

Program Change Request

Date Submitted: 02/23/24 3:53 pm

Viewing: **SC-CERG-BCB : Bioinformatics and Computational Biology Graduate Certificate**

Last approved: 04/04/23 8:24 pm

Last edit: 03/01/24 9:06 am

Changes proposed by: jbazaz

Catalog Pages Using this Program

[Bioinformatics and Computational Biology Graduate Certificate](#)

No Longer

Anticipated closure
date (i.e., calendar
Rationale for

Are you completing this form on someone else's behalf?

No

Effective Catalog: 2024-2025

Program Level: Graduate

Program Type: Certificate

Degree Type: Graduate Certificate

Title: Bioinformatics and Computational Biology Graduate Certificate

Approval Criteria

1. What was the process used within your academic
2. Who was involved in approving the badge?
3. What evidence was used to identify need/demand
4. Please attest to the following statements regarding.....
 - a. Have you ensured there are no other existing badges
 - b. Has CPE confirmed the proposed badge does not
 - c. Has the instructor(s) for this badge experience been
 - d. Is there a contact hour minimum?
 - e. Is an assessment required?
 - f. Does this badge provide a benefit for current or
5. Is this badge co-sponsored with another organization, association, or unit? (If you would like an
 - a. What is the organization, program, or department

Earning Criteria

In Workflow

1. **SSB CC**
2. **SSB Program Chair**
3. **SC Curriculum Committee**
4. SC Assistant Dean
5. Assoc Provost-Graduate
6. Registrar-Programs

Approval Path

1. 03/01/24 10:43 am
Ramin Hakami (rhakami):
Approved for SSB CC
2. 03/22/24 11:43 am
Iosif Vaisman (ivaisman):
Approved for SSB Program Chair

History

1. Nov 16, 2017 by clmig-jwehrheim
2. Jun 4, 2018 by rzachari
3. Mar 6, 2020 by pxiong
4. Feb 23, 2021 by jriemen
5. May 11, 2022 by Jennifer Bazaz Gettys (jbazaz)
6. Apr 4, 2023 by Jennifer Bazaz Gettys (jbazaz)

Course:
Badge:
Participant:
Document:
Portfolio:
Presentation:
Assessment:
Credential:
Education

Other:
Project:
Professional

Schedule/Registration:
Volunteer:

Skills Tag

Skills Tag

Badge Attributes

Please select one from each category:

Achievement Type:

Mastery Level:

Time Commitment:

Cost:

Industry Standards:

Recommendations:

Issuance information and Pricing

Principia: See <https://cpe.amu.edu/digitalhadaenricina/> for more information

Estimated Number of Badges Expected to be Issued:

Notes:

- All badge requests will be routed to CPE for review and approval. Please allow 7
- A Mason Digital Credentials Advisory Group may be developed to review badge

Banner Title: Bioinformatics Compu Biol GC

Is this a retitling of an existing program?

Existing Program

Registrar/OAPI Use Only – SCHEV Status Approved

Registrar’s Office Use Only – Program Start Term Fall 2018

Registrar/OAPI Use Only – SCHEV Letter [BCB CERG.pdf](#)

**Registrar/OAPI Use
Only – SACSCOC
Status**

Concentration(s):

	Associated Concentrations	Registrar's Office Use Only: Concentration Code
1	Systems Biology and Biotechnology	SBBT

INTO Major(s):

**Registrar/IRR Use
Only –
Concentration CIP
Code**

College/School: College of Science

**Department /
Academic Unit:** School of Systems Biology

**Jointly Owned
Program?** No

Participating

Participating

Justification

What: Referring applicants to central admissions language and removing extraneous wording.
Why: To make the program more adaptable to changes in university policies.

Catalog Published Information

**Total Credits
Required:** Total credits: 15

Registrar's Office Use Only - Program Code:
SC-CERG-BCB

**Registrar/IRR Use
Only – Program CIP
Code**

**Admission
Requirements:**

Admissions

University-wide admissions policies can be found in the [Graduate Admissions Policies](#) section of this catalog. [International students and students having earned international degrees should also refer to Admission of International Students for additional requirements.](#)

~~To apply for this program, please complete the George Mason University Admissions Application.~~ [Eligibility](#)

Applicants should hold a bachelor's degree from ~~degree in biology, computer science, or a related field with a minimum GPA of 3.25 in the last earned degree from~~ an institution of higher education accredited by a Mason-recognized U.S. institutional accrediting agency or international equivalent in biology, computer science, or a related field with a minimum GPA of 3.25. equivalent:

In general, prior to admission, applicants are expected to have completed courses in biology, biochemistry, calculus, computer programming, and probability and statistics. Students admitted with course deficiencies in these areas may be required to take additional courses, some of which may not be applicable to the certificate's credit total.

Application Requirements

To apply, prospective students should submit the ~~complete a George Mason University Admissions Application and its required supplemental documentation. Application, supply official transcripts from each college and graduate institution attended, and provide a current résumé:~~

The GRE is not required for admission into this certificate.

~~For applicants whose native language is not English, Mason's English Language Proficiency Requirements must be met.~~

**Program-Specific
Policies:**

Policies

For policies governing all graduate certificates, certificate programs, see [AP.6 Graduate Policies](#).

~~Premium Tuition The certificate is a professional certification program that charges students at a differential (premium) tuition rate, with an additional \$100 per credit added to the standard George Mason University graduate tuition rate for students who enroll in this certificate program, regardless of in-state or out-of-state status. The differential tuition is used to fund continuing improvements in the College of Science's (COS) educational facilities used to support the certificate program. Students may not pursue this certificate concurrently with any other graduate degree program or~~
certificate.

~~certificate program offered by COS:~~

Students may not apply previous credit hours into this certificate.

