# Bio 100: Biology Explorations:

# Current Controversies Involving Biology

# Spring 2016

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**Course Description:** Current Controversies Involving Biology are commonly in the news: endocrine disruptors (BPA) in plastics, bioterrorism, potential pandemics such as Ebola, whether or not vaccines are safe, and risks associated with genetically engineered organisms. How is one to sort through competing information to make an informed opinion or decision about what to buy or what to believe? The goals of this course are to make students more informed decision makers by (1) broadening and deepening a students' understanding of the living world and (2) appreciating science as "way of thinking". Group discussion, and verbal and written presentations, and inquiry-based labs will be used to help students achieve these goals.

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| --- | --- | --- | --- |
| Meeting Times | Day | Time  | Location |
| Lecture | MWF | 10:30-11:50pm | Confer Hall 126 |
| Lab Section 003 | M | 12:30PM - 2:20PM | Nobel Hall of Science 325  |
| Lab Section 003 | M | 2:30PM - 4:20PM | Nobel Hall of Science 325 |

**Required Textbooks:**

1. Lies, Damned Lies & Science, Author: Seethaler, ISBN:9780132849449
2. Smart Thinking, Author: Markman, ISBN: 9780399537226
3. Concepts of Biology, Author: OPENSTAX, ISBN 9781938168116 \*Available Free online at OpenStax

**Office Hours:**

* W 1:00-2:30pm
* Please use the appointment times on my Google calendar to arrange a time to meet. This ensures that I’m there when you want to meet. There is a link on the course Moodle page.
* Email is the best way to arrange another time to meet.
* Any time that I’m in my office/lab/around, you’re welcome to talk to me. Please don’t be shy!

**My goals for you this semester are:**

1. A greater understanding of how the scientific process works, how scientists communicate, and how science relates to everyday living.
2. A deeper understanding

of select science topics.

1. Experience communicating science both spoken and written.

### What I expect from you:

1. Participate in class: this includes asking questions, contribute in discussions, and coming to class prepared. **Always ask, “What does this mean for biology?”**
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. Provide prompt and useful feedback of course work.
2. Be responsive to your learning style and pace.
3. Be available outside of class for answering questions and tutoring.

### 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 Bio100 in the subject line so that I don’t overlook your email.
* Please use appropriate language, grammar, and salutations. Please don’t use texting abbreviations.

### 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 (34 class periods), I am not able to give you more than 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 fill out the explanation of absence form. 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.

**Late Assignments**

A 30% penalty will be deducted from the grade received on an assignment for every day that the assignment is late. All assignments, online, written, or verbal, are due at the beginning of class time.

**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/%29).

**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 201 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. We 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.”

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# Assignments

Summary of Course Assignments

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| --- | --- | --- |
| Attendance and Participation | 5pts/day | 200 |
| Quizzes | 10@ 25pts each | 250 |
| Student Lead Discussion | 2 @ 50pts | 50 |
| Biography Paper and Presentation | 1 @ 50pts | 50 |
| Group Poster Presentations | 1 @ 75pts | 75 |
| Laboratory Experiments | 13 @ 25pts each | 325 |
| Misc. Assignments/Questionnaires |  | 50 |
| **Total** |  | **~950 pts** |

\*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- | F |
| >94 | 90-93 | 87-89 | 86-84 | 80-83 | 77-79 | 74-76 | 70-73 | <67 |

**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.

### 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.  |

**Quizzes (25pts each)**

Quizzes will be given every Friday. They will be given at the beginning of class. Material covered in lecture, readings, or discussed by the class in the preceding week will be covered. If you miss class on quiz day, you will not be able to make up the quiz unless you have made prior arrangements or have an acceptable excuse (see above). If you miss a quiz for any other reason, you will receive a zero for that quiz.

**Student –Led Discussions: (50pts each)**

The student-led class discussions will be a group project. You and your group will be pick a topic and lead the class in a 30min discussion of that topic. A handout will be provided to help you design your discussion questions. The requirements for this activity are:

* Do the assigned reading for that topic ahead of time and come to class ready to lead the discussion and activities.
* Design several open-ended questions to guide the class discussion. (Make sure that you know the answers!)
* Submit a copy of your questions, typed, to the instructor.
* Design an interactive activity. There is a spectrum of class activities that you could have the class do: have the class fill out a survey related to a topic and then have the class discuss the results; do a written or verbal activity; have the class participate in a small group discussion and them bring the group back together to discuss, participate in a game, watch a YouTube video and a follow-up discussion.
* Write a reflection on the discussion you lead. Again, there will be a handout to help guide you.

**Biography Paper and Presentation (50pts)**

You will choose an individual to write a biography of this semester. This should be a scientist, alive or dead, of your choosing whom you admire or want to know more about. (A more detailed handout will be given.) After reading some books, articles, and gathering information in different ways (i.e. interview) you have two assignments:

* A short paper (3 pages, single spaced) that analyzes the character of your person. This should include a personal reflection of how this person ‘speaks’ to you.
* A short verbal presentation to bring to life the person chosen.

**Group Poster Presentation (75pts)**

Posters are a unique way that scientist communicate. The poster presentation is both a visual summary of the research and a verbal presentation. For this, your group will conduct a mini-research project and then present these finding in a poster format. (A more detailed handout will be given.)

**Laboratory Experiments (325pts)**

Asking questions about our world and testing hypothesis are integral to how scientist understand our world. Over the course of this semester, you will be researching, designing and implementing an original scientific investigation examining the mutagenesis of a household chemical. The first couple weeks of lab you will be introduced to the techniques and how to analyze the data. You will then use this information to design your own experiment with your group. You will be guided through out this process, so don’t worry about it yet.

