General Genetics I: Genetics 467 Syllabus Fall 2016

COURSE DESCRIPTION:
The course will cover transmission genetics and central dogma. The scope of the topics and level will be equivalent to the current Genetics 466, however we are allotting twice the amount of time to cover these topics as compared to the current Genetics 466. The extra time will allow instructors to provide more examples for concepts, review more problems in class, and expand the use of active learning exercises in class.

INSTRUCTORS:
Alternating years.
(John Doebley and Chris Hittinger) (Qiang Chang and Al Laughon)

TEACHING ASSISTANT:
(One TA, TBA) Office hours: by appointment

CLASS:
MWF 11AM-11:50AM in TBA

OFFICE HOURS:
TBA or by appointment with both instructors.

COURSE WEB SITE: Login at learnUW.wisc.edu and navigate to the Genetics 467 course site. Course content, discussion boards, quizzes and the gradebook will be found at this site.

RECOMMENDED TEXTS:

Introduction to Genetic Analysis, 10th Edition by Griffiths, Wessler, Carroll and Doebley (2012), W. H Freeman and Company. ISBN 1-4292-2943-8

Solutions Manual for Introduction to Genetic Analysis, 10th Edition by Scott, Sia, Brockett, Fixsen and Lavett (2012) W.H. Freeman and Company. ISBN 1429201770

ASSESSMENT:

There will be six quizzes throughout the semester that will be conducted during the normal lecture hour.

There will be a final cumulative exam.

You are allowed notes that will fit on a 3x5 inch notecard (both sides can be used), but you must turn the card in with your exam (you can get it back after the exam is graded). You are allowed a calculator (nonprogrammable) but no cell phones or ipods.

GRADING: The four exams will be weighted equally (100 points each).

Grading Scale:

A	90%
AB	86-89%
B	80%

BC 76-79%
C 70%
D 60%
F <60%

ASSIGNED PROBLEMS: Homework problems are assigned to help you understand the material and prepare for the exams. Homework will not be collected or graded but IT IS HIGHLY ADVISABLE TO DO THE PROBLEMS at the end of each chapter. Many exam questions will be problem-oriented.

SUGGESTED READINGS: It is highly advisable to read the suggested sections of the textbook before every lecture. This will help in understanding the material presented during the lectures. Exams will be on the material discussed during the lectures, and in the related problems. Hence, it is also highly recommended to attend all lectures and assigned discussion sections.

Lecture		Date	Instructor	Topics
1	F	Sept 2	JD	The Study of Inheritance: three vignettes
2	W	Sept 7	JD	Mendelism
3	F	Sept 9	JD	DNA, Genes, Chromosomes, & Genomes
4	M	Sept 12	JD	Cell Cycle, Mitosis and Meiosis
5	W	Sept 14	JD	Probability for Genetic Events I
6	F	Sept 16	JD	Probability for Genetic Events II
7	M	Sept 19	**JD/TA**	**Problem Session and review**
8	W	Sept 21	**JD/TA**	**Quiz 1**
9	F	Sept 23	JD	Testing Genetic Hypotheses
10	M	Sept 26	JD	Extensions to Mendelism (epistasis)
11	W	Sept 28	JD (AL)	Model Organisms and Forward Genetics
12	F	Sept 30	JD	Pathways & Mosaic Analysis
13	M	Oct 3	JD	Chromosomes, Sex and Mendel
14	W	Oct 5	**JD/TA**	**Problem Session and review**
15	F	Oct 7	**JD/TA**	**Quiz 2**
16	M	Oct 10	JD	Variation in Chromosome Number
17	W	Oct 12	JD	Variation in Chromosome Structure
18	F	Oct 14	JD	Linkage and Mapping I (3-pt cross)
19	M	Oct 17	JD	Linkage and Mapping II (tetrad analysis)
20	W	Oct 19	JD	Linkage and Mapping III (advanced mapping)
21	F	Oct 21	**JD/TA**	**Problem Session and review**
22	M	Oct 24	**JD/TA**	**Quiz 3**
23	W	Oct 26	CH	DNA: The Secret of Life
24	F	Oct 28	CH	DNA Replication
25	M	Oct 31	CH	Central Dogma: Transcription
26	W	Nov 2	CH	Central Dogma: The Genetic Code
27	F	Nov 4	CH	Central Dogma: Translation
28	M	Nov 7	**CH/TA**	**Problem Session and review**
29	W	Nov 9	**CH**	**Quiz 4**
30	F	Nov 11	CH	Mutations, DNA Repair
31	M	Nov 14	CH	DNA Repair, Recombination
32	W	Nov 16	CH	Transposable Elements
33	F	Nov 18	CH	The Bacterial Network of Life

34	M	Nov 21	**CH/TA**	**Problem Session and review**
35	W	Nov 23	**CH**	**Quiz 5**
36	M	Nov 28	CH	Polymerase Chain Reaction (PCR)
37	W	Nov 30	CH	DNA Cloning, Bioengineering
38	F	Dec 2	CH	DNA Sequencing
39	M	Dec 5	CH	The Human Genome
40	W	Dec 7	CH	Genomics and Bioinformatics
41	F	Dec 9	CH	Evaluations and Summary Lecture
42	M	Dec 12	**CH/TA**	**Problem Session and review**
43	W	Dec 14	**CH**	**Quiz 6**