Course Outline

UNIVERSITY STUDIES

BIOL 108
Introduction to Biodiversity
Winter, 2014

3 CREDITS
3 HOURS Lecture and 3 HOURS Lab PER WEEK

INSTRUCTOR: David Smith

INSTRUCTOR: **David Smith**

PHONE NUMBER: (780) 791-4997

E-MAIL: **david.smith**@keyano.ca

OFFICE NUMBER: S209B

OFFICE HOURS:

Monday – Friday (except Thursday)	12:00 – 12:50 PM
Thursday	1:00 – 1:50 PM

HOURS OF INSTRUCTION:

Lecture:

Monday	1:00 – 1:50 PM	Room 228
Thursday	12:00 – 12:50 PM	Room 233
Friday	1:00 – 1:50 PM	Room 228

Lab:

Tuesday	2:00 – 4:50 PM	Room 234

PRE-REQUISITE(S):

BIOL 030

COURSE DESCRIPTION:

In this course we will examine the interplay between our planet and the organisms which inhabit it. We will discuss the history of life on our planet and the methods used to infer evolutionary histories and classify organisms. The principles which unite all living things and the unique adaptations which characterize the major lineages will be discussed using examples from bacteria, fungi, protists, animals, and plants. Upon completion of this course, students shouldW have an understanding of some of the major principles of evolution and systematics.

Laboratories will survey the diversity of biological form and function, and introduce students to data collection and scientific writing. Through an overview of the three biological domains, students should gain an appreciation of the remarkable diversity of living organisms with which we share the planet.

COURSE OUTCOMES:

Upon successful completion of this course, students will be able to:
1) Explain basic principles of ecology, evolution, and Mendelian genetics, with a focus on the origin and diversity of life.

2) Use current phylogenetic and taxonomic nomenclature to describe the diversity of life on earth, and explain how evolutionary history is reflected in the nomenclature of organisms, including reference to major evolutionary innovations.

3) Use scientific inquiry to ask and answer questions about the world around them. This includes understanding the strengths & limitations of scientific inquiry and recognizing common mis-uses/mis-understandings.

REQUIRED RESOURCES:

*Campbell, N. A.,Urry, L. A., Cain, M. L., Wasserman, S. A., Minorsky, P. V. and Jackson, R. B. 2011. Biology, 9th Ed. Benjamin/CummingsPublishing Company. San Francisco, California, USA.

** The 8th edition of Biology is also acceptable*

TOPICS TO BE COVERED:

Laboratory:

Week of	Lab Exercise
Jan. 6	**No Lab**
Jan. 13	**No Lab**
Jan. 20	Lab 1 Biological tools and aseptic technique
Jan. 27	Lab 2 Mechanisms of evolution
Feb. 3	Lab 3 Population genetics ***Assignment on Labs 2 and 3, 5%***
Feb. 10	Lab 4 Student presentations of primary literature articles, ***Presentation is worth 5%***
Feb. 17	Lab 5 Domain Bacteria and sterile technique
Mar. 3	Lab 6 Domain Bacteria continued and Protists
Mar. 10	Lab 7 Kingdom Plantae
Mar. 17	Lab 8 Kingdom Fungi ***Assignment Due- 5%***
Mar. 24	Lab 9 Kingdom Animalia – Non-Deuterostome Invertebrates
Mar. 31	Lab 10 Kingdom Animalia continued – Deuterostomes ***Assignment Due – 5%***
April 7	Review lab
April 14	***Final Lab Exam – 15%***

Lecture:

Lecture Topic	Textbook Concepts (8th and 9thed.)
1. Introduction – The scientific method and the scale of biology	1.1-1.3
2. Darwin and natural selection	22.1-22.3
3. Evolution of populations (microevolution)	14.1-14.2; 23.1-23.4
4. The origin of species (speciation)	24.1-24.4
5. Taxonomy, systematics, phylogeny, and classification	26.1-26.5
6. A brief history of time: the origin of life, fossils and their relevance	25.1-25.4
7. Prokaryotes	27.1-27.6
8. Endosymbiosis and the evolution of eukaryotes	25.3, 26.6
9. Reproductive strategies: why does sex exist?	12.1-12.2; 13.1-13.4
10. Protists	28.1-28.7
11. Plant diversity I: bryophytes and pteridophytes	29.1-29.3
12. Plant diversity II: seeded plants	30.1-30.4
13. Functional anatomy of seed plants	35.1-35.4; 36.3-36.4
14. Fungi	31.1-31.5
15. Animal development and classification	32.1; 32.3-32.4
16. Animal diversity I: invertebrates	33.1-33.5
17. Animal diversity II: chordates and vertebrates	34.1-34.8

Please Note:

This course outline may be modified to facilitate unforeseen time constraints. Time allotted to each topic and suggested readings are subject to change.

MOODLE

Go to http://ilearn.keyano.ca

This course is supported through Moodle. Assignments, readings and handouts will be posted on Moodle. Login information will be provided by your instructor. For further instructions please see the Moodle handout.

