institution of Highest Degree	Area of Specialization/Pertinent Experience	Other Administrative or Teaching Responsibilities
Professor Nicholas Stugard	Rowan University	Mathematics/ training in R programming	
Professor Hendree Milward	Central Connecticut	Mathematics/ training in R programming	

CONNECTICUT BOARD OF REGENTS FOR HIGHER EDUCATION

Connecticut State Colleges & Universities

APPLICATION FOR NEW **PROGRAM APPROVAL** – **REPLICATION OF A COT PROGRAM**

PRO FORMA Budget - Resources and Expenditures Projections (whole dollars only)

PROJECTED Enrollment	First Year						Second Year						Third Year					
	Fall Semester		Spring Semester		Summer		Fall Semester		Spring Semester		Summer		Fall Semester		Spring Semester		Summer	
	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT
Internal Transfer (from other programs)	9		9				3		3				3		3			
New Students (first time matriculating)	3		3				12		12				17		17			
Continuing Students progressing to credential			12				24		39				42		50			
Headcount Enrollment	12		24				39		54				62		70			
Total Estimated FTE per Year ¹	36																	
PROJECTED Program Revenue	First Year						Second Year						Third Year					
	Fall Semester		Spring Semester		Summer		Fall Semester		Spring Semester		Summer		Fall Semester		Spring Semester		Summer	
	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT
Tuition ²	2988		14940				35856		39508				47390		52432			
Tuition from Internal Transfer ²	8964		8964				2988		2324				2410		2348			
Program Specific Fees (lab fees, etc.)																		
Other Revenue (annotate in narrative)																		
Total Annual Program Revenue	35856						80676						104580					
PROJECTED Program Expenditures ³							<div>NOTE: Existing regulations require that: “an application for a new program shall include a complete and realistic plan for implementing and financing the proposed program during the first cycle of operation, based on projected enrollment levels; the nature and extent of instructional services required; the availability of existing resources to support the program; additional resource requirements; and projected sources of funding. If resources to operate a program are to be provided totally or in part through reallocation of existing resources, the institution shall identify the resources to be employed and explain how existing programs will be affected. Reallocation of resources to meet new and changing needs is encouraged, provided such reallocation does not reduce the quality of continuing programs below acceptable levels.”</div> <div>11 FTE = 12 credit hours for undergraduate programs; 1 FTE = 12 credit hours for graduate programs; both for Fall & Spring</div> <div>2Revenues from all courses students will be taking.</div> <div>3Capital outlay costs, instructional spending for research and services, etc. can be excluded.</div> <div>4If full-time person is solely hired for this program, use rate time; otherwise, use a percentage. Indicate if new hires or existing faculty/staff. Record Salary and Fringe Benefits, accordingly.</div> <div>5e.g. student services. Course development would be direct payment or release time; marketing is cost of marketing that program separately.</div> <div>6Check with your Business Office – community colleges have one rate; the others each have their own. Indirect Cost might include such expenses as student services, operations and maintenance.</div>											
	First Year	Second Year	Third Year															
Administration (Chair or Coordinator) ⁴	1587	1587	1587															
Faculty (Full-time, total for program) ⁴	15176	60704	60704															
Faculty (Part-time, total for program) ⁴																		
Support Staff (lab or grad assist, tutor)																		
Library Resources Program																		
Equipment (List in narrative)																		

CONNECTICUT BOARD OF REGENTS FOR HIGHER EDUCATION
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Other ⁵				
Estimated Indirect Costs ⁶	6827	27309	27309	
Total Expenditures per Year	23590	89600	89600	

CT BOARD OF REGENTS FOR HIGHER EDUCATION

RESOLUTION

concerning

Promotions and Tenures

May 14, 2020

RESOLVED: That the Board of Regents for Higher Education approve the 2020 promotions and tenures recommended by the presidents of the Connecticut State Universities.

A True Copy:

Erin A. Fitzgerald, Secretary of the
CT Board of Regents for Higher Education

ITEM

Approval of the 2020 promotions and tenures recommended by the presidents of the Connecticut State Universities

BACKGROUND

In accordance with the CSU-AAUP Collective Bargaining Agreement, the Board of Regents awards promotion and tenure to faculty at the four institutions of the Connecticut State University. The contract prescribes a thorough, multi-level review process at the institutions. Recommendations forwarded to the Board have been approved by the respective university president and provost. The Board of Regents acts upon the presidents' recommendations. The letters of recommendation are attached.

05/01/2020 – BOR Academic & Student Affairs Committee

05/14/2020 – Board of Regents

April 17, 2020 - REVISED

Mr. Mark Ojakian
President, Board of Regents for Higher Education
Connecticut State Colleges and Universities
61 Woodland Street
Hartford, CT 06105-2237

Dear Mr. Ojakian:

The following are my recommendations for Promotion and Tenure, which will be effective August 24, 2020:

TENURE

Dr. Catherine Abel-Berei (Health & Movement)
Dr. Meghan Barboza (Biology)
Dr. Russell Engel (Accounting)
Dr. Lorrie G. Gardella (Social Work)
Dr. Jesse Gleason (World Languages and Lit.)
Dr. Darcy Kern (History)
Dr. Younjun Kim (Economics)
Dr. Joan Kreiger (Health & Movement)
Dr. Julie Ann Liefeld (Social Work)
Dr. Matthew Miller (Env, Geo, & Marine Sci.)

Dr. Kyle O'Brien (Social Work)
Dr. Jessica Powell (Curriculum and Learning)
Dr. Sarah Roe (History)
Dr. Louise Shaw (Curriculum and Learning)
Dr. Robert Smith, Jr. (Management/Intl Bus.)
Dr. Amy Smoyer (Social Work)
Ms. Kari Swanson (Library Services)
Dr. Yan Wei (Special Education)
Dr. Binlin Wu (Physics)
Dr. Olcay Yavuz (Educational Leadership)

PROMOTION

From Assistant to Associate Professor:

Dr. Catherine Abel-Berei (Health & Movement)
Dr. Jemel Aguilar (Social Work)
Dr. Kimberly Bean (Special Education)
Dr. Elisabeth Counselman Carpenter (Social Work)
Dr. Jesse Gleason (World Languages and Literatures)
Dr. Darcy Kern (History)
Dr. Younjun Kim (Economics)
Dr. Joan Kreiger (Health and Movement)
Dr. Matthew Miller (Env, Geo, & Marine Sci.)

Dr. Kyle O'Brien (Social Work)
Dr. Jessica Powell (Curriculum and Learning)
Dr. Sarah Roe (History)
Dr. Melanie Savelli (Comm., Media and Screen St.)
Dr. Louise Shaw (Curriculum and Learning)
Dr. Robert Smith, Jr. (Management/Intl Bus.)
Dr. Amy Smoyer (Social Work)
Dr. Yan Wei (Special Education)
Dr. Olcay Yavuz (Educational Leadership)

From Associate to Full Professor:

Dr. Eric Cavallero (Philosophy)
Dr. Adiel Coca (Chemistry)
Dr. Russell Engel (Accounting)
Dr. Lorrie G. Gardella (Social Work)
Dr. Sean Grace (Biology)
Dr. Rebecca Harvey (Social Work)
Dr. Peter Latchman (Health and Movement)

Dr. Julie Liefeld (Social Work/MFT)
Dr. William Lunn (Health and Movement)
Dr. Theresa Marchant-Shapiro (Political Science)
Dr. Helen Marx (Curriculum and Learning)
Dr. Laura Raynolds (Curriculum and Learning)
Dr. Kari Sassu (Counseling and School Psych.)
Dr. Derek Taylor (Comm., Media and Screen St.)

From Assistant Librarian to Associate Librarian

Kari Swanson (Library Services)

From Associate Librarian to Librarian

Wendeline Hardenberg (Library Services)

From Athletic Trainer I to Athletic Trainer II

Matthew Almeida

From Athletic Trainer II to Athletic Trainer III

Lisa Dupuis

From Athletic Trainer III to Athletic Trainer IV

Alison Dale

From Coach A to Coach I

Brian Nill

From Coach I to Coach II

Mark Fogel

From Coach II to Coach III

Christopher Moran

I request that the Board of Regents act on these recommendations at its May 14, 2020 meeting. Please let me know if you have any questions.

Sincerely,



Joe Bertolino
President

cc: R. Prezant, T. Tyree



OFFICE OF THE PRESIDENT

DR. JOHN B. CLARK

To: Mark E. Ojakian
President
Connecticut State Colleges & Universities

From: Dr. John B. Clark

Date: April 14, 2020

Re: REVISED WCSU Promotion & Tenure Recommendations

I support and concur with the recommendations of Provost Missy Alexander and Student Affairs Vice President Keith Betts that the following faculty and staff members receive promotion and tenure:

Tenure

Dr. Eileen Campbell, Nursing Department
Dr. Linda Dalessio, Nursing Department
Dr. Forest Robertson, Chemistry Department
Dr. Michael Shoushani, Mathematics Department
Dr. Lai Van Vo, Finance Department

Promotion to Professor

Dr. Jay Brower, Communication & Media Arts Department
Dr. Stavros Christofi, Mathematics Department
Dr. Ming Ling Chuang, Management Department
Dr. Xiaoqi Han, Marketing Department
Dr. Truman Keys, Communication & Media Arts Department
Dr. Douglas O'Grady, Music Department
Dr. Linda Warren, Nursing Department

Promotion to Associate Professor

Dr. Daniel Baluha, Chemistry Department
Dr. Eileen Campbell, Nursing Department
Dr. Linda Dalessio, Nursing Department
Dr. Nicole DeRonck, Education & Educational Psychology Department
Dr. Jennifer Flynn, Management Information Systems Department
Dr. Jacqueline Guzda, Communication & Media Arts Department
Dr. Laurel Larsen, Music Department

Mark E. Ojakian
April 14, 2020
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Dr. Karen McLean, Social Work Department
Dr. Manoj Misra, Social Sciences Department
Dr. Mary Nielson, Nursing Department
Dr. Lai Van Vo, Finance Department

Promotion to Athletic Trainer 4

Peter Algarin, Athletics Department

c: M. Alexander, Academic Affairs
K. Betts, Student Affairs
F. Cratty, Human Resources
J. Gates, CSCU
M. Murray, Promotion & Tenure Committee



MEMORANDUM

TO: Mark Ojakian, President
Connecticut State Colleges and University System

FROM: Zulma R. Toro, President
Central Connecticut State University

A handwritten signature in black ink, appearing to be "Z. Toro".

DATE: April 21, 2020

SUBJECT: Promotion and Tenure

I am pleased to present my recommendations for instructional faculty promotion and tenure to be effective with the Academic Year 2020-21:

To Professor

Jan Bishop, Physical Education & Human Performance
Haji Naik Dharavath, Computer Electronics & Graphic Technology
Xiaobing Hou, Computer Electronics & Graphic Technology
A. Tomasz Jarmoszko, Management Information Systems
Jelane Kennedy, Counselor Education & Family Therapy
Michelle Kusaila, Accounting
Chester Labedz, Management & Organization
C. Christopher Lee, Management & Organization
Namhun Lee, Manufacturing & Construction Management
Jason Melnyk, Physical Education & Human Performance
Jennifer Piatek, Geological Sciences
Christina Robinson, Economics & Graduate Studies
Kareem Shabana, Management & Organization
Reginald Simmons, Criminology & Criminal Justice
Jeffrey Thomas, Geological Sciences
Fu-Shang Wei, Engineering
Jacob Werblow, Educational Leadership, Policy & Instructional Technology
Bin Zhou, Engineering

To Coach II

Patrick Hall, Athletics

To Associate Professor

Caleb Bragg, Psychological Science
Cameron Brewer, Philosophy
Jotham Burrello, English
Myungjin Chae, Manufacturing & Construction Management
Sixia Chen, Computer Science

Jeanne Criscola, Design (Graphic Information)
Margaret Donohue, Counselor Education & Family Therapy
Timothy Garceau, Geography
Charisse Levchak, Sociology
Tatiana Melendez-Rhodes, Counselor Education & Family Therapy
Elizabeth Brewer Olson, English
Matthew Orange, Physical Education & Human Performance
Sinead Ruane, Management & Organization
Rahul Singhal, Physics & Engineering Physics
Chad Williams, Computer Science

To Coach I

Patrick Holden, Athletics

The following will be granted Tenure

Caleb Bragg, Psychological Science
Cameron Brewer, Philosophy
Jotham Burrello, English
Myungjin Chae, Manufacturing & Construction Management
Sixia Chen, Computer Science
Jeanne Criscola, Design (Graphic Information)
Margaret Donohue, Counselor Education & Family Therapy
Timothy Garceau, Geography
Michelle Kusaila, Accounting
C. Christopher Lee, Management & Organization
Charisse Levchak, Sociology
Tatiana Melendez-Rhodes, Counselor Education & Family Therapy
Maria Mongillo, Educational Leadership, Policy & Instructional Technology
Elizabeth Brewer Olson, English
Matthew Orange, Physical Education & Human Performance
Mohammad Rahman, Manufacturing & Construction Management
Sinead Ruane, Management & Organization
Kareem Shabana, Management & Organization
Rahul Singhal, Physics & Engineering Physics

/ml

c: A. Suski-Lenczewski

EASTERN CONNECTICUT STATE UNIVERSITY
A Liberal Education. Practically Applied.

Office of the President

DATE: April 20, 2020

TO: Mark Ojakian
President, Connecticut State Colleges and Universities

FROM: Dr. Elsa M. Núñez
President

SUBJECT: RECOMMENDATIONS FOR PROMOTION AND TENURE

I recommend the following individuals for promotion and/or tenure for action by the Board of Regents at its May 2020 meeting. The effective date for all actions is August 24, 2020.

For Tenure:

Dr. Sarah Baires, Anthropology
Dr. Thomas Balcerski, History
Dr. Amy Bataille, Health Sciences
Professor Alycia Bright-Holland, Performing Arts
Dr. Courtney Broschious, Political Science
Dr. Michelle Ferrer, Kinesiology and Physical Education
Dr. Stefan Kamola, History
Dr. Niki Kunene, Business Administration
Dr. Chantal Larose, Mathematical Sciences
Dr. Jenna Scisco, Psychological Sciences
Professor Anya Sokolovskaya, Performing Arts
Mr. David Vrooman, Library

For Promotion to the rank of Professor:

Dr. Cara Bergstrom-Lynch, Sociology
Dr. Reginald Flood, English
Dr. Kim Ward, Mathematical Science

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President Mark Ojakian

April 20, 2020

For Promotion to the rank of Associate Professor:

Dr. Sarah Baires, Anthropology

Dr. Thomas Balcerski, History

Dr. Amy Bataille, Health Sciences

Professor Alycia Bright-Holland, Performing Arts

Dr. Courtney Broschious, Political Science

Dr. Stefan Kamola, History

Dr. Niki Kunene, Business Administration

Dr. Chantal Larose, Mathematical Sciences

Dr. Tanya Moorehead, Education

Dr. Jenna Scisco, Psychological Sciences

For Promotion to the rank of Coach IV:

Mr. Brian Hamm, Athletics Department

c: File

CT BOARD OF REGENTS FOR HIGHER EDUCATION

RESOLUTION

Concerning

The General Education Core

for the CSCU Community College

May 14, 2020

- WHEREAS the CT Board of Regents for Higher Education approved the Revised Students First Plan, BR 18-089, on June 21, 2018, and reaffirmed the plan on December 19, 2019, to consolidate CSCU's 12 community colleges into a singly accredited institution;
- WHEREAS the Students First plan requires the consolidation of the community colleges and calls for the alignment of the curriculum into a single catalog of programs and courses and includes a single general education core;
- WHEREAS a common general education curriculum contributes to the development of an educated person by exposing students to multiple disciplines and multiple methods of inquiry in broad foundational courses in the arts and humanities, social and behavioral sciences, physical and natural sciences, and mathematics; cultivates student success by helping students acquire skills and knowledge - such as oral/written communication, information literacy, and critical thinking skills - to further their education and thrive in a complex, diverse, and changing world;
- WHEREAS a common general education curriculum permits students to change majors with minimal loss of credit or disruption in progress to degree completion and aids in seamless transfer;
- WHEREAS the Provost and Senior Vice President for Academic and Student Affairs for the CSCU charged the Students First Academic and Student Affairs Consolidation Committee to develop a general education core for the consolidated college;
- WHEREAS the Students First Academic and Student Affairs Consolidation Committee created and the Provost charged a general education work group comprising 12 elected members, one from each community college, and 6 members elected by the Students First Academic and Student Affairs Consolidation Committee;
- WHEREAS the general education work group developed a proposal, sought feedback in a two and a half month period of public comment, and modified the original proposal based on all the feedback received;

WHEREAS all of the colleges were given the opportunity within a three and a half month period to vote on endorsing the revised core and to offer additional comments;

WHEREAS the Students First Academic and Student Affairs Consolidation Committee and the College Consolidation Implementation Committee voted in favor of moving the revised proposal to the Board of Regents; therefore be it

RESOLVED that the Board of Regents for Higher Education approve the adoption of the proposed 21-25 credit general education core for the singly accredited community college.

A True Copy:

Erin A. Fitzgerald, Secretary of the
CT Board of Regents for Higher Education

ITEM

Approval of the 21-25 credit general education core for the singly accredited Connecticut community college.

BACKGROUND

At its meeting of December 14, 2017, the Board of Regents voted to approve the merger of the 12 CSCU community colleges into a singly accredited community college. A revised plan for the merger was approved by the Board on June 21, 2018 and reaffirmed on December 19, 2019. The plan calls for the aligning of college curricula statewide, including adoption of a statewide General Education curriculum.

In May 2018, Dr. Jane Gates, the Provost and Senior Vice President for Academic and Student Affairs for the CSCU, charged the Students First Academic and Student Affairs Consolidation Committee (SF ASA CC) to develop a General Education curriculum for the consolidated college. The SF ASA CC created a General Education Work Group that Provost Gates then charged with the specific task of developing the proposal consistent with NECHE standards, BOR/BOT policy, and state law.

The workgroup comprises one elected representative from each of the 12 community colleges, 6 volunteer members from the SF ASA CC, and two chairs: Mike Stefanowicz (non-voting) and Michael Stutz (an elected representative from TRCC).

Member	College	Membership Type
Berenguel, J.	Asnuntuck CC	College Representative
Bouffard, P.	System Office	SF ASA CC; Non-Voting
Buccilli, M.	Gateway CC / Guided Pathways	SF ASA CC Representative
Canto, E.	Middlesex CC	College Representative
Christie, J.	Capital CC	College Representative
Doninger, L.	Gateway CC	College Representative
Eddy, S.	Naugatuck Valley CC	College Representative
Gentry, S.	Tunxis CC	College Representative
Klucznik, K.	TAP / System Office	SF ASA CC Representative
Lopez, M.	Gateway CC	SF ASA CC Representative
Milton, C.	Norwalk CC	College Representative
O'Grady, J.	Northwestern CC	College Representative
Ortiz, J.	Housatonic CC	College Representative
Pagano, E.	Quinebaug Valley CC	College Representative
Paulin, C.	Manchester CC	College Representative
Picard, R.	Naugatuck Valley CC	SF ASA CC Representative
Rosselli-Navarra, F.	Manchester CC / Guided Pathways	SF ASA CC Representative
Stefanowicz, M.	System Office	Co-Chair, SF ASA CC; Non-Voting
Stutz, M.	Three Rivers CC	Co-Chair, College Representative
Zenie, H.	Three Rivers CC/ Guided Pathways	SF ASA CC Representative

Work Group Timeline

- The work group met 8 times between May and September, 2018 and developed a proposed 21-25 credit general education core for the consolidated community college curriculum.
- A draft proposal of the core was approved by the SF ASA CC to be forwarded to all the colleges for a campus comment period between September 14 and December 1, 2018.
- The General Education Work Group met during the Spring and Fall 2019 semesters after campus comments were submitted to the Co-chairs of SF ASA CC to review the feedback and revise the core based on campus feedback. The following specific changes were made to the proposal based upon feedback from the public comment period:
 - 2 proposed separate options were combined into one required category: Arts and Humanities. Fine Arts had been with an option with Oral or Written Communication; Humanities had been an option with History.
 - History was moved from an option with Humanities to an option with Social /Behavioral Science.
 - Oral and Written Communication became the sole options within one category.
 - Student Success – College and Career Planning category was removed. This was replaced with 7 options that program coordinators can designate. CSS (FYE) may be designated here if it is vetted in the Cont. Learning / Info. Literacy category and program coordinators wish to do so.
 - Certain discipline codes that were overlooked were added to each category.
- The General Education Work Group worked with Transfer and Articulation Policy (TAP) Framework and Implementation Review Committee (FIRC) during the Spring 2019 semester to ensure alignment between the proposed 21 credit core and the FRAMEWORK30, the general education component of all TAP transfer degrees.
- The General Education Work Group finalized a proposal on 11/1/19, which included the addition of a diversity requirement within the 21-credit core.
- The revised proposal was approved by SF ASA CC on 11/15/19 and the College Consolidation Implementation Committee (CCIC) on 12/9/19.
- The proposal was forwarded to colleges for endorsement votes in December of 2019, with a deadline to submit votes and feedback by 4/3/20. Colleges were asked to provide specific feedback in the event that they did not endorse the proposal; feedback was optional if the proposal was endorsed.
- During the Spring of 2020, the work group co-chair (M. Stefanowicz) and a member of the work group (F. Rosselli) visited seven of the twelve colleges to discuss the proposal, address questions and concerns, and solicit informal feedback.
- The General Education Work Group convened on 4/3/20 to review all endorsement votes and feedback. The group approved moving the proposal forward to the SF ASA CC.
- The SF ASA CC reviewed the proposal on 4/24/20 and approved the General Education 21-credit core without the diversity requirement, but with the recommendation that a future one-college governance general education and/or curriculum consider a diversity course graduation requirement.
- The CCIC reviewed the proposal from the SF ASA CC on 4/27/20, returned the diversity requirement to the general education proposal, and then approved the amended proposal to move forward to the Academic and Student Affairs subcommittee of the Board of Regents.

The Proposal

Philosophy of the General Education Core Curriculum. The general education curriculum contributes to the development of an educated person by exposing students to multiple disciplines and multiple methods of inquiry in broad foundational courses. It cultivates student success by helping students acquire skills and knowledge to further their education and thrive in a complex, diverse, and changing world.

Guiding Principles for the Curriculum.

The General Education Curriculum will:

- Follow NECHE standards, Board of Regents policy, and state law.
- Consist of categories that are based upon traditional disciplines with specific subject codes identified and outcomes defined, namely: English/Communication, Arts and Humanities, Historical Knowledge, Mathematics, Science (Scientific Knowledge, Scientific Reasoning, Social/Behavioral Science).
- Balance and reflect the needs and requirements for both transfer (to CSCU and non-CSCU schools) and career programs of study.
- Align with Transfer and Articulation Policy (TAP) competency areas. This requires working with Framework and Implementation Review Committee (FIRC) on modifying TAP to lead to bilateral alignment.
- Limit designated specific courses or directed elective choices to compelling accreditation directive or programmatic need.

In addition,

- The institution places primary responsibility for the content, quality, and effectiveness of the curriculum with its faculty (from NECHE standard 3.15).
- Courses or course areas not included in the Gen Ed may petition for inclusion in the Gen Ed through the curriculum revision process to be established by the one college.

A General Education course will:

1. Ask students to demonstrate knowledge of the fundamental concepts, theories, primary works, skills, or ideas within the specific category discipline area.
2. Ask students to interpret and apply introductory methods of inquiry and analysis in the discipline category.
3. Have as its main objective, and 2/3 of its focus, the category content and/or skills.
4. Be vetted in only one General Education category.
5. Be vetted and approved by an appropriate discipline group.

General Education Program Outcomes. Upon completion of the General Education Core Curriculum, students will be able to demonstrate beginning competency in communication, critical thinking, and the foundational knowledge and methods of inquiry in multiple disciplines. These discipline competencies include at a minimum: arts and humanities, understanding of the social world, scientific reasoning/understanding, quantitative literacy, and oral/written communication.

General Education Core Curriculum Outcome Categories. The proposed General Education core is an outcomes-based model embedded in a discipline framework. The [TAP FRAMEWORK30 outcomes](#) will serve for the categories of the proposed 21 credit core. TAP outcomes are in place for all categories except the two for which the general education work group recommends modification: Arts and Humanities to replace and augment Aesthetic Dimensions, and Social / Behavioral Science to replace Social Phenomena. The Framework Implementation and Review Committee (FIRC) is charged with making any revisions to the current outcomes (Outcomes currently exist for Aesthetic Dimensions and Social Phenomena). The proposed 21 credit general education core allows each program to decide whether the College Career and Success course will be required in the general education core, if it is vetted as a Continued Learning/Information Literacy Course.

Additional Notes:

- The General Education Curriculum applies to Associate degrees, not certificates.
- The General Education Curriculum will be integrated in the degrees during the common program consolidation process.
- The proposed General Education Curriculum is limited to 21-25 credits to allow maximum flexibility for program coordinators to determine the other 35-39 credits of a degree.
- Program coordinators can designate a course or a directed elective if there is an accreditation directive or programmatic need demonstrated.
- Pursuant to PA 1231: Section 1. (NEW) (*Effective July 1, 2012*) (a) Not later than July 1, 2013, the regional community-technical college system and the Connecticut State University System shall develop and implement a general education core of courses for which not fewer than thirty academic credits shall be offered by each such constituent unit as part of its liberal arts and sciences programs and any other degree program designated as a transfer program. A student who graduates from any such liberal arts and sciences program or transfer program or transfers from such program to another of such constituent units or to another institution within the same constituent unit shall transfer any credits earned while enrolled in such program toward the general education core curriculum requirements of the constituent unit to which such student transfers.

