

BIOLOGY 411: Senior Capstone

Spring 2007

INSTRUCTOR:

Dr. Eva Top

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OFFICE HOURS: Tuesdays from 4-5 PM and Fridays 11am-12pm, Rm. 347/258 LSS, or by appointment.

TIME AND PLACE: We will meet on Wednesdays 12:30 - 1:20 PM, Room 254 Life Sciences South. Near the end of the semester the class will meet at various times in addition to the regular class time to accommodate all student presentations.

COURSE DESCRIPTION:

This course is offered to biology majors (and others who satisfy the prerequisites) as a "capstone" to their undergraduate studies. You have spent four or more years gaining knowledge of biology, but have probably spent little time considering how this knowledge is (or isn't) used in the "real world" that you will enter upon graduation. The primary objective of the course is to provide you with an opportunity to do so. In this course you will critically read, consider, discuss, and write about specific scientific issues that are prominent in society today.

As you well know, few issues pertaining to scientific policies and practices are "black and white", and almost all are complex. Conflicting data are not uncommon. Moreover, economic, political, and moral issues enter into decision-making, as do various prejudices and the momentum imparted by past practices. The goal of the course is to expose students to the complexity of these kinds of issues and provide an opportunity to wrestle with how the knowledge you have gained can be used to arrive at recommendations and decisions.

COURSE INFORMATION: This syllabus and other information about the course are available on the web (<http://www.sci.uidaho.edu/biosci/lecture/Top/Spring/index%20%20sp%20.html>).

BOOKS:

We will read from three books:

1) "The Weather Makers: How Man is Changing the Climate and What it Means for Life on Earth" by Tim Flannery
Publisher: Atlantic Monthly Press; ISBN-10: 0-87113-935-9; ISBN-13: 978-0-87113-935-1

2) "Lords of the Harvest: Biotech, Big Money, and the Future of Food" by Daniel Charles
Publisher: Perseus Publishing; ISBN: 0-7382-0773-X
These two books are available through www.amazon.com. Please order them right away.

Syllabus for BIOL 411, Senior Capstone
Dr. Eva Top

3) We will also use material from the following book, which can be read on-line at no cost: “Environmental Effects of Transgenic plants: The Scope and Adequacy of Regulation” - <http://www.nap.edu/catalog/10258.html>

ATTENDANCE and PARTICIPATION:

Attendance is mandatory except for when an absence is excused for medical reasons or when authorized by the University.

Students are required to complete the assigned reading *before* the scheduled class period and should be prepared to participate in classroom discussions or to answer questions when called upon to do so.

ACADEMIC HONESTY: Academic honesty is governed by Article II of the University of Idaho’s Student Code of Conduct (<http://www.webs.uidaho.edu/fsh/2300.html>). Cheating on classroom or outside assignments, including examinations is a violation of this code. All incidents of academic dishonesty will be reported to the dean of students. Individuals guilty of academic dishonesty will be expelled from the course and receive a failing grade. All students should be aware that even one incident of academic dishonesty may also merit expulsion from the University.

GRADING: A student’s grade will be based on following:

Presentation of reading assignment: 20%

Participation: 15%

Outline of term paper: 5%

Term paper: 40%

Presentation of term paper: 20%

There will be no examinations in the course (including no final exam).

PRESENTATIONS

Students will make two presentations in class.

The first of these presentations will be based on assigned reading from the books and related articles from the popular press, available on the web (<http://www.sci.uidaho.edu/biosci/lecture/Top/Spring/index%20%20sp%20.html>). The presentation will consist of a brief (15 minute) summary of the information covered in the assigned chapter(s) of the textbook, and any of the related articles, followed by a discussion about the key issues raised, as well as the implications of the conclusions drawn by the author. The student should be prepared to lead a group discussion for the remainder of the class time. If certain concepts are new or not clear, the student is expected to get a better understanding through additional reading. This presentation will be graded by the instructor as well as by your peers (50/50).

The second presentation will be a 30-40-minute presentation based on your term paper (see TERM PAPER below), and this will be followed by 10 minutes of questions from the class and discussion. Two days before the presentation a 250 word abstract should be distributed (via email) to the instructor and the students (an email list will be provided). The grade for the presentation will be determined by the instructor, and based on the clarity and substance of the presentation (see TERM PAPER below) as

well as the manner in which the presentation is made. It is also expected that the presenter will make appropriate use of graphics (presented using transparencies or PowerPoint).

PARTICIPATION

Participation of students in classroom discussions will be judged by the instructor and will account for 15% of the final grade.

