BIOLOGY 1110

Credit Hours: 4  Contact Hours: 3  Lab Hours: 2

Prerequisites: Exemption from or completion of ENGL 0810, READ 0810, and MATH 0810.

Catalog Description:
This course examines in detail the physical and chemical basis of life with emphasis on cell processes, reproduction, and inheritance. A unit on Eubacteria, Archaebacteria, Protista, and Fungi introduces the student to four of the six kingdoms of living organisms.

Group for Whom the Class is Intended:
BIOL 1110 is generally appropriate for all students who require biology or a one-year science sequence. The alternate course, BIOL 1030, would be appropriate for the following emphases under the university parallel major: Accounting, Art, Business Administration, Business Education, Communications, Computer Science, Early Childhood Education, Economics, Elementary Education, English, History, Industrial Management, Math, Political Science, Psychology, Secondary Education, Social Science, Social Work, Sociology, and Undeclared.

Associate of Science, Tennessee Transfer Pathways, University Parallel: Biology; Pre-Occupational Therapy; Pre-Physical Therapy; Psychology; Social Work. A one-year Natural Science sequence option for Computer Science and Secondary Education. A Natural Science option for General Education curriculum core requirements.

Instructor Information will be provided. This information will include name, contact information, office location, and office hours.

Required Texts:

Supplemental Materials:
textbook website and photo atlas in lab (recommended)

Lab Requirements:
Lab Manual

Biological Program Learning Outcomes:
After completing the requirements of the Biology Tennessee Transfer Pathway outcomes, in the Natural Science Program, students will be able to . . .

1) Conduct a Biology experiment, collect and analyze data, and interpret results in a laboratory setting.
2) Analyze, evaluate and test a scientific hypothesis.
3) Use basic scientific language and processes, and be able to distinguish between scientific and non-scientific explanations.
4) Identify unifying principles and repeatable patterns in nature, the value of biological diversity, and apply them to problems or issues of a biological nature.
5) Analyze and discuss the impact of biological discovery on human thought and behavior.

**Intended Biological Student Learning Outcomes:**

By the end of the course, students should . . .

1) Understand the basic chemical makeup of living organisms.
2) Analyze the principal energy process of metabolism, including photosynthesis and cell respiration.
3) Comprehend and evaluate the significance of cell structure and function in life's processes.
4) Identify and evaluate DNA’s significance to reproduction and heredity to living things.
5) Understand the principles of evolution
6) Classify and analyze the organizational structure of the major groups of microorganisms, including viruses, bacteria, protists, and fungi.
7) Identify and comprehend the basic steps of the Scientific Method.

**Course Objectives:**

Throughout the course, students will have the opportunity . . .

1) to examine the characteristics of life, the scientific method and the taxonomy related to biological organisms.
2) to examine the molecular building blocks of cellular structure and the processes related to these.
3) to examine the energy related processes of the cell. These processes of cellular metabolism include respiration and photosynthesis.
4) to examine the genetic material of the cell including DNA structure and the expression of the genetic codes in the evolutionary process and heredity.
5) to view diversity of organismal groups with the microscope in order to study the diversity of various kingdoms and the unique cellular structures of each group.

**Major Assignments and Method for Calculating the Final Grade:**

Each instructor will provide a listing of the major assignments. Final Grades will be determined as follows: Lecture = 75% of the final grade / Laboratory = 25% of the final grade.
(The following is an example grading system demonstrating the 75% Lecture / 25% Lab grade determination.)