The Proposed General Education Core.

1	Eng. 101 Composition	3 credits
2	Math 100 or higher (college level)	3- 4 credits
3	Arts and Humanities: Courses vetted for <u>TAP Arts and Humanities</u> (replaces Aesthetic Dimensions) ARC 102, ART, COM, DGA, ENG, ESL (two top levels), GRA, HUM, MUS, PHL, THR, Language and Culture (ARA, CHI, FRE, GER, ITA, JPN, LAT, RUS and SPA)	3-4 credits
4	Choose one from: <ul style="list-style-type: none"> • Scientific Reasoning – AST, BIO, CHE, EAS, ENV, EVS, GLG, MTR, OCEN, PHY, SCI course vetted for TAP Scientific Reasoning • Scientific Knowledge and Understanding – AST, BIO, CHE, EAS, ENV EVS, GLG, MTR, OCEN, PHY, SCI course vetted for Scientific Knowledge and Understanding outcomes 	3-4 credits (lab optional)
5	Choose one from: <ul style="list-style-type: none"> • Social / Behavioral Science – ANT, ECN, GEO, POL, PSY, SOC, WMS course vetted for TAP Social and Behavioral Science outcomes • Historical Knowledge – HIS course vetted for TAP Historical Knowledge outcomes 	3 credits
6	Choose one from: <ul style="list-style-type: none"> • Oral Communication – COM courses vetted for TAP Oral Communication • Written Communication II– ENG course vetted for TAP Written Communication II outcomes 	3 credits
7	Choose one from: (Program directed) <ul style="list-style-type: none"> • A course vetted for one of the following TAP categories that has not been fulfilled elsewhere in the general education requirements: <ul style="list-style-type: none"> ○ Continued Learning/Info Literacy ○ Scientific Knowledge ○ Scientific Reasoning ○ Social / Behavioral Science ○ Historical Knowledge ○ Written Communication II ○ Oral Communication <p>Program alignment groups will determine how this will be designated</p>	3-4 credit
	Students must take at least one course in the Gen Ed core which meets a diversity requirement.*	Total: 21-25 credits

* Students must take at least one course in the Gen Ed core which meets a diversity requirement, defined as:

“Diversity courses have substantial content that addresses racial, ethnic, gender, socioeconomic, sexual orientation, religious or other types of diversity.... Diversity courses are intended to prepare students for an increasingly diverse and interdependent campus and the world that they live in and will lead.” --UCLA Definition from Registrar’s page

* Diversity courses will be vetted by a faculty led curriculum diversity committee.

Results of Endorsement Votes

Two colleges (QVCC and MxCC) approved the proposal; Nine colleges (ACC, CCC, GCC, HCC, MCC, NCCC, NVCC, TRCC, TxCC) passed resolutions declining to vote on the proposal; One college (NCC) rejected the proposal and the voting process. The full text of all resolutions is attached as an appendix at the end of this report.

College	Endorsement Vote	Date
Asnuntuck	Resolution not to act on any SF proposals	20-Feb
Capital	Resolution not to vote	21-Feb
Gateway	Resolution not to vote	28-Jan
Housatonic	Resolution not to vote	4-Feb
Manchester	Resolution not to vote	3-Mar
Middlesex	Approved	24-Mar
Naugatuck	Resolution not to vote	18-Feb
Norwalk	Voted not to support voting process or proposed core	26-Mar
Northwestern	Resolution not to vote	9-Mar
Quinebaug Valley	Approved	31-Mar
Three Rivers	Resolution not to vote	11-Mar
Tunxis	Resolution not to vote	20-Feb

Endorsement Feedback on the Proposal

CCC declined to vote on the proposal, but emailed the following concerns raised by faculty at C-DAC meeting 2/25: A new requirement for at least one course in the Gen Ed Core which meets a diversity requirement is in the proposal. Diversity will be an embedded requirement. It may be difficult for students to complete the Diversity requirement within the 7 courses in the Gen Ed core. Concern was expressed that requiring diversity in introductory level courses might achieve a superficial or “diversity light” level of engagement with diversity issues, while allowing students to take a diversity course beyond their Gen Ed 21-25 credit core (such as in a 200-level course) might allow for a richer experience. Concern was also expressed that designating certain courses as meeting a mandatory diversity requirement might adversely skew enrollment (e.g., huge numbers of students enroll in SOC 101, while enrollment in PSY 111 drops precipitously). Discussion was had about shared governance and how some believe the process of creating a new General Education Core did not use shared governance.

HCC declined to vote on the proposal, but emailed the following feedback:

- The Humanities department will not consider voting on the endorsement of the proposal until outcome revisions are finalized. The department supports the inclusion of the diversity requirement. The department suggests that a similar writing requirement be added to the core. Faculty members voiced concern regarding the Written Communication II being optional.
- The First Year Studies department discussed putting diversity courses into the General Education Proposal, but after discussion believed it was too much given what was already in Gen Ed. The department felt diversity should be added to the other courses and be embedded in

the core. They suggested making “diversity” part of the measurable outcomes so it could be checked off as being done; it would be part of the course description and written outcomes. Some courses already have diversity in them, so this idea would just put diversity in all or many of the courses taught.

- The Behavioral and Social Sciences department will not endorse the proposal until outcome revisions are finalized. The BSS department expressed concerns about the inclusion of an added diversity requirement in the Gen Ed core, which they felt would add an additional, unnecessary requirement to the core. The department believed that diversity is already intrinsically embedded in numerous courses.

MCC declined to vote on the proposal, but the Gen Ed work group representative submitted the following suggestion: “...slightly alter the Framework 30 (removing CL and IL which can be done programmatically) which would allow FIRC to separate Arts and Humanities in the Framework 30 and allow Gen Ed to include Arts and Humanities in category 7.”

NCC declined to vote, but also explicitly indicated they would not support the proposed General Education core for reasons described in the appendix to this report.

In campus visits, the following feedback and concerns were shared:

- Diversity Requirement: All colleges expressed support for the idea of students having to meet a diversity requirement, but there was strong opposition expressed at some colleges that such a requirement should not be limited to a 21-credit general education core. Arguments against including this as part of the core: (1) general education courses are introductory level courses and many of the course that address diversity at a deep level are offered at the 200-level, thus making the courses that would best fulfill a diversity requirement unable to fulfill that requirement; (2) limiting the diversity requirement to 21 credit core will exclude program courses that might otherwise meet the definition of a diversity course; (3) limiting students to fulfill a diversity requirement within only 21 credits will unduly restrict their choices; (4) the social and behavioral science outcomes already include a diversity outcome; (5) the process by which courses will be designated as diversity courses needs to be spelled out; and (6) lessons learned from developing the framework 30 for TAP programs suggests that it is best to avoid embedded outcomes like this diversity requirement.
- Number of Credits: At some colleges that currently have a 27- or 30-credit general education requirement, concern was expressed that the proposed 21-credit core was not sufficiently rigorous. At the same time, appreciation was expressed by program coordinators at most of the colleges for keeping the core to 21 credits to allow for greater flexibility on the program side, especially for programs with external accreditation.
- Arts & Humanities: In response to feedback from earlier versions of the proposal, the Arts and Humanities were combined into a single category with a single set of outcomes. Concern was expressed programs would opt to have students take Humanities rather than Arts courses and all college students should take a course in the Arts. A proposed solution was to keep the category combined but create one set of outcomes for Arts (a revised version of the current TAP Aesthetic Dimensions category) and another for Humanities (currently missing from the TAP framework 30) such that this category would mimic other combined categories and whichever set of outcomes was not met initially could be met in the seventh open category.

- Shared governance concerns: As can be seen in the language of the resolutions, many colleges expressed concerns about a lack of shared governance in the development and approval of the proposal. The General Education Work Group comprised an elected representative from each college (11 faculty members and 1 staff member) along with 6 members elected (de-facto) from the SF ASA CC (1 staff member from GCC, 1 staff member from GCC on-loan full time to the system office, 1 faculty/administrator from NVCC, 2 faculty members working part-time at MCC and TRCC, respectively, and part time at the system office, one system office administrator with 25+ years as a faculty member). Thus, the work group feels that the concerns of a diverse group of faculty and staff voices was represented in its work. In addition, the work of the committee was shared with all governance bodies at the colleges on two separate occasions and the committee chair offered to host discussions at each college in both 2018 and 2020. The chair, along with other committee representatives, visited 11 of the 12 colleges for informal discussions in 2018 and 7 of the colleges in 2020. Feedback from college governance committees in response to the first general education proposal was incorporated into subsequent proposals. College autonomy is assured by following the TAP model for endorsement in which each college vets the proposal through their individual governance processes. Through these various means, all members of the college community had the opportunity to provide feedback on the proposed general education core.
- Vetting guidelines and vetting process: Some concern was expressed about the guideline that general education courses be vetted in a single category as a number of colleges currently allow courses to be vetted in multiple categories. Concern was also expressed that the vetting process is still not fully developed. The work group felt strongly that the vetting process should involve discipline experts but that the exact procedures were beyond the scope of the group's charge and needed to be informed by the work shared governance group.

Post Endorsement Process

The General Education Work Group discussed the results of the endorsement votes and the feedback received as well as whether it was appropriate to try to address the concerns above by either reaffirming or editing the proposal. Because of opposition to Students First, five members of the work group were recalled by their colleges and resigned from the committee. Three members were recalled by their colleges, but were willing to continue to serve if needed. An additional member resigned from the SF ASA CC and work group. The remaining work group members felt strongly that the proposal was created by a fully representative committee, with elected faculty and staff from each college, through a long, thoughtful, and iterative process informed by campus feedback. However, because committee members instrumental in developing this proposal were recalled by their colleges, any attempt to alter the proposal at this juncture would no longer meet that standard.

The group respectfully submitted the proposal along with the endorsement votes and feedback to the SF ASA CC for their consideration. The SF ASA CC modified the proposal by removing the requirement for a diversity course and voted to forward the revised proposal to the College Consolidation Implementation Committee, which voted to forward the proposal to the Board of Regents for action.

RECOMMENDATION

Having ensured that the governance process set out by the Students First Plan for the development and approval of curriculum for the singly accredited Connecticut community college was followed, the

College Consolidation Implementation Committee recommends that the Board of Regents approve the proposed 21-25 credit General Education Core for the single accredited Connecticut community college.

05/01/2020 – BOR Academic & Student Affairs Committee

05/14/2020 – Board of Regents

APPENDIX**Community College Resolutions regarding Students First****Asnuntuck Community College****Faculty Council Resolution Recalling Elected Representatives to Students First Plan Committees****February 7, 2020**

Whereas, Asnuntuck Community College faculty have participated in good-faith with the consolidation process;

Whereas, the elected representatives and the Faculty Council have repeatedly called for prioritizing the development of a governance process for the proposed one college;

Whereas, the system office has repeatedly blocked efforts to develop a curricular governance structure for the creation, evolution, and assessment of the curricula for the proposed one college;

Whereas, the system office has repeatedly claimed to NECHE, the Legislature, and the media that over 400 faculty and staff are working in a transparent and collaborative process while in reality the objections to the process have been systematically ignored and opposition has been met with threats of replacement; now therefore, be it

Resolved that Faculty Council, the representative shared governance body of Asnuntuck Community College's faculty, is recalling its' elected representatives to the Students First workgroups (all names must be removed from all Students First documents including those that are sent to NECHE, the Legislature, and the media) and will not elect new representatives until there is a charge to develop a representative governance structure that will create policies and procedures for developing, evolving, and assessing the curricula that will be the academic program of the proposed one college; now, therefore, be it

Further Resolved that the Faculty Council of Asnuntuck Community College will not act on any proposals generated by Students First Plan committees until there is a representative governance structure that will create policies and procedures for developing, evolving, and assessing the curricula that will be the academic program of the proposed one college.

Vote: 14-2, 7 Feb 2020

5/3/2019 ACC's Faculty Council passed the following vote of no confidence:

"Resolved, that the Asnuntuck Community College Faculty Council, as the representative body for faculty at Asnuntuck Community College, votes No Confidence in the 'Students First' plan and consolidation, Mark Ojakian, president of the C SCU system, and the Board of Regents for the C SCU system."

The vote was by secret ballot without a public announcement of the tally

Capital Community College**Capital Community College Senate Resolution on Non-Participation in Students First Academic and Student Affairs Consolidation Committee, the Shared Governance Workgroup, and the General Education Workgroup Effective Immediately - February 2020**

Whereas, Capital Community College (CCC) has a representative, meaningful, and participatory shared governance process in place that provides faculty and staff genuine opportunities to participate in decision-making and develop and manage the curricula for CCC as an independently accredited college;

Whereas, faculty, the Faculty Advisory Council and other bodies, have repeatedly requested to participate in a thoughtful, deliberative process to create a logical, functional shared governance structure that can be used to develop the curricula for the proposed one college;

Whereas, the charge to the Shared Governance Workgroup does not include creating a governance structure to review and revise the curricula currently being proposed for the new one college;

Whereas, the system office has repeatedly blocked efforts to develop a curricular governance structure for the creation, evolution, and assessment of the curricula for the proposed one college;

Whereas, the system office has repeatedly [claimed](#) to NECHE, the Legislature, and the media that over 400 faculty and staff are working in a transparent and collaborative process while in reality objections to the process have been systematically ignored and opposition has been met with [threats of replacement](#);

Whereas, the faculty and staff unions (the 4Cs, CSU-AAUP, AFT, SOUAF and AFSCME) that comprise the Connecticut State Colleges and Universities (CSCU) system [stand united in opposition](#) to the proposed consolidation of the community colleges and the strategies referred to by “Students First,”;

Whereas, the [significant concerns identified by the CCC College Senate](#) at the introduction of the community college consolidation plan related to curriculum, shared governance and cost savings have only intensified, while being consistently misrepresented and met with derision by the system office; now therefore, be it

Resolved that the CCC College Senate, the representative shared governance body of Capital Community College, cannot currently support the endorsement voting process for the proposed General Education or any other Students First curricula; now, therefore, be it

Further Resolved that the CCC College Senate is recalling all elected representatives to the Students First Workgroups (all names must be removed from all Students First documents including those that are sent to NECHE, the Legislature, and the media) and will not elect new representatives until there is a legitimate and representative shared governance structure whereby faculty and staff can participate in decision-making and develop and manage the curricula for the proposed one college.

12-yes, 1-no, 0-abstentions, Feb 27 2020

Capital Community College Senate No Confidence Vote

5/9/2019 Senate vote: 11 in favor, one abstention. College survey: 91% in favor

As an institution, Capital Community College’s most important asset is its individual and independent accreditation. It allows our faculty and staff to make local decisions that respond to the specific needs of our students and our community. The Students First Proposal from President Mark Ojakian, as endorsed by the CSCU Board of Regents, would take away our accreditation. This loss would remove our ability to act on behalf of our local constituents. The fact that decisions would be made at a distance by bureaucrats who neither understand nor have direct knowledge of the needs of our community and of our students is counter to who we are as a community college and why we exist.

Whereas in April 2017 the Board of Regents (BOR) for the Connecticut State Colleges and Universities (CSCU) System and its President, Mark Ojakian, launched the “Students First” Initiative, which attempts to consolidate the administrative infrastructure and academic programs of the 12 community colleges and consolidate “back office” functions for the 17 CSCU institutions with no understanding of how this might affect the colleges and universities ability to function and retain accreditation;

Whereas the hiring of three regional presidents was undertaken before consolidation has been officially approved, and the process was rushed without meaningful input from faculty and staff, and in a way that did not yield a diversity of candidates;

Whereas the number of women in leadership roles within the community colleges has decreased in recent years, which has led to low representation by women for a student population that is mostly women;

Whereas the planning process for "Students First" violates established principles of shared governance, despite repeated calls to create a more representative and deliberative process for managing the transition;

Whereas the committees created as part of this plan do not provide adequate faculty representation and participation in academic decision-making;

Whereas the processes adopted for curriculum reform are rushed and unlikely to build academic excellence into programs, but will instead result in programs that meet the "lowest common denominator", and which cannot respond effectively to ever changing regional needs;

Whereas we share all of the concerns raised in the initial NEASC (now NECHE) response dated April 25, 2018 when they did not endorse the initial Substantive Change application, and there is no guarantee that an updated application for accreditation will be approved;

Whereas over the last two years "Students First" has already failed to meet both budgetary expectations and planned timelines, and will continue to drain resources from the colleges to build a statewide bureaucratic structure not directly related to educating students;

Whereas the plan to build a single community college for Connecticut with 12 campuses endangers the ability of the twelve independent Colleges to fulfill their respective missions, while only putting the system office first; now, therefore, be it

Resolved, that the Capital Community College Senate, as the representative body for faculty and staff of Capital Community College, votes No Confidence in the "Students First" plan, Mark Ojakian, president of the CSCU system, and the Board of Regents for the CSCU system.

Gateway Community College

Gateway Community College Faculty Staff Council Resolution to Stand With Our Unions January 28, 2020

Whereas, Gateway Community College faculty and staff have participated in good-faith with the consolidation process;

Whereas, the elected representatives and the Faculty Staff Council have repeatedly [called](#) for prioritizing the development of a governance process for the proposed one college;

Whereas, the system office has repeatedly [blocked efforts](#) to develop a curricular governance structure for the creation, evolution, and assessment of the curricula for the proposed one college and instead claims that the TAP Model is an adequate governance structure for establishing the curricula for the proposed one college;

Whereas, the system office has repeatedly [claimed](#) to NECHE, the Legislature, and the media that over 400 faculty and staff are working in a transparent and collaborative process while in reality the objections to the process have been systematically ignored and opposition has been met with [threats of replacement](#);

Whereas the volume of work involved in aligning hundreds of programs and courses over the coming months and years (a timeline that many workgroups have determined is not feasible), represents a significant drain on college resources, a strain on college committee priorities (eg., curriculum, governance, etc.), and a reduction in availability to current students; now therefore, be it

Resolved that Faculty Staff Council, the representative shared governance body of Gateway Community College commits to stand with our unions and to [Our Stand: Commitment to Our Students and To Our Twelve Community Colleges](#). We support withdrawal from all Students First Plan committees and consolidation work, [participation in which has been noted as a choice by Mr. Ojakian and Dr. Gates](#) and to turn our time, energy, and attention to fulfilling the mission of Gateway Community College.

Gateway Community College Faculty Staff Council Resolution Recalling Elected Representatives to Students First Plan Committees January 28, 2020

Whereas, Gateway Community College faculty and staff have participated in good-faith with the consolidation process;

Whereas, the elected representatives and the Faculty Staff Council have repeatedly [called](#) for prioritizing the development of a governance process for the proposed one college;

Whereas, the system office has repeatedly [blocked efforts](#) to develop a curricular governance structure for the creation, evolution, and assessment of the curricula for the proposed one college;

Whereas, the system office has repeatedly **claimed** to NECHE, the Legislature, and the media that over 400 faculty and staff are working in a transparent and collaborative process while in reality the objections to the process have been systematically ignored and opposition has been met with **threats of replacement**; now therefore, be it

Resolved that Faculty Staff Council, the representative shared governance body of Gateway Community College, is recalling elected representatives to the Students First Workgroups (all names must be removed from all Students First documents including those that are sent to NECHE, the Legislature, and the media) and will not elect new representatives until there is a charge to develop a representative governance structure that will create policies and procedures for developing, evolving, and assessing the curricula that will be the academic program of the proposed one college; now, therefore, be it

Further Resolved that the Gateway Community College Faculty Staff Council will not act on any proposals generated by Students First Plan committees until there is representative governance structure that will create policies and procedures for developing, evolving, and assessing the curricula that will be the academic program of the proposed one college.

GCC Faculty Staff Council Meeting on 9 May 2019: 48 yes, 1 no, 2 abstain

No Confidence Vote As an institution, Gateway Community College's most important asset is its individual and independent accreditation. It allows our faculty and staff to make local decisions that respond to the specific needs of our students and our community. The Students First Proposal from President Mark Ojakian, as endorsed by the CSCU Board of Regents, would eliminate our accreditation. This loss would remove our ability to act on behalf of our local constituents. The fact that decisions would be made at a distance by bureaucrats who neither understand nor have direct knowledge of the needs of our community and of our students is counter to who we are as a community college and why we exist.

Whereas in April 2017 the Board of Regents (BOR) for the Connecticut State Colleges and Universities (CSCU) System and its President, Mark Ojakian, launched the "Students First" Initiative, which attempts to consolidate the administrative infrastructure and academic programs of the 12 community colleges and consolidate "back office" functions for the 17 CSCU institutions with no understanding of how this might affect the colleges and universities ability to function and retain accreditation;

Whereas the hiring of three regional presidents was undertaken before consolidation has been officially approved, and the process was rushed without meaningful input from faculty and staff, and in a way that did not yield a diversity of candidates;

Whereas the number of women holding the office of president/CEO at the colleges has decreased drastically in recent years, which has led to very low representation by women for a student population that is mostly women;

Whereas the planning process for "Students First" violates established principles of shared governance, despite repeated calls to create a more representative and deliberative process for managing the transition;

Whereas the committees created as part of this plan do not provide adequate faculty representation and participation in academic decision-making;

Whereas the processes adopted for curriculum reform are rushed and unlikely to build academic excellence into programs, but will instead result in programs that meet the "lowest common denominator";

Whereas we share all of the concerns raised in the initial NEASC (now NECHE) response dated April 25, 2018 when they did not endorse the initial Substantive Change application, and there is no guarantee that an updated application for accreditation will be approved;

Whereas over the last two years "Students First" has already failed to meet both budgetary expectations and planned timelines, and will continue to drain resources from the colleges to build a statewide bureaucratic structure at the expense of student-facing services;

Whereas faculty, staff, management, and related expenses currently paid out of the community college operating accounts are being utilized by the BOR, not reflecting transparency in actual BOR expenditures and reporting;

Whereas the plan to build a single community college for Connecticut with 12 campuses removes the community from the community colleges;

Whereas "Students First" risks plunging the community college system into years of uncertainty and chaos that will have negative impacts on students;

Whereas "Students First" endangers the ability of the twelve Community Colleges in Connecticut to fulfill their respective missions, while only putting the system office first; now, therefore, be it

Resolved, that Faculty/Staff Council, as the representative body for faculty and staff of Gateway Community College, votes No Confidence in the "Students First" plan, Mark Ojakian, president of the CSCU system, and the Board of Regents for the CSCU system.

Housatonic Community College

2/4/2020 RESOLUTION:

The HCC College Senate opposes the Students First Initiative because it does not support the needs of our unique, diverse student populations; therefore,

The HCC College Senate recommends that HCC faculty or staff members do not participate in any Students First committees or workgroups or any other initiatives, which our unions do not support.

HCC faculty or staff who do participate in Students First committees or workgroups or any other initiatives do so voluntarily and without the support of the HCC College Senate

"...be it Resolved, that the Housatonic Community College faculty and staff, vote No Confidence in the "Students First" plan, Mark Ojakian, president of the CSCU system, and the Board of Regents for the CSCU system"

107 voted, 76% in favor of the no-confidence resolution by electronic vote over a period of one week, ending May 15th 2018. Votes reported May 16th

Manchester Community College

Manchester Community College Academic Senate Resolution on Non-Participation in Students First Academic and Student Affairs Consolidation Committees, and the General Education Workgroup Effective Immediately Final Version: March 3, 2020

Note: This is a second revision of our resolution. The main difference in this updated version is that if we cannot support Students First until there is a governance structure, we can't pull personnel from the Shared Governance Workgroup which would create that structure. That structure could work in parallel to the current individual colleges or it could replace the individual structures.

Whereas, Manchester Community College (MCC) has a representative, meaningful, and participatory shared governance process in place that provides faculty and staff genuine opportunities to participate in decision-making and develop and manage the curricula for MCC as an independently accredited college;

Whereas, faculty, the Academic Senate, and other bodies have repeatedly requested to participate in a thoughtful, deliberative process to create a logical, functional shared governance structure that can be used to develop the curricula for the proposed one college;

Whereas, the charge to the Shared Governance Workgroup does not include creating a governance structure to review and revise the curricula currently being proposed for the new one college;

Whereas, the system office has repeatedly blocked efforts to develop a curricular governance structure for the creation, evolution, and assessment of the curricula for the proposed one college;

Whereas, the system office has repeatedly [claimed](#) to NECHE, the Legislature, and the media

that over 400 faculty and staff are working in a transparent and collaborative process while in reality objections to the process have been systematically ignored;

Whereas, the faculty and staff unions (the 4Cs, CSU-AAUP, AFT, SOUAF and AFSCME) that comprise the Connecticut State Colleges and Universities (CSCU) system [stand united in opposition](#) to the proposed consolidation of the community colleges and the strategies referred to by “Students First”;

Whereas, the system office has drawn away vital financial resources from campuses to hire regional presidents and other expensive administrative staff;

Whereas, the system office has increased its own budget by over 45% since 2017; justified its work by claiming to address a “fiscal crisis” but has added over \$16 million dollars to its own budget during the last four years, resources that should have gone to support students, advising, tutoring, and other teaching and learning activities on campus [System Office expenditure totals for the last four years:

2017: 30,330,990

2018: 34,312,167

2019: 39,500,000

2020: 46,690,000];

Whereas, the way this plan has been implemented has created divisiveness rather than a system of real shared governance, collegiality, and common purpose, which is one of the reasons why eleven college governing bodies voted “[no confidence](#)” in the “Students First” plan, President Mark Ojakian, and the Board of Regents for the CSCU system last spring;

Whereas, the state legislature itself has introduced bills to address these issues, including [H.B. No. 5114: An Act Requiring Training for the Members of the Governing Boards of the Institutions of Higher Education in the State](#); [H.B. No. 5113: An Act Requiring Legislative Approval for the Merger or Closing of Institutions Within the Connecticut State Colleges and Universities](#); [H.B. No. 5112: An Act Concerning the Budget of the Connecticut State Colleges and Universities](#); and [An Act Requiring Financial Transparency of the “Students First”/Consolidation Plan](#);

Whereas, the significant concerns identified by faculty, staff, and governing bodies across the state at the introduction of the community college consolidation plan related to curriculum, shared governance and cost savings have only intensified, while being consistently misrepresented and largely disregarded by the system office; now therefore, be it

Resolved that the MCC Academic Senate, the representative shared governance body of Manchester Community College, cannot currently support the endorsement voting process for the proposed General Education or any other Students First curricula; now, therefore, be it

Further Resolved that the MCC Academic Senate is recalling all elected representatives to the Students First Workgroups (all names must be removed from all Students First documents including those that are sent to NECHE, the Legislature, and the media) except those representatives on the Shared Governance Workgroup and will not elect new representatives until there is a legitimate and representative shared governance structure whereby faculty and staff can participate in decision-making and develop and manage the curricula for the proposed one college; now, therefore, be it

Further Resolved that we will continue work related to consolidation when 1. financial and human resources are redistributed back to colleges from the system office; 2. a shared governance structure is developed, proposed, reviewed, officially approved by each of the twelve community colleges, and implemented in parallel to (or replacing as a single college) the current 12 individual college shared governance structures.

