

Biology 210: Principles of Genetics
Section 2
Spring, 2013 Class Syllabus

Course and Instructor Information

Meeting times: Lecture: M, Tu, Th 3:00 pm - 3:50 pm Sci A121
 Final Exam: Wednesday, May 15, 14:45 - 16:45

Instructor: Dr. Matt Rogge
Office: TNR 441
Phone: 346-2506
Email: mrogge@uwsp.edu

Office hours: M, W 10-11 am
Other times by appointment

Course Description Genetics is a field that is becoming increasingly important in all fields of biology. It is important that students in any field related to biology have a fundamental understanding of genetics, as it is likely that you will encounter it at some point in your career. In this class, we will study DNA as the genetic material of all organisms, how it is replicated and transferred, and how changes in the DNA sequence result in variability within populations. In addition, we will discuss how advances in genetics have led to advancements in medicine and biotechnology.

Course Objectives

- Become familiar with the language and basic concepts of genetics
- Familiarize yourself historical studies in genetics that provided the groundwork for the modern day study of genetics
- Learn how genes are transferred from parents to offspring and how variation in those genes occurs
- Understand the molecular biology behind genetics (transcription, translation, etc)
- Learn how genetic changes can result in changes that may or may not be beneficial to an organism
- Learn how genetic material is utilized and manipulated in biotechnology
- Learn how genetic principles are applied at a population level to study evolution

Required Texts

Brooker, R. J. 2012. Genetics: Analysis and Principles, 4th edition. McGraw-Hill, New York, New York. Available from text rental.

Attendance

Attendance in lecture is strongly recommended to ensure exposure to all material covered in class, but no formal attendance will be taken. Attendance at exams is **REQUIRED**. Make-up exams will only be administered in the event of illness or emergency, which will also require documentation. If you are aware ahead of time of a conflict with the exam period, a meeting with the instructor is required to discuss the situation, and rescheduling may occur at the **INSTRUCTOR'S** discretion.

Grading

Your grade will be determined by the total points possible. Grades will not be curved. If you feel an error has been made in grading, you have 48 hours from the time you received the grade to contact the instructor with your reasoning. The student will meet with the instructor to discuss the grading, and the exam will be regraded and returned.

Quizzes

There will be nine quizzes worth a total of 200 points (see schedule). Each quiz is worth 25 points, and the lowest quiz score will be dropped. There will be no makeup points for missing a quiz.

Exams

There will be three exams during normal lecture times (see schedule) and one during finals week (not comprehensive). Each exam is worth 100 points. No exam grades will be dropped. The only excuses for missing an exam will be a death in the family, violent illness, or accident, and written evidence of some kind will be required in order to make up a missed exam. **NO EXCEPTIONS.**

Total: 600 points

Grades will be calculated by dividing the total points received by the total points possible and multiplied by 100. The following scale will be used to assign a final grade.

93 to 100%	A	73 to 76%	C
90 to 92%	A-	70 to 72%	C-
87 to 89%	B+	67 to 69%	D+
83 to 86%	B	60 to 66%	D
80 to 82%	B-	<60%	F
77 to 79%	C+		

Tutoring

A tutoring group has been set up for this section of Biol 210 through the UWSP TLC. A schedule can be found on the TLC website <http://www.uwsp.edu/tlc>.

Expectations

You are responsible for attending lecture in order to ensure exposure to all the material covered. You are responsible for asking questions for clarification of topics that you do not fully understand. I am more than willing and happy to meet with you outside of class to further explain any topics. You can stop by during office hours or call/email/see me after class to set up an appointment outside of office hours. If there is any way I can assist you in this class, do not hesitate to ask, and I will do my best to help.

