Washington State University
MAJOR CURRICULAR CHANGE FORM -- NEW/RESTORE COURSE

- Please attach rationale for your request, a complete syllabus, and explain how this impacts other units in Pullman and other campuses (if applicable).
- Obtain all required signatures with dates.
- Provide original stapled packet of signed form/rationale statement/syllabus PLUS 10 stapled copies of complete packet to the Registrar's Office, campus mail code 1035.
- Submit one electronic copy of complete packet to wsu.curriculum@wsu.edu.

Requested Future Effective Date: Spring 2016 (term/year) Course Typically Offered: Spring

DEADLINES: For fall term effective date: October 1st; for spring or summer term effective date: February 1st. See instructions.
NOTE: Items received after deadlines may be put to the back of the line or forwarded to the following year. Please submit on time.

☐ New Course
☐ Temporary Course
☐ Restore Course

MBios

525

Advanced Topics in Genetics

course subject/crosslist course no. title
V 1-2,3

Recommended Prep: MBios 503 or an equivalent course providing a basic understanding of molecular biology or molecular genetics.

Credit hrs lecture hrs per week lab or studio hrs per week prerequisite

Description for catalog: V 1-3, May be repeated for credit; cumulative maximum 4 hours.

Recent genetics research in selected areas.

Additional Attributes: Check all that apply.
☐ Crosslisting (between WSU departments)*
☐ Variable credit: 1-3

☐ Conjoint listing (400/500):

☐ Repeat credit (cum. max. hrs): 4

Special Grading: ☐ S, F; ☐ A, S, F (PEACT only); ☐ S, M, F (VET MED only); ☐ H, S, F (PHARMACY, PHARDSCI only)

☐ Cooperative with UI

☐ Other (please list request):

The following items require prior submission to other committees/depts. (SEE INSTRUCTIONS.)

☐ Request to meet Writing in the Major [M] requirement (Must have All-University Writing Committee Approval.)

☐ Request to meet UCORE in ________________ (Must have UCORE Committee Approval) See instructions.)

☐ Special Course Fee ________________ (Must submit request to University Receivables.)

Contact: Kwan Hee Kim Phone number: 335-7022 Campus mail code: 7520
Email: khkim@vetmed.wsu.edu Instructor, if different: Patricia Hunt & Terry Hassold

Chair / date

Dean / date

All-University Writing Com / date

Chair (if crosslisted/interdisciplinary)*

Dean (if crosslisted/interdisciplinary)*

UCORE Committee Approval Date

Catalog Subcommittee Approval Date

GSC or AAC Approval Date

Faculty Senate Approval Date

*If the proposed change impacts or involves collaboration with other units, use the additional signature lines provided for each impacted unit and college.
Proposal to convert MBioS 525 (Advanced Topics in Genetics) to a modular format

Rationale:

The SMB faculty has determined that it is advantageous to increase the flexibility of elective course offerings in the PhD in Molecular Biosciences degree program. Therefore, we will change MBioS 525 from a variable 1-2 credit course to a variable 1-3 credit course. This change will make the course more accessible to graduate students in all CVM PhD programs and to students from other life science graduate programs at WSU. Students will be allowed to take the course for a maximum of 4 credits during their program of study. A sample syllabus for a 1 credit offering of the revised MBioS 525 course is attached to this Major Curriculum Change form.
MBioS 525
Advanced Topics in Genetics:
Genes, genomes, and society

1 Credit

Spring 2016

Instructors:
Patricia Hunt
BLS 333
Office Hours: by appointment
Phone: 5-4954
e-mail: pathunt@vetmed.wsu.edu

Terry Hassold
BLS 332
Office Hours: By appointment
Phone: 5-4953
Email: terryhassold@vetmed.wsu.edu

Course meeting times and days: MWF 9:10-10:00 AM
Room: TBD

Description
2013 marked the 10th anniversary of the sequencing of the human genome and the 60th anniversary of the discovery of the DNA double helix. Advances in genetics (the study of individual genes) and genomics (the study of an entire genome) have fundamentally altered our understanding of biology. This course will focus on current topics in human genetics, exploring the science and discussing the philosophical, ethical and societal concerns raised by recent scientific advances.
**Recommended Preparation:** MBioS 503 or an equivalent course providing a basic understanding of molecular biology or molecular genetics.

**Course Grading:** Students are expected to read all assigned papers and participate in class discussions. Grades will be based on the following assessments:

1. Participation - 30 points. Class attendance is mandatory and students are expected to read all assigned papers and be able to contribute to the class discussion of concepts and explain data in individual figures/tables and the authors' interpretations.