5.2.19 MCC’s Academic Senate passed the following vote of no confidence:

"Resolved, that the Manchester Community College Academic Senate, as the representative body for faculty and staff of Manchester Community College, votes No Confidence in the 'Students First' plan and consolidation, Mark Ojakian, president of the CSCU system, and the Board of Regents for the CSCU system."

The vote total was: 58 “yes”; 11 “no”; 7 abstentions.

Naugatuck Valley Community College

Curriculum and Educational Affairs Committee Resolution on SF General Education and Program Curricula Endorsement - February 6, 2020

Whereas, Naugatuck Valley Community College has a governance process in place to develop and manage the curricula for NVCC as an independently accredited college;

Whereas, the proposed one college curricula are not curricula for Naugatuck Valley Community College but for a new institution that has yet to be named or defined;

Whereas, the faculty and staff at Naugatuck Valley Community College does not know whether the Board of Regents will be applying for a substantive change or new candidacy with NECHE;

Whereas, the proposed one college should have a governance structure in place in order to develop and manage its own curricula as an independently accredited college should;

Whereas, there is no documentation regarding what an endorsement vote means or who the arbiters of interpreting votes will be;

Whereas, the charge to the Shared Governance Workgroup does not include creating a governance structure to review and revise the curricula currently being proposed for the new one college;

Whereas, faculty, the Faculty Advisory Council and other bodies, have repeatedly requested to participate in a thoughtful, deliberative process to create a logical, functional shared governance structure that can be used to develop the curricula for the proposed one college;

Whereas, the faculty and staff unions (the 4Cs, CSU-AAUP, AFT, SOUAF and AFSCME) that comprise the Connecticut State Colleges and Universities (CSCU) system stand united in opposition to the proposed consolidation of the community colleges and the strategies referred to by “Students First,” and have asked college governance bodies not to vote on products of the plan, including the proposed General Education program and other academic programs; now therefore, be it

Resolved that the Curriculum and Educational Affairs Committee (CEAC), a representative shared governance body of Naugatuck Valley Community College, cannot support the endorsement voting process for the proposed General Education or any other “Students First” curricula; now, therefore, be it

Further Resolved that the Naugatuck Valley Community College’s Curriculum and Educational Affairs Committee (CEAC) urges the system office and Board of Regents to implement a legitimate and representative shared governance structure and process for consideration of all curricula for the proposed new college.

9 yea, 1 nay, 2 abstentions

Naugatuck Valley Community College General Education Assessment and Curriculum Committee Resolution on SF General Education and Program Curricula Endorsement - February 13, 2020

Whereas, Naugatuck Valley Community College has a governance process in place to develop and manage the curricula for NVCC as an independently accredited college;

Whereas, the proposed one college curricula are not curricula for Naugatuck Valley Community College but for a new institution that has yet to be named or defined;

Whereas, the faculty and staff at Naugatuck Valley Community College does not know whether the Board of Regents will be applying for a substantive change or new candidacy with NECHE;

Whereas, the proposed one college should have a governance structure in place in order to develop and manage its own curricula as an independently accredited college should;

Whereas, there is no documentation regarding what an endorsement vote means or who the arbiters of interpreting votes will be;

Whereas, the charge to the Shared Governance Workgroup does not include creating a governance structure to review and revise the curricula currently being proposed for the new one college;

Whereas, faculty, the Faculty Advisory Council and other bodies, have repeatedly requested to participate in a thoughtful, deliberative process to create a logical, functional shared governance structure that can be used to develop the curricula for the proposed one college;

Whereas, the faculty and staff unions (the 4Cs, CSU-AAUP, AFT, SQUAF and AFSCME) that comprise the Connecticut State Colleges and Universities (CSCU) system stand united in opposition to the proposed consolidation of the community colleges and the strategies referred to by "Students First," and have asked college governance bodies not to vote on products of the plan, including the proposed General Education program and other academic programs; now therefore, be it

Resolved that NVCC's General Education Assessment and Curriculum Committee (GEACC), a representative shared governance body of Naugatuck Valley Community College, cannot support the endorsement voting process for the proposed General Education or any other "Students First" curricula; now, therefore, be it

Further Resolved that the Naugatuck Valley Community College's General Education Assessment and Curriculum Committee urges the system office and Board of Regents to implement a legitimate and representative shared governance structure and process for consideration of all curricula for the proposed new college.

Naugatuck Valley Community College Faculty Senate Resolution Recalling Faculty from Consolidation related Committees February 18, 2020

Whereas, Naugatuck Valley Community College faculty and staff have participated in good-faith with the consolidation process;

Whereas, the systemwide Faculty Advisory Committee and many faculty on Students First related committees have repeatedly called for prioritizing the development of a governance process for the proposed one college;

Whereas, the system office has [blocked](#) faculty led efforts to develop a curricular governance structure as required by NECHE standard 3.15 for the creation, modification, and assessment of the curricula for the proposed one college; now therefore, be it

Resolved that Faculty Senate, the representative shared governance body of Naugatuck Valley Community College, recalls NVCC faculty from Students First committees and Workgroups; now, therefore, be it

Further Resolved that NVCC Faculty Senate will elect new representatives for Students First committees and work groups when there is a charge creating a faculty led representative governance structure that, as mandated by NECHE 3.15, will create policies and procedures for developing, modifying, and assessing the curricula for the academic program of the proposed one college; now, therefore, be it

Further Resolved that Naugatuck Valley Community College Faculty Senate will consider and vote on proposals generated by Students First related committees when such a faculty led and duly elected representative governance structure for the one college is charged.

Naugatuck Valley Community College Faculty Senate Resolution on SF General Education and Program Curricula Endorsement - February 18, 2020

Whereas, Naugatuck Valley Community College has a governance process in place to develop and manage the curricula for NVCC as an independently accredited college;

Whereas, the proposed one college curricula are not curricula for Naugatuck Valley Community College but for a new institution that has yet to be named or defined;

Whereas, the faculty and staff at Naugatuck Valley Community College does not know whether the Board of Regents will be applying for a substantive change or new candidacy with NECHE;

Whereas, the proposed one college should have a governance structure in place in order to develop and manage its own curricula as an independently accredited college should;

Whereas, there is no documentation regarding what an endorsement vote means or who the arbiters of interpreting votes will be;

Whereas, the charge to the Shared Governance Workgroup does not include creating a governance structure to review and revise the curricula currently being proposed for the new one college;

Whereas, faculty, the Faculty Advisory Council and other bodies, have repeatedly requested to participate in a thoughtful, deliberative process to create a logical, functional shared governance structure that can be used to develop the curricula for the proposed one college;

Whereas, the faculty and staff unions (the 4Cs, CSU-AAUP, AFT, SQUAF and AFSCME) that comprise the Connecticut State Colleges and Universities (CSCU) system stand united in opposition to the proposed consolidation of the community colleges and the strategies referred to by “Students First,” and have asked college governance bodies not to vote on products of the plan, including the proposed General Education program and other academic programs; now therefore, be it

Resolved that Faculty Senate, the representative shared governance body of Naugatuck Valley Community College, cannot support the endorsement voting process for the proposed General Education or any other “Students First” curricula; now, therefore, be it

Further Resolved that the Naugatuck Valley Community College Faculty Senate urges the system office and Board of Regents to implement a legitimate and representative shared governance structure and process for consideration of all curricula for the proposed new college.

Naugatuck Valley Community College’s Faculty Senate Vote of No Confidence May 14, 2019

Whereas, Naugatuck Valley Community College’s most important asset is its individual and independent accreditation, allowing our faculty and staff to make local decisions and respond to the specific needs of our students and our community; and

Whereas, the Students First proposal from President Mark Ojakian, as endorsed by the CSCU Board of Regents, would jeopardize our accreditation and hinder our ability to act on behalf of our local constituents; and

Whereas, the proposal’s centralized structure requires governance decisions to be made at a distance with a minimized role for local faculty voices, thereby undercutting our identity as a community college; and

Whereas, these concerns and objections have been made repeatedly to President Ojakian and the CSCU Board of Regents, most recently and emphatically through NVCC Faculty Senate’s signature on a petition bearing more than 1,400 names from across the system and state; and

Whereas, these concerns and objections have been ignored by system leadership; therefore

Be it resolved, that the Faculty Senate of Naugatuck Valley Community College votes No Confidence in the “Students First” plan, Mark Ojakian, president of the CSCU system; and the Board of Regents for the CSCU system.

Vote count: 1 yes, 1 no

Northwestern Connecticut Community College**Northwestern Connecticut Community College Professional Senate Resolution to Stand With Our Unions - 3/9/2020**

Whereas, Northwestern Connecticut Community College faculty and staff have participated in good-faith with the consolidation process;

Whereas, the elected representatives, faculty, and staff of Northwestern Connecticut Community College and other community colleges have repeatedly called for prioritizing the development of a governance process for the proposed one college;

Whereas, the system office has repeatedly blocked efforts to develop a curricular governance structure for the creation, evolution, and assessment of the curricula for the proposed one college and instead claims that the TAP Model is an adequate governance structure for establishing the curricula for the proposed one college;

Whereas, the system office has repeatedly claimed to NECHE, the Legislature, and the media that over 400 faculty and staff are working in a transparent and collaborative process while in reality the objections to the process have been systematically ignored and opposition has been met with threats of replacement;

Whereas the volume of work involved in aligning hundreds of programs and courses over the coming months and years—a timeline that many workgroups have determined is not feasible—represents a drain on college financial resources, a burden on faculty and staff, and a reduction in the ability of said faculty and staff to assist current students and to carry out the mission of Northwestern Connecticut Community College.

Resolve that we, the Professional Senate, the representative shared governance body of Northwestern Connecticut Community College, have no confidence in the Consolidation process thus far and commit to stand with our union. We support the rights of Northwestern Connecticut Community College faculty and staff to participate in, oppose, or withdraw from Students First Plan committees and work groups, as they see fit in alignment with their service to our students and community which is our first priority. Participation has been noted as a choice by Mr. Ojakian, and we urge faculty and staff to devote their time, attention, and efforts to fulfilling the mission of Northwestern Connecticut Community College. Resolution passed with 38 in favor, 6 against and 6 abstentions Recorded on 3/9/2020

Norwalk Community College**NCC Resolution in Support of our Unions and Non-Participation in the Students First Academic & Student Affairs Consolidation Committee, the Shared Governance Workgroup, and the General Education Workgroup Effective Immediately**

Whereas the unions representing university and community college faculty and staff have endorsed collective action in response to the Board of Regents' ("BOR") "Students First" and "Consolidation" initiatives;

Whereas the call to collective action is being taken only after concerns expressed by faculty and staff, particularly regarding the creation of a shared governance structure to oversee curricular and other matters, have been repeatedly and uniformly ignored over the last two years;

Whereas Norwalk Community College believes our continued inclusion on the above-named committees would serve only to inaccurately confirm our tacit agreement with the "Student's First" agenda;

Whereas there is ample and irrefutable evidence that the "Student's First Consolidation" initiatives are not only failing to improve, but are harming, the quality of public higher education as well as harming the state's fiscal posture;

Whereas we believe that we can more productively utilize our time and effort in supporting initiatives at our college that will improve the learning experience for our students while at the same time supporting the needs of our unique student population and the community we serve; and

Whereas the BOR has repeatedly misrepresented to NECHE, to the legislature, and to the media the large number of faculty and staff voluntarily and collaboratively working on “Student’s First” Consolidation committees and task forces, while the work has been anything but collaborative as concerns and questions voiced by faculty and staff have been ignored or met with [threats of replacement](#) now, therefore, be it

Resolved, that the Norwalk Community College Senate, as the shared governance body of Norwalk Community College that elected representatives to the Students First Academic & Student Affairs Consolidation Committee (SFASACC), the Shared Governance Workgroup, and the General Education Workgroup, [stands with our unions to renew our commitment to our current students and our twelve community colleges](#). As such we withdraw our representation in, and will cease our participation in, all of these and related committees.

Approved by the Norwalk Community College senate at its January 29, 2020 meeting with a unanimous vote of 22-0. NCC Senate Resolution on SF General Education, February 26, 2020

Whereas Norwalk Community College has a governance process in place to develop and manage the curricula for NCC as an independently accredited college;

Whereas the proposed one college curricula are not curricula for Norwalk Community College but for a new institution that does not yet exist and has yet to be named or defined;

Whereas the proposed one college does not have a governance structure in place to develop and/or manage its own curricula as affirmed in NECHE standards: 3.13, 3.14, and 3.15;

Whereas the proposed General Education core does not provide our students with the knowledge to become successful employees or informed global citizens as affirmed in the NCC Mission statement as well as in NECHE standards 4.13, 4.14, 4.15, 4.16, and 4.17 and would therefore not be confirmed even if the structure was in place to vote;

Whereas the proposed General Education Core complicates the ability of students to change majors since only 6-7 credits of the core will be the same across majors if programs can tailor General Education core courses to their own perceived needs. This opens up the possibility that if a student changes her/his major s/he may have to take different courses to fulfill the General Education core requirements in the new major as well as courses within the major itself. Students may not only lose credits for courses they took in their current major, but they could also lose credits in the General Education core when changing majors;

Whereas the documentation defining what an “endorsement” vote means, who the arbiters of interpreting votes and accompanying rationales would be, and defined parameters on how the votes and accompanying rationales would be interpreted is either non-existent or arcane;

Whereas the charge to the Shared Governance Workgroup does not include creating a governance structure to review and revise the curricula currently being proposed for the new one college;

Whereas the proposed General Education core is only one example of the unwillingness of the system office and the Board of Regents to work collaboratively, in a meaningful and constructive manner, with faculty and staff, to carefully weigh *both sides* of all aspects, all ramifications, and all intended and unintended consequences of the consolidation of the twelve community colleges into one college for the students and the communities these colleges serve; and

Whereas the faculty and staff unions (the 4Cs, CSU-AAUP, AFT, SOUAF-AFSCME and AFSCME Local 2480) that represent the Connecticut State Colleges and Universities (CSCU) system faculty and professional staff stand united in opposition to the proposed consolidation of the community colleges and the proposal referred to as “Students First,” and have asked college governance bodies not to vote on products of the plan, including the proposed General Education program and other academic programs; now therefore, be it

***Resolved*, that the Norwalk Community College Senate, the shared governance body of Norwalk Community College, will not support the voting process for the proposed General Education core, and will not, for the above reasons, support the proposed General Education core as it has been presented.**

In accordance with the NCC governance process, this resolution has already been passed by the NCC Curriculum Committee and the NCC General Education Committee. Approved by the Norwalk Community College senate at its February 26, 2020 meeting with a unanimous vote of 25-0.

Resolved, that the Norwalk Community College Senate, as the representative body for faculty and staff of Norwalk Community College, votes No Confidence in the "Students First" plan, Mark Ojakian, president of the CSCU system, and the Board of Regents for the CSCU system.

Vote on 20 May 2019. 28 in favor and 2 against.

Quinebaug Valley Community College

Reported on 15 May 2019: with a full quorum, the Academic Senate voted 22 in favor of the No Confidence resolution, with 10 opposed

Resolved, that the QVCC Academic Senate, as the representative body for faculty and staff of the academic division of Quinebaug Valley Community College, votes No Confidence in the 'Students First' plan and consolidation, Mark Ojakian, president of the CSCU system, and the Board of Regents for the CSCU system

Three Rivers Community College

Three Rivers Community College Faculty Senate Resolution Recalling Elected Representatives to Students First Plan Committees - January 31, 2020

Whereas, Three Rivers Community College faculty have participated in good-faith with the consolidation process;

Whereas, the elected representatives and the Faculty Senate have repeatedly [called](#) for prioritizing the development of a governance process for the proposed one college;

Whereas, the system office has repeatedly [blocked efforts](#) to develop a curricular governance structure for the creation, evolution, and assessment of the curricula for the proposed one college;

Whereas, the system office has repeatedly [claimed](#) to NECHE, the Legislature, and the media that over 400 faculty and staff are working in a transparent and collaborative process while in reality the objections to the process have been systematically ignored and opposition has been met with [threats of replacement](#); now therefore, be it

Resolved that Faculty Senate, a segment of the representative shared governance body of Three Rivers Community College, is recalling elected representatives to the Students First Workgroups and will not elect new representatives until there is a charge to develop a representative governance structure that will create policies and procedures for developing, evolving, and assessing the curricula that will be the academic program of the proposed one college.

Approved by a vote of thirty-two to two

Three Rivers Community College Congress

Three Rivers Community College Curriculum Committee Resolution on Students First Plan General Education 9 March 2020

Whereas, Three Rivers Community College has a governance process in place to develop and manage the curriculum for Three Rivers as an independently accredited college;

Whereas, the proposed one college curriculum is not a curriculum for Three Rivers Community College but for a new institution that has yet to be named or defined;

Whereas, the faculty and staff at Three Rivers Community College do not know whether the Board of Regents will be applying for a substantive change or new candidacy with NECHE;

Whereas, the process currently outlined for curriculum approval is vague and inadequate;

Whereas, the proposed one college should have a governance structure in place in order to develop and manage its own curriculum as an independently accredited college would;

Whereas, the charge to the Shared Governance Workgroup does not include creating a governance structure to review and revise the curriculum currently being proposed for the new one college;

Whereas, faculty, the Faculty Advisory Council, and other bodies, have repeatedly been unable to participate in a thoughtful, deliberative process to create a logical, functional shared governance structure that can be used to develop the curricula for the proposed one college;

Whereas, the faculty and staff unions (the 4Cs, CSU-AAUP, AFT, SOUAF, and AFSCME) that comprise the Connecticut State Colleges and Universities (CSCU) system stand united in opposition to the proposed consolidation of the community colleges and the strategies referred to as, "Students First," and have asked college governance bodies not to vote on products of the plan, including the proposed General Education program and other academic programs; now therefore, be it Resolved that Three Rivers Curriculum Committee, the component of shared governance body of Three Rivers Community College that oversees general education, cannot support the endorsement voting process for the proposed General Education or any other Students First Plan curricula; now, therefore, be it

Further Resolved that the Three Rivers Community College Curriculum Committee urges the system office and Board of Regents to implement a legitimate and representative shared governance structure and process for consideration of all curricula for the proposed new college

**Resolution on Students First Plan General Education
11 March 2020**

Whereas, Three Rivers Community College has a governance process in place to develop and manage the curriculum for Three Rivers as an independently accredited college;

Whereas, the proposed one college curriculum is not a curriculum for Three Rivers Community College but for a new institution that has yet to be named or defined;

Whereas, the faculty and staff at Three Rivers Community College do not know whether the Board of Regents will be applying for a substantive change or new candidacy with NECHE;

Whereas, the process currently outlined for curriculum approval is vague and inadequate;

Whereas, the proposed one college should have a governance structure in place in order to develop and manage its own curriculum as an independently accredited college would;

Whereas, the charge to the Shared Governance Workgroup does not include creating a governance structure to review and revise the curriculum currently being proposed for the new one college;

Whereas, faculty, the Faculty Advisory Council, and other bodies, have repeatedly been unable to participate in a thoughtful, deliberative process to create a logical, functional shared governance structure that can be used to develop the curricula for the proposed one college;

Whereas, the faculty and staff unions (the 4Cs, CSU-AAUP, AFT, SOUAF, and AFSCME) that comprise the Connecticut State Colleges and Universities (CSCU) system stand united in opposition to the proposed consolidation of the community colleges and the strategies referred to as, "Students First," and have asked college governance bodies not to vote on products of the plan, including the proposed General Education program and other academic programs; now therefore;

Whereas, the Three Rivers Curriculum Committee, the component of shared governance body of Three Rivers Community College that oversees general education, adopted a formal resolution that it cannot support the endorsement voting process for the proposed General Education or any other Students First Plan curricula; and, that the Three Rivers Community College Curriculum Committee urges the system office and Board of Regents to implement a legitimate and representative shared governance structure and process for consideration of all curricula for the proposed new college;

Now therefore, be it RESOLVED, that the Three Rivers College Congress endorses and adopts the action of the Curriculum Committee for all of the reasons set forth above.

Tunxis Community College**Tunxis Community College Professional Staff Organization Resolution to Stand With Our Unions**

Whereas, Tunxis Community College faculty and staff have participated in good-faith with the consolidation process;

Whereas, the elected representatives, faculty, and staff of Tunxis Community College and other community colleges have repeatedly called for prioritizing the development of a governance process for the proposed one college;

Whereas, the system office has repeatedly blocked efforts to develop a curricular governance structure for the creation, evolution, and assessment of the curricula for the proposed one college and instead claims that the TAP Model is an adequate governance structure for establishing the curricula for the proposed one college;

Whereas, the system office has repeatedly claimed to NECHE, the Legislature, and the media that over 400 faculty and staff are working in a transparent and collaborative process while in reality the objections to the process have been systematically ignored and opposition has been met with threats of replacement;

Whereas the volume of work involved in aligning hundreds of programs and courses over the coming months and years—a timeline that many workgroups have determined is not feasible—represents a drain on college financial resources, a burden on faculty and staff, and a reduction in the ability of said faculty and staff to assist current students and to carry out the mission of Tunxis Community College; now therefore, be it

Resolved that the Professional Staff Organization, the representative shared governance body of Tunxis Community College, commits to stand with our unions and to support *Our Stand: Commitment to Our Students and to Our Twelve Community Colleges*. We support withdrawal from all Students First Plan committees and work groups, participation in which has been noted as a choice by Mr. Ojakian, and urge faculty and staff to devote their time, attention, and efforts to fulfilling the mission of Tunxis Community College.

Passed Feb 14th, 2020. 14-yes, 6-no, 1-abstain

Tunxis Community College Professional Staff Organization Resolution on Students First Plan General Education

Whereas, Tunxis Community College has a governance process in place to develop and manage the curricula for Tunxis as an independently accredited college;

Whereas, the proposed one college curricula are not curricula for Tunxis Community College but for a new institution that has yet to be named or defined;

Whereas, the faculty and staff at Tunxis Community College does not know whether the Board of Regents will be applying for a substantive change or new candidacy with NECHE;

Whereas, the proposed one college should have a governance structure in place in order to develop and manage its own curricula as an independently accredited college should;

Whereas, there is no documentation regarding what an endorsement vote means or who the arbiters of interpreting votes will be;

Whereas, the charge to the Shared Governance Workgroup does not include creating a governance structure to review and revise the curricula currently being proposed for the new one college;

Whereas, faculty, the Faculty Advisory Council, and other bodies have repeatedly requested to participate in a thoughtful, deliberative process to create a logical, functional shared governance structure that can be used to develop the curricula for the proposed one college;

Whereas, the faculty and staff unions (the 4Cs, CSU-AAUP, AFT, SOUAF, and AFSCME) that comprise the Connecticut State Colleges and Universities (CSCU) system stand united in opposition to the proposed consolidation of the community colleges and the strategies referred to as Students First and have asked college governance bodies not to vote on products of the plan, including the proposed General Education program and other academic programs; now therefore, be it

Resolved that the Professional Staff Organization, the representative shared governance body of Tunxis Community College, cannot support the endorsement voting process for the proposed General Education or any other Students First curricula; now, therefore, be it

Further Resolved that the Tunxis Community College Professional Staff Organization urges the system office and Board of Regents to implement a legitimate and representative shared governance structure and process for consideration of all curricula for the proposed new college.

20 02 2020 37-yea, 1-nay, 3 abstentions

Tunxis Community College Professional Staff Organization Resolution Recalling Elected Representatives to Students First Plan Committees and Work Groups

Whereas, Tunxis Community College faculty and staff have participated in the consolidation process in good faith;

Whereas, elected representatives, faculty, and staff from Tunxis Community College and other community colleges have repeatedly called for prioritizing the development of a governance process for the proposed one college;

Whereas, the system office has repeatedly blocked efforts to develop a curricular governance structure for the creation, evolution, and assessment of the curricula for the proposed one college;

Whereas, the system office has repeatedly claimed to NECHE, the Legislature, and the media that over 400 faculty and staff are working in a transparent and collaborative process while in reality the objections to the process have been systematically ignored and opposition has been met with threats of replacement; now therefore, be it

Resolved that Professional Staff Organization, the representative shared governance body of Tunxis Community College, is recalling elected representatives to all Students First plan committees and work groups and will not elect new representatives until there is a charge to develop a representative governance structure that will create policies and procedures for developing, evolving, and assessing the curricula that will be the academic program of the proposed one college; now, therefore, be it

Further resolved that the Tunxis Community College Professional Staff Organization, including all committees of that organization, will not act on any proposals generated by Students First committees and work groups until there is representative governance structure that will create policies and procedures for developing, evolving, and assessing the curricula that will be the academic program of the proposed one college. Passed Feb 14th, 2020. 14-yes, 6-no, 1-abstain

Resolved, that the TXCC Professional Staff Organization, as the representative body for the faculty and staff of Tunxis Community College, votes No Confidence in the 'Students First' plan and consolidation, Mark Ojakian, president of the CSCU system, and the Board of Regents for the CSCU system.

