

# Immunology (Biol 3413 D10)

## Summer I- 2022



**Instructor: Dr. Laurel Fohn, MD, PhD**

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Phone: 325-486-6644

Office: Cavness 107

**Office Hours:** Office hours will be by appointment via telephone or Blackboard Collaborate. Please email me to schedule an appointment.

**Attendance:** All lectures and assignments will be posted on-line. There will be a quiz, exam, or assignment on a near daily basis as an assessment of attendance. You are required to have internet access for the entire course. Accommodations will not be made for a lack of internet access. NOTE: You are NOT automatically dropped if you stop attending class or completing assignments. **Monday, June 27, 2022**, is the **last day to drop** a course for this session.

## Course Information

### Course Description

The goals of this course are to provide students with factual knowledge about the field of immunology and to introduce fundamental principles of the field. These represent progress points 1 & 2 on the IDEA course evaluation form to be filled out at the end of the semester.

### Prerequisite and Co-requisite Courses

Any 3 of the following courses each with a grade of "C" or better: Biology 1406 (1106+1306), 1407 (1107+1307), 1411, 1413, 3301, 3411, or by special departmental approval.

### Prerequisite Skills

Proficiency in accessing and utilizing ASU Blackboard platform, internet websites, using ASU Library resources, and proficiency with Microsoft Word and/or PowerPoint are expectations of the course.

## Student Learning Outcomes

Upon completion of this course, students should be able to:

- name the important cells of the immune system and be able to describe and/or recognize their role in immunity
- distinguish the differences in innate and adaptive immunity
- distinguish between the cell mediated adaptive response and the humoral mediated adaptive response
- distinguish/understand the clinical consequences of a normal and an abnormally functioning immune system
- understand how an immune reaction is initiated, perpetuated and terminated
- understand the similarities & differences in the self/non-self model of immunity as compared to the danger model

## Course Delivery- Online Summer Session- see details below.

- Biology 3413, Immunology, is a Summer Session Course. It will be offered from June 6, 2022- July 8th, 2022.
- Biology 3413 is an online course. You will need access to reliable internet and Blackboard.<sup>1</sup>
- Immunology is a lecture and lab combined course designed for upper level science majors particularly those with health professions interests. Grades from lecture and lab are combined to create an overall course grade.
- Course lectures and content (including powerpoints, textbook readings and supplemental reading) will be asynchronous. Lectures/ materials will be posted on the assigned dates; but there are no assigned times for viewing/ learning the material; however, assignