PCB 4233C: Immunology, CRN80998, Fall 2016

Class meeting times/location: Tues/Thurs. 8:00am – 10:15am, WH, Rm 244

Instructor: Mustafa Mujtaba, Ph.D. **Office Phone #:** 239-590-7357
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Office hours/location: Mondays and Wednesdays: 12:00pm – 3:00pm in Whitaker Hall 117
Other hours will also be available by appointment.

Course Description and learning outcomes: An integrated lecture/laboratory course presenting theory and basic principles of immunology including antigen- antibody reactions, immunoglobulin structure, genetics, cellular immunity and immunopathology. Prerequisites for the course include CHM2211C and BSC 1010C. See page 3 for the detailed schedule of specific topics, concepts, and learning outcomes covered this semester.

Materials:

- Textbook: The Immune System, 4th Edition. Peter Parham, Garland Publishing Co. New York, NY.
- Laboratory Exercises: Download and print from CANVAS.
- Clickers: Cell phone OR device that can send e-mail or text message. During class you will respond to instructor's question via text message, which will be shown on the screen/overhead. *Please learn how to text message to an e-mail address using your cell phone or any other handheld e-mail-capable device.*
- This course is on the FGCU's CANVAS website. You can access and download this syllabus and posted class materials, including notes and quizzes. CANVAS Website address: http://canvas.fgcu.edu/

Course Policies: Students are expected to adhere to the following:

- Attendance: come to class on time. Tardiness, leaving class early or failure to come to class minimizes your opportunity to learn. If you are not in class at the time when attendance is taken or when assignments are given or begin, you forfeit the opportunity to take part in that assignment. **EACH UNEXCUSED ABSENCE WILL RESULT IN A 2% REDUCTION OF YOUR OVERALL GRADE.**
- Make-ups for the exams will only be allowed with documented proof of reason for absence (ex. doctor's note with doctor's phone number).
- Unfortunately, due to the time constraints, no make-up laboratories can be offered.
- Read assigned textbook chapters and lab exercises prior to attending class.
- Allot sufficient time to study course material outside of the class period. Allow at least ONE hour per day outside of the class to study your notes.
- Take quizzes, exams and perform labs as scheduled (see tentative schedule).
- All safety guidelines set forth in student lab activities will be strictly adhered to.
- Faculty adhere to the FGCU policies of academic integrity provided in the *Florida Gulf Coast University Student Guidebook.*

Honors code: Any incident of cheating on exams, quizzes or lab discussion questions, or deliberately misrepresenting reports of assignments will result in a "0" grade for that assignment and possibly an "F" grade for the entire course. In addition, you can

be referred to the Judicial Department of the Dean of Students' Office for violation of the Student Code of Conduct. 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

Grading: Your final grade for the course will be calculated according to your performance in the categories listed below. Three extra points will be added to each of your exam score if you utilize your handheld clicker devices during class to answer the student response questions posed by the instructor. Two extra points will be added to your exam score if you are the winner of the "flyer of the week" for your row. I do NOT give "+/-" grades.

Online CANVAS Quizzes (Lecture and Lab)	10%
Laboratory Activities (lab data sheets-12%, and Lab report – 3%)	15%
Class Activities (Participation —2.5% and Flyer of the week—2.5%)	5%
Exams: 5 non-cumulative exams (14% each)	70%

Grading Scale	
90-100%	A
80-89%	B
70-79%	C
60-69%	D
<60%	F

Confirmation of Attendance: *All faculty members are required to use Canvas to confirm a student's attendance for each course by the end of the first week of classes. Failure to do so will result in a delay in the disbursement of your financial aid. The confirmation of attendance is required for all students, not only those receiving financial aid.*

Disabilities: *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.*

For further information please read the General Counsel Policies at:
http://www.fgcu.edu/generalcounsel/policies-view.asp

PCB 4233C (Immunology) Detailed Schedule

NOTE: *All weekly online CANVAS quizzes are due by midnight the day before lecture.*

Week 1		
Topics	**Readings**	**Lab**
Thursday, August 18		
• Introduction to course • Syllabus • Elements of the Immune System and their Roles in Defense	• Chapter 1	• Lab Safety and Lab Safety Contract (on CANVAS -- print, read, sign, and bring to class)

Week 2		
Topics	**Readings**	**Lab**
Tuesday, August 23		
• No class (Instructor at International Congress of Immunology conference in Australia!) • Online assignments	• Chapter 1 • Conference presentation file on CANVAS	• Lab Safety and Lab Safety Contract (on CANVAS -- print, read, sign)
Thursday, August 25		
• No class (Instructor at Immunology conference in Australia!)	• Conference presentation file on CANVAS	• Read Immunology conference presentation file (download from CANVAS). We will discuss in class next week.

