

Course Approval Form

For instructions:

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

Action Requested: (definitions available at website above)

☒ Create NEW ☐ Inactivate
☐ Modify (check all that apply below)

Course Level:

☒ Undergraduate ☐ Graduate

☐ Title
☐ Credits

☐ Repeat Status
☐ Schedule Type

☐ Prereq/coreq
☐ Restrictions

☐ Grade Mode
☐ Other: _____

College/School:

College of Science

Department:

Environmental Science & Policy

Submitted by:

Esther Peters

Ext:

3-3462

Email:

epeters2@gmu.edu

Subject Code:

BIOL

Number:

412

Effective Term:

☐ Fall

☒ Spring

☐ Summer

Year

2018

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

Title: Current

Banner (30 characters max w/ spaces)

New

Histotechniques

Fulfills Mason Core Req? (undergrad only)

☐ Currently fulfills requirement

☐ Submission in progress

Credits:

☒ Fixed →

☐ Variable →

☐ Lec + Lab/Rct →

3

to

0

or

Repeat Status:

(check one)

☒ Not Repeatable (NR)

☐ Repeatable within degree (RD) →

☐ Repeatable within term (RT) →

Max credits allowed:
(required for RT/RD status only)

Grade

☒ Regular (A, B, C, etc.)

Mode:

☐ Satisfactory/No Credit

(check one)

☐ Special (A, B C, etc. +IP)

Schedule Type:

(check one)

LEC can include LAB or RCT if linked sections will be offered

☒ Lecture (LEC)

☐ Lab (LAB)

☐ Recitation (RCT)

☐ Internship (INT)

☐ Independent Study (IND)

☐ Seminar (SEM)

☐ Studio (STU)

☐ Activity (ACT)

☐ Research (RSC)

☐ Student Teaching (STC)

☐ Thesis (THS-798/799)

☐ Dissertation (DIS-998/999)

Prerequisite(s) (NOTE: hard-coding requires separate Prereq Checking form; see above website):

Undergraduate courses in biology and chemistry or POI

Corequisite(s):

None

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

Equivalencies (check only as applicable):

☐ YES, course is 100% equivalent to _____

☒ YES, course renumbered to or replaces BIOL 508 _____

Catalog Copy (Consult University Catalog for models)

Description (No more than 60 words, use verb phrases and present tense)	Notes (List additional information for the course)
Introduces theory and methods for the preparation of tissue samples from animal or plant specimens for examination with light or electron microscopy.	Course will co-meet with BIOL 512, EVPP 412/512, and NEUR 461. Undergraduate students in this course will be graded according to a different rubric than the graduate students.
Indicate number of contact hours: When Offered: (check all that apply)	Hours of Lecture or Seminar per week: 3 Hours of Lab or Studio: _____
<input type="checkbox"/> Fall <input type="checkbox"/> Summer <input checked="" type="checkbox"/> Spring	

App

Depart

College/School Approval

Date

If this
those

any other units, the originating department must circulate this proposal for review by
a. Failure to do so will delay action on this proposal.

Unit

Unit Approver's Signature

Date

Undergraduate or Graduate Council Approval

UGC or GC Council Member

Provost's Office

UGC or GC Approval Date

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

The form above is processed by the Office of the University Registrar. This second page is for the COSCC's reference. Please complete the applicable portions of this page to clearly communicate what the form above is requesting.

FOR ALL COURSES (required)

Course Number and Title: BIOL 412

Date of Departmental Approval:

FOR INACTIVATED/REINSTATED COURSES (required if inactivating/reinstating a course)

- Reason for Inactivating/Reinstating:

FOR MODIFIED COURSES (required if modifying a course)

- Summary of the Modification:
- Text before Modification (title, repeat status, catalog description, etc.):
- Text after Modification (title, repeat status, catalog description, etc.):
- Reason for the Modification:

FOR NEW COURSES (required if creating a new course)

- Reason for the New Course: Students use light microscopy to read slides in cell biology, microbiology, immunology, biodiversity, anatomy and physiology, and histology courses to learn about how to recognize cells and tissues and understand their function and condition. To teach students how to make these histoslides and to introduce them to the possibilities of a career in histotechnology, this course was developed and uses the GMU Histology Laboratory, supervised by Dr. Esther Peters. Histotechniques can augment investigations in many disciplines, including botany, zoology, taxonomy, systematics, ecology, microbiology, molecular biology, biochemistry, physiology, toxicology, psychology, and pathology. In this course, advanced undergraduate and graduate students examine the science of histotechnology and apply these methods to prepare plant or animal tissue samples for the study of cells, tissues, organs, and organ systems using microscopy. This is an introductory course to enable graduate students to use this tool in their research, as well as to prepare students for further study in the health professions or to obtain HT or HTL certification for a career in histotechnology after completion of their undergraduate degree. Histotechnologists are in great demand in human and veterinary medicine (hospitals and diagnostic laboratories), industry (pharmaceutical and biomedical device development), and academic and applied research. The course has been taught since 2009, taken by biology, environmental science, neuroscience, and bioengineering majors; graduate students have used the laboratory to prepare tissue sections for their research. With the establishment of Ph.D. and M.S. programs in Evolutionary Biology this fall, the Department of Biology decided to obtain a permanent course number, which was also supported by the Department of Environmental Science & Policy, since more students may be interested in taking this course for their research. Comparative histology supports molecular genetics by providing "phenotypic anchoring" for 'omics investigations to confirm the health status of the organism(s) being studied (were gene mutations expressed, a parasite or pathogenic microorganism present, or another abnormality affecting the tissue sampled?), as well as aiding in the systematic classification of organisms through study of the structure and composition of tissues, organs, and organ systems. Dr. Peters has also developed procedures to use immunohistochemistry and fluorescent in situ hybridization in histological studies.

- Relationship to Existing Programs: None
 - Relationship to Existing Courses: Taught annually as BIOL 508 Selected Topics in Animal Biology: Histotechniques beginning in Spring 2009, co-meeting with NEUR 461 Selected Topics in Neuroscience beginning in 2015.
 - Semester of Initial Offering: Spring 2018
 - Proposed Instructors: Dr. Esther Peters
-