Program Change Request

Date Submitted: 03/07/25 1:37 pm

Viewing: SC-MSP-BNFM : Bioinformatics Management, Professional Science Master's

Last approved: 04/26/24 1:05 pm

Last edit: 02/25/26 10:54 am

Changes proposed by: jbazaz

Catalog Pages Using this Program

Bioinformatics Management, Professional Science Master's

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

No

Effective Catalog:	2025-2026
Program Level:	Graduate
Program Type:	Master's
Degree Type:	Professional Science Masters

Title:

Bioinformatics Management, Professional Science Master's

Banner Title:	Bioinformatics Management PSM
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	

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. 03/07/25 1:42 pm Ramin Hakami (rhakami): Approved for SSB CC
2. 02/26/26 10:23 am Iosif Vaisman (ivaisman): Approved for SSB Program Chair

History

1. Nov 16, 2017 by clmig-jwehrheim
2. Mar 8, 2018 by rzachari
3. Jan 23, 2019 by Jennifer Bazaz Gettys (jbazaz)
4. Sep 9, 2019 by Jennifer Bazaz Gettys (jbazaz)
5. Feb 23, 2021 by jriemen

6. May 2, 2022 by Jennifer Bazaz Gettys (jbazaz)
7. Apr 26, 2024 by Jennifer Bazaz Gettys (jbazaz)

Concentration(s):	
Registrar/IRR Use Only – Concentration CIP Code	
College/School:	College of Science
Department / Academic Unit:	School of Systems Biology
Jointly Owned Program?	No
Is there an embedded degree as part of a program?	

Justification

What: Replacing an inactivated course, HAP 713, with HI 613. Removing the inactivated SWE 760.

Why: To keep the curriculum updated.

Total Credits Required:	Total credits: 31

Registrar's Office Use Only - Program Code:

SC-MSP-BNFM

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.

Eligibility

Applicants should have a bachelor's degree in biology, computer science, or a related field from an institution of higher education accredited by a Mason-recognized U.S. institutional accrediting agency or international equivalent with a GPA of at least 3.00 in their last 60 credits of study. Applicants should have taken courses in molecular biology, computer science, calculus, physical chemistry, and statistics. Students with deficiencies in one or more of these areas may be required to take additional courses from the undergraduate curriculum.

Application Requirements

To apply for this program, prospective students should submit the George Mason University Admissions Application and its required supplemental documentation, a goals statement, and two letters of recommendation. The GRE is not required for admission into this program.

Program-Specific Policies:

Policies

For policies governing all graduate programs, see AP.6 Graduate Policies.

Transferring Previous Graduate Credit into this Program

Previously earned and relevant graduate credits may be eligible for transfer into this program; details can be found in the Credit by Exam or Transfer section of this catalog.

Degree Requirements: Students should refer to the Admissions & Policies tab for specific policies related to this program.

Due to the varied course options and their associated prerequisites, students are encouraged to create a program of study with their faculty advisor by the end of their first semester of studies.

Bioinformatics Courses

BINF 630	Bioinformatics Methods	3
BINF 631	Molecular Cell Biology for Bioinformatics	3
BINF 702	Biological Data Analysis	3
Select two from the following or other BINF-prefixed courses in consultation with the faculty advisor:		6
BINF 633	Molecular Biotechnology	
BINF 634	Bioinformatics Programming	
BINF 650	Introduction to Bioinformatics Database Design	
BINF 731	Protein Structure Analysis	
BINF 732	Genomics	
BINF 740	Introduction to Biophysics	
Total Credits		15

Professional Skills Courses

Please note: MBA-prefixed courses are offered on an alternative semester schedule (view the Schedule of Classes for details). Considering this, it may be advisable to take these courses in one semester rather than over several.