May 16, 2019, Yea 48, Nay 2, Abstentions 4

Faculty Advisory Council Community College

Faculty Advisory Committee (FAC), the statutorily representative system-wide body of the Connecticut State College and University Faculty, fully supports college governance bodies' resolutions recalling all faculty and staff from Students' First committees and work groups and encourages all college governance bodies to hold votes on such resolutions.

Passed 28 Feb 2020

Faculty Advisory Committee (FAC), the statutorily representative system-wide body of the Connecticut State College and University Faculty, fully supports college governance bodies' resolutions to reject the Students' First curriculum endorsement process as an illegitimate substitute for shared governance and encourages all college governance bodies to hold votes on such resolutions.

Passed 28 Feb 2020

CT BOARD OF REGENTS FOR HIGHER EDUCATION

RESOLUTION

concerning

AWARD OF THE TITLE

CONNECTICUT STATE UNIVERSITY PROFESSOR

TO

ELLIOTT HORCH

May 14, 2020

WHEREAS, The faculty at Southern Connecticut State University through its CSU Professor Advisory Committee has recommended Dr. Elliott Horch for the title of Connecticut State University Professor; and

WHEREAS, The President of Southern Connecticut State University, Joe Bertolino, has endorsed the committee's recommendation to award the title to Professor Horch and Connecticut State Colleges and Universities President Mark E. Ojakian has concurred; and

WHEREAS, Professor Horch, a highly distinguished teacher, prolific scholar and renowned academic with an international reputation, has served Southern Connecticut State University since 2007 and is currently a tenured Professor of Physics; and

WHEREAS, Professor Horch received the Connecticut State University System Research Award in 2011, the Southern Connecticut State University Faculty Scholar Award the following year, and been nominated 14 times for the University's J. Philip Smith Outstanding Teaching Award, and

WHEREAS, Professor Horch has more than 80 publications and approximately \$8 million in grants; therefore, be it

RESOLVED, That the title of Connecticut State University Professor is herewith awarded by the Board of Regents to Dr. Elliott Horch of Southern Connecticut State University effective May 14, 2020, pursuant to the BOR/AAUP Collective Bargaining Agreement; and be it further

RESOLVED, That Professor Horch be entitled to all the rights, privileges and responsibilities pertaining to this honor.

A True Copy:

Erin A. Fitzgerald, Secretary of the
CT Board of Regents for Higher Education

ITEM

Award of the title Connecticut State University (CSU) Professor to Elliott Horch of Southern Connecticut State University

BACKGROUND

In accordance with BOR/AAUP Collective Bargaining Agreement, Article 5.6:

The Board, upon the recommendation of a President and the BOR President, may award full-time members the title, CSU Professor, provided that the member: 1) has been recommended for the honor by the President who has received the advice of a committee elected from the membership by a procedure designed by the Senate and approved by the President; 2) has been recognized by peers in the field for professional excellence.

CSU Professors shall retain their title for the duration of their service to the system and shall receive additional compensation at a rate 1.10 times their regular salaries.

Not more than four (4) CSU Professorships shall be awarded in any given year, and there shall not be more than twelve (12) in Connecticut State University nor more than three (3) in any one university at any given time.

RECOMMENDATION

President Joe Bertolino endorses the recommendation of Southern's nominating committee and requests that the Board of Regents award the title CSU Professor to Elliott Horch of the Department of Physics. The System President Mark E. Ojakian and Provost Jane M. Gates concur with this recommendation. President Bertolino's letter of recommendation is attached.

05/01/2020 – BOR Academic & Student Affairs Committee

05/14/2020 – Board of Regents

April 22, 2020

Mr. Mark Ojakian
President
Connecticut State Colleges & Universities
39 Woodland Street
Hartford, Connecticut 06105

Dear President Ojakian:

On behalf of Southern Connecticut State University, I am delighted to recommend Dr. Elliott Horch to you and the CSCU Board of Regents for designation as a Connecticut State University Professor, effective May 14, 2020.

In this distinguished appointment, Dr. Horch, a Professor of Physics, would replace the recently retired Dr. Terrell Ward Bynum, Professor of Philosophy and join Southern's current CSU Professors: Dr. Vivian Shipley, Professor of English and Dr. David Levine, Professor of Art History.

The CSU Professor Advisory Committee, chaired by SCSU Chemistry Department Chair Adiel Coca, stated that Dr. Horch met the benchmark of excellent in all three selection categories: creative activity, teaching, and service.

A full Professor since 2013, Dr. Horch has developed a remarkable record of teaching and service excellence and has, with little company in his scholarship stratum, a remarkable record of peer reviewed publications and grant success.

With more than 80 publications, almost 60 in the past seven years, and approximately \$8 million in grants, primarily from the National Science Foundation and Department of Defense, Dr. Horch represents one of Southern's most successful scholars in any field.

Add to the mix his strong teaching credentials, devotion to our students, and his level of important service, and you have an individual who can easily serve as a model for newer faculty members who have high aspirations.

Since joining the Physics Department at Southern in 2007, Dr. Horch has earned a stellar reputation for his outstanding work at an international level. With research interests in astrophysics, binary stars, and exoplanets, he regularly collaborates with scientists from around the globe.

An accomplished designer of high-resolution imaging devices and optical detectors to survey the stars and planets, he developed the Differential Speckle Survey Instrument and the SCSU Interferometer, both of which have been used in leading astronomy research.

Allied to this his impressive record of productivity, and Dr. Horch has become a widely respected member of the scientific community. His efforts led to him receiving the Connecticut State University System Research Prize in 2011 and the SCSU Faculty Scholar Award the following year.

Dr. Horch has taught at all levels of our Physics program and was instrumental in the development of our new Master's Degree in Applied Physics. He has taught more than 20 courses at Southern, four of them new. It is clear from his student evaluations that students enjoy having Dr. Horch as an instructor and perhaps unsurprisingly, he has been nominated 14 times for the university's J. Philip Smith Outstanding Teaching Award.

Currently the Chair of the SCSU Research and Scholarship Committee, Dr. Horch is also a member of several professional organizations and external organizing committees. For example, he is the chair of the Scientific Organizing Committee for the Gemini Science Meeting scheduled for June, 2020. He is also Chair of the Science and Technology Advisory Committee for the Gemini Observatory, which has sites in Hawaii and Chile.

This recommendation is in compliance with the terms of the process as outlined within the BOR/AAUP Collective Bargaining Agreement. I have enclosed a draft resolution awarding this title to Dr. Horch to be presented to the Board of Regents for their consideration at the May 14th Board of Regents meeting. If you require any further information, please do not hesitate to contact me.

Sincerely yours,

A handwritten signature in black ink, appearing to read "Joe Bertolino", with a stylized flourish at the end.

Joe Bertolino
President

CT BOARD OF REGENTS FOR HIGHER EDUCATION

RESOLUTION

concerning

Approval of Awardees for CSU-AAUP Faculty Research Grants

May 14, 2020

RESOLVED: That the Board of Regents for Higher Education approve the funding recommendations of the CSU-AAUP Faculty Research Grants' Selection Committee for the 2020-21 program year.

A True Copy:

Erin A. Fitzgerald, Secretary of the
CT Board of Regents for Higher Education

ITEM

CSU-AAUP Faculty Research Grants

BACKGROUND

Article 9 of the Collective Bargaining Agreement between the Board of Regents and the Connecticut State University American Association of University Professors (CSU-AAUP) mandates that funds, as set forth in Article 9.10 be allocated for research grants at each of the four CSU institutions, according to a formula based on their respective numbers of full-time faculty members.

RATIONALE

The CSU-AAUP Faculty Research Grants continues to be a very popular and a widely supported program by both faculty members and administrators. The program is the primary tool in promoting the advancement of research and creative works by CSU faculty members. Over the years, the grants have led to the publication of many books and journal articles; and have contributed to the advancement of instructional excellence across the CSU universities.

RESOURCES

A total of \$962,041 has been allocated for the 2020-21 program year of the CSU-AAUP Faculty Research Grants Program. Additionally, a total of \$49,727 in residual funds from previous years is available for distribution this year. A grand total of \$1,011,768 is available for research projects to be recommended for funding during the 2020-21 program year.

The CSU institutions received a total of 271 proposals from a total of 294 individual faculty members; requesting funds totaling \$1,335,239; \$333,471 or 33 percent more than what is available for distribution. Each proposal is reviewed and scored on a scale of 1 (poor) to 5 (excellent) by two faculty members from other CSU institutions. Selection Committee members at the awarding institutions employ those scores as the basis for their funding recommendations.

RECOMMENDATION

The Selection Committee has recommended that a total of 259 faculty members receive grants totaling \$993,915. Its recommendations are contained in the attached roster by CSU institution.

05/01/2020 – BOR Academic and Student Affairs Committee

05/14/2020 – Board of Regents

****CCSU** CSU-AAUP Faculty Research Grants Applications – Spring 2020 Competition**

Faculty Rank	Last Name	First Name	Department	Grant Title	Funded Amount
Associate Professor	Drew	Sally	Special Education and Interventions	Examination of Efficacy of the Writing in Science Notebook (WiS-N) Intervention to Improve Students' Argument Writing in Inclusive Middle School Science Classrooms	\$9,950
Professor	Hermes	Katherine	History	Indigenous Connecticut, 1550-1900: An Interactive Digital Resource	\$4,401
Assistant Professor	Lee	Byung	Criminology & Criminal Justice	Sexual Victimization in the Virtual World: An Application of Routine Activities Theory	\$4,510
Assistant Professor	Ruhs	Theodora	Journalism	Aging and Sexuality in the Press	\$10,000
Assistant Professor	Schenck	Samantha	Economics	The Impact of Corruption on Entrepreneurship and Innovation in Ukraine	\$4,939
Assistant Professor	Singhal	Rahul	Physics & Engineering Physics	Synthesis and study of the electrochemical behavior of ternary metal oxide for supercapacitor applications	\$6,000
Assistant Professor	Takemae	Natsuko	Special Education and Interventions	International Research on Universal Design for Learning: Embedding Natural Learning Support for Students Through Systematic Frameworks	\$9,830
Professor	Valerie	Lynda	Literacy, Elementary and Early Childhood Education	Effect of Permission to Play with Language Model on Student Writing: Motivation, Word Choice and Voice	\$5,400
Assistant Professor	Abbas	Syed	Biology	Modulation of cellular serotonin expression by blue light	\$4,500
Assistant Professor	Alicea-Velazquez	Nilda	Chemistry & Biochemistry	Determining the basis of SHP-1 phosphatase ligand selectivity using structural approaches	\$5,000
Associate Professor	Amaya	Luz	Engineering	Optimization of Vertical Axis Wind Turbine with Solar Power	\$4,500
Professor	Barrington	Candace	English	Faithless Love: Re-Reading Chaucer's The Canterbury Tales through Global Languages	\$2,250
Assistant Professor	Barriteau Phaire	Candace	Literacy, Elementary, and Early Childhood Education	Early Childhood Competency Study: What Are the Priorities of Hiring Agencies and Are We Preparing Students to Meet Those Needs?	\$2,400
Professor	Blitz	David	Philosophy	Bertrand Russell: Synthesis and Timeline of his Work	\$4,800

Assistant Professor	Bragg	Caleb	Psychological Science	Self-Control vs Conscientiousness: A meta-analytic examination	\$1,500
Assistant Professor	Bray	Alicia	Biology	Invasive Japanese Beetle Management with Tiphia Wasps in Connecticut	\$4,500
Associate Professor	Broderick	David	Computer Electronics & Graphics Technology	Development and Validation of Requirements for Potable Water Generation in Disaster Recovery	\$5,000
Assistant Professor	Chae	Myungjin	Manufacturing & Construction Management	Sick Building Syndrome (SBC) Control using Smart Building Technology	\$2,223
Assistant Professor	Chae	Myungjin	Manufacturing & Construction Management	Automated and Real-Time Route Finding System for Flexible Bus System (FBS)	\$2,205
Associate Professor	Chakraborty	Sourav	Chemistry & Biochemistry	Phytochemical profiling, mineral content and nutritional value assessment of fruits of a rare South American plant Jaltomata darcyana	\$4,990
Associate Professor	Chase	Daniel	Biomolecular Sciences	The subcellular localization and effect of DOP-2 receptor signaling on the excitability of the chemosensory neuron ASH in C. elegans	\$5,000
Professor	Cohen	Diana	Political Science	Charging the Net: The Battle for Gender Equality in Professional Women's Ice Hockey	\$3,912
Assistant Professor	Corbera Lopez	Silvia	Psychological Science	Validation of a new video-based emotion recognition task in children: the "Bell-Lysaker Emotion Recognition Task for Children (BLERT-K)"	\$5,000
Professor	Crundwell	Guy	Chemistry & Biochemistry	Synthesis of asymmetric 2,3-dialkyl-5-methylquinoxalines- a study of configurational isomerism	\$4,063
Professor	Davis	Michael	Biomolecular Sciences	Characterizing and Circumventing Bacteriophage Resistance in Propionibacterium acnes	\$4,920
Associate Professor	Dhar	Paramita	Economics	Effect of Childhood Obesity on Absenteeism in school	\$3,150
Associate Professor	Dharavath	Haji Naik	Computer Electronics and Graphics Technology (CEGT)	Aiming for G7 Master Compliance through a Color Managed Workflow: Comparison of Compliance with Amplitude Modulated (AM) vs. Frequency Modulated (FM) Screening of Multicolor Digital Printing	\$4,500

Associate Professor	Dobbs-McAuliffe	Betsy	Biomolecular Sciences	Investigating thyroid hormone effects in the regenerating central nervous system	\$4,328
Professor	Dowling	Robert	English	A Place in Time: The Life and Work of Sam Shepard	\$5,000
Associate Professor	Efremoff	Ted	Art	A Refugee's Guide to Rome	\$5,000
Assistant Professor	Garbovskiy	Yuriy	Physics & Engineering Physics	Establishing a Cutting-Edge Liquid Crystal Research Lab at CCSU	\$3,000
Associate Professor	Gilmore	Susan	English	"Language of the Unheard": Riot on the American Cultural Stage	\$2,250
Associate Professor	Givens	Eugena	Criminology & Criminal Justice	The Impact of Witnessed Violence on Juvenile Delinquency Among Youth At-risk for Maltreatment	\$4,760
Professor	Gotchev	Ivan	Mathematical Sciences	On some results about cardinal inequalities for topological spaces	\$5,000
Assistant Professor	Gu	Shijie	Mathematics	On the 5-dimensional Busemann conjecture	\$4,500
Professor	Halkin	Sylvia	Biology	Changes over Time and Space in the Song Repertoires of Northern Cardinals, <i>Cardinalis cardinalis</i>	\$5,000
Professor	Hammad	Khaled	Engineering	Influence of the Expansion Ratio and Yield-Stress Rheology on Suddenly Expanding Flows	\$4,500
Associate Professor	Hapeman	Paul	Biology	Occupancy Modeling, Detection, and Distribution of Fisher (<i>Pekania pennanti</i>) in Suitable Habitats of Connecticut	\$5,000
Associate Professor	Hartwig	Heidi	English	Tracing Conversion in the Notebooks, Journals, and Novels of J.-K. Huysmans	\$3,000
Professor	Hoopengardner	Barry	Biomolecular Sciences	Tunicate RNA editing: a basal chordate model for RNA editing studies	\$4,374
Assistant Professor	Johnson	Steven	Engineering	An Investigation into the Consolidation of Mg and Al Alloy Powders by Applying Solid and Transient Liquid State Methods	\$5,000

Associate Professor	Kapper	Martin	Biomolecular Sciences	Is the chaperone protein HSP-72 induced during high-salinity adaptation in the ribbed mussel?	\$4,813.00
Assistant Professor	Kim	Eunhye Grace	Geography	Creative MICE (Meetings, Incentives, Conventions/conferences, and Exhibitions) Tourism: Building Synergies with Cultural Heritage Tourism	\$3,825
Professor	King	Thomas	Biomolecular Sciences	Do Heph11 variants require immunological "help" to mediate an in vivo allograft response?	\$5,000
Associate Professor	Kumar	Rati	Communication	A culture centered exploration of Rohingya health as lived experience in Hyderabad, India	\$5,000
Professor	Kurkovsky	Stan	Computer Science	Effective Student Industrial Experiences in Undergraduate Computer Science Programs	\$4,500
Professor	Lee	Lee	Management & Organization	Change-oriented Leadership versus Administrative Leadership	\$2,700
Associate Professor	Lim	Hyouun-Sook	Management & Organization	Does age increase or decrease creativity? The moderating effect of perceived organizational support	\$4,500
Assistant Professor	Liu	Yan	Educational Leadership, Policy and Instructional Technology	How is teacher leadership implemented, and how it influences instructional quality in 48 countries?	\$4,500
Associate Professor	Marjani	Sadie	Biology	Methylation analysis of extracellular vesicle DNA from bovine IVF embryo spent culture media	\$5,000
Associate Professor	Maurer	Sarah	Chemistry & Biochemistry	Characterization of heterogenous prebiotic mixtures for the origins of life using FTIR and NMR	\$4,978
Professor	McGrath	Kate	History	The Guthlac Roll: The Creation of a Warrior Saint in Post-Conquest England	\$5,000
Associate Professor	Meng	Yunliang	Geography	Burglary Rates and Neighborhood Contextual Characteristics: A Case Study in Hartford, Connecticut	\$3,500
Professor	Mione	Thomas	Biology	You Say Tomato, I say Jaltomata	\$4,145

Professor	Mitchell	Damon	Criminology & Criminal Justice	Development of Gender-Informed Criminogenic Thinking Scales	\$5,000
Professor	Mitrano	John	Sociology	Ethnic Identity Formation: The Role of Heritage Tourism	\$4,074
Professor	Mulrooney	James	Biomolecular Sciences	Regulation of Actin Dynamics during Parietal Endoderm Migration	\$4,707
Professor	Naoumov	Viatcheslav	Engineering	Combustion of Bio-Derived Fuels in the Lab-Scale Hybrid Propellant Rocket Engine at the Increased Flow Rates of Oxidizer: Study of Combustion of Pure Bees Wax and Bees Wax Enriched with Aluminum Powder	\$4,467
Associate Professor	Oyewumi	Oluyinka	Geological Sciences	Geochemical Assessment of the impact of historical farmland on heavy metal pollution of drinking water supplies in Rocky Hill, CT	\$5,000
Professor	Penniman	Clayton	Biology	Temporal, Spatial, and Life Stage Variability in Community Physiological Profiles of Heterotrophic Prokaryotes in the Biofilm Attached to the Thalli of Chondrus crispus, an Ecologically Important Lower Intertidal Red Seaweed	\$4,500
Professor	Perdomo	Oscar	Mathematics	Quantum State Preparation	\$4,500
Professor	Pope-Portelinha	Cynthia	Geography	The Everyday Geographies of Caregiving: Youth experiences of caring for parents diagnosed with ALS (Lou Gehrig's Disease) in Connecticut	\$5,000
Professor	Pozorski	Aimee	English	Representing Mental Illness: Allen Ginsberg's "Kaddish"	\$1,867
Associate Professor	Rodriguez	Heather	Sociology	The Social Reconstruction of Latino Identity in Protest Art (Arte Contestario)	\$5,000
Assistant Professor	Rosete	Alfredo	Economics	Gentrification and Access to Care Work: Theory and Evidence	\$3,600
Assistant Professor	Russell	Felice	Educational Leadership, Policy and Instructional Technology	Preparing Teachers for Linguistic Diversity through Critical Practice	\$2,250

Professor	Saha	Krishna	Mathematical Sciences	Methods for the Analysis of Multiple Endpoints Simultaneously in Reproductive and Development Toxicity Experiments	\$5,000
Professor	Salama	Talat	Manufacturing & Construction Management	Concrete Mixture Design using Volcanic Ash for Bridge Construction	\$5,000
Professor	Sharma	Nimmi	Physics & Engineering Physics	Laser Measurements of Aerosol Optical Depth	\$5,000
Professor	Shen	Xiaoping	Geography	China's Geography: Globalization and the Dynamics of Political, Economic, and Social Change	\$3,000
Assistant Professor	Singh	Gurbakhsh	Mathematical Sciences	Comparing odds and probabilities as measures of risk for certain generalized linear models	\$4,500
Professor	Siporin	Rachel	Art	Conversations/Artists and Innovators: Color Etchings and Monotypes	\$5,000
Assistant Professor	Smith	Jessica	Biomolecular Sciences	Uncovering the Role of a Type Six Secretion System Involved in Direct Interspecies Electron Transfer between Geobacter Species	\$4,500
Assistant Professor	Soper	Carolyne	Economics	"Community Partner Involvement in the Assessment of Service Learning: A Case Study in the Economics of Social Issues"	\$990
Professor	Warshauer	Matthew	History	9/11 Generation	\$5,000
Professor	Westcott	Barry	Chemistry & Biochemistry	First row transition-metal complexes with a novel β -diketonate	\$4,500
Professor	Wizevich	Michael	Geological Sciences	Investigating the Cedar Mountain Formation, East-Central Utah: Implications for Salt Tectonics, Megafans, Preservation of Dinosaur Tracks, and the Discovery of Life on Mars	\$5,000
Assistant Professor	York	Cassandra	Physical Education and Human Performance	The effect of a low FODMAP diet on gastrointestinal disruption, exercise ability, and mental health in healthy athletic college students	\$4,879

Assistant Professor	Zadi	Samuel	Modern Languages	The title of the paper I will write is, "African Solidarity: Myth or Reality? A Study of Camara Laye's <i>L'Enfant Noir</i> (1947) and Fatou Diome's <i>Le Ventre de l'Atlantique</i> (2003)."	\$2,480
Associate Professor	Zalewski	Leanne	Art	Princess Mathilde: Forgotten Artist	\$5,000
Associate Professor	Zhou	Bin	Engineering	Incremental Analysis of Pre-college Outreach Programs	\$4,500
					\$306,900
					\$55,030
					\$361,930

****ECSU** CSU-AAUP Faculty Research Grants Applications – Spring 2020 Competition**

Faculty Rank	Name	Department	Grant Title	Funded Amount
Professor	Patricia Szczys	Biology	Defining population boundaries for Black Skimmer using population genetics: A hemisphere-scale assessment.	\$4,650
Associate Professor	Joshua Idjadi	Biology	Teamwork: How Do Parrotfish Species Mediate Coral Reef Recovery?	\$4,275
Associate Professor	Kurt Lucin	Biology	Investigating the Presence of Bacteria in the Brain	\$4,650
Associate Professor	Barbara Murdoch	Biology	The Effects of Simulated Microgravity on Cortical Neurons	\$4,650
Associate Professor	Garrett Dancik	Computer Science	Updating an online Bladder Cancer Biomarker Evaluation Tool with more datasets and more features	\$4,603
Associate Professor	William Mattingly	Biology	Do harvester ants facilitate the establishment of an invasive nitrogen-fixing plant in longleaf pine savannas	\$4,650
Assistant Professor	Derek Laux	Biology	Examination of immune cell interactions with early stage cancer cells	\$4,650
Associate Professor	Sukeshini Grandhi	Business Administration	Sharing personal genomic data for P4 medicine: Exploration of public concerns and methods to increase informed decision making	\$4,650
Assistant Professor	Vijay Veerappan	Biology	Genome-wide mRNA expression analysis of a novel deregulated anthocyanin pigmentation mutant in the model legume plant Medicago truncatula using RNA-Seq technology	\$4,650
Associate Professor	Amy Groth	Biology	Expression and Function of odd-skipped genes in <i>C. elegans</i>	\$3,600
Assistant Professor	Brianna Halladay	Economics	Hispanic College Graduates in Connecticut: The Psychology of Major Choice and Wage Differentials	\$3,600
Assistant Professor	Steve Muchiri	Economics	An Analysis of Maternity Healthcare Utilization on Birth Outcomes. A Case Study on Kenya	\$3,600
Professor	Elizabeth Cowles	Biology	Survey of Nursery Irrigation Pond Conditions and Identification of Phytophthora Species	\$3,600
Associate Professor	Kristen Epp	Biology	Effect of climate change on Red-backed salamanders: soil temperature profiles and moisture variability	\$3,564
Professor	Mary Kenny	Sociology	Irreconcilable Differences: Southern Confederate Migrants in Brazil	\$3,354
Professor	Anthony Cornicello	Performing Arts	Straight-Up Jazz Trio Recording Project	\$3,497
Associate Professor	Kristen Morgan	Performing Arts (joint)	Frantic Assembly International Summer School	\$6,535
Professor	Peter Drzewiecki	Environmental Earth Science	3-Dimensional Interpretation of Jurassic Environments in the Hartford Basin from a New Rock Core Collection	\$3,178

