

Developmental Biology BIOL713
Fall 2015
Dr. Anna Allen

Lecture Time and Place: TR 11:10am-12:30pm in E.E. Just Hall Room 224
Laboratory Time and Place: MW 2:10-4:40pm in E.E. Just Hall Room 236

Instructor: Dr. Anna Allen
Office: E. E. Just Hall (Biology Building), Room 244
Phone: 202-806-6957
E-mail: anna.allen@howard.edu
Office Hours: M,W 10:00am – 12 noon

Teaching Assistant: Ms. Ruby Boateng
Phone: 202-806-5614 E-mail: ruby.boateng@bison.howard.edu
Office Hours: TBA Office: E.E. Just Hall, Room 242

Prerequisites:

Genetics (BIOL 200) **AND** either Cell Biology (BIOL 310) or Molecular Biology (BIOL 320) must be taken and passed with a grade of “C” or better. Also, all students enrolled in this course must have fulfilled the Freshman English requirement by passing ENGL 003.

Course Description:

This lecture and laboratory will provide students with knowledge in the area of both embryonic and postembryonic animal development. As such, we will cover major topics in the field of Developmental Biology including fertilization, morphogenesis, pattern formation and control of these events. Throughout the semester the student will be exposed to both classical and modern approaches to studying Developmental Biology.

In addition, students will be exposed to various aspects of scientific writing. Written communication is an important means by which scientists not only convey their research results to their peers but also inform the public about important scientific advances. Thus it is extremely important that a student trained in Biology have experience both in writing pieces of scientific work and critically evaluating written works by their peers. In this course, students will be required to compose multiple scientific laboratory reports based on experiments they have conducted, in addition to specific journal entry assignments involving various different pre-writing strategies.

Course Objectives: After this course, students will be able to:

- diagram the general pattern of development in representative animals
- describe the methods involved in studying developmental processes
- distinguish between the various processes involved in differentiation and pattern formation during development
- perform original research experiments involving developmental model organisms.
- analyze information when it is presented and synthesize reasonable solutions.
- improve in their professional writing skills and ability to learn through writing

Required Textbook:

Developmental Biology, **10th** Edition, by Scott F. Gilbert
Sinauer Associates, Inc. Publishers, ISBN 978-0-87893-978-7 or 978-1-60535-192-6
(hardbound or looseleaf version is acceptable)

Reading Requirements:

Assigned readings are listed next to the lecture topic in the syllabus. Readings should be completed BEFORE each lecture.

Class Attendance:

Regular class attendance at lectures is expected, however no attendance will be recorded for this course. It is the hope of the instructor that students will attend and actively participate in lecture. Learning is a very active process, and this course is designed to be actively engaging. Whether you are present in lecture or not, ultimately YOU are responsible for all work covered in class. In addition, exams will cover information presented BOTH in the textbook and in class lectures, as such, you are responsible for all the material. Students who anticipate missing class for official University business (i.e.- sports, administrative duties, etc.) shall notify the instructor as soon as possible. Students who are absent for health reasons are expected to present documentation as soon as possible. **Attendance at laboratory is mandatory.**

Getting assistance outside of class:

Please use the teaching assistant as a first point of contact for routine questions, including clarification of lecture materials and exam grading. You can use the Blackboard discussion board to post general (i.e.- public) questions about course material and policies. The TA will monitor the discussion on Blackboard to provide answers and clarification when appropriate. Questions can also be sent directly to the TA via e-mail or in person.

If additional assistance is needed, the best way to contact the instructor is to come to the scheduled office hours. If that does not work, contact the instructor to set up an appointment. Blackboard will also be employed for communication with the class, including the posting of course notes, study questions, and exam keys.

Blackboard:

Blackboard is an essential tool utilized in this course. Through the course site on Blackboard, you will access copies of the lecture presentations, homework assignments, quiz answers, supplemental notes, references, and links to websites that have additional material regarding pertinent subjects. Familiarity with Blackboard is critical because you will be required to submit multiple assignments through Blackboard's SafeAssign function. These assignments will not be accepted via hand-delivery or e-mail, thus you should ensure you know how to properly utilize this particular aspect of Blackboard. All assignments submitted through Blackboard should be in PDF form and named in the following format: Last Name_First Name_Assignment Name.pdf. For example, for Jane Doe's Laboratory Report 1, her file would be named: Doe_Jane_LabReport1.pdf.

