

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 26, 2019
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Most Recent NEASC Institutional Accreditation Action and Date: August 2013

<p>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) Master of Arts Certificate: (specify type and level) Date Program was Initiated: 2004 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): 30</p>	<p>Original Program Credit Distribution # Cr in Program Core Courses: 3-6 # Cr of Electives in the Field: 19-22 # Cr of Free Electives: 0 # Cr Special Requirements (include internship, etc.): 3-6 <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: 30</p>
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Type of Program Modification Approval Being Sought (mark all that apply):

- Licensure and Accreditation (specify whether New Certificate, Minor, Option, Concentration, or Other)
- 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)
- Change of Degree Title or Program Title

<p>Modified Program Characteristics Name of Program: Biomolecular Sciences Degree: Title of Award (e.g. Master of Arts) Master of Science Certificate¹: (specify type and level) Program Initiation Date: Fall 2019 or ASAP 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): 30 Other:</p>	<p>Modified Program Credit Distribution # Cr in Program Core Courses: 3-6 # Cr of Electives in the Field: 19-22 # Cr of Free Electives: 0 # Cr Special Requirements (include internship, etc.): 3-6 <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: 30</p>
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***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."

CSCU REVIEW STATUS (For System Office Use Only - please leave blank)

Notes regarding Application: Log of Steps Toward Approval: Date of Approval: Date for Inclusion in BOR-ASA Meeting Package: Comments: Conditions for Approval (if any)

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

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SECTION 1: GENERAL INFORMATION (continued)

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

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

Institution's Unit (e.g. School of Business) and Location (e.g. main campus) Offering the Program:

Other Program Accreditation:

- 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: James Mulrooney Title: Prof Tel.: 860-832-2660 e- mail:
mulrooneyj@ccsu.edu

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 curriculum of the proposed Master of Science degree is identical to the current Master of Arts degree. The distinction between a Master of Arts degree and a Master of Science degree is most often made by the field of study. Most Master's programs in the natural sciences offer Master of Science degrees rather than Master of Arts degrees. For example, the University of Connecticut's Master's degree in Molecular and Cell Biology is a Master of Science degree. Also, Southern Connecticut State University's Biology department offers a Master of Science degree. Our Master's degree emphasizes research experiences and all students are required to complete an independent research experience. In addition, the program offers a thesis option, similar to the UConn and SCSU programs. Many current students in the Biomolecular Sciences Master's program express confusion as to why our program is a Master of Arts. They have also relayed to us that employers prefer the Master of Science degree.

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)* Approximately 90% of our graduates remain in CT, working in jobs related to their degree, such as in the Biotech Sector (Protein Sciences, Boehringer Ingelheim.)
- 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? The Biomolecular Sciences department focuses on the areas of cell and molecular biology within the larger field of biology. Also, each member of the department engages in student-centered research. All Master's students in the Biomolecular Sciences department are required to complete an independent research project.
- 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)* None.
- Please indicate what similar programs exist in other institutions within the CSCU System, and how unnecessary duplication is being avoided. Master's programs in Biological Sciences and Biology are available at Central Connecticut State University and Southern Connecticut State University, respectively. The University of Connecticut has a Master's degree in Molecular and Cell Biology. The Biomolecular Sciences Master's degree is unique in that the program focuses on cell and molecular biology and also schedules all classes at 4:30pm or later. While the University of Connecticut offers a Master of Science degree in Molecular and Cell Biology, many classes are scheduled early in the day. The Biomolecular Sciences program at CCSU accommodates students who are already working full-time and want to earn

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their master's degree at the same time.

- Please provide a description/analysis of employment prospects for graduates of this proposed program: Students in the Biomolecular Sciences Master's program usually choose one of three routes post-graduation: employment, doctoral programs in the biological or biomedical sciences, or clinical degrees in health-related fields. Students seeking employment work in biotech and pharmaceutical industries and in academic laboratories.

Description of Modification (Please provide a summary of the modifications to curriculum, admissions or graduation requirements, mode of delivery etc., and concisely describe how the institution will support these changes.)

No changes to curriculum, admissions, or graduate requirements. The modification is only to the name of the program from Master of Arts to Master of Science.

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 resource required is full-time faculty to teach within the program.