Professor	Xing Liu	Education (joint)	Models for Count Response Variables in Educational Research: A Comparison of Poisson Regression, Negative Binomial Regression and Two Zero-Inflated Models	\$6,970
Assistant Professor	Soojin Kim	Art & Art History	Sugar Time	\$3,600
Assistant Professor	Anya Sokolovskaya	Performing Arts	Creating a traveling exhibit Sidonia's Thread: Crafig a Life from Holocaust High Fashion	\$3,600
Assistant Professor	Brian Day	Performing Arts (joint)	A Bilingual Intermedial Performance Adaptation of Lepe De Vega's <i>Acting is Believing</i>	\$5,760
Assistant Professor	Nashid Anjum	Computer Science	Reliable Coverage and Connectivity Analysis of Random Flying Ad-hoc Network	\$3,528
Professor	Okon Hwang	Performing Arts	Nanta: New Musical Genre in Korea	\$3,600
Professor	Jamel Ostwald	History	Mapping Early Modern Military Operations with GIS	\$3,600
Assistant Professor	Thomas Balcerski	History	The Party of No: When Democrats were Conservative	\$3,600
Professor	Raouf Mama	English	Queen Abba Pokou: A Heroine For Our Time	\$3,600
Assistant Professor	Stefan Kamola	History	Iran under Mongol Rule	\$3,600
Professor	Theresa Severance	Sociology	Adult Children of Incarcerated Parents/Family Members: Exploring Risks and Outcomes Among College Students	\$2,268
Professor	Anthony Aidoo	Mathematical Sciences	Morphological pyramids and wavelets on the quincunx lattice approach to improving X-ray images	\$3,600
Professor	Daniel Donaghy	English	<i>Some Saw Other Ways Out</i> : A Collection of Original Poems	\$3,600
Assistant Professor	Jenna Scisco	Psychological Science	The Impact of Active Workstations on Employee Health	\$3,600
Professor	Kehan Gao	Computer Science (joint)	Investigating Deep Learning with Imbalanced Big Data	\$7,200
Associate Professor	Mehdi Khorami	Mathematical Sciences	Twisted spin-cobordism and Twisted K-theory	\$1,800
Professor	Chiaku Chukwuogor	Business Administration	An Econometric Analysis of the Fair Values of Financial Assets and Liability- The Case of US Listed Financial Depository Institutions Post the 2008 Financial Crisis: 2009-2020	\$3,522
Associate Professor	Timothy Cochran	Performing Arts	Book production for "Musical Sincerity and Transcendence in Film"	\$2,520
Professor	Fatma Pakdil	Business Administration (joint)	Implementing statistical process control in monitoring leanth of stay and readmission rate at hospitals with lean management perspective	\$5,600
Professor	Maureen McDonnell	English	Shakespeare and the Public Humanities: A Partnership with the Shakespeare Center of Los Angeles	\$2,800
Professor	Sudha Swaminathan	Education	Study of the Impact of coding on preschoolers' math and self-regulation abilities	\$1,417

Associate Professor	Allison Speicher	English	Fictions of Age: Age Consciousness in Nineteenth Century American Literature	\$2,798
Associate Professor	Afarin Rahmanifar	Art & Art History	Women in Ta 'Zieh (Vibrant Persian Ritual Performance)	\$2,800
Professor	Christopher Torockio	English	<i>Murmur: A Novel</i>	\$2,800
Professor	Michele Bacholle	World Languages	From "Bad Girl" to Harki's Wife and The Invisible Woman	\$2,800
Assistant Professor	Christine Garcia	English	What might this difference do? Connecting Gloria Anzaldua's <i>Autohistoria-Teoria</i> with Current Composition Studies Theory & Pedagogy	\$1,400
			TOTAL=	\$167,939

****SCSU** CSU-AAUP Faculty Research Grants Applications – Spring 2020 Competition**

Faculty Rank	Last Name	First Name	Department	Grant Title	Funded Amount
Professor	Pettigrew	David	Philosophy	Addressing Challenges to human Rights and Transitional Justice in Bosnia and Herzegovina: The Legacy of the 1995 Dayton Peace Accords: A Book Manuscript	\$5,000
Assistant Professor	Coury	Carmen	History	Constructing Costa Rica's White Republican Mythic Past	\$4,875
Associate Professor	Harry	Chelsea	Philosophy	The Reception of Presocratic Natural Philosophy in Later Classical Thought	\$2,500
Assistant Professor	Hwang	Candy	Chemistry	Reducing Biofilm Formation in Implanted Medical Devices by Disrupting Quorum Sensing in Pseudomonas aeruginosa	\$5,000
Professor	Crawford	Sarah	Biology	Investigation of the Potential Use of Brain Tumor Associated Microvesicles in Therapeutic Targeting and Delivery of Chemotherapy	\$5,000
Associate Professor	Dodson	Joel	English	Poor Pens: Writing, Ephemeral Verse, and Student Need in the Seventeenth Century	\$3,804
Associate Professor	Baraw	Charles	English	William Wells Brown's Clotel in the Classroom: Teaching the Unrepresentable	\$4,000
Professor	Palma	Pina	World Languages and Literatures	Pontano and the Renaissance at the Court of Aragon	\$5,000
Associate Professor	Kalbfleisch	Elizabeth	English	The Radical Style in American Life: How the Academic Left Shaped our Polarized Culture 1968-1992	\$5,000
Professor	Marsoobian	Armen	Philosophy	Creating Memory: A Digital Film Reimagining of an American Story of Life, Exhile, and Rebirth	\$5,000
Professor	Ogbaa	Kalu	English	The life and Times of Chinua Achebe	\$5,000
Professor	Serchuk	Camille	Art	Lies of the Land: Art, Cartography, and Visual Culture in Early Modern France	\$5,000
Associate Professor	Weng	Miaowei	World Languages and Literatures	The Power of Childhood Innocence	\$5,000
Professor	Abe	Jo Ann	Psychology	Cognitive Complexity and Political Preferences	\$5,000
Professor	Fluhr	Nicole	English	Swinburne's Apocalyptic Dreams	\$2,500
Assistant Professor	Umamaheswar	Janani	Sociology	Constructions of Adulthood and Masculinity Among Elderly Incarcerated Men	\$4,900
Professor	Vu	Thuan	Art	Translating Vietnamese Imagery	\$5,000

Assistant Professor	Roe	Sarah	History	The History of Female Medicine and the Rise of Technology: How Norms and Values Have Shaped the Way We Understand Women	\$5,000
Assistant Professor	Baker	Sarah	Communication, Media & Screen Studies	Understanding Trans* Working Adults Experiences of Workplace Dignity	\$3,765
Professor	McEachern	Robert	English	Metaphors in the Personal Writing of Oncologists	\$1,883
Assistant Professor	Singh	Amitkumar	Marketing	Alexa or Alexi: Moderating Role of Voice on Persuasiveness of Information	\$3,765
Associate Professor	Warner	Heather	Communication Disorders	Prevalence and Predicting Factors of Pre-treatment Dysphagia in Veterans with Head and Neck Cancer	\$3,765
Associate Professor	Barnes	Ericka	Chemistry	High-accuracy computational quantum chemistry investigation of the Polymerization of Boron-Containing Chromophores	\$3,694
Associate Professor	Coca	Adiel	Chemistry	Chemistry and Antimicrobial Evaluation of Organoboron Compounds	\$3,765
Associate Professor	Edgington	Nicholas	Biology	Sequence Identification of Avirulent Mutations in a natural bacteria pathogen of the nematode C. elegans	\$3,765
Professor	Neverow	Vara	English	Resisting Patriarchy: Virginia Woolf, Feminism, and Sexual Politics	\$3,765
Professor	Shipley	Vivian	English	Writing Poems About CT's Witch Hunt and Social Justice to Complete Remnants, a New Book of Poetry	\$3,765
Associate Professor	Walters	Kenneth	Psychology	Sluggish Cognitive Tempo, ADHD, and Quality of Life among College Students	\$1,883
Associate Professor	Bordner	Kelly	Psychology	Using a rodent tmodel to asses multigenerational effects of cannabinoid exposure in utero	\$3,765
Professor	Brownell	Mia	Art	New Paintings	\$3,765
Associate Professor	Chandler	Jeremy	Art	Spotted at First Light: Creating and Exhibiting New Photographic Artwork	\$3,765
Professor	Cochenet	Gregory	Art	Brick, Fire, Sodium, and Ceramic Art: The Design and Construction of a Sodium Vapor Kiln	\$1,630
Assistant Professor	DeLuca	Zara	Communication Disorders	Examining Programming Skills for Children with Language Disabilities via Robotics Education	\$7,530

Associate Professor	Perumbilly	Sebastian	Social Work/Marriage & Family Therapy	Suicide Prevention, Clinical Assessment & Awareness-Creation on University Campuses: Perspectives of Licensed Clinical Professionals	\$3,602
Professor	Slomba	Jeff	Art	An Enlarging Circle: Sculptural tondos created with computer-assisted design and Make Haven	\$3,765
Professor	Schmitt	Elena	World Languages and Literatures	A Multilingual Masterpiece: Translingual Nature of 'War and Peace'	\$3,765
Professor	Yang	Charlie	Management/IB	A Qualitative Study of the Meanings and Practices of Concious Capitalism: Exploring its Practical and Pedagogical Implications	\$5,798
Professor	Anthis	Kristine	Psychology	The Intersectionality Prism	\$1,883
Assistant Professor	Axon	Stephen	Environment, Geography & Marine Science	A Comparative Study of the Components of Sustainable Urban Transportation between East and West Coast Cities in the US	\$3,254
Professor	Ellis	Scott	English	Stories Nature: The Narrative Structures and Effects of the Environmental Sketch	\$2,489
Assistant Professor	Ferraro	Marisa	Curriculum & Learning	An Explorative Study of Waldkindergarten, German nature-based preschools	\$3,765
Assistant Professor	Jeffrey	Rachel	Biology	Modification of the Dopamine System with Enriched Environment Exposure in Adolescents	\$3,765
Professor	Lesley	Melvin	Chemistry	Novel Tamoxifen Derivatives Derived from 4-Pyridyl-1-butyne	\$3,765
Associate Professor	Pang	Yulei	Mathematics	Corn data for Global Warming Potential (GWP) and Global Eutrophication (EU) predictive model comparison	\$3,765
Professor	Purdy	Mary	Communication Disorders	Improving Reading Comprehension in Persons with Aphasia	\$3,765
Assistant Professor	Savelli	Melanie	Communication, Media & Screen Studies	The Effect of Compound Sources on Health Messages and the Knowledge Gap	\$3,765
Professor	Stretch	Cynthia	English	Housing Precarity and Resistance in Contemporary US Literacy Culture	\$1,883
Assistant Professor	Zigmont	Victoria	Public Health	A Follow Up Study to Understand Changes in Student Food Insecurity	\$3,765
Assistant Professor	Zipoli	Richard	Communication Disorders	The Relationship Between Central Auditory Processing, Phonological Processing, and Reading Abilities in Children	\$6,807

Assistant Professor	Andrushko	Valerie	Anthropology	Health and Head-shaping Practices in the Inca Heartland: A Study of Ancient Burials from Cuzco, Peru	\$3,765
Assistant Professor	Brady	Steven	Biology	Road-mediated (mal)adaptive evolution in amphibians	\$3,765
Associate Professor	Eilderts	Luke	World Languages & Literatures	In the Spotlight, on the Edge: Defining Drag in the French Capital	\$3,765
Associate Professor	Gregory	Robert	Health and Movement Sciences	The Effects of a Heelless Shoe on Running Gate Mechanics	\$3,765
Professor	Heidkamp	C. Patrick	Environment, Geography & Marine Science	The Role of Ocean Clusters as Catalysts for Coastal Sustainability and Resilience - A Case Study of the Iceland-Ocean Cluster	\$3,712
Assistant Professor	Powell	Jessica	Curriculum & Learning	Teachers Who Work to the Gap: A Qualitative Analysis of White Teachers and Anti-Racist Pedagogy	\$2,259
Professor	Antonios	Imad	Computer Science	Characterization and Online Prediction of Time Alignment Error in Smart Grids	\$3,765
Assistant Professor	Barboza	Meghan	Biology	Examination of harp and harbor seal nasal cavities using a microCT scanner and histologic techniques	\$3,765
Assistant Professor	Bonjo	Laurie	Counseling & School Psychology	A Qualitative Study of Factors Influencing the Decision to Become Connecticut School Counselors: Voices from Underrepresented Groups	\$3,620
Professor	McGill	Kenneth	Anthropology	Representations of Economic Value in Gambling Addiction Therapy	\$2,410
Professor	Skoczen	Kathleen	Anthropology	The Social Life of Plastics: Exploring Local Perceptions of Plastic Use and Disposal in Samana, Dominican Republic	\$3,765
Assistant Professor	Sulkowski	Mikolaj	Biology	Homeostatic transcriptional control of BMP signaling in Drosophila motor neurons	\$3,765
Professor	Abd El-Raouf	Amal	Computer Science	A Big Data Model to Increase Business Value Using Machine Learning Methods	\$3,765
Associate Professor	Gregory	Jess	Educational Leadership	Applying SERVQUAL in P-12 Settings	\$2,937
Professor	Levine	David	Art	Further Research for "Mary's Mandolin"	\$3,200
Associate Professor	Lunn	William	Health and Movement Sciences	Effects of acute and chronic cannabidiol (CBD oil) dosing on pre-, during-, and post-exercise hemodynamic, metabolic, and inflammatory measures, gut microbiota, sleep quality, anxiety, and problem solving	\$3,728

Professor	Prince	Melvin	Marketing	Multi-Cultural Study of Consumer Disidentification among Second Generation Immigrants	\$7,530
Associate Professor	Ryder	Todd	Chemistry	Diels-Alder Reactions of Cyclic Isoimidium Salts	\$3,765
Assistant Professor	Weinbaum	Jonathan	Biology	Excavation of a Late Triassic Fossil Stonebed in the Southwestern United States	\$3,765
Assistant Professor	Wu	Binlin	Physics	Develop AI deep learning algorithms for analysis of Raman spectroscopy data for brain cancer diagnosis	\$3,765
Assistant Professor	Yavuz	Olca	Educational Leadership & Policy Studies	Building a Statewide Collaborative Effort to Advocate K-12 Student Success: Academic, Social-Emotional, and Career Development for All	\$1,883
Associate Professor	Finch	Evan	Physics	Continuing Work on Symmetry Violation Experiments at Brookhaven Lab	\$3,653
Assistant Professor	Fisher	Michael	Biology	Selecting Resistance Against Anti-Virulence Therapies: Employing Directed Evolution as Tool for Drug Development	\$3,765
Associate Professor	Liu	Yue	Marketing	Power Effects on Consumer Well-Being	\$3,765
Associate Professor	Stewart	Carol	Management	Entrepreneurship for Veterans with Disabilities (EBV)	\$4,071
Assistant Professor	Fedorchuk	Nicholas	Earth Sciences	Sedimentology of late Paleozoic glacial deposits in northwest Namibia: Investigating Earth's last Icehouse to Greenhouse Transition	\$3,727
Associate Professor	Hossain	Md	Computer Science	Authorship Categorization: Combating Online Piracy, Plagiarism, and Cyber Attacks	\$3,012
Professor	Kim	Hak Joon	Information and Library Science	Bullying Among Library Employees	\$1,883
	Lavin	Terrence	Art	New Forms in Metal: 3D Modeling, Rapid Prototyping, and Electroforming	\$3,765
Associate Professor	MacGregor	James	Recreation, Tourism & Sports Management	Identifying Factors that Impact Academic Success among First-Year Student Athletes	\$7,530
Assistant Professor	Rupp	Kristie	Health and Movement Sciences	What the Health about the Body Positivity Movement?	\$3,765
					311844.157

****WCSU** CSU-AAUP Faculty Research Grants Applications – Spring 2020 Competition**

Faculty Rank	Last Name	First Name	Department	Grant Title	Funded Amount
Associate Professor	Brewer	Adam	Education & Educational Psychology	Anxiety as a Mediator of Relapse of Avoidance in Autism	\$10,000
Professor	Lindenauer	Leslie	History & Non-Western Culture	Mad Hatters: Labor, Immigration, and Power in Danbury's Hatting Industry 1890-1920	\$10,000
Professor	Alloco	Katherine	History & Non-Western Culture	Intercessor, Rebel, Regent: Isabella of France and Her Political Networks	\$5,000
Associate Professor	Aloni	Maya	Psychology	Development and Validation of an Impression of Vegan Characteristic Scale	\$4,991
Asst. Professor	Baluha	Daniel	Chemistry & Biochemistry	Effect of solid Phase Extraction (SPE) Sorbent Materials on the Apparent Molecular Size Distribution of Natural Disolved Organic Matter	\$3,935
Professor	Bandhauer	Carina	Social Sciences	The Modern Anti-Immigrant Movement	\$5,000
Professor	Barone	JC	Communications & Media Arts	The Kate Millet Project	\$4,657
Associate Professor	Boyle	James	Physics, Astronomy & Meteorology	Salinity and Sea State Buoy: Development of an Air Drop Deployment Method	\$5,000
Associate Professor	Cordeira	Joshua	Biological & Environmental Sciences	Improving a Mouse Model of Exercise and Diet-Induced Obesity in Humans	\$5,000
Professor	Dwyer	Terrence	JLA	Female Police Officer Experiences & Observations of Sexual Harassment, Gender Discrimination & Sexual Assault in the Workplace	\$2,500
Professor	Eckstein	Jessica	Communications & Media Arts	Psychometrics and Utility of the Technology-Mediated Abuse (TMA) Scale: Extending Reliability and Validity to Diverse Samples and Expert-Validating Among IPV Stakeholders	\$4,962
Professor	Gadkar-Wilcox	Wynn	History	Dharma, Phenomenology, and the Vietnam War	\$3,899
Asst. Professor	Giamanco	Kristin	Biological & Environmental Sciences	Unraveling the Molecular Structure and Assembly of the Perineuronal Net	\$5,000
Professor	Hawkins	Stacey Alba	World Languages & Literature	Poetry Translation	\$5,000
Associate Professor	Huang	Carol	Finance	Aircraft Leasing and Its Effect on Airlines' Financial Performance	\$4,350
Professor	Lever-Mazzuto	Katie	Communications & Media Arts	Communication Skills for Healthcare Providers	\$3,000
Professor	May	Martha	History & Non-Western Culture	New Deal Subsistence Homesteads: Questions of Race, Gender and Public Policy, 1933-1938	\$5,000
Asst. Professor	Misra	Manoj	Social Sciences	Anti-coal Protest and Asymmetric Environmentalism	\$5,000

Associate Professor	Monette	Michelle	Biological & Environmental Sciences	Impacts of Elevated Water Temperature on the Seawater Tolerance of Atlantic Salmon	\$5,000
Professor	Nelson	Mary	Psychology	Improving Metacognitive, Course Performance and Perceived Competence in College Students	\$5,000
Asst. Professor	Oberleitner	Lindsay	Psychology	Increasing the Trained Addiction Workforce: Understanding Perceptions and Needs from Treatment Systems	\$4,910
Professor	Oluwole	Owoye	Social Sciences	Subversal-Reversal of Institutions in the United States: Presidential Leadership Matters	\$5,000
Professor	Pan	Zuohang	Social Sciences	Equilibrium Exchange Rate of Chinese Yuan to U.S. Dollar and the Impact on US-Chinese Trade Imbalances	\$5,000
Associate Professor	Prieto	Judith	Chemistry & Biochemistry	Development of Tools to Analyze Malaria Proteins Involved in Drug Resistance	\$5,000
Professor	Qi	Shouhua	English	The Kindness of Strangers: Culture, History, and the Reception of Tennessee Williams in China	\$5,000
Asst. Professor	Reynolds	Hannah	Biological & Environmental Sciences	Halotolerance in Fungal Communities Near Roadways	\$5,000
Associate Professor	Robertson	Forest	Chemistry & Biochemistry	Synthesis of 2-Substituted Tetrahydrothiophenes, 1,4-Dithianes and 1,3-Oxathiolanes	\$5,000
Asst. Professor	Stankus	Brian	Chemistry & Biochemistry	Kinetics and Dynamics of Small Molecule Photochemistry	\$5,000
Associate Professor	Stewart	Tricia	Education & Educational Psychology	School Choice in Connecticut: Small Town, Suburban, and Rural Family Participation	\$5,000
Asst. Professor	Waldbuesser	Caroline	Communication & Media Arts	What Are They Looking At? The Influences of Teachers Perceptions of Their Body Images on Teaching	\$4,998
TOTALS					\$152,202

CT BOARD OF REGENTS FOR HIGHER EDUCATION

RESOLUTION

Concerning

One-time modification of the current Board

of Trustee Policy (3.5.1) criteria for

granting an incomplete for CSCU

Community Colleges

May 14, 2020

- WHEREAS, The CSCU Community Colleges have operated under Board of Trustees policy 3.5.1 (Granting of an Incomplete);
- WHEREAS, Current policy states that for courses to be granted an incomplete, “most of the course requirements” must already be completed;
- WHEREAS, The Enrollment Management Crisis Team requests the implementation of an emergency procedure whereby a college’s chief academic officer may make an exception to this policy for courses that cannot meet the threshold identified in the current policy;
- WHEREAS, It is anticipated that this would impact a small number of courses;
- WHEREAS, The Provost, Senior Vice President of Academic and Student Affairs and the Community College Academic Deans concurs with this request; and
- WHEREAS, The action is not an amendment of policy, but an acknowledgment that due to the COVID-19 pandemic and its impact upon students, adherence to certain criteria may be detrimental to student academic progress; therefore be it
- RESOLVED, That the Board of Regents for Higher Education formally adopts a one-time exception to BOT 3.5.1 so that a college’s chief academic officer may make an exception for courses that cannot meet the threshold identified in the current policy that “most of the course requirements” be completed in order for an incomplete to be granted for the spring 2020 semester

A True Copy:

Erin A. Fitzgerald, Secretary of the
CT Board of Regents for Higher Education

ITEM

That the Board of Regents for Higher Education formally adopts a one-time exception to BOT 3.5.1 so that a college's chief academic officer may make an exception for courses that cannot meet the threshold identified in the current policy that "most of the course requirements" be completed in order for an incomplete to be granted for the spring 2020 semester.

BACKGROUND

BOT 3.5.1 states that "most of the course requirements" be completed in order for an incomplete to be granted. This item recommends a temporary modification that allows a college's chief academic officer to make an exception for courses that cannot meet the threshold identified in the current policy.

It is not an amendment of policy, but an acknowledgment that due to the COVID-19 pandemic and its impact upon students, adherence to this deadline may be detrimental to student academic progress.

The Enrollment Management Crisis Team made this request of the System's Provost and Senior Vice President of Academic and Student Affairs.

RECOMMENDATION

It is the recommendation of the System's Provost and Senior Vice President of Academic and Student Affairs, that the Board of Regents approve this temporary exception.

CONNECTICUT BOARD OF REGENTS FOR HIGHER EDUCATION
Connecticut State Colleges & Universities
BELOW THRESHOLD INFORMATION REPORT FORM
PROGRAM MODIFICATION

SECTION 1: GENERAL INFORMATION

Institution: Quinebaug Valley Community College	Date of Submission to CSCU Office of the Provost: 3/4/2020
Most Recent NECHE Institutional Accreditation Action and Date: Continued in Accreditation – 2011 Two Year Progress Report Accepted – 2019	
Original Program Characteristics CIP Code No. 510801 Title of CIP Code Medical/Clinical Assistant Name of Program: Medical Assisting Degree: Title of Award (e.g. Master of Arts) AS Stand-Alone Certificate: (specify type and level) N/A Date Program was Initiated: 11/1990 OHE#: 002647 Modality of Program: X On ground Online X Combined If "Combined", % of fully online courses? 20% Locality of Program: On Campus Off Campus X Both	Original Program Credit Distribution # Credits in General Education: 24 # Credits in Program Core Courses: 29 # Credits of Electives in the Field: 0 # Credits of Free Electives: 3 # Cr Special Requirements (include internship, etc.): 4 <u>Total # Cr in the Program (sum of all #Cr above): 60</u> From "Total # Cr in the Program" above, enter #Cr that are part of/belong in an already approved program(s) at the institution: 60
Modified Program Characteristics Name of Program: Medical Assisting Degree: Title of Award (e.g. Master of Arts) AS Certificate ¹ : (specify type and level) N/A Program Initiation Date: ASAP Modality of Program: X On ground Online X Combined If "Combined", % of fully online courses? 20% Total # Cr the Institution Requires to Award the Credential (i.e. include program credits, GenEd, other): 60 Other: N/A	Modified Program Credit Distribution # Credits in General Education: 16 # Credits in Program Core Courses: 29 # Credits of Electives in the Field: 0 # Credits of Free Electives: 12 # Cr Special Requirements (include internship, etc.): 4 <u>Total # Cr in the Program (sum of all #Cr above): 61</u> From "Total # Cr in the Program" above, enter #Cr that are part of/belong in an already approved program(s) at the institution: 61
If program modification is concurrent with discontinuation of related program(s), list information for such program(s): Program Discontinued: N/A CIP: OHE#: Accreditation Date: Phase Out Period Date of Program Termination	
Rationale for Modification The current science requirement is twelve credits of biology for the Medical Assisting (MA) program. QVCC is the only MA program in the CT Community College System that requires three biology classes. All others require only one human biology.	
Description of Resources Needed (As appropriate summarize faculty and administrative resources, library holdings, specialized equipment, etc. required to implement the proposed modification and estimate the total cost.) No additional resources will be needed to implement this modification.	
Institutional Contact for this Proposal: Brian Clinton Title: Program Coordinator and Assistant Professor of Medical Assisting Tel.: 860-932-4087 e- mail: BClinton@qvcc.edu Institution's Unit (e.g. School of Business) and Location (e.g. main campus) Offering the Program: Main Campus - Danielson	

CONNECTICUT BOARD OF REGENTS FOR HIGHER EDUCATION
Connecticut State Colleges & Universities
BELOW THRESHOLD INFORMATION REPORT FORM
PROGRAM MODIFICATION

SECTION 2: Curriculum Details for a Program Modification						
Course Number and Name	L.O. #	Pre-Requisite	Cr Hrs	Course Number and Name	L.O. #	Cr Hrs
Program Core Courses				Other Related/Special Requirements		
CSA* 105 Intro to Software Applications		none	3	ENG* 101 Composition		3
HLT* 111 Basic Life Support	7	none	1	BIO* 115 Human Biology		4
MED* 111 Admin Medical Assisting	4	none	3	MAT* 137 Intermediate Algebra OR MAT* 186 Precalculus		3/4
MED* 112 Medical Insurance and Billing	5	CSA 105	3			
MED* 125 Medical Terminology		none	3			
MED* 131 Clinical Medical Assisting	1	MED 125	3			
HLT* 170 Law & Ethics for the Health Care Professional	7	none	3			
MED* 216 Electronic Medical Records Management	6	MED 112 and MED 125	3			
MED* 245 Clinical Laboratory Procedures	2	MED 125	4			
MED* 250 Principles of Pharmacology	3	MED 125	3			
MED* 280 Medical Assisting Practicum	1-7	MED 111, 112, 125, 131, 245, and BIO 115	4			
Core Course Prerequisites				Elective Courses in the Field		
				Social Science Elective		3
				Liberal Arts and Sciences Elective		3
				General Elective		3
				General Elective		3
				General Elective		3
				General Elective		3
Total Other Credits Required to Issue Modified Credential						0
Learning Outcomes - L.O. <i>(List up to three of the most important student learning outcomes for the program, and any changes introduced)</i> <ol style="list-style-type: none"> 1. Incorporate principles and procedures of vital signs and demonstrate how to take vital signs 2. Explain the principles underlying each step in the venipuncture procedure; 3. Comprehend basic pharmacology facts relating to the source, the category, indication for use, and the consequences of drugs. 4. Promote effective office maintenance and management. 5. Utilize computerized medical billing software 6. Compare and contrast the electronic health record and the manual medical record. 7. Define law, ethics, and bioethics and describe their importance to health care professions. 						

