

# Biology 102: Human Biology

## Autumn Quarter 2011

Dr. John Reeve

Welcome to Biology 102. You should find answers to most of your questions below, so please read the following information carefully and completely. But, if you still have questions, please then do ask.

**Lecture Room/Times:** Jennings Hall, Room 001; T and R 10:00-11:18 AM;  
**Recitation Room/Times:** See your schedule  
**Recommended Texts:** (1) *What Is Life?* by Jay Phelan, © 2011; ISBN: 1429246669  
(2) *The New York Times* (see flyer on Carmen)

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**Prerequisites:** Bio 101 or equivalent (could be high school AP biology); or Course Coordinator's Permission

### GEC Natural Science Goals and Objectives

*Students who successfully complete this course will fulfill the following GEC Natural Science goals and objectives:*

**Goals/Rationale:** Courses in natural sciences foster an understanding of the principles, theories and methods of modern science, the relationship between science and technology, and the effects of science and technology on the environment.

**Learning Objectives:**

1. Students understand the basic facts, principles, theories and methods of modern science.
2. Students learn key events in the history of science.
3. Students provide examples of the inter-dependence of scientific and technological developments.
4. Students discuss the social and philosophical implications of scientific discoveries and understand the potential of science and technology to address problems of the contemporary world.

In Biology 102, non-major Biology students meet the GEC Natural Science Learning Objectives in multiple ways. The course provides students with an understanding of basic human biology. Lectures and recitations address human evolution and genetics, nutrition, sex and reproduction, organ functions and development, hormones, infectious, genetic and immune diseases. Discussions of topical scientific research help students understand the history and development of scientific investigations of human biology and health. Current interactions of science, technology and society are noted and discussed throughout the course. Assignments give students opportunities to personally consider these interactions. Biology 102 is designed to help students make informed decisions about their own biology, human society and biology-based technological advances that they will encounter during their 21<sup>st</sup> century lives.

## **COURSE OVERVIEW and OBJECTIVES**

Issues related to human biology, behavior and healthcare are routinely in the news and topics of TV and talk radio discussions. But usually the scientific facts provided are minimal whereas the extrapolations are extensive. The goal of Biology 102 lectures is to provide students with the facts and to identify current limits of knowledge related human biology issues and 21<sup>st</sup> century human behavior and lifestyles. In the recitation sessions, students have the opportunity to review and discuss the lecture materials, see relevant videotape presentations, and to discuss contemporary societal issues (Case studies; see below) raised by our increased understanding and ability to manipulate human biology. Students will also collaborate in small groups to develop and present a poster to the entire Biology 102 community on a human biology issue of their choice.

## **OFFICE HOURS**

Please discuss any questions or concerns with your Teaching Associate (TA) or Adam Andrews before scheduling an appointment with Dr. Reeve. But, if your question is not satisfactorily answered, please do call or send an email to schedule an appointment with Dr. Reeve. No student should leave Bio 102 with the impression that the instructors were unwilling to meet, talk and help. We are pleased to meet and talk with you, if you ask.

## **EXAMINATIONS and GRADING**

### **Examinations: 400 pts**

All examination questions will be based on the material presented and discussed with the class by Dr. Reeve during the classroom lectures and by the teaching associates during the weekly recitation activities. There may be questions based on information and details discussed in the recitation sections that are not explicitly described in the lectures and/or listed in the lecture guides. Questions will not be asked on topics in the textbook that are not discussed at all in the lectures nor in common recitation activities (e.g. videos).

The midterm examinations will be held in JE 001 at the scheduled lecture time. The first midterm will be from 10:00 - 11:18 AM on Thursday, October 13, 2011 and the second from 10:00-11:18 AM on Tuesday, November 8, 2011. Each will be worth 100 points.

The Final Examination will be held during Finals Week, on Thursday, December 8<sup>th</sup>, from 9:30 to 11:18 A.M. Please note this date and time NOW to avoid end-of-Quarter scheduling and travel conflicts. The final examination will be comprehensive and will be worth 200 points.

### **Recitations: 150 pts**

Recitations will run Tuesday through Thursday beginning September 27<sup>th</sup>. During each recitation, students will have the opportunity to discuss the information presented in the classroom lectures and will participate in a Case Study discussion. They will also watch and discuss one or more videotapes concerning course-relevant aspects of "Human Biology." Recitation points will be awarded for student participation in the group discussions and for correct answers to brief quizzes based on recitation activities.

The Case Studies to be discussed will be posted to Carmen. Copies of the textbook will be available on closed reserve at both the BP and Thompson Libraries. All students are expected to have read the associated questions and considered the issues raised by a case study BEFORE her/his recitation meets to discuss and evaluate the topic. One case study will be discussed each week, according to the course schedule below.

### **The New York Times: 50 pts**

Each student will prepare a written summary of one NYT article each week for 5 consecutive weeks beginning with recitations the week of October 13-16. Copies of the NYT are available daily by subscription, or in the residence halls, libraries, or on the internet. Details for this assignment will be presented in recitation and on CARMEN.

