**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

Instructor: S. Brookhart Shields, Ph.D.

Office: 221J Nobel Hall of Science

Office Phone: 933-7330

Email: bshields@gustavus.edu

Lectures: TR 8:30-9:50am, 121 NHS

Laboratory: R 1:30-5:20pm, 237 NHS

Required Textbook: Molecular Biology of the Cell 6E - The Problems Book ISBN 978-0815344537

**Optional Textbook**: Molecular Biology of the Cell, by Bruce Alberts, current edition 6th

Edition 4 is available [online for free](http://www.ncbi.nlm.nih.gov/books/NBK21054/?term=Molecular%20Biology%20of%20the%20Cell). (Search the title at <http://www.ncbi.nlm.nih.gov/books)>

**Other Materials:** You will need a bound notebook for lab. It does not need to be special, but a composition notebook with a hard cover are cheap and durable.

**Moodle:** I will use Moodle to post announcements, assignments, grades, and readings. You will need your login name and password; contact Helpdesk for assistance.

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

### My goals for you this semester are:

1. To develop as sense a wonder and awe at the beauty and complexity of cell biology.
2. A deeper understanding of how cell biologist ask questions, develop experiments to test hypothesis, and interpret data.
3. To critically examine primary literature, brief yourself on the main points of the field, identify question asked, explain the experiments performed, and how the results fit into the authors conclusions.
4. To advance your communication skills, both written and verbal, for a range of audiences.

### What I expect from you:

1. Participate in class: this includes asking questions, contribute in discussions, and coming to class prepared.
2. Assist your peers: this includes forming study groups, working cooperatively in class, sharing your knowledge with others, and being respectful of others.
3. Seek assistance: this includes ask peers, the instructor, and others for help and being persistent when encountering difficulties.

### What you can expect from me:

1. Everything in this class is done for a reason. I do not assign busy work. Everything is designed to A) fulfill the above goals and B) allow you to succeed on the exams.
2. We will be mainly use class time to solve problems or discuss papers. Therefore, I will not lecture during this course.
3. Homework will be challenging, so the exam doesn’t come as a shock.
4. Provide prompt and useful feedback of course work.
5. Be available outside of class for answering questions and tutoring.

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

## Course Policies

### Courtesies

Please show your respect to the instructor and other members of the class by observing the following:

* Come to class on time and be ready to start on time. If you do come late, please try to be discrete when you do arrive.
* At the end of class, please wait until I have indicated that class is finished before packing up. This allows for everyone to hear the end of class materials.
* Please come to class prepared for the activities of the day. If you choose to attend without preparation, you may be asked to leave out of respect of those that did make the time to be prepared.

**Email Etiquette**

* I do not check my email in the evenings or weekends, so please plan your questions accordingly.
* When emailing me, please include Bio373 in the subject line so that I don’t overlook your email.
* Please use appropriate language, grammar, and salutations.

### Attendance Policy

As with all courses, your daily attendance and participation is required and counts toward your final grade in the class. Failure to attend class will result in a zero for that day’s activity. If you are not able to attend 85% of the class meetings (24 class periods), I am not able to give you 85% of the points earned in class, i.e. one letter grade reduction. If you are not able to attend a lab, I will not be able to give you a passing grade for the course. The only exception to these policies is if you have arrangements **before** the absences or have an acceptable excuse. Acceptable excuses are:

1. Students who are ill will notify the instructor on the day they miss (preferably before class). If you have to miss class for more than one day, you need to contact health services and student life. It will be excused only if your illness can be substantiated. Assignments due on that day will be turned in at the beginning of class on the day the student returns unless other arrangements are made with instructor.
2. Accident, illness, or death of immediate family (must provide verification).
3. In the case of a college-sponsored activity, the student must notify the instructor at least one day prior to the event and turn in any assignments due that day before leaving campus. Work not turned in by the due date will be subject to the late penalty or not accepted at all.

**Disability Services**

Gustavus Adolphus College is committed to ensuring the full participation of all students in its programs.

If you have a documented disability (or you think you may have a disability of any nature) and, as a

result, need reasonable academic accommodation to participate in class, take tests or benefit from the

College’s services, then you should speak with the Disability Services Staff, for a confidential discussion

of your needs and appropriate plans. Course requirements cannot be waived, but reasonable

accommodations may be provided based on disability documentation and course outcomes.

Accommodations cannot be made retroactively; therefore, to maximize your academic success at

Gustavus, please contact Disability Services as early as possible. Disability Services

(https://gustavus.edu/advising/disability/) is located in the Academic Support Center.

**Help for Multilingual Students**

Support for English learners and multilingual students is available through the Academic Support

Center’s English Learning Specialist (www.gustavus.edu/advising/). The ELS can meet individually with

students for tutoring in writing, consulting about academic tasks, and helping students connect with the

College’s support systems. When requested, the ELS can consult with faculty regarding effective

classroom strategies for English learners and multilingual students. The ELS can provide students with a

letter to a professor that explains and supports appropriate academic arrangements (e.g., additional time

on tests, additional revisions for papers). Professors make decisions based on those recommendations at

their own discretion. In addition, English learners and multilingual students can seek help from peer tutors

in the Writing Center ([www.gustavus.edu/writingcenter/)](http://www.gustavus.edu/writingcenter/)).

