U401-101: General Biology

Course Format: Online

Course Author/s: Daphne Pham, Ph.D.

Course credits: 3

Prerequisites: College Algebra or concurrent enrollment; placement into Freshman English or higher.

Course Description: This course focuses on biochemistry, cell biology, genetics, and molecular biology. Explores the nature of living things and current developments in biology. Designed specifically for non-science majors.

Required Course Materials

Optional Course Materials

Hardware Requirements
- You will need a webcam, speakers, and a microphone.

Course Learning Objectives
- Communication, Literacy - reading for understanding and writing for effective communication
  - Learning Outcome: Students will be able to read and understand basic scientific discussions based on biological concepts as they apply to modern life.
- Reasoned Judgment, Scientific thinking - understanding and applying the scientific method.
  - Learning Outcome: Students will be able to understand and apply basic concepts in biology.
- Social and Personal Responsibility, Individual accountability - understanding what a responsible choice is and that one's present education and life-long learning is a personal responsibility
  - Learning Outcome: Students will identify and analyze contemporary issues relevant to biology including disease and bioethics.

Course Overview

<table>
<thead>
<tr>
<th>Module #</th>
<th>Module Topic</th>
<th>Evaluated Activities</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction &amp; Syllabus</td>
<td>There are no graded activities for this module. Please look through the Course Introduction and Course Planning modules, as well as purchase &amp; register for Starr Biology Today and Tomorrow (under Starr Biology module).</td>
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<tr>
<td>2</td>
<td>Invitation to Biology Chap. 1</td>
<td>The graded activities for this module are in MindTap: Learn-It exercises (The Scientific Method, Lifeforms, and Scientific Data), and Apply-It homework as well as quiz.</td>
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</tbody>
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Effective Date 12/01/2021
Last Modified 12/06/2021
3 Cell Structure Chap. 3 The graded activities for this module are in MindTap: Learn-It exercises (Features of a Cell, Prokaryotic & Eukaryotic Cells, and The Fluid Mosaic Model), and Apply-It homework as well as quiz.

4 DNA Structure & Function Chap. 7 The graded activities for this module are in MindTap: Learn-It exercises (Chromosome Structure, Complementary DNA Sequences, and Semiconservative Model of DNA Replication), and Apply-It homework as well as quiz.

5 Gene Expression & Control Chap. 8 The graded activities for this module are in MindTap: Learn-It exercises (Codons, Anticodons, and Amino Acids; Transcription; and Epigenetics), and Apply-It homework as well as quiz.

6 How Cells Reproduce Chap. 9 The graded activities for this module are in MindTap: Learn-It exercises (Phases of the Cell Cycle, Mitosis and Meiosis, and Genetic Variation), and Apply-It homework as well as quiz.

7 Patterns of Inheritance Chap. 10 The graded activities for this module are in MindTap: Learn-It exercises (Alleles, Monohybrid and Dihybrid Crosses and Pedigrees), and Apply-It homework as well as quiz.

8 Biotechnology Chap. 11 The graded activities for this module are in MindTap: Learn-It exercises (Gene Therapy, and DNA cloning), and Apply-It homework as well as quiz.

9 Energy & Metabolism Chap. 4 The graded activities for this module are in MindTap: Learn-It exercises (Enzymes, Exergonic & Endergonic Reactions and The ATP/ADP Cycle), and Apply-It homework as well as quiz.

10 Releasing Chemical Energy Chap. 6 The graded activities for this module are in MindTap: Learn-It exercises (Aerobic Respiration & Fermentation, Cellular Respiration, and Energy Release), and Apply-It homework as well as quiz.

11 Photosynthesis Chap. 5 The graded activities for this module are in MindTap: Learn-It exercises (Parts of a Chloroplast, Pigments & Photons and Photosynthesis), and Apply-It homework as well as quiz.

12 Evidence of Evolution Chap. 12 The graded activities for this module are in MindTap: Learn-It exercises (Biological Diversity & Change, Darwin Fitness, and Steps of Natural Selection), and Apply-It homework as well as quiz.

13 Process of Evolution Chap. 13 The graded activities for this module are in MindTap: Learn-It exercises (Microevolution, Sources of Genetic Variation, and Speciation), and Apply-It homework as well as quiz.

14 Prokaryotes, Protists, and Viruses Chap. 14 The graded activities for this module are in MindTap: Learn-It exercises (Viruses, Archaea & Bacteria, and The First Cell), and Apply-It homework as well as quiz.

15 Animal Evolution Chap. 16 The graded activities for this module are in MindTap: Learn-It exercises (Symmetry in Animal Body Plans, Chordate Embryos, and Unique Traits of Mammals), and Apply-It homework as well as quiz.

**Evaluation Methods**

Your final grade will be based on your performance on the following:

1) MindTap weekly activities = 30%
2) MindTap weekly homework = 30%
3) MindTap weekly quizzes = 40%
MindTap Online Weekly Quizzes: Quizzes on each textbook chapter covered in this course will be given using the course’s textbook website MindTap (Login site information is given activities for Module 1 or in Starr Biology module, use BIOLOGY 101 link). Please DO A SYSTEM CHECK to make sure that your browser meets the requirements for MindTap. The quizzes for the appropriate chapters are under APPLY IT. The quizzes are open book and open internet exercises, but they will be timed so be prepared when you initiate the quiz.

MindTap Online Weekly MindTap Learn-It Activities and Homework: Additional graded activities and homework are also on MindTap. Full credit for the Learn-It activities and Learn-It homework will be awarded based upon either obtaining a maximum score or obtaining a ~75% score (overall) using the maximum number of attempts. Supplementary non-graded resources are available for your use in MindTap, including pre-assessment learning exercises to identify strengths and challenges. While these are not graded, they can prove useful in your understanding of the course materials.

Canvas Overview & Learning Resources—Further Study: non-graded resources (videos, animations and websites) for specific chapters are available for your use. Again, although they are not graded, they can be useful in your understanding of the course materials.

Quiz Method: Online Without Proctoring
This course requires all students to complete quizzes online in MindTap. Students receive one attempt on each quiz.

Grading Scale
The following grading scale is used to evaluate all course requirements and determine your final grade:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Score Range</th>
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</thead>
<tbody>
<tr>
<td>A</td>
<td>93–100</td>
</tr>
<tr>
<td>B</td>
<td>83–87.9</td>
</tr>
<tr>
<td>C</td>
<td>70–77.9</td>
</tr>
<tr>
<td>D</td>
<td>60–69.9</td>
</tr>
<tr>
<td>F</td>
<td>Below 60</td>
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</tbody>
</table>

AB = 88–92.9  BC = 78–82.9  F = Below 60

Pass/Fail Option
Students who enroll in an Independent Learning (IL) course under the pass/fail option will receive a final grade of S in place of a final grade equivalent to an A, AB, B, BC, or C and a final grade of U in place of a final grade equivalent to a D or F.