



**BSC 1010C General Biology**  
**CRN 80799**  
**Whitaker 104**

**Fall 2018**  
**Tues. & Thur. 10:30 am – 1:15 pm**  
**Dept. Biological Sciences**

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**Instructor: Matthew Palmtag**

Office: Whitaker 229

E-mail: mpalmtag@fgcu.edu

Tel: 239 – 590 - 1263

**Office Hours: Tues. & Thur. 9:15 – 10:15, 2:15 – 2:45 or by appointment** (Last day of office hours will be Nov. 29<sup>th</sup>)

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**Course Description:** This course is intended for science majors. The principles of biology are studied from the molecular to the cellular level. Topics include basic biochemistry, the cell doctrine, the physical phenomena of life, elementary bioenergetics and biosynthesis, cellular and organismal reproduction and the gene concept. The curriculum is inquiry based and fully integrated with laboratory and/or field experiences that emphasize active learning strategies.

**Required Texts:**

- Biology 11<sup>th</sup> ed. 2016. Campbell NA, Reece JB. Pearson Publishing: San Francisco.
  - Lab Activities for General Biology I. 2012. Cross, RE, and Jackson, BS, eds. Bluedoor Publishing: Eden Prairie, MN.
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**Student Learning Outcomes:**



This Scholarly-Enriched Course has been designed to teach specific course content, which will include the production of scholarly work that utilizes writing, critical thinking, and information literacy.

At the completion of the course, students should be able to:

- Describe the scientific process.
- Explain organic and inorganic compounds and their roles in biological systems.
- Describe the properties of water and how they make life possible.
- Describe how pH and buffers influence processes.
- Identify and describe the structure and function of the 4 biological macromolecules that compose all life on the planet.
- Describe dehydration, synthesis and hydrolysis reactions and their importance in living systems.
- Describe the role of enzymes in regulating life processes.
- Distinguish between prokaryotes and eukaryotes.
- Explain the interrelationship of structure and function in biological membranes.
- Describe the major cellular organelles and their functions.
- Explain the importance of membranes and compartmentalization of cellular functions.
- Describe the importance of membrane proteins including serving as receptors, regulating metabolic pathways, facilitating cellular communication, and establishing cellular identity.
- Explain the basic laws of thermodynamics and their application to living organisms.
- Explain the metabolic pathways through the study of cellular respiration (including glycolysis, Krebs cycle & the electron transport chain) and photosynthesis.
- Differentiate between somatic (mitotic) and germinal (meiotic) reproduction.
- Explain the Central Dogma (from gene to protein) and its centrality to life.
- Describe basic Mendelian genetics and be able to correctly predict outcomes from monohybrid and dihybrid crosses including those involving traits that are X-linked, show co-dominance, are controlled by multiple alleles, and crossing over.
- Explain the chromosomal basis for genetics.
- Describe how the genetic message can be altered through mutation and recombination.

- Explain gene regulation and expression through study of the lac operon, the trp operon, and/or metabolism.
- Be able to explain genetic engineering including the techniques involved such as electrophoresis, creating recombinant DNA, cloning, PCR, DNA sequencing, and restriction mapping.
- Work efficiently and safely in laboratory settings.

### Course Communication:

I will be using Canvas extensively in this course, as a means to provide course related information to you and as a way for you to engage assignments. **Email using the email addresses at the top of the syllabus from within Canvas.** Additionally, I will be corresponding with you through your student email account so it is very important for you to have your student email activated. If you need assistance with this, please review the FGCU instructions for activating, forwarding, and getting help with your email at <http://eagle.fgcu.edu/ts.html>. We will not use any other e-mail addresses (Yahoo, Hotmail) that you may have as a means for communication.

### Evaluation and Grading:

- There will be **four exams** and a **comprehensive final exam**. Each exam is equal in value and your average exam score will represent 75% of your grade.
- There are no make-up exams for unexcused absences, missing a scheduled exam will result in zero credit.
- **Laboratories/worksheets/problem sets/quizzes comprise 25% of your grade** and will be assessed on a varying scale. All work is due as designated; no late work will be accepted.
- Weekly quizzes will be administered using Canvas and will test your knowledge of material presented in laboratory. **There will be no make-up quizzes.**
- Final course grades will be determined on a straight percentage basis; **no extra credit is possible.**
- **Final grades will be reduced at my discretion for violating course policy.**
- **Grading scale:**  $\geq 90\% = A$ ;  $80-89\% = B$ ;  $70-79\% = C$ ;  $60-69\% = D$ ;  $< 60\% = F$

