COURSE SYLLABUS

Fall 2022
Implications of the New Genetics
01:447:354:01/02

Classes begin **9/7/2022** and end on **12/14/2022**. The last day to drop this
course without a "W" grade is **9/15/2022**.

Course meeting days, times, location and modality: Class is **in person on Livingston
Campus in Tillett Hall, Room 204 from 3:50-5:10pm M/W.** Virtual alternatives will be provided to
students who must quarantine.

Academic Calendar Directory: https://academicaffairs.rutgers.edu/academic-calendar-directory You
are advised to retain a copy of this syllabus in your personal files for use when applying for future
degrees, certifications, or transfer of credit.

INSTRUCTOR INFORMATION

Instructor:	Dr. Karen Schindler
Email:	ks804@hginj.rutgers.edu
Student Support Hours:	Hours Upon Request- please email with a selection of times and dates you are available. Meetings can be used to discuss course content, course concerns, or educational/career development.

GENERAL COURSE DESCRIPTION

Course Description:

This course fulfills elective requirements for Biological Science and Genetics majors. I will present
information from a historical perspective and review emerging genetic technologies. You will be *expected*
to understand the basics of genetics and molecular biology: Mendelian inheritance, central dogma, PCR,
cloning, etc. If you need review material and supplemental reading please see me. This course also
satisfies the SAS Core Curriculum Goal of Contemporary Challenges (CCO). You will therefore be
expected to apply materials taught in class to current social issues.

Prerequisites: 01:447:380 or 01:447:384

Course Modality: This course is delivered in person.

To access the companion Canvas course site, please visit Rutgers Canvas at https://canvas.rutgers.edu/
and log in using your NetID. For more information about course access and support contact Canvas Help
https:// canvas.rutgers.edu/canvas-help/ via email at help@canvas.rutgers.edu, or call 877-361-1134.

Purpose of the Course:

Science is not separate from your life. In the 21st century, information about genetics is increasing almost exponentially and changing rapidly. Ideas that were science fiction only a few years ago are now possible. But, many social, ethical and legal systems are not advancing at the same pace and are influenced by biological ideas that are no longer valid. The purpose of the course is to provide exposure of these emerging genetic technologies, provide a platform for verbal and written critical thinking and evaluation of the technologies, and to learn to listen to and engage with peers from diverse backgrounds.

MATERIALS

Required Texts: None.

Additional Course Resources: A variety of digital content (readings and recorded lectures) will be provided during the course. Digital content will be found within the **Canvas course site** under Modules with class date titles. There may be additional reading assignments as student interests dictate. Students will need to register for Wordpress and Slido via invites for blogging and polling assignments.

Technology Requirements:

This course requires that you access online resources in the University's Canvas site. Please review the following link for Canvas Student Resources for assistance on getting started in Canvas:

https://canvas.rutgers.edu/students/

Additional Technical Requirements:
- Review Rutgers' Tech Guides at: https://it.rutgers.edu/technology-guide/ You will require the following: laptop or tablet for use in class and at home. If you do not have the appropriate technology for financial reasons, please email the Dean of Students at deanofstudents@echo.rutgers.edu for assistance. If you are facing other financial hardships, please visit the Office of Financial Aid: https://financialaid.rutgers.edu/.

STUDENT LEARNING OBJECTIVES

By fully participating in this course, you should be able to:

1. Master terms, concepts and theories behind genetic technologies and apply them to social, legal and ethical issues.
2. Research the social, legal and ethical implications of a genetic principle/technology, and describe ethical considerations from multiple sides of an issue.
3. Become knowledgeable and well-versed in current events surrounding emerging genetic technologies.
4. Critically analyze ethical scenarios using ethical principles.
5. Learn approaches in describing complex genetic technologies and their implications to a lay audience.

Core Learning Goals: This course fulfills an SAS Core Learning Goal "Our Common Future." As such, we will be Analyzing the relationship that science and technology have to contemporary social issues.