Week 3		
Topics	**Readings**	**Lab**
Tuesday, August 30		
• Innate Immunity: The Immediate Response to Infection	• Chapter 2	• Experiment 1:Lysozyme in Tears
Thursday, September 1		
• Innate Immunity: The Induced Response to Infection	• Chapter 3	• Continue last lab

Week 4		
Topics	**Readings**	**Lab**
Tuesday, September 6		
• Innate Immunity: The Induced Response to Infection	• Chapter 3	• Continue last lab
Thursday, September 8		
• **EXAM 1 (Chapters 1, 2, and 3)**		

Week 5		
Topics	**Readings**	**Lab**
Tuesday, September 13		
• Antibody Structure/Generation of B-Cell Diversity	• Chapter 4	• Experiment 2: Differential white blood cell count and morphology
Thursday, September 15		
• Antibody Structure/Generation of B-Cell Diversity	• Chapter 4	• Continue last last….

Week 6		
Topics	**Readings**	**Lab**
Tuesday, September 20		
• Antigen Recognition by T Lymphocytes	• Chapter 5	• Experiment 3: Blood processing and serum separation
Thursday, September 22		
• Antigen Recognition by T cells		• Continue last last….

Week 7		
Topics	**Readings**	**Lab**
Tuesday, September 27		
• The Development of B Lymphocytes	• Chapter 6	• Experiment 4: Complement's bactericidal activity in normal serum
Thursday, September 29		
• The Development of B lymph.		• Continue last last….

Week 8		
Topics	**Readings**	**Lab**
Tuesday, October 4		
• **EXAM 2 (Chapters 4, 5, and 6)**		
Thursday, October 6		
• The Development of T Lymphocytes	• Chapter 7	• Continue last last….

Week 9		
Topics	**Readings**	**Lab**
Tuesday, October 11		
• T Cell Mediated Immunity	• Chapter 8	• Experiment 5: Tumor necrosis factor alpha (TNFα) assay
Thursday, October 13		
• T Cell Mediated Immunity		• Continue with last lab

Week 10		
Topics	**Readings**	**Lab**
Tuesday, October 18		
• Immunity Mediated by B cells and Antibodies	• Chapter 9	• Experiment 6: Immunodiffusion: The Ouchterlony plate method
Thursday, October 20		
• Immunity Mediated by B cells and Antibodies		• Continue with last lab

Week 11		
Topics	**Readings**	**Lab**
Tuesday, October 25		
• **EXAM 3 (Chapter 7, 8, and 9)**		
Thursday, October 27		
• Preventing Infection at Mucosal Surfaces	• Chapter 10	

Week 12		
Topics	**Readings**	**Lab**
Tuesday, November 1		
• Immunological Memory and Vaccination	• Chapter 11	• Experiment 7: Rapid Immunodiagnostic test for syphilis
Thursday, November 3		
• Coevolution of Innate and Adaptive Immunity	• Chapter 12	• Continue last lab

NOTE: Tuesday, November 1 is the last day to drop/withdraw without academic penalty

Week 13		
Topics	**Readings**	**Lab**
Tuesday, November 8		
• Failures of the Body's Defenses	• Chapter 13	• Experiment 8: Enzyme Linked Immunosorbent Assay (ELISA)
Thursday, November 10		
• Failures of the Body's Defenses		• Continue with last lab

Week 14		
Topics	**Readings**	**Lab**
Tuesday, November 15		
• **EXAM 4 (Chapters 10, 11, 12, and 13)**		
Thursday, November 17		
• IgE-Mediated Immunity and Allergy	• Chapter 14	• Assign Lab Report

Week 15		
Topics	**Readings**	**Lab**
Tuesday, November 22		
• Transplantation of Tissue and Organs	• Chapter 15	• Experiment 9: Blood Typing
Thursday, November 24		
• **Thanksgiving Break (No Class!)**		

Week 16		
Topics	**Readings**	**Lab**
Tuesday, November 29		
• Disruption of Healthy Tissue by the Adaptive Immune Response	• Chapter 16	• Continue last lab
Thursday, December 1		
• Cancer and Its Interactions with the Immune system	• Chapter 17	• **Lab reports due**

Week 17, EXAM DAY—Thursday, December 8
• **EXAM 5 (chapters 14, 15, 16, and 17) – Thursday, December 8 at 8:00am**