Islamic Foundation School
Course Outline

Course Title: Biology 12	
Course Code: SBI4U	
Course Type: Academic	
Grade: 12	
Credit Value: 1.0	
Prerequisites: SBI3U	
Co requisites: None	
Course developed by: Fazeel Siddiqui	**Date:** August 20th 2013
Course Revised by: Fazeel Siddiqui	**Date:** Janurary 31st 2014
Course based on Ministry curriculum document: Ministry of Education Curriculum Document 2008 titled as: "Science; The Ontario Curriculum; Grades 11 and 12"	

ISLAMIC FOUNDATION SCHOOL

Course Outline – Biology (SBI4U)
Course Type: Academic, Grade: 12, Credit Value: 1.0
Prerequisite: SBI3U , Co-requisite: None

Department: Science
Teacher: Fazeel Siddiqui

Course Description / Rationale

This course provides students with the opportunity for in-depth study of the concepts and processes that occur in biological systems. Students will study theory and conduct investigations in the areas of biochemistry, metabolic processes, molecular genetics, homeostasis, and population dynamics. Emphasis will be placed on the achievement of detailed knowledge and the refinements of skills needed for further study in various branches of the life sciences and related fields.

Overall Curriculum Expectations

By the end of this course, students will:

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 and functions of biological molecules, and the biochemical reactions required to maintain normal cellular function.
C1. analyse the role 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 cellular respiration and photosynthesis;
C3. demonstrate an understanding of the chemical changes and energy conversions that occur in metabolic processes.
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 to molecular genetics, and how genetic modification is applied in industry and agriculture.
E1. evaluate the impact on the human body of selected chemical substances and of environmental factors related to the human activity;
E2. investigate the feedback mechanisms that maintain homeostasis in living organisms;
E.3 demonstrate an understanding of the anatomy and physiology of human body systems, and explain the mechanisms that enable that body to maintain homeostasis.
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 populations growth, and explain the factors that affect the growth of various populations of species.

Outline of Course Content

Unit	Title	Chapters	Approximate Hours
1	**Biochemistry**	**1-2**	**25**
2	**Metabolic Processes**	**3-5**	**25**
3	**Molecular Genetics**	**6-8**	**20**
4	**Homeostasis**	**9-11**	**20**
5	**Population Dynamics**	**12-13**	**20**

Teaching & Learning Strategies

In this class, a variety of teaching strategies will be used to enhance students learning. These include (but are not limited to): note taking, interactive lessons, cooperative work, investigations through experiments and laboratory work, independent learning and study notes.

Learning Skills:

In addition to earning a mark on the report card, Learning Skills will be evaluated as outlined by **Growing Success. Assessment, Evaluation and Reporting in Ontario Schools. 2010**. The Learning Skills are: Responsibility, Organization, Independent Work, Collaboration, Initiative, and Self-Regulation. The Learning Skills are evaluated using four-point scale: E for Excellent, G for Good, S for Satisfactory, and N for Needs Improvement

Obtaining Extra Help:

Students are expected and encouraged to seek extra help from the teacher when needed**.** The teacher will inform the students of his/her availability and the students are expected to make use of the hours allocated for extra help. Class remedial sessions will also be conducted throughout the term and will be scheduled based on student/teacher consensus.

Late Assignment Submission Policy

"Students are responsible not only for their behaviour in the classroom and the school but also for providing evidence of their achievement of the overall expectations within the time frame specified by the teacher, and in a form approved by the teacher." **Growing Success, page 43**. If a student has not already procured an extension from a teacher and does not meet assignment deadlines, he/she has up until the time the marked assignments are returned to submit the work for a full mark. Any work submitted after this will be marked and given a mark up to 50.

Achievement Policy
For Grades 9 to 12, a final grade (percentage mark) is recorded for every course. The final grade will be determined as follows:

• Seventy per cent of the grade will be based on evaluation conducted throughout the course. This portion of the grade should reflect the student's most consistent level of achievement throughout the course, although special consideration should be given to more recent evidence of achievement.

• Thirty per cent of the grade will be based on a final evaluation administered at or towards the end of the course. This evaluation will be based on evidence from one or a combination of the following: an examination, a performance, an essay, and/or another method of evaluation suitable to the course content. The final evaluation allows the student an opportunity to demonstrate comprehensive achievement of the overall expectations for the course. **Growing Success. Assessment, Evaluation and Reporting in Ontario Schools. 2010**

Homework is an essential part of each department's curricula and students are responsible for all work assigned in each class. On-going assessment will occur to allow all students the opportunity to be successful. Students will be evaluated in all four categories of the achievement chart.

Overall Assessment Breakdown

Term Work (70%)		**Category Weight**
Labs & Assignments (30%)		Knowledge & Understanding (40%)
Quizzes (15%)		Communication (20%)
Tests (25%)		Application (20%)
		Thinking/Inquiry (20%)
Cumulative Evaluation (30%)		
Final Exam (30%)		

Resources
Nelson Biology 12 Textbook (replacement cost is $165)
Nelson Biology 12 Study Guide

Plagiarism
Students are expected to think independently and work honestly. All students must avoid presenting the work or ideas of others as their own. It is in the best interest of each student to build habits which contribute to genuine academic, personal, and social growth, and which attest to sound character. Plagiarism is an academic dishonesty which cannot be tolerated at IFS. The first offence will result in a mark of zero and all previous work may be put to scrutiny. Subsequent offence may result in removal from school. (IFS Student Planner, page 31)

Contact
Students can contact me through email or the contact section located on the course webpage.
fazeeljs13@gmail.com
http://www.weebly.com/weebly/main.php

Student Declaration and Agreement

Student Name: _____

Course: _____

Teacher: _____

I have read this course outline and understand the procedures, policies, resources, and consequences that exist in relation to this course. If I have questions, concerns, or suggestions about any aspect of this course, I will contact the teacher at the earliest possible time so that I may meet with the greatest amount of success possible.

_____ _____

Student Signature Date

_____ _____

Parent / Guardian Signature Date