Teaching Procedures:
Prior to class, students will read course material and watch associated class lecture material. Comprehension quizzes will assess completion and class preparedness. Class time will be spent doing activities such as guided discussions, case studies, blog workshops, current event evaluations and group

presentations.

Teaching Philosophy:

I learn best by doing and teaching. I provide you with the context and background for genetic technologies. I then use my teaching philosophy to facilitate your own exploration and learning through active discussions, critical thinking exercises such as blog writing and presentations, and reflection-based questioning.

Instructor Responsibilities:
Monday-Friday, I will respond to emails within 24h; weekend response times will be longer due to family obligations but I will respond on the following Monday at the latest. Longer writing assignments will be graded within a week's time. Grades are updated on Canvas monthly.

COURSE COMPLETION REQUIREMENTS

Your success in this course depends on the following:

1. Active participation in class (verbal, polling, reflection answers): During class time (~3h/week)

2. Group Projects (current events and case study): In and outside of class

3. Blog writing: 4 assignments, takes about 5h to research and write

4. Pre-class reading and viewing for quizzes: 10 classes; about 1.5h for each

GRADING

All rubrics can be found in the Canvas Course site → Modules, last section.

1. **Class contribution.** One of the reasons that the public often misjudges science is a lack of active dialogue on the part of scientists. My goal is to get you comfortable with discussing these hotly debated topics in a public setting (the classroom) while being respectful of opposing opinions. If you are not an active contributor, your chances of receiving an "A" are reduced. You will be responsible for recording your class contribution <u>for each class</u> via the <u>Google document form link</u> that accompanies the exit ticket. You will be evaluated on **quantity and quality** of your contributions. Therefore, please provide sufficient details regarding your contribution in your response. This is described in further detail in the rubric.

Note that if you miss class, you also miss participation/contribution opportunities. Exceptions must be cleared with Dr. Schindler.

1. **Exit ticket:** At the end of each class, you will be given a question to answer using <u>Google Forms</u>. **This must be completed before you leave.** This serves as a way for me to gauge any misunderstandings of the material, to challenge you with a thought-provoking, no-right-or-wrong-answer type question, to take class attendance, and record class contribution details.

2. **Blogs:** You will complete blog assignments using a course Wordpress site (http://www.ruelsigenetics2022.com/). You will receive an emailed invitation that you must accept to use the site for these assignments. You will have <u>4 blog assignments</u>. Submissions are due by midnight on the due date. You will receive a score sheet and feedback for each graded blog. See Files section for examples of high scoring blogs and the evaluation rubric.

3. **Reading quizzes:** Short quizzes will be given through Canvas. **You will have 1 chance to submit your answers** within 20 minutes and will receive answer feedback. Quizzes will close at 3:30pm the day of class in which they are due.

4. **Optional: Twitter account**: Find something interesting during class or on your own that is related to class? Tweet to your personal twitter account and tag **#RUELSIGEN**. This is a great way to tap into the professional Bioethics world and I highly recommend giving it a try. This is also a good way to increase your class contribution score (if you record it on your contribution form). If you have ideas and desire for other social media engagement, let me know!

5. **Genetics in the news:** Topics in this course are highly relevant to the news cycle and evolve quickly. For example, every semester I have taught this course, the rules and regulations regarding 23 and Me have changed, and Crispr-mediated genome editing was not even a topic in 2013 and in 2018, a scientist edited human embryos that were used for live birth. You and your group will be expected to stay up-to-date on news coverage throughout the semester. For 2 class meetings you will be assigned a news article to discuss as a group, create an informative power point slide, and then write a 1-page group-based summary. Please see the instructions and rubric for more details.

6. **Group case study:** You will be assigned a group after the drop-add period. I will approve topics via a written **proposal due in October, date TBA.** Use proposal form on Canvas (in Files).

