|  |  | **Course Outline and Evaluation Summary**  **Course Code** | |  |
| --- | --- | --- | --- | --- |
|  | Title of Course: Grade 12 Biology University Preparation SBI4U1 | 416-395-3210 | |
|  | Department: Science |  | |

| **Course Description** |
| --- |
| In this course, students will be provided 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 refinement of skills needed for further study in various branches of the life sciences and related fields.  **Prerequisite:** Biology Grade 11, University Preparation |

| **Course Evaluation**  Course evaluations incorporate one or more of the achievement categories (KICA). A brief description of each category can be found [here](https://www.dcp.edu.gov.on.ca/en/assessment-evaluation/categories-of-knowledge-and-skills). The final grade is calculated using the weighted percentages below. | | | | | |
| --- | --- | --- | --- | --- | --- |
| **Term Work:** | **A variety of tasks where you show your learning and have marks assigned using the Achievement Categories/Strands** | | **Summative**  **Evaluation:** | **Marked summative tasks which assess your learning on the entire course** | |
| 70% | 40% | Knowledge & Understanding | 30% | Culminating Tasks | |
| 20% | Thinking & Inquiry |
| 20% | Application |
| 20% | Communication |

| **Learning Skills** |
| --- |
| Learning skills provide Information to help students understand what skills, habits & behaviors are needed to work on to be successful. These are not connected with any numerical mark. A brief description of each skill can be found [here](http://www.edu.gov.on.ca/eng/policyfunding/growsuccess.pdf#page=17).  **Responsibility, Organization, Independent Work, Collaboration, Initiative and Self-Regulation**  E – Excellent G – Good S – Satisfactory N – Needs Improvement |

| **Required Materials:** Any educational resource required for this course will be provided by the school. It is the student’s responsibility to come to class with the following materials. 3 ring binder, loose-leaf paper, graph paper, calculator, pen(s), pencil(s), ruler, tape, and scissors. |
| --- |

| **School/Departmental/Classroom Expectations** |
| --- |
| **Attendance:** The student is expected to attend class on time. Parents/guardians will be contacted if lates/attendance becomes an issue/hindrance. If the student knows about an absence in advance, they should contact the teacher.  **Plagiarism/Cheating:** A mark of 0 will be assigned for any work submitted that does not belong to the student. A mark of 0 will be assigned to a student who was found to have cheated. Parents/guardians will be informed.  **Missed Work:** If a student is absent from class, (e.g. illness, sports team) it is **their** responsibility to find out what they have missed and to catch up. The student is responsible for completing all of the work that was missed due to an absence. If a student misses an assignment or test without a legitimate explanation and documentation, marks up to and including the full value of the evaluation may be deducted. Make-up tests must be arranged to be written.  **Late Work:** Late work may result in a deduction of marks up to and including the full value of the evaluation. |

\\\\

| **Course Assessment Tasks** | | | |
| --- | --- | --- | --- |
| ***Unit/Topic/Strand*** | ***Big Ideas*** | ***Major Assignments / Evaluations*** | ***Estimated Duration*** |
| Unit 1:  Biochemistry | o Technological applications that affect biological processes and cellular functions are used in the food, pharmaceutical, and medical industries.  o Biological molecules and their chemical properties affect cellular processes and biochemical reactions.  o Biochemical compounds play important structural and functional roles in cells of all living organisms. | Students will be given the opportunity to demonstrate their learning in a number of ways comprising:  o Written assessments in the forms of quizzes and/or tests  o Note taking skills  o Projects including resource production and scientific writing  o Presentations  o Performance tasks  o Lab skills and report writing | 30 hours |
| Unit 2:  Molecular Genetics | o DNA contains all the genetic information for any living organism.  o Proteins control a wide variety of cellular processes.  o Genetic research and biotechnology have social, legal, and ethical implications. | 30 hours |
| Unit 3:  Metabolism | o All metabolic processes involve chemical changes and energy conversions.  o An understanding of metabolic processes enables people to make informed choices with respect to a range of personal, societal, and environmental issues. | 20 hours |
| Unit 4:  Homeostasis | o All metabolic processes involve chemical changes and energy conversions.  o An understanding of metabolic processes enables people to make informed choices with respect to a range of personal, societal, and environmental issues. | 10 hours |
| Unit 5:  Population Dynamics | o Population growth follows predictable patterns.  o The increased consumption of resources and production of waste associated with population growth result in specific stresses that affect Earth’s sustainability.  o Technological developments can contribute to or help offset the ecological footprint associated with population growth and the consumption of natural resources. | 10 hours |
| Culminating Task(s) | Will include a review of the knowledge, materials and skills amassed throughout the duration of the course. | The final assessment will take into consideration; notes, homework assignments, course participation and self reflection carried out during the entirety of the course as well as a final examination | 10 hours |