EVALUATION:

Assignment	Percentage	Due Date, week of
Lab Exam and Assignments	**40%**	See schedule
Midterm I	**10%**	January 27, 2014
Midterm II	**15%**	February 17, 2014
Final Examination	**35%**	April 21-30, 2014

GRADING SYSTEM:

Letter Grade	Description	Grade Points
A+		4
A	Excellent	4
A-		3.7
B+		3.3
B	Good	3
B-		2.7
C+		2.3
C	Satisfactory	2
C-		1.7
D+		1.3
D	Minimal Pass	1
F	Failure	0

Students intending to transfer to other institutions should strive for a 'C-' as a minimum.
Transfer information on each course is available at the Alberta Council on Admission and Transfers.

NOTES:

Please dress appropriately for the weather on any field trips! Proper footwear is important. If the weather does not co-operate, the lab schedule will shift.
Individual components of the course will be given a numerical mark. The grading system will be applied using a combination of absolute achievement and relative standing in the class.

MISSED TERM EXAM OR LABS:
A student who cannot write a term examination or complete a lab assignment due to incapacitating illness, severe domestic affliction or other compelling reasons can apply to have the weight of the missed midterm transferred to the final. All attempts should be made to make up missed labs. Missed labs with no attempts to complete the work will be assigned a "0".
You must notify the instructor of a missed midterm or lab assignment within 48 hours.
Deferral of term work is a privilege and not a right; there is no guarantee that a deferral will be granted. Misrepresentation of Facts to gain a deferral is a serious breach of the Code of Student Behaviour.

CELL PHONES: Cell phones and other electronic devices are to be turned off during class times. If you need to use one, leave the room. If you have to text someone, leave the room.

STUDENTS WITH DISABILITIES: Students who require accommodation in this course due to a disability are advised to discuss their needs with counsellors in the Registrar's office . Please ensure that the required forms for exams are submitted to the instructor **one week** before the date of midterms or **by the last lecture class** for the final exam.

SKILL CENTRE: Students who require additional help in developing strategies for

better time management, study skills or examination skills should contact the Keyano College Skill Centre.

Disclaimer: Any typographical errors in this Course Outline are subject to change and will be announced in class. The date of the final examination is set by the Registrar.

Note: Recording is permitted only with the prior written consent of the instructor or if recording is part of an approved accommodation plan.

Students should consult:

http://keyano.ca/sites/default/files/academic%20regulations.pdf

IMPORTANT DATES:

January 17, 2014	Courses dropped after this date will be designated "W". (A withdrawal (W) is not reflected in your GPA)
January 27, 2014	Midterm Exam (week of Jan. 27th)
February 17, 2014	Midterm Exam (week of Feb. 17th)
March 7, 2014	Courses dropped after this date will be designated "WF". (A withdrawal failure (WF) counts as a 0 in your GPA)
April 18, 2014	Last day of classes
April 21-30, 2014	Final Exam

COLLEGE POLICIES

Equality, Equity and Respect

The Keyano College is committed to providing an environment of equality, equity and respect for all people within the College community. All members of this community are considered partners in developing teaching and learning contexts that are welcoming to all. Faculty, staff, and students are encouraged to use inclusive language to create a classroom atmosphere in which students' experiences and views are treated with equal respect and valued in relation to their gender, ethnic and cultural background, and sexual orientation.

Students should consult:
http://keyano.ca/current-students/individual-rights/definitions-scope

Plagiarism and Cheating

Every student expects to be treated and evaluated fairly in a course. Plagiarism and cheating robs everyone of this right.

No student may submit words, ideas or data of another student or person as his or her own in any writing, project, assignment, quiz, electronic presentation, exam etc. Any work used that is not the student's own must be clearly cited as belonging to someone else. There are penalties for

using other's work and not citing it. The Student's Rights & Responsibilities document clearly outlines these penalties and the appeal process.

- No learner can obtain information from another student during an exam.
- No learner can bring unauthorized information (paper or electronic) into an exam or quiz.
- No student can submit work done in another course for grading in this course without the written prior approval of the course instructor.
- No student can submit copyright protected or commercially produced materials as part or all of an assignment without proper citation & permission.

Student Rights & Responsibilities

Students should consult the Keyano College Credit Calendar or online at:
http://keyano.ca/sites/default/files/academic%20regulations.pdf

Specialized Supports and Duty to Accommodate

Disability Support Services: Learner Assistance Program

If you have a documented disability or you think that you would benefit from some assistance from a Disabilities Counsellor, please call or visit the Disability Supports Office 780-792-5608 to book an appointment (across from the library). Services and accommodations are intended to assist you in your program of study, while maintaining the academic standards of Keyano College. We can be of assistance to you in disclosing your disability to your instructor, providing accommodations, and supporting your overall success at Keyano College.

Specialized Supports and Duty to Accommodate

Specialized Support and Duty to Accommodate are aligned with the office of Disability Support Services: Learner Assistance Program (LAP) guided by federal and provincial human rights legislation, and defined by a number of Keyano College policies. Keyano College is obligated by legislation to provide disability-related accommodations to students with identified disabilities to the point of undue hardship.

Course Outline

UNIVERSITY STUDIES

BIOL 108
Introduction to Biodiversity
Winter, 2014

3 CREDITS
6 HOURS PER WEEK

_____ _____
David Smith, Instructor **Date**

Reviewed and approved by:

_____ _____
Louis Dingley, Chairperson **Date**

_____ _____
Guy Harmer, Dean **Date**