

# 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 your
  - 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](#)

Pricing: See <https://cpe.gmu.edu/digitalbadges/pricing/> 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):**

	<b>Associated Concentrations</b>	<b>Registrar's Office Use Only: Concentration Code</b>
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:

<a href="#">BINF 630</a> Bioinformatics Methods	3
<a href="#">BINF 631</a> Molecular Cell Biology for Bioinformatics	3
Total Credits	6

## Concentration in Systems Biology and Biotechnology (SBBT)

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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.

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

## Electives

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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

<a href="#">BINF 633</a>	Molecular Biotechnology
<a href="#">BINF 634</a>	Bioinformatics Programming
<a href="#">BINF 636</a>	Microarray Methodology and Analysis
<a href="#">BINF 639</a>	Introduction to Biometrics
<a href="#">BINF 730</a>	Biological Sequence and Genome Analysis
<a href="#">BINF 731</a>	Protein Structure Analysis
<a href="#">BINF 732</a>	Genomics
<a href="#">BINF 733</a>	Gene Expression Analysis
<a href="#">BINF 734</a>	Advanced Bioinformatics Programming
<a href="#">BINF 739</a>	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

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*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

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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 general education 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