As a student registered for this course, you should have automatic access to the BIOL713 Blackboard site through the following link: <https://blackboard.howard.edu>. If you have any trouble logging into Blackboard, please contact the Help Desk at helpdesk@howard.edu or 202-806-2020. For all other Blackboard related issues, contact Blackboard Support at blackboardsupport@howard.edu. If you have any other issues with Blackboard, please contact the system administrator (Umesh Giri) at ugiri@howard.edu.

Examinations:

Examinations will emphasize material that is discussed in lectures. Any material presented in the lectures, but not appearing in the text is eligible to be presented for examination. The lectures will often not correspond to material in the textbook in terms of presentation order,

examples used, or depth of coverage. Although the examination questions will be based on the materials presented in the lectures, it will be assumed that you have read the assigned pages in the textbook that related to that topic. In many cases, reading and understanding the textbook assignments will further illuminate the lectures, and make a crucial difference in whether students will obtain an A in the course.

As this is an advanced course for science majors, expect to be required not only to regurgitate facts on exams, but also to understand the purpose and meaning of experiments and to think creatively. Tests will include short answer questions (Fill in, True/False, Multiple Choice) to determine your mastery of the subject material. However, short essay questions and problem solutions will be used to determine the depth of your understanding of lecture materials and your ability to reason and be imaginative. In other words, studying is only part of your job- you will also be asked to think!

Final Course Grading:

Your final course grade will be determined as follows:

60% lecture grade

40% laboratory grade

Lecture Grading:

There will be four lecture examinations: three semester examinations covering roughly the first, second, and third parts of the course, and a comprehensive final examination. One of the semester examination scores can be dropped. The lecture grade (based on a total of 400 points) will be either:

- (1) sum of the two (best) semester exams (200pts) AND the final exam (100pts) AND digital journal grade (100pts)
- (2) the sum of the three semester examinations (300pts) AND digital journal grade (100pts)
- or**
- (3) just the final examination (300pts) AND digital journal grade (100pts).

There will be no make up examinations. If you miss a semester examination because of illness, religious observance (although exams are scheduled to avoid major religious observances), or other problems, it simply becomes the exam you drop.

Digital Journals:

You are required to keep a digital laboratory journal that must consist of **one entry per week**. These entries will be posted on the appropriate forum on the Blackboard Discussion Board and must be posted prior to the indicated due date and time. An entry will consist of answering the specific topic question posed. Sometimes this will be a question regarding a specific lecture and might include answering a question like: (1) What was the most useful or meaningful thing you learned during lecture that day? and (2) What was the “muddiest” or most confusing point during the lecture. Other examples of potential topic questions include: write an abstract for a review paper on the subject for a current scientific journal, write a short newspaper article on the subject, write a synopsis for school children age 10-13 on the subject, or write the “introduction” section for your next laboratory report. Your entries must be written in Standard English, be appropriate for the intended target audience, and must meet the indicated minimum and maximum word limit. These will be read and feedback provided by Dr. Allen.

Examples of Possible Lecture Grading Scenarios:

1. Student takes 3 semester exams and is satisfied with the grade. It is not necessary to take the final exam.
2. Student takes 3 semester exams and is not satisfied with the grade. The final exam should be taken, and the grade will be **the best of:**
 - A- Three semester exams (total 300 pts) AND digital journal grade (100pts), **or**
 - B- Final exam alone (total 300 pts) AND digital journal grade (100pts), **or**
 - C- Two best semester exams (200pts), final exam (100pts) AND digital journal (100pts).
3. Student takes only the final exam (counted out of 300 pts) AND digital journal grade (100pts)
(NOTE: This is somewhat risky, as familiarity with Dr. Allen's exams promotes performance on the final.)
4. Student misses one semester exam. Student must take final exam and grade is determined as in 2B or 2C above.
5. Student "misses" two semester exams. He or she must take the final exam to avoid failing, and the grade is determined solely by the final. Counting the one regular exam and the final is NOT an option.