Premium Tuition

The certificate is a professional certification program that charges students at a differential (premium) tuition rate, with an additional \$100 per credit added to the standard George Mason University graduate tuition rate for students who enroll in this certificate, certificate program, regardless of in-state or out-of-state status. The differential tuition is used to fund continuing improvements in the College of Science's (COS) educational facilities used to support the certificate program.

~~In addition, students may not apply previous credit hours from another certificate, degree, or non-degree studies to this certificate program because of the differential (premium) tuition rate:~~

Degree Requirements:

This certificate may be pursued on a full-or part-time basis.

Students should refer to the [Admissions & Policies](#) tab for specific policies related to this certificate. program:

Required Courses

Students must complete the following coursework:

BINF 630 Bioinformatics Methods	3
BINF 631 Molecular Cell Biology for Bioinformatics	3
Total Credits	6

Concentration in Systems Biology and Biotechnology (SBBT)

This concentration was largely created to build a "bridge" option for students who had not yet decided if they would like to pursue a wet lab career or enter into the field of computational biology. Once completed, these certificate graduates will be well prepared to enter into the [Biology, MS](#), the [Bioinformatics and Computational Biology, MS](#), or to pursue a career in biotechnology.

BINF 701 Systems Biology	3
BIOS 742 Biotechnology	3
or BIOS 743 Genomics, Proteomics, and Bioinformatics	
Choose one elective from the following:	3
BIOL 502 Adaptation in Biosystems	
BIOL 508 Selected Topics in Animal Biology	
BIOL 682 Advanced Eukaryotic Cell Biology	
BIOL 689 Interdisciplinary Tools in the Biosciences	
Total Credits	9

Electives

For students not choosing the Systems Biology and Biotechnology Concentration, select three courses from the following, or other courses as approved by the coordinator:

9

BINF 633	Molecular Biotechnology
BINF 634	Bioinformatics Programming
BINF 636	Microarray Methodology and Analysis
BINF 639	Introduction to Biometrics
BINF 730	Biological Sequence and Genome Analysis
BINF 731	Protein Structure Analysis
BINF 732	Genomics
BINF 733	Gene Expression Analysis
BINF 734	Advanced Bioinformatics Programming
BINF 739	Topics in Bioinformatics

Total Credits

9

**Retroactive
Requirements
Updates:**

Plan of Study:

**Honors
Information:**

**Accelerated
Description/Dual
Degree
Description:**

**INTO-Mason
Requirements:**

**College
Requirements &
Policies:**

**Department /
Academic Unit**

Requirements & Policies:

Program Outcomes

Additional Program Information

This information is required by the Office of Accreditation and Program Integrity.

Courses offered via distance (if applicable):

Indicate whether students are able to pursue on a: Both Full and Part-time basis

What is the primary delivery format for the program? Both Face-to-Face and Distance

Does any portion of this program occur off-campus?
No

Off-campus details:
Are you working with a vendor / other collaborators to offer your program?
No

Please explain:
Related Departments
Could this program prepare students for any type of professional licensure, in Virginia or elsewhere?
No

Please explain:
Are you adding or removing a licensure component?
No

Please explain:

Additional SCHEV & SACSCOC Information

Is the content of the new program closely related to that of an existing approved program at the same instructional level (i.e., baccalaureate, master's, doctoral)?

Which existing approved program(s)?

Is this new program considered to be "advancing the degree level of a currently approved program" (i.e. existing content is at lower degree level, new content is at the higher degree level)?

Which existing approved program(s)?

Is this new program considered to be "lowering the degree level of a currently approved program" (i.e. existing content is at higher degree level, new content is at the lower degree level)?

Which existing approved program(s)?

Is this a re-opening of a program that was closed to admission within the last five years?

Date of Program Closure

What are the methods of delivery for the program?

Does this program include a course/credit-based competency-based education delivery option?

Is this change a simple retitling of an existing program, with no other changes, to any existing program content, curriculum requirements, etc?

No

Does this change represent a repackaging of content in an existing approved degree/certificate program at the same instructional level (i.e., baccalaureate, master's, or doctoral)?

No

Which existing approved program(s)?

Percentage of total credits containing new course content. ("New course content" is defined by SACSCOC as content that is not currently included in an existing approved degree/certificate program at the same instructional level. Do not exclude gen ed credits in calculations for undergraduate programs.)

0%-24%

Does this change include the addition of a distance education or face-to-face method of delivery for this program?

No

What is the new method of delivery?

Does this change include the addition of a course/credit-based competency-based education delivery option?

No

Will any additional equipment/facilities be needed?

No

Description of institutional impact:

Will any additional faculty be required?

No

Description of institutional impact:

Will any additional financial resources be needed?

No

Description of institutional impact:

Additional library/learning resources needed?

No

Description of institutional impact:

OAPI Use Only – Determination of SACSCOC Impact

Comments or Notes

Green Leaf Program Designation

Is this a Green Leaf program? No

Green Leaf Designation

Sustainability-focused academic programs require at least one green leaf course. Either that course is itself sustainability-focused or else the program requires a set of sustainability-related courses with aggregated substance equivalent to a sustainability-focused course.

Relationship to Existing Courses

Relationship to Existing Programs

List sustainability-focused courses currently required in the degree

*Sustainability-related academic programs either require at least one sustainability-related course or else offer any green leaf course as an option or elective **

List sustainability-related courses currently required in the degree

Does this program cover material which crosses into another department?

No

**Impacted
Departments**

**Additional
Attachments**

**SCHEV Proposal
Executive Summary**

**Reviewer
Comments**

**Additional
Comments**

Is this course required of all students in this degree program?

[%wi_required.eshtml%](#)

**Attached
Document**

[%attach_document.eshtml%](#)

Key: 414