Course Approval Form

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

Action Requested: (definitions available at website above)
- [ ] Create NEW
- [ ] Inactivate
- [x] Modify (check all that apply below)

Course Level:
- [ ] Undergraduate
- [x] Graduate

- [ ] Title (must be 75% similar to original)
- [x] Credits
- [ ] Repeat Status
- [ ] Schedule Type
- [ ] Prereq/coreq
- [ ] Restrictions
- [ ] Grade Mode
- [ ] Other:

College/School: College of Science
Department: Biology
Submitted by: Larry Rockwood
Ext: 3-1031
Email: lrockwoo@gmu.edu

Subject Code: BIOL
Number: 574
(Do not list multiple codes or numbers. Each course proposal must have a separate form.)

Effective Term:
- [x] Fall
- [ ] Spring
- [ ] Summer

Year 2017

Title:
Current: Population Genetics
Banner (30 characters max w/ spaces):
New:

Fulfills Mason Core Req? (undergrad only)
- [ ] Currently fulfills requirement
- [ ] Submission in progress

Credits: (check one)
- [x] Fixed → 3
- [ ] Variable → to
- [ ] Lec + Lab/Rct→ 0 or

Repeat Status: (check one)
- [x] Not Repeatable (NR)
- [ ] Repeatable within degree (RD) →
- [ ] Repeatable within term (RT) →

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

Grade Mode: (check one)
- [x] Regular (A, B, C, etc.)
- [ ] Satisfactory/No Credit
- [ ] Special (A, B C, etc. +IP)

Schedule Type: (check one)
LEC can include LAB or RCT if linked sections will be offered
- [x] Lecture (LEC)
- [ ] Lab (LAB)
- [ ] Recitation (RCT)
- [ ] Internship (INT)
- [ ] Independent Study (IND)
- [ ] Seminar (SEM)
- [ ] Studio (STU)

Prerequisite(s) (NOTE: hard-coding requires separate Prereq Checking form; see above website):
BIOL 308 and 311, or permission of instructor

Corequisite(s):

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

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)
Genetic structure and dynamics of populations, both real and ideal.	
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) [x] Fall [ ] Summer [ ] Spring	

Approval Signatures

[redacted] 2016

College/School Approval — Date

If [redacted] by any other units, the originating department must circulate this proposal for review by t[redacted]omission. Failure to do so will delay action on this proposal.

Unit Name	Unit Approval Name	Unit Approver's Signature	Date

Undergraduate or Graduate Council Approval

UGC or GC Council Member — Provost's Office — UGC or GC Approval Date

Form revised 9/2/2016

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 574: Population Genetics

Date of Departmental Approval: September 23, 2016

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:

This course meets for 3 hours per week but has been given 4 credits in the past. The change brings the course into line with how it is actually taught. In addition, as a required course in the new concentration in Biocomplexity and Evolutionary Biology, it brings the concentration into line with other concentrations within the Biosciences Ph.D. program that have a 12 credit core.

FOR NEW COURSES (required if creating a new course)

- Insert Tentative Syllabus Below

Biology 574
Population Genetics
Fall 2016

Valerie A. Buckley-Beason, Ph.D.
Adjunct Professor
Department of Biology
703 608 0165 (personal cell)
vbuckley@gmu.edu

Course Objectives

This course is designed to give advanced undergraduates and graduate students an introduction to demographic, quantitative and evolutionary genetic models. These models provide a framework for the understanding and analysis of genetic diversity and evolutionary process. The textbook readings should acquaint the student with the basic theories of population genetics and give some examples of experimental observations that illustrate tests of these theories. Additional readings will provide examples of current experimental and theoretical approaches to population genetics. Examples will be used whenever possible to test various theoretical models. The course is focused on the application of population genetics to answer questions about variation including such areas as how much genetic variation is there between and within populations, what are some of the tools for measuring genetic relationships of populations and graphically representing them, how do we apply population genetics to such areas as paternity testing and forensic identification. By the end of the course

students should be able to make predictions about micro-evolutionary process and should understand what types of forces act in determining the genetic composition of populations.

Text:

The required texts are: *Genetics in Populations*, 4th edition, Phillip W. Hedrick and *additional* readings as assigned.

Exams/Projects

There will be a mid-term and a final project; a paper and a 30 minute presentation.

Project -
There will be a project due at the end of the semester. Specific details will be provided on Blackboard.

Basis of Final Grade		**Final Grade Calculations**	
Mid-term Exam	**30%**	**A**	**93% and higher**
Presentation	**30%**	**A-**	**90 – 92.99%**
		B+	**87-89.99%**
Project	**30%**	**B**	**83-86.99%**
Participation	**10%**	**B-**	**80-82.99%**
		C	**70-79.99%**
		F	**<70%**

Schedule:

September 7	**Background and course discussion**
September 14	**Chapter 1**
September 21	**Chapter 2**
September 28	**Chapter 3**
October 5	**Chapter 4**
October 12	**Chapter 5**
October 19	**Mid-term exam**
October 26	**Phylogenetics**
November 2	**Chapter 7 - Abbreviated**
November 9	**Chapter 8 – Abbreviated**
November 16 and 30	**Case studies / open discussion**
December 7 and 14	**Final project presentations**