TERM PAPER

Students will also be expected to prepare a term paper that constitutes a critical analysis of scientific and social issues that pertain to a particular case study. As far as possible, the student should attempt to objectively address conflicting scientific and public viewpoints. The topic of the term paper will be chosen by the student but must be approved by the instructor. The text of the paper should reflect the original thoughts, interpretations, and conclusions of the author. The term paper should address (at least) the following aspects of the case:

- What is the problem?
- What scientific data have been gathered to define and understand the problem?
- What individuals, groups, government organizations have concluded that a “problem” exists?
- What conclusions and predictions have been drawn by scientists and policy makers based on the scientific data?
- How has the problem been described or explained to the public by the mass media? Does the media represent the problem in an accurate way - what aspects are generalized, simplified, exaggerated, and so on?
- What knowledge gaps exist, how have data been extrapolated, and what predictions have been made?
- Are the conclusions and predictions scientifically and logically sound?
- What actions or policy changes have been recommended? What are the conflicting viewpoints that have been expressed concerning the severity of the problem and the steps that should be taken to mitigate the problem?
- An assessment of what should be done in the future to better understand and address the problem that represents the student’s personal opinions.
- What are the implications and consequences of possible outcomes?

The term paper should be no less than 11 printed pages (line spacing: 1.5 lines; including figures, tables but NOT including the list of references). The references and figure/table captions should be single-spaced; font: 12 pt. Primary sources of information and data should be properly cited. Errors in grammar, syntax, and spelling will result in a lowering of your grade. Students are encouraged to periodically consult with the instructor about the topic and formulation of the paper as it is being prepared. Additional information about the organization and format of the paper will be provided in class.

* CLASS SCHEDULE - Mondays *

Date	Book	Assigned Reading	Student
January 10	Introduction	Assign first chapters	
January 19 (FRI!)	The Weather Makers	Part 1	Ted Yamamoto
January 22	The Weather Makers	Part 2	Jaclyn Nelson
January 29	The Weather Makers	Part 3	Jennifer LeFors
February 5	The Weather Makers	Part 4	LaDeene Bedard
February 12	The Weather Makers	Part 5	Courtney Heinz
February 23 (FRI!)	Environmental Effects of Transgenic Plants	Preface, Executive Summary and Chapter 1	Zach Greenwade and Geoffry Herzog
February 26	Environmental Effects of Transgenic Plants	Chapter 2	Heather Guild
March 5	Lords of the Harvest	Prologue + Chapters 1-5	Maia Benner
March 12	NO CLASS		
March 19	Environmental Effects of Transgenic Plants	Chapter 7	Abbey Burgess
March 26	Lords of the Harvest	Chapters 13-16	Rachelle Rollins
April 2	Lords of the Harvest	Chapters 17 - Epilogue..	Darcy VanGundy
April 9	Three Presentations		
April 16*	Three Presentations		
April 23*	Three Presentations		
April 30*	Three Presentations		

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- Additional times for student presentations will be determined later.

ASSIGNMENT DUE DATES:

- (1) Presentation and discussion of book chapters: See schedule.
- (2) Outline of term papers due March 5, 2007.
- (3) Term papers are due April 13, 2007.
- (4) Presentations of term papers will start during the week of April 9, 2007.

* CLASS SCHEDULE - Wednesdays *

Date	Book	Assigned Reading	Student
January 10	Introduction	Assign first chapters	
January 17	The Weather Makers	Part 1	Tara Potter
January 24	The Weather Makers	Part 2	Melinda Ouwerkerk
January 31	The Weather Makers	Part 3	Lisa Carey
February 7	The Weather Makers	Part 4	Lindsey Anderson
February 14	The Weather Makers	Part 5	Halle Minney
February 21	Environmental Effects of Transgenic Plants	Preface, Executive Summary and Chapter 1	Kaileigh Zive AND Geoffrey Hall
February 28	Environmental Effects of Transgenic Plants	Chapter 2	Jendar Deschenes
March 7	Lords of the Harvest	Prologue + Chapters 1-5	Kim Russo
March 14	NO CLASS		
March 21	Environmental Effects of Transgenic plants	Chapter 7	Alley Godwin
March 28	Lords of the Harvest	Chapters 13-16	Selah Walker
April 4	Lords of the Harvest	Chapters 17-Epilogue	Nicole Hecker
April 11	Three Presentations		
April 18*	Three Presentations		
April 25*	Three Presentations		
May 2*	Three Presentations		

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- Additional times for student presentations will be determined later.

ASSIGNMENT DUE DATES:

- (5) Presentation and discussion of book chapters: See schedule.
- (6) Outline of term papers due March 7, 2007.
- (7) Term papers are due April 13, 2007.
- (8) Presentations of term papers will start during the week of April 11, 2007.