### Course Policies:

- **Exams:**
  - If a student is unable to attend a scheduled exam and the student is interested in rescheduling the exam, the following preparations must be addressed before missing the regularly scheduled exam. 1) the student must submit the "absence documentation form" on the last page of the syllabus, 2) provide supporting documentation with the absence documentation form, and 3) send an email to Professor Palmtag through the student Canvas email service, proposing a date and time to reschedule the exam (exams are typically rescheduled to be taken during office hours). Students that do not comply with these rules will receive a grade of zero on the exam (athletes, this includes you). If the nature of your absence or unforeseen circumstances prevent you from following all the listed rules, Professor Palmtag will evaluate the circumstances on a case-by-case basis. If Professor Palmtag's investigation indicates that the student had sufficient time and information to follow the rules, then the student will receive a zero for the exam.
  - Exams begin at the start of class and penalties will be assessed to students that do not arrive on time for the exam. If a student arrives after the instructor has begun providing exam instructions the student will be penalized 5 points. If a student arrives 10 minutes late they will automatically lose 10 points from their final score, 20 minutes late will result in losing 20 points from their final score, and 30 minutes late will result in losing 50% of points earned on the exam. The computer clock located at the classroom podium represents the official time of the class.
  - Classroom rules during the administration of an exam include but are not limited to: no brimmed hats, no hoods, no sunglasses, no use of electronics, no headphones, no smart watches, no phones, phones must be powered off and stowed, all exam materials must be returned to Professor Palmtag, and you cannot leave the room and return to the room to continue the exam. The penalty for breaking any of these rules will be the loss of all credit for the exam, and Professor Palmtag reserves the right to take further disciplinary action.
  - Exams will only be given on the date scheduled.
  - All incidents of suspected cheating will be referred to appropriate university authorities.
- Tardiness, leaving class early or failure to come to class minimizes your opportunity to learn. If you are not in class at the time assignments are given or begin, you forfeit the opportunity to take part in that

assignment or laboratory. You are still responsible for all notes, assignments, announcements and schedule changes.

- **Cell phones are to be turned off during class time. Computers may be used for taking notes during class; if they are used for any other reason you will not be able to bring them back into the classroom. Violations of electronics policies will result in grade devaluation at our discretion.**
- All assignments are due on the dates specified. Work may be turned in earlier than the due date, but will not be accepted after the due date.
- Due to time and scheduling constraints, no make-up laboratories can be offered.
- ***Unusual*** circumstances resulting in tardiness or class absence will be evaluated on a case-by-case basis. The circumstances must be communicated as soon as possible and not at the end of the semester.
- If you experience a catastrophic event in your life that precludes you from completing course requirements, you may elect to petition for an incomplete grade provided that you are passing the course.
- All safety guidelines set forth in student laboratory activities will be strictly adhered to and most importantly there will be **no food or drink during lab activities.**
- Faculty adhere to the FGCU policies provided in the *Florida Gulf Coast University Student Guidebook* and include but are not limited to Code of Conduct, academic integrity including dishonesty/cheating, plagiarism, authorized absence, and absences due to other causes. Violations may result in a failing grade on the assignment, in the course, or dismissal from the class or from the University, depending on the severity of the incident.
- The instructor reserves the right to modify the syllabus as needed to accommodate situations that may arise during the semester.

#### **University Policies:**

##### **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 which 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>

##### **University Nondiscrimination Statement**

Florida Gulf Coast University is committed to ensuring equity and fairness for all University employees, students, visitors, vendors, contractors and other third parties. As such, the University prohibits discrimination on the bases of race, color, national origin, ethnicity, religion, age, disability, sex (including sexual harassment/assault), gender identity/expression, marital status, sexual orientation, veteran status or genetic predisposition with regard to admissions, employment, programs or other activities operated by the University. This prohibition extends to enforcement of **Title IX** of the Education Amendments of 1972. Questions or complaints should be directed to the Office of Institutional Equity and Compliance (OIEC). The OIEC's phone number is (239)745-4366; the OIEC email address is [OIEC@fgcu.edu](mailto:OIEC@fgcu.edu).

**Disability Accommodations Services** *Approved 3-27-09 by Faculty Senate; Approved 4-30-09 by VPAA; Revised & Approved by Faculty Affairs Team 4-11-16, Faculty Senate Approved 4/15/16* 3

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.

