BIO 1150 Master Course Syllabus

I. College/School: College of Science and Mathematics
   Department: Biological Sciences

II. Course Information
   Course Title: Introduction to Biology: Organisms and Ecosystems
   Course Abbreviation and Number: BIO 1150
   Course Cross Listing(s) Abbreviation and Number:
   Check ("x") all applicable:
       Writing Intensive_____Service Learning_____Laboratory__X___Laboratory Grade Separate_____
       Ohio TAG (Transfer Assurance Guideline) Course__X___Ohio Transfer Module Course_____

III. Course Registration
   Prerequisites: WSU Math Placement 04 or Undergraduate level MTH 126 Minimum Grade of D or
   Undergraduate level MTH 127 Minimum Grade of D
   Corequisites: Bio 1150L

IV. Course Objectives
   1. Characterize the methods and limitations of science.
   2. Discuss the evolution of theories in biology, using historical developments and perspectives with a
      particular emphasis on the evidence for evolution.
   3. Compare the physiological processes of the digestive, musculo-skeletal, circulatory, respiratory, excretory,
      nervous, immune, and reproductive systems among different organisms.
   4. Identify the similarities and differences in cell /tissue/whole body organization structure and function among
      plants, animals, prokaryotes, and viruses. Explain the relationship between body organization and
      organism classification.
   5. Describe how living things interact with both the biotic and abiotic aspects of the environment.
   6. Identify the evolutionary processes that lead to adaptation and biological diversity as it applies to
      physiology, whole body organization, and behavior.
   7. Describe the basic principles of conservation biology.

V. Course Learning Outcomes
   1. Understand the major contributions and limitations of key studies in physiology, ecology, and evolution.
   2. Collect and critically analyze data in light of physiological, ecological and evolutionary biology concepts.
   3. Understand the relationship among form, function, and basic needs of organisms as it applies to whole
      body organization and physiology of multiple organ systems.
   4. Understand the critical relationships among biotic and abiotic aspects of an ecosystem, with an emphasis
      on the flow of energy and nutrients. Predict how changes in either aspect affect the other.
   5. Understand the evidence for evolution.
   6. Apply the evolutionary processes that lead to adaptation and biological diversity with regard to physiology,
      whole body organization, and behavior.
   7. Apply the basic principles of conservation biology.

BIO 1150 is a Natural Science course for the Core Element program. Learning outcomes are:
   1. Understand the nature of scientific inquiry
   2. Critically apply knowledge of scientific theory and methods of inquiry to evaluate information from a variety
      of sources
   3. Distinguish between science and technology and recognize their roles in society
   4. Demonstrate an awareness of theoretical, practical, creative and cultural dimensions of scientific inquiry
   5. Discuss fundamental theories underlying modern science

VI. Suggested Course Materials (required and recommended)
       9780805368444
   Lab manual: BIO 1150 Lab Manual, custom printed by Hayden McNeil

VII. Suggested Method of Instruction
   Lecture; Students will attend weekly 2-hour laboratory sessions
VIII. Suggested Evaluation and Policy

Student performance is assessed through 3 exams throughout the semester and one final exam, comprising 75% of the total points. The remaining 25% of points will be accrued through the laboratory in the form of pre-lab quizzes, lab reports and lab practical exams. A student must earn at least 70% of the possible points in the lab to be eligible to pass the course.

IX. Suggested Grading Policy

Final course letter grade (A-F) is determined on a 10-percentage point scale (i.e. 90% is an A, 80% is a B, etc…).

X. Suggested Assignments and Course Outline

<table>
<thead>
<tr>
<th>WK.</th>
<th>LEARNING OUTCOME #</th>
<th>LECTURE TOPIC</th>
<th>READING</th>
<th>LABORATORY TOPIC</th>
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<tbody>
<tr>
<td>1</td>
<td>1, 3, 4</td>
<td>Form &amp; function: Cells to organs in animals and plants</td>
<td>Ch. 35, 40</td>
<td>Microscopes, Cells &amp; Tissues</td>
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<tr>
<td>2</td>
<td>9, 10</td>
<td>Nutrition procurement &amp; processing Musculo-skeletal system</td>
<td>Ch. 37, 41, 50</td>
<td>Musculo-skeletal Systems</td>
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<tr>
<td>3</td>
<td>10</td>
<td>Musculo-skeletal system Circulatory system</td>
<td>Ch. 50, 42</td>
<td>Cardiovascular System</td>
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<tr>
<td>4</td>
<td>10</td>
<td>Respiratory system EXAM 1</td>
<td>Ch. 42</td>
<td>Breathing Capacities</td>
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<tr>
<td>5</td>
<td>10</td>
<td>Osmoregulation Communication: Nerves</td>
<td>Ch. 44, 48, 49</td>
<td>Urinary System</td>
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<tr>
<td>6</td>
<td>10, 11, 12</td>
<td>Communication: Nerves &amp; hormones Immunity</td>
<td>Ch. 39, 45, 43</td>
<td>Nervous System</td>
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<td>7</td>
<td>8, 10</td>
<td>Reproduction &amp; development</td>
<td>Ch. 38, 46, 47</td>
<td>Reproductive System</td>
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<td>8</td>
<td>7, 13 – 15, 23</td>
<td>EXAM 2 Whole body organization &amp; classification</td>
<td>Ch. 32-35, 40</td>
<td>Phylogenies &amp; History of Life</td>
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<tr>
<td>9</td>
<td>13, 15, 16, 17</td>
<td>Form &amp; function and the environment Relationships among living and non-living</td>
<td>Ch. 50, 52</td>
<td>Community Ecology</td>
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<td>10</td>
<td>16, 18, 19</td>
<td>Energy and nutrient flow in the environment Population growth and changes</td>
<td>Ch. 55, 52</td>
<td>Population Changes</td>
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<tr>
<td>11</td>
<td>1, 2, 23</td>
<td>Evidence for evolution &amp; evolutionary processes Principles of biological evolution</td>
<td>Ch. 22, 23</td>
<td>Evolution/Natural Selection</td>
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<tr>
<td>12</td>
<td>2, 15</td>
<td>Speciation and biodiversity</td>
<td>Ch. 24, 25, 26</td>
<td>Speciation</td>
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<tr>
<td>13</td>
<td>2, 21, 22</td>
<td>EXAM 3 Animal behavior</td>
<td>Ch. 51</td>
<td>Animal Behavior</td>
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<td>14</td>
<td>2, 20, 27</td>
<td>Conservation biology</td>
<td>Ch. 56</td>
<td>Biodiversity</td>
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</table>

XI. Other Information

N/A

This is a course guideline syllabus. Course materials, method of instruction, evaluation and policy, grading policy, assignments, and other course matters can differ by specific course sections and individual professors. Additional information can be obtained by contacting the appropriate college and department.