LECTURE TIMES:  MWF 8:10-9:10
LOCATION:    Sci 104
INSTRUCTOR:  Dr. J. Elson-Riggins
OFFICE:     Science Rm. 118
PHONE:      657-1645
E-MAIL:     jelsonriggins@msubillings.edu
OFFICE HOURS:  MWF 9:20-10:20
CLASS WEB SITE: http://www.msubillings.edu/ScienceFaculty/Elson-Riggins/

COURSE DESCRIPTION AND OBJECTIVES
This is the first course in the Biology core for students majoring in Biology. It emphasizes the principles of biology related to the unity of life. Pertinent topics are outlined in the syllabus that follows. In this course, you will also learn about scientific reasoning, how to interpret scientific data, and critical thinking. The expected outcome of this course is that it will give you a contemporary view of biology necessary to pursue advanced work in different biological fields.

COURSE REQUIREMENTS

LECTURES:  To pass this course you must attend lectures. Attendance will be monitored periodically and will be taken into account when determining your final course grade. You will be expected to read the assigned sections of the text books. The lectures will be in the form of power point presentations. These presentations will be available on the course web site AFTER the lecture. The assigned readings will be listed on this site and given in lecture.

ASSESSMENT : Eight quizzes and four examinations will be given in this course, in addition to the mandatory comprehensive final exam.

QUIZZES:  Quizzes will be composed of ten multiple choice questions. To be successful in the quizzes, it will be necessary to read the pertinent material and attempt all the questions at the end of the text chapters. The lowest 2 quizzes will be dropped, and the remaining six will be worth 20% of your final grade. The quizzes will be administered at the beginning of the lecture hour. Students arriving after the quiz has been distributed will not be permitted to take it.

EXAMS: Each exam may be composed of multiple choice, matching, true/false, short answer, and essay questions. Exams will not only require knowledge of the material covered in lecture, but you will also be expected to use this information to solve problems. Study guides and practice exams will be posted on the class web site prior to the actual examination. It is VERY important that you attempt the practice exams (do them under exam conditions – time yourself!) and ask for help if you have trouble with the practice questions.
The practice exams will be similar (but not the same!) as the real exams. Therefore, if you have trouble with the practice exams you will also have trouble with the real exams. Exams 1-4 will be worth 60% of your final grade. The final exam will be worth 20% of your final grade. Finally, exam dates are tentative and will depend on the progress of the course. Any changes in date will be announced in lecture.

**REVIEW SESSIONS:** Review sessions will be offered prior to the exams. These will not however, occur during class time, as we will need all lecture time to cover the course material. I will schedule a time for each review session that the majority of students can attend. If you are unable to attend the review you should meet with students that have attended to discuss the material. I fully encourage you to work together in groups (you are NOT competing with one another!) in this way. However, if you do attend the review session, you will be required to have attempted the appropriate practice exam beforehand.

**SUMMARY:** Your success in this class will be dependent upon attending lecture, taking detailed notes during the lecture and/or from the web site, reading the text and attempting questions in the text, completing all assignments, attending review sessions and/or study groups, and doing the practice exams.

**MAKE UP EXAMS**
Make up exams will not be given without prior approval from the instructor and will only be permitted in dire circumstances beyond your control. If an exam is missed due to illness, a note from a physician will be required for a make up exam to be administered. There will be no make up quizzes under any circumstances.

**GRADES AND POINT BREAKDOWN**
A, A- = 90-100%  B+, B, B- = 80-89%  C+, C, C- = 70-79%
D+, D, D- = 60-69%  F ≤ 59%

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Percentage of Points</th>
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<tbody>
<tr>
<td>Quizzes</td>
<td>20</td>
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<td>Unit Exams</td>
<td>60</td>
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<tr>
<td>Final Exam</td>
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<td>Total</td>
<td>100</td>
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**EXTRA CREDIT**
There will be extra credit questions on the exams. However, extra credit assignments will not be permitted – so please do not ask for them!!!
ACADEMIC MISCONDUCT

It is **YOUR responsibility** to familiarize yourself with the Student Affairs Handbook. In particular, note Part IX, B.1, Academic Misconduct. You are expected to be **entirely** responsible for your own work. Any student cheating in an exam will receive a zero for that assignment, and possibly an “F” for the course. Plagiarism in any form will not be permitted.

Verbal abuse in any form will **NOT** be tolerated. Any student indulging in such behavior will be reported to the Dean of Arts and Sciences and The Office of Student Affairs.

CLASS ETIQUETTE

Students are expected to be attentive during lecture and to ask questions. However, disruptive behavior such as talking amongst yourselves, ringing cellular telephones, talking on cell phones, and reading non-course material during lecture will not be tolerated. Any students indulging in such behavior will be asked to leave the class. Cellular telephones must be turned off prior to lecture.

STUDENTS WITH A DOCUMENTED DISABILITY

Students with a documented disability requiring academic accommodation should make an appointment with the instructor. You should also contact Disability Support Services for assistance.

HOLIDAY AND TENTATIVE EXAM SCHEDULE

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
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<tbody>
<tr>
<td>Jan 25</td>
<td>Quiz 1</td>
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<td>Feb 1</td>
<td>Quiz 2</td>
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<td>Feb 6</td>
<td><strong>Exam 1</strong></td>
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<td>Feb 17</td>
<td>Quiz 3</td>
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<td>Feb 20</td>
<td>Presidents Day</td>
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<td>Feb 24</td>
<td><strong>Exam 2</strong></td>
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<td>Mar 3</td>
<td>Quiz 4</td>
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<td>Mar 6-10</td>
<td>Spring Break</td>
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<td>Mar 17</td>
<td>Quiz 5</td>
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<td>Mar 22</td>
<td><strong>Exam 3</strong></td>
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<td>Mar 29</td>
<td>Quiz 6</td>
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<td>Apr 7</td>
<td>Quiz 7</td>
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<td>Apr 12</td>
<td><strong>Exam 4</strong></td>
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<td>Apr 13-14</td>
<td>Mini Spring Break</td>
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<td>Apr 21</td>
<td>Quiz 8</td>
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<td>Apr 28</td>
<td>University Day</td>
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<td>May 1 (12-13:50)</td>
<td><strong>Final Exam</strong></td>
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LECTURE TOPICS

Science:
- What is Biology?
- Organization of life
- The scientific method

Chemistry of Life:
- Atoms, isotopes, and molecules
- Water
- Macromolecules

Cells:
- Properties of prokaryotic and eukaryotic cells
- Microscopy
- Structure of cells
- Transport across cell membranes

Energy:
- Properties of energy
- Chemical reactions and catalysts
- Cellular respiration
- Photosynthesis

Cell Division:
- Prokaryotic and eukaryotic cell cycles
- Chromosomes
- Mitosis and meiosis
- Cell cycle control
- Sexual life cycles

Information Flow:
- Mendel and the principles of genetics
- Non-Mendelian patterns of inheritance
- Human Genetics
- Chromosomes, DNA, and heredity
- DNA replication
- Gene expression – DNA ⇒ mRNA ⇒ Protein
- Mutation

Biological change:
- Darwin
- Evolution of populations
- Selection
- Evidence for evolution by natural selection
- Origin of species and species concepts

Classification of Organisms:
- Taxonomy and the six kingdom, three domain system

Ecology:
- What is ecology?
- Population and community ecology
- Ecosystems