### HONORS BIOLOGY 112-0005 (GENERAL BIOLOGY I) TOPIC SCHEDULE

**DR. BONNIE WOOD - FALL 2010**

**Mondays and Wednesdays 12:00 NOON - 2:45 PM in Folsom 304**

**Key to Fonts:**
- **Outline Titles and Numbers**
- **In class and laboratory activities**

**STUDENT PRESENTATIONS, OTHER ASSIGNMENTS, TESTS**

Textbook chapters and other homework

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<th>WEEK</th>
<th>HOMEWORK</th>
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<td>1</td>
<td>Due 9/1: READ SYLLABUS Chs. 1&amp;18, Outlines 1 &amp; 2.</td>
<td>8/30: <em>The Scientific Process</em> (Outline 1) • Find Your Learning Team! Introductions • Case Study: Salem's Secrets</td>
<td>9/1: Properties of Life and How We Name Living Things (Outline 2) • Lab Etiquette and Safety • The Compound and Dissecting Microscopes • Word Roots</td>
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<td>2</td>
<td>Due 9/8: Chs. 3 &amp; 4, Outline 3. Visit the Model of a DNA Double Helix; Properties of Water; Submit report choices</td>
<td>9/6: HOLIDAY - NO CLASSES</td>
<td>9/8: <em>Chemistry and Molecules of Life</em> (Outline 3) Bring a calculator • Properties of Water • pH Changes with Serial Dilutions of an Acid • Where Do You Find Organic Molecules?</td>
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<td>3</td>
<td>Due 9/13: Ch. 5, Outline 4 Conceptualizing Metric Units/ Making Measurements, questions 1-8.</td>
<td>9/13: <em>Cells</em> (Outline 4) • Conceptualizing Metric Units • Making Measurements • Making Measurements with the Compound Microscope • Diffusion and Osmosis, Class 1</td>
<td>9/15: <em>Cells</em> (Outline 4) Bring drawing paper and hard lead + blue, green, red pencils • Size and Shapes of Cells, Surface Area: Volume Ratios • Making a drawing from a prepared slide • Equilibrium: Throwing Paper Wads • Diffusion and Osmosis, Class 2 • Demonstration of an appropriate test review question.</td>
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<td>4</td>
<td>Due 9/20: Test review questions</td>
<td>9/20: <em>Cells</em> (Outline 4) • Plant and Animal Cells • Case Study: Osmosis is Serious Business!</td>
<td>9/22: <em>Cells</em> (Outline 4) • Diffusion and Osmosis in Plant and Animal Cells • Test Review Activity</td>
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<td>5</td>
<td>Due 9/29: Chs. 9&amp;12, Outline 8. Cut out pink &amp; blue chromosomes &amp; bring to class with 6 paperclips</td>
<td>9/27: <strong>TEST (Outlines 1-4)</strong> NOTE: SKIP TO OUTLINES 8 – 10 TO PREPARE FOR DR. NOBLE’S VISIT. RETURN TO OUTLINE 5 ON OCTOBER 25.</td>
<td>9/29: <em>The Cell Cycle and DNA Replication</em> (Outline 8) • Extraction And Spooling Of DNA • DNA Replication Outside The (Cereal) Box • Chromosome socks: Find your sister chromatid and homologue • Begin sprouting onion bulbets</td>
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<td>6</td>
<td>Due 10/4: Ch. 9, Outline 9 Your Body is Younger Than you Think. Test review questions Due 10/6: Ch. 10, Outline 10</td>
<td>10/4: <em>Mitosis</em> (Outline 9) • Sock Chromosomes- Mitosis • Paper Chromosomes – Mitosis • Mitosis in <em>Allium cepa</em> • But I’m Too Young! A Case Study of Ovarian Cancer</td>
<td>10/6: <em>Meiosis</em> (Outline 10) • Sock Chromosomes - Meiosis • Paper Chromosomes - Meiosis • Clarifying Misconceptions About Meiosis With Pipe Cleaners • Sock Chromosomes – Make a Karyotype • Case Study: Cross-Dressing or Crossing-Over? Sex Testing of Women Athletes • Test Review Activity</td>
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<td>7</td>
<td>Due 10/18: Human Karyotyping Due 10/20: Read “Solving Superman”, and write answers to questions at end of Part 1, Sections A , B &amp; C</td>
