SYLLABUS

(1) COURSE INFORMATION
Course name: Biology and Society (BIOL F103)
Credits: 4 credits, including lab
Instructor: Anja Kade, email: ftank@uaf.edu, phone: (907) 474-7094
Lecture hours: none (online)
Website: https://classes.uaf.edu
UA student info website: http://uaonline.alaska.edu
Office hours: by appointment

(2) COURSE OVERVIEW
“Biology and Society” is a general biology course for non-majors with a lab component that will be delivered online. The course will cover the fundamental principles of biology and emphasize the applications to humans in the modern world. The field of biology encompasses too many topics to cover in one single class, and this course will focus on the following general areas of biology: cell biology and heredity, evolution, diversity of life, plant biology, animal biology, ecology and the global environment. You should spend at least 5 hours per week online, reading the lecture notes, completing lab sessions and testing your understanding through skill quizzes. In addition, you are required to read assignments in your textbook, complete homework assignments and lab worksheets, write a scientific report and prepare a presentation for the student symposium. The course material is organized into six major lecture sections. The seventh section represents a symposium consisting of the presentations delivered by the students. You should complete one section at a time within a two-week timeframe.

(3) ASSESSMENT AND GRADING

<table>
<thead>
<tr>
<th>Test/Project</th>
<th>% of total grade</th>
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<tbody>
<tr>
<td><strong>Lecture:</strong></td>
<td></td>
</tr>
<tr>
<td>Midterm exam 1</td>
<td>15</td>
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<tr>
<td>Midterm exam 2</td>
<td>15</td>
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<tr>
<td>Final exam</td>
<td>15</td>
</tr>
<tr>
<td>6 homework assignments</td>
<td>10</td>
</tr>
<tr>
<td>Student symposium (presentation slides,</td>
<td>10</td>
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<tr>
<td>note pages and discussion board)</td>
<td></td>
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<tr>
<td>Participation (discussion board)</td>
<td>5</td>
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<tr>
<td><strong>Lab:</strong></td>
<td></td>
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<tr>
<td>6 lab worksheets (consisting of two units each)</td>
<td>15</td>
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<tr>
<td>Scientific report on experiment</td>
<td>10</td>
</tr>
<tr>
<td>6 “lab and lecture” quizzes</td>
<td>5</td>
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<tr>
<td><strong>Total</strong></td>
<td>100</td>
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Assessment

• **Exams.** You will take the exams online from the class website. The format will include fill-in-the-blank, multiple choice and short essay questions. The exams will be open-book and timed. You will have to study in advance as you will not be able to look up every answer. The exams will not be comprehensive. Each exam will be enabled on Blackboard from 8 a.m. to 8 p.m. on the day noted in the assignment schedule.

• **Homework assignments.** You will find six homework assignments, one associated with each of the first six major lecture topics. The homework assignments are intended to reinforce material covered in the lectures and give you the opportunity to explore the application of biological concepts to us humans in greater depth. The assignments will include short essays, reports and reflections. You are required to submit the homework after the completion of the respective lecture section. Note the due dates!

• **Student symposium.** We will have a student symposium at the end of the semester consisting of presentations delivered by all students. For the presentation, you may choose from any topic concerning biology that interests you. Check with me during the first two weeks for approval of your topic. The presentation should be prepared in Powerpoint and include your personal remarks on the note pages. For more instruction, refer to Section 7. You need to email me your presentation by the end of section 6 (note the due date), and I will post your presentation on the class website. You should give an overview of your topic, including recent literature research, and stimulate a discussion at the end of your presentation on the online discussion board. Every student is required to read each presentation during the two-week symposium and post at least one contribution to each presentation! The material covered by the presentations may show up on the final exam.

• **Class participation.** As this is an online class, we will not have a normal classroom environment in which you can interact with each other. However, I will post biweekly discussion topics for each lecture section 1-6 to the discussion board on the class website. You are required to post at least one contribution to the discussion during each two-week lecture section. I also encourage you to ask questions and share your own experiences/knowledge on any topic via the discussion board.

• **Lab worksheets.** This class includes six lab sessions associated with the first six major course sections. During each online lab session, you will demonstrate your understanding of the lab topics by filling out lab worksheets. These must be submitted after the completion of each lab via fax and will serve as your certification of having finished the lab sessions. Each set of lab worksheets consists of two units (A and B), which need to be faxed in by the last day of the respective section by 8 p.m. (fax number: 866-849-5283). Lab 4 is an experiment broken down into the set-up and the analysis. The experiment requires some time, so you need to plan ahead and get an early start to finish it in time.

• **Scientific report on experiment.** As part of the lab, you will perform a small plant-biology experiment, including data collection and a short analysis (see Lab 4). You are required to write a scientific report on the experimental methods, results and discussion and hand it in at the end of the semester. You will find further details in the lab folder on plant biology in Section 4.
• Quizzes. You are responsible for completing an online “lab and lecture” quiz after completing each of the first six course sections. These six short multiple-choice quizzes ensure your understanding of the lab and lecture material. Each quiz needs to be completed by the end of the two-week section time by 8 p.m. of the respective date.