   A. Presentation (60%): The group will present a 25-minute oral presentation on a case study that is a current event. There will be a 10-minute question/discussion session following your presentation. The PowerPoint presentation must be given by each group member – everyone must take a turn speaking. Given the relatively short length of the presentation, you are encouraged to select a fairly specific topic to allow time to provide a thorough examination of the topic. For example, "Genetic Testing" would likely be too broad to cover in 25 minutes. "Ethical considerations of non-invasive prenatal testing" may be a more reasonable topic.

   Your presentation will be evaluated by me (50%) and by your classmates (averaged and weighted 50%), and weighted as 60% of the case study grade.

   B. Self/Peer Evaluation (5%): Each member is to complete the 1 page self and peer evaluation question form found in Canvas Modules. This is due, along with the paper, the day of your presentation. Please keep your evaluations confidential. If there is a group member who has not been contributing to an equal extent, this is your ONLY opportunity to voice this issue so that I can consider modifying that member's group grade. I will NOT accept complaints outside of this form.

   C. Paper (35%): You will submit a 1-2 page independently written paper on your topic following the outline guidelines in Canvas Modules. **This paper is due by 12/15 at the latest.**

Final Course Grade: 70% of your grade will be based on individual assessment and 30% of your grade will be based on group work. Grades in this course are weighted according to the table below.
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Activity	Due Date	Grade %
Blog Writing	9/30, 10/14, 10/28, 11/11	25%
Class contribution	Daily	15%
Genetics in the News	10/10, 11/16	15%
Reading quizzes	9/16, 9/19, 9/21, 9/26, 9/28, 10/3, 10/17, 10/19, 10/31, 11/2	10%
Peer commenting	10/3, 10/17, 11/7, 11/14	5%
Group Case Study	11/28-12/14	30%
Total		**100%**

Grading Scale:

Grade	Range
A	100 - 90
B+	87 - 89
B	80 -86
C+	77 - 79
C	70 - 76
D+	67 -69
D	60 - 66
F	60 and Below

ACADEMIC POLICIES AND PROCEDURES

Attendance Policy:

Given the format and content of this class, <u>attendance is mandatory</u>. Attendance will be taken during each class. If you must miss a class, this is to be reported using the University absence reporting website (https://sims.rutgers.edu/ssra/). Indicate the date and reason for absence for official records. **This must be reported before the start of class.** Please see the Rutgers policy: https://sasundergrad.rutgers.edu/degree-requirements/policies/attendance-and-cancellation-of-classes.

Please note the following: If you are absent from class and not logged into a virtual platform, you cannot participate that day. Therefore, do not complete the class contribution form for that day. **Students will not receive credit for attendance if they are more than 15 minutes late to class.**

You are responsible for material covered in any class that you do not attend. If you miss a class, you must review the syllabus and then contact a classmate or me for the missed information. If you have a situation that might cause you to miss class over an extended period of time, contact the Dean of Students at deanofstudents@echo.rutgers.edu for assistance.

Late Work:

Assignments turned in late will be penalized 5 points per day.

Coursework Difficulties:

Please discuss any issues that you are having in completing the coursework on time with me. I am available to talk this over with you by appointment.

Incomplete Policy:

If you are unable to complete the coursework during the semester due to some catastrophic issue, you must contact me immediately to discuss your alternatives.

Academic Honesty and Plagiarism:

Our purpose in the classroom is to seek the truth; this work requires trust and honesty between teacher and student. If we are not honest about what we know and do not know, our learning will always be impaired. Because our teaching and learning depends on this honest communication, we expect all students to understand what plagiarism is and why it is unacceptable.