<td>10/18: <strong>TEST (Outlines 8-10)</strong> <strong>7:00 PM Thursday, October 21, Campus Center: STEM CELL BIOLOGY: THE NEXT MEDICAL REVOLUTION, Dr. Mark Noble, Professor of Genetics, Neurology, Neurobiology and Anatomy; Director, Univ. Rochester Stem Cell and Regenerative Medicine Institute at University of Rochester Medical Center</strong></td>
<td>10/20: Preparation for Dr. Noble’s visit • Case Study: Saving Superman A Look into Stem Cell Research. Part II, Role Play/Jigsaw (Dr. Noble will visit your English 101 class on the morning of Thursday, October 21)</td>
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**UMPI FALL BREAK: NO CLASSES 10/11 – 10/15**
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| 8    | Due 10/25: Ch. 6, Outline 5 Enzyme Dietary Supplements
      Due 10/27: Ch. 7, Outline 6 Book review title due | 10/25: **Energy and Enzymes (Outline 5)**  
- Discussion of information on enzyme dietary supplements  
- *Simulation of The Nature of Enzymes*  
- *In Vitro Gas Suppression: Beano®*  
- Begin germinating seeds for "Cellular Respiration in Plants"
      Dr. Wood submits midterm grades | 10/27: **Photosynthesis (Outline 6)**  
- Photosynthesis vs. Respiration  
- Cellular Respiration in Plants |
| 9    | Due 11/1: Ch. 8, Outline 7
      Due 11/3: Chs. 11, 13, 14, Outline 11 | 11/1: **Cellular Respiration (Outline 7)**  
- Effects of Experimental Variables on Fermentation Ability of Yeast  
- Case Study: Why is Patrick Paralyzed?  
- Plant Mung Beans (Outline 14, p. 116)
      **Cellular Respiration and Photosynthesis Rap Songs** | 11/3: **Genetics (Outline 11)**  
- Inheritance Of ABO Blood Types in Humans  
- Case Study: Sometimes It Is All In The Genes  
- Relating Enzyme Function To Phenotype (relate to case study) |
| 10   | Due 11/8: Outline 11 DNA Fingerprinting, CoursePack pp. 87-88.
      Due 11/10: Chs. 2&17, Outline 12 | 11/8: **Genetics (Outline 11)**  
- The Pedigree Chart  
- Coin Toss Pedigrees  
- Restriction Enzyme/DNA Fingerprinting Simulation  
- Case Study: Two Peas in a Pod? | 11/10: **Evolution and Natural Selection (Outline 12)**  
- Microbial Resistance to Triclosan  
- Sickle-Cell Anemia  
- MDR Tuberculosis: A Case Study Focused on Social Justice |
| 11   | Due 11/15: Ch. 23, Outline 13 Supermarket Botany;
      Test review questions
      Due 11/17: Ch. 24, Outline 14 By 11/19: Writing Center Consultation for Book Review | 11/15: **Plant Form and Function (Outline 13)**  
- The Organs of the Vascular Plant  
- Transpiration in Mung Beans: Control by Environmental Factors: Preparation/Procedure (Outline 14, pp. 117-118)
      **COLLECT DATA AFTER 18-24 HOURS!** (Outline 14, p. 119) | 11/17: **Plant Growth and Responses (Outline 14)**  
- Transpiration in Mung Beans: Control by Environmental Factors: Data Collection and Analysis  
- Test Review Activity |
| 12   |       | 11/22: **TEST (Outlines 5-7, 11-14) INCLUDING MICROSCOPE SKILLS ASSESSMENT** | 11/24: **HOLIDAY - NO CLASSES** |
| 13   | Due 11/29: Ch. 29, Outline 15.
      Due 12/1: Ch. 30, Outline 15. | 11/29: **Animal Circulation (Outline 15)**  
- Circulation Challenge Questions  
- Case Study: Anyone Who Had a Heart | 12/1: **Animal Respiration (Outline 15)**  
- Case Study: Iron Deficiency Anemia  
- Case Study: A Typical Cold?  
- I Don’t Need a Flu Shot |
| 14   | Due 12/6: Ch. 33, Outline 15.
      Due 12/8: Final book review (include signed grading criteria sheet and draft) | 12/6: **Animal Immune Response (Outline 15)**  
- ABO/Rh Blood-Typing Model  
- Blood Typing for Organ Donations  
- ABO-Rh Blood Typing With Synthetic Blood | 12/8: **Animal Dissection**  
- Frog dissection and sheep brain lab BOOK REVIEW PRESENTATIONS |
| 15   |       | 12/13:  
- Biology Attitudes, Skills & Knowledge Post-Semester Survey: Individual and Learning Team  
- Review of all old tests | **THURSDAY, DECEMBER 16, 2010**  
12:45 PM – 2:45 PM  
COMPREHENSIVE FINAL EXAM (OUTLINES 1-15) |