

# Program Change Request

Date Submitted: 11/15/22 11:54 am

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

Last approved: 05/11/22 1:08 pm

Last edit: 11/15/22 12:02 pm

Changes proposed by: jbazaz

## Catalog Pages

### Using this Program

[Bioinformatics and Computational Biology Graduate Certificate](#)

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

Yes

Requestor:

## In Workflow

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

## Approval Path

1. 11/17/22 11:46 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)

Name	Extension	Email
Iosif Vaisman	8431	ivaisman@gmu.edu

Effective Catalog: 2023-2024

Program Level: Graduate

**Program Type:** Certificate

**Degree Type:** Graduate Certificate

**Title:** Bioinformatics and Computational Biology Graduate Certificate

**Banner Title:** Bioinformatics Compu Biol GC

**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

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

**College/School:** College of Science

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

**Jointly Owned Program?** No

**Justification**

What: Adjusting the admissions requirements.  
 Why: Better preparing applicants for the certificate's curriculum.

**Catalog Published Information**

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

**Registrar's Office Use Only - Program Code:**

Registrar/IRR Use  
Only – Program CIP  
Code

Admission  
Requirements:

## Admissions

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University-wide admissions policies can be found in the [Graduate Admissions Policies](#) section of this catalog. To apply for this program, please complete the [George Mason University Admissions Application](#). Applicants should hold a **bachelor's BA or BS degree in biology, a discipline related to biological or computer science, or a related field with a minimum GPA science from an institution of 3.25 in the last earned degree from an institution of** higher education accredited by **a a** Mason-recognized U.S. institutional accrediting agency or international **equivalent. equivalent, with a minimum GPA of 3.00:**

**In general, prior to admission, applicants are expected to Applicants should** have **completed taken** courses in **molecular biology, biochemistry, computer science,** calculus, **computer programming, physical chemistry, or statistics;** and **probability and statistics. should also possess working knowledge of a computer programming language. 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.**

To apply, prospective students should complete a [George Mason University Admissions Application](#), supply official transcripts from each college and graduate institution attended, and provide a current résumé. **For applicants whose native language is not English, Mason's [English Language Proficiency Requirements](#) must be met. TOEFL or IELTS scores are required of all international applicants.**

Program-Specific  
Policies:

## Policies

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

### Premium Tuition

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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 program offered by COS. 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 program.

## Required Courses

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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:

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

Are you working with a vendor / other collaborators to offer your program?  
No

Related  
Departments

Could this program prepare students for any type of professional licensure, in  
Virginia or elsewhere?

No

Are you adding or removing a licensure component?  
No

## Additional SCHEV & SACSCOC Information

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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

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

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

Will any additional faculty be required?

No

Will any additional financial resources be needed?

No

Additional library/learning resources needed?

No

### OAPI Use Only – Determination of SACSCOC Impact

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Comments or Notes

### Green Leaf Program Designation

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Is this a Green Leaf program? No

**Does this program cover material which crosses into another department?**

No

**Additional  
Attachments**

**Reviewer  
Comments**

**Additional  
Comments**

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

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