**Academic Integrity**

One of the objectives of Gustavus Adolphus College as stated in the mission statement is to "foster the

development of values as an integral part of intellectual growth." In a community of scholars nothing is

more valuable than the intellectual property of a member of the community. It is unacceptable in this

course to represent the work of another individual as your own, for example, another or former student of

BIO 373 or material from a website. All cases of academic dishonesty including cheating on exams and

plagiarizing laboratory assignments and reports from the internet or elsewhere will result in penalties up

to and including automatic failure of the course and will be reported to the Provost for inclusion in your

permanent file and disciplinary action as stated in the student code. I expect all students to abide by the

following Student Honor Code for all assignments/exams: “On my honor, I pledge that I have not given,

received or tolerated others’ use of unauthorized aid in completing this work.”

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

## Course Assessment

Course Assignments

* Weekly Moodle Quizzes 10@10pts 100
* Discussion participation 28@5pts/day 140
* Writing assignments 3@50pts 150
* Notebook grades 10@10pts 100
* Formal Lab Reports 2@50pts 100
* Paper Summaries 5@25pts 125
* Verbal presentations 3@50pts 150
* Exams 3@75pts 150
* Final Project: Cell Biology of Human Disease 75

950\*

\*There may be minor adjustments as we go.

### Grading Scale

You will not be graded on a curve, and so will not be competing with your fellow student. Everyone has the opportunity to succeed in this class.

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| A | A- | B+ | B | B- | C+ | C | C- | D+ | D | D- | F |
| >94 | 90-93 | 87-89 | 86-84 | 80-83 | 77-79 | 74-76 | 70-73 | 67-69 | 64-66 | 60-63 | <59 |

A Final Word on Grades: You will find that I work hard to support your learning and provide multiple opportunities for you to be successful. At the end of the semester, when your grade had been assigned, please do not request extra credit or for your grade to be bumped up. It would be inequitable to everyone in the class if I were to grant such requests.

Weekly Moodle Quizzes

There will be a weekly quizzes posted on Moodle worth 10pts each. They will need to be completed by 10am on Tuesdays to receive credit. The quizzes will cover material from lecture, lab, or in discussion in the previous week as well as readings for the upcoming week.

### Writing Assignments/ Verbal Presentations

Over the semester, you will be given focused writing assignments to practice your writing for both discipline-specific and non-scientist audiences. Paired with these of these writing assignments will be a short verbal presentation to the class. Each assignment will have detailed instructions and grading criteria provided.

### Notebook Grades

An integral part of an experiment is keeping a record of what was done and why. Hence, you will keep a lab notebook this semester. The physical format of your notebook is not as critical but it does need to be bound. However, what is in the notebook is critical-a detailed handout will follow to describe this. Your notebook will be checked each week and worth 10pts/week.

### Formal Lab Reports

In lab this semester, you will complete two multi-week projects. These are designed to give you both practical experiences working with the tools that cell biologist use and give you the chance to design and execute your own research project. The results of these two projects will be written up in the format of a journal article.

### Paper Summaries

There will be three paper summaries spread throughout the semester. For these, you will need to find an article in the primary literature, read it thoroughly, and write a review/summary of the article. A handout will follow detailing the criteria for the assignment.

### Exams

There will be three exams through out the semester. These will be focused on problem solving and interpreting data and not on factual recall. They will not be multiple choice, short answer, or fill in the blank. I want you to use a higher order thinking and written communication. In class you will have ample opportunity to practice the kind of problems will be on exams.

### Final Project-Cell Biology of Human Disease

The final writing/verbal presentation will be a poster presentation focused on the Cell Biology of Human Disease. **Failure to participate in the symposium will significantly impact your grade.**

### Participation Grading (5pts each day)

Participation involves more than sitting in class; involves contributing to the discussions, providing peers with feedback, and actively listening to others. The following rubric will be used to grade class participation.

|  |  |
| --- | --- |
| **Points** | **Expectation** |
| 5 | A student receiving a 5 comes to class prepared;1 contributes readily to the conversation but doesn’t dominate it: makes thoughtful contributions that advance the conversation; shows interest in and respect for others’ views; participates actively in small groups. |
| 4 | Comes to class prepared and makes thoughtful comments when called upon, contributes occasionally without prompting: shows interest in and respect for others’ views; participates actively in small groups. A 4 score may also be appropriate to an active participant whose contributions are less developed or cogent than those of a 6 but still advance the conversation. |
| 3 | A student receiving a 3 participates in discussion, but in a problematic way. Such students may talk too much, make rambling or tangential contributions, continually interrupt the instructor with digressive questions, bluff their way when unprepared, or otherwise dominate discussions, not acknowledging cues of annoyance from instructor or students. |
| 2 | A student receiving a 2 comes to class prepared, but does not voluntarily contribute to discussions and gives only minimal answers when called upon. Nevertheless these students show interest in the discussion, listen attentively, and take notes. |
| 1-0 | Students in this range often seem on the margins of the class and may have a negative effect on the participation of others. Students receiving a 1 often don’t participate because they haven’t read the material or done the homework. Students receiving a 0 may be actually disruptive, radiating negative energy via hostile or bored body language, or be overtly rude. |
| NOTE. This scoring guide assumes regular attendance: the instructor may lower participation scores for absences or tardiness. Preparation can also be measured by quizzes, by brief writing assignments at the start of class, by completion of out-of-class journal entries or other homework, or by evidence from direct questioning. | |

## \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_