

Biology 13: Human Biology
Fall 2021

Course #: Bio 13 sec. 0859

Instructor: Dr. Linda McPheron

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Class time: Tu/Th 2:00 – 3:30 (we will meet on Zoom Tuesdays from 2-3:30; no class meeting on Thursdays; work will be done online)

Section 1: Molecules, Diet, Nutrition / Ecology & Human Impact

Aug. 17, 19, 24, 26, 31, Sept. 2, 7, 9

Important molecules: fat, carbohydrates, sugar, protein, cholesterol, vitamins

Metabolism; how we get energy

Food, nutrition, agriculture

Population Growth

Human Impact / Climate Change

Organ system: Digestive system, Urinary System

Health Issues: nutrition, exercise

Reading:

Ch. 2.2 (water, pH)

Ch. 2.3 (organic molecules)

Ch. 16.2 (digestive system)

Ch. 19.2, 19.3 (population growth)

Section 2: Body Systems & Experiments

Sept. 14, 16, 21, 23, 28

Body Organs; Circulatory System

Respiratory System

Process of Science, Designing Experiments

Organ system: Heart, circulatory system, respiratory system

Health Issues: heart disease, high blood pressure

Reading:

Ch. 1.2 (process of science)

Ch. 16.3 (respiratory system)

Ch. 16.3 (circulatory system)

Section 3: Cells & Cell Growth

Sept. 30, Oct. 5, 7, 12, 14

Cells, organelles

Mitosis & Meiosis

Cancer, causes, treatments

Health issues: cancer, stem cells, cloning

Reading:

Ch. 3.3, 3.4, 3.5, 3.6 (cells)

Ch. 6.2, 6.3 (cell growth and cancer)

Section 4: Genetics & Evolution

Oct. 19, 21, 26, 28, Nov. 2

Genes, DNA, Chromosomes, Evolution & Natural Selection

Human Genetics, Genetic Engineering, Gene Therapy

Health issues: genetic abnormalities, genetics of diseases, evolution of diseases (viruses)

Reading:

Ch. 9.1, 9.2, 9.3, 9.4 (DNA and protein synthesis)

Ch. 9.5 (gene regulation)

Ch. 8.1, 8.2 (inheritance)

Ch. 10.1 (cloning, genetic engineering)

Ch. 11.1, 11.2 (evolution)

Section 5: Immune System, Diseases & Reproduction

Nov. 4, 9, 16, 18, 23, 25 (no class Nov. 11 – holiday)

Microorganisms

Human Diseases, Human Reproduction

Organ systems: Immune System, Endocrine System, Reproductive System

Health issues: HIV, STI's, bird flu, coronavirus

Reading:

Ch.17 (immune system)

Section 6: Movement & Thinking

Nov. 30, Dec. 2, 7, 9

Bones & Muscles

Nervous system: reflexes, nerves, brain

Neurotransmitters, brain chemistry

Organ system: skeletal system, muscles, & nervous system

Health issues: brain chemistry, depression, ADHD

Reading:

Ch. 16.5 (muscles and skeletal system)

Ch. 16.6 (nervous system)

Course description:

Survey course primarily for students not majoring in biological sciences, presenting topics from biology dealing specifically with humans. Topics include cellular biology, genetics, anatomy and physiology, reproduction, evolution, and human impacts on the environment. Not an anatomy and physiology course.

Link to Course Outline of Record: https://portal.santarosa.edu/SRWeb/SR_CourseOutlines.aspx?ck=BIO13

Student Learning Outcomes:

Upon completion of the course, students will be able to:

1. Apply the scientific method and critical thinking techniques to evaluate biological information from the popular media.
2. Apply information about biological processes to human health issues.
3. Investigate the impacts of human population growth and resource use on the environment and human species.

Grading:

15 Activities (10 pts) - **150** points
8 Reports (20 pts) - **160** points
6 Discussion Posts (25 pts) – **150** points
Disc. Intro (20) – **10** points
2 Reflections (15 pts) – **30** points
3 Quizzes (40 pts) – **120** points
3 Exams (30 pts) - **90** points
total points: **710**

Scale:

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

Text (required): We will be using the free open stax test: Biology 2e.

<https://openstax.org/details/books/concepts-biology>

Recommended (but not required): Human Biology by Starr & McMillan (9th or 10th edition; can also use earlier editions).

Class policies: Attendance is required and participation in discussions is expected for all live zoom classes. In-class assignments are done during class time. They may not be turned in late. You are responsible for any material missed in class, and you will want to complete all missed assignments. **Plagiarism:** "Plagiarism is defined as the unauthorized use of the language and thought of another author and representing them as your own," according to the college policy. Plagiarism is a violation of the rules of student conduct, and discipline may include, but is not limited to, a failing grade on this assignment or an F in the course. Any material from other sources must be cited and all answers need to be in your own words. A plagiarism software, turnitin will be used for your Reports and Exams.

Add/Drop Deadlines:

Aug. 22: Last day to register without add code
Aug. 29: Last day to drop class with refund
Sept. 5: Last day to drop without a "W"
Sept. 5: Last day to add with instructor signature
Nov. 14 : Last day to drop class with a "W"