

EASTERN SCHOOL DISTRICT

Course Description

(June 2, 2006)

Course: Biology 2201

Subject Area: Science

Text: McGraw-Hill Ryerson: Biology

Description:

This course is common to all four Atlantic Provinces. The aim of this course is to develop scientific literacy. Scientific literacy is an evolving combination of the science related attitudes, skills, and knowledge students need to develop inquiry, problem-solving, and decision-making abilities; to become lifelong learners; and to maintain a sense of wonder about the world around them. To develop scientific literacy, students require diverse learning experiences which provide opportunity to explore, analyze, evaluate, synthesize, appreciate and understand the interrelationships among science, technology, society, and the environment that will affect their personal lives, their careers, and their futures.

This course is a continuation of the ecology topic introduced in Science 1206 and introduces other branches of biology such as cellular biology, microscopy, classification, human biology, and population biology. The units are to be covered in the sequence outlined below. The number of hours of instruction are only approximate and serve as a guide only.

Unit 1: Matter and Energy for Life Core Lab 1: <i>Using the Microscope</i> Core Lab 2: <i>Osmosis</i>	27 hours
Unit 2: Biodiversity Core Lab 3: <i>Dichotomous Key</i> Core STSE 1: <i>Modern Classification Techniques</i>	32 hours
Unit 3: Maintaining Dynamic Equilibrium I Core Lab 4: <i>Blood Pressure</i> Core Lab 5: <i>Respiratory Volumes</i> Core Lab 6: <i>Macromolecules</i> Core STSE 2: <i>Kidney and Urological Disease</i> Core STSE 3: <i>Cancer</i>	42 hours
Unit 4: Interactions Among Living Things	10 Hours

Core Lab 7: *Reproduction Patterns*

Evaluation Guidelines:

Summative evaluation of students in Biology 2201 shall utilize a variety of evaluation instruments. Primarily, these are designed to test students' basic knowledge of content, their understanding and ability to apply content, and ability to synthesize and problem solve (higher thinking skills) with respect to the content.

Summative evaluation of students in science courses must involve a variety of evaluation instruments. **Midyear examinations, final examinations, and unit tests/quizzes**, completed by students are traditional instruments which must be a part of any summative student evaluation scheme. As well, **Performance Assessment** instruments shall be used for a portion of the summative evaluation.

Unit Tests/Quizzes:

All unit tests are based on the learning outcomes of the course and the objectives. The tests include a variety of testing techniques such as multiple choice and essay items. There is at least one test after each unit and sometimes the unit can be broken into several sections for the purpose of testing if the teacher deems it necessary. Each test is designed for completion in a single class period.

Performance Assessment:

Performance assessment instruments shall be used for a portion of the summative evaluation. *Examples of performance assessment instruments are assignments, written homework, science fair, class observations, science projects, laboratory reports, in-class presentation, in-class cooperative education, practical laboratory tests, observation checklist, computer assisted evaluation and teacher-student interviews, research reports, field trip reports, portfolios, etc.*

Teachers can determine the performance assessment instruments used in Biology 2201. However, a variety of instruments shall be used to accurately assess students' understanding of learning outcomes, with a focus on core labs and STSE topics.

Cumulative Midyear Examination:

The mid-year examination tests all course objectives to that point. It will include multiple choice, essay items and short answer questions on elective units. The test is designed to be completed in a 2 hour time period.

Final Examination:

The final examination is based on the course objectives for the entire year. It uses the same testing techniques used in the mid-year examination. The test is designed to be completed in a 2 hour time period.

Weighting of Evaluation Component:

Tests/Quizzes	25%
Performance Assessment	20%
Comprehensive Midyear Exam	20%
Final Examination	35%

Notes:

- 1) To parallel the evaluation for Biology 3201, performance assessments in Biology 2201 should primarily focus on STSE and core lab outcomes.
- 2) Student grades for the November reporting period comprised of results obtained from tests/quizzes (80%) and Performance Assessment (20%).

Table of Specifications:

A Table of Specifications is used for two main reasons. First, it guides the construction of examinations by outlining a percent value for each cognitive level and unit of study. Secondly, the total percentage for each unit directly corresponds to the suggested time for teaching that unit.

Unit	Cognitive Level %			
	Level 1	Level 2	Level 3	Total %
Matter and Energy for Life	10	10	5	25
Biodiversity	12	12	6	30
Maintaining Dynamic Equilibrium I	14	14	7	35
Interactions Among Living Things	4	4	2	10
Total %	40	40	20	100

The evaluation instrument will contain 15-20% of core lab and STSE (Science, Technology, Society, and the environment) content.

Final Examination Blue Print: *(Follows format of public exam)*

A) Selected Response:

Unit	Number of Selected Response Questions			
	Level 1	Level 2	Level 3	Total #

Matter and Energy for Life	10	6	3	19
Biodiversity	12	7	4	23
Maintaining Dynamic Equilibrium I	14	8	4	26
Interactions Among Living Things	4	2	1	7
Total %	40	23	12	75

B) Constructed Response Blue Print:

Unit	Number of Marks			
	Level 1	Level 2	Level 3	Total #
Matter and Energy for Life	0	4	2	6
Biodiversity	0	5	2	7
Maintaining Dynamic Equilibrium I	0	6	3	9
Interactions Among Living Things	0	2	1	3
Total %	0	17	8	25