<table>
<thead>
<tr>
<th>Task</th>
<th>Weight</th>
<th>Student Learning Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture Exam 1</td>
<td>100 points</td>
<td>1,3,6,7</td>
</tr>
<tr>
<td>Lecture Exam 2</td>
<td>100 points</td>
<td>2</td>
</tr>
<tr>
<td>Lecture Exam 3</td>
<td>100 points</td>
<td>4,7</td>
</tr>
<tr>
<td>Final Lecture Exam</td>
<td>150 points</td>
<td>5</td>
</tr>
<tr>
<td>Lab Exam I</td>
<td>50 points</td>
<td>2,3,6,7</td>
</tr>
<tr>
<td>Lab Exam II</td>
<td>50 points</td>
<td>1,3,4,7</td>
</tr>
<tr>
<td>Final Lab Exam</td>
<td>50 points</td>
<td>5</td>
</tr>
</tbody>
</table>

**Grading Policies:**

**Grading Scale:** The grading scale for all examinations and the final course grade will be based on the following percentages:

- **A** = 90 - 100%
- **B** = 80 - 89%
- **C** = 70 - 79%
- **D** = 60 - 69%
- **F** = 0 - 59%

Unless prevented by circumstances beyond his/her control or absent on the basis of an institutionally-approved absence, a student is expected to attend regularly all classes for which he/she is registered. Regardless of the cause or nature of the absence, the student is responsible for the material covered or assigned during the absence.

The FA grade indicates that the student earned a grade of F (failing) and accumulated excessive absences’ (non-school-related absences’) totaling more than fifteen percent (15%) of the total number of times a class meets during the semester.

Class Participation and/or Attendance may be a percentage of the final grade

**Course Policies:**

**Academic Misconduct Policy:**

Plagiarism, cheating, and other forms of academic dishonesty are prohibited. Students guilty of academic misconduct, either directly or indirectly, through participation or assistance, are immediately responsible to the instructor of the class. Based on their professional judgment, instructors have the authority to impose the following academic sanctions: (a) require the student to repeat the assignment for full or partial credit; (b) assign a zero, an F, or any other grade appropriate for the assignment or examination; (c) assign an F for the course. In addition, disciplinary sanctions may be imposed through the regular institutional procedures. For more information, see MSCC Policy 3:02:00:03.

**Classroom Misconduct Policy:**
The instructor has the primary responsibility for maintenance of academic integrity and controlling classroom behavior, and can order temporary removal or exclusion from the classroom of any student engaged in disruptive conduct or conduct that violates the general rules and regulations of the institution for each class session during which the conduct occurs. Extended or permanent exclusion from the classroom, beyond the session in which the conduct occurred, or further disciplinary action can be effected only through appropriate procedures of the institution.

Disruptive behavior in the classroom may be defined as, but not limited to, behavior that obstructs or disrupts the learning environment (e.g., offensive language, harassment of students and professors, repeated outbursts from a student which disrupt the flow of instruction or prevent concentration on the subject taught, failure to cooperate in maintaining classroom decorum, etc.), text messaging, and the continued use of any electronic or other noise or light emitting device which disturbs others (e.g., disturbing noises from beepers, cell phones, palm pilots, lap-top computers, games, etc.). For more information, see MSCC Policy 3:02:00:03.

Class Cancelation Policy:
Each instructor will explain how students will learn of class cancelations and give instructions for how the class calendar will be affected. This notification may be via D2L, Motlow email, and/or Molow Rave system (https://www.getrave.com/login/mscc). Additional information may also be given as to how to prepare for the next class period.

Emergency Procedures Policy:
In case of a medical emergency we will immediately dial 9-911 and report the nature of the medical emergency to emergency response personnel. We will try to stay with the person(s) in need and maintain a calm atmosphere. We will talk to the person as much as possible until response personnel arrive on campus, and we will have someone go outside to meet emergency personnel and direct them to the appropriate location.

