

COURSE OUTLINE: CSEC HUMAN

and SOCIAL BIOLOGY

(GENERAL): 2020/2021

Living Things and the Environment & Life

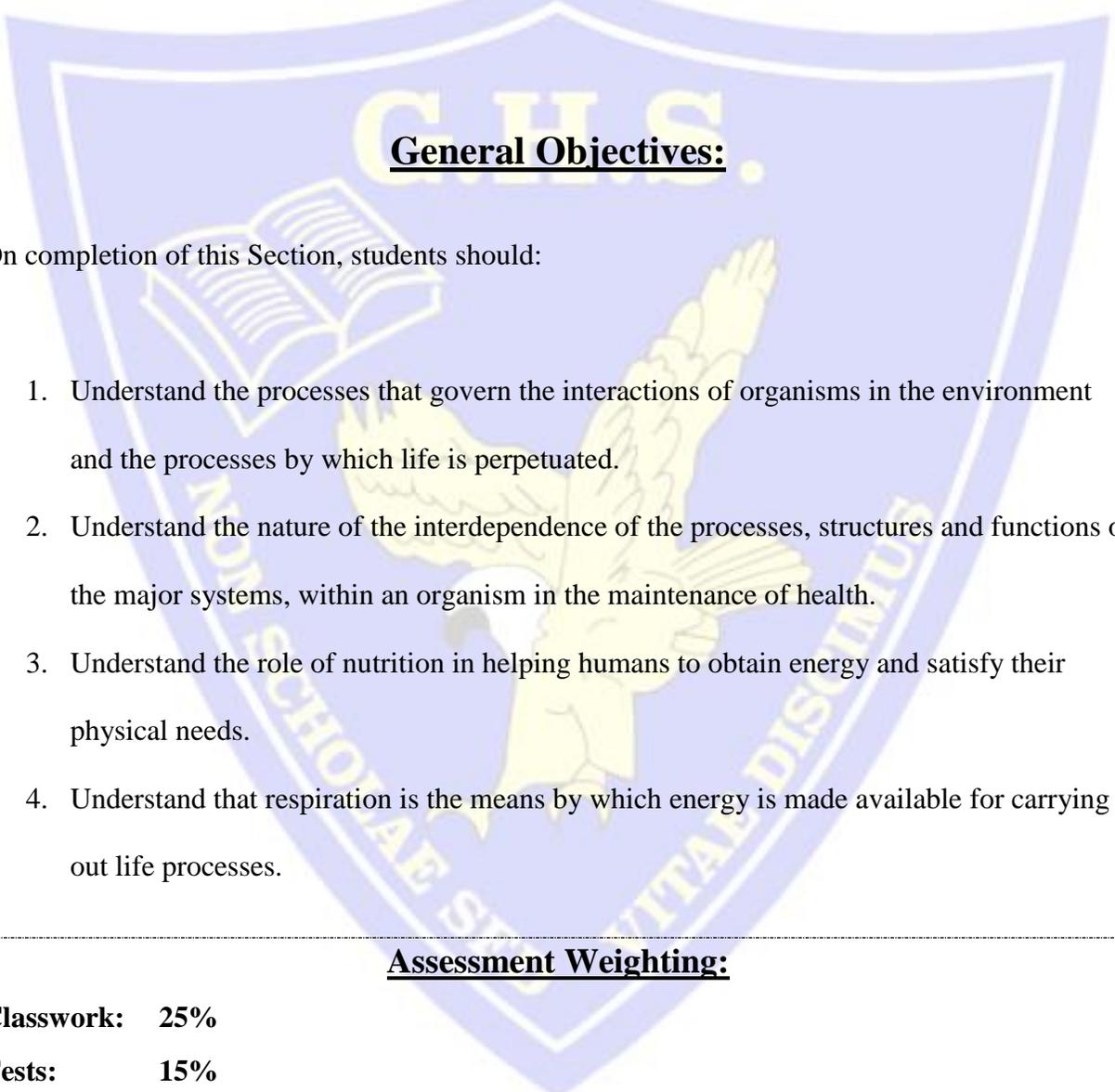
Processes

Course Description:

Human beings require knowledge of the ways in which the human body functions, of the interdependence of living things, and of the ways the total environment functions to support life on earth in all its forms, in order to make intelligent decisions on matters at home, work or in society, which routinely affect their health and, therefore, the quality of their lives. The study of Human and Social Biology provides students at the secondary level with an opportunity in acquiring this knowledge. Human and Social Biology is concerned with the study of the structure and functioning of the human body. It also involves the application of biological principles, knowledge and skills, and technological advances, to the maintenance of health and to solve the problems of living together. The subject incorporates the view that human beings have a responsibility to their environment and, as such, have an obligation to conserve, protect, maintain

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and improve its quality. This course is designed to allow students to work individually and cooperatively, utilizing the theoretical concepts of the course in interactive and practical activities. (Source: CXC (2017). *Transcription of human and social biology... retrieved from: <http://www.cxc.org> -> CSEC%20Human%20and%20Social%20Biology.pdf*)



General Objectives:

On completion of this Section, students should:

1. Understand the processes that govern the interactions of organisms in the environment and the processes by which life is perpetuated.
2. Understand the nature of the interdependence of the processes, structures and functions of the major systems, within an organism in the maintenance of health.
3. Understand the role of nutrition in helping humans to obtain energy and satisfy their physical needs.
4. Understand that respiration is the means by which energy is made available for carrying out life processes.

