Bellevue Community College
Biol & 160 (formerly Biol 101)
Introductory Biology
Fall 2009
Item # 3109 (Section E)

Course Information

Instructor: Dr. Gita Bangera
Class Hours: M,W 11.30 to 12.45 S214
T,Th 11.30 to 1.20 S214
Office Hours: M: 1.30 to 2.30 Science Study Center S114
M: 2.30 to 4.30 S240E
T: 3.30 to 5.30 S240E
Or by appointment
Office S240E
Email gita.bangera@bellevuecollege.edu
Telephone 425 564 4031
Required Text Book: Biology: Life on Earth by Audesirk, Audesirk and Byers
BCC custom edition
Websiote http://scidiv.bellevuecollege.edu/gb
Other Materials: Scantron answer cards; #2 lead pencils for exams.

The attached schedule is the best guess as of now and is liable to change. Changes to the schedule will be announced in class and/or listed on the website.
1. **Introduction**

Biology 160 is an introductory biology course for students who wish to pursue further studies in science or biology. In this course, the emphasis is on cell and molecular biology concepts. This course is a prerequisite for microbiology and for human anatomy and physiology. For a single-term biology experience students may wish to consider Biology 100.

**Learning outcomes**

At the end of this course, students will be able to:

- Develop a list of characteristics of living things.
- Arrange the levels of organization from simplest to most complex.
- Demonstrate the methodology of scientific inquiry by using observation, experimentation, data collection and interpretation, etc., in everyday problem solving and the generation of new knowledge.
- Recognize that the proper subject matter of science is the natural (physical) world and that all science is based on common laws or principles (e.g., law of gravity, energy transformation, etc.) and methods (e.g., nature of scientific inquiry).
- Distinguish between inorganic and organic compounds.
- Describe the properties of carbon that make it the central component of organic compounds.
- Identify the major functional groups present in organic compounds and describe their properties and interactions.
- Compare the functions and chemical compositions of the major groups of organic compounds: carbohydrates, lipids, proteins, and nucleic acids.
- Demonstrate the special properties of water that support life.
- Justify why the cell is the basic unit of life. Evaluate size relationships among different cells and cell structures.
- Compare and contrast Eukaryotic and Prokaryotic cells.
- Describe the structure and function of all the organelles and their relationship to each other.
- Make a detailed sketch of a fluid mosaic model of cell membrane structure and explain how structure is related to function.
- Use examples to compare and contrast potential energy and kinetic energy.
- Describe how the first and second laws of thermodynamics relate to living systems.
- Explain the chemical structure of ATP and its central role in metabolism.
- Describe the relationship between enzyme properties and types and rates of chemical reactions.
- Describe the interdependency between photosynthesis and cellular respiration.
- Explain that all three domains of life must perform some form of cell respiration.
- Discuss the significance of chromosomes in terms of their information content.
- Compare the roles of mitosis and meiosis in reproduction.
- Solve inheritance problems using Mendel’s principles.
- Relate the chemical and physical features of DNA to the structure proposed by Watson, Crick and Franklin.
- Outline the flow of genetic information in cells, from DNA to protein and how this process may be controlled.
- Articulate the scientific origins of biotechnological developments and evaluate the ecological, social, cultural, personal and ethical implications of those developments.
- Distinguish between environmentally induced and inherited abnormalities.
- Summarize the evidence supporting the theory of evolution.
- Explain why evolution is the central theme of all biology.
- Explain how heritable variation and selection are the basis for evolution in a given environment.
- Use various laboratory techniques, including compound and dissecting microscopes, and gel electrophoresis.

2. **Attendance**

Class attendance is expected. It is difficult to do well in any subject without attending class, and lecture and laboratory materials are essential for the exams. You are responsible for knowing class materials whether you attend class or not. You are also responsible for any changes in the syllabus,
including changes for exam dates or assignment dates whether you have been attending class or not, or if for some reason, fail to note a change at the time it is announced.

**Note:** Points earned on the lab preparation quizzes count only when you also complete the laboratory exercises. No laboratory quiz credit will be given if you leave lab early.

3. **Examinations and quizzes**

Five unit exams and a comprehensive final exam will be given in Biology 101. Exams cover lecture, text and laboratory material. The exam format is primarily objective, and may include a laboratory practical component.

The anticipated exam dates are listed in the course syllabus. Any changes in exam dates will be announced, in class, in advance. You must take the exams at the scheduled time. **No make-up exams will be given.** If you miss an exam you will receive a zero (0). If there is an extenuating circumstance for missing an exam, the instructor may, **at her discretion**, use the final exam score as a "make-up" exam for the missed exam. Missing an exam will seriously affect your course grade.