2. Problem sets - 20 points. Students will be required to complete two problem sets during the course, each worth 10 points. Each problem will be outlined in class and students will be provided with individual data sets and asked to evaluate them, generate figures summarizing the data, provide a written interpretation of the results, and be prepared to present their findings during the next class session.

3. Oral presentation-50 points. Students will choose a paper from a topic list provided during the first week of class, write a brief News and Views type summary of it, and provide a brief oral presentation in class. Written and oral presentations (25 points each) will be assessed on the basis of clarity, appropriate coverage of the topic, and ability of the student to handle questions posed following the oral presentation.

**Grading Overview:**

<table>
<thead>
<tr>
<th>Component</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participation</td>
<td>30 pts</td>
</tr>
<tr>
<td>Problem Sets</td>
<td>2 x 10 pts</td>
</tr>
<tr>
<td>Written Presentation</td>
<td>25 pts</td>
</tr>
<tr>
<td>Oral Presentation</td>
<td>25 pts</td>
</tr>
<tr>
<td>Total</td>
<td>100 pts</td>
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</tbody>
</table>

**Grade Distribution:**

- 90-100% A
- 80-89% B
- 70-79% C
- 60-69% D
- <60% F

**Late Assignment Policy:** It is expected that all assignments will be submitted in a timely fashion. Failure to do so will result in a 5-10pt reduction. Exceptions will, of course be made in the event of extenuating circumstances.
Learning objectives

At the end of this course students will be able to:

a. Describe the basic features of the human genome and the complexities of human gene mapping.
b. Demonstrate a working knowledge of human gene mutations, their frequency and their causes.
c. Understand the potential risks to the human genome posed by environmental factors and assisted reproductive technologies.

Put in here a map of Learning objectives onto course assessments

<table>
<thead>
<tr>
<th>Learning Objective</th>
<th>How assessed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Describe the basic features of the human genome and the complexities of human gene mapping</td>
<td>In class discussion</td>
</tr>
<tr>
<td></td>
<td>Assigned papers</td>
</tr>
<tr>
<td>Demonstrate a working knowledge of human gene mutations, their frequency and their causes</td>
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</tbody>
</table>

Assigned reading for class

NY times Opinion "My Medical Choice" Angelina Jolie. 5/14/2013
http://www.nytimes.com/2013/05/14/opinion/my-medical-choice.html?smid=pl-share
NY times "Jolie's disclosure of preventative mastectomy highlights dilemma. 5/14/2013
Regalado (2014) For one baby, life begins with genome revealed. MIT Review

Papers for student assignments

Student Conduct Statement
Students are encouraged to work with classmates to understand the assigned papers and discussion materials. However, each student must independently demonstrate an understanding of the assigned material in class discussions. Students who violate WSU’s Standards of Conduct for Students will receive an F as a final grade in this course, will not have the option to withdraw from the course and will be reported to the Office Student Standards and Accountability. Cheating is defined in the Standards for Student Conduct WAC 504-26-010 (3). It is strongly suggested that you read and understand these definitions.

Accommodation Policy
Reasonable accommodations are available for students with a documented disability. If you have a disability and may need accommodations to fully participate in this class, please visit the Access Center (Washington Building 217; 509-335-3417) to schedule an appointment with an Access Advisor. All accommodations MUST be approved through the Access Center. For more information, contact a Disability Specialist:
http://accesscenter.wsu.edu, Access.Center@wsu.edu

Safety Statement
Washington State University is committed to enhancing the safety of the students, faculty, staff, and visitors. It is highly recommended that you review the Campus Safety Plan (http://safetyplan.wsu.edu/) and visit the Office of Emergency Management web site (http://oem.wsu.edu/) for a comprehensive listing of university policies, procedures, statistics, and information related to campus safety, emergency management, and the health and welfare of the campus community.

Tentative Schedule of Studies

Week 1  Introduction

M – Welcome, course organization (Topic paper selection)
W - Genes and genomes, a primer
F - The human genome and human gene mapping tools

Week 2  Assessing genetic disease risk and choosing to know

M – Huntington’s disease
W – Prenatal screening and diagnosis
F - Problem set: Babies as transplant donors: ‘savior siblings’

Week 3

M – Genetics and cancer
W – Copy number variation and genetic disease
F - Problem set: Treating untreatable disorders: a Down syndrome example

Week 4  Environmental effects on genetic risk

M – Developmental origins of adult health and disease
W – Assisted reproductive technology and genetic diagnosis
F - Mitochondrial disease treatment

Week 5  Presentation of student papers