



PCB 3023C Cell Biology – CRN 10702 & 10703 – Spring 2016

College of Arts and Sciences, Department of Biological Sciences, 4 Credits

CRN 10703: Monday/Wednesday 8:00 am – 10:45 am, AB7 227

CRN 10702: Monday/Wednesday 11:00 am - 1:45 pm, AB7 227

Instructor: Lyndsay V. Rhodes, Ph.D., Assistant Professor

Office: WH 254

Email: Lrhodes@fgcu.edu

Phone: 590-7244

Office hours: Mondays 3:00 – 4:30pm, Tuesdays 11am – 1pm, and by appointment.

Course Description:

This course is designed to introduce students to the fundamentals of cell structure and function with emphasis on understanding the underlying molecular basis. Topics include cellular mobility, growth, bioenergetics, division, communication and regulation. The curriculum is inquiry based and fully integrated with a laboratory that emphasizes active learning strategies.

Prerequisites: BSC 1010C and BSC 1011C with a minimum grade of C and CHM 1045C and CHM 1046C with a minimum grade of C.

Instructor's note: A strong background in chemistry is expected and experience with organic chemistry is extremely helpful! Although FGCU does not, nearly all other campuses in the Florida State University system require at least organic chemistry I as a prerequisite for their equivalent cell biology courses.

Text:

Recommended:

Alberts, et al., *Essential Cell Biology*, 4th Edition. Either the hard cover (expensive) or soft cover (cheaper) versions are acceptable. Students are expected to read and be familiar with the recommended material prior to attending class.

**Additional course materials will be posted on Canvas at <http://Canvas.fgcu.edu/>. All students are expected to check Canvas daily. **

Bound lab notebook. Each student must purchase a bound notebook for use only in this class. Format is student's choice, but must be permanently bound (**NOT** spiral or 3-ring). This is to be brought to EVERY class meeting, unless otherwise instructed.

*** *The syllabus is organized around chapters in Essential Cell Biology. If you use any other text, it is your responsibility to find and read the chapters covering the corresponding material.* ***

Expectations for this course:

- **Be Punctual** – Class will start on time. You should be in your seat, ready for class at this time. If not, it is your responsibility to gather information presented prior to your arrival.
- **Be Attentive** – Class time is limited and valuable. Do not waste your time or that of others by distractive behavior (ie, no texting, checking email or social media, etc. during class time).
- **Be Prepared** – You must be prepared for class by completing all associated assignments and readings prior to your arrival. This is important for your success as well as that of your group.
- **Be Participatory** – Take an active part in class by engaging with the material and each other. This will greatly facilitate your learning and retention of the material.
- **Be Respectful** – Every person in this class has something unique to contribute. You and your peers may not always agree (this is normal and expected), but it is expected that each of you will demonstrate respect to all members of this course.
- **Be Collaborative** – Seek the help of your classmates and/or help those around you understand concepts that may be challenging. Collaborative experiences benefit all parties involved and lead to lasting learning.

If we all follow these simple guiding principles, we will ensure that this course will be the best it can be for us all.

Grading: Grades will be weighted as follows:

CATEGORY	WEIGHT
In-class work and homework	10%
Lab work (Notebook, Pre/Post Labs, & Formal Lab Report)	15%
Exams (4 term exams)	75%

FINAL %	GRADE	FINAL %	GRADE
93-100	A	73-76	C
90-92	A-	70-72	C-
87-89	B+	67-69	D+
83-86	B	60-66	D
80-82	B-	<60	F
77-79	C+		

Labs: Students will work together in groups on labs that focus on learning mammalian cell culture concepts and techniques. Some lab work may be required outside of class time. Each student will be required to maintain a detailed laboratory notebook (**bound** notebook) of the work performed in each lab. The laboratory notebook will be periodically reviewed to give you feedback, and it will be essential in writing your formal lab report. Pre- and Post-lab questions will be assigned for each lab. Students will design and execute an independent experiment in the final weeks of the course and write a formal lab report detailing the experiment and results. The final lab grade will be based on the lab notebook, pre/post lab questions, and formal lab report.

Exams: There will be four exams throughout the term. All material builds on previous material, so in effect the exams are cumulative as you move through the semester. No make-up exams will be given, unless under extenuating circumstances subject to my **advanced** approval.

Attendance: Attendance will not be individually graded, but will be recorded through in-class assignments and/or clicker questions. Students will be responsible for all material covered in class as well as out-of-class readings and assignments. Students are expected to attend all classes and participate in class and laboratory activities. In-class work dependent on attendance and homework contribute toward 10% of your grade while lab work contributes to an additional 15%. There will be no make-up for missed classes, exams, or labs. Late assignments will result in reduced scores. Failure to turn in assignments or exams in a timely fashion will result in a score of 0.

Technology in the classroom: The sciences rely heavily on technology, which should be utilized to our advantage. Tablets, smart phones, laptops, or cell phones may be used periodically as clickers for in-class student response activities, so you are encouraged to bring a device to class. However, disruptive – to your fellow classmates or myself – use of technology in this classroom will not be tolerated. If the use of one's phone, laptop, tablet, etc. becomes a distraction, you will be asked to put it away immediately or leave the room, forfeiting in-class grades for that day.