Laboratory Grading: (see pg 8-13 for more details)

Your grade in the laboratory course will be evaluated based on your notebook, reports, in-class presentation and your participation in class discussions. The breakdown is as follows:

Laboratory Reports	45%
Laboratory Notebook	30%
In-class Presentation	20%
Participation in Class Discussions	5%

Final Course Letter Grades:

Because ample partial credit is given on exams, and because the ranges for each grade are already expanded beyond the typical 10 percentage points, there is NO normalization of grades based on class performance ("grading on a curve"). In other words, there is an absolute standard of quality in this class, not a relative standard, and it's your job to get there.

A: 89-100% - Denotes unusual mastery of the subject material and outstanding scholarship.

B: 78-88.9% - Denotes very good mastery of the subject material and good scholarship.

C: 65-77.9% - Denotes acceptable understanding of the subject material.

D: 50-64.9% - Denotes marginal understanding of the subject material and a less than average performance.

F: below 49.9% - Denotes unacceptable understanding of the subject material and unsatisfactory performance.

Note: An incomplete grade (I) can not be assigned if the student's grade for the semester falls below the level needed to pass the course.

Regrade Policy:

The regrading of examinations will be considered as unusual, rather than a routine request. Exams must be written **in pen** to be considered for regrading. A request for regrading of an examination must be submitted to the TA in writing (on a separate sheet of paper), along with the original copy of the exam, and should include a brief explanation for the regrading request. A regrade request **MUST** be submitted within **ONE** week after the graded examinations are returned to the class. Only one cycle of regrading will be considered per examination. **By submitting an exam for regrading, you agree to accept the score of the entire regraded**

examination, not the original score. In other words, we will read and grade the exam again, and any errors in your favor would be corrected, while any errors initially missed will also be counted. Due to time constraints, the final examination will not be considered for regarding.

Writing Matters:

Writing is an essential tool for thinking and communicating in virtually every discipline and profession. Therefore, in this course I expect you to produce writing that is not only thoughtful and accurate, but also organized, clear, grammatical, and consistent with the conventions of the field. If your writing does not meet these standards, I may deduct points or ask you to revise. For assistance with your writing, go to the student section of the Writing across the Curriculum (WAC) website, <http://www.cetla.howard.edu/wac/students.aspx>.

Academic Honesty:

The university has approved an “Academic Code of Conduct” which all students are required to read. The Code prohibits students from cheating on exams, plagiarizing papers, submitting the same paper for credit in two courses without authorization, buying papers, submitting fraudulent documents, and forging signatures. Students are expected to adhere to the highest standards of academic integrity and honesty. Please review the university policies on academic integrity (which include what happens if you are caught doing something you shouldn’t) in the *H-book* or at the following address: <http://www.howard.edu/policy/academic/student-conduct.htm>

Statement on ADA Procedures:

Howard University is committed to providing an educational environment that is accessible to all students. In accordance with this policy, students in need of accommodations due to disability should contact the Office of the Dean for Special Student Services for verification and determination of reasonable accommodations as soon as possible at the beginning of each semester. Special Student Services can be reached at Howard Center Suite 725, 2225 Georgia Ave., NW, Washington DC 20059 or 202-806-5983 or see <http://www.howard.edu/specialstudentservices/> for details.

Statement on Interpersonal Violence:

Howard University takes sexual assault, dating violence, domestic violence, stalking and sexual harassment seriously. If a student reveals that he or she needs assistance with any of these issues, all Responsible Employees, which includes faculty, are required to share this information with the University Title IX Office (202-806-2550) or a student can be referred for confidential services to the Interpersonal Violence Prevention Program (IVPP) (202-238-2382) or University Counseling Services (202-806-6870). For more information about these services, please go to: <http://campussafetyfirst.howard.edu>

Policy Regarding Classroom Conduct:

Class attendance is mandatory if a student expects to truly develop a mastery of the concepts presented. Students are expected to be punctual for class; however, if a student is late for class, it is expected that they enter the classroom as quietly and non-disruptively as possible. Please use common courtesy during class time and refrain from conversing with fellow students. This can be very distracting to classmates who are trying to pay attention. Cell phones and other electronic devices (with the exception of laptops if they are being used to take notes) must be turned off during regular lecture and laboratory periods and during examinations.

