

Course ID: **BIO 105**

Credits: 3

Course Name: **THE ORGANIZATION AND DIVERSITY OF LIFE**

Prerequisites:

Class Information		Instructor Information		First day of classes:	Wed., Sept. 9, 2015
Days:	WED / FRI	Instructor:	Graeme Gissing	Last day to add/drop, or change to audit:	Sun., Sept 20, 2015
Time:	9:45-11:00	Email:	ggissing@ambrose.edu	Last day to request revised exam:	Mon., Oct. 26, 2015
Room:	A1085	Phone:	403-410-2000 x 5940	Last day to withdraw from course:	Thu., Nov. 12, 2015
Lab:	Not applicable	Office:	G2204	Last day to apply for time extension for coursework:	Mon., Nov 23, 2015
<b>FINAL EXAM:</b> Date: Tuesday, December 22, 2015 Time: 1:00 PM Room: A2131		Office Hours:	12:00 - 1:30 on Wednesdays and by appointment	Last day of classes:	Mon., Dec 14, 2015

**Textbook:**

As this course is for non-science majors, flexibility is exercised regarding a text and several options are available:

1) We will be using a free text for the first time in 2015. This text is available free of charge through OpenStax (donations are encouraged). The text link will be made available to enrolled students in class.

**Recommended:** Biology, OpenStax College, 30 May 2013

2) The following recommended text is only suggested for those who wish to purchase a thorough biology text.

**Recommended:** Campbell Biology, Canadian Edition - 1st Edition (2014) - Plus Mastering Biology with Pearson eText -- Access Card Pack (Reece, Urry, Cain), Pearson.

3) Students may also use any good undergraduate biology text that they have access to. Many students from last year may be selling used copies of Campbell Essential Biology with Physiology, 4th Edition or another biology text.

**Course Description:**

This course introduces key biological concepts and mechanisms to non-science majors and covers topics such as: The biochemistry of life and the cell, the characteristics of living cells, photosynthesis and cellular respiration, genetics, evolution and natural selection, the diversity of living organisms, the form and function of organ systems, and introduces key concepts in ecology.

**Note:** This course is not open for credit to Majors or Minors in Biology or Natural Science. Credit for both Biology 105 and 131 will not be allowed.

## Expected Learning Outcomes:

1. This course will allow students to increase their understanding of fundamental biological principles and to apply these principles to topics associated with an introductory biology course.
2. Students will gain a greater appreciation for the utility of the scientific method in our expanding knowledge of biology.
3. Students will gain an understanding of the diversity of life found on the planet and gain an appreciation for the relationship between form and function in living organisms.
4. Students will gain an understanding of biochemistry associated with life, cell structure and function, photosynthesis and cellular respiration, organ systems, genetics, evolution and natural selection, and ecology.

## Course Schedule:

The following schedule provides a general guideline and timetable for topics and tests. It may change depending on progress through the semester.

### I. Fundamentals of Biology

**Week 01** - Introduction to the Course / Characteristics of Life / Scope and Process of Science

**Week 01** - Essential Chemistry for Biology / Properties of Water / Molecules of Life

**Week 02** - Biomolecules: Carbohydrates, Lipids, Proteins, Nucleic acids

**Week 02** - A Tour of the Cell / Cell Structure and Function

**Week 03** - Cellular Energy / Enzyme Function / Photosynthesis - Light Reactions and Calvin Cycle

**Week 03** - Cellular Respiration - Citric Acid Cycle

### II. Genetics

**Week 04** - **Wednesday, September 30, 2015, No Class - Spiritual Emphasis Days**

**Week 04** - Modes of Reproduction / Structure of DNA and Chromosomes

**Week 04** - Cell Division – Mitosis

**Week 04** - Cell Division – Meiosis

**Week 05** - Patterns of Inheritance / Punnett Squares / Human blood types

**Week 05** - **Lecture Exam 1 of 2 (tentative, will depend on progress)**

### III. Evolution and Natural Selection

**Week 06** - Charles Darwin / Voyage of the HMS Beagle / Natural Selection

**Week 06** - Phenotypes / Adaptive Radiation / Forms of Natural Selection

**Week 06** - Mechanisms of Microevolution and Random Genetic Drift

**Week 06** - Macroevolution and Speciation

#### IV. Diversity of Life

**Week 07** - Tree of Life / Domains and Kingdoms / Taxonomy / Binomial Nomenclature

**Week 07** - Origins of Life / Endosymbiosis / Bacteria and Archaea / Protists / Algae

**Week 08** - Plant Form and Function / Plant Diversity / Monocots and Dicots

**Week 08** - Plant Structure / Angiosperm Reproduction

**Week 09** - Kingdom Animalia - Characteristics / Types of Structural Support / Animal Phyla / Sponges / Cnidaria

**Week 09** - Lecture Exam 2 of 2 (tentative, will depend on progress)

**Week 10** - **Wednesday, November 11, 2015, No Class - Remembrance Day**

**Week 10** - Flatworms / Molluscs / Annelids

**Week 11** - Arthropods / Echinoderms

#### V. Animal Structure and Function

**Week 11** - The Chordates / Homeostasis / Hierarchy of Organization / Tissues / Organ Systems - Urinary System

**Week 12** - Nutrition and Digestion

**Week 12** - Circulatory System / Respiratory System

**Week 13** - Immune System

**Week 13** - Endocrine System

**Week 14** - Nervous and Locomotor Systems

**Week 14** - **Friday, December 11, 2015, last class** - used to cover any missed material and help with final exam

#### **Requirements:**

Assignments, Tests and Exams, Quizzes:

All exams and assignments are announced and/or scheduled in advance. Assignments are due at the designated time; please see the late policy below for additional information about late submissions of assigned work.

Written exams are objective, utilizing a variety of formats including multiple-choice, matching, true/false, completion, short answer, and short essay questions.

A number of in-class activities will be completed throughout the semester. These include, but are not limited to, quizzes, group discussions, and in-class exercises. Unannounced lecture quizzes represent one of these activities and are short quizzes completed at the beginning of class that are based on recent course material. They are designed to encourage students to keep up with the material and to help students prepare for term tests and the final exam. Missed lecture activities (including unannounced quizzes) cannot be made up and, **if missed, will receive a grade of zero**. The format of assignments will vary according to the topic and the course needs.

**The final exam will have a structure similar to the written term tests, with a combination of question formats.**

**Approximately 50% of the final exam will cover material since the second term test. Approximately 50% of the exam will consist of cumulative material. Further details regarding this comprehensive material will be forthcoming.**

### Late Submission of Assignments:

Over the course of term, we will be engaged in a number of projects that require both faculty-student and student-student collaboration. Often, these collaborations will culminate in assignments that will be turned in for a grade. Thus, it will be vital that all parties take responsibility for their part of these activities. As your instructor, I will provide clear objectives, adequate time, and necessary assistance for completing these assignments. As students, you will be responsible for managing your time such that you are prepared for due dates. However, when circumstances prevent students from turning in individual assignments on time, the following late policy will apply (details below). This policy will cover all lecture-related activities. However, the late policy does not cover written tests or the final exam, both of which must be completed in the allotted time.

Condition (calendar days include both weekdays and weekends)	Deduction
Assignment is turned in 1 calendar day after it is due (e.g. Due: Monday, handed in on Tuesday)	20%
Assignment is turned in 2 calendar days after it is due (e.g. Due: Monday, handed in Wednesday)	30%
Assignment is turned in 3 calendar days after it is due (e.g. Due: Friday, handed in on Monday)	40%
Assignment is turned in 4 calendar days after it is due (e.g. Due: Monday, handed in on Friday)	50%
Assignment is turned in 5 or more calendar days after it is due	100%

### Attendance:

Regular attendance will be essential for success on all exams and assignments. No points will be subtracted from your grade for non-attendance. However, in-class assignments and unannounced in-class quizzes cannot be made up and, **if missed, will receive a grade of zero.**

### Grade Summary:

Activity	Percent of Grade
Lecture Exam I	20%
Lecture Exam II	20%
Unannounced Formative Lecture Quizzes (5)	15%
Assignments and/or Class Activities (3)	15%
Final Exam	30%

A+	95-100%	Excellent	C+	65-70%	Satisfactory
A	90-95%	Excellent	C	62.5-65%	Satisfactory
A-	85-90%	Excellent	C-	60-62.5%	Satisfactory
B+	80-85%	Good	D+	55-60%	Minimal Pass
B	75-80%	Good	D	50-55%	Minimal Pass
B-	70-75%	Good	F	Below 50%	Fail



## Policies:

### Communication

All students have received an Ambrose e-mail account upon registration. It is the student's responsibility to check this account regularly as the Ambrose email system will be the professor's instrument for notifying students of important matters (cancelled class sessions, extensions, requested appointments, etc.) between class sessions. If students do not wish to use their Ambrose accounts, they will need to forward all messages from the Ambrose account to another personal account.