In the event of an emergency (drill or actual), a signal will be sent. Based on that signal, students will follow the procedures below for that specific type of emergency:

Loud warbling sound throughout Building (FIRE):
Collect purses and coats and proceed immediately out of your room and exit through the closest emergency exit. Proceed to the Designated Assembly Area closing windows and doors as you exit. Remain there until the "All Clear" Signal is given by an Emergency Management Team member. (Instructors- Provide your Designated Assembly Area, and its location to students)

Tornado Siren (SEVERE WEATHER):
Proceed to the closest designated severe weather shelter on the 1st floor and proceed all the way into the shelter. Crouch down on the floor with your head between your knees facing away from the outside walls.
Remain there until the "All Clear" Signal is given. (Instructors- Provide the recommended room number or hallway location to students)

Air Horn (1 Long Blast) and Face to Face All Clear (INTRUDER/HOSTAGE):
Ensure door is closed, locked and lights turned off. If your door will not lock, move some tables and chairs in front of the door quickly. Move immediately to the rear of the room away from the door and sit on the floor-out of sight if possible. Remain calm and quiet and do not respond to any inquiries at the door unless you have been given the "All Clear" and a member of law enforcement or your campus Emergency Management Team member makes face-to-face contact at your door.

Classroom Locked-door Policy:
In order to adhere to MSCC Emergency Preparedness Policy and to facilitate effective classroom management, the classroom door will remain closed and locked for the duration of the class period.

Each instructor may have specific policies regarding Make-up Work/Exams, Class Cancelation Procedures, Use of Electronic Devices in Class, Food/Drink in class, Bringing Children to the Classroom, Retention of Graded Assignments/Exams, Recording of Lectures, etc.

Educational Technology:
Accessing Campus Computers or the MSCC Library from Off Campus:
Your Username format is your First Initial, Last Name and Month and Day Birthday in the Format of MMDD. Example: Marcia Smith born on April 11, 1992 - Username: msmith0411. Your Pin will be the numeric pin you created when you initially applied to Motlow College.

Using D2L:
For help with D2L including how to submit materials to a Dropbox, see this page: http://www.mscc.edu/techtube.aspx

Login Information:

D2L ID format:
Your first initial + your full last name + the first four digits of your birthdate; no spaces. For example, if Cathy Jones' birthday is February 24, 1992, her D2L ID would be cjones0224. Your password is the same as your Motlow email/computer login password. You must login to either email or a computer on one of the Motlow campuses prior to logging into D2L. After you have successfully logged on, you will see your "My Home" page showing the on-line course(s) in which you are enrolled. Click on the link to attend class. You may also click here for Motlow's TechTutorials for D2L: http://www.youtube.com/user/MotlowCollege#p/u/12/770Sx0gLrWE

Note: Classes will not appear in D2L until the first day of class.
Technical Support/Assistance:
Students having problems logging into a course, timing out of a course, using course website tools, or any other technical problems, should contact the MSCC Technology Help Desk at 931-393-1510 or toll free 1-800-654-4877, Ext. #1510 (or d2lhelp@mscc.edu)

Disability Services/Accommodations:
Motlow College is committed to meeting the needs of qualified students with disabilities by providing equal access to educational opportunities, programs, and activities in the most integrated setting appropriate. This commitment is consistent with the College's obligations under Section 504 of the Rehabilitation Act of 1973 and the American with Disabilities Act of 1990 (ADA). Together, these laws prohibit discrimination against qualified persons with disabilities. To this end, the Director of Disability Services for Motlow College coordinates services and serves as an advocate and liaison for students with disabilities attending Motlow College. Contact the Director of Disability Services here: [http://www.mscc.edu/disability/index.aspx](http://www.mscc.edu/disability/index.aspx).

Students with disabilities who would need assistance in an emergency evacuation should self-disclose that need to the instructor no later than the second day of class or second group meeting.

Confidentiality of Student Records:
The education records of current and former students at Motlow State Community College are maintained as confidential records pursuant to The Family Educational Rights and Privacy Act (FERPA) of 1974 as amended. For further information, see MSCC Policy No. 3:02:03:00.