Potentially Useful Developmental Biology Websites:

Gilbert: Developmental Biology, 10th Edition <http://10e.devbio.com/>
The Society of Developmental Biology <http://www.sdbonline.org/>

Additional Resources:

The following sources may be able to provide assistance to those students struggling with the writing requirements of this course:

- English Department's Writing Center (Locke Hall, Room 100)
- Center for Academic Excellence
- Writing Across the Curriculum site at <http://www.cetla.howard.edu/wac/students.aspx>
- Colorado State's Writing Guides (<http://writing.colostate.edu/guides/>)

Developmental Biology BIOL713
Lecture Schedule
Fall 2015

Week	Lecture	Date	Topic	Readings
1	1	8/25	Course Introduction	
	2	8/27	Principles of Developmental Biology	Ch. 1
2	3	9/1	Germ Line, Germ Cell Migration & Meiosis	Ch. 17 (p591-610)
	4	9/3	Gametogenesis: Oogenesis & Spermatogenesis	Ch. 16 (p610-623) Ch 4 (p117-123)
3	5	9/8	Fertilization	Ch. 4 (p123-149)
	6	9/10	“	“
4	7	9/15	Cleavage and Determinants I	Ch 5, 7, 8 & 9
	8	9/17	“	“
5	9	9/22	Gastrulation	“
	10	9/24	“	“
6	11	9/29	Exam 1 (covers lectures 1-10)	
	12	10/1	Neurulation and CNS Patterning in Vertebrates	Ch. 10 (p333-353)
7	13	10/6	Neural Crest	Ch. 11 (p375-394)
	14	10/8	Mesoderm	Ch. 12 (p415-439)
8	15	10/13	Lateral Plate Mesoderm	Ch. 13 (p449-476)
	16	10/15	Endoderm	Ch. 13 (p476-486)
9	17	10/20	Differential Gene Expression	Ch. 2 (p31-65)
	18	10/22	Overview of Signaling Pathways	Ch. 3 (p69-104)
10	19	10/27	Drosophila Patterning I Drosophila Patterning: Segmentation & Hox	Ch. 6 (p179-190, 194-202)
	20	10/29	Drosophila Patterning: Segmentation & Hox genes & Dorsal-Ventral	Ch. 6 (p202-213) Ch. 6 (p190-194)
11	21	11/3	Exam 2 (covers lectures 12-20)	
	22	11/5	Amphibian Axial Patterning (Molecular Mechanisms)	Ch. 8 (p256-270)
		11/6	Note- today is the last day to withdraw from a course	
12	23	11/10	Sex Determination	Ch. 15
	24	11/12	Stem Cells & Metamorphosis	Pgs 319- 331 and Ch. 16 (p549-567)
13	25	11/17	Vertebrate Limb Development	Ch. 14
	26	11/19	Regeneration & Aging	Ch. 16 (p568-587)
14	27	11/24	Medical Aspects of Developmental Biology	Ch.18
	28	11/26	THANKSGIVING HOLIDAY- No classes	
15	29	12/1	Evolution and Development	Ch. 20
	30	12/3	Exam 3 (covers lectures 22-29)	
		12/3	Last Day of Classes	
		12/7-8	Departmental Examinations	
		12/10	FINAL EXAMINATION 6:00-8:00pm	Comprehensive

