Syllabus: Organismal Biology – Bio 135D & E

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Office Hours: Tues 10:00 – 12:00 (or by appointment)
Lecture Times: M W F 1:40 – 2:40 pm, Room: Olin 241
Laboratory Times:
Thursday 8:30 am – 11:20 am or 12:40 pm – 3:30 pm, Room: Olin 142
Textbook: Biological Science by Scott Freeman

There is a tremendous diversity of life on earth, most of it is invisible to the casual observer either because it is unicellular and microscopic or because most of us are not accustomed to observing the macroscopic and multicellular organisms around us with a discerning eye. This course will focus on two of the most conspicuous groups of macroscopic organisms; plants and animals. Although we are surrounded by plants and animals everyday, the role that these omnipresent organisms play in the biosphere often escapes our scrutiny. We will survey the different ways that plants and animals overcome the problems associated with living in the Earth's biosphere. We will explore this subject through a combination of lecture, reading, writing, discussion, and laboratory exercises.

Course Objectives By the end of this course you should be able to:

1. Understand the principal structural and functional adaptations evolved by plants and animals for overcoming the major problems associated with living on Earth.
2. Be able to synthesize and critically evaluate a conceptual picture of organismal biology based on scientific information.
3. Communicate scientific information clearly in verbal and written formats.

Lecture Topics The lecture portion of the class is designed to provide you with a foundation in organismal biology. The lecture material should not be treated as an inert mass of information to be unquestioningly memorized and recalled. The information contained

in the lectures will aid you in developing a conceptual understanding of organismal biology. I encourage you to continually evaluate how new material can be assimilated into your developing understanding. You should assess your own comprehension of the material as it is provided, challenging yourself to make sense of new information. Myself and the other members of the class are tools that you can use to aid in this evaluation. Do not hesitate to ask questions of us.

The dates of the lectures are approximate, and we will likely deviate to accommodate the natural organic development of the class. The chapters relevant to each topic are indicated and I encourage you to use the book as a resource to assist your understanding of the subject. However, you will only be responsible for the material covered in the lecture or from specifically assigned readings. Reading the book alone will not be an appropriate substitute for your attendance and attention in class.

Topic	**Week of:**	**Text Chapters**
Introduction & Origins	Feb. 1	Assigned on Moodle
Energy – Cellular Respiration	Feb. 8	9
Energy – Photosynthesis	Feb. 15	10
Energy – Gas Exchange	Feb. 22	10
Exam 1	Feb. 24	
Discussion 1	Feb. 26	Assigned on Moodle
Energy – Gas Exchange	March 1	36, 44
Nutrients – Animal & Plant Nutrition	March 8	38, 43
Nutrients – Plant Nutrition	March 15	38
Exam 2	March 17	
Discussion 2	March 19	Assigned on Moodle
Spring Break	March 22	
Information Processing – Electrical & Chemical Signalling	March 29	39, 45, 47
Information Processing – Gene Expression	April 5	16, 18
Homeostasis – Water and Solute Balance &		

Immunity	April 12	37, 39, 42, 49
Homeostasis – Immunity	April 19	39, 49
Exam 3	April 21	
Discussion 3	April 23	Assigned on Moodle
Homeostasis – Immunity	April 26	39, 49
Reproduction – Cell & Organismal Reproduction	May 3	11, 12, 40, 48
Reproduction – Organismal Reproduction & Bioawesomeness	May 10	40, 48
Final Exam	May 20: 8:30 – 11:30 am	

Class Discussions Biology is a living discipline and new information is constantly being integrated into and causing the reevaluation of previous biological paradigms. This process is not limited to biologists who have achieved a particular academic level but is the responsibility of all biology students. To participate in the process of moving biology forward as a discipline, you must continually practice at critically evaluating new biological information. Toward that end we will have a semi–structured class discussion periodically throughout the semester. Prior to the discussion you will be assigned readings which will provide background information about the topic. Often the authors of the readings will support opposing views of the issue. You are required to read the assigned articles and write a short (one page maximum) statement of opinion encapsulating your thoughts and questions on the issue. The statement is not intended to be incredibly formal but should contain a clearly articulated argument. The statements must be uploaded to Moodle prior to the discussion. Although each student's level of involvement will naturally vary for the different different topics, you are expected to maintain an engaged and active presence during the discussions.

Classroom Courtesy This classroom is intended to be an open forum for you to explore and develop an understanding of biology. All students must feel free to contribute to the general environment of discovery and anything that detracts from a open, respectful, inquiry – based environment will not be tolerated. Specifically, all classmates are to be treated with respect at all time. While discussions may become passionate, personal attacks or intimidation are not permitted. Additionally any behavior that distracts from the purpose of the class is also disrespectful and will not be tolerated. These behaviors include but are not limited to, cell phone use, disruptive behavior, sleeping etc:. Laptops may be used during

lecture for note taking but should not be used for non–class related activities and must be put away during discussions.

Expectations I expect you to read and adhere to the *Academic Expectations for DePauw Students* and the *Academic Integrity Policy* outlined in the DePauw Student Handbook.

Academic Resources The resources on campus to assist your academic success should be viewed as tools that you can use to improve your learning experience and not punitive or remedial in any way. The first of these is myself. I am invested in your academic success and I am available during my office hours or by appointment to assist you with the material we cover in class and lab. Please do not hesitate to contact me with questions or concerns about the material we cover or the class in general. The second is the Academic Resource Center (ARC)(http://www.depauw.edu/admin/arc/index.asp). ARC has numerous programs and tutoring opportunities including assistance with writing and dedicated biology tutors.

A library guide for this course is available on the Moodle site. This guide contains information on the resources available at the library and has been customized for this course.

Attendance I will not formally take attendance but your presence in each lecture is expected. In-class assignments cannot be made-up. Attendance for the discussions is mandatory, you will receive zero points for missed discussions. Attendance for the laboratory is mandatory. No make–up labs are possible.

Grading and Evaluation Your final grade for the class will come from 3 exams and a *cumulative* final exam, plus in-class assignments and discussions, and your laboratory grade. The percent value of each portion of your final grade is shown in the table below.

The grade on the final exam can replace any or all of the grades on the lecture exam. Prior to turning in the final exam you will be asked to indicate which (if any) of your lecture exam grades you wish to replace with your final exam grade. There are *no make–up exams!* The value of any missed exam will be added to the final exam grade.

The laboratory grade will be compiled from the laboratory assignments. The details of the laboratory assignments will be discussed in the laboratory. You will receive separate grades for your in-class assignments and your participation in each of the scheduled class discussions. All assignments are due at the beginning of class. All lecture exams will take place during the class period and are due at the end of class. It is not within my power to change the date of the final exam. Grades will not be curved and there are no opportunities for extra credit.

Assignment Values

Grade	**Percent of Final Grade**
Lecture Exam (3)	15% each
Final Exam	20%
In-class assignments and Discussion	5%

Laboratory Assignments	30%

Exam Dates

Exam 1	Feb. 24
Exam 2	March 17
Exam 3	April 21
Final Exam	May 20: 8:30 – 11:30 am

Grading Scale

Percent Cut–off	**Letter Grade**
93%	A
90%	A-
88%	B+
83%	B
80%	B-
78%	C+
73%	C
70%	C-
60%	D
<60%	F