THE ERINDALE ACADEMY

Unit /Assessment Plan for SBI4U

Course Title: Biology, Grade 12 University Preparation Teacher's Name: **FAUZIA AKHTER**

Time hours	Unit Title	Topics	Overall expectations	Accommodation for ELL	Assessment Evaluation
Throughout all units	***SCIENTIFIC INVESTIGATION SKILLS AND CAREER EXPLORATION***	**Lab#1** Food test **(Unit#1)** **Lab#2.** Photosynthesis and limiting factor (**Unit#2**) (Simulation) **Lab#3.** DNA extraction from banana and strawberry **(Unit#3) (Gizmos)** *** Poster presentation (All units)	A1. demonstrate scientific investigation skills (related to both inquiry and research) in the four areas of skills (initiating and planning, performing and recording, analysing and interpreting, and communicating); A2. identify and describe careers related to the fields of science under study, and describe contributions of scientists, including Canadians, to those fields..	N/A	Lab worksheet; team work; participation; Q/A; class discussion
6 classes and 1 lab **= 20 hrs.**	**UNIT 1:B. BIOCHEMISTRY**	➢ Introduction to Biochemistry Cellular Biology ➢ The Chemicals of Life Lesson ➢ Enzymes	B1. analyse technological applications of enzymes in some industrial processes, and evaluate technological advances in the field of cellular biology; B2. investigate the chemical structures, functions, and chemical properties of biological molecules involved in some common cellular processes and biochemical reactions; B3. demonstrate an understanding of the structures	N/A	CW; HW; Lab work; Unit#1-MCQ quiz test; Unit test#1

			and functions of biological molecules, and the biochemical reactions required to maintain normal cellular function. .		
7 classes and 1 lab+ Presentation; **=24 hrs.**	**UNIT 2: C. METABOLIC PROCESSES**	➢ Thermodynamics ➢ Photosynthesis ➢ Cellular Respiration ➢ Cellular Energy	C1. analyse the role of metabolic processes in the functioning of biotic and abiotic systems, and evaluate the importance of an understanding of these processes and related technologies to personal choices made in everyday life; C2. investigate the products of metabolic processes such as cellular respiration and photosynthesis; C3. demonstrate an understanding of the chemical changes and energy conversions that occur in metabolic processes.	N/A	CW; HW; Class discussion; Unit#2-MCQ quiz test; Unit test#2
7 classes+ 1lab **= 25 hrs.**	**UNIT 3: D. MOLECULAR GENETICS**	➢ Introduction to DNA ➢ Protein Synthesis ➢ Biotechnology and Gene Modification ➢ Social, Ethical and Legal Implications of Biotechnology	D1. analyse some of the social, ethical, and legal issues associated with genetic research and biotechnology; D2. investigate, through laboratory activities, the structures of cell components and their roles in processes that occur within the cell; D3. demonstrate an understanding of concepts related	N/A	CW; HW; Lab work; Class discussion; ; Unit#3-MCQ quiz test; Unit test#3

			to molecular genetics, and how genetic modification is applied in industry and agriculture.		
6 classes +1Lab.) **= 20hrs.**	**UNIT 4: E. HOMEOSTASIS**	➢ Maintaining Balance ➢ The Endocrine System ➢ The Nervous System ➢ The Immune System	E1. evaluate the impact on the human body of selected chemical substances and of environmental factors related to human activity; E2. investigate the feedback mechanisms that maintain homeostasis in living organisms; E3. demonstrate an understanding of the anatomy and physiology of human body systems, and explain the mechanisms that enable the body to maintain homeostasis.	N/A	CW; HW; Lab work; Class discussion; Unit#4-MCQ quiz test Take home assignment (Unit test#4)
6 classes =18 hrs.	**UNIT 5: POPULATION DYNAMICS**	➢ Community Interactions ➢ Population Ecology ➢ Population Growth ➢ Human Population Growth and Ecology	F1. analyse the relationships between population growth, personal consumption, technological development, and our ecological footprint, and assess the effectiveness of some Canadian initiatives intended to assist expanding populations; F2. investigate the characteristics of population growth, and use models to calculate the growth of populations within an ecosystem; F3. demonstrate an understanding of concepts related to population growth, and explain the factors that affect the growth of various populations of species.		CW; HW; Lab work; Class discussion; Essay writing; Unit#5 MCQ quiz test; Unit test#5
6 hours	Culminating Performance Task and Final Examination	Midterm; Research presentation (PPT); Poster presentation; Final exam			

Total= 110 hrs.		