UWSP values a safe, honest, respectful, and inviting learning environment. In order to ensure that each student has the opportunity to succeed, we have developed a set of expectations for all students and instructors. This set of expectations is known as the *Rights and Responsibilities* document, and it is intended to help establish a positive living

and learning environment at UWSP. Visit here for more information:
<http://www.uwsp.edu/stuaffairs/Pages/rightsandresponsibilities.aspx>

Academic integrity is central to the mission of higher education in general and UWSP in particular. Academic dishonesty (cheating, plagiarism, etc.) is taken very seriously. Don't do it! The minimum penalty for a violation of academic integrity is a failure (zero) for the assignment. For more information, see the UWSP "Student Academic Standards and Disciplinary Procedures" section of the *Rights and Responsibilities* document, Chapter 14, which can be accessed here:
<http://www.uwsp.edu/stuaffairs/Documents/RightsRespons/SRR-2010/rightsChap14.pdf>

Access for all Students

The Americans with Disabilities Act (ADA) is a federal law requiring educational institutions to provide reasonable accommodations for students with disabilities. For more information about UWSP's policies, visit:
<http://www.uwsp.edu/stuaffairs/Documents/RightsRespons/ADA/rightsADAPolicyInfo.pdf>

If you have a disability and require classroom and/or exam accommodations, please register with the Disability and Assistive Technology Center and then contact me **AT THE BEGINNING OF THE COURSE**. I am happy to help in any way that I can, but you need to be registered. For more information, please visit the Disability and Assistive Technology Center, located on the 6th floor of the Learning Resource Center (the Library). You can also find more information here:
<http://www4.uwsp.edu/special/disability/>

Cell Phones

Please turn off/mute/set to vibrate any electronic devices that could interrupt class (lab or lecture) before class begins. If it is a personal emergency, feel free to excuse yourself from the class and communicate outside of the classroom.

TENTATIVE SCHEDULE

Week	Date	Topic	Chapter
1	Jan 22	Syllabus and Overview of Genetics	1
	Jan 24	Mendelian Inheritance	2
2	Jan 28	Pedigrees and Chi Square Analysis	2
	Jan 29	Cell Cycle and Mitosis	3
	Jan 31	Quiz 1 / Meiosis and Gametogenesis	3
3	Feb 4	Inheritance Patterns and Sex-Linked Traits	4
	Feb 5	Gene Interactions	4
	Feb 7	Quiz 2 / Non-Mendelian Inheritance	5
4	Feb 11	Gene Linkage and Genetic Mapping in Eukaryotes	6
	Feb 12	Genetic Transfer in Prokaryotes	7
	Feb 14	Chromosome Structure	8
5	Feb 18	Exam 1	
	Feb 19	Chromosome Number	8
	Feb 21	DNA Structure	9
6	Feb 25	Quiz 3 / Chromosome Organization	10
	Feb 26	Chromosome Organization	10
	Feb 28	DNA Replication	11
7	Mar 4	DNA Replication	11
	Mar 5	Quiz 4 / Transcription	12
	Mar 7	Transcription	12
8	Mar 11	Translation	13
	Mar 12	Exam 2	
	Mar 14	Translation	13
9	Mar 18	Regulation of Bacterial Genes	14
	Mar 19	Regulation of Bacterial Genes	14
	Mar 21	Quiz 5 / Regulation of Eukaryotic Genes	15
10	Mar 25 - 28	Spring Break – No class	
11	Apr 1	Regulation of Eukaryotic Genes	15
	Apr 2	DNA Mutation	16
	Apr 4	Quiz 6 / DNA Repair	16
12	Apr 8	Recombination	17
	Apr 9	Transposition	17
	Apr 11	Recombinant DNA Technology	18
13	Apr 15	Exam 3	
	Apr 16	Recombinant DNA Technology	18
	Apr 18	Biotechnology	19
14	Apr 22	Quiz 7 / Biotechnology	19
	Apr 23	Analysis of DNA	20
	Apr 25	Genomics, Proteomics, and Bioinformatics	21
15	Apr 29	Quiz 8 / Genomics, Proteomics, and Bioinformatics	21
	Apr 30	Genetics of Disease	22
	May 2	Developmental Genetics - Animals	23
16	May 6	Developmental Genetics - Plants	23
	May 7	Quiz 9 / Population Genetics and Hardy - Weinberg	24
	May 9	Evolutionary Genetics	26
17		Final Exam, Wednesday, May 15, 14:45 - 16:45 Sci A121	