Dakota College at Bottineau Course Syllabus

Course Prefix/Number/Title: BIOL 150 General Biology I, Number of Credits: 4 semester credits

Course Description: The first semester of a two-semester sequenced study of the fundamental topics of biology, with an emphasis on cellular biology.

Prerequisites: none

Course Objectives: Demonstrate an understanding and proficiency with the following concepts:

1. Understand cellular and viral structure and function.
2. Understand fundamental biochemical principles.
3. Understand rudimentary classical genetics
4. Understand rudimentary molecular genetics and have a familiarity with varioius DNA technologies
5. Use knowledge about mechanisms of cellular and molecular processes.

Instructor: C. L. Lura, Ph.D.

Office: NSC 114

Office Hours: MWF 10:00-11:00

Phone: (701) 228-5472

Email: chuck.lura@dakotacollege.edu

Lecture/Lab Schedule: Fall semester

Textbook(s): Campbell, N.A. and J.B. Reece. 2008. Biology. 8th Edition. Pearson/Benjamin Cummings, Publ. Co.

Lura, C.L. 2012. Biology 150 Lab Manual.

Course Requirements:		
	4 Hour Exams @ 100 pts. ea.	400 pts.
	Lec assign/quizzes	100 pts.
	2 Lab Exams @ 50 pts. ea.	100 pts.
	10 Lab Quizzes	100 pts.
	TOTAL POINTS	**700**

A = 100-90%
B = 89-80%
C = 79-70%
D = 69-60%
F = below 60%

Tentative Course Outline:

BIOLOGY 150 TENTATIVE SYLLABUS

DATE	TOPIC	READING ASSIGN.
Week 1	Scientific Method, Chemistry of Life, Water	Chapter2,3,4
Week 2	Large Biological Molecules, Cell Structure and Function **LAB:** Chemistry of Life	5,6
Week 3	Cell Structure and Function cont'd, **LAB:** Microscopy, Eukaryote Cell Structure and Function	6,7
Week 4	Virus Structure and Function, Viroids, Prions **HOUR EXAM I** **LAB:** Cells: diversity and phylogeny	19
Week 5	Enzymes, and Metabolism **LAB:** Enzymes	8
Week 6	Photosynthesis and Respiration **LAB:** Photosynthesis	10,9
Week 7	Respiration cont'd., DNA **LAB:** Respiration	9,16
Week 8	Mitosis and Meiosis **HOUR EXAM II** **Lab Midterm**	12,13
Week 9	Nucleic Acids, Protein Synthesis **LAB:** Mitosis and Meiosis	15,17
Week 10	Gene Expression & Regulation, Inheritance DNA Technology, Genetic Engineering **LAB:** Inheritance and Probability	14,18,20
Week 11	Hardy-Weinberg, Natural Selection **LAB:** Hardy-Weinberg	22,23
Week 12	Speciation and Phylogeny **LAB:** Island Biogeography and Evolution	24,26
Week 13	Macroevolution **HOUR EXAM III** **LAB:** Macroevolution	26,25

Week 14	Populations and Communities **LAB:** Sampling Populations and Communities	53,54
Week 15	Ecosystems- energy flow & biogeochemical cycles **LAB:** Ecosystem Modeling	55
Week 16	Conservation & Restoration **LAB: LAB FINAL**	56
Week 17	Summary and Future Considerations	

General Education Goals/Objectives:

Goal 1: Explains the interrelationships between humans and their environment and the role of science in their lives

Goal 2: Demonstrates knowledge and application of technology

Relationship to Campus Theme:

Class announcement/discussion on news items about technological developments in biology and how that influences the discipline as well as the societal aspects.

DNA analysis, genetic engineering, and DNA fingerprinting covered in class

Knowledge on cell structure and function related to microscope development discussed in class

Interject technological devdelopments and how they influence scientific development and societal issues.

Classroom Policies: Regular attendance and participation in lab and lecture is expected.
All make-up exams will include a significant essay/short answer component and must be made up within one week of the students return to class unless prior arrangements have been made.

Academic Integrity: Cheating on a test, quiz, or other assessment results in zero points for the assessment.

Disabilities and Special Needs: Any accommodations due to a learning disability must come through the Dakota College Learning Center. If you have a diagnosed learning disability, you need to contact the Learning Center in Thatcher 1104 or phone (701) 228-5477.