Any student considering plagiarism should recognize the consequences and consider alternatives. Students uncertain about what constitutes plagiarism may request help from faculty or from appropriate University services. For information on using sources in writing, see the Identifying and Avoiding Academic Dishonesty section of the <u>Rutgers Academic Integrity</u> web site:

http://academicintegrity.rutgers.edu/resources-for-students/

STUDENT CODE OF CONDUCT

Students are required to adhere to the <u>University Student Code of Conduct</u> delineated in the Rutgers Student Affairs website <u>Student Conduct</u> page:

http://studentconduct.rutgers.edu/student-conduct-processes/university-code-of-student-conduct/#1495568095620-2f5ce77d-17dd

ACCOMMODATIONS

Rutgers University welcomes students with disabilities into all of the University's educational programs. In order to receive consideration for reasonable accommodations, a student with a disability must contact the appropriate disability services office at the campus where you are officially enrolled, participate in an

intake interview, and provide documentation: https://ods.rutgers.edu/students/documentation-guidelines. If the documentation supports your request for reasonable accommodations, your campus's disability services office will provide you with a Letter of Accommodations. Please share this letter with your instructors and discuss the accommodations with them as early in your courses as possible. To begin this process, please complete the Registration form (https://webapps.rutgers.edu/student-ods/forms/registration).

STUDENT SUPPORT SERVICES

Academic Services:

- Student Success Essentials: https://success.rutgers.edu
- Student Support Services: https://www.rutgers.edu/academics/student-support
- The Learning Centers: https://rlc.rutgers.edu/
- The Writing Centers (including Tutoring and Writing Coaching): https://writingctr.rutgers.edu
- Rutgers Libraries: https://www.libraries.rutgers.edu/
- Office of Veteran and Military Programs and Services: https://veterans.rutgers.edu
- Student Health Services: http://health.rutgers.edu/
- Counseling, Alcohol and Other Drug Assistance Program & Psychiatric Services (CAPS): http://health.rutgers.edu/medical-counseling-services/counseling/
- Office for Violence Prevention and Victim Assistance: www.vpva.rutgers.edu/

Rutgers Student Health Services:

Rutgers Student Health Services is dedicated to health for the whole student body, mind and spirit. It accomplishes this through a staff of qualified clinicians and support staff. Services are available at several locations throughout the New Brunswick-Piscataway area. For more information visit: http://health.rutgers.edu/

Veteran Services:

Rutgers is proud to support veterans. If you are a veteran of the armed forces, please visit the Office of Veteran and Military Programs and Services website for more information: https://veterans.rutgers.edu/

TOPICS SCHEDULE

Canvas Module 1

Weeks 1&2: Introduction to the course

LEARNING GOALS:
- Understand course format and expectations
- Distinguish between ethical and social implications
- Evaluate blog styles and effectiveness
- Become comfortable with in person discussions and activity format

CLASS MEETING	BEFORE CLASS	IN CLASS ACTIVITIES	DUE TODAY	ASSIGNMENTS (DUE DATE)
Date: 9/7 **Topic:** Intro	**Read:** Syllabus	1. Gene Editing video 2. Ice breaker	Contribution log	Syllabus quiz (9/16)
Date: 9/12 **Topic:** Public perception and scientific literacy	**Read:** 1. Public perception 2. US public wary All readings found in Canvas, under Modules with the class date link	What is science up to video 1. March for Science 2. Scientific literacy quiz	Contribution log	Syllabus quiz (9/16)
Date: 9/14 **Topic:** Blogs and ethics	**Read:** 1. Fact sheet (p.1-3) 2. Social vs Ethical issues 3. Blog 1 4. Blog 2 5. Blog 3 Listen (Optional): Ask a Bioethicist	1. Blog eval/ discussion 2. Social vs Ethical discussion 3. Case study exercise	1. Syllabus quiz (9/16) 2. Contribution log	1. Quiz 1 based on readings for 9/19 class (9/19) 2. Blog 1- Sci literacy (9/30)

Canvas Module 2

Weeks 3-5: Reprogenetics

<u>LEARNING GOALS:</u>
- Use ART terminology and describe them to lay audience
- Connect technologies to E/L/S implications
- Learn diverse points of views
- Follow Reprogenetic-based current events