Developmental Biology BIOL713
Laboratory Schedule
MW 2:10-4:40pm

Week	Class #	Date	Topic	Readings
1		8/24	no lab	<i>To be posted</i>
		8/26	no lab	<i>on Blackboard</i>
2	1	8/31	Lab Starts – introduction & discussion	
	2	9/2	Lab 1: Microscopes	
3	3	9/7	LABOR DAY- no classes	
	4	9/9	Student Presentations – Sea Urchin	
4	5	9/14	Lab 2: Sea Urchin Fertilization	
	6	9/16	Student Presentations – <i>C. elegans</i> Introduction to <i>C. elegans</i> techniques	
5	7	9/21	Lab 3: <i>C. elegans</i> – RNAi I	
	8	9/23	Lab 3: <i>C. elegans</i> – RNAi II	
6	9	9/28	Lab 3: <i>C. elegans</i> – RNAi III	
	10	9/30	Student Presentations – <i>Drosophila</i> Introduction to <i>Drosophila</i> techniques	
7	11	10/5	Lab 4: Gene Expression in <i>Drosophila</i> Embryos	
	12	10/7	Lab 4: Gene Expression in <i>Drosophila</i> Embryos	
8		10/12	COLUMBUS DAY- no classes	
	13	10/14	Student Presentations – <i>C. elegans</i>	
9	14	10/19	Lab 5: <i>C. elegans</i> immunolocalization I & II	
	15	10/21	Lab 5: <i>C. elegans</i> immunolocalization III	
10	16	10/26	Lab 5: <i>C. elegans</i> immunolocalization IV	
	17	10/28	Student Presentations – Chick	
11	18	11/2	Lab 6: Chick embryo observation & staging	
	19	11/4	Student Presentations- Planaria Introduction to <i>Planaria</i> techniques	
12	20	11/9	Lab 7: Planarian Regeneration	
		11/11	VETERAN’S DAY- no classes	
13	21	11/16	Lab 8: <i>Drosophila</i> - Imaginal Discs	
	22	11/18	Lab 8: <i>Drosophila</i> - Imaginal Discs II	
14	23	11/23	TBA	
		11/25	THANKSGIVING HOLIDAY- Classes suspended at noon	
15	24	11/30	TBA	
	25	12/2	Review for lecture Exam #3	

BIOL713 Laboratory Grading

Laboratory Reports (45% of the final lab grade)

Lab Reports generally have three goals:

- 1) to justify the reasons for performing the experiment
- 2) to record the results of the experiment
- 3) to allow others to evaluate the results

Reports should contain the following components:

- Name of the experiment
- Introduction and Background
- Materials and Methods
- Results
- Discussion and Conclusions
- References

Introduction and Background

This section is written to provide the reader with all the background needed to appreciate why you did the experiment and to understand your results and conclusions. To accomplish this, you may need to provide a brief review of previous work, including appropriate references. The introduction should provide the following: the objective of the experiment, relevant background information, an indication of the importance of the work, and a brief preview of what will be described.

Main Body of the Report

The main body should consist of three sections: Materials and Methods, Results, Discussion and Conclusions. Each section must be clearly identified with a heading. Write each section in a logical, coherent manner using complete sentences.

Materials and Methods

Describe what you did during the lab. Identify the equipment you have used and the data collection techniques. A schematic of the experiment may be helpful. The intent of this section is to summarize the experimental strategy and identify what aspects of the equipment and procedure are significant to the outcome of the experiment.

Results

Present all relevant observations you made, including any qualitative ones. Prepare graphs and tables that best display the results of the experiment. It is also appropriate to include labeled drawings or other relevant images, such as photographs.

Discussion and Conclusions

Discuss the results you displayed in the previous Result section. What did you learn from the lab? For this section, present the conclusions you draw from the results. All conclusions should be clearly stated and supported with evidence. Cite specific results and observations from the experiment and tie them to your conclusions.

References

Cite complete references for any information that you draw on. DO NOT submit just the website. Use correct citations methods in CBE style. Of course, your laboratory guide should be cited. Information on the CBE style can be found in the reference folder of Blackboard.

BIOL713 Laboratory Grading

Laboratory Notebooks (30% of the final lab grade)

Each student is expected to diligently maintain an up-to-date lab notebook. This notebook will be your working record of all activities in the lab, and will be kept according to sound scientific practices. The notebook is used to keep your notes and calculations as you prepare experiments, to record observations as the experiments are performed, and to note additional data and conclusions.

The notebooks must be written in a clear, concise and accurate manner. The use of personal pronouns (I, we) should be limited with entries written in the passive voice instead (for example: proper = 1mL of media was pipetted into each falcon tube; improper = I pipetted 1mL of media in each falcon tube.)

