Moravian College

Biology Department
Biology 112 – General Zoology
Fall 2009

Instructor: Dr. Fran Irish
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Office: Collier Hall of Science – Room 321
Office hours: Monday and Friday 11:30 a.m. – 1:00 p.m., Thursday 9 a.m. – 10 a.m., or by appointment.

Lecture: Monday, Wednesday, and Friday 7:50 a.m. – 8:40 a.m.
Memorial Hall – Room 302

Lab: Section A: Tuesday 12:45 p.m. – 3:45 p.m.
Section B: Thursday 12:45 p.m. – 3:45 p.m.
Collier Hall of Science – Room 303

Required Textbook: *Integrated Principles of Zoology, 14th. Edition,* by Cleveland Hickman, Jr. et al., McGraw-Hill, 2008.

Required Lab Manual: *Laboratory Exercises in Integrated Principles of Zoology, 14th. Edition,* by Cleveland Hickman, Jr. et al., McGraw-Hill, 2008.

Other required equipment: Goggles (available at the book store), lab coats (provided), and dissection kits (also provided, but if you plan to be a biology major, you might consider purchasing your own kit at the book store), loose-leaf binder with lined and unlined paper for lab notebook.

Course Description: An introduction to basic concepts in biology through study of the major lineages of invertebrate and vertebrate animals, with emphasis on the ontogeny, structure, and function of organ systems in an evolutionary context. Topics covered will include basic cell structure, reproduction, development, and phylogeny. The laboratory will focus on observation of structural-functional relationships of living and preserved representatives of the major animal phyla.

Course Objectives: By the end of this course, students should:

1. Understand the difference between science and non-science.
2. Be familiar with the specialized vocabulary of zoology.
3. Understand the relationship between animal structure and function.
4. Know the structural and functional characteristics of major animal groups, and be familiar with current hypotheses concerning how they evolved.

Blackboard: All information associated with this course---syllabus, assignments, power point presentations, customized lab exercises, useful web links, cumulative grades---will be posted on Blackboard. You must register yourself for this course on Blackboard as soon as possible (see attached instruction sheet; the web address is: http://blackboard.moravian.edu/). Please note that your opportunity to register will expire on Saturday, Sept. 5th. If you have difficulty with this, PLEASE E-MAIL ME IMMEDIATELY!

Course Expectations

Lecture attendance: My lectures will generally be in the form of power point presentations, though I may decide to follow some other format if I find it more effective. I will post the power point lectures on Blackboard after class so that those of you who are slow note-takers or abysmal artists will not be struggling to keep up, and all of you can attend more carefully to what I say. HOWEVER, the power point slides will not contain everything I say---you will have to add the details if you are to have an effective study aid. THUS, tempting though it may be, you cannot sleep in and skip the lectures without penalty. If I see that attendance is dropping, I will stop posting the lectures. If you are ill, by all means stay home, but please e-mail me so I will know why you are absent. Cell phones must be turned off during lecture (this means you cannot text your friends).

Lab attendance: Don't even consider missing a lab unless you are ill or have some other emergency. Please contact me BEFORE the missed lab, and plan to submit an official excuse. It is the student's responsibility to arrange to make up a missed lab before the next lab quiz or practical. Be aware that it may not be possible to make up exercises involving live material, and I will not be available to guide you as I would during the scheduled lab period.

You are expected to read the assigned lab exercises BEFORE coming to lab. If you habitually come unprepared, you will not be able to participate in class discussions, and you will be scrambling to keep up (and your grade will suffer). Please bring your lab manual and lab notebook to every lab.

Lab notebook: Critical observation is absolutely essential to science. Therefore, I ask that you bring a loose-leaf binder with blank lined and unlined paper to lab. This binder will hold all lab handouts, plus your notes and drawings. The goal of this exercise is to hone your powers of observation and provide you with a useful study tool. Your lab notebooks will be handed in at the beginning of each lab practical (i.e., once in the middle of the semester, and again at the end), graded, and returned by the next lab period.

Exams: At the beginning of class on Fridays (except during weeks when lecture exams or lab practicals are scheduled), there will be a short quiz (5-points) covering the lectures on Monday and Wednesday. Plan to arrive for class on time, as late arrivals will not be allowed to take the quiz, and missed quizzes cannot be made up.

Neither lecture nor lab exams can be made up. If you have a legitimate excuse for missing an exam, that exam will be dropped, and your final grade will be computed on the basis of the work you have completed. If your absence is not excused, you will

receive a 0 for the missed exam. Absolutely no activated electronic devices will be allowed during exams (this includes cell phones and ipods).

The final lecture exam is cumulative, but weighted toward the last quarter of the course (100 points drawn from the period since the third lecture exam; 100 points drawn from the entire semester).

