



Biology: Part 1

Course number: SC041_22_1

Credits: .5 credit

Prerequisites: None

INSTRUCTIONAL TEAM

Our Academic Advisors are also available to help you when you need it. They are trained to provide answers to your questions about the course or program.

Phone: 1-800-224-7234

Hours: 8:30AM – 8:30PM (Eastern Standard Time), Monday-Friday

MAIL

James Madison High School
5051 Peachtree Corners Circle, Suite 200
Norcross, GA 30092

TEXTBOOK

Biology. McGraw Hill Education, 2017.

COURSE DESCRIPTION

This course includes a study of living organisms and vital processes. Themes that will be covered in this course include scientific skills, ecology, biochemistry, and cellular processes.



LEARNING OBJECTIVES

After completing Biology: Part 1, students will be able to:

- Explain the process of science and how scientists use the scientific method to solve problems
- Identify of patterns, processes, and relationships of living organisms
- Explain the interdependence of organisms, the relationship of matter, energy, and organization in living systems
- Identify of the role of bio-macromolecules and explain their structure and function as related to life processes
- Distinguish between photosynthesis and cellular respiration
- Explain cellular structure and the role organelles play in living cells
- Explain the role of mitosis in growth, development and reproduction and identify the factors that regulate the cell cycle

LESSONS	TOPICS
Lesson 1: The Study of Life	Introduction to Biology, The Nature of Science, and Methods of Science
Lesson 2: Principles of Ecology	Organisms and Their Relationships, Flow of Energy in an Ecosystem, Cycling of Matter, Community Ecology, Terrestrial Biomes, and Aquatic Biomes
Lesson 3: Population Ecology and Biodiversity	Population Dynamics, Human Population, Biodiversity, Threats to Biodiversity, and Conserving Biodiversity
Lesson 4: Chemistry in Biology	Atoms, Elements and Compounds, Chemical Reactions, Water and Solutions, and Building Blocks of Life
Lesson 5: Cellular Structure and Function	Cell Discovery and Theory, The Plasma Membrane, Structures and Organelles, and Cellular Transport
Lesson 6: Cellular Energy	How Organisms Obtain Energy, Photosynthesis, and Cellular Respiration
Lesson 7: Cellular Reproduction	Cellular Growth, Mitosis and Cytokinesis, and Cell Cycle Regulation



GRADING

The following point totals correspond to the following grades:

POINTS	GRADE
100-90	A
89-80	B
79-70	C
65-69	D
Below 65	F

James Madison High School allows 2 attempts on exams. If a student is not satisfied with his/her score on the 1st attempt, an exam may be resubmitted. The 2nd attempt is not required as long as the final course average is above 65%. The higher of the 2 attempts will be the score that counts towards the final average.

Exams are timed and once you begin an exam, the timer runs continuously, even if you leave the course. Refer to the exam instructions for the time limit (in most cases 3 hours), but the time limit cannot be spread over multiple days.

GRADE WEIGHT

TOPIC	ACTIVITY	PERCENTAGE
Lesson 1: The Study of Life	MC Quiz	9%
Lesson 2: Principles of Ecology	MC Quiz	9%
Lesson 3: Population Ecology and Biodiversity	MC Quiz	9%
Lesson 4: Chemistry in Biology	MC Quiz	9%
Lesson 5: Cellular Structure and Function	MC Quiz	9%
Lesson 6: Cellular Energy	MC Quiz	9%
Lesson 6 Lab	Lab Assignment	15%
Lesson 7: Cellular Reproduction	MC Quiz	9%
Midterm	Assignment	22%

ACADEMIC AND COURSE POLICIES

Please see the Academic Policies section in the [James Madison High School Catalog](#) for information on Course policies, including the Exam/Assignment Retake Policy, Grading Policy, Academic Honesty Policy, and Student Conduct Policy.



Biology: Part 2

Course number: SC042_22_1

Credits: .5 credit

Prerequisites: Biology: Part 1

INSTRUCTIONAL TEAM

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Norcross, GA 30092

TEXTBOOK

Biology. McGraw Hill Education, 2017.

COURSE DESCRIPTION

This course includes a study of living organisms and vital processes. Themes that will be covered in this course include sexual reproduction, genetics, evolution, classification, and organisms.



LEARNING OBJECTIVES

After completing Biology: Part 2, students will be able to:

- Analyze how genetic information is passed to their offspring and how these mechanisms lead to variability and diversity of species
- Explain how the structures of DNA and RNA lead to the expression of information within the cell via the processes of replication, transcription, and translation
- Explain the theory of evolution and discuss the evidence for evolution, types of selection, and factors that lead to evolution
- Use cladograms and phylogenetic trees to determine relationships among major groups of organisms
- Explain patterns in structures and function among clades of organisms, including the origin of eukaryotes by endosymbiosis. Clades should include: archaea, bacteria, eukaryotes, fungi, plants, and animals

LESSONS	TOPICS
Lesson 1: Sexual Reproduction and Genetics	Meiosis, Mendelian Genetics, and Gene Linkage and Polyploidy
Lesson 2: Complex Inheritance and Human Heredity	Basic Patterns of Human Inheritance, Complex Patterns of Inheritance, and Chromosomes and Human Heredity
Lesson 3: Molecular Genetics and Biotechnology	DNA, Replication of DNA, DNA RNA & Proteins, Gene Regulation and Mutation, Applied Genetics and DNA Technology
Lesson 4: Evolution	Fossil Evidence of Change, The Origin of Life, Darwin's Theory, Evidence of Evolution, and Shaping Evolutionary Theory
Lesson 5: Classification	The History of Classification, Modern Classification, and Domains and Kingdoms
Lesson 6: Organisms	Bacteria, Viruses, Protists, Fungi, Plants, and Animals



GRADING

The following point totals correspond to the following grades:

POINTS	GRADE
100-90	A
89-80	B
79-70	C
65-69	D
Below 65	F

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GRADE WEIGHT

TOPIC	ACTIVITY	PERCENTAGE
Lesson 1: Sexual Reproduction and Genetics	MC Quiz	8%
Lesson 2: Complex Inheritance and Human Heredity	Lab Assignment	15%
Lesson 2: Complex Inheritance and Human Heredity	MC Quiz	8%
Lesson 3: Molecular Genetics and Biotechnology	MC Quiz	8%
Lesson 4: Evolution	Lab Assignment	15%
Lesson 4: Evolution	MC Quiz	8%
Lesson 5: Classification	MC Quiz	18%
Lesson 6: Organisms	MC Quiz	8%
Final Exam: Lesson 1-6	MC Quiz	22%

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