**Additional Quizzes**

There may be one or more short quizzes given during the quarter on specific subject areas of biology. These quizzes will be announced in class prior to the day given. Credit earned on these quizzes will be a formal part of the course point total. There will be no make-ups for quizzes. If you are absent, you will receive a zero (0) for the quiz.

4. **Labs**

1. Each properly completed lab will be worth 5 points unless otherwise mentioned.
2. Laboratory Preparation Quizzes
   
   To ensure that you have prepared for each laboratory session, you will take a short quiz (worth 5 points/lab) at the beginning of each laboratory based on the lab to be completed that day. Credit for pre-lab quizzes is a part of your course grade. Credit is given for the lab quiz only when you also complete the laboratory exercise. If you leave lab before the completion of the exercise you will receive a zero (0) for the quiz for that lab, no matter how well you did on the quiz.

5. **Assignments and Reports**

All assignments and reports are due **at the beginning of class** on the due date. Late papers are not accepted and receive no credit. Assignments will be announced in class. Credit received for assignments will be added to the total course point total. You are responsible for assignments even if you do not attend class on the day an assignment is announced, or for some reason, fail to note the assignment at the time it is announced.

On occasion, I may assign group projects in which members of the group will work collaboratively on the assignment. Each member of the group will receive a common score on the project, as well as an individual score for his/her contribution to the assignment's completion. A collaborative assignment means that one comprehensive report/project is turned in. Although each member uniquely contributes to the whole, the project is not a sequential compilation of each individual's component part. For example, a text chapter summary should consist of one cohesive report, not three or four independent sections, each completed by one member of the group.

6. **Bellevue Community College Science Division Policy on Cheating**

You, the student, are expected to conduct yourself with integrity. When you cheat*, or aid someone else in cheating, you violate a trust. If you cheat the following actions may be taken:

1. You will receive a grade of 0 on the exam, lab, quiz, etc., where evidence of cheating has been demonstrated. This grade cannot be dropped.
2. A report of the incident will be sent to the Dean of Student Services. He/she may file the report in your permanent record or take further disciplinary action such as suspension or expulsion from the college.
If you feel you have been unfairly accused of cheating, you may appeal. (For a description of due process procedures see WAC 132H-120, copies of which are available in the Student Body Government Office)

*Cheating includes, but is not limited to, copying answers on tests or homework, glimpsing at nearby test papers, swapping papers, stealing, plagiarizing, illicitly giving or receiving help on exams or assignments

Note that copying and pasting or using the exact words from a website without quotation marks and a reference is considered plagiarism. When in doubt say it in your own words!

7. **Grading**

Your grade will be determined at the end of the quarter as a percentage of the total points possible on exams, writing assignment(s), lab quizzes, genetics problems, non-scheduled quizzes, and any additional assignments and projects that may be required. In addition, the instructor may, at her discretion, add up to a 2% bonus to your final course grade for class participation.

The Grading scale is:

- **A** = 4.0 = 93% or higher of total points possible
- **A-** = 3.7 = 89-92% of total points possible
- **B+** = 3.3 = 87-89% of total points possible
- **B** = 3.0 = 83-86% of total points possible
- **B-** = 2.7 = 80-82% of total points possible
- **C+** = 2.3 = 77-79% of total points possible
- **C** = 2.0 = 73-76% of total points possible
- **C-** = 1.7 = 70-72% of total points possible
- **D+** = 1.3 = 66-69% of total points possible
- **D** = 1.0 = 60-65% of total points possible
- **F** = Less than 60% of total points possible

8. **Course Grade Information**

Your Biology 101 course grade is computed on a spreadsheet. An approximate course standing is computed and distributed after each exam to give you an idea of how you are progressing in the course. It also allows you to verify that I have recorded your scores correctly.

The spreadsheet uses a code to identify each student. Your code will be handed out to you in class. Final course grades will be posted on the Biology 101 Internet site (see above for URL) by your secret code within a few days of the final exam. Final course grades are not given out on the telephone or by the Science Division staff.

9. **Withdrawal from the Course**

Withdrawal from a course is the termination of the student's registration in that course. To do so, the student must complete an official Add/Drop form, available at the Registration Office.

The various deadlines for withdrawal are listed at the following website:

[http://www.bellevuecollege.edu/enrollment/calendar/deadlines/](http://www.bellevuecollege.edu/enrollment/calendar/deadlines/)

If you just stop coming to class and do not complete the course, you will receive an "F" at the end of the quarter

10. **Disability accommodation:**

If you require accommodations based on a documented disability, have emergency medical information to share, or need assistance in case of emergency evacuation; please make an appointment with me as soon as possible.