CLASS MEETING	PRE-CLASS ASSIGNMENTS	CLASS ACTIVITIES	DUE TODAY	ASSIGNMENTS (DUE DATE)
Date: 9/19 **Topic:** Biology behind ART	**Read:** 1. Bioethics and embryology (p. 64-79) 2. Feuer 2013 (p.189-195) **Watch (in Canvas):** Lectures 1-3 (10 min each) All lectures found in Modules under class date link	1. ART procedure videos 2. Poll and share 3. E/L/S discussion	1. Quiz 1- by 3:30pm 2. Contribution log	1. Quiz 2- based on readings for 9/21 class (9/21) 2. Blog 1-Sci literacy (9/30)
Date: 9/21 **Topic:** PGD and eugenics	**Read:** 1. Silver 2000 2. Neumayr 2005 3. Ethics of PGD 4. Bioethics and Embryology (pg. 215-225) **Watch:** Lectures 4-5 in Modules (10 min ea) **Optional:** Read links from RU's Dr. Schoen about forced sterilization in US	1. Poll and share 2. Discuss +/- of PGD 3. Debate: Silver vs Neumayr	1. Quiz 2- by 3:30pm 2. Contribution log	1. Quiz 3 based on readings for 9/26 class (9/26) 2. Blog 1- Sci literacy (9/30)

Module 2 cont…

CLASS MEETING	PRE-CLASS ASSIGNMENTS	CLASS ACTIVITIES	DUE TODAY	ASSIGNMENTS (DUE DATE)
Date: 9/26 **Topic:** Mitochondrial replacement therapy	**Read:** 1. Power of 3 2. Ethics of MRT 3. Darnovsky 4. 3 parent embryo fail **Watch:** Lectures 6-8 on Canvas modules (~8 min each) **Listen:** Kiev Success (6 min)	1. Poll and share 2. Eugenics discussion 3. Stakeholder activity	1. Quiz 3- due by 3:30pm 2. Contribution log	1. Quiz 4 - based on readings for 9/28 class (9/28) 2. Blog 1 (9/30, midnight via wordpress course site)
Date: 9/28 **Topic:** Germline Modification	**Read:** 1. Crispr, the disruptor 2. Genetically engineered babies 3. Tomorrow's children 4. Research **Watch:** Lectures 9-11 (~10 min each) **Listen:** Inside the lab (7 min)	1. Watch Crispr/Cas 9 video 2. Poll and share 3. E/L/S discussion	1. Blog 1 (9/30) 2. Quiz 4 by 3:30pm 3. Contribution log	1. Blog 1 peer reading (starting 10/1; read table members' blog 1) (10/3) 2. Blog 2 (10/14) 3. NO UPCOMING QUIZ
Date: 10/3 **Topic:** Blog workshop	**Read:** Table members blog 1	Blog workshop	1. Contribution log	1. Quiz 5- based on readings for class on 10/5 (10/5) 2. Blog 2- ART (10/14)

Canvas Module 3

Weeks 5-6: Reprogenetics wrap up through active learning (note: 10/3 and 10/5 were flipped for holiday accommodation)

LEARNING GOALS:
- Use ART terminology and describe them to lay audience
- Connect technologies to ELS implications
- Learn diverse points of views
- Report reprogenetic-based current events
- Evaluate case studies using ethical principles

