Course Approval Form

For approval of new courses and deletions or modifications to an existing course.

registrar.gmu.edu/facultystaff/curriculum

Action Requested:

[X] Create new course [ ] Inactivate existing course

[ ] Modify existing course (check all that apply)

[ ] Title [ ] Credits [X] Repeat Status [ ] Grade Type

[ ] Prereq/coreq [ ] Schedule Type [ ] Restrictions

[ ] Other:

Course Level:

[X] Undergraduate

[ ] Graduate

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

Submitted by: Anne Verhoeven **Ext:** 3-1572 **Email:** averhoev@gmail.com

Subject Code: MLAB **Number:** 407

(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: Clinical Molecular Biology

Banner (30 characters max including spaces):

New:

Credits: (check one) [ ] Fixed [X] Variable or 1 to ~~99~~ 10 (12)

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

Maximum credits allowed: 99

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

[ ] Lecture (LEC) [x] Lab (LAB) [ ] Recitation (RCT) [ ] Internship (INT)

[ ] Independent Study (IND) [ ] Seminar (SEM) [ ] Studio (STU)

Prerequisite(s):

Completion of requirements for BS with major in Medical Laboratory Science except for the 30 credits of professional study.

Corequisite(s):

Instructional Mode:

[x] 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 [xx] No

If yes, please list

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)
Course presents advanced methods in nucleic acid testing to human medico-legal, forensic, and pathology applications. Topics include but are not limited to: Polymorphisms, Paternity Testing, Single Nucleotide Polymorphisms, Bone Marrow Engraftment, Mitochondrial DNA Polymorphisms and Disorders, Chromosomal Abnormalities, Single Gene Disorders, Lysosomal Storage Disorders, Cystic Fibrosis, and Quality Assurance in the Molecular Biology laboratory.	

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

When Offered: (check all that apply) [ ] Fall [ ] Summer [ ] Spring

Approval Signatures

College/School Approval Date

If proposal affects courses offered by any other units, the originating department must circulate this proposal for review by the appropriate units and obtain 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 11/8/11*

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 401

Date of Departmental Approval: November 18, 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:

FOR NEW COURSES (required if creating a new course)

Reason for the New Course:

Recently diagnostic tests have resulted in many of our clinical affiliates adding the studying of molecular biology to their programs. In order to recognize this change in our students' clinical training we are adding MLAB 407 to our program. MLAB 407 will be taught by faculty at our affiliated clinical training sites. Since each program differs in emphasis we must assign a variable amount of credit for this class.

- Relationship to Existing Programs:
  None
- Relationship to Existing Courses:
  None
- Semester of Initial Offering:
  Fall 2017
- Proposed Instructors:
  Affiliated Faculty at Affiliated Clinics and Hosptials
- Insert Tentative Syllabus Below

Syllabus
Clinical Molecular Biology

Instructor: Team Taught

Masimichi Ito, PhD.; Kasinathan Muralidharan, PhD., Meghan Starolis, PhD., Chris Spence, PhD.

Guest Lecturers:

Nicole Christacos, PhD.; Harvey Vandenburg, MHA, MT (ASCP) DLM; Renee Mohrmann, MD

Human Molecular and Chromosomal Applications and Pathology

This course presents advanced methods in nucleic acid testing to human medico-legal, forensic, and pathology applications. Topics include: Polymorphisms, RFLP, Paternity Testing, Linkage, Single Nucleotide Polymorphisms, Bone Marrow Engraftment, Mitochondrial DNA Polymorphisms and Disorders, Chromosomal Abnormalities, Patterns of Inheritance, Single Gene Disorders, Lysosomal Storage Disorders, Cystic Fibrosis, Trinucleotide Repeats, Genomic Imprinting , Array CGH, Molecular Oncology, HLA and Transplantation, and Quality Assurance in the Molecular Biology laboratory

Text: Molecular Diagnostics: Fundamentals, Methods, and Clinical Applications, Lela Buckingham, 2nd edition

Grading:

Exam Average (3 exams) 100%

A = 90% and above

B = 80% - 89%

C= 70%- 79%

Failing: less than 70%

Students with less than 70% will be withdrawn from the program.

Course Agenda:

Week #		Date	No. of Hours	Time	Subject	Lecturer
1	W		2	2pm-4pm	Polymorphisms	Dr. Ito
2	W		2	2pm-4pm	RFLP	Dr. Ito

3	W		2	2pm-4pm	Paternity Testing	Dr. Ito
4	M		1	2pm-3pm	Linkage, Single Nucleotide Polymorphisms	Dr. Muralidharan
	W		1	2pm-3pm	Bone Marrow Engraftment	Dr. Muralidharan Dr. Mohrmann
5	W		2	2pm-4pm	Mitochondrial DNA Polymorphisms	Dr. Ito
	F		3	2pm-5pm	Chapter 11 Review and Exam	Harvey Vandenburg
6	M		2	10am-12pm	Chromosomal Abnormalities	Dr. Christacos
	W		2	10am-12pm	Patterns of Inheritance, single gene disorders	Dr. Christacos
7	TU		2	2pm-4pm	DVT, Cytochrome P-450	Dr. Muralidharan
	W		2	2pm-4pm	Lysosomal Storage Disorders, Cystic Fibrosis, Limitations	Dr. Spence
8	TU		2	2pm-4pm	Trinucleotide Repeats	Dr. Muralidharan
	W		2	2pm-4pm	Genomic Imprinting	Dr. Spence
9	W		2	2pm-4pm	Mitochondrial Disorders	Dr. Ito
10	W		2	10am-12pm	Array CGH	Dr. Christacos
11	W		2	2-4p	Molecular Oncology 1	Dr. Spence
12	W		2	10a-12p	Molecular Oncology 3	Dr. Christacos
13	W		2	10a-12p	Molecular Oncology 4	Dr. Mohrmann
	F		3	2pm-5pm	Review and Exam Chapter 14	Harvey Vandenburg
14	W		2	TBD	HLA	Dr. Muralidharan
15	W		2	9am-11am	Quality Assurance in the Molecular Biology Laboratory	Dr. Starolis
16	TU		3	2pm-5pm	Review and Exam Chapters 15 &16	Harvey Vandenburg

Academic Integrity
GMU is an Honor Code university; please see the University Catalog for a full description of the code and the honor committee process. The principle of academic integrity is taken very seriously and violations are treated gravely. What does academic integrity mean in this course? Essentially this: when you are responsible for a task, you will perform that task. When you rely on someone else's work in an aspect of the performance of that task, you will give full credit to those people in the proper, accepted form. When doing homework, the work must be yours. It is totally unacceptable to copy the work of another student in this course in any form.

GMU Email Accounts
Students must use their Mason email account to receive important University information, including messages related to this class. See http://masonlive.gmu.edu for more information.

Other Useful Campus Resources:
Writing Center: A114 Robinson Hall; (703) 993-1200; http://writingcenter.gmu.edu

UNIVERSITY LIBRARIES "Ask a Librarian" http://library.gmu.edu/mudge/IM/IMRef.html

Counseling and Psychological Services (CAPS): (703) 993-2380; http://caps.gmu.edu

University Policies
The University Catalog, http://catalog.gmu.edu, is the central resource for university policies affecting student, faculty, and staff conduct in university academic affairs. Other policies are available at http://universitypolicy.gmu.edu/. All members of the university community are responsible for knowing and following established policies.