Concepts in Biology
Biology 120 - Spring 2003

Instructor: Dr. Steve Baker
Office: Pierce Hall #117
Phone: 770-784-8446

Office Hours: Tuesday and Thursday 9:30-11:00. Wednesday 3:00-4:30 pm. Students are encouraged to see the instructor during class to make appointments at other times.

Lecture Hours: MWF 11:45-12:35
Room: Pierce 102

Lab Hours: Monday, 2:00-5:00
Room: Pierce 125


Course Objectives

• Students should gain understanding of the scientific process, scientific inquiry and critical thinking skills.
• Students should gain a basic knowledge of biological concepts such as cellularity, cellular reproduction, energy, genetics, and evolution.
• Students should learn about the basic structure and function of major body systems
• An underlying theme of this course relates to the interruption of body homeostasis by disease; this will be addressed through the addition of relevant clinical topics.

Tentative Lecture Schedule

<table>
<thead>
<tr>
<th>Jan.</th>
<th>Chapter</th>
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<tbody>
<tr>
<td>15</td>
<td>Introduction to Course, Scientific Inquiry 1</td>
</tr>
<tr>
<td>17</td>
<td>Basic Biology; Are you alive? 1</td>
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<tr>
<td></td>
<td>Martin Luther King Holiday</td>
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<tr>
<td>22</td>
<td>Viruses; Are they alive? 20</td>
</tr>
<tr>
<td>24</td>
<td>Prokaryotes/In-class investigation 20</td>
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</tbody>
</table>
27  Eukaryotic Cell Structure and Function  4
29  Lipids and Membrane Structure  3, 4
31  Cell Transport  4

Feb.  3  Clinical Issues/Breakdowns in Cell Function
      February 3:  First writing assignment due
      DNA, chromosomes, and cell reproduction  12
      Cellular Reproduction:  Mitosis  8
      Clinical Issues/Cancer

February 11, Tuesday:  Resources and Research, 8:15-9:30 am.
      Meet in library study room
      Introduction to Sex:  Meiosis  9
      Exam 1 - Through Cancer
      Mendelian genetics  10
      Modes of Inheritance  10
      Clinical Issues/Human Genetic Disorders
      Molecular Genetics and Cloning  15
      Putting your genes to work; protein production  13
      Changes in genes; evolution and natural selection  16

Mar  3  Evidences for evolution  18
      March 3, Second writing assignment due
      Clinical Issues/Bacterial Evolution and Antibiotics
      Systems Overview:  Circulation I  34
      Clinical Issues/Coronary Artery Disease
      Respiration  36
      Exam 2 - Through Coronary Artery Disease
      Respiratory Disorders  36
      Cell Wars:  Immunity  35
      Parasites and other Symbionts
      Carbohydrates and Cellular Respiration  7

April  2  Digestion  37
      Clinical Issues/ Digestive Disorders
      Human Reproduction  39
      April 7, Third writing assignment due
      Clinical Issues/ Reproduction Case Study
      Nervous System-Introduction  30
      Brain Anatomy/Sheep Brain Review  30
      Exam 3, through Reproduction
      Introduction to Ecology-Ecosystems  43
      The Driving Force:  Photosynthesis  6
      Overview of Plant Anatomy
      Clinical Issues/ Medicinal Plants
      Wrap-up
The instructor reserves the right to modify this syllabus or the lab syllabus as he deems it necessary.

Additional Course Information:

Writing: Students will write about current topics in biology and as a component of classroom and laboratory learning. Assignments will be made in class and lab.

Papers: One major paper will be required on a topic relating to a human disease or other clinical topic. A handout will be provided to outline specific requirements.

Honor Code: All examinations and work for credit in this course come under the regulations of the Honor Code. Your signature on your examination or paper attests to your upholding the Honor Code in your work.

Absences: The policy on absences is outlined in a separate handout. Unexcused absences or a failure to follow the procedures outlined in that handout will result in a reduction of your grade. Additionally, tardiness is exceptionally rude and will result in a decreased grade as well.

Evaluation: Students will be evaluated on their performance in the classroom and the laboratory. Points are distributed as follows:

- 300 points 3 lecture exams
- 150 points laboratory exams
- 175 points final exam
- 50 points research paper
- 30 points additional class writings

705 points total

Plus and minus grades are given in this course.
Lab Schedule
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Jan. 27    Lab Topic 1, Scientific Investigation
Feb. 3    Lab Topic 3, Microscope/Cell
          Lab Topic 4, Cell Membranes
          Lab Exam 1 (1, 3, 4)
          Lab Topic 5, Mitosis
          Meiosis, Human Genetics
          Lab Topic 5, 10
Mar 3    Lab Topic 14, Molecular Genetics
          Lab Topic 9, Animal Diversity
          Lab Exam 2 (5, 10, 14, 9)
          Lab Topic 11, Circulation and Respiration
          Lab Topic 10, Digestive System
Apr 7    Lab Topic 12, Reproduction/Development
          Lab Topic 13, Aquatic Ecology
          Lab Topic 3, Photosynthesis
          Lab Exam 3 (11, 10, 12, 13, 3)