Although there is no uniform method for keeping an effective lab notebook, and it is not meant for publication, several general rules should be followed:

- 1- A bound notebook should be used (i.e.- a black and white marble composition notebook).
- 2- Every entry should be dated, with the time of day included, and all pages numbered.
- 3- Leave about 2 pages blank at the beginning for your Table of Contents.
- 4- The lab notebook should be well organized and all data, drawings, and graphics pertaining to a single experiment should be kept together. This means that empty pages should be left for drawings/conclusions when necessary.
- 5- Notebook entries should contain the following components:
 - i. Name of the experiment (Title)
 - ii. Introduction and Background
Acceptable to be brief in your notebook, more detailed for lab report
 - iii. Methods and Materials
Describes the procedure of the experiment. This includes key experimental details *as the experiment was performed*, not just how you were told to perform the experiment in the lab instructions (i.e., actual times, temperatures). The lab notebook is a record of actual work, not the instructions you were given. This means you need to keep up to date with your notebook. It is inappropriate and usually inaccurate to go back and write down whatever the instructions say, or what you think you remember. Always include chemical concentrations (if known), not just volumes.
 - iv. Results
This section should include all data (numbers, images, etc) gathered in the experiment. Drawings should be done in pencil and should be large enough. They should be well labeled, identifying organisms by species name, tissues, cells or organelles observed. Drawings of microscopic images should include plate magnifications. Photographic images should be taped into the lab notebook and thoroughly labeled. If results are delayed until a following experiment, make a note of it.
 - v. Conclusions
This section presents the conclusions you draw from the results. All conclusions should be clearly stated and supported by your data/results. Cite specific results and observations from the experiment and tie them to your conclusions.
- 6- It is generally considered good policy not to white-out or erase entries for corrections, but to cross them out instead.
- 7- Lab notebooks should not be recopied.

- 8- Drawings should be made directly in the notebook; photos can be taped into the notebook.
- 9- Labels are important! Use proper scientific language. Avoid abbreviations. Don't use jargon.
- 10- Take copious notes. Include details, such as date, start and finish times for experiments, ambient temperature, etc. You will seldom find yourself in a situation where you have too many details about a given experiment, but you will often wish you had more.

Lab notebooks will be turned in periodically during the semester for grading. Notebooks will be evaluated based on completeness, organization, following provided format, and understanding of the experiments conducted. Since lab notebooks are meant to be working documents (e.g. they are always in draft form, never revised), and since it is essential that you bring your lab notebook along with you each time you come to lab, *there will be no advance notice of notebook inspections*. Missing notebooks may receive zero credit.

Laboratory In-class Presentation (20% of final lab grade):

At least once during the semester, each student will be responsible for presenting either background information or an original research paper on an assigned model organism. The material will be selected and provided to the student by the instructor. While every student in the class is responsible for also reading the assigned material, it is the presenting student's responsibility to prepare a PowerPoint presentation on the material and lead the discussion on the subject. The presentation should last 20 minutes, and include a summary of the article, the reason for the study, the methods, results and broader conclusions. Presentations should also include original figures from the article. This will serve as a basis for the discussion with the rest of class. Presenting students will be required to meet with either the TA or the instructor at least 3 days before their assigned presentation to go over their presentation. The TA and/or instructor will then give insights and/or suggestions for the presentation.

Note- you will be graded according to the Presentation Rubric included in the syllabus.

Laboratory Participation (5% of final lab grade):

Asking and answering questions is expected and required, as such class discussion is an integral part of this course. The participation grade will come largely from attendance and participation in discussion of the assigned readings and of fellow students' presentations.

Note- you will be graded according to the Participation Rubric included in the syllabus.

