

# Program Change Request

Date Submitted: 03/04/22 12:31 pm

## Viewing: **SC-PHD-BCB : Bioinformatics and Computational Biology, PhD**

Last approved: 02/26/21 2:39 pm

Last edit: 03/04/22 12:31 pm

Changes proposed by: jbazaz

### Catalog Pages Using this Program

[Bioinformatics and Computational Biology, PhD](#)

No Longer Anticipated closure  
Rationale for

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

Yes

### Requestor:

Name	Extension	Email
Diane St. Germain	4263	dstgerma

Effective Catalog: 2022-2023

Program Level: Graduate

Program Type: Doctoral

Degree Type: Doctor of Philosophy

Title: Bioinformatics and Computational Biology, PhD

- Approval Criteria:**
1. What was the process used within your department to review this request?
  2. What evidence was used to identify new or revised content?
    - a. Have you ensured there are no other existing courses that duplicate this content?
    - b. Has CDE confirmed the proposed badge content?
    - c. Has the instructor(s) for this badge experience in teaching this content?
    - d. Is there a content knowledge minimum?
    - e. Is an assessment required?
  3. Does this badge provide a benefit for current students?
  4. Does this badge provide a benefit for future students?
  5. Is this badge co-sponsored with another organization, association, committee, etc.?

### In Workflow

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

### History

1. Nov 16, 2017 by clmig-jwehrheim
2. Feb 23, 2021 by Johanna Riemen (jriemen)
3. Feb 26, 2021 by Johanna Riemen (jriemen)

- Course:
- Badge:
- Participation:
- 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/digitalhadaenpricing/> 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...
- A Mason Digital Credentials Advisory Group may be developed to review badge...

**Banner Title:** **Bioinformatics & Compu Bio PhD**

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**

**Registrar/OAPI Use Only – SCHEV Letter**

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

**Concentration(s):**

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: Removing the requirement for two official transcripts. Removing the GRE requirement.

Why: These changes will allow us to ease the path into the program while still receiving enough information to make an informed admission decision.

### Catalog Published Information

**Total Credits** Total credits: 72

**Required:**

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

SC-PHD-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.

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

### Eligibility

Applicants should have a bachelor's degree in biology, computer science, or a related field, with a minimum GPA of 3.25 in the last earned degree. Applicants should have taken courses in molecular biology, cell biology, biochemistry, genetics, calculus, physical chemistry, computer programming and data structures, and probability and statistics. Students with deficiencies in one or more of these areas may be admitted provisionally and required to take additional courses, some of which may not be applicable to the degree's course total. Students whose undergraduate record does not include basic biochemistry will be required to take a basic course prior to [BINF 701](#) Systems Biology.

## Application Requirements

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To apply, prospective students should submit the [George Mason University Admissions Application](#), **a copy two copies** of official transcripts from each college and graduate institution attended, **a a** current résumé, and an expanded goals statement. Applicants should also include three letters of **recommendation**. ~~recommendation and an official report of scores obtained on the GRE general exam. Scores should be in the 45th percentile or above. The GRE requirement for admission to the doctoral program will be waived if the student holds a master's degree from an institution of higher education accredited by a Mason-recognized U.S. institutional accrediting agency or international equivalent.~~ TOEFL or IELTS scores are required of all international applicants.

**The GRE is not required for admission into this program.**

**Program-Specific Policies:**

## Policies

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

## Reduction of Credits

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For students entering the doctoral program with a master's degree in a related field from an institution of higher education accredited by a Mason-recognized U.S. institutional accrediting agency or international equivalent, the number of required credits may be reduced up to 30 credits, subject to approval of the program director and the college's associate dean for student affairs. See [AP.6.5.2 Reduction of Credits](#) for more information.

**Degree Requirements:**

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

## Doctoral Coursework

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### Fundamental Bioscience Courses

<a href="#">BINF 701</a>	Systems Biology	3
<a href="#">BINF 702</a>	Biological Data Analysis	3

### Core Bioinformatics Courses

<a href="#">BINF 690</a>	Numerical Methods for Bioinformatics	3
<a href="#">BINF 705</a>	Research Ethics	1
<a href="#">BINF 730</a>	Biological Sequence and Genome Analysis	3
<a href="#">BINF 731</a>	Protein Structure Analysis	3
<a href="#">BINF 740</a>	Introduction to Biophysics	3

### General Electives

Select 23-35 credits of approved general electives or independent research 23-35

Lab Rotation 3

[BINF 703](#) Bioinformatics Lab Rotation (taken three times)

Colloquium 3

[BINF 704](#) Colloquium in Bioinformatics (taken three times)

## Doctoral Committee and Advancement to Candidacy

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By the end of the semester when coursework is completed, the student must form a doctoral committee made up of a minimum of three graduate faculty members and take a written comprehensive exam. The exam includes written and oral components. Upon passing the comprehensive exam and submitting an acceptable dissertation proposal, the student is advanced to doctoral candidacy to begin the dissertation writing phase.

## Dissertation Research

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A minimum of 12 and maximum of 24 combined credits from [BINF 998](#) Doctoral Dissertation Proposal and [BINF 999](#) Doctoral Dissertation may be applied toward satisfying doctoral degree requirements. Students must take at least 3 credits of [BINF 999](#) Doctoral Dissertation.

Select 12-24 credits from the following:

12-24

[BINF 998](#) Doctoral Dissertation Proposal

[BINF 999](#) Doctoral Dissertation

Total Credits

12-24

## Doctoral Dissertation

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After advancing to doctoral candidacy, students work on their doctoral dissertation while enrolled in [BINF 999](#) Doctoral Dissertation. The dissertation should represent a significant contribution that is suitable for publication in a refereed scientific journal. The dissertation must be defended in a public forum before the dissertation committee and other interested faculty.

**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

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 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*

**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

**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**

Key: 419