### **Resources for Faculty General Education**

Information on General Education program requirements is available online at [http://www.fgcu.edu/General\\_Education/index.html](http://www.fgcu.edu/General_Education/index.html)

### **Service-Learning**

Information on integrating service-learning into the course and course syllabus is available online at <http://www.fgcu.edu/Connect/>

### **Distance-Learning**

Information on distance learning courses is available online at <http://itech.fgcu.edu/distance/>

### **Online Tutorials**

Information on online tutorials to assist students is available online at <http://www.fgcu.edu/support/Approved>

**Canvas Learning Management System and Demonstration Site** Information on Canvas is available online at <http://canvas.fgcu.edu/> and <https://fgcu.instructure.com/courses/7692>

### **Library Resources**

Main page: <http://library.fgcu.edu/>

Tutorials & Handouts: <http://library.fgcu.edu/RSD/Instruction/tutorials.htm>

Research Guides: <http://fgcu.libguides.com/>

Faculty Support: [http://library.fgcu.edu/faculty\\_index.html](http://library.fgcu.edu/faculty_index.html) *Approved 3-27-09 by Faculty Senate; Approved 4-30-09 by VPAA; Revised & Approved by Faculty Affairs Team 4-11-16, Faculty Senate Approved 4/15/16 4*

Contact Us: <http://library.fgcu.edu/LBS/about/contactus.htm>

### **Respondus Monitor – Remote, Online Exam Monitoring**

In order to protect the integrity of online assessments that are delivered to students off site in a non-proctored location, this course may employ *Respondus Monitor* technology that will allow for the web-enabled monitoring of exams and quizzes. Students must own a computer device and an associated webcam that meet the minimum requirements of the University's standard remote monitoring system. Additional information:

- *Respondus Monitor* overview: <http://respondus.com/products/monitor/>
- *Respondus Monitor* Faculty Training and Workshops: TBA

### **Respondus LockDown Browser – Classroom and/or Remote Online Exams**

In order to protect the integrity of classroom or remote online exams, this course may employ *Respondus LockDown Browser* technology that will allow for the student's temporary restriction to a designated online testing website, disabling the ability to print, copy, access other applications or move to any other URL for the duration of the assessment. This technology may be used on campus in University computer classrooms or for remote delivery of quizzes and exams. [For online classes only: students must own a computer that meets the minimum requirements of the University's standard lock down browser application.] Additional information:

- *Respondus LockDown Browser* overview: <http://respondus.com/products/lockdown-browser/>
- *Respondus LockDown Browser* Faculty Training and Workshops: TBA

### **Lecture Capture Technology/FGCU Capture – Classroom Recording**

This course may employ technology that will allow for audio and/or video recording of live classroom sessions. This lecture capture technology is utilized for the sole purpose of enhancing student learning. It may provide for supplemental student instruction via secure links to recorded session(s), the live stream of courses, presentations of off-site guest speakers and/or the delivery of course instruction utilizing "flipped classroom" methodologies. Student questions and/or comments may be included as a part of any session being recorded. See FGCU-CAPTURE for additional details and training <http://aets.fgcu.edu/fgcucapture.asp>

### **Syllabus Statement for Center for Academic Achievement**

The Center for Academic Achievement (CAA) provides academic support services to all FGCU students. Students can take advantage of our free peer tutoring and Supplemental Instruction sessions for lower-level math and science courses, as well as workshops to facilitate the development of skills necessary for college success. If you would like to participate in any of our programs, learn about tutoring services, or meet with an Academic Retention Coordinator, please visit the CAA in Library 103 or call us at (239) 590-7906. Our website is [www.fgcu.edu/caa](http://www.fgcu.edu/caa).

Counseling and Psychological Services (CAPS) provides free counseling and therapy services (including psychiatry) to all FGCU students. Please walk in to the second floor Howard Hall office any week day between 8:30 and 4:30 to schedule an initial contact appointment. Visit the CAPS website at [www.fgcu.edu/caps](http://www.fgcu.edu/caps) for more information. CAPS offers a 24/7 Helpline at (239) 745-3277 (EARS).