Other Considerations

Previous Three Years Enrollment and Completion for the Program being Modified

ACTUAL Enrollment	Fall Term, Year <u>2016</u>		Fall Term, Year <u>2017</u>		Fall Term, Year <u>2018</u>	
	Full Time	Part Time	Full Time	Part Time	Full Time	Part Time
Transfers In						
New Students	9	8	8	5	10	1
Returning Students	4	8	6	15	7	15
ACTUAL Headcount Enrollment	13	16	14	20	17	16
Fall FTE accounted for by Program Majors	19.6		22.2		21.3	
Size of Credentialed Group(s) for Given Year	9		13		14	

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		
Note: No curricular changes						

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

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Core Course Prerequisites	Elective Courses in the Field
Total Other Credits Required to Issue Modified Credential	

Learning Outcomes - L.O. *(Please list up to seven of the most important student learning outcomes for the program, and any changes introduced)*

1. Graduate students will demonstrate knowledge in Biomolecular science, including an understanding of:
 - a) The connection between molecular properties and cellular activities;
 - b) The connection between cellular activities and biological responses;
 - c) Cellular structure and function, including chemical composition, physiochemical and functional organization of organelles, and basic cellular metabolism;
 - d) Major cellular processes, including DNA replication, gene regulation, protein structure and function, cell signaling, and differentiation; and
 - e) Contemporary techniques used in cell and molecular biology
2. Graduate students will evaluate papers from the scientific literature and present oral and written critiques.
3. Graduate students will develop research questions and the approach they will use to address that question.
4. Graduate students will do a research project, analyze and evaluate the data generated and present their findings in both an oral and written format.
- 5.
- 6.
- 7.

SECTION 3: RESOURCE AND FINANCIAL CONSIDERATIONS

Two-Year 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:

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The proposed change may produce a modest increase in enrollment, estimated at 6% per academic year (i.e., one additional student per year). Tuition estimates are calculated using CT in-state rates of \$5917.50 for full-time tuition and \$654 as part-time per credit tuition. Part-time students are estimated to enroll in 5 credits per semester on average. The projected increase in tuition revenue reflects two students per academic year, alternating 1 full-time and 1 part-time with 2 part-time.

The only expense is full-time faculty. Currently, full-time faculty teach an estimated 23 credits per academic year within the program with roughly half that offered each Fall. We scaled the salary of each faculty member teaching in the program to the number of credits they teach and divided by 2 to obtain Fall semester cost. We estimated fringe at 71% of base salary for long-standing faculty members and at 45% for newer faculty members. The increase across years represents a 3.7% change as reflected in Articles 12.3 and 12.4 of the AAUP Contract and alternating teaching loads for given faculty members across years. (Note: Faculty members teaching within the program and/or their ranks may change within 3 years.)

The Department has the capacity to absorb the expected enrollment projects without offering new sections of courses. Faculty do not receive release time or stipends for coordinating the program. Support staff for the department do not spend dedicated time supporting the Master's program.

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

PROJECTED Program Revenue	Fall 2019	Fall 2020	Fall 2021
Tuition (do not include internal transfers)	\$ 156,188	\$ 162,728	\$ 171,915
Program-Specific Fees	\$ -	\$ -	\$ -
Other Revenue (Annotate in narrative)	\$ -	\$ -	\$ -
Total Estimated Program Revenue	\$ 156,188	\$ 162,728	\$ 171,915

PROJECTED Program Expenditures*	Fall 2019	Fall 2020	Fall 2021
Administration (Chair or Coordinator)	\$ -	\$ -	\$ -
Faculty (Full-time, total for program)	\$ 77,334	\$ 78,294	\$ 87,683
Faculty (Part-time, total for program)	\$ -	\$ -	\$ -
Support Staff	\$ -	\$ -	\$ -
Library Resources Program	\$ -	\$ -	\$ -
Equipment (List as needed)	\$ -	\$ -	\$ -
Other (e.g. student services)	\$ -	\$ -	\$ -
Estimated Indirect Costs (e.g. student services, operations, maintenance)	\$ -	\$ -	\$ -
Total Estimated Program Expenditures	\$ 77,334	\$ 78,294	\$ 87,683

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

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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.