### **Poster presentation: 100 pts**

Students will collaborate, in small groups, to produce a poster on a topic chosen from a list of suggested topics or (preferably) on a topic of the group's choosing. The points for this assignment will be split equally between the final collaborative poster presentation (50 pts) and each individual's contribution (50 pts). Details of this assignment will be presented in recitation and on CARMEN. Many posters produced by previous Bio 102 classes remain on public display, and garner much OSU interest, for the entire academic year.

### **Lecture Activities: 50 points**

Each day in lecture, students will respond in individual written form to questions posed to the class. These questions will be graded on the basis of 5 points each, and the highest 10 scores will be counted. No make up assignments will be offered.

### **FINAL GRADES**

Final grades will be determined by the percentage of the total points received out of 750 points, based on the 3 examinations, recitations, presentations, lecture activities and NYT assignment. The grading scale will be as follows:

93-100%	=	A	80-83%	=	B-	67-70%	=	D+
90-93%	=	A-	77-80%	=	C+	60-67%	=	D
87-90%	=	B+	73-77%	=	C	0-59%	=	E
83-87%	=	B	70-73%	=	C-			

Note 1: *Carmen* does not round averages up to the next nearest percentage point, so 92.11% and 92.97% both earn the grade of A-.

Note 2: Grading on a curve is not desirable; everyone should be able to get an A.

### **POSTING OF GRADES**

All grades will be posted on *Carmen*; you will have 10 working days to challenge any grade or inquire regarding any un-posted grade; after that time, grades are final.

### **MAKE-UP EXAMINATIONS/RECITATIONS**

If you are too ill to take a quiz/exam, please contact the Course Coordinator within 24 hours of the class period in which the exam was taken. You must be seen by and receive written documentation from a professional health care practitioner on the day of the quiz/exam in order for a make up to be given. Persons arriving late for quizzes or exams will not be offered an exam after the first person has finished. Other serious personal problems will be considered, in advance, but on an individual basis. In all instances, documentation supporting the excused absence will be required. Lack of transportation, loss of electricity, travel plans, etc. will not be considered as valid excuses and you will receive a "0". Make ups for exams and quizzes will be in a short answer format.

**Check the date and time of the final examination now and make sure that this time does not conflict with your future plans. No early final exams will be given.**

If you miss a recitation and you have a valid written excuse, you may be given a make-up assignment associated with the missed topic that will require approximately two hours work outside of the classroom. Only under exceptional circumstances will such a make-up opportunity be granted more than once.

### **CARMEN**

This course uses CARMEN (<http://carmen.osu.edu>) as its tool to manage grades and communicate timely information to our students. It is expected that all students will check this site frequently for schedule changes, assignment guidelines, and other information. If you are unfamiliar with CARMEN, instructions are available at the Center for Life Sciences Education office (260 Jennings Hall).

## **LATE ASSIGNMENTS POLICY**

Late assignments turned in within 24 hours after the due date is worth a maximum of half credit. Any assignment turned in past the 24-hour deadline is worth no credit. If possible, students should deliver late assignments directly to their TA in person. If that's not possible, students may deliver late papers to their TA's mailbox in the CLSE TA mailroom (Jennings 247), but students must stamp the papers with the day and times received and log it in as per posted instructions. A date stamp machine is available across from the TA mailboxes. Dropboxes are available on Carmen. Do not email assignments to your TA. *This policy will be enforced so that all students in the course are treated equally.*

## **ACCOMMODATION OF SPECIAL NEEDS**

Any students registered with the Office of Disability Services as needing accommodation should speak with Mr. Andrews regarding those needs. Please do this within the first two weeks of the quarter, and feel free to contact any of the course instructors either after class or during office hours. Only Mr. Andrews is authorized to sign ODS forms. Please fill out those parts of the proctor sheet forms that are to be completed by the student before bringing the form for signature. This will help us ensure that your individual needs will be met appropriately and fairly.

## **ACADEMIC MISCONDUCT**

OSU has a strict code of academic misconduct that requires us to report all cases of suspected misconduct (e.g. cheating on an examination, plagiarism in written assignments, using an examination proxy, etc.) to the OSU Committee on Academic Misconduct for adjudication. We will strictly adhere to this policy. Students agree that by taking this course all required papers may be subject to submission for textual similarity review to Turnitin.com for the detection of plagiarism. All submitted papers will be included as source documents in the Turnitin.com reference database solely for the purpose of detecting plagiarism of such papers. Use of the Turnitin.com service is subject to the Terms and Conditions of Use posted on the Turnitin.com site.

## **SECTION CHANGES**

All section changes and adds are done at the Center for Life Sciences Education office between 8:00 AM and 4:00 PM in room 260 Jennings Hall or by the Course Coordinator. Due to the need to keep up-to-minute availability of seats in each recitation, the lecturer and TAs are unable to sign any permission forms.

## **SEXUAL HARASSMENT**

OSU and the Center for Life Sciences Education consider sexual harassment offenses to be unacceptable behaviors that destroy opportunities for learning. While all members of the staff involved in this course have been trained in the OSU sexual harassment policies and procedures, this is not true for all OSU students. Please report any concerns about questionable or unwanted behavior to Dr. Reeve or Mr. Andrews.