## Course Schedule

| Day         | Date           | Topic                                  | Reading  | Laboratory Activities   |
|-------------|----------------|--|----------|---|
| Tue         | Aug 21         | Themes of Biology/Science; Evolution   | Ch 1; 22 |   |
| Thur        | Aug 23         | Themes of Biology/Science; Evolution   | Ch 1; 22 | Measurements: Activity 1 (LQ1)                                    |
| Tue         | Aug 28         | Chemical Context of Life               | Ch 2     | Microscopy: Activity 2 (LQ2)                                      |
| Thur        | Aug 30         | Chemical Context of Life /Water & Life | Ch 2,3   | Solutions, pH and Buffers: Activity 3 (LQ3)                       |
| Tue         | Sept 4         | Water & Life                           | Ch 3     |   |
| Thur        | Sept 6         | Carbon and Molecular Diversity         | Ch 4     |   |
| Tue         | Sept 11        | Large Biological Molecules             | Ch 5     | Biologically Important Molecules: Activity 4 (LQ4)                |
| Thur        | Sept 13        | Large Biological Molecules cont'd      |          |   |
| <b>Tue</b>  | <b>Sept 18</b> | <b>Exam I: Ch 1- 5, 22</b>             |          |   |
| Thur        | Sept 20        | Tour of the Cell                       | Ch 6     | Cells: Compartments of Life: Activity 5 (LQ5)                     |
| Tue         | Sept 25        | Membrane Structure and Function        | Ch 7     | Diffusion/Osmosis: Activity 6 (LQ6)                               |
| Thur        | Sept 27        | An Introduction to Metabolism          | Ch 8     | Enzymes: Activity 7 (LQ7)   |
| Tue         | Oct 2          | Cellular Respiration & Fermentation    | Ch 9     |   |
| Thur        | Oct 4          | Cellular Respiration & Fermentation    | Ch 9     | Cellular Respiration: Activity 8 (LQ8)                            |
| Tue         | Oct 9          | Photosynthesis                         | Ch 10    | Photosynthesis: Activity 9.1, 9.2, 9.3                            |
| Thur        | Oct 11         | Photosynthesis                         | Ch 10    | Photosynthesis: Activity 9.4 (LQ9)                                |
| <b>Tue</b>  | <b>Oct 16</b>  | <b>Exam II: Ch 6-10</b>                |          |   |
| Thur        | Oct 18         | The Molecular Basis of Inheritance     | Ch 16    | DNA Extraction: Activity 10 (LQ10)                                |
| Tue         | Oct 23         | The Cell Cycle                         | Ch 12    | Mitosis & Cell Division: Activity 11 (LQ11)                       |
| Thur        | Oct 25         | Meiosis and Sexual Life Cycles         | Ch 13    | Meiosis: Activity 12 (LQ12)                                       |
| Tue         | Oct 30         | Mendel and the Gene Idea               | Ch 14    |   |
| Thur        | Nov 1          | Chromosomal Basis of Inheritance       | Ch 15    | Sex Biased Inheritance Patterns: Activity 13 (LQ13)               |
| Tue         | Nov 6          | Chromosomal Basis of Inheritance       | Ch 15    |   |
| <b>Thur</b> | <b>Nov 8</b>   | <b>Exam III: Ch. 12-16</b>             |          |   |
| Tue         | Nov 13         | Gene Expression: From Gene to Protein  | Ch 17    |   |
| Thur        | Nov 15         | Regulation of Gene Expression          | Ch 18    |   |
| Tue         | Nov 20         | Viruses                                | Ch 19    |   |
| <b>Thur</b> | <b>Nov 22</b>  | <b>Thanksgiving - No Class</b>         |          |   |
| Tue         | Nov 27         | DNA Tools & Biotechnology              | Ch 20    | Bacterial Transformation: Activity 14 (LQ14)                      |
| Thur        | Nov 29         | Exam IV and Final Review Day           |          | Gel Electrophoresis: Activity 15 (LQ15*due Dec. 4 <sup>th</sup> ) |
| <b>Tue</b>  | <b>Dec 4</b>   | <b>Exam IV: Ch 17-20</b>               |          |   |
| <b>Thur</b> | <b>Dec 6</b>   | <b>STUDY DAY – NO CLASS</b>            |          |   |
|             |                | <b>COMPREHENSIVE FINAL EXAM</b>        |          |   |

**IMPORTANT NOTE:** “LQ#”, found in the “Laboratory Activities Column” indicates the date that each laboratory quiz opens and the laboratory activity that it corresponds with. Each quiz will remain open for one week after the open date listed and will close one hour before the beginning of class on the due date.

### Course policies (continued):

You must participate in the laboratory exercise for your lab quiz grade to be counted. ***Students that take a quiz but did not participate in the laboratory activity will receive a zero regardless of the grade that was achieved on the quiz.***

If a student removes any exam materials from the classroom they will receive a zero on the exam.

The instructor(s) reserve(s) the right to administer a written or oral make up exam for any test not taken at the times specified on the syllabus. This only applies to students that have been excused from the scheduled exam by their instructor.

Instructor reserves the right to grade a select portion of the daily assignment rather than the entire assignment.

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#### Absence Documentation Form

**If you have a valid excuse for missing class, please print out and complete this document. This document should be submitted to the instructor before the date of absence along with supporting documentation (like a physician's note, court documents, receipt for travel plans, etc.). The instructor will evaluate each submission and excused absences will be granted or declined on a case-by-case basis.**

Name \_\_\_\_\_ CRN \_\_\_\_\_ Todays date \_\_\_\_\_

Date(s) you will not be in attendance \_\_\_\_\_

Assignment(s) missed during absence \_\_\_\_\_

Reason for absence: \_\_\_\_\_

\*Please attach documentation supporting reason for absence to this form\*

Student signature \_\_\_\_\_ Instructor signature \_\_\_\_\_

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\*Please attach documentation supporting reason for absence to this form\*

Student signature \_\_\_\_\_ Instructor signature \_\_\_\_\_