All graded items must be submitted through Canvas under each corresponding assignment. Many assignments will be provided for you in electronic files via Canvas and can easily be saved and submitted. Other assignments may be provided in paper format or may require drawings. These non-electronic assignments must be scanned or imaged and saved as electronic files for Canvas submission. If you have questions or issues with technology, please see me immediately.

Academic Behavior Standards and Academic Dishonesty:

All students are expected to demonstrate honesty in their academic pursuits. The university policies regarding issues of honesty can be found in the FGCU Student Guidebook under the Student Code of Conduct and Policies and Procedures sections. All students are expected to study this document that outlines their responsibilities and consequences for violations of the policy. The FGCU Student Guidebook is available online at <http://studentservices.fgcu.edu/judicialaffairs/new.html>. Additionally, students agree that, by taking this course, written assignments may be subject to submission for textual similarity review to Turnitin.com for the detection of plagiarism.

Disability Accommodations Services:

Florida Gulf Coast University, in accordance with the Americans with Disabilities Act and the university's guiding principles, will provide classroom and academic accommodations to students with documented disabilities. If you need to request an accommodation in this class due to a disability, or you suspect that your academic performance is affected by a disability, please see me or contact the Office of Adaptive Services. The Office of Adaptive Services is located in the Wellness Building. The phone number is 239-590-7956 or Video Phone (VP) 239-243-9453. In addition to classroom and campus accommodations, individuals with disabilities are encouraged to create their personal emergency evacuation plan and FGCU is committed to providing information on emergency notification procedures. You can find information on the emergency exits and Areas of Rescue Assistance for each building, as well as other emergency preparedness materials on the Environmental Health and Safety and University Police Department websites. If you will need assistance in the event of an emergency due to a disability, please contact Adaptive Services for available services and information.

Student Observance of Religious Holidays:

All students at Florida Gulf Coast University have a right to expect that the University will reasonably accommodate their religious observances, practices, and beliefs. Students, upon prior notification to their instructors, shall be excused from class or other scheduled academic activity to observe a religious holy day of their faith. Students shall be permitted a reasonable amount of time to make up the material or activities covered in their absence. Students shall not be penalized due to absence from class or other scheduled academic activity because of religious observances. Where practicable, major examinations, major assignments, and University ceremonies will not be scheduled on a major religious holy day. A student who is to be excused from class for a religious observance is not required to provide a second party certification of the reason for the absence.

Course Objectives:

This course will enable students to:

1. Understand the fundamentals of cell structure and function at the molecular level.
2. Work effectively in collaborative groups to discuss concepts and solve problems.
3. Apply the process of science: develop and test hypotheses, construct and evaluate scientific tests of hypotheses, and gather evidence.
4. Interpret evidence and use it to defend or reject claims and hypotheses.
5. Use quantitative reasoning: draw and interpret graphs, choose ways to represent data, and look for patterns in data.
6. Construct, evaluate and revise scientific models.
7. Connect facts and concepts to biological theories.
8. Effectively communicate their ideas with others in various formats: written, oral, and visual presentations.

Student Learning Outcomes:

Following this course, students will be able to:

1. Identify components, define terminologies, identify processes, and describe relationships between systems in the study of cell biology.
2. Describe how the systems in cell biology functionally interact with each other.
3. Identify components, and define terminologies, functions and uses of laboratory equipment/technology-based tools in the study of cell biology.
4. Demonstrate how to access equipment/technology-based tools and how to apply these tools to answer biological questions.
5. Demonstrate a willingness to follow safety protocols & procedures.

Biological Specific Learning Outcomes:

As set forth by the Department of Biological Sciences at FGCU, this course will support student development of the following skills:

1. Demonstrate knowledge of biological systems from the molecular, cellular and organismal perspectives.
2. Engage in the scientific process to form hypothesis, synthesize scientific information, gather and analyze data, apply statistical techniques.
3. Engage in effective scientific communication as individuals and as team members by listening, speaking, and writing.
4. Apply ethical practices and behavior in all aspects of biological scientific endeavors.

5. Approach and solve biological problems critically with scientific literacy in individual and group settings.

This course will also support the following **University Student Learning Outcomes**:

- Goal 2C Culturally Diverse Perspective. Participate in collaborative projects requiring productive interaction with culturally-diverse people, ideas, and values.
- Goal 4 Effective Communication. Know the fundamental principles for effective and appropriate communication, including reading, writing, speaking, and listening skills; organize thoughts and compose ideas for a variety of audiences, using a full range of communication tools and techniques; participate in collaborative projects requiring effective communications among team members.
- Goal 5 Ethical Responsibility. Know and understand the key ethical issues related to a variety of disciplines and professions; analyze and evaluate key ethical issues in a variety of disciplinary and professional contexts; participate in collaborative projects requiring ethical analysis and/or decision making.
- Goal 6 Information Literacy. Identify and locate multiple sources of information using a variety of methods; analyze and evaluate information within a variety of disciplinary and professional contexts; participate in collaborative analysis and/or application of information recourses.
- Goal 7 Problem-Solving Abilities. Understand the multidisciplinary and interdisciplinary nature of knowledge; apply critical, analytical, creative, and systems thinking in order to recognize and solve problems; work individually and collaboratively to recognize and solve problems.
- Goal 8 Technological Literacy. Develop knowledge of modern technology; process information through use of technology; collaborate with others using technology tools.