CLASS MEETING	PRE-CLASS ASSIGNMENTS	CLASS ACTIVITIES	DUE TODAY	ASSIGNMENTS (DUE DATE)
Date: 10/5 **Topic:** Stem cells and cloning	**Read:** 1. Hyun 2010 2. Kiskinis and Eggan 3. Hyun 2014 4. Human stem cells **Watch:** 1. Lectures 12-13 (~12 min each) Listen: Debate	1. Watch SCNT video 2. Poll and share 3. Lay writing 4. ELSI	1. Quiz 5- due at 3:30pm 2. Contribution log	1. Read assigned news article (10/10) 2. Blog 2- ART (10/14) 3. NO UPCOMING QUIZ
Date: 10/10 **Topic:** Genetics in the News	**Read:** 1. Assigned news article TBA	1. Current event evaluation	1. Contribution log 2. Current event advertorial	1. Read case studies and questions (10/12) 2. Blog 2- ART (10/14) 3. NO UPCOMING QUIZ
Date: 10/12 **Topic:** Case studies	**Read:** 1. Case studies and associated questions	1. Case study evaluation and discussion	1. Contribution log	1. Blog 2- ART (10/14 by midnight on wordpress) 2. Quiz 6- based on readings for 10/17 class (10/17)

Canvas Module 4

Weeks 7-10: Genetics and Genomics

LEARNING GOALS:
- Use genomics terminology and describe them to lay audience
- Connect technologies to ELS implications
- Learn diverse points of views
- Follow Genomics-based current events

CLASS MEETING	PRE-CLASS ASSIGNMENTS	CLASS ACTIVITIES	DUE TODAY	ASSIGNMENTS (DUE DATE)
Date: 10/17 **Topic:** Direct to consumer genetic testing	**Read:** 1. DTC testing 2. NYT DTC Labs 3. DTC Genetics 4. What's next? **Watch:** Lectures 1-2 (10 min each)	1. 23andMe results video 2. Poll and share 3. ELSI	1. Quiz 6- due by 3:30pm 2. Contribution log	1. Quiz 7- based on readings for 10/19 class (10/19) 2. Blog 2 peer commenting- assignment in instruction sheet (10/24) 3. Blog 3- Crispr (10/28)
Date: 10/19 **Topic:** Precision medicine and privacy	**Read:** 1. Cancer Genomics 2. NEJM Precision Medicine 3. The genome hacker **Watch:** 1. Lectures 3-4 (total 20 min) 2. Hacking	1. PGP 2. ELSI 3. Precision medicine search	1. Quiz 7- due by 3:30pm 2. Contribution log	1. Blog 2 peer commenting- assignment in instruction sheet (10/24) 2. Blog 3- Crispr (10/28) NO UPCOMING QUIZ
Date: 10/24 **Topic:** Genetic Counseling	**Read:** TBA		Contribution log	1. Blog 3- Crispr (10/28) NO UPCOMING QUIZ

Module 4 cont…

CLASS MEETING	PRE-CLASS ASSIGNMENTS	CLASS ACTIVITIES	DUE TODAY	ASSIGNMENTS (DUE DATE)
Date: 10/26 **Topic:** DIY science diagnosis	**Read:** 1. Life Hackers 2. DIY Crispr 3. Genspace website (explore and learn) **Watch:** 1. Lecture 6 (note: 5 and 6 are intentionally out of order) 2. Genspace: Cool hunting video (scroll down) 3. Bea the film	1. DNA portrait video 2. Genspace video 3. Poll and share 4. ELSI	Contribution log	1. Quiz 8- based on readings for class on 10/31 (10/31) 2. Blog 3- Crispr (10/28 by midnight on wordpress) 3. Blog 3 peer commenting (open after 10/28, due 11/7; assignments on instruction sheet)
Date: 10/31 **Topic:** DNA Patents	**Read:** 1. Williams Biotech 2. Allen 2001 3. Perkel 2013 4. Intellectual property 5. Myriad data fight **Watch:** 1. Lectures 7-9 (25 min total) 2. Who owns your body	1. Take back our genes video 2. In the family video 3. ELSI	1. Quiz 8- due by 3:30pm 2. Contribution log	1. Quiz 9- based on reading for 11/2 class (11/2) 2. Blog 3 peer commenting (11/7) 3. Blog 4 – Open topic (11/11)
Date: 11/2 **Topic:** Specimen and sequence ownership: Henrietta Lacks	**Read:** 1. Biospecimen policy 2. Deal done 3. The sequel 4. Skloot website (explore and learn) **Watch:** Lecture 5 **Optional:** Watch The Immortal Life of Henrietta Lacks (HBO) or read the book!	1. Live reading 2. ELSI	1. Quiz 9- due at 3:30pm 2. Contribution log	1. Blog 3 peer commenting (11/7) 2. Blog 4- open topic (11/11) NO MORE QUIZZES