Assessment Weighting:

Classwork: 25%

Tests: 15%

Exam: 45%

Attendance: 5% (absent for 50% of classes = 0%)

Punctuality: 5% (late for more than 50% of classes = 0%)

Participation: 5% (participate in less than 50% of classes = 0%)

Learning Outcomes:

Characteristics of living

things

1. Describe the characteristics of living organisms.
2. Compare the structures of an unspecialised plant and animal cell and selected microbes.
3. State the functions of cell structures and organelles.
4. Relate the structure of selected cells to their function.
5. Explain the importance of cell specialisation in humans.
6. Explain the importance of the passive and active transport in living systems.

7. Conduct simple investigations on osmosis and diffusion.

8. Explain the process of photosynthesis.

9. Investigate the effect of light and chlorophyll on the production of starch.

10. Explain the ways in which other living organisms depend on plants directly or indirectly for food.

11. Explain the principles of a food chain and food web.

12. Describe the recycling of carbon in nature.

Life Processes

13. Distinguish between macro and micro nutrients.

14. Discuss the functions of macro nutrients

15. Discuss the functions of micronutrients.

16. State the cause, symptoms and treatment of deficiency diseases.

17. Classify vitamins as fat or water soluble.

18. Performs tests to distinguish among food nutrients.

Course Details

Date	Topic	General Objectives	Assignments	Resources
Week 1 of October	The characteristics and features of living organisms	Describe the characteristics of living things	<p>Discuss the difference between a car and a mouse and tell why the car is not said to be a living thing although it possesses characteristics of living things.</p> <p>Human and Social Biology for CSEC Examinations by Phil Gadd pages 19 – 20, No. 1 – 10.</p>	<p>Human and Social Biology for CSEC Examinations by Phil Gadd pages 10 – 18</p> <p>Gadd, P. (2009). <i>CSEC human and social biology: For csec examinations (6th edition)</i>. Macmillan Publishers.</p>
Week 2 of October	Specialised and unspecialised plant and animal cells	Compare the structures of an unspecialised plant and animal cell and selected microbes (virus, bacteria and fungi).	<p>Students will be required to draw and annotate an unspecialised plant and animal cell, virus, bacteria and fungi.</p> <p>Students will also be required to respond to a 'Quizizz' quiz on the topic.</p>	<p>Human and Social Biology for CSEC Examinations by Phil Gadd pages 22 – 27</p> <p>Gadd, P. (2009). <i>CSEC human and social biology: For csec examinations (6th edition)</i>. Macmillan Publishers.</p>
Week 3 of October	<p>Functions of cell organelles</p> <p>Cell structure and function</p>	<p>State the functions of cell structures and organelles.</p> <p>Relate the structure of selected cells to their function</p>	<p>Create a table to compare the differences and similarities between the organelles found in the unspecialised plant and animal cells.</p>	<p>Human and Social Biology for CSEC Examinations by Phil Gadd pages 22 – 27</p> <p>https://www.youtube.com/watch?v=ApvxVtBJxd0</p>

Week 4 of October	Cell specialization	Explain the importance of cell specialisation in humans	Students will be required to name the four types of tissues, name their function and give a location on the body where each tissue can be found. Draw, label and annotate diagrams of the four types of tissues. Discuss the importance of cell specialization in multicellular organisms.	Human and Social Biology for CSEC Examinations by Phil Gadd pages 33 – 35. https://www.youtube.com/watch?v=wNe6RuK0FfA
Week 1 of November	Transport in humans	Explain the importance of passive and active transport in living systems Conduct investigations on osmosis and diffusion	Differentiate between the terms ‘passive transport’ and ‘active transport’ Human and Social Biology for CSEC Examinations by Phil Gadd pages 39 – 40, No. 1 – 10 and 19.	Human and Social Biology for CSEC Examinations by Phil Gadd pages 28 – 33 Gadd, P. (2009). <i>CSEC human and social biology: For csec examinations (6th edition)</i> . Macmillan Publishers. https://www.youtube.com/watch?v=ywIVrkHru2s
Week 2 of November	Six Weeks Test Photosynthesis	Objectives from week 1 of October to Week 1 of November. Explain the process of photosynthesis. Investigate the effect of light and chlorophyll on the production of starch.	Students will be required to log into their Google Classroom and complete the assignment under classwork. Research project: You will need two peas; plant one in a cup/pot and put it in a cool shaded area and the other in pot which is placed in a warm well-	Photosynthesis in plants: https://www.youtube.com/watch?v=3pD68uxRLkM

			lit area. Record the number of days the pea take before the shoot arise and afterwards record the height of the pea over a period of 4 weeks. Comment on the difference in height and make inferences on which contains the most starch.	
Week 3 of November	Interdependencies of living organisms.	<p>Explain the ways in which other living organisms depend on plants directly or indirectly for food.</p> <p>Explain the principles of a food chain and food web.</p> <p>Construct a food chain and food web from a selected habitat.</p>	<p>Students will be required to examine several food chains and food webs provided by the teacher and take part in discussions on the relationship/dependencies of the organisms in the food web/chain.</p> <p>Students will be required to create food webs and chains using terrestrial and aquatic organisms.</p>	Gadd, P. (2009). <i>CSEC human and social biology: For csec examinations (6th edition)</i> . Macmillan Publishers. Pages 41 – 44.
Week 4 of November	Recycling of Nutrients	<p>The Carbon Cycle</p> <p>The Nitrogen Cycle</p>	<p>Students will be required to draw an annotated diagrams of the carbon and nitrogen cycles and discuss the importance of the carbon and nitrogen to life on earth.</p> <p>Students will be required to respond to a quiz on 'Quizizz' which will be link to their</p>	Gadd, P. (2009). <i>CSEC human and social biology: For csec examinations (6th edition)</i> . Macmillan Publishers. Pages 48 - 51

			Google Classroom account.	
Week 1 of December	Nutrition: Macro nutrients	Distinguish between macro and micro nutrients. Discuss the functions of macro nutrients.	Students will be required to create a table which has all the macro-nutrients, the test used to detect these nutrients, foods which contain these nutrients and their function in the body.	Gadd, P. (2009). <i>CSEC human and social biology: For csec examinations (6th edition)</i> . Macmillan Publishers. Pages 55 – 61 (Dietary fibre excluded)
Week 2 of December	Nutrition: Micro nutrients	Discuss the function of micro nutrients: vitamins A, B ₁ , C, D, E, and K and the minerals: calcium, magnesium, fluorine, iodine, phosphorous, sodium and iron.	Students will be required to: Copy tables 5.2, 5.3 and 5.4 from pages 65 – 66 of their HSB text. <i>See next column.</i> Write a 3 paragraph essay discussing the importance of vitamins and minerals for a healthy life. (Should be submitted via Google Classroom).	Gadd, P. (2009). <i>CSEC human and social biology: For csec examinations (6th edition)</i> . Macmillan Publishers. Pages 62 – 66.
Week 3 of December	Nutrition: Deficiency diseases	State the cause, symptoms and treatment of deficiency diseases: Night blindness, iron-deficiency anaemia, rickets, and goitre Classify vitamins as fat or water soluble: Fat soluble – A, D, E and K, Water soluble – B, C	Gadd, P. (2009). <i>CSEC human and social biology: For csec examinations (6th edition)</i> . Macmillan Publishers. Pages 79 – 80. #s 1 – 10 and 14 and 20.	Gadd, P. (2009). <i>CSEC human and social biology: For csec examinations (6th edition)</i> . Macmillan Publishers. Pages 62 – 66.

Week 5 of December	Christmas Break	Christmas Break	Christmas Break	Christmas Break
Week 1 of January	Nutrition: Food Test	Performs tests to distinguish among food nutrients: starch, reducing sugars, non-reducing sugars, protein and fat.	<p>Observe various food tests performed by teacher and/or YouTube videos and make a report on observations made.</p> <p>Discuss the reactions of each test with the food being tested.</p> <p>Use the emulsion test to test for the presence of fats in foods at home, including butter/margarine, crushed peanut etc. make a video of the process and post in Google Classroom.</p>	<p>https://www.youtube.com/watch?v=1a4Jy6JOjiY</p> <p>https://www.youtube.com/watch?v=sLP8dcnWnJg</p> <p>https://www.youtube.com/watch?v=13H1urX3gxI</p>
Week 2 of January	Nutrition: Water, dietary fibre	<p>State the functions of water in the body.</p> <p>Explain the role of dietary fibre in the body.</p> <p>Describe the causes and effects of constipation and diarrhoea</p>	Write a two paragraph essay on the importance of dietary fibre to the body; be sure to discuss the sources of dietary fibre, its impact on diarrhoea and constipation and diseases of the intestines such as intestinal cancer.	Gadd, P. (2009). <i>CSEC human and social biology: For csec examinations (6th edition)</i> . Macmillan Publishers. Pages 66 – 67, 60 – 62, 102
Week 3 of January	Nutrition: Balanced diet	Discuss the importance of a balanced diet: food groups, the effects of age, sex and occupation on dietary needs.	<p>Respond to items 18 – 19 on page 80 of text (<i>see next column</i>)</p> <p>Sign in to Google classroom and complete assessment on 'Quizizz' through link provided.</p>	Gadd, P. (2009). <i>CSEC human and social biology: For csec examinations (6th edition)</i> . Macmillan Publishers. Pages 67 – 79.

Week 4 of January	EXAMS	EXAMS	EXAMS	EXAMS
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