Reading assignments: You have a well-written, up-to-date textbook; unfortunately, we will not have time to discuss everything in it. The chapters that are relevant to each lecture are indicated on the lecture schedule. I expect you to scan the relevant chapter and read the chapter summary before each lecture to get a feel for the material I will be covering. After class, read the sections covered in the lecture for clarification, and amplify your lecture notes in areas you don't understand (I don't want to discourage you from reading the entire chapter, but if your time is limited, you may opt to forego this pleasure). There is an excellent summary at the end of each chapter, and useful questions to test your understanding. I recommend that you also use the on-line study materials provided for the textbook (these include flashcards that are quite useful for vocabulary---and there will be lots of vocabulary).

Grading: After the first lecture exam, your grades will be posted on Blackboard, so you can see how you are doing at any time. There will be no extra credit options beyond the occasional extra question or two on exams, so please focus your energy on what we are doing in class and lab. If you find yourself falling behind, or you are struggling to learn the material, *please contact me right away.* I am here to help you.

Three lecture exams (100 points each)	300 points
10 lecture quizzes (5 points each)	50 points
Final lecture exam (cumulative)	200 points
Two lab quizzes (25 points each)	50 points
Two lab practicals (100 points each)	200 points
Lab notebook	50 points
Class participation*	100 points
	950 points

*****Class participation includes attendance, preparation, participation in discussions, and completion of small, un-graded homework assignments.

I use the conventional grading scale: 90-100 = A, 80-89 = B, 70-79 = C, 60-69 = D, below 60 = F. Please note that the instructor may exercise qualitative judgment in determining your grade.

Academic Honesty: Students are expected to abide by the college policy on intellectual Honesty (see Student Handbook).

LECTURE SCHEDULE

Week	Lecture topic	Reading assignment
August 31*****	Introduction: The big questions	Chapter 1
	Origin and chemistry of life	Chapter 2
	Cells: the unit of life	Chapter 3
September 7*	NO CLASS – LABOR DAY	
	reproduction	pp. 137-146
	development	Chapter 8
September 14*	systematics	Chapter 10
	protozoa	Chapter 11
	animal body plans	Chapter 9
September 21	**EXAM** (100 points)	
	sponges	Chapter 12
	cnidarians	Chapter 13
September 28 *	flatworms	Chapter 14
	molluscs	Chapter 16
October 5	annelids	Chapter 17
	nematodes	pp. 386-392
	arthropods	Chapter 19 & 20
October 12*	*NO CLASS – FALL BREAK*	
	arthropods	Chapter 21
	echinoderms	pp. 472-494
October 19	**EXAM** (100 points)	
	protochordates	Chapter 23
	fishes	Chapter 24
October 26*	amphibians	Chapter 25
	non-avian reptiles & birds	Chapter 26 & 27
	mammals	Chapter 28
November 2*	evolution	Chapter 6
November 9*	Support, protection, & movement	Chapter 29
	Homeostasis	Chapter 30
November 16	**EXAM** (100 points)	

	circulation & respiration	Chapter 31
November 23	digestion NO CLASS – THANKSGIVING	Chapter 32
November 30	nervous system endocrine system	Chapter 33 Chapter 34
December 7*	immunity The future of biodiversity	Chapter 35

DECEMBER 11----FINAL LECTURE EXAM---8:30 – 11:30 AM

***** 5-point quiz on Friday covering Monday and Wednesday's lectures. NOTE: because classes end on Dec. 7, the final quiz will be on that day (Wednesday).

Please note: Lecture and lab syllabi outline the topics I hope to cover in the order I hope to cover them, but I may make changes as we progress through the semester. I will give you fair warning, and all changes will be posted on Blackboard.

LABORATORY SCHEDULE

Week	Laboratory topic	Laboratory exercise
August 31	Introduction, Safety Microscopy, The cell, mitosis	Handout Exercise 1 Exercise 2
September 7	Gametogenesis, Embryology	Exercise 3
September 14	**QUIZ** (25 points) Protozoans Using a dichotomous key	 Exercise 6 Exercise 5A
September 21	Sponges Cnidarians	Exercise 7 Exercise 8
September 28	Flatworms Molluscs	Exercise 9 Exercise 11
October 5	**LAB PRACTICAL** (100 points) Annelids	 Exercise 12
October 12	***NO LAB – FALL BREAK***	
October 19	Nematodes Arthropods	Exercise 10A Exercises 13-15
October 26	Echinoderms Protochordates	Exercise 16 Exercise 17
November 2	**QUIZ** (25 points) Vertebrate diversity Fish behavior	 Handout in lab
November 9	Vertebrate tissues Fetal pig dissection	Exercise 4 Exercise 22A,B
November 16	Fetal pig: digestive, circulatory, urogentital systems	Exercises 22C-E, G
November 23	***NO LAB – THANKSGIVING***	
November 30	**FINAL LAB PRACTICAL** (100 points)	