BINF 705	Research Ethics	1

MBA 712	Project Management	3
Select one course from the following that hasn't previously been taken:		3
BIOL 508	Selected Topics in Animal Biology [1]	
COS 500	Professional Preparation for STEM Disciplines	
COS 600	Multidisciplinary Problem Solving and Leadership	
EVPP 638	Corporate Environmental Management and Policy	
AIT 671	Information System Infrastructure Lifecycle Management	
COMM 641	Environmental Communication	
GBUS 613	Financial Reporting and Decision Making	
GBUS 623	Marketing Management	
GBUS 643	Managerial Finance	
GBUS 653	Organizational Behavior	
GBUS 738	Introduction to Machine Learning for Business Applications	
or MBA 738	Introduction to Machine Learning for Business Applications	
GCH 691	Project Management in Public Health	
~~HAP 713~~	~~Project Management in Health Information Technology~~	
HI 613	Project Management in Health Information Technology	
MBA 712	Project Management	
MBA 726	Negotiations	
PUAD 781	Information Management: Technology and Policy	
SWE 625	Software Project Management	
Or other courses in consultation with the faculty advisor		
Total Credits		7

1 When the topic is Research & Development in Biotechnology Companies.

Scientific Electives

Close attention should be paid to each course's prerequisites.

Select 6 credits in courses that haven't previously been taken, tailored to suit interests and goals in consultation with the faculty advisor.	6

Big Data Analysis:	
CSI 695	Scientific Databases
AIT 580	Foundations of Data Processing
AIT 581	Problem Formation and Solving in Big Data
AIT 622	Determining Needs for Complex Big Data Systems
Synthetic and Systems Biology:	
BIOS 701	Systems Biology
CHEM 665	Protein-Protein Interactions: Methods and Applications
Human Health and Personal Genomics:	
BINF 732	Genomics
BIOL 562	Personalized Medicine
BIOL 566	Cancer Genomics
BIOL 665	Environmental Hazards to Human Health
BIOS 740	Laboratory Methods in Functional Genomics and Biotechnology
BIOS 741	Genomics
Software Development and Analysis:	
BINF 634	Bioinformatics Programming
SWE 510	Object-Oriented Programming in Java
SWE 619	Object-Oriented Software Specification and Construction
SWE 621	Software Design and Architecture
SWE 626	Software Project Laboratory
SWE 637	Software Testing
SWE 645	Component-Based Software Development
~~SWE 760~~	~~Course SWE 760 Not Found~~
Colloquium: [1]	
BINF 704	Colloquium in Bioinformatics (may be repeated for up to 3 credits)
Additional Internship Experience [2]	
BINF 795	Bioinformatics Internship

Total Credits	6

[1]
If chosen, it is recommended that students take the colloquium course early in their studies so that they may be exposed to various possibilities and areas of research presented by the speakers.

[2]
The maximum amount of internship credits that can be applied to the degree is 6 credits.

Internship

The internship component is intended to provide students with the opportunity to put into practice all of the skills and knowledge accumulated throughout their studies in this program. Students must arrange an internship with a private company, a governmental agency, a non-governmental organization, or some other entity with an interest in bioinformatics *and* management. Students must identify a specific person within that outside entity who will be the contact and manager of the internship.

Internship credit is never given for work previously done, or for work that would have been done in any case due to an existing employment relationship.

The internship work must produce one or more products such as: a comprehensive report, a departmental presentation, a research project, or an article. Internship placement and product type must be approved by the student's faculty advisor.

Further details and procedures for completing the internship can be found with the faculty advisor.

Three credits of internship		3
BINF 795	Bioinformatics Internship	
Total Credits		3

Retroactive Requirements Updates:

Plan of Study:

Program Outcomes

Additional Program Information

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

Courses offered via distance (if applicable):

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

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

Have you reached out to the Libraries to determine whether there are adequate resources to support your program? If not, please email Meg Meiman, Associate University Librarian for Learning, Research, and Engagement at mmeiman2@gmu.edu.

OAPI Use Only – Determination of SACSCOC Impact

Comments or Notes

Green Leaf Program Designation

Is this a Green Leaf program? No

Does this program cover material which crosses into another department?

Yes

Impacted Departments

Department
School of Business
Environmental Science & Policy
Computer Science

Additional Attachments

SCHEV Proposal

Executive Summary

Reviewer Comments

Additional Comments

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

%wi_required.eschtml%

Key: 422