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| **PROFESSOR:** | **PHONE NUMBER:** |
| **OFFICE LOCATION:** | **E-MAIL:** |
| **OFFICE HOURS:** | **SEMESTER:** |

1. **COURSE NUMBER AND TITLE, CATALOG DESCRIPTION, CREDITS:**

**PCB 3023C CELL BIOLOGY (3 CREDITS)**

This course offers a detailed examination into the molecular and cellular concepts of prokaryotic and eukaryotic cells. The cell theory, cell organization, and various cellular processes and metabolic pathways including the cell cycle, meiosis, respiration, photosynthesis, DNA replication, and protein synthesis will be explored. Consideration will also be given to viruses, pathogens, advances in DNA technology, and contemporary laboratory techniques.

1. **PREREQUISITES FOR THIS COURSE:**

**BSC 1010/1010L (Biological Science I with Lab); BSC 1011/1011L (Biological Science II with Lab)–all with a grade of “C” or higher; Prior to enrolling in any upper level course (course number beginning with a 3 or 4), students must complete the following courses with a grade of “C” or better: ENC 1101 English Composition I, ENC 1102 English Composition II, and three semester hours of college level mathematics; or permission from the appropriate academic dean.**

**CO-REQUISITES FOR THIS COURSE:**

None

1. **GENERAL COURSE INFORMATION:** Topic Outline.

• Cell theory

• Cell organization

• Cell cycle and reproduction

• Respiration and photosynthesis

• DNA replication

• Protein synthesis

• Advances in DNA technology

1. **All courses at Florida SouthWestern State College contribute to the general education program by meeting one or more of the following general education competencies:**

**C**ommunicate clearly in a variety of modes and media.

**R**esearch and examine academic and non-academic information, resources, and evidence.

**E**valuate and utilize mathematical principles, technology, scientific and quantitative data.

**A**nalyze and create individual and collaborative works of art, literature, and performance.

**T**hink critically about questions to yield meaning and value.

**I**nvestigate and engage in the transdisciplinary applications of research, learning, and knowledge.

**V**isualize and engage the world from different historical, social, religious, and cultural approaches.

**E**ngage meanings of active citizenship in one’s community, nation, and the world.

**A.**  **General Education Competencies and Course Outcomes**

1. Listed here are the course outcomes/objectives assessed in this course which play an integral part in contributing to the student’s general education along with the general education competency it supports.

General Education Competency: **Evaluate**

Course Outcomes or Objectives Supporting the General Education Competency Selected:

* Evaluate the connection between essential organic molecules and the composition of cells.
* Compare and contrast the similarities and differences between prokaryotic and eukaryotic cell structure and function.
* Scrutinize critical functions involved in ATP synthesis and explore its role in metabolism.
* Defend the current theories of enzyme structure and function and the role of enzymes in metabolism the role of enzymes in metabolism.
* Evaluate the importance of historical events leading to modern cellular biology.
* Compare and contrast the catabolic pathways of aerobic cellular respiration, and fermentation.
* Explain the catabolic pathways of respiration and relate their significance to ecosystems.
* Explain the anabolic pathways of photosynthesis and relate their significance to ecosystems.
* Evaluate the role and concepts involved in cell-to-cell communication and its relationship to disease.
* Compare and contrast cell cycles of prokaryotic and eukaryotic cells.
* Differentiate between and among binary fission, mitosis, meiosis and recognize their significance in cell reproduction.
* Scrutinize the processes involved in the replication and repair of DNA.
* Evaluate the significance of transcription and translation of genes and their relation to cellular metabolism.
* Justify the value and ethical practices of modern DNA technology including cloning, DNA fingerprinting, gene therapy, gene manipulation, and bioremediation.
* Relate the processes of transduction, transformation, conjugation and mutation with current evolutionary theories.
* Analyze the pathogenic role of eukaryotes, prokaryotes, and viruses.
* Demonstrate correct usage of laboratory equipment.
* Critically discuss lab safety and the ethics of experimentation.

**Florida Educator Accomplished Practices:**

At the conclusion of this course, students will demonstrate competency in the following Florida Educator Accomplished Practices (FEAPs):

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| FEAP | Assessment | Pre-professional Educators Portfolio Assignments (PEP) |
| **Knowledge of Subject Matter:**  The pre-professional teacher has a basic understanding of the subject field and is beginning to understand that the subject is linked to other disciplines and can be applied to real-world integrated settings. The teacher’s repertoire of teaching skills includes a variety of means to assist student acquisition of new knowledge and skills using that knowledge. | 8.c.1 Students will demonstrate competency by successfully completing a group of standardized exam questions. | 8.c.1.p The portfolio will consist of a collection of selected assessment data. It may include all or a portion of the following: exams; quizzes; writing assignments; written or electronic presentations; discussion forums; collaborative problem solving exercises; or data interpretation and analysis exercises. |

1. **DISTRICT-WIDE POLICIES:**

**Programs for Students with Disabilities**

Florida SouthWestern 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. The office locations and telephone numbers for the Office of Adaptive Services at each campus can be found at <http://www.fsw.edu/adaptiveservices>.

**REPORTING TITLE IX VIOLATIONS**

Florida SouthWestern State College, in accordance with Title IX and the Violence Against Women Act, has established a set of procedures for reporting and investigating Title IX violations including sexual misconduct.  Students who need to report an incident or need to receive support regarding an incident should contact the Equity Officer at [equity@fsw.edu](mailto:equity@fsw.edu).  Incoming students are encouraged to participate in the Sexual Violence Prevention training offered online.  Additional information and resources can be found on the College’s website at <http://www.fsw.edu/sexualassault>.

1. **REQUIREMENTS FOR THE STUDENTS:**

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

1. **ATTENDANCE POLICY:**

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

1. **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.)

1. **REQUIRED COURSE MATERIALS:**

(In correct bibliographic format.)

1. **RESERVED MATERIALS FOR THE COURSE:**

Other special learning resources.

1. **CLASS SCHEDULE:**

This section includes assignments for each class meeting or unit, along with scheduled Library activities and other scheduled support, including scheduled tests.

1. **ANY OTHER INFORMATION OR CLASS PROCEDURES OR POLICIES:**

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