

BIOLOGY 40S – COURSE OUTLINE**Description:**

Biology 40S is a course designed to assist students in achieving greater understanding of genetics, DNA, RNA and how these molecules lead to genetic diversity in all organisms. Other important units will deal with biodiversity, classifying and categorizing biodiversity and the conservation of biodiversity.

Course Topics:

The Course is divided into five (5) major units:

Unit 1: Understanding biological inheritance

* principles of inheritance * autosomal inheritance * atypical inheritance * sex-linked inheritance * using pedigrees * genetic testing * genetic variability * chromosome mutations

Unit 2: Mechanisms of inheritance

* discovering the structure of DNA * DNA structure * DNA replication * protein synthesis * gene mutation * investigating applications of gene technology in bioresources * investigating applications of gene technology in humans

Unit 3: Evolution theory and biodiversity

* defining evolution * The Historical context * Darwin's Theory * Adaptation * Natural selection * effects of Natural selection * Artificial selection * population genetics * mechanisms for genetic variation * speciation * convergent and divergent evolution * pace of evolutionary change

Unit 4: Organizing biodiversity

* defining biodiversity and species * classifying organisms * determining evolutionary relationships * domains of life * investigating evolutionary trends

Unit 5: Conservation of biodiversity

* maintaining biodiversity * conservation strategies * monitoring biodiversity * investigating a conservation issue

Evaluation:**Creating the Grade:**

- Grades will be based only on the demonstration of an individual student's knowledge and skills of the outcomes for each course:
 - Only items marked by the teacher will determine a student's grade
 - Grades are based on individual student achievement, not group achievement
- When determining a grade, the teacher will decide whether there is sufficient evidence of achievement. If not, the mark can be reported as an "IN" (incomplete). Teachers will determine with students and parents/guardians a plan for completion of work.

Establish, communicate, and apply consequences for late and missing work:

Students must understand that there will be consequences for not completing assignments that provide evidence of learning or for submitting those assignments late. If, after establishing and clearly communicating expectations regarding assignments, setting and communicating timelines for assignments, and supporting student learning using the strategies provided above, student work is still late or missing; teachers will apply the following strategies:

- confer with the student and, where appropriate, with the student's parent/guardians about the reasons for not completing the assignment, and consider the legitimacy of reasons;
- develop an agreement with the student to complete the work;
- require the student to complete missing work during lunch by attending the Assessment Completion Centre (ACC).

If, after completing the steps above, the student does not hand in the assessment by the agreed upon deadline, a zero may be used as a mark as the student has not demonstrated any knowledge or skill of the outcome.

The consequence for not completing work is to complete the work. Late marks will not be subtracted from an assignment as it is purely punitive and doesn't measure learning. The assignment will either be completed or given a zero.

The full policy is available on the SCI website under "Student Handbook".

FINAL EVALUATION:

Tests / Evaluations	Projects / Lab Reports / Portfolio work	Oral work / *Oral evaluations	Final Exam / Final Evaluation
45%	20%	20%	25%

Aboriginal perspectives: Interlake School Division is dedicated to an inclusive education, including perspectives from an aboriginal point of view. This may involve instruction, the use of resources (primary and secondary), formative assessment and models of collaboration.

How to be successful in this course:

This entire course is composed of five (5) units, meaning that each unit will be given approximately three (3) weeks of study. The students are strongly encouraged to keep a regular study schedule during which they can assess what they know and what they do not.

Students can expect a unit test every three to four weeks. It is also a very good idea that students review the unit on a nightly basis so that all questions can be asked and all clarifications can be given before the day of any unit test. There may not be enough time for "last minute" questions on the day of the unit test.

Cheating and academic dishonesty:

Both cheating and academic dishonesty can be defined as "presenting work under your name that was not researched or written by you". In short, it is when a student tries to pass off someone else's work as his/her own.

First infraction: Student will be given a mark of zero (0) and instructed to re-do the assignment; if the assignment is not redone, please refer to the section on late assignments above. Parents and school administration will be informed.

Second infraction: Student will be given a mark of zero (0) and will not be presented with the opportunity to redo that particular assignment. Parents and school administration will be informed.

Third infraction: Student will be given a mark of zero (0), will not be presented with the opportunity to redo the assignment and will be referred to the administration of the school / division for appropriate consequences.

In the French Immersion program, the use of online translators is strictly forbidden; any work suspected of having been completed this way may require the student to provide proof that s/he is capable of functioning at the level of french provided in the assignment under scrutiny.