Date: 11/7 Topic: Twitch	Read: 1. Huntington NYT	1. Twitch viewing and discussion	1. Contribution log 2. Blog 3 peer commenting	1. Blog 4- open topic (11/11)

Canvas Module 5

Weeks 10-12: Genetics and Genomics wrap up through active learning

LEARNING GOALS:
- Use genomics terminology and describe them to lay audience
- Connect technologies to ELS implications
- Learn diverse points of views
- Report genomics-based current events
- Evaluate case studies using ethical principles

CLASS MEETING	PRE-CLASS ASSIGNMENTS	CLASS ACTIVITIES	DUE TODAY	ASSIGNMENTS (DUE DATE)
Date: 11/9 **Topic:** Group project	1. Coordinate plans with group on final project	Project group work	1. Contribution log	1. Blog 4 (11/11; midnight on wordpress) 2. Read assigned blogs (11/14)
Date: 11/14 **Topic:** Blog workshop	**Read:** Assigned blogs	Blog workshop	Contribution log	Current event article (11/16)
Date:11/16 **Topic:** Genetics in the News	**Read:** Assigned news articles	Current event evaluation	1. Contribution log 2. Current event advertorial	Case studies (11/21)
Date: 11/21 **Topic:** Case studies	**Read:** Case studies and associated questions	Case study evaluation and discussion	Contribution log	

11/23- NO CLASS; Friday classes for University Holiday schedule

Canvas Module 6

Weeks 12-15: Final projects

LEARNING GOALS:
- Connect technologies to ELS implications
- Learn diverse points of views
- Evaluate case studies using ethical principles

CLASS MEETING	PRE-CLASS ASSIGNMENTS	CLASS ACTIVITIES	DUE TODAY	ASSIGNMENTS (DUE DATE)
Date: 11/28 **Topic:** Group project		Present/Evaluate	1. Contribution log 2. Evaluation rubric	
Date: 11/30 **Topic**: Group project		Present/Evaluate	1. Contribution log 2. Evaluation rubric	
Date: 12/5 **Topic:** Group project		1. Present/Evaluate	1. Contribution log 2. Evaluation rubric	
Date: 12/7 **Topic:** Group project		1. Present/Evaluate	1. Contribution log 2. Evaluation rubric	
CLASS MEETING	PRE-CLASS ASSIGNMENTS	CLASS ACTIVITIES	DUE TODAY	ASSIGNMENTS (DUE DATE)

Date: 12/12 Topic: Group project		1. Present/Evaluate	1. [Contribution log](#) Evaluation rubric	
Date: 12/14 **Topic:** Group project		1. Present/Evaluate	1. [Contribution log](#) 2. Evaluation rubric	Final papers; upload into Canvas (12/16)

Supplemental instructional materials found in Canvas "Modules" folder

1. What to do if adding course
2. Examples of good and bad blog entries
3. Examples of good and bad case study project topics
4. Student evaluation grading forms
5. Group numbers and members' names (after drop/add)

Letters of recommendation

I will only write letters of recommendation for students that I know _**VERY**_ well. These individuals typically:

(a) participate regularly in class and attend office hours,

(b) talk Genetics with me outside of the classroom,

(c) are Genetics aficionados (i.e. **above a 95%** in the course), and

(d) are carefully tracking their contribution to the class so that we can use specific examples in the letter.

Once I agree to write a letter, I will send you detailed instructions**. It will require some writing on your part.** Advance notice is required, and at minimum, I will need 3 weeks time to craft an effective letter.