CONNECTICUT BOARD OF REGENTS FOR HIGHER EDUCATION
Connecticut State Colleges & Universities
BELOW THRESHOLD: NEW ACADEMIC OFFERING - INFORMATION REPORT FORM

SECTION 1: BELOW-THRESHOLD GENERAL PROGRAM INFORMATION¹

Institution: Central Connecticut State University	Date of Submission to CSCU Office of the Provost: March 25, 2020
Characteristics of Below-Threshold Offering Name of Offering: Detective Certificate Type of Offering (e.g. Grad Certificate) Undergraduate Certificate Anticipated Initiation Date: Fall 2020 Anticipated Date of First Completion (if applicable): Spring 2022 Modality of Program: On ground Online X Combined If "Combined", % of fully online courses? 50 Locality of Program: X On Campus Off Campus Both	Credit Distribution of the Offering # Credits in General Education: 0 # Credits in Program Core Courses: 12 # Credits of Electives in Field: 0 # Credits of Electives: 0 # Credits Special Requirements (e.g. internship): 0 Total # Credits the Institution Requires to Award the Credential 12
CIP Code No. 43.0114 Title of CIP Code. Law Enforcement Investigation and Interviewing	
Description of Offering, Context and Justification <i>(Please provide a concise description of the proposed offering and learning objectives, including a list of courses if necessary for clarity. In one paragraph, please address need and anticipated benefits of the offering)</i> <p>Currently, Connecticut State Police Major Crimes and local police departments send their detectives to trainings throughout the U.S., including some of the institutes listed below. Additionally, although there are certificate programs for crime scene technicians, there are none to our knowledge that are tailored to police detectives. Instead, detectives take independent courses from these different institutes, sometimes at great expense. It would be valuable to have a program designed to address the specific needs of detectives in CT and the Northeast region and that offers courses with a more systematic and holistic approach to investigation and interviewing.</p> <p><u>Examples of Police Training Institutes</u></p> <ul style="list-style-type: none"> • University of Tennessee Law Enforcement Innovation Center (LEIC): http://leic.tennessee.edu/ • University of North Florida Institute of Police Technology and Management (IPTM) https://iptm.unf.edu/About/ • University of Louisville Southern Police Institute http://louisville.edu/spi/news/ed.pocock.article.08.2019 <p><u>Examples of Related Certificate Programs</u></p> <ul style="list-style-type: none"> • University of Rhode Island CSI Training https://web.uri.edu/prov/certificate-credit-and-non-credit-program/criminalinvestigation/ • Purdue University Crime Scene Technician certificate https://www.purdueglobal.edu/degree-programs/criminal-justice/crime-scene-technician-certificate/ <p><u>Example of University and Police Partnership program for Police Academy Training</u></p> <ul style="list-style-type: none"> • Northeastern University https://news.northeastern.edu/2019/05/29/the-new-cambridge-northeastern-police-academy-is-leading-an-evolution-of-the-profession-of-law-enforcement/ 	

¹ This information report pertains to academic programs not reaching the threshold requiring Board of Regents action. Information is shared with the BOR-Academic Council and included in the BOR-Academic and Student Affairs Committee meetings. The following academic programs are considered Below Threshold and do not require a BOR resolution:

- a) new degree options or certificate programs:
 - i. an undergraduate certificate of program of 30 credit hours or fewer which falls within an approved program,
 - iii. a new undergraduate degree option or certificate program of 15 or fewer semester credit hours,
 - iv. a new graduate option or certificate program of 12 or fewer semester credit hours
- b) academic programs that do not qualify students to become eligible for federal financial aid.

CONNECTICUT BOARD OF REGENTS FOR HIGHER EDUCATION

Connecticut State Colleges & Universities

BELOW THRESHOLD: NEW ACADEMIC OFFERING - INFORMATION REPORT FORM

It is anticipated that all CT State detectives will want to advance their level of knowledge for their career. Currently, there are 120 detectives in the CT Major Crime Squads. It is also anticipated that many municipal police agencies in New England will want their detectives to have this advanced knowledge. According to the FBI's Uniform Crime Report statistics, there are over 28,000 officers in New England that may find this Advanced Detective Certificate Program appealing for career advancement.

Courses from this certificate program can be applied toward the BA in Criminology.

Cost Effectiveness and Availability of Adequate Resources *(As applicable, please provide a one paragraph narrative addressing resources, financial aspects of the program and how it will be sustained)*

Subject matter experts would be hired as adjuncts to teach the courses. The additional expense would be 3 load credits per Fall and Spring term, or 6 load credits per annum. Assuming a Class C lecturer with 31% estimated fringe, total expense would be \$14,408 (6 credits * \$1,833 per credit * 1.31).

Institutional Contact for this Proposal: Jennifer Hedlund, Ph.D.

Title: Department
Chair, Criminology &
Criminal Justice

Tel.: 860-832-2968 e-mail:
hedlundj@ccsu.edu

Institution's Unit: *(e.g. School of Business)* and Location *(e.g. main campus)* Offering the Program: Ammon College of Liberal Arts and Social Sciences; main campus

CONNECTICUT BOARD OF REGENTS FOR HIGHER EDUCATION
Connecticut State Colleges & Universities
BELOW THRESHOLD: NEW ACADEMIC OFFERING - INFORMATION REPORT FORM

SECTION 2: DETAILS OF NEW OFFERING (Community Colleges)

Curriculum

*(Please provide details of the courses for the proposed offering. Mark any new courses with an asterisk * and attach descriptions. Mark any courses that are delivered fully online with a double asterisk **. Please modify this format as needed for each case)*

Course Number and Name	L.O. #	Pre-Requisite	Cr Hrs	Course Number and Name	L.O. #	Cr Hrs
Core Courses (Students select 4 of the following offerings)				Other Requirements		
CRM 480: Death Investigations	1-3		3			
CRM 481: Sexual Assault Investigation	1-3		3			
CRM 483: Interview & Interrogation	1-3		3			
CRM 485: Financial Crime Investigation	1-3		3			
Prerequisites						
Admission to the Detective Certificate program or permission of program coordinator.						
Total Other Credits Required to Issue Credential						
Other Details						
Learning Outcomes - L.O. <i>(Please list up to three of the most important student learning outcomes for the offering and concisely describe assessment methodologies to be used in measuring the outcomes. If the program will seek external accreditation or qualifies the completer to opt for a professional/occupational license, please frame outcomes in attention to such requirements.)</i> <ol style="list-style-type: none"> Develop in-depth understanding of the nature of the investigatory process using modern technology and best practices Describe key elements necessary for effective investigation and processing for admissibility in court Analyze legal and ethical practices for securing evidence and testimony 						

CONNECTICUT BOARD OF REGENTS FOR HIGHER EDUCATION
Connecticut State Colleges & Universities
BELOW THRESHOLD INFORMATION REPORT FORM
PROGRAM MODIFICATION

SECTION 1: GENERAL INFORMATION

Institution: Central Connecticut State University	Date of Submission to CSCU Office of the Provost: March 25, 2020
Most Recent NECHE Institutional Accreditation Action and Date: April 12, 2019	
Original Program Characteristics CIP Code No. n/a Title of CIP Code n/a Name of Program: Astrobiology Minor Degree: Title of Award (e.g. Master of Arts) Minor Stand-Alone Certificate: (specify type and level) Date Program was Initiated: n/a OHE#: n/a Modality of Program: X On ground Online Combined If "Combined", % of fully online courses? Locality of Program: X On Campus Off Campus Both	Original Program Credit Distribution # Credits in General Education: 0 # Credits in Program Core Courses: 11 # Credits of Electives in the Field: 7 # Credits of Free Electives: 0 # Cr Special Requirements (include internship, etc.): 0 <u>Total # Cr in the Program</u> (sum of all #Cr above): 18 From "Total # Cr in the Program" above, enter #Cr that are part of/belong in an already approved program(s) at the institution: 18
Modified Program Characteristics Name of Program: Astrobiology Minor Degree: Title of Award (e.g. Master of Arts) n/a Certificate ¹ : (specify type and level) Program Initiation Date: n/a Modality of Program: On ground Online Combined If "Combined", % of fully online courses? Total # Cr the Institution Requires to Award the Credential (i.e. include program credits, GenEd, other): 18 Other:	Modified Program Credit Distribution # Credits in General Education: 0 # Credits in Program Core Courses: 11 # Credits of Electives in the Field: 7 # Credits of Free Electives: 0 # Cr Special Requirements (include internship, etc.): 0 <u>Total # Cr in the Program</u> (sum of all #Cr above): 18 From "Total # Cr in the Program" above, enter #Cr that are part of/belong in an already approved program(s) at the institution: 18
If program modification is concurrent with discontinuation of related program(s), list information for such program(s): Program Discontinued: CIP: OHE#: Accreditation Date: Phase Out Period Date of Program Termination	
Rationale for Modification One 3-credit course (AST 478: Planetary Image Analysis) was deleted from electives in the field due to low demand.	
Description of Resources Needed (As appropriate summarize faculty and administrative resources, library holdings, specialized equipment, etc. required to implement the proposed modification and estimate the total cost.) None.	
Institutional Contact for this Proposal: Mark Evans Title: Professor of Geology Tel.: 860-832-2936 e- mail: evansmaa@ccsu.edu Institution's Unit (e.g. School of Business) and Location (e.g. main campus) Offering the Program: School of Engineering, Science, and Technology, CCSU	

CONNECTICUT BOARD OF REGENTS FOR HIGHER EDUCATION
Connecticut State Colleges & Universities
BELOW THRESHOLD INFORMATION REPORT FORM
PROGRAM MODIFICATION

SECTION 2: Curriculum Details for a Program Modification						
Course Number and Name	L.O. #	Pre-Requisite	Cr Hrs	Course Number and Name	L.O. #	Cr Hrs
Program Core Courses				Other Related/Special Requirements		
AST 208: Planetary Astronomy and			4			
BIO 121: General Biology I			4			
or						
BMS 102: Introduction to Biomolecular Science and			3			
BMS 103: Introduction to Biomolecular Science Laboratory			1			
AST 470: Exoplanets and Astrobiology (Capstone)			3			
Core Course Prerequisites				Elective Courses in the Field		
AST 208 - MATH 101 (C- or higher) or MATH 102 (C- or higher) or MATH 103 (C- or higher)			4	BIO 200: Integrative Biology		4
BIO 121 - none			4	BIO 230: Natural History		3
BMS 102 - none			3	BIO 315: Microbial Ecology		4
BMS 103 - BMS 102 (may be taken concurrently)			1	BIO 405: Ecology		4
AST 470 - AST 208, and BIO 121 or BMS 102 and BMS 103; or permission of department chair			3	BIO 440: Evolution		3
				BMS 201: Principles of Cell and Molecular Biology		4
				BMS 316: Microbiology		4
				CHEM 210: Organic Chemistry I - Foundations		3
				CHEM 211: Organic Chemistry I Laboratory - Foundations		1
				CHEM 212: Organic Chemistry II - Synthesis		3
				CHEM 213: Organic Chemistry II Laboratory - Synthesis		1
				AST 209: Stellar and Galactic Astronomy		4
				AST 378: Comparative Planetology		3
				AST 478: Planetary Image Analysis		3
Total Other Credits Required to Issue Modified Credential						
Learning Outcomes - L.O. <i>(List up to three of the most important student learning outcomes for the program, and any changes introduced)</i> 1. n/a						

Struck through courses are deletions.

CONNECTICUT BOARD OF REGENTS FOR HIGHER EDUCATION
Connecticut State Colleges & Universities
BELOW THRESHOLD INFORMATION REPORT FORM
PROGRAM MODIFICATION

SECTION 1: GENERAL INFORMATION

Institution: Central Connecticut State University	Date of Submission to CSCU Office of the Provost: March 25, 2020
Most Recent NECHE Institutional Accreditation Action and Date: April 12, 2019	
Original Program Characteristics CIP Code No. n/a Title of CIP Code n/a Name of Program: Astronomy Minor Degree: Title of Award (e.g. Master of Arts) Minor Stand-Alone Certificate: (specify type and level) Date Program was Initiated: n/a OHE#: n/a Modality of Program: X On ground Online Combined If "Combined", % of fully online courses? Locality of Program: X On Campus Off Campus Both	Original Program Credit Distribution # Credits in General Education: 0 # Credits in Program Core Courses: 8 # Credits of Electives in the Field: 12 # Credits of Free Electives: 0 # Cr Special Requirements (include internship, etc.): 10 <u>Total # Cr in the Program</u> (sum of all #Cr above): 18 From "Total # Cr in the Program" above, enter #Cr that are part of/belong in an already approved program(s) at the institution: 18
Modified Program Characteristics Name of Program: Astronomy Minor Degree: Title of Award (e.g. Master of Arts) n/a Certificate ¹ : (specify type and level) Program Initiation Date: n/a Modality of Program: X On ground Online Combined If "Combined", % of fully online courses? Total # Cr the Institution Requires to Award the Credential (i.e. include program credits, GenEd, other): 18 Other:	Modified Program Credit Distribution # Credits in General Education: 0 # Credits in Program Core Courses: 8 # Credits of Electives in the Field: 10 # Credits of Free Electives: 0 # Cr Special Requirements (include internship, etc.): 16 <u>Total # Cr in the Program</u> (sum of all #Cr above): 18 From "Total # Cr in the Program" above, enter #Cr that are part of/belong in an already approved program(s) at the institution: 18
If program modification is concurrent with discontinuation of related program(s), list information for such program(s): Program Discontinued: CIP: OHE#: Accreditation Date: Phase Out Period Date of Program Termination	
Rationale for Modification One 3-credit course (AST 478: Planetary Image Analysis) was deleted from electives in the field due to low demand. Two 3-credit courses were added to the list of electives in the field (AST 460: Independent Research in Astronomy; AST 490: Topics in Astronomy). These additions will allow students to complete the minor more efficiently.	
Description of Resources Needed (As appropriate summarize faculty and administrative resources, library holdings, specialized equipment, etc. required to implement the proposed modification and estimate the total cost.) Courses will cycle appropriately with demand. These courses could also contribute to another minor (Astrobiology) or major (Earth Science BS with a specialization in Planetary Geology). No additional resources will be required to implement these changes.	
Institutional Contact for this Proposal: Mark Evans Title: Professor of Geology Tel.: 860-832-2936 e-mail: evansmaa@ccsu.edu	

CONNECTICUT BOARD OF REGENTS FOR HIGHER EDUCATION
Connecticut State Colleges & Universities
BELOW THRESHOLD INFORMATION REPORT FORM
PROGRAM MODIFICATION

Institution's Unit (*e.g. School of Business*) and Location (*e.g. main campus*) Offering the Program: School of Engineering, Science, and Technology; main campus

CONNECTICUT BOARD OF REGENTS FOR HIGHER EDUCATION
Connecticut State Colleges & Universities
BELOW THRESHOLD INFORMATION REPORT FORM
PROGRAM MODIFICATION

SECTION 2: Curriculum Details for a Program Modification						
Course Number and Name	L.O. #	Pre-Requisite	Cr Hrs	Course Number and Name	L.O. #	Cr Hrs
Program Core Courses				Other Related/Special Requirements		
AST 208: Planetary Astronomy			4	MATH 152: Calculus I		4
AST 209: Stellar and Galactic Astronomy			4	MATH 221: Calculus II		4
				PHYS 125: University Physics I		4
				PHYS 126: University Physics II		4
Core Course Prerequisites				Elective Courses in the Field		
AST 208 - MATH 101 (C- or higher) or MATH 102 (C- or higher) or MATH 103 (C- or higher)			4	AST 112: Search for Life on Other Planets		3
AST 209 - MATH 101 (C- or higher) or MATH 102 (C- or higher) or MATH 103 (C- or higher)			4	AST 113: The Cosmos		3
MATH 152 - MATH 115 (C- or higher) and MATH 116 (C- or higher), or MATH 119 (C- or higher)			4	AST 278: Observational Astronomy		4
MATH 221 - MATH 152 (C- or higher)			4	AST 378: Comparative Planetology		3
PHYS 125 - MATH 152			4	AST 418: Astrophysics		3
PHYS 126 - PHYS 125			4	AST 460: Independent Research in Astronomy		3
				AST 470: Exoplanets and Astrobiology		3
				AST 478: Planetary Image Analysis		3
				AST 490: Topics in Astronomy		3
Total Other Credits Required to Issue Modified Credential						
Learning Outcomes - L.O. <i>(List up to three of the most important student learning outcomes for the program, and any changes introduced)</i> 1. n/a						

Bolded courses are new offerings. ~~Struck through~~ courses are deletions.

CONNECTICUT BOARD OF REGENTS FOR HIGHER EDUCATION
Connecticut State Colleges & Universities
BELOW THRESHOLD INFORMATION REPORT FORM
PROGRAM MODIFICATION

SECTION 1: GENERAL INFORMATION

Institution: Central Connecticut State University	Date of Submission to CSCU Office of the Provost: March 25, 2020
Most Recent NECHE Institutional Accreditation Action and Date: April 12, 2019	
Original Program Characteristics CIP Code No. 26.0204 Title of CIP Code Molecular Biology Name of Program: Biomolecular Sciences Degree: Title of Award (e.g. Master of Arts) BS Stand-Alone Certificate: (specify type and level) Date Program was Accredited: Dec 15 2004 OHE#: 13445 Modality of Program: X On ground Online Combined If "Combined", % of fully online courses? Locality of Program: X On Campus Off Campus Both	Original Program Credit Distribution # Credits in General Education: 32 # Credits in Program Core Courses: 22-23 # Credits of Electives in the Field: 12-13 # Credits of Free Electives: 20-23 # Cr Special Requirements (include internship, etc.): 31-32 <u>Total # Cr in the Program</u> (sum of all #Cr above): 120 From "Total # Cr in the Program" above, enter #Cr that are part of/belong in an already approved program(s) at the institution: 120
Modified Program Characteristics Name of Program: Biomolecular Sciences Degree: Title of Award (e.g. Master of Arts) BS Certificate ¹ : (specify type and level) Program Initiation Date: Fall 2020 Modality of Program: X On ground Online Combined If "Combined", % of fully online courses? Total # Cr the Institution Requires to Award the Credential (i.e. include program credits, GenEd, other): 120 Other: Removing the Biotechnology specialization.	Modified Program Credit Distribution # Credits in General Education: 32 # Credits in Program Core Courses: 22-23 # Credits of Electives in the Field: 12-13 # Credits of Free Electives: 20-23 # Cr Special Requirements (include internship, etc.): 31-32 <u>Total # Cr in the Program</u> (sum of all #Cr above): 120 From "Total # Cr in the Program" above, enter #Cr that are part of/belong in an already approved program(s) at the institution: 120
If program modification is concurrent with discontinuation of related program(s), list information for such program(s): Program Discontinued: CIP: OHE#: Accreditation Date: Phase Out Period Date of Program Termination	
Rationale for Modification <p>The primary change to curriculum is removal of the Biotechnology specialization. The enrollment in this specialization has remained modest with 8 to 11 students over the past 5 years. The total number of Biomolecular Sciences undergraduates ranged between 98 and 102 in Fall 2015 and 2016 but has since grown rapidly to 126 in Fall 2017, and 141 in Fall 2018. Enrollment in Fall 2019 held somewhat steady at 138 students. Considering the rapid enrollment growth in the general program with no accompanying growth in the specialization, it is prudent to remove the specialization as a formal option. All courses that would count towards the specialization are still offered and faculty advisors would assist interested students in tailoring their directed electives to emphasize Biotechnology. The option to enroll in the Biotechnology specialization will be suspended immediately. The specialization will phase out over 3 years to accommodate the eight currently enrolled students (4 sophomores, 3 juniors, and 1 senior). These students also have the option of declaring the general program option.</p> <p>The primary difference between the Biotechnology specialization and the general program is the inclusion of one 4-credit core</p>	

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course (BMS 495: Capstone in Molecular Biology) and more constrained list of the remaining 8 to 9 credits of directed electives that make up the 35-credit major. A secondary modification is to remove BIO 530 (3 credits) from the list of potential non-BMS electives that would satisfy directed electives requirements. Finally, given this movement toward broadening the major, rather than list the BMS courses offered as directed electives, the catalog will now read that any 300-level BMS course or above can count as a directed elective.

Description of Resources Needed *(As appropriate summarize faculty and administrative resources, library holdings, specialized equipment, etc. required to implement the proposed modification and estimate the total cost.)*

None.

Institutional Contact for this Proposal: James Mulrooney Title: Professor of Biomolecular Sciences Tel.860-832-2660
e- mail: mulrooneyj@ccsu.edu

Institution's Unit *(e.g. School of Business)* and Location *(e.g. main campus)* Offering the Program: School of Engineering, Science, and Technology; Main Campus CCSU

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SECTION 2: Curriculum Details for a Program Modification						
Course Number and Name	L.O. #	Pre-Requisite	Cr Hrs	Course Number and Name	L.O. #	Cr Hrs
Program Core Courses				Other Related/Special Requirements		
BMS 102: Introduction to Biomolecular Science	#1		3	MATH 115: Trigonometry -OR- MATH 119: Pre-Calculus with Trigonometry		3 or 4
BMS 103: Introduction to Biomolecular Science Laboratory	#3		1	MATH 125: Applied Calculus – OR- MATH 152: Calculus I		3 or 4
BMS 190: Introduction to Research I	#4		.5	CHEM 161: General Chemistry		3
BMS 201: Principles of Cell and Molecular Biology	#1 #3		4	CHEM 162: General Chemistry Laboratory		1
BMS 290: Introduction to Research II	#4		.5	CHEM 200: Foundations of Analytical Chemistry		3
BMS 306: Genetics -OR- BMS 307: Genomics	#1 #3		3 or 4	CHEM 201: Foundations of Analytical Chemistry Laboratory		1
BMS 311: Cell Biology	#1 #3		4	CHEM 210: Foundations of Organic Chemistry		3
BMS 316: Microbiology	#1 #3		4	CHEM 211: Foundations of Organic Chemistry Laboratory		1
BMS 390: Independent Research in Biomolecular Science	#2 #4		1	CHEM 212: Organic Synthesis		3
BMS 491: Advanced Independent Research in Biomolecular Science	#2 #4		1	CHEM 213: Organic Synthesis Laboratory		1
				PHYS 121: General Physics I AND PHYS 122: General Physics II		8
				-OR- PHYS 125: University Physics I and AND PHYS 126: University Physics II		8
Core Course Prerequisites				Directed Electives (12-13 credits)		
BMS 103 and BMS 190: BMS 102 (may be taken concurrently)				Elective courses may include: any 300-level or above BMS course, CHEM 320, CHEM 354, CHEM 455, CHEM 456, CHEM 458, BIO 449.		
BMS 201: BMS 102 and BMS 103 or BIO 121; or permission of department chair				BMS 318, BMS 319, BMS 412, and BMS 413 are also listed in the course description section of the catalog with a BIO designator. These double- or cross-listed courses (i.e., BMS 318 and BIO 318) are considered fully equivalent.		
BMS 290: BMS 201 (may be taken concurrently) and BMS 190; or permission of department chair				BMS 380: 3 credits only of this 6-credit course		
BMS 306: BMS 201 (C- or better) or BIO 200 or permission of the						

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department chair, and CHEM 161 and CHEM 162			
BMS 307: BMS 201 (C- or better) and CHEM 161 and CHEM 162, or permission of department chair			
BMS 311 and BMS 316: BMS 201 (C- or better) or permission of the department chair, and CHEM 161 and CHEM 162			
BMS 390 - BMS 290 and written permission of instructor and department chair			
BMS 491 - BMS 390 and written permission of instructor and department chair			

Learning Outcomes - L.O. *(List up to three of the most important student learning outcomes for the program, and any changes introduced)*

1. Biomolecular Sciences majors will be able to demonstrate foundational knowledge in Biomolecular science
2. Biomolecular Sciences majors will be able to evaluate, summarize and critique papers from the scientific literature
3. Biomolecular Sciences majors will be able to develop a research question and discuss and evaluate approaches to address that question
4. Biomolecular Sciences majors will be able to design and conduct a research project under the guidance of a faculty member, including data collection, evaluation, and presentation in an oral or written format.

