



# Course Approval Form

For instructions see:  
<http://registrar.gmu.edu/facultystaff/catalog-revisions/course/>

## Action Requested:

☒ Create new course ☐ Inactivate existing course ☐ Reinstate inactive course

☐ Modify existing course (check all that apply)

☐ Title ☐ Credits ☐ Repeat Status ☐ Grade Type

☐ Prereq/coreq ☐ Schedule Type ☐ Restrictions

☐ Other:

## Course Level:

☐ Undergraduate

☒ Graduate

College/School: College of Science Department: School of Systems Biology

Submitted by: Iosif Vaisman Ext: 3-8431 Email: ivaism@gm.edu

Subject Code: BINF Number: 530

(Do not list multiple codes or numbers. Each course proposal must have a separate form.)

Effective Term: ☐ Fall ☒ Spring ☐ Summer

Year: 2016

Title: Current

Banner (30 characters max w/ spaces)

New: Introduction to Bioinformatics Methods

## Fulfills Mason Core Req? (undergrad only)

☐ Currently fulfills requirement

☐ Submission in progress

Credits: ☒ Fixed ☐ Variable

or 3 to

Repeat Status: ☒ Not Repeatable (NR) ☐ Repeatable within degree (RD) ☐ Repeatable within term (RT)

Maximum credits allowed: 3

Grade Mode: ☒ Regular (A, B, C, etc.) ☐ Satisfactory/No Credit ☐ Special (A, B, C, etc. +IP)

Schedule Type: ☒ Lecture (LEC) ☐ Lab (LAB) ☐ Recitation (RCT) ☐ Internship (INT)

(check one)  
LEC can include LAB or RCT

☐ Independent Study (IND) ☐ Seminar (SEM) ☐ Studio (STU)

## Prerequisite(s):

## Corequisite(s):

Graduate standing, or permission of instructor.

## Instructional Mode:

☐ 100% face-to-face

☒ Hybrid: ≤ 50% electronically delivered

☐ 100% electronically delivered

Restrictions Enforced by System: Major, College, Degree, Program, etc. Include Code.

## Are there equivalent course(s)?

☒ Yes ☐ No

If yes, please list BINF 630

## Catalog Copy for NEW Courses Only (Consult University Catalog for models)

Description (No more than 60 words, use verb phrases and present tense)	Notes (List additional information for the course)
Introduction to methods and tools for pairwise sequence comparison, multiple sequence alignment, phylogenetic analysis, protein structure prediction and comparison, database similarity searches, and discovery of conserved patterns in protein sequence and structures.	

Indicate number of contact hours: Hours of Lecture or Seminar per week: 3 Hours of Lab or Studio: 0

When Offered: (check all that apply) ☐ Fall ☐ Summer ☒ Spring

## Approval Signatures

Department Approval \_\_\_\_\_ Date \_\_\_\_\_ College/School Approval \_\_\_\_\_ Date \_\_\_\_\_

If this course includes subject matter currently dealt with by any other units, the originating department must circulate this proposal for review by those units and obtain the necessary signatures prior to submission. Failure to do so will delay action on this proposal.

Unit Name	Unit Approval Name	Unit Approver's Signature	Date

## For Graduate Courses Only

Graduate Council Member \_\_\_\_\_ Provost Office \_\_\_\_\_ Graduate Council Approval Date \_\_\_\_\_

For Registrar Office's Use Only: Banner \_\_\_\_\_ Catalog \_\_\_\_\_

revised 10/16/14

## Course Proposal Submitted to the College of Science Curriculum Committee (COSCC)

Course Number and Title: BINF 530 Introduction to Bioinformatics Methods

Date of Departmental Approval:

- Reason for the New Course: Introductory course offered for the Graduate Certificate and Master's programs in BCB
- Relationship to Existing Programs: We are assigning a new number to a required course for the Certificate program. It will be cross-listed with an existing course in the Master's program.
- Relationship to Existing Courses: Cross-listed with BINF 630
- Semester of Initial Offering: Spring 2016
- Proposed Instructors: Dr. Iosif Vaisman
- Insert Tentative Syllabus Below

### **BINF 530- Introduction to Bioinformatics Methods**

- 3 credits
- Instructor: [Iosif Vaisman](#)  
Office: OB, Room 312  
Office Hours: By appointment  
Phone: 703-993-8431
- **Course description:** The course covers theoretical approaches, techniques and computational tools for DNA and protein sequence and structure analysis. The topics also include biological databases and internet-based bioinformatics resources.
- **Grading:** grades will be based on homework assignments (33% + 33%) and final exam (34%).
- **Textbook:**  
Marketa J Zvelebil, Jeremy O Baum  
[Understanding bioinformatics](#)  
New York: Garland Science, 2008.
- [Syllabus](#)
- [Lecture 1, 1/22/2015](#), A1, A18  
[Lecture 2, 1/29/2015](#), A10, Ch.3  
[Lecture 3, 2/5/2015](#), A16, A19, Ch.3  
[Lecture 4, 2/12/2015](#), A11  
[Lecture 5, 2/19/2015](#), A11  
[Lecture 6, 2/26/2015](#), A7, A13, A14, Ch.4.1-4.7, Ch.5
- [Lecture 6, 2/28/2013](#), Ch.6, Ch.4.8-4.10  
[Lecture 7, 3/7/2013](#), Ch.4.8, Ch.6.6  
[Lecture 8, 3/21/2013](#), A17, Ch.9, Ch.10

[Lecture 9, 3/28/2013](#), Ch.2,11,12

[Lecture 10, 4/4/2013](#), Ch.2,11

[Lecture 11, 4/11/2013](#), Ch.2

[Lecture 12, 4/18/2013](#), Ch.13

[Lecture 13, 4/22/2013](#),

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- [Review topics](#)

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[Reading Materials](#)

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- [Exercises](#)