BIOLOGY 100 PRINCIPLES OF BIOLOGY Fall Semester 2007

Course description: Principles of Biology is an introductory biology course which covers the main concepts in biology in a lecture and laboratory format. The course satisfies the LinC (laboratory requirement for graduation). The human organism will be used as the the primary focus organism for each topic. In lab, there is a fetal pig dissection which allows the student to observe the various organ systems covered simultaneously in lecture.

Instructor Dr. Karen Kurvink

Lecture Biol 100A MWF 3a (10:20-11:10 AM) HoSci 202
Lab A Monday (12:45-3:45 PM) HoSci 300
Lab B Wednesday (12:45 3:45 PM) HoSci 300
Lab C Tuesday (12:45-3:34 PM) HoSci 302

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

1. To cover the basic principles of general 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

Tentative Lecture **Schedule**

MonAug 27	Introduction to course	Chapter 1
WedAug 29	Principles of cellular life	Chapter 2,3
FriAug 31	Cell structure and interactions	Chapter 4
MonSept 3	Labor Day No class	
WedSept 5	How cells work	Chapter 5
FriSept 7	Cellular respiration	Chapter 7
MonSept 10	Mitosis	Chapter 8
WedSept 12	Meiósis	Chapter 9

FriSept 14	Reproductive system	Chapter 38
MonSept 17	Early development	Chapter 38
WedSept 19	Animal tissues and organ systems	Chapter 28
Fri Sept 21	Musculoskeletal system	Chapter 32
Mon Sept 24	Digestive system	Chapter 36
Wed Sept 26	Respiratory system	Chapter 35
Fri Sept 28	Unit **Exam 1(Chapters 1,2,3,4,5,7,8,9,38)**	
Mon Oct 1	Circulatory system	Chapter 33
Wed Oct 3	Immune system	Chapter 34
Fri Oct 5	Excretory system	Chapter 37
Mon Oct 8	Fall break	
Wed Oct 10	Endocrine system	Chapter 31
Fri Oct 12	Nervous system	Chapter 29
Mon Oct 15	Sensory perception	Chapter 30
Wed Oct 17	Plants and animals common challenges	Chapter
Fri Oct 19	Unit Exam 2 (Chapters 28, 29, 30, **31, 32,33,34,35, 36, 37)**	
Mon Oct 22	Plant structure and function	Chapter
Wed Oct 24	Plant reproduction	Chapter 27
Fri Oct 2	Photosynthesis	Chapter 6
Mon Oct29	Infectious disease	Chapter 19
WedOct31	Mendelian genetics	Chapter 10
Fri Nov 2	Chromosomes/human genetics	Chapter 11
MonNov 5	DNA structure and function	Chapter 12
WedNov 7	Protein synthesis	Chapter 13, 14
Fri Nov 9	Studying and Manipulating genomes	Chapter 15
MonNov 12	Processes of evolution (population genetics)	Chapter 16
WedNov 14	Evolutionary patterns	Chapter 17
FriNov **16**	Unit Exam 3 **(Chapters 24,25,26,27, 6,19,10,11,12,13,14)**	
MonNov 19	Forces of evolution	Chapter 18
WedNov 21	No class Thanksgiving recess	
FriNov 23	Thanksgiving break	
MonNov 26	Ecology	
	Community structure and biodiversity	Chapter 40
WedNov 28	Ecosystems (biogeochemical cycles)	Chapter 41
Fri Nov 30	Population ecology	Chapter 39
Mon Dec 3	Human population growth	
Wed Dec 5	Biogeochemical overloading	
	Other environmental challenges	Chapter 42
Fri Dec 7	Regional biomes	Chapter 42

Mon Dec 10 Life connections

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

Tentative Lab Schedule

Week 1	Aug 27 . 29	Microscope/cells Scientific measurement Scientific literature . Example stem cell articles Group interaction: “Stem cell situations/discussion” Form groups for environmental poster.
Week 2	Sept 3 . 5	No lab (due to Labor Day holiday)
Week 3	Sept’ 10 . 12	Enzyme activity . spectrophotometer Mitosis Group interaction: “When does life begin?” Confirm topic for environmental poster.
Week 4	Sept 17-19	Meiosis Reproduction/development Assisted reproductive technology Group interaction: “Regulation of ARTs”
Week 5	Sept 24 . 26	Tissues Muscles/skeletal system Fetal pig- external anatomy Fetal pig . digestive system Digestive tract slides
Week 6	Oct 1 . 3	Fetal pig . respiratory system Fetal pig . circulatory system Blood slides Fetal pig . endocrine system
Week 7	Oct 8 . 10	Spring break
Week 8	Oct 15 . 17	Fetal pig . excretory system Fetal pig . reproductive system Placenta types Fetal pig . nervous system Review for practical
Week 9	Oct 24	**Practical exam**
Week 10	Oct29 and 31	Plant structure and function Plant reproduction

Week 11	Nov 5 and 7	Mini practical on plant slides Human trafts Karyotype
Week 12	Nov 12 and 14	DNA isolation Protein synthesis
Week 13	Nov 19 and 21	No lab- Thanksgiving break
Week 14	Nov 26 and 28	Evolution discussion Phylogenetic tree
Week 15	Dec 3 and 5	Environmental posters (groups) displayed and contracted work presented.

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 counts 20 pts/lab.

2. During the last lab environmental posters will be displayed and discussed. Students will work in groups (four students/group). Each group will be expected to prepare the poster "out of class". The poster will be graded on the basis of 100 pts. (note: each student in the group will received the same grade unless valid reason is given to do otherwise) The poster will be graded on content, creativity, and appearance (posters will be displayed) Student names should be clearly indicated in the lower right hand corner of the poster. They should be ready for display on Monday, Dec 3rd.

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. Each unit exam contains 100 pts.

3. A contracting option is available for students who desire alternative ways to earn course points. For this semester, the emphasis will be on "Planet Earth Issues" including infectious diseases. The format will be to prepare a 10 minute powerpoint presentation on your topic which will be presented during the final lab (contract value 50 pts) or

to prepare a research paper on a selected topic (point value 50-100 points) which will be due on Dec 3. This paper must be referenced and contain a bibliography. Note, you may elect to do both the presentation and the paper. If you plan to select a contract option, you must have your topic and point values determined by the March 3 (Friday before Spring break).

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	
80-89%	B	+ and - grades will be added at the
70-79%	C	discretion of the professor
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	100 pts
Optional contracted work	20 to 200 pts
Lecture attendance	100 pts
Final class video	20 pts