PARTICIPATION RUBRIC

____ / 100	Exceeds Expectations	Meets Expectations	Approaches Expectations	Does not meet Expectations
Preparation for Class ____ / 20	<ul style="list-style-type: none"> - prepares course material thoroughly & carefully for class - seeks help if needed 	<ul style="list-style-type: none"> - prepares course material carefully for class - seeks help if needed 	<ul style="list-style-type: none"> - sloppy or thoughtless preparation of material - does not seek help when needed 	<ul style="list-style-type: none"> - incomplete or no preparation
Active Engagement ____ / 25	<ul style="list-style-type: none"> - asks insightful questions - contributes thoughtful remarks that are relevant to topic - always raises hand 	<ul style="list-style-type: none"> - occasionally asks insightful questions - contributes remarks that are on topic - raises hand to speak 	<ul style="list-style-type: none"> - rarely asks questions or makes occasional remarks that are relevant - raises hand 	<ul style="list-style-type: none"> - does not ask questions - makes off-topic remarks - calls out to answer, does not raise hand
Active Listening ____ / 25	<ul style="list-style-type: none"> - thoughtful & observant responses to classmates' remarks - makes valuable contributions that move class discussion - is always attentive to others when they speak 	<ul style="list-style-type: none"> - frequently responds to others' remarks - makes helpful contributions to class discussion - is attentive to others 	<ul style="list-style-type: none"> - seldom responds to others or contributes to class discussions - is present, not disruptive 	<ul style="list-style-type: none"> - does not respond to others' remarks - no contributions to class discussion - is inattentive and/or disruptive when others are speaking
Peer Support ____ / 10	<ul style="list-style-type: none"> - makes an extra effort to help classmates - encourages others to participate equally & fully 	<ul style="list-style-type: none"> - helps classmates when needed - occasionally encourages others to participate 	<ul style="list-style-type: none"> - does not prevent others from participating or learning 	<ul style="list-style-type: none"> - unwillingly to help others - prevents others from participating or learning
Approach to Learning ____ / 20	<ul style="list-style-type: none"> - consistent enthusiasm for class activities & material - shows respect for instructor & peers - shows genuine respect for & interest in others viewpoints 	<ul style="list-style-type: none"> - interest in class activities and material - respect for others - shows respect for & occasional interest in others' views 	<ul style="list-style-type: none"> - inconsistent interest in class activities & material - respect for others - is tolerant of others viewpoints 	<ul style="list-style-type: none"> - uninterested in class activities & work - disrespectful of others - inconsiderate of others' views - disruptive of class learning environment

PRESENTATION RUBRIC

____ / 100	Exceeds Expectations	Meets Expectations	Approaches Expectations	Does not meet Expectations
Content and Scientific Merit ____ / 40	<ul style="list-style-type: none"> - presentation had an exceptional amount of valuable material - defines in detail background & importance of research - states objectives - able to identify relevant questions - accurately describes all figures in paper - summarizes major points of paper - summarizes potential weaknesses (if any) 	<ul style="list-style-type: none"> - presentation had a good amount of material - defines background & importance of research - states objectives - identifies some relevant questions - describes some of the figures in the paper - summarizes some of the major points of the paper - summarizes some of the potential weaknesses (if any) 	<ul style="list-style-type: none"> - presentation had moments where valuable material was present but as a whole, content was lacking - provides some background - states objectives - identifies questions in research - describes a figure in the paper - summarizes a major point of the paper - summarizes a potential weakness of the paper 	<ul style="list-style-type: none"> - presentation contained little to no valuable material - provides little to no background on research - fails to state objective of paper - fails to identify relevant questions - fails to describe figures - fails to summarize major points - fails to mention weaknesses
Collaboration ____ / 20	<ul style="list-style-type: none"> - everyone contributed to the presentation - everyone seemed well versed in the material 	<ul style="list-style-type: none"> - seemed like every one did some work but some people are carrying the presentation - group members worked well 	<ul style="list-style-type: none"> - seemed as though certain people did not do as much work as others - group members worked well together 	<ul style="list-style-type: none"> - seems as though only a few people worked on the presentation - group members did not work well together
Organization ____ / 20	<ul style="list-style-type: none"> - presentation was well organized, well prepared and easy to follow 	<ul style="list-style-type: none"> - presentation had organizing ideas but could have been much stronger with better preparation 	<ul style="list-style-type: none"> - minimal signs of organization or preparation 	<ul style="list-style-type: none"> - presentation lacked organization and had little evidence of preparation
Presentation ____ / 20	<ul style="list-style-type: none"> - presenters were all very confident in delivery and they did an excellent job engaging the class - visual slides were clear and understandable 	<ul style="list-style-type: none"> - presenters were occasionally confident with their presentation - presentation was not as engaging as it could have been - visual slides were clear and semi-understandable 	<ul style="list-style-type: none"> - presenters were not consistent with the level of confidence/ preparedness - visual slides were unclear and not understandable 	<ul style="list-style-type: none"> - presenters were unconfident and demonstrated little evidence of planning prior to presentation - visual slides were incomprehensible