For complete learning outcomes please visit: https://www2.ccsu.edu/program/BiomolecularSciences_BS

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SECTION 1: GENERAL INFORMATION

Institution: Central Connecticut State University **Date of Submission to CSCU Office of the Provost:** March 25, 2020

Most Recent NECHE Institutional Accreditation Action and Date: April 12, 2019

Original Program Characteristics

CIP Code No. 11.0101 Title of CIP Code Computer and Information Sciences, General
Name of Program: Computer Science (Alternative specialization)
Degree: Title of Award (e.g. Master of Arts) **BS**
Stand-Alone Certificate: (specify type and level)
Date Program was Accredited: 11/27/1979 **OHE#:** 00043
Modality of Program: X On ground Online Combined
 If "Combined", % of fully online courses?
Locality of Program: X On Campus Off Campus Both

Original Program Credit Distribution

Credits in General Education: 38-40
 # Credits in Program Core Courses: 15
 # Credits of Electives in the Field: 15
 # Credits of Free Electives: 11-16
 # Cr Special Requirements (include internship, etc.): 8 cr mathematics (gen ed); 18-21 cr. minor required
Total # Cr in the Program (sum of all #Cr above): 120
 From "Total # Cr in the Program" above, enter #Cr that are part of/belong in an already approved program(s) at the institution: **120**

Modified Program Characteristics

Name of Program: Computer Science (Alternative specialization)
Degree: Title of Award (e.g. Master of Arts) **BS**
Certificate¹: (specify type and level)
Date Program was Accredited: 11/27/1979
Modality of Program: X On ground Online Combined
 If "Combined", % of fully online courses?
Total # Cr the Institution Requires to Award the Credential (i.e. include program credits, GenEd, other): 120
Other: Changing requirements for Cybersecurity track

Modified Program Credit Distribution

Credits in General Education: 38-40
 # Credits in Program Core Courses: 15
 # Credits of Electives in the Field: 15
 # Credits of Free Electives: 11-16
 # Cr Special Requirements (include internship, etc.): 8 cr mathematics (gen ed); 18-21 cr. minor required
Total # Cr in the Program (sum of all #Cr above): 120
 From "Total # Cr in the Program" above, enter #Cr that are part of/belong in an already approved program(s) at the institution: **120**

If program modification is concurrent with discontinuation of related program(s), list information for such program(s):

Program Discontinued: **CIP:** **OHE#:** **Accreditation Date:**

Phase Out Period **Date of Program Termination**

Rationale for Modification

The major requires 15 directed electives. Students have the option to pursue directed electives within a Cybersecurity track. One three-credit course (CS/CYS 492) will now be required. Two three-credit courses (CS/CYS 419: Usable Security and Privacy; CS/CYS 455: Secure Software Development) are being added to the list of electives. These courses respond to changes in industry demand for the skills taught in these courses.

Description of Resources Needed (As appropriate summarize faculty and administrative resources, library holdings, specialized equipment, etc. required to implement the proposed modification and estimate the total cost.)

None. These courses are offered as part of the Cybersecurity BS. Cost for additional sections are absorbed through that

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program.

Institutional Contact for this Proposal: Chad Williams
cwilliams@ccsu.edu

Title: Chair Tel.: 860-832-2719 e- mail:

Institution's Unit (*e.g. School of Business*) and Location (*e.g. main campus*) Offering the Program: School of Engineering Science and Technology; main campus

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SECTION 2: Curriculum Details for a Program Modification						
Course Number and Name	L.O. #	Pre-Requisite	Cr Hrs	Course Number and Name	L.O. #	Cr Hrs
Program Core Courses				Other Related/Special Requirements		
CS 151: Computer Science I	2		3	MATH 152: Calculus I		4
CS 152: Computer Science II	2		3	MATH 217: Discrete Mathematics for Computer Science -OR- MATH 218: Discrete Mathematics		4
CS 253: Data and File Structures	1,2,3		3			
CS 254: Computer Organization and Assembly Language Programming	6		3			
CS 355: Systems Programming	1,3,5		3			
Core Course Prerequisites				Elective Courses in the Field		
CS 151 - Grade C- or better in MATH 152 (may be taken concurrently) or placement test				15 credits of computer science courses numbered CS 225 or higher, with at least 12 of those credits at the 300 level of higher		
CS 152 - Grade C- or better in both CS 151 and MATH 152				Cybersecurity Track (15 credits)		
CS 253 - Grade C- or better in CS 152				CS/CYS 492: Computer Security – AND	1,4	3
CS 254 - Grade C- or better in either CS 151 or MATH 471				<u>9 credits taken from the following:</u>		
CS 355 - Grade C- or better in both CS 253 and CS 254				CS/CYS 291: Introduction to Computer Forensics	1,4	3
				CS/CYS 419: Usable Security and Privacy	4	3
				CS/CYS 455: Secure Software Development	1,2,4,6	3
				CS/CYS 493: Secure Software Systems	1,2,4,6	3
				CS/CYS 494: Cryptographic Systems	1,2,4	3
				--AND--3 additional credits		3
Total Other Credits Required to Issue Modified Credential						
Learning Outcomes - L.O. (List up to three of the most important student learning outcomes for the program, and any changes introduced) <ol style="list-style-type: none"> 1. Analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions. 2. Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline. 3. Communicate effectively in a variety of professional contexts. 4. Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles. 5. Function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline. 6. Apply computer science theory and software development fundamentals to produce computing-based solutions. 						

Bolded courses are new offerings.

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SECTION 1: GENERAL INFORMATION

Institution: Central Connecticut State University **Date of Submission to CSCU Office of the Provost:** March 25, 2020

Most Recent NECHE Institutional Accreditation Action and Date: April 12, 2019

Original Program Characteristics

CIP Code No. 11.0101 Title of CIP Code Computer and Information Sciences, General
Name of Program: Computer Science (Honors specialization)
Degree: Title of Award (e.g. Master of Arts) **BS**
Stand-Alone Certificate: (specify type and level)
Date Program was Accredited: 11/27/1979 OHE#: 00043
Modality of Program: X On ground Online Combined
If "Combined", % of fully online courses?
Locality of Program: X On Campus Off Campus Both

Original Program Credit Distribution

Credits in General Education: 32-33
Credits in Program Core Courses: 39
Credits of Electives in the Field: 12
Credits of Free Electives: 12-13
Cr Special Requirements (include internship, etc.): 24
Total # Cr in the Program (sum of all #Cr above): 120
From "Total # Cr in the Program" above, enter #Cr that are part of/belong in an already approved program(s) at the institution: **120**

Modified Program Characteristics

Name of Program: Computer Science (Honors specialization)
Degree: Title of Award (e.g. Master of Arts) **BS**
Certificate¹: (specify type and level)
Date Program was Accredited: 11/27/1979
Modality of Program: X On ground Online Combined
If "Combined", % of fully online courses?
Total # Cr the Institution Requires to Award the Credential (i.e. include program credits, GenEd, other): 120
Other: Changing elective offerings

Modified Program Credit Distribution

Credits in General Education: 32-33
Credits in Program Core Courses: 39
Credits of Electives in the Field: 12
Credits of Free Electives: 12-13
Cr Special Requirements (include internship, etc.): 24
Total # Cr in the Program (sum of all #Cr above): 120
From "Total # Cr in the Program" above, enter #Cr that are part of/belong in an already approved program(s) at the institution: **120**

If program modification is concurrent with discontinuation of related program(s), list information for such program(s):

Program Discontinued: CIP: OHE#: Accreditation Date:
Phase Out Period Date of Program Termination

Rationale for Modification

Three 3-credit courses are added to the list of 9 credits of advanced electives in the field (CS 418: Principles of Software Testing and Quality Assurance; CS/CYS 419: Usable Security and Privacy; CS/CYS 455: Secure Software Development). Further, within the cybersecurity track of directed electives, two three-credit courses (CS/CYS 419: Usable Security and Privacy; CS/CYS 455: Secure Software Development) are being added. These courses respond to changes in industry demand for the skills taught in these courses.

Description of Resources Needed (As appropriate summarize faculty and administrative resources, library holdings, specialized equipment, etc. required to implement the proposed modification and estimate the total cost.)

None. These courses are offered as part of the Cybersecurity BS. Cost for additional sections are absorbed through that program.

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Institutional Contact for this Proposal: Chad Williams Title: Chair Tel.: 860-832-2719 e- mail:
cwilliams@ccsu.edu

Institution's Unit (e.g. *School of Business*) and Location (e.g. *main campus*) Offering the Program: School of Engineering Science and Technology; main campus

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SECTION 2: Curriculum Details for a Program Modification						
Course Number and Name	L.O. #	Pre-Requisite	Cr Hrs	Course Number and Name	L.O. #	Cr Hrs
Program Core Courses				Other Related/Special Requirements		
CS 151: Computer Science I	2		3	MATH 152: Calculus I		4
CS 152: Computer Science II	2		3	MATH 217: Discrete Mathematics for Computer Science -OR- MATH 218: Discrete Mathematics		4
CS 253: Data and File Structures	1,2,3		3	MATH 221: Calculus II		4
CS 254: Computer Organization and Assembly Language Programming	6		3	MATH 226: Linear Algebra and Probability for Engineers		4
CS 354: Digital Systems Design	2,6		3			
CS 355: Systems Programming	1,3,5		3	BIO 121: General Biology I – AND - BIO 122: General Biology II		8
CS 385: Computer Architecture	2,6		3	-OR-		--
CS 463: Algorithms	1,2		3	CHEM 161: General Chemistry – AND- CHEM 162: General Chemistry Laboratory – AND - CHEM 200: Foundations of Analytical Chemistry – AND- CHEM 201: Foundations of Analytical Chemistry Laboratory		8
CS 464: Programming Languages	6		3	-OR-		--
CS 483: Theory of Computation	1,6		3	GSCI 121: The Dynamic Earth Laboratory -AND- GSCI 125: The Dynamic Earth- AND- GSCI 141: Earth and Life History- AND- GSCI 145: Earth and Life History Laboratory		8
CS /CYS492: Computer Security	1,4		3	or		--
CS 410: Software Engineering (capstone)	1,2,3,4,5,6		3	PHYS 125: University Physics I		4
CS 498: Senior Project (capstone)	1,2,3,4,5,6		3	PHYS 126: University Physics II		4
Core Course Prerequisites				Advanced Elective Courses in the Field		
CS 151 - Grade C- or better in MATH 152 (may be taken concurrently) or placement test				CS 407: Advanced Topics in Computer Science		1 to 3
CS 152 - Grade C- or better in both CS 151 and MATH 152				CS 415: Computer Game Development	1,2,5,6	3
CS 253 - Grade C- or better in CS 152				CS 416: Web Programming	1,2,6	3
CS 254 - Grade C- or better in either CS 151 or MATH 471				CS 418: Principles of Software Testing and Quality Assurance	1,2	3
CS 354 - Grade C- or better in both CS 254 and either MATH 217 or MATH 218				CS/CYS 419: Usable Security and Privacy	4	3
CS 355 - Grade C- or better in both CS 253 and CS 254				CS 423: Computer Graphics	2,6	3
CS 385 - CS 354				CS 425: Image Processing	2,6	3
CS 463 - Grade C- or better in CS 253 or (for graduates) CS 501				CS/CYS 455: Secure Software Development	1,2,4,6	3
CS 464 - Grade C- or better in CS 253 or (for graduates) CS 501				CS 460: Database Concepts	1,2,6	3
CS 483 - Grade C- or better in both CS 253 and either MATH 217 or MATH 218				CS 462: Artificial Intelligence	1,3,6	3
CS 492 - Grade C- or better in both CS 253 and either CS 254 or CET 349, or Permission of Department Chair, or admission to a graduate program in CIT. CS 501 and CS 502 are prerequisites for graduate students				CS 465: Compiler Design	1,2	3
CS 410 - Grade C- or better in 6 credits of CS courses 400 level or higher, or permission of instructor				CS 473: Simulation Techniques	1,6	3
CS 498 - Senior standing, 21 credits toward major including a grade C-				CS 481: Operating Systems Design	1,2,6	3

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or better in CS 410				
MATH 152 - MATH 115 (C- or higher) and MATH 116 (C- or higher), or MATH 119 (C- or higher)		CS 490: Computer Communications Networks & Distributed Processing	1,2,3,5,6	3
MATH 217 - MATH 119 with grade of C- or higher, or MATH 115 and MATH 116 both with of grade C- or higher		CS 491: Wireless Communication Networks	2,6	3
MATH 221 - MATH 152 (C- or higher)		CS 493: Secure Software Systems	1,2,4,6	3
MATH 226 - MATH 221 (C- or higher)		CS 495: Legal, Social, Ethical, and Economic Issues in Computing	4	3
BIO 121 - none		Auxiliary Elective Courses in the Field (3 credits)		
BIO 122 - BIO 121		CS 290: Topics in Computer Science		1-3
CHEM 161 - MATH 101 (C- or better) or MATH 102 (B- or better) or MATH 103 (C- or better) or math placement exam		CS/CYS 291: Introduction to Computer Forensics	1,4	3
CHEM 162 - CHEM 161 (may be taken concurrently)		CS 300: Computer Science Work Experience	1,2,3,4,5,6	1-3
CHEM 200 - Grade of C- or better in CHEM 161 and CHEM 162		CS 398: Independent Study in Computer Science		1-3
CHEM 201 - CHEM 161 and CHEM 162 and CHEM 200 or CHEM 260 (May be taken concurrently)		CS 499: Seminar in Computer Science	3	3
GSCI 121 - none		Optional Cybersecurity Track (9 credits of electives)		
GSCI 141 - none		CS/CYS 291: Introduction to Computer Forensics	1,4	3
GSCI 145 - GSCI 141 (may be taken concurrently)		CS/CYS 419: Usable Security and Privacy	4	3
PHYS 125 - MATH 152		CS/CYS 455: Secure Software Development	1,2,4,6	3
PHYS 126 - PHYS 125		CS/CYS 493: Secure Software Systems	1,2,4,6	3
		CS/CYS 494: Cryptographic Systems	1,2,4	3
Total Other Credits Required to Issue Modified Credential				

Learning Outcomes - L.O. (List up to three of the most important student learning outcomes for the program, and any changes introduced)

1. Analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions.
2. Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline.
3. Communicate effectively in a variety of professional contexts.
4. Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles.
5. Function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline.
6. Apply computer science theory and software development fundamentals to produce computing-based solutions.

Bolded courses are new offerings.

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SECTION 1: GENERAL INFORMATION

Institution: Central Connecticut State University **Date of Submission to CSCU Office of the Provost:** March 25, 2020

Most Recent NECHE Institutional Accreditation Action and Date: April 12, 2019

Original Program Characteristics

CIP Code No. n/a Title of CIP Code n/a
Name of Program: Computer Science Minor
Degree: Title of Award (e.g. Master of Arts) **Minor**
Stand-Alone Certificate: (specify type and level)
Date Program was Accredited: n/a **OHE#:** n/a
Modality of Program: X On ground Online Combined
 If "Combined", % of fully online courses?
Locality of Program: X On Campus Off Campus Both

Original Program Credit Distribution

Credits in General Education: 0
 # Credits in Program Core Courses: 12
 # Credits of Electives in the Field: 6
 # Credits of Free Electives: 0
 # Cr Special Requirements (include internship, etc.): 0
Total # Cr in the Program (sum of all #Cr above): 18
 From "Total # Cr in the Program" above, enter #Cr that are part of/belong in an already approved program(s) at the institution: 18

Modified Program Characteristics

Name of Program: Computer Science Minor
Degree: Title of Award (e.g. Master of Arts) **Minor**
Certificate¹: (specify type and level)
Date Program was Accredited: n/a
Modality of Program: X On ground Online Combined
 If "Combined", % of fully online courses?
Total # Cr the Institution Requires to Award the Credential (i.e. include program credits, GenEd, other): 18
Other:

Modified Program Credit Distribution

Credits in General Education: 0
 # Credits in Program Core Courses: 9
 # Credits of Electives in the Field: 9
 # Credits of Free Electives: 0
 # Cr Special Requirements (include internship, etc.): 0
Total # Cr in the Program (sum of all #Cr above): 18
 From "Total # Cr in the Program" above, enter #Cr that are part of/belong in an already approved program(s) at the institution: **18**

If program modification is concurrent with discontinuation of related program(s), list information for such program(s):

Program Discontinued: **CIP:** **OHE#:** **Accreditation Date:**
Phase Out Period **Date of Program Termination**

Rationale for Modification

One of the previous core courses (CS 153: Computer Science III) has been phasing out of the curriculum. Removing that class reduces the core from 12 to 9 credits. Electives in the field will increase from 6 to 9 credits.

Description of Resources Needed (As appropriate summarize faculty and administrative resources, library holdings, specialized equipment, etc. required to implement the proposed modification and estimate the total cost.)

None.

Institutional Contact for this Proposal: Chad Williams **Title:** Chair **Tel.:** 860-832-2719 **e- mail:**
cwilliams@ccsu.edu

Institution's Unit (e.g. School of Business) and Location (e.g. main campus) Offering the Program: School of Engineering Science

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and Technology; main campus

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PROGRAM MODIFICATION

SECTION 2: Curriculum Details for a Program Modification						
Course Number and Name	L.O. #	Pre-Requisite	Cr Hrs	Course Number and Name	L.O. #	Cr Hrs
Program Core Courses				Other Related/Special Requirements		
CS 151: Computer Science I			3			
CS 152: Computer Science II			3			
CS 153: Computer Science III			3			
CS 253: Data and File Structures			3			
Core Course Prerequisites				Elective Courses in the Field		
CS 151 - Grade C- or better in MATH 152 (may be taken concurrently) or placement test				6 9 credits of computer science courses numbers CS 210 or higher		
CS 152 - Grade C- or better in both CS 151 and MATH 152						
CS 253 - Grade C- or better in CS 152						
Total Other Credits Required to Issue Modified Credential						9
Learning Outcomes - L.O. <i>(List up to three of the most important student learning outcomes for the program, and any changes introduced)</i> n/a						

Struckthrough items are deleted offerings.

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SECTION 1: GENERAL INFORMATION

Institution: Central Connecticut State University **Date of Submission to CSCU Office of the Provost:** March 25, 2020

Most Recent NECHE Institutional Accreditation Action and Date: April 12, 2019

Original Program Characteristics

CIP Code No. 11.1003 Title of CIP Code Computer and Information Systems Security
Name of Program: Cybersecurity
Degree: Title of Award (e.g. Master of Arts) **BS**
Stand-Alone Certificate: (specify type and level)
Date Program was Accredited: 06/21/2018 OHE#: 19464
Modality of Program: X On ground Online Combined
If "Combined", % of fully online courses?
Locality of Program: X On Campus Off Campus Both

Original Program Credit Distribution

Credits in General Education: 29-30
Credits in Program Core Courses: 51-52
Credits of Electives in the Field: 16-22
Credits of Free Electives: 4-8
Cr Special Requirements (include internship, etc.): 14
Total # Cr in the Program (sum of all #Cr above): 120
From "Total # Cr in the Program" above, enter #Cr that are part of/belong in an already approved program(s) at the institution: **120**

Modified Program Characteristics

Name of Program: Cybersecurity
Degree: Title of Award (e.g. Master of Arts) **BS**
Certificate¹: (specify type and level)
Date Program was Accredited: 06/21/2018
Modality of Program: X On ground Online Combined
If "Combined", % of fully online courses?
Total # Cr the Institution Requires to Award the Credential (i.e. include program credits, GenEd, other): 120
Other:

Modified Program Credit Distribution

Credits in General Education: 29-30
Credits in Program Core Courses: 51-52
Credits of Electives in the Field: 16-22
Credits of Free Electives: 4-8
Cr Special Requirements (include internship, etc.): 14
Total # Cr in the Program (sum of all #Cr above): 120
From "Total # Cr in the Program" above, enter #Cr that are part of/belong in an already approved program(s) at the institution: **120**

If program modification is concurrent with discontinuation of related program(s), list information for such program(s):

Program Discontinued: CIP: OHE#: Accreditation Date:

Phase Out Period Date of Program Termination

Rationale for Modification

One three-credit course (CS 153: Computer Science III) is being removed from the core and will be replaced by another three-credit course (CS 355: Systems Programming). Within the Cyber Operations concentration (electives in the field), one three-credit class (CS 355: Systems Programming) will be replaced by another three-credit course with two alternatives (CS/CYS 419: Usable Security and Privacy -OR- CS/CYS 455: Secure Software Development).

Description of Resources Needed (As appropriate summarize faculty and administrative resources, library holdings, specialized equipment, etc. required to implement the proposed modification and estimate the total cost.)

To facilitate this change, no more than two additional sections taught by part-time faculty per year would be needed. In AY 2020-21, six credits of Lecturer C instruction would cost \$14,407 (\$1,833 x 6 credits x 1.31 fringe).

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Institutional Contact for this Proposal: Chad Williams
cwilliams@ccsu.edu

Title: Chair Tel.: 860-832-2719 e- mail:

Institution's Unit (*e.g. School of Business*) and Location (*e.g. main campus*) Offering the Program: School of Engineering Science and Technology; main campus

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SECTION 2: Curriculum Details for a Program Modification						
Course Number and Name	L.O. #	Pre-Requisite	Cr Hrs	Course Number and Name	L.O. #	Cr Hrs
Program Core Courses				Other Related/Special Requirements		
CET 229: Computer Hardware Architecture	4		3	PS 110: American Government & Politics-OR- PS 210: The International and Domestic Legal Environment of Cybersecurity	2	3
CET 249: Introduction to Networking Technology	4		3	MATH 152: Calculus I	1	4
CYS 227: Introduction to Cybersecurity	1,7		3	MATH 217: Discrete Mathematics for Computer Science	1	4
CET 339: Computer System Administration	3,4		3			
CET 349: Network Routing	4		3			
CYS 459: Network Security Technologies	1,2,3		3			
CYS 467: Security System Management	1,4		3			
CYS 477: Ethical Hacking and Penetration Testing	1,3,4,5		3			
CS 151: Computer Science I	3		3			
CS 152: Computer Science II	1,3		3			
CS 153: Computer Science III	1,3		3			
CS 253: Data and File Structures	1,3		3			
CS 355: Systems Programming	3		3			
CYS 492: Computer Security	1,3,4		3			
CYS 493: Secure Software Systems	1,3,4,5		3			
CYS 494: Cryptographic Systems	1,3		3			
CRM 414: Cybercrime -OR- PS 210: The International and Domestic Legal Environment of Cybersecurity	2		3 or 4			
CYS 400: Internship & Senior Seminar	7		3			
Core Course Prerequisites				Cyber Defense Concentration		25-26
CYS 227 - CET 249 (C- or higher)				CET 113: Introduction to Information Processing	3	3
CET 339 - CET 229 with a grade of C- or higher				CET 439: Enterprise Messaging Systems	3,4	3
CET 349 - CET 249 with a grade of C- or higher				CET 449: Advanced Networking	4	3
CYS 459 - CET 349 with a grade of C- or higher				CET 479 Network Administration	3,4	3
CYS 467 - CET 349 and CYS 227 (C- or higher in both)				CS 460: Database Concepts	1,3,4	3
CYS 477 - CET 459 or CS 490 (C- or higher in either)				CS 481: Operating Systems Design	1,3,4	3
CS 151 - Grade C- or better in MATH 152 (may be taken concurrently) or placement test				Free electives		7-8
CS 152 - Grade C- or better in both CS 151 and MATH 152				Cyber Defense Concentration		25-26
CS 253 - Grade C- or better in CS 152				CET 223: Basic Electrical Circuits	4	3
CS 355 - Grade C- or better in both CS 253 and CS 254				CET 363: Digital Circuits	4	3
CYS 492 - Grade C- or better in both CS 253 and either CS 254 or CET 349, or permission of Department Chair, or admission to a graduate program in CIT.				CET 466: Logic Design	4	3
CYS 493 - C- or better in CS 253 and CS 254 or CET 349				CS 254: Computer Organization and Assembly Language Programming	3	3
CYS 494 - C- or better in either CS 254 or CET 349, and MATH 217 or MATH 218				CS 481: Operating Systems Design	1,3,4	3
CRM 414 - CRM 322 (with a grade of C- or higher) or Cybersecurity				CET 469: Wireless Networks and	1,4	3

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majors with at least junior standing		Security		
PS 210 - Political Science Majors, Cybercrime Minors, and Cybersecurity Majors only		CYS 291: Introduction to Computer Forensics -OR- CYS 487: Network Forensics	1,6	3
CYS 400 - Completion of 75 credits in the degree or Permission of Department Chairperson		CS 355: Systems Programming	3	3
		CYS 419: Usable Security and Privacy -OR- CYS 455: Secure Software Development	1,3,4,5,7	3
		Free electives		1-2
		General Concentration		25-26
		Required minor		18-21
		Free electives		4-7
Total Other Credits Required to Issue Modified Credential				

Learning Outcomes - L.O. (List up to three of the most important student learning outcomes for the program, and any changes introduced)

1. Understand the up-to-date concepts, technologies, design issues, and tools in cybersecurity
2. Understand cybersecurity policies and laws and exhibit ethical and legal responsibilities
3. Demonstrate the capability of software tools utilization and development including operating system, database, and application. Be able to analyze threats, identify vulnerabilities, and develop security solutions.
4. Demonstrate the capability of hardware development and system administration to design, implement, and analyze electronic, network and server systems. Be able to assess, implement, and manage security needs to defend the systems.
5. Apply the knowledge and skills of information assurance and penetration testing to conduct risk and liability assessments and test the effectiveness of security measures.
6. Apply the knowledge and skills of digital investigation to identify and preserve the digital evidence.
7. Recognize the need for and demonstrate the ability to engage in lifelong learning in cybersecurity careers.