If you would like to inquire about becoming a DRC (Disability Resource Center) student please call (425) 564-2498 or 564-4110 (TTY line) or go in person to the DSS office in B132.
<table>
<thead>
<tr>
<th>Date</th>
<th>Day</th>
<th>Topic</th>
<th>Text Chap.</th>
<th>Laboratory Activity</th>
<th>Ex. #</th>
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<tbody>
<tr>
<td>9/21/09</td>
<td>Mon</td>
<td>Introduction to Life on Earth</td>
<td>1</td>
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<td>9/22/09</td>
<td>Tue</td>
<td>Introduction /Atoms and molecules</td>
<td>1,2</td>
<td>Lab orientation/Scientific Process</td>
<td>2-1</td>
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<td>9/23/09</td>
<td>Wed</td>
<td>Biochemical Principles</td>
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<td>Scientific Process/Metric System</td>
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<td>Mon</td>
<td>Atoms and Molecules/Biological Molecules</td>
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<td>9/29/09</td>
<td>Tue</td>
<td>COLLEGE ISSUES DAY NO CLASS</td>
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<td>9/30/09</td>
<td>Wed</td>
<td>Exam I Chapters 1,2,3 and labs</td>
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<tr>
<td>10/1/09</td>
<td>Thu</td>
<td>Diffusion Demo</td>
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<td>10/5/09</td>
<td>Mon</td>
<td>Cells Structure and Function/Membranes</td>
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<td>10/6/09</td>
<td>Tue</td>
<td>Energy Flow</td>
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<tr>
<td>10/12/09</td>
<td>Mon</td>
<td>Energy Flow/Photosynthesis/Cellular resp</td>
<td>6,7,8</td>
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<td>10/13/09</td>
<td>Tue</td>
<td>Exam II Chapters 4,5,6, and labs</td>
<td>7</td>
<td>Photosynthesis</td>
<td>6-1</td>
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<td>10/14/09</td>
<td>Wed</td>
<td>DNA structure and function</td>
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<td>10/15/09</td>
<td>Thu</td>
<td>DNA extraction</td>
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<tr>
<td>10/26/09</td>
<td>Mon</td>
<td>Photosynthesis/Cellular Respiration</td>
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<td>11/2/09</td>
<td>Mon</td>
<td>DNA structure and function/Gene Expression and</td>
<td>9,10</td>
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<td>8-3, 8-4</td>
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<td>11/3/09</td>
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<td>DNA replication</td>
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<td>11/4/09</td>
<td>Wed</td>
<td>Exam III Chapters 7,8 and labs</td>
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<tr>
<td>11/5/09</td>
<td>Thu</td>
<td>DNA transcription/translation</td>
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<td>Date</td>
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<td>Topic</td>
<td>Text Chapter</td>
<td>Laboratory Activity</td>
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<td>11/9/09</td>
<td>Mon</td>
<td>Gene Expresssion and Regulation/Cellular Reproduction</td>
<td>10,11</td>
<td>7-1, 7-2 homework</td>
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<td>11/10/09</td>
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<td>Mitosis/Meiosis</td>
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<td>11/11/09</td>
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<td>11/12/09</td>
<td>Thu</td>
<td>Plasmid DNAIsolation lab</td>
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<td>Hand out</td>
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<td>11/16/09</td>
<td>Mon</td>
<td>Cellular Reproduction/Biotechnology</td>
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<tr>
<td>11/17/09</td>
<td>Tue</td>
<td>Plasmid DNAIsolation lab</td>
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<td>11/18/09</td>
<td>Wed</td>
<td>Biotechnology</td>
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<td>11/19/09</td>
<td>Thu</td>
<td>Gel Electrophoresis</td>
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<tr>
<td>11/23/09</td>
<td>Mon</td>
<td>Patterns of inheritance</td>
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<tr>
<td>11/24/09</td>
<td>Tue</td>
<td>Patterns of inheritance</td>
<td>12</td>
<td>Genetics problems</td>
<td>10-2,10-3 homework: 10-4,10-5, 10-6</td>
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<td>11/25/09</td>
<td>Wed</td>
<td>Exam IV 9,10,13 and labs</td>
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<tr>
<td>11/26/09</td>
<td>Thu</td>
<td>HOLIDAY</td>
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<td>11/30/09</td>
<td>Mon</td>
<td>Patterns of inheritance/Evolution</td>
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<td>12/1/09</td>
<td>Tue</td>
<td>Evolution</td>
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<td>12/2/09</td>
<td>Wed</td>
<td>Evolution/Review Session</td>
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<td>12/3/09</td>
<td>Thu</td>
<td>Exam V 12, 14-17+ Review</td>
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<td>3/14/08</td>
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<tr>
<td>12/7/09</td>
<td>Mon</td>
<td>Final Exam All References</td>
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