Grading
For each assignment, you will get a percentage grade that will be posted on your Blackboard account. At the end of the semester, I will weight the grades for all assignments according to the “% of total grade” listed in the table above and give final letter grades based on the following percentage scale:

- A: 90-100%
- B: 80-89%
- C: 65-79%
- D: 50-64%
- F: < 49%

(4) CLASS POLICIES
You are responsible for handing in all assignments on time. The deadline for each assignment is noted in the course schedule. Assignments sent in more than one week late will not be graded, and there will be a 10% penalty for any assignment handed in during the seven-day grace period. I hope this strict policy will help you to keep on top of the course and finish it successfully. If you cannot make a deadline because of urgent reasons, you need to let me know in advance! (However, too many family deaths over the course of one semester may seem a little suspicious…) I will grade all assignments associated with a certain class section after the respective due date and email you my notes and your grades within the following week.

To successfully complete this class, you need to keep up with assigned course work and readings! Also, I encourage you to ask questions to clarify issues you may have trouble with. You may post any questions regarding the class material on the discussion board or email me with your questions directly.
DUE DATES FOR ASSIGNMENTS

27 Jan 07  Homework 1  
            Lab 1 (units A and B)  
            Contribution to discussion board  
            Quiz 1  

9 Feb 07  Midterm exam 1  

10 Feb 07  Homework 2  
            Lab 2 (units A and B)  
            Contribution to discussion board  
            Quiz 2  

24 Feb 07  Homework 3  
            Lab 3 (units A and B)  
            Contribution to discussion board  
            Quiz 3  

9 Mar 07  Midterm exam 2  

10 Mar 07  Homework 4  
            Lab 4 (units A and B)  
            Contribution to discussion board  
            Quiz 4  

31 Mar 07  Homework 5  
            Lab 5 (units A and B)  
            Contribution to discussion board  
            Quiz 5  

14 Apr 07  Homework 6  
            Lab 6 (units A and B)  
            Contribution to discussion board  
            Quiz 6  
            Symposium presentation (slides and note pages)  

28 Apr 07  Contributions to discussion board for all symposium presentations  

4 May 07  Final exam  
            Scientific report
LECTURE AND ASSIGNMENT SCHEDULE

Week 1-2: 16 Jan – 27 Jan 07
Section 1: Cell biology and heredity
Lecture 1: Biology as a science (Ch. 1)
Lecture 2: Cell structure and function (Ch. 5)
Lecture 3: Cell reproduction (Ch. 11, 12)
Lecture 4: Patterns of inheritance and DNA (Ch. 13, 14)
Homework 1: Report on inherited diseases
Lab 1: Cell types and inheritance
   A. Cell types
   B. Inheritance
Contribution to discussion board
Quiz 1

Week 3-4: 29 Jan – 10 Feb 07
Section 2: Evolution
Lecture 5: Scientific evidence for evolution (Ch. 22)
Lecture 6: Genetic variation (Ch. 21)
Lecture 7: Species concept (Ch. 23)
Homework 2: Essay on the founder effect in human populations
Lab 2: Evolution
   A. Evolution over geologic time
   B. Rapidly occurring evolution
Contribution to discussion board
Quiz 2

9 Feb 07
Midterm exam 1 (covering sections 1-2)

Week 5-6: 12 Feb – 24 Feb 07
Section 3: Diversity and simple organisms
Lecture 8: Classification of organisms (Ch. 25)
Lecture 9: Prokaryotes (Ch. 27)
Lecture 10: Protists (Ch. 28)
Lecture 11: Fungi (Ch. 30)
Homework 3: A recipe of kingdoms
Lab 3: Classification and diversity
   A. Classification
   B. Diversity
Contribution to discussion board
Quiz 3

Week 7-8: 26 Feb – 10 Mar 07
Section 4: Plant biology
Lecture 12: Plant diversity (Ch. 29)
Lecture 13: Plant morphology (Ch. 35)
Lecture 14: Plant reproduction (Ch. 41)
Homework 4: Report on medicinal use of plants
Lab 4: Germination experiment
   A. Set-up
   B. Analysis
Contribution to discussion board
Quiz 4

9 Mar 07
Midterm exam 2 (covering sections 3-4)

Spring break: 12 Mar – 18 Mar 07

Week 9-10: 19 Mar – 31 Mar 07
Section 5: Animal biology
Lecture 15: Diversity of noncoelomate invertebrates (Ch. 31, 32)
Lecture 16: Diversity of coelomate invertebrates (Ch. 33)
Lecture 17: Diversity of vertebrates (Ch. 34)
Lecture 18: Animal behavior (Ch. 52)
Homework 5: Overview of insects as human food
Lab 5: The human animal
   A. Human health
   B. Human senses
Contribution to discussion board
Quiz 5

Week 11-12: 2 Apr – 14 Apr 07
Section 6: Ecology and global environment
Lecture 19: Population ecology (Ch. 53)
Lecture 20: Community ecology (Ch. 54)
Lecture 21: Ecosystem ecology (Ch. 55)
Lecture 22: Environmental degradation (Ch. 56)
Homework 6: Reflection on your ecological footprint
Lab 6: Ecology
   A. Population ecology
   B. Community and ecosystem ecology
Contribution to discussion board
Quiz 6

Week 13-14: 16 Apr – 28 Apr
Section 7: Student symposium
(Links to the presentation of each student will be added later.)
Contributions to discussion board for each presentation
4 May 07

**Final exam** (covering section 5-7)

**Assignment due:** scientific report