Program Change Request

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

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

Last approved: 02/23/21 4:34 pm

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

Changes proposed by: jbazaz

Catalog Pages Using this Program

Bioinformatics Management, Professional Science Master's

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	dsterma@gmu.edu

Effective Catalog: 2022-2023

Program Level: Graduate

Program Type: Master's

Degree Type: Professional Science Masters

Title: Bioinformatics Management, Professional Science Master's

1. What was the process used with

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. 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 Johanna Riemen (jriemen)

b. Has CPE confirmed the proposed bas
c. Has the instructor(s) for this badge ex
f. Does this badge provide a benefit for cur
5. Is this badge co-sponsored with another
a. What is the organization, program, or dep

Earning Criteria

Course:
Badge:
Participant:
Payment:
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/digitalbadgepricing/ for more information

Estimated Number of Badges Expected to be Issued:

Notes:

All badges must be approved by CPE for

- A Mason Digital Credentials Advisory Group may be developed to review

Banner Title:	Bioinformatics Management PSM
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: Reducing required recommendation letters to two.

Why: To 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 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.
To apply for this program, please complete the George Mason University Admissions Application.
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. To apply, prospective students

should submit the George Mason University Admissions Application, supply an official transcript from each college and graduate institution attended, a current résumé, **two** ~~three~~ letters of recommendation, and an expanded goals statement. TOEFL or IELTS scores are required of all international applicants.
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.

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	Advanced Communication Skills for STEM	

GBUS 613	Financial Reporting and Decision Making
GBUS 623	Marketing Management
GBUS 643	Managerial Finance
GBUS 653	Organizational Behavior
GBUS 738	Data Mining for Business Analytics
or MBA 738	Data Mining for Business Analytics
GCH 691	Project Management in Public Health
HAP 713	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	Analytics: Big Data to Information
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	Software Analysis and Design of Real-Time Systems

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:

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

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

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 instructiona 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?

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%

Attached Document

Key: 422