CARSON GRAHAM SECONDARY

COURSE OUTLINE: ANATOMY AND PHYSIOLOGY 12 (BIOLOGY 12) 2019-2020

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Course Description:

Anatomy and Physiology 12 will allow students to develop, through inquiry, an interest in and an understanding of cell and human biology. Three big ideas will address a wide variety of learning outcomes. Homeostasis is maintained through physiological processes; gene expression, through protein synthesis, is an interaction between genes and the environment; and the organ systems have complex interrelationships to maintain homeostasis.

Link to BC Curriculum:
https://curriculum.gov.bc.ca/sites/curriculum.gov.bc.ca/files/curriculum/science/en_science_12_anatomy-and-physiology_elab.pdf

Big Ideas	RELATED CONCEPTS
Homeostasis	Biological Molecules, Enzymes & Metabolic Pathways, Feedback Loops, and Transport Across a Cell Membrane.
Gene expression	DNA Structure and Function, DNA Replication, Gene Expression, Protein Synthesis, Genomics and Biotechnology.
Organ systems	Structural and functional interdependence of the following systems: Digestive, Respiratory, Cardiovascular, Urinary, Nervous, Immune and Reproductive.

Textbook:

Anatomy and Physiology 12 Student Resource (2018) Roger Prior Price $23.10

Chapter References:

Cell Biology

Unit A: Chemistry of Life and Organic Molecules.....pg. 6-18
Unit D: Cell Structure and Function.....pg. 50-59

Cell Processes and Applications

Unit C: Membrane Structure and Function.....pg. 38-47
Unit B: Metabolism Energy and Enzymes.....pg. 22-34
Unit E: DNA: Replication, Transcription and Translation.....pg. 64-79

Human Body Systems

Unit F: Digestive System.....pg. 84-93
Unit G: Cardiovascular System.....pg. 98-120
Unit H: Respiratory System.....pg. 126-134
Unit I: Nervous System.....pg. 138-153
Unit J: Urinary System.....pg. 158-165
Unit K: Reproductive System.....pg. 170-184

Assessment:

- Class work: quizzes, individual and/or group assignments, projects, research assignments, labs and dissections.
- Summative assessments: projects, major assignments, quizzes and tests, design labs, Midterm Exam
- Terms 1 & 2 Science 12 Term Paper
- Term 3 Final Exam

Assessment in this course will be based on the curricular competencies of BC's New Curriculum and will be influenced by a similar scale used in the IB DP program and Marzano's Depth of Knowledge criteria.

Marking Criteria

Score	Letter Grade Equivalent	What it means
7	A+ = 95-100%	In addition to Score 5 performance, in-depth inferences and applications that go beyond what was taught. Very few errors.
6	A- = 86-94%	In addition to Score 5 performance, partial success at inferences and applications that go beyond what was taught.
5	B = 77-85%	No major errors or omissions regarding any of the information and/or processes (simple or complex) that were ***explicitly*** taught.
4	C+/B = 67-76%	No major errors or omissions regarding the simpler details and processes and partial knowledge of the more complex ideas and processes.
3	C =54-66%	No major errors or omissions regarding the simpler details and processes but major errors or omissions regarding the more complex ideas and processes
2	C- = 45-53%	Partial knowledge of the simpler details and processes but major errors or omissions regarding the more complex ideas and processes
1.0	F = 40-44%	With help, a partial understanding of some of the simpler details and processes and some of the more complex ideas and processes
0.5	F = 30-40%	With help, a partial understanding of some of the simpler details and processes but not the more complex ideas and processes
0.0	F = 0-30%	Even with help, no understanding or skill demonstrated

Levels will be recorded for the following categories:

Category	Description	Tasks
A- Knowledge and Understanding	- recall, select and use knowledge of scientific facts, concepts and techniques in a variety of familiar and unfamiliar contexts, including those related to First Peoples, the local community and other cultures.	-in class activities and assignments, could include written responses. -quizzes, and tests.
B – Inquiring & Planning	- questioning/predicting: make observations, formulate and predict hypotheses. - planning/conducting**:** plan methods to collect reliable data, collect and record data, apply concepts of accuracy to experimental procedures. - processing/analyzing: seek patterns and connections in data, describe relationships between variables, perform calculations, construct and interpret graphs, models, and/or diagrams.	-applying knowledge to data-based questions and sample problems, could include familiar and/or unfamiliar situations.
C –Evaluating, applying & innovation	- evaluate methods and describe possible improvements to methods and quality of data, analyze the validity of information in primary and secondary sources, find solutions to problems at a local/or global level. -use knowledge of scientific concepts to draw conclusions that are consistent with evidence.	-student lab activities, published lab exercises, online simulations research based presentations and projects, quizzes and tests.
D – Communication & Research	- create models to describe, construct evidence-based arguments, use appropriate scientific language and representations. express and reflect on a variety of perspectives and worldviews.	-research based presentations and projects.