Bolded courses are additions; ~~struck through~~ courses are deletions.

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PROGRAM MODIFICATION

SECTION 1: GENERAL INFORMATION

Institution: Central Connecticut State University | **Date of Submission to CSCU Office of the Provost:** March 25, 2020

Most Recent NECHE Institutional Accreditation Action and Date: April 12, 2019

Original Program Characteristics

CIP Code No. 40.601 | Title of CIP Code Geology/Earth Science General

Name of Program: Earth Sciences

Degree: Title of Award (e.g. Master of Arts) **BS**

Stand-Alone Certificate: (specify type and level)

Date Program was Initiated: 01/01/1976 | **OHE#:** 00092

Modality of Program: X On ground | Online | Combined

If "Combined", % of fully online courses?

Locality of Program: X On Campus | Off Campus | Both

Original Program Credit Distribution

Credits in General Education: **44-46**

Credits in Program Core Courses: **18**

Credits of Electives in the Field: **14-26**

Credits of Free Electives: **2-22**

Cr Special Requirements (include internship, etc.): **22-28**

Total # Cr in the Program (sum of all #Cr above): **120**

From "Total # Cr in the Program" above, enter #Cr that are part of/belong in an already approved program(s) at the institution: **120**

Modified Program Characteristics

Name of Program: Earth Science

Degree: Title of Award (e.g. Master of Arts) **BS**

Certificate¹: (specify type and level)

Program Initiation Date: Fall 2020

Modality of Program: X On ground | Online | Combined

If "Combined", % of fully online courses?

Total # Cr the Institution Requires to Award the Credential (i.e. include program credits, GenEd, other): **120**

Other:

Modified Program Credit Distribution

Credits in General Education: **44-46**

Credits in Program Core Courses: **19**

Credits of Electives in the Field: **13-25**

Credits of Free Electives: **2-22**

Cr Special Requirements (include internship, etc.): **22-28**

Total # Cr in the Program (sum of all #Cr above): **120**

From "Total # Cr in the Program" above, enter #Cr that are part of/belong in an already approved program(s) at the institution: **120**

If program modification is concurrent with discontinuation of related program(s), list information for such program(s):

Program Discontinued: | **CIP:** | **OHE#:** | **Accreditation Date:**

Phase Out Period | **Date of Program Termination**

Rationale for Modification

One 3-credit course (AST 478: Planetary Image Analysis) was deleted from electives in the field due to low demand.

Description of Resources Needed (As appropriate summarize faculty and administrative resources, library holdings, specialized equipment, etc. required to implement the proposed modification and estimate the total cost.)

None.

Institutional Contact for this Proposal: Dr. Mark Evans | Title: Professor of Geology | Tel.: 860-832-2936 | e- mail: evansmaa@ccsu.edu

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Institution's Unit (*e.g. School of Business*) and Location (*e.g. main campus*) Offering the Program: School of Engineering, Science, and Technology, main campus

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SECTION 2: Curriculum Details for a Program Modification PLANETARY GEOLOGY SPECIALIZATION						
Course Number and Name	L.O. #	Pre-Requisite	Cr Hrs	Course Number and Name	L.O. #	Cr Hrs
Program Core Courses				Other Related/Special Requirements		
GSCI 121 The Dynamic Earth -OR- GSCI 131 Environmental Geoscience	1		3	AST 208 Planetary Astronomy	1,2	4
GSCI 125* The Dynamic Earth Laboratory -OR- GSCI 135** Environmental Geoscience Laboratory	1,2		1	AST 209 Stellar and Galactic Astronomy	1,2	4
GSCI 141 Earth and Life History	1		3	AST 278 Observational Astronomy	2,3	4
GSCI 145 Earth and Life History Laboratory	1,2		1	AST 378 Comparative Planetology	1,2	3
GSCI 221 Mineralogy	1,2,3		4	AST 478: Planetary Image Analysis		3
GSCI 223 Stratigraphy and Sedimentology	1,2,3		4	GSCI 360 Research Methods in the Geological Sciences	2,3	1
GSCI 260 Communicating the Geological Sciences	3		1	GSCI 460 Senior Project	1,2,3	2-4
GSCI 290 Field Methods in Geology	1,2,3		2	-OR- External Geology Field Camp	1,2,3	4
				CHEM 161 General Chemistry		3
				CHEM 162 General Chemistry Laboratory		1
				CHEM 201 Foundations of Analytical Chemistry		3
				– AND – CHEM 260 Foundations of Inorganic Chemistry		1
				MATH 152 Calculus I		4
				MATH 221 Calculus II		4
				PHYS 125 University Physics I		4
				PHYS 126 University Physics II		4
Core Course Prerequisites				Elective Courses in the Field		
GSCI 125*: GSCI 121 (may be taken concurrently)				AST 418 Astrophysics	1,2	3
GSCI 135**: GSCI 131 (may be taken concurrently)				AST 470 Exoplanets and Astrobiology	1,2	3
GSCI 221: GSCI 125 or GSCI 135, CHEM 161 and CHEM 162				AST 478 Planetary Image Analysis	1,2	3
GSCI 223: GSCI 145, GSCI 290				GSCI 321 Structural Geology	1,2	4
GSCI 260: Sophomore standing and Earth Sciences major				GSCI 322 Igneous and Metamorphic Petrology	1,2,3	4
				GSCI 350 Computer Methods in the Geological Sciences	2,3	3
Total Other Credits Required to Issue Modified Credential						
Learning Outcomes - L.O. (List up to three of the most important student learning outcomes for the program, and any changes introduced)						
1. Scientific literacy: Students will be able to identify, analyze, and apply earth science concepts, principles, laws, and theories.						

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2. Ability to do science: Students will be able to interpret, analyze, and apply the Scientific Method and other related inquiry related skills, as well as quantitative methods, in the earth science lab.
3. Communications: Students will be able to use oral and written communication to accurately and effectively convey earth science concepts.

~~Struck through~~ courses are deletions.

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PROGRAM MODIFICATION

SECTION 1: GENERAL INFORMATION

Institution: Central Connecticut State University **Date of Submission to CSCU Office of the Provost:** March 25, 2020

Most Recent NECHE Institutional Accreditation Action and Date: April 12, 2019

Original Program Characteristics

CIP Code No. 15.0613 Title of CIP Code Manufacturing Technology/Technician
Name of Program: Manufacturing Engineering Technology
Degree: Title of Award (e.g. Master of Arts) **BS**
Stand-Alone Certificate: (specify type and level)
Date Program was Accredited: 04/21/1987 OHE#: 02365
Modality of Program: X On ground Online Combined
If "Combined", % of fully online courses?
Locality of Program: X On Campus Off Campus Both

Original Program Credit Distribution

Credits in General Education: 40-41
Credits in Program Core Courses: 43
Credits of Electives in the Field: 3-4
Credits of Free Electives: 4-7
Cr Special Requirements (include internship, etc.): 37-38
Total # Cr in the Program (sum of all #Cr above): 130
From "Total # Cr in the Program" above, enter #Cr that are part of/belong in an already approved program(s) at the institution: **130**

Modified Program Characteristics

Name of Program: Manufacturing Engineering Technology
Degree: Title of Award (e.g. Master of Arts) **BS**
Certificate¹: (specify type and level)
Program Accreditation Date: 04/21/1987
Modality of Program: X On ground Online Combined
If "Combined", % of fully online courses?
Total # Cr the Institution Requires to Award the Credential (i.e. include program credits, GenEd, other): 130
Other:

Modified Program Credit Distribution

Credits in General Education: 40-41
Credits in Program Core Courses: 43
Credits of Electives in the Field: 3-4
Credits of Free Electives: 4-7
Cr Special Requirements (include internship, etc.): 37-38
Total # Cr in the Program (sum of all #Cr above): 130
From "Total # Cr in the Program" above, enter #Cr that are part of/belong in an already approved program(s) at the institution: **130**

If program modification is concurrent with discontinuation of related program(s), list information for such program(s):

Program Discontinued: CIP: OHE#: Accreditation Date:
Phase Out Period Date of Program Termination

Rationale for Modification

Replace one three-credit additional requirement (ROBO 330: Fluid Power Systems) with another three-credit additional requirement (ET 354: Applied Fluid Mechanics). Applied fluid mechanics provides a broader view of the field, while still providing required practical knowledge.

Description of Resources Needed (As appropriate summarize faculty and administrative resources, library holdings, specialized equipment, etc. required to implement the proposed modification and estimate the total cost.)

None. One course substitutes fully for the other.

Institutional Contact for this Proposal: Nidal Al-Masoud Title: Chairperson Tel.: 860-832-1825 e- mail: almasoudn@ccsu.edu

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Institution's Unit (e.g. *School of Business*) and Location (e.g. *main campus*) Offering the Program: School of Engineering Science and Technology;
main campus

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SECTION 2: Curriculum Details for a Program Modification						
Course Number and Name	L.O. #	Pre-Requisite	Cr Hrs	Course Number and Name	L.O. #	Cr Hrs
Program Core Courses				Other Related/Special Requirements		
ENGR 150: Introduction to Engineering	1,2,3,9		3	CET 236: Circuit Analysis	1,4,6,7	3
ET 251: Applied Mechanics I - Statics	1,2,3,5		3	CHEM 161: General Chemistry	1,4,6,7	3
ET 252: Applied Mechanics II - Dynamics	1,2,3,5		3	CHEM 162: General Chemistry Laboratory	1,4,6,7	1
ET 357: Strength of Materials	1,2,3,5		3	ENGR 240: Computational Methods for Engineering	1,3	3
ET 361: Engineering Technology Instrumentation	2,3,4,5,6,7		3	ROBO 330: Fluid Power Systems	1,4,7	3
ET 399: Engineering Economy	8,10,7		3	ET 354: Applied Fluid Mechanics	1,3,4,5,6,7	3
ETM 260: Computer Aided Design and Integrated Manufacturing CAD/CAM/CIM	3		3	MM 121: Mechanical CAD	3	3
ETM 340: Geometric Dimensioning & Tolerancing	5,6,9,10		3	MM 216: Manufacturing Processes	4,5,6	3
ETM 356: Materials Analysis	3,4,5,6,7		3	MM 226: Principles of Computer Numerical Control (CNC)	4,5,6	3
ETM 360: Computer Aided Planning (CAP)	3,4,5,6		3	MM 236: Tool Design	4,5,6	3
ETM 461: Composites and Plastics Manufacturing Processes	3,4,5,6		3	MATH 119: Pre-Calculus with Trigonometry	1	4
ETM 462: Manufacturing Process Planning and Estimating	5,6		3	or		3
ETM 466: Design for Manufacture	2,3,5,6,7		3	MATH 116: Pre-Calculus Mathematics	1	3
ETM 497: Engineering Technology Senior Project Research	1-10		2	ROBO 420: Manufacturing Automation	5	3
ETM 498: Engineering Technology Senior Project (Capstone)	1-10		2	STAT 104: Elementary Statistics	1	3
ETM 454: Applied Heat Transfer	8,10,7		3	TM 464: Six Sigma Quality	5	3

				***General Education Requirements		
			3	Literature	8,9,10	3
			3	Philosophy or Fine Arts	8,9,10	3
			3	Literature, Philosophy or Fine Arts	8,9,10	3
			3	History	8,9,10	3
			3	ECON or GEOG or HIST or Pol. Sci. or ET 399	8,9,10	3
			3	Anthropology, Psychology, or Sociology	10	3
			8	PHYS 121: General Physics I -and- PHYS 122: General Physics II -or- PHYS 125: University Physics I - and- PHYS 126: University Physics II	1	8

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			6	WRT 110: Introduction to College Writing -and- ENGR 290: Engineering Technical Writing and Presentation	7	6
				MATH 135: Applied Engineering Calculus I -and- MATH 136: Applied Engineering Calculus II -or- MATH 152: Calculus I -and- MATH 221: Calculus II	1	6 or 8
				PE 144: College Wellness -or- ENGR 150: Introduction to Engineering	8	2 or 3
Core Course Prerequisites				Elective Courses in the Field		
ENGR 150 - none				ET 300: Ergonomics		3
ET 251 - ENGR 150 or ROBO 110; and MATH 136 (may be taken concurrently) or MATH 152; and PHYS 121 or PHYS 125 (All with C- or higher)				ET 495: Topics in Engineering Technology		3
ET 252 - ET 251 (C- or higher)				ETM 358: Applied Thermodynamics		3
ET 357 - ET 251; and PHYS 121 or PHYS 125; and MATH 136 (may be taken concurrently) or MATH 152. (All with C- or higher)				ETM 367: Machine Design		3
ET 361 - STAT 104 and ET 357, and ENGR 290 (all with C- or higher)				ETM 460: Computer Aided Design and Manufacturing (CAD/CAM)		3
ET 399 - MATH 125 (C- or higher) or MATH 135 (C- or higher) or MATH 152 (C- or higher)				ETM 463: Plastics and Composite Tool Design		3
ETM 260 - none				ETM 467: Applied Finite Element Analysis		3
ETM 340 - MM 121 (C- or higher) or MM 216 (C- or higher) or permission of instructor				ETM 468: Composite Design & Analysis		3
ETM 356 - CHEM 161, CHEM 162; ENGR 251 or ET 251 (either may be taken concurrently). All prerequisites require C- or higher				ENGR 490: Fundamentals of Engineering (FE)		3
ETM 360 - STAT 104; ENGR 240 or CS 213. All prerequisites require C- or higher				ETM 464: CAD Solid Modeling and Design		3
ETM 461 - ETM 256 or ETM 356, CHEM 161 and CHEM 162. All prerequisites require C- or higher				ETM 423: Applied Feedback Control Systems		3
ETM 462 - MM 121 (C- or higher) and MM 216 (C- or higher) and ETM 340 (C- or higher) or permission of instructor				MM 366: Supply Chain and Purchasing Strategies		3
ETM 466 - ETM 260 (C- or higher) and ETM 340 (C- or higher) or permission of instructor				MM 390: Lean Operation Management		3
ETM 497 - For Manufacturing Engineering Technology: ET 361 and ETM 462 (both may be taken concurrently or C- or higher). For Mechanical Engineering Technology: ET 361 and ETM 367 (both may be taken concurrently or C- or higher)						
ETM 498 - For Manufacturing Engineering Technology: ETM 497 (C- or higher), ET 361 (C- or higher), ETM 462 (C- or higher), ETM 466 (may be taken concurrently or C- or higher). For Mechanical Engineering Technology ETM 497 (C- or higher), ET 361 (C- or higher), ETM 367 (C- or higher), ETM 467 (may be taken concurrently or C- or higher)						
ETM 454 - ET 354 (C- or higher) and ETM 358 (C- or higher) or permission of instructor						

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Total Other Credits Required to Issue Modified Credential				
<p>Learning Outcomes - L.O. (<i>List up to three of the most important student learning outcomes for the program, and any changes introduced</i>)</p> <p>1 Ability to apply basic knowledge of mathematics, science and engineering principles to solve technical problems.</p> <p>2 Ability to identify, formulate and solve technical problems.</p> <p>3 Ability to use computational methods, skills, computers and modern technical tools in engineering practice.</p> <p>4 Ability to design and conduct experiments, and to analyze and interpret data.</p> <p>5 Ability to design a system, component or process to meet desired needs.</p> <p>6 Ability to function effectively on teams and within a diverse environment.</p> <p>7 Ability to communicate effectively in oral, written, visual and graphic modes.</p> <p>8 Recognition of the need for self-improvement through continuing education and the ability to engage in lifelong learning.</p> <p>9 Understanding of professionalism and ethics and associated responsibilities.</p> <p>10 Knowledge of contemporary issues and understanding of the impact of engineering/technical solutions within a global perspective.</p>				

Bolded courses are additions; ~~struckthrough~~ courses are deletions.

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PROGRAM MODIFICATION

SECTION 1: GENERAL INFORMATION

Institution: Central Connecticut State University **Date of Submission to CSCU Office of the Provost:** March 25, 2020

Most Recent NECHE Institutional Accreditation Action and Date: April 12, 2019

Original Program Characteristics

CIP Code No. 15.0805 Title of CIP Code Mechanical Engineering/Mechanical Technology/Technician
Name of Program: Mechanical Engineering Technology
Degree: Title of Award (e.g. Master of Arts) **BS**
Stand-Alone Certificate: (specify type and level)
Date Program was Accredited: 10/15/1993 OHE#: 02813
Modality of Program: X On ground Online Combined
If "Combined", % of fully online courses?
Locality of Program: X On Campus Off Campus Both

Original Program Credit Distribution

Credits in General Education: 40-41
Credits in Program Core Courses: 55
Credits of Electives in the Field: 5-9
Credits of Free Electives: 0
Cr Special Requirements (include internship, etc.): 26
Total # Cr in the Program (sum of all #Cr above): 130
From "Total # Cr in the Program" above, enter #Cr that are part of/belong in an already approved program(s) at the institution: **130**

Modified Program Characteristics

Name of Program: Mechanical Engineering Technology
Degree: Title of Award (e.g. Master of Arts) **BS**
Certificate¹: (specify type and level)
Program Accreditation Date: 10/15/1993
Modality of Program: X On ground Online Combined
If "Combined", % of fully online courses?
Total # Cr the Institution Requires to Award the Credential (i.e. include program credits, GenEd, other): 130
Other:

Modified Program Credit Distribution

Credits in General Education: 40-41
Credits in Program Core Courses: 55
Credits of Electives in the Field: 8-12
Credits of Free Electives: 0
Cr Special Requirements (include internship, etc.): 23
Total # Cr in the Program (sum of all #Cr above): 130
From "Total # Cr in the Program" above, enter #Cr that are part of/belong in an already approved program(s) at the institution: **130**

If program modification is concurrent with discontinuation of related program(s), list information for such program(s):

Program Discontinued: CIP: OHE#: Accreditation Date:

Phase Out Period Date of Program Termination

Rationale for Modification

Program is removing a three-credit requirement from additional requirements (ROBO 330: Fluid Power Systems), resulting in a three-credit increase to directed electives in the field. Further, there some redundancy of content between the removed course and a required core course.

Description of Resources Needed

None. Enrollments from the removed additional requirement will be spread across directed elective alternatives.

Institutional Contact for this Proposal: Nidal Al-Masoud, Title: Chairperson, Tel.:860-832-1825, e- mail: almasoudn@ccsu.edu

Institution's Unit Offering the Program: School of Engineering, Science, and Technology; main campus

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SECTION 2: Curriculum Details for a Program Modification						
Course Number and Name	L.O. #	Pre-Requisite	Cr Hrs	Course Number and Name	L.O. #	Cr Hrs
Program Core Courses				Other Related/Special Requirements		
ENGR 150: Introduction to Engineering	1,3,5		3	CET 236: Circuit Analysis	1	3
ET 251: Applied Mechanics I - Statics	1,2		3	CHEM 161: General Chemistry	1	3
ET 252: Applied Mechanics II - Dynamics	1,2		3	CHEM 162: General Chemistry Laboratory	1,4,5	1
ET 354: Applied Fluid Mechanics	1,2,4		3	ENGR 240: Computational Methods for Engineering	1,2	3
ET 357: Strength of Materials	1,2		3	MM 121: Mechanical CAD	1	3
ET 361: Engineering Technology Instrumentation	1,3,4,5		3	MM 216: Manufacturing Processes	1,4,5	3
ET 399: Engineering Economy	1		3	MATH 119: Pre-Calculus with Trigonometry -or- MATH 116: Pre-Calculus Mathematics	1	3 or 4
ETM 260: Computer Aided Design and Integrated Manufacturing CAD/CAM/CIM	2,3		3	ROBO 330: Fluid Power Systems		3
ETM 340: Geometric Dimensioning & Tolerancing	1,2,3		3	STAT 104: Elementary Statistics	1	3
ETM 356: Materials Analysis	4,5		3	-----		
ETM 358: Applied Thermodynamics	1,2		3	***General Education Requirements		
ETM 367: Machine Design	1,2		3	Literature	N/A	3
ETM 462: Manufacturing Process Planning and Estimating	1,2		3	Philosophy or Fine Arts	N/A	3
ETM 464: CAD Solid Modeling and Design	2,3		3	Literature, Philosophy or Fine Arts	N/A	3
ETM 466: Design for Manufacture	1,2		3	History	N/A	3
ETM 467: Applied Finite Element Analysis	1,2		3	ECON or GEOG or HIST or Pol. Sci. or ET 399	1	3
ETM 497: Engineering Technology Senior Project Research	1,2,3,4,5		2	Anthropology, Psychology, or Sociology	N/A	3
ETM 498: Engineering Technology Senior Project (Capstone)	1,2,3,4,5		2	PHYS 121: General Physics I -and- PHYS 122: General Physics II -or- PHYS 125: University Physics I -and- PHYS 126: University Physics II	1	8
ETM 454: Applied Heat Transfer	1,2		3	WRT 110: Introduction to College Writing -and- ENGR 290: Engineering Technical Writing and Presentation	3	6
				MATH 135: Applied Engineering Calculus I -and- MATH 136: Applied Engineering Calculus II -or- MATH 152: Calculus I -and- MATH 221: Calculus II	1	6 or 8
				PE 144: College Wellness	N/A	2
Core Course Prerequisites				Directed Elective Courses in the Field		
ENGR 150 - none			3	ET 495: Topics in Engineering Technology		
ET 251 - ENGR 150 or ROBO 110; and MATH 136 (may be taken concurrently) or MATH 152; and PHYS 121 or PHYS 125 (All with C- or higher)			3	ETM 360: Computer Aided Planning (CAP)		

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ET 252 - ET 251 (C- or higher)	3	ETM 423: Applied Feedback Control Systems	3
ET 354 - ET 251 (C- or higher)	3	ETM 460: Computer Aided Design and Manufacturing (CAD/CAM)	3
ET 357 - ET 251; and PHYS 121 or PHYS 125; and MATH 136 (may be taken concurrently) or MATH 152. (All with C- or higher)	3	ETM 461: Composites and Plastics Manufacturing Processes	3
ET 361 - STAT 104 and ET 357, and ENGR 290 (all with C- or higher)	3	ETM 463: Plastics and Composite Tool Design	3
ET 399 - MATH 125 (C- or higher) or MATH 135 (C- or higher) or MATH 152 (C- or higher)	3	ETM 468: Composite Design & Analysis	3
ETM 260 - none	3	MM 226: Principles of Computer Numerical Control (CNC)	3
ETM 340 - MM 121 (C- or higher) or MM 216 (C- or higher) or permission of instructor	3	ENGR 392: Engineering Practicum (400 hours)	1
ETM 356 - CHEM 161, CHEM 162; ENGR 251 or ET 251 (either may be taken concurrently). All prerequisites require C- or higher	3	ENGR 490: Fundamentals of Engineering (FE)	3
ETM 358 - CHEM 161 and CHEM 162; MATH 136 or 152; and PHYS 121 or PHYS 125. All prerequisites require C- or higher	3	MM 236: Tool Design	3
ETM 367 - ET 252 (C- or higher) and ET 357 (C- or higher)	3	MM 390: Lean Operation Management	3
ETM 462 - MM 121 (C- or higher) and MM 216 (C- or higher) and ETM 340 (C- or higher) or permission of instructor	3	TM 464: Six Sigma Quality	3
ETM 464 - ETM 260 (C- or higher); and ETM 340 (C- or higher) or ME 340 (C- or higher); or permission of instructor	3	ROBO 420: Manufacturing Automation	3
ETM 466 - ETM 260 (C- or higher) and ETM 340 (C- or higher) or permission of instructor	3		
ETM 467 - ENGR 357 (C- or higher) or ET 357 (C- or higher) or permission of instructor	3		
ETM 497 - ET 361 and ETM 462 (both may be taken concurrently or C- or higher). For Mechanical Engineering Technology: ET 361 and ETM 367 (both may be taken concurrently or C- or higher)	2		
ETM 498 - ETM 497 (C- or higher), ET 361 (C- or higher), ETM 462 (C- or higher), ETM 466 (may be taken concurrently or C- or higher). For Mechanical Engineering Technology ETM 497 (C- or higher), ET 361 (C- or higher), ETM 367 (C- or higher), ETM 467 (may be taken concurrently or C- or higher)	2		
ETM 454 - ET 354 (C- or higher) and ETM 358 (C- or higher) or permission of instructor	3		
Total Other Credits Required to Issue Modified Credential			

Learning Outcomes - L.O.

1. an ability to apply knowledge, techniques, skills and modern tools of mathematics, science, engineering, and technology to solve broadly-defined engineering problems appropriate to the discipline;
2. an ability to design systems, components, or processes meeting specified needs for broadly-defined engineering problems appropriate to the discipline;
3. an ability to apply written, oral, and graphical communication in broadly-defined technical and non-technical environments; and an ability to identify and use appropriate technical literature;
4. an ability to conduct standard tests, measurements, and experiments and to analyze and interpret the results to improve processes; and
5. an ability to function effectively as a member as well as a leader on technical teams.

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~~Struck through~~ courses are deletions.