

EDISON STATE COLLEGE

Division of Arts and Sciences

COMMON COURSE SYLLABUS

PROFESSOR: William H. Wilcox, Ph.D.

PHONE NUMBER: 941 626-2881

OFFICE LOCATION: G-104

E-MAIL: bwilcox@comcast.net

OFFICE HOURS: as posted or email for appointment

SEMESTER: Fall 2010

I. COURSE NUMBER AND TITLE, CATALOG DESCRIPTION, CREDITS:

BSC 1010L BIOLOGICAL SCIENCE LAB I (1 CREDIT)

This laboratory, which accompanies BSC 1010, emphasizes the development of scientific reasoning, formulation of problem statements, and development of investigational techniques and data collection skills used to evaluate scientific hypotheses. Hands-on exercises and instrumental techniques common to studies of cell biology are employed to study topics introduced in BSC 1010.

II. PREREQUISITES FOR THIS COURSE:

Minimum score of {(SAT-R 440 quantitative and 440 verbal) or (ACT-E 19 math, 18 reading and 17 English) or (FCELPT 72 math, 83 reading and 83 sentence skills)} and {BSC1005 or high school biology} with a grade of "C" or better

CO-REQUISITIES FOR THIS COURSE:

BSC 1010

III. GENERAL COURSE INFORMATION: Topic Outline.

- The chemical basis of life
- Functional organization of prokaryotic and eukaryotic cells
- The cell theory as evidenced in prokaryotic and eukaryotic cell cycles and associated mechanisms of control
- The structural and functional roles of membranes with an emphasis on the functions associated with lipids and proteins
- An introduction to energy and metabolism (role of enzymes in catabolism and anabolism)
- Catabolic energy yielding metabolisms associated with carbohydrates, fatty acids or amino acid skeletons associated with fermentation or respiration and the energy consuming, anabolic process of photosynthesis
- Cell communication mechanisms and their role in control of metabolic pathways and gene expression
- Patterns of Mendelian inheritance and the protein basis of the origin of alleles
- The origin of new genetic variations (mutations) as errors in DNA replication, crossing over or non-disjunction
- The role of chromosomes in heredity, their prokaryotic and eukaryotic structure and replication (DNA biosynthesis)
- The "anatomy" of prokaryotic and eukaryotic genes, their transcription and translation and the

- regulation of these processes
- Genetic engineering and the Human Genome Project

IV. LEARNING OUTCOMES AND ASSESSMENT:

GENERAL EDUCATION COMPETENCIES:

General education courses must meet at least four out of the five following outcomes. All other courses will meet one or more of these outcomes.

Communication (COM): To communicate effectively using standard English (written or oral).

Critical Thinking (CT): To demonstrate skills necessary for analysis, synthesis, and evaluation.

Technology/Information Management (TIM): To demonstrate the skills and use the technology necessary to collect, verify, document, and organize information from a variety of sources.

Global Socio-cultural Responsibility (GSR): To identify, describe, and apply responsibilities, core civic beliefs, and values present in a diverse society.

Scientific and Quantitative Reasoning (QR): To identify and apply mathematical and scientific principles and methods.

ADDITIONAL COURSE COMPETENCIES:

At the conclusion of this course, students will be able to demonstrate the following additional competencies:

LEARNING OUTCOMES	ASSESSMENTS	GENERAL EDUCATION COMPETENCIES
Apply the elements of the scientific method to answer a scientific problem.	Successfully complete one or more of the following: exams; quizzes; debates; writing assignments; oral, written, or electronic presentations; computer simulation exercises; collaborative problem solving exercises; data interpretation and analysis exercises; or a well-organized lab notebook.	
Analyze and graph scientific data, using computer-based data management and presentation programs.	Successfully complete one or more of the following: exams; quizzes; oral, written, or electronic presentations; computer simulation exercises; collaborative problem solving exercises; or data interpretation and analysis exercises.	QR, COM, TIM, CT
Properly use scientific procedures and equipment during experiments, including but not limited to microscopes,	Successfully complete one or more of the following: exams; quizzes; oral, written, or electronic	

spectrophotometers, analytical balances, chromatography, and volumetric pipette delivery systems.	presentations; computer simulation exercises; data interpretation and analysis exercises; or a well-organized lab notebook.	
---	---	--

V. **DISTRICT-WIDE POLICIES:**

PROGRAMS FOR STUDENTS WITH DISABILITIES

Edison State College, in accordance with the Americans with Disabilities Act and the college's guiding principles, offers students with documented disabilities programs to equalize access to the educational process. Students needing to request an accommodation in this class due to a disability, or who suspect that their academic performance is affected by a disability should contact the Office of Adaptive Services at the nearest campus.

Lee Campus	Taeni Hall S-116A	(239) 489-9427
Charlotte Campus	Student Services SS-101	(941) 637-5626
Collier Campus	Admin. Bldg. A-116	(239) 732-3918
Hendry/Glades Ctr.	LaBelle H.S.	(863) 674-0408

VI. **REQUIREMENTS FOR THE STUDENTS:**

THINK SAFTY AT ALL TIMES. LABS AND FIELD TRIPS ARE DANGEROUS PLACES.

- PAY ATTENTION,
- BE CAREFUL,
- ASK QUESTIONS AND
- BE SURE YOU KNOW WHAT YOU ARE DOING
- TRIP AND FALL IS MOST COMMON INJURY
- WATCH WHERE YOU ARE WALKING
- KEEP BOOK BAGS, BRIEFCASES, PURSES WELL UNDER YOUR DESK

Lab Notebook. Students will be required to maintain a bound (not spiral bound) composition book as a lab notebook for recording all lab notes and recorded data (see IX. Required Course Materials).

VII. **ATTENDANCE POLICY:**

Absences and tardiness are not considered in grading as long as tardy students enter the room without making disruptive sounds. See disruptive behavior under *VIII Grading Policy*. However, the number one problem employers tell us they have with Edison graduates, and the number one cause of termination, is their inability to arrive on time and prepared for work. Do not embarrass yourself or Edison with tardiness.

Class will start at the scheduled time as shown by the clock in the classroom. It is a good idea to arrive 5 minutes early.

No makeup quizzes or exams are provided unless arrangements are made significantly in advance.

If you encounter an unforeseen problem that will cause you to be late call my cell phone at 941 626-2881 at least 10 MINUTES PRIOR TO THE START OF CLASS and let me know. Failure to call will require that you

seek any material you miss from your fellow classmates.

Any student encountering a real problem will have my full support and assistance regardless of the above requirements. (12/26/09)

VIII. GRADING POLICY:

Percent scores will be converted to grades based on the following, unless otherwise modified as discussed below:

90 – 100 =	A
80 – 89 =	B
79 – 70 =	C
60 – 69 =	D
< 60 =	F

Five exams will be averaged for your course grade.

No make –up exams are provided unless arrangements are made significantly in advance.

Lab reports will be required for each exercise or experiment, and all or part of various reports will be submitted and graded as part of exams. Printed lab reports are due at the start of the next lab unless otherwise indicated.

Lab notebook will be collected and graded as part of various exams. Notebooks must contain:

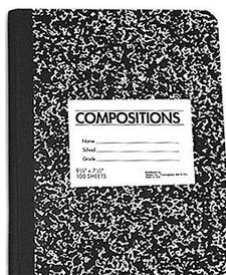
- name and lab section clearly visible on front of notebook
- first page as a table of contents
- pages numbered
- all lab/field notes, discussions, observations, pre lab lecture notes, etc. in chronological order
- all notes and other entries should be in waterproof ink

Note: The “incomplete” grade [“I”] will be given only when unusual circumstances warrant. An “incomplete” is not a substitute for a “D,” “F,” or “W.”

IX. REQUIRED COURSE MATERIALS:

BSC1010L Lab Manual (Edison State Special Edition), Author: Prabhu, ISBN:9781599842097

Obtain a bound, but not spiral bound, field/laboratory notebook. Pic below shows most commonly used notebook.



X. RESERVED MATERIALS FOR THE COURSE:

None.

XI. CLAST COMPETENCIES INVOLVED IN THIS COURSE.

Students must be able to use word processing software for formatting and presenting their lab reports. Working in the lab is dangerous and requires care, standing for 30 minutes at a time, the ability to lift and walk with lab equipment and work in close proximity and cooperatively with others.

XII. CLASS SCHEDULE: (revised 11-5-10)

Date F10 (Wed)	BSC1010 Lab Topic Sequence
8-25	Microscope and Cells
9-1	Microscope and Cells
9-8	Microscope and Cells
9-15	Exam 1 & Scientific Method
9-22	Scientific Method
9-29	Scientific Method & Exam 2
10-6	Enzymes
10-13	Enzymes
10-20	Enzymes & Exam 3
10-27	Diffusion & Osmosis
11-3	Diffusion & Osmosis
11-10	Diffusion & Osmosis & Exam 4 (Thur. section: college closed)
11-17	E. coli transformation
11-24	E. coli transformation (Thur. section: college closed)
12-1	E. coli transformation & Exam 5
TBA	Final Exam

XIII. ANY OTHER INFORMATION OR CLASS PROCEDURES OR POLICIES:

Lab safety is a paramount concern and will be discussed and the proper use of lab safety equipment will be demonstrated.