## **COURSE SCHEDULE and READING**

Listed below, in the order of presentation, is the lecture schedule for Biology 102. The most relevant textbook chapters are listed but please also consult the index of the textbook, as some topics are described in several different textbook locations. Most of the PowerPoint (PP) slides shown by Dr. Reeve during the lectures will be available through Carmen, but the lectures and class discussions will add information. Class Discussion issues are noted on the Carmen PP slides. In addition, as current newsworthy events in human biology will be discussed, and with student input and discussion encouraged, focal topics and specific emphasis may change.

## **ISSUE RESOLUTION**

The CLSE believes that student concerns are usually most effectively addressed by the staff closest to the situation. Therefore, students are ordinarily expected to address issues or concerns with their TAs first. If the issue cannot be resolved by your TA, or for some reason you feel that you absolutely cannot address your concern with your TA, please feel free to contact Adam Andrews (andrews.171@osu.edu) or Assistant Director Matt Misicka.

**Table 1. Schedule of lecture topics.** Relevant chapter sections are identified (#.X-Y; e.g. 1.5-8 means **Chapter 1** sections 1.5 through 1.8) in the textbook “*What Is Life*” by Jay Phelan (1<sup>st</sup> Edition), but **also consult the index** as some topics have additional details distributed throughout the text. The lectures emphasize current events and provide information directly relevant to daily life. There will be additional details and information discussed that is NOT in the textbook. The Midterm and Final Examination dates are listed.

<b>Date</b>	<b>Lecture Topics</b>	<b>Chapter sections</b>	<b>Recitation Activities</b>
<b>Sept</b> Thur 22	<b>Course Overview</b> ; Scientific method and human experiments. human features, ancestral hominids	<b>1.1-16; 11.10-11</b>	<b>NO RECITATIONS HELD THIS WEEK</b>
Tues 27	Present and future human evolution. Review of DNA makes RNA makes protein, prions. Genetic code and mutations.	<b>5.1-8</b>	• CS: Pros and Cons of Smoking Bans
Thur 29	Human genome and chromosomes, karyotype and sex determination	<b>6.1-2; 6.4-8; 6.10-15; 6.17-18</b>	
<b>Oct</b> Tues 4	Stem cells, reproductive versus therapeutic cloning; human genetic traits and hereditary diseases	<b>5.10-13; 5.17-19; 7.11-16</b>	• CS: DNA Dragnets • Mate Choice Survey
Thur 6	Blood groups, human pedigrees, DNA testing and gene replacement therapy, human genomics	<b>5.11-13; 7.10</b>	
Tues 11	Cancer, longevity, aging, death, apoptosis,	<b>6.6; 6.9;</b>	• CS: Stem Cells • NYT #1 Due
<b>Thur 13</b>	<b>Midterm I</b>		
Tues 18	Mate selection, pheromones, male and female reproductive systems;	<b>9.10-15; 25.4-6</b>	• CS: Cancer Trials • NOVA: <i>Cancer Warrior</i> video & Worksheet • NYT #2 Due
Thur 20	Ovarian and uterine cycles Fertilization, contraception,	<b>25.7-9</b>	
Tues 25	Embryonic and fetal development, birth and breast feeding, oxytocin	<b>25.11-14; 24.1</b>	• CS: Fertility Treatments • NYT #3 Due
Thur 27	Blood, heart, cardiovascular system and disorders;	<b>21.4-8</b>	
<b>Nov</b> Tues 1	Lymphatic system, Respiration, nutrition,	<b>21.9; 21.11; 21.13, 21.15-18; 22.5-8; 22.15-18</b>	• NOVA: <i>The Pill</i> video & Worksheet • NYT #4 Due
Thur 3	Digestion, Urinary system, medical rationing	<b>22.9-13; 5.19</b>	
<b>Tues 8</b>	<b>Midterm II</b>		• CS: Heart Transplant • NYT #5 Due
Thur 10	Nervous system, nerve impulses, neurotransmitters and drugs, synapses; Brain structure, limbic system.	<b>23.1-6; 23.16-21</b>	
Tues 15	Sensory perception; taste, vision, hearing, balance.	<b>23.7-12</b>	• <b>Poster Session (11/15 – 4:30PM)</b> • CS: Selecting the Perfect Baby / <i>GATTACA</i> • <b>Poster Paper Due</b>
Thur 17	Endocrine system, hormones, diabetes;	<b>24.1-11; 22.18</b>	
Tues 22	Immune system, antigens and antibodies, autoimmune diseases, vaccines,	<b>26.1-12</b>	<b>NO RECITATIONS THIS WEEK</b>
<b>Thur 24</b>	<b>Thanksgiving Day – No Classes</b>		
Tues 29	Disease transmission, viral diseases, influenza, HIV	<b>13.7-8; 13.15-18</b>	• CS: To Vaccinate or Not to Vaccinate? • Peer Evaluation Due
<b>Dec</b> Thur 1	Antibiotic resistance, bacterial and parasite diseases	<b>13.7-8; 13.14; 25.10</b>	
<b>Thur 8</b>	<b>FINAL EXAM 9:30 – 11:18 a.m.</b>		