### Registration

During the **Registration Revision Period** students may enter a course without permission, change the designation of any class from credit to audit and /or voluntary withdraw from a course without financial or academic penalty or record. Courses should be added or dropped on the student portal by the deadline date; please consult the List of Important Dates. After that date, the original status remains and the student is responsible for related fees.

Students intending to withdraw from a course after the Registration Revision Period must apply to the Office of the Registrar by submitting a "Request to Withdraw from a Course" form or by sending an email to the Registrar's Office by the **Withdrawal Deadline**; please consult the List of Important Dates on the my.ambrose.edu website. Students will not receive a tuition refund for courses from which they withdraw after the Registration Revision period. A grade of "W" will appear on their transcript.

### Exam Scheduling

Students wishing to withdraw from a course, but who fail to do so by the applicable date, will receive the grade earned in accordance with the course syllabus. A student obliged to withdraw from a course after the Withdrawal Deadline because of health or other reasons may apply to the Registrar for special consideration.

Students, who find a conflict in their exam schedule must submit a Revised Examination Request form to the Registrar's Office by the deadline date; please consult the List of Important Dates. Requests will be considered for the following reasons only: 1) the scheduled final examination slot conflicts with another exam; 2) the student has three final exams within three consecutive exam time blocks; 3) the scheduled final exam slot conflicts with an exam at another institution; 4)

extenuating circumstances. Travel is not considered a valid excuse for re-scheduling or missing a final exam.

### Electronic Etiquette

Students are expected to treat their instructor, guest speakers, and fellow students with respect. It is disruptive to the learning goals of a course or seminar and disrespectful to fellow students and the instructor to use electronics for purposes unrelated to the course during a class session. Turn off all cell phones and other electronic devices during class. Laptops should be used for class-related purposes only. Do not use iPods, MP3 players, or headphones. Do not text, read, or send personal emails, go on Facebook or other social networks, search the internet, or play computer games during class. Some professors will not allow the use of any electronic devices in class. The professor has the right to disallow the student to use a laptop in future lectures and/or to ask a student to withdraw from the session if s/he does not comply with this policy. Repeat offenders will be directed to the Dean. If you are expecting communication due to an emergency, please speak with the professor before the class begins.

### Academic Policies

It is the responsibility of all students to become familiar with and adhere to academic policies as stated in the Academic Calendar. Personal information (information about an individual that may be used to identify that individual) may be required as part of taking this class. Any information collected will only be used and disclosed for the purpose for which the collection was intended. For further information contact the Privacy Compliance Officer at [privacy@ambrose.edu](mailto:privacy@ambrose.edu).

### Extensions

Although extensions to coursework in the semester are at the discretion of the instructor, students may not turn in coursework for evaluation after the last day of the scheduled final examination period unless they have received permission for a course Extension from the Registrar's Office. Requests for course extensions or alternative examination time must be submitted to the Registrar's Office by the deadline date; please consult the List of Important Dates. Course extensions are only granted for serious issues that arise "due to circumstances beyond the student's control."

### **Appeal of Grade**

An appeal for change of grade on any course work must be made to the course instructor within one week of receiving notification of the grade. An appeal for change of final grade must be submitted to the Registrar's Office in writing and providing the basis for appeal within 30 days of receiving notification of the final grade, providing the basis for appeal. A review fee of \$50.00 must accompany the appeal. If the appeal is sustained, the fee will be refunded.

### **Academic Integrity**

We are committed to fostering personal integrity and will not overlook breaches of integrity such as plagiarism and cheating. Academic dishonesty is taken seriously at Ambrose University as it undermines our academic standards and affects the integrity of each member of our learning community. Any attempt to obtain credit for academic work through fraudulent, deceptive, or dishonest means is academic dishonesty. Plagiarism involves presenting someone else's ideas, words, or work as one's own. Plagiarism is fraud and theft, but plagiarism can also occur by accident when a student fails or forgets to acknowledge to another person's ideas or words. Plagiarism and cheating can result in a failing grade for an assignment, for the course, or immediate dismissal from the university college. Students are expected to be familiar with the policies in the current Academic Calendar that deal with plagiarism, cheating, and the penalties and procedures for dealing with these matters. All cases of academic dishonesty are reported to the Academic Dean and become part of the student's permanent record.

**Note:** Students are strongly advised to retain this syllabus for their records.