Student Success:

Tutoring:
MSCC Instructors can guide students to specific resources regarding Tutoring in their discipline. In particular, students may find help with Math and Essay Writing via each campus’ Learning Support labs. Students should contact the labs on their campus to schedule appointments for help. For additional help, see the Student Success page: [http://www.mscc.edu/student_success/index.aspx](http://www.mscc.edu/student_success/index.aspx)

Academic Advisement:
MSCC Instructors can guide students to specific resources regarding Advisement. For additional help, see the Academic Advisement page: [http://www.mscc.edu/advisement/index.aspx](http://www.mscc.edu/advisement/index.aspx)
**Class Schedule of Assignments:**

Students are responsible for reading the chapters assigned. Each of these will be discussed in lecture class. Students are also responsible for the laboratory content of each laboratory meeting.

<table>
<thead>
<tr>
<th>Week</th>
<th>Student Learning Outcomes</th>
<th>Content to be Covered</th>
<th>Student Assignments/Supplementary Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1, 6, 7</td>
<td>Characteristics of Life; Scientific Method</td>
<td>Chapter 1 Lab Exercise: Taxonomy</td>
</tr>
<tr>
<td>2</td>
<td>1, 7</td>
<td>Biochemistry; Properties of Water</td>
<td>Chapter 2 Lab Exercise: Microscopy / The Cell</td>
</tr>
<tr>
<td>3</td>
<td>1, 3, 7</td>
<td>Nucleic Acids, Protein Production and Structure</td>
<td>Chapters 3-4 Lab Exercise: Diffusion / Osmosis</td>
</tr>
<tr>
<td>4</td>
<td>1, 3, 7</td>
<td>Cell Structure; Membranes</td>
<td>Chapters 5 Lab Exercise: Cellular Respiration/Photosynthesis</td>
</tr>
<tr>
<td>5</td>
<td>1, 2</td>
<td>Energy; Metabolism</td>
<td>Chapter 6 Lab Exercise: Lab Exam I</td>
</tr>
<tr>
<td>6</td>
<td>1, 2, 3</td>
<td>Respiration</td>
<td>Chapter 7 Lab Exercise: Mitosis/Meiosis</td>
</tr>
<tr>
<td>7</td>
<td>1, 2, 3</td>
<td>Photosynthesis</td>
<td>Chapter 8 Lab Exercise: DNA / Enzymes</td>
</tr>
<tr>
<td>8</td>
<td>1, 4</td>
<td>Mitosis; Meiosis</td>
<td>Chapter 11 Lab Exercise: Genetics</td>
</tr>
<tr>
<td>9</td>
<td>1, 3, 4, 5</td>
<td>Genetics; DNA</td>
<td>Chapters 12, 16 Lab Exercise: Lab Exam II</td>
</tr>
<tr>
<td>10</td>
<td>1, 2, 4, 5, 6</td>
<td>Evolution</td>
<td>Chapter 21 Lab Exercise: Kingdom Eubacteria</td>
</tr>
<tr>
<td>11</td>
<td>1, 4, 5, 6</td>
<td>Population Genetics; Taxonomy; Classification</td>
<td>Chapters 22, 23 Lab Exercise: Kingdom Protista (Algae, )</td>
</tr>
<tr>
<td>12</td>
<td>1, 3, 5, 6</td>
<td>Viruses</td>
<td>Chapters 13.5; 19.15-19.19 Lab Exercise: Kingdom Protista (Protozoa)</td>
</tr>
<tr>
<td>13</td>
<td>1, 3, 5, 6</td>
<td>Prokaryotes</td>
<td>Chapter 26 Lab Exercise: Kingdom Fungi</td>
</tr>
<tr>
<td>14</td>
<td>1, 3, 5, 6</td>
<td>Protists</td>
<td>Chapters 27-28 Lab Exercise: Lab Exam III</td>
</tr>
<tr>
<td>15</td>
<td>1, 3, 5, 6</td>
<td>Fungi</td>
<td>Chapter 34</td>
</tr>
</tbody>
</table>