

ST. MARY'S COLLEGE

CAPE BIOLOGY UNIT 2

Course Outline 2016-2017

Term 1

Proposed Date/Week	Unit/ Section	Topic	Modules
Wk 1-2	01	Photosynthesis	:01-Structure of dicotyledonous leaf
			:02- photophosphorylation
			:03- Calvin Cycle
			:04- limiting factors of photosynthesis
Wk 3-4	02	Respiration and energy release	:01- breakdown of glucose in cellular respiration
			:02- Glycolysis
			:03- structure and function of the mitochondria
			:04- precursor of Krebs cycle /Krebs cycle process
			:05-oxidative phosphorylation
Wk 5	03	Anaerobic respiration	:01- comparison of aerobic and anaerobic respiration
			:02- significance of lactate formation and ethanol production
WK 6	04	Ecological Systems	:01-abiotic and biotic factors in an environment
			:02- distinguish between ecosystem , habitat and ecological niche
			:03- investigative methods for studying ecological systems
Wk 7	05	Energy Flow and Nutrient Cycling	:01- energy flow in system and energy transfer in trophic levels
			:02- biological pyramids
			:03-species diversity
			:04- carbon and nitrogen cycle
			:05- importance of the ecosystem being self sustaining
Wk 8-9	06	Transport of water and minerals	:01- uptake of ions in the roots
			:02- uptake and movement of water in the plant
			:03- structure and function of Xylem
			:04- factors affecting transpiration rate

Term1 continued

Proposed Date/Week	Unit/Section	Topic	Modules
Wk 10-11	07	Circulatory System in man	:01- structure and function of arteries, veins and capillaries
			:02- structure of heart and the cardiac cycle
			:03- initiation and control of heart action
			:04- blood pressure and pulse
			:05- haemoglobin and oxygen uptake
			:06- interpretation of oxygen dissociation curves/ Bohr effect
WK 12-13	08	Homeostasis Osmoregulation	:01- homeostasis defined
			:02- homeostasis in the liver
			:03- nitrogenous waste products and their removal
			:04- structure and function of kidney
			:05- removal of waste by the kidney
			:06- clinical significance of glucose and protein in urine

Term 2

Proposed Date/Week	Unit/Section	Topic	Modules
Wk 1-2	01	Nervous co-ordination	:01- structure of motor and sensory neurones
			:02- resting potential
			:03- nerve transmission and action potential
			:04- synaptic transmission
			:05- role of synapses
Wk 3-4	02	Hormonal control	:01- general principles of hormonal control
			:02- blood glucose regulation
			:03- co-ordinating systems- nervous and endocrine
			:04- plant regulator- ethene

Term 2 Continued

Proposed Date/Week	Unit/Section	Topic	Modules
Wk 5	03	Health and Diseases	:01- health defined
			:02- categories of diseases
			:03- significance of global distribution of AIDS and Diabetes
Wk 6-9	04	Social and preventative medicine	:01- importance of a balanced diet
			:02- diseases associated with the heart
			:03- relevance of physical fitness
			:04- causes of either AIDS or Dengue and its impact worldwide
			:05- preventative factors in controlling diseases
			:06- the use and abuse of antibiotics
			:07- phagocytic action
			:08- the role of Lymphocytes
			:09- passive and active immunity
			:10- monoclonal antibodies
			:11- effects of alcoholism
			:12- effects of cigarette smoking
Wk 10-11	05	Genetic engineering	:01- recombinant DNA technology
			:02- role of restriction enzymes
			:03- gene therapy
			:04- transgenic organisms