

EDISON STATE COLLEGE

Division of Arts and Sciences

COMMON COURSE SYLLABUS

PROFESSOR:

OFFICE LOCATION:

E-MAIL:

PHONE NUMBER:

OFFICE HOURS:

SEMESTER:

I. COURSE NUMBER AND TITLE, CATALOG DESCRIPTION, CREDIT HOURS:

BSC 1005 – INTRODUCTION TO BIOLOGICAL SCIENCES – AA – 3 CREDIT HOURS

This is a survey course for biological science. Topics included are chemistry for biological sciences, biology of the cell, heredity, evolution, phylogenetic classification, and ecology. It emphasizes major concepts, processes, and phylogenetic relationships. This course fulfills three hours of the General Education science requirement but does not have an associated lab.

II. PREREQUISITES FOR THE COURSE:

None.

III. GENERAL COURSE INFORMATION:

- Science as a process
- The chemical basis of life
- The molecules of cells
- A tour of the cell
- How cells harvest chemical energy
- Photosynthesis
- Cell reproduction
- Mendelian genetics
- Concepts of evolution
- Evolution of populations
- Advances in DNA technology
- Phylogenetic classification of organisms
- Ecosystems and communities
- Population ecology
- Conservation ecology

IV. LEARNING OUTCOMES AND ASSESSMENT:

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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 COMPETENCY
Analyze basic atomic structure and function and discuss its role in chemical bonding.	Successfully complete one or more of the following: exams; quizzes; debates; case studies; writing assignments; oral, written, or electronic presentations; discussion forums; collaborative problem solving exercises; or data interpretation and analysis exercises.	
Recognize the roles pH, temperature, and enzyme catalyzed reactions, and discuss their importance to metabolism.	Successfully complete one or more of the following: exams; quizzes; collaborative problem solving exercises; or data interpretation and analysis exercises.	
Justify how the physical and chemical properties of water are important to life.	Successfully complete one or more of the following: exams; quizzes; debates; oral, written, or electronic presentations; or discussion.	
Compare the structure of prokaryotic and eukaryotic cells and discuss how structure relates to cell function.	Successfully complete one or more of the following: exams; quizzes; debates; writing assignments; oral, written, or electronic presentations; discussion forums; or data interpretation and analysis exercises.	

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Identify and analyze ways through which plant and animal cells obtain energy needed for metabolism and carbon needed for synthesis of molecules.		
Analyze the stages and purpose of mitosis and meiosis.		
Apply basic Mendelian genetics to solve genetic problems.	Successfully complete one or more of the following: exams; quizzes; discussion forums; or collaborative problem solving exercises.	QR, CT
Identify and discuss the evolutionary process of life.	Successfully complete one or more of the following: exams; quizzes; debates; oral, written, or electronic presentations; discussion forums; or data interpretation and analysis exercises.	
Analyze and evaluate the applications and importance of advancements in genetic technology.	Successfully complete one or more of the following: exams; quizzes; debates; case studies; writing assignments; oral, written, or electronic presentations; discussion forums; collaborative problem solving exercises; or data interpretation and analysis exercises.	GSR, COM
Explore the phylogenic relationships within major taxons of organisms.	Successfully complete one or more of the following: exams; quizzes; oral, written, or electronic presentations; discussion forums.	
Identify the relationships and adaptations of major taxons to their environment.		
Evaluate the various types of relationships and processes within communities and ecosystems.	Successfully complete one or more of the following: exams; quizzes; oral, written, or electronic presentations; discussion forums; collaborative problem solving exercises; or data interpretation and analysis exercises.	

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.

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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:

List specific course assessments such as class participation, tests, homework assignments, make-up procedures, etc.

VII. ATTENDANCE POLICY:

The professor's specific policy concerning absence. (The College policy on attendance is in the Catalog, and defers to the professor.)

VIII. GRADING POLICY:

Include numerical ranges for letter grades; the following is a range commonly used by many faculty:

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

(Note: The "incomplete" grade ["I"] should be given only when unusual circumstances warrant. An "incomplete" is not a substitute for a "D," "F," or "W." Refer to the policy on "incomplete grades.")

IX. REQUIRED COURSE MATERIALS:

(in correct bibliographic format)

X. RESERVED MATERIALS FOR THE COURSE:

Other special learning resources.

XI. CLAST COMPETENCIES INVOLVED IN THIS COURSE:

XII. CLASS SCHEDULE:

This section includes assignments for each class meeting or unit, along with scheduled Learning Resource Center (LRC) media and other scheduled support, including scheduled tests.

XIII. ANY OTHER INFORMATION OR CLASS PROCEDURES OR POLICIES:

(which would be useful to the students in the class.)

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COMMON COURSE SYLLABUS

Professor: _____ **Office Location:** _____
E-mail: _____ **Phone Number:** _____
Office Hours: _____ **Semester:** _____

I. COURSE NUMBER AND TITLE, CATALOG DESCRIPTION, CREDIT HOURS:

BSC 1005: Introduction to Biological Sciences – AA **3 Credits**

This survey course provides a foundation for BSC1010, BSC1093C and MCB 2010C. Topics included are chemistry for biological sciences, biology of the cell and heredity. This course will include lecture/discussion and group activities. This course is not a prerequisite for BSC1010 but it is recommended for those who have had no prior experience with biological sciences course work. This course fulfills three hours of the General Education science requirement but does not have an associated lab.

II. PREREQUISITES FOR THE COURSE: None

III. GENERAL COURSE INFORMATION: Topic Outline:

- Science as a process
- The chemical basis of life
- The molecules of cells
- A tour of the cell
- The working cell
- How cells harvest chemical energy
- Photosynthesis
- Ecosystem food webs
- The cellular basis of reproduction and inheritance
- Patterns of inheritance
- Evolution of populations and behavior
- Molecular biology of the gene
- The control of gene expression
- DNA technology and the human genome

IV. LEARNING OUTCOMES AND ASSESSMENT:

General Education Competencies:

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

At the conclusion of this course, students will be able to demonstrate the

following competencies:

Communication (COM): To communicate (read, write, speak, listen) effectively using standard English and apply effective techniques to create working relationships with others to achieve common goals.

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	Gen. Ed. Competencies
Analyze basic atomic structure and function and discuss its role in chemical bonding.	Successfully complete one or more of the following: exams; quizzes; debates; case studies; writing assignments; oral, written, or electronic presentations; discussion forums; collaborative problem solving exercises; or data interpretation and analysis exercises.	QR, CT, COM
Identify chemical reactions and be able to write a simple chemical equation showing chemical equilibrium.	Successfully complete one or more of the following: exams; quizzes; collaborative problem solving exercises; or data interpretation and analysis exercises.	QR, CT, COM
Justify how the physical and chemical properties of water are important to life.	Successfully complete one or more of the following: exams; quizzes; debates; oral, written, or electronic presentations; or discussion.	QR, CT, TIM
Describe the pH scale, its relationship to living systems, and its practical and scientific uses in our lives.	Successfully complete one or more of the following: exams; quizzes; debates; writing assignments; oral, written, or electronic presentations; discussion forums; collaborative problem solving exercises; or data interpretation and analysis exercises.	QR, CT, TIM, COM
Analyze the importance of enzyme catalyzed chemical reactions and discuss their importance to the	Successfully complete one or more of the following: exams; quizzes; debates; case studies; writing assignments; oral, written, or electronic presentations; discussion forums;	QR, CT, COM

metabolism of living organisms.	collaborative problem solving exercises; or data interpretation and analysis exercises.	
Compare the structure of prokaryotic and eukaryotic cells and discuss how structure relates to cell function.		QR, CT, TIM, COM
Compare and contrast plant and animal cells as to structure and function.		QR, TIM, CT
Identify and analyze ways through which plant and animal cells obtain energy needed for metabolism and carbon needed for synthesis of molecules.		QR, CT
Analyze and appraise the stages and purpose of mitosis and meiosis.		QR, CT, COM
Apply basic Mendelian genetics to solve genetic problems.	Successfully complete one or more of the following: exams; quizzes; discussion forums; or collaborative problem solving exercises.	QR, CT
Describe the structure and function of chromosomes.	Successfully complete one or more of the following: exams; quizzes; debates; writing assignments; oral, written, or electronic presentations; or discussion forums.	COM, CT
Analyze the steps of protein synthesis.	Successfully complete one or more of the following: exams; quizzes; debates; writing assignments; oral, written, or electronic presentations; discussion forums; or data interpretation and analysis exercises.	QR, CT, COM
Discuss how mutations affect protein synthesis and cell function.	Successfully complete one or more of the following: exams; quizzes; debates; writing assignments; oral, written, or electronic presentations; or discussion forums.	QR, CT, COM
Analyze and evaluate the applications and importance of genetic engineering.	Successfully complete one or more of the following: exams; quizzes; debates; case studies; writing assignments; oral, written, or electronic presentations; discussion forums; collaborative problem solving exercises; or data interpretation and analysis exercises.	GSR, COM, QR, CT

V. DISTRICT-WIDE POLICIES:

Programs for Students with Disabilities

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- VI. **REQUIREMENTS FOR THE STUDENTS:** List specific course assessments, such as class participation, tests, homework assignments, make-up procedures, etc.
- VII. **ATTENDANCE POLICY:** The professor's specific policy concerning absence. (The College policy on attendance is in the Catalog, and defers to the professor.)
- VIII. **GRADING POLICY:** Include numerical ranges for letter grades; the following is a range commonly used by many faculty:

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(Note: The "incomplete" grade ["I"] should be given only when unusual circumstances warrant. An "incomplete" is not a substitute for a "D," "F," or "W." Refer to the policy on "incomplete" grades.)

- IX. **REQUIRED COURSE MATERIALS:**
- X. **RESERVED MATERIALS FOR THE COURSE:** Other special learning resources.
- XI. **CLAST COMPETENCIES INVOLVED IN THE COURSE:**
- XII. **CLASS SCHEDULE:** This section includes assignments for each class meeting or unit, along with scheduled Learning Resource Center (LRC) media and other scheduled support, including scheduled tests.
- XIII. **ANY OTHER INFORMATION OR CLASS PROCEDURES OR POLICIES:** which would be useful to the students in the class.