

BIOLOGY 100 - PRINCIPLES OF BIOLOGY Spring Semester 2008

Course description: This is an introductory biology course which covers the main concepts in biology in a lecture/ laboratory format. The course satisfies the F4 LinC (laboratory requirement for graduation). The human organism will be used as the primary focus organism for each topic. Lab exercises correlate with the lecture content. (Note - there is a fetal pig dissection).

Instructor - Dr. Karen Kurvink

Lecture - Biol 100 - MWF 3 (10:20- 11:10 AM) Collier Hall of Science 202

Lab - Monday 12:45 - 3:45 Collier Hall of Science 300

Text - **BIOLOGY - Concepts and Applications** 6th edition (2006) by Cecie Starr

Course objectives:

1. To cover the basic principles of biology.
2. To introduce students to the process of science and experimental design.
3. To emphasize biological systems related to the human organism in the context of “evolutionary conservation in design” for all higher organisms .

Course comments:

1. “Showing up” for lectures and laboratories is critical for success in this course. If you have to miss a lecture or lab you should submit a written/signed explanation of the reason for your absence. Unexcused absences will result in a lowered course grade. Lab attendance is 20 pts/lab.
2. Unit exams will cover material from both the designated lecture and laboratory portions of the course. The exams will contain a variety of types of questions. Optional help sessions will be offered before each exam to answer questions and to clarify the material covered. Each unit exam is 100 pts.
3. A contracting option is available for students who have a specific interest in doing an individual project. This is optional and must be discussed and contracted with the professor.
4. Course grade: This grade will be determined by dividing earned points by the total possible number of points. The percentage will translate into a letter grade according to the following scale:

90 - 100%	A	+ and - will be determined by the professor
80 - 89%	B	
70 - 79%	C	
60 - 69%	D	
Below	F	

Tentative point distribution:

Four unit exams (100 pts each)	400 pts
Lab attendance/participation	220 pts
Practical	60 pts
Mini-practical	20 pts
Poster or powerpoint	50 pts (per student)
Optional efforts	maximum of 100 pts
Lecture attendance	100 pts
Final class video	20 pts

Tentative Lecture Schedule

Mon	Jan 14	Introduction to course	Chapter 1
Wed	Jan 16	Principles of cellular life	Chapter 2,3
Fri	Jan 18	Cell structure and interactions	Chapter 4
Mon	Jan 21	Martin Luther King Jr Day - No class	
Wed	Jan 23	How cells work	Chapter 5
Fri	Jan 25	Cellular respiration	Chapter 7
Mon	Jan 28	Mitosis	Chapter 8
Wed	Jan 30	Meiosis	Chapter 9
Fri	Feb 1	Reproductive system	Chapter 38
Mon	Feb 4	Early development	Chapter 38
Wed	Feb 6	Animal tissues and organ systems	Chapter 28
Fri	Feb 8	Musculoskeletal system	Chapter 32
Mon	Feb 11	Digestive system	Chapter 36
Wed	Feb 13	Respiratory system	Chapter 35

Fri	Feb 15	Unit Exam 1(Chapters 1,2,3,4,5,7,8,9,38)	
Mon	Feb 18	Circulatory system	Chapter 33
Wed	Feb 20	Immune system	Chapter 34
Fri	Feb 22	Excretory system	Chapter 37
Mon	Feb 25	Endocrine system	Chapter 31
Wed	Feb 27	Nervous system	Chapter 29
Fri	Feb 29	Sensory perception	Chapter 30
Mon	Mar 3	Spring break - no class	
Wed	Mar 5	Spring break - no class	
Fri	Mar 7	Spring break - no class	
Mon	Mar 10	Plant structure and function	Chapter 24, 25,26
Wed	Mar 12	Plant reproduction	Chapter 27
Fri	Mar 14	Unit Exam 2 (Chapters 28, 29, 30, 31, 32,33,34,35, 36, 37)	
Mon	Mar 17	Photosynthesis	Chapter 6
Wed	Mar 19	Mendelian genetics	Chapter 10
Fri	Mar 21	Good Friday - no class	
Mon	Mar 24	Easter Monday	
Wed	Mar 26	Chromosomes/human genetics	Chapter 11
Fri	Mar 28	DNA structure and function	Chapter 12
Mon	Mar 31	Protein synthesis	Chapter 13, 14
Wed	Apr 2	Genomics/poteomics	Chapter 15
Fri	Apr 4	Processes of evolution (population genetics)	Chapter 16
Mon	Apr 7	Evolutionary patterns	Chapters 17

Wed	Apr 9	Forces of Evolution	Chapter 18
Fri	Apr 11	Unit Exam 3 (Chapters 24,25,26,27, 6,10,11,12,13,14,15)	
Mon	Apr 14	Ecology Community structure and biodiversity	Chapter 40
Wed	Apr 16	Ecosystems (biogeochemical cycles)	Chapter 41
Fri	Apr 18	Population biology	Chapter 39
Mon	Apr 21	Biogeochemical overloading	
Wed	Apr 23	Regional biomes	Chapter 42
Fri	Apr 25	Biological interconnections	

Unit Exam 4 - During final exam period (Chapters 16, 17, 18, 39, 40,41, 42)

Tentative Lab Schedule

Lab 1	Jan 14	Microscope/cells Scientific literature - Example stem cell articles Group interaction: "Stem cell"
	Jan 21	No lab - Martin Luther King Day
Lab 2	Jan 28	Enzyme activity - spectrophotometer Mitosis
Lab 3	Feb 4	Meiosis Reproduction and Development Tissues
Lab 4	Feb 11	Muscles/skeletal system Fetal pig - digestive system Digestive tract slides
Lab 5	Feb 18	Fetal pig - respiratory system Fetal pig - circulatory system Blood slides Fetal pig - endocrine system
Lab 6	Feb 25	Fetal pig - excretory system Fetal pig - reproductive system

Placenta types
Fetal pig - nervous system
Review for practical

Lab 7 Mar 10

Practical exam

Lab 8 Mar 17

Plant structure and function
Plant reproduction

Mar 24

Easter Monday - no lab

Lab 9 Mar 31

Mini practical on plant slides
Human traits
Karyotype

Lab 10 April 7

DNA isolation
DNA structure
Protein synthesis

Lab 11 April 14

Population genetics

Lab 12 April 21

Evolution discussion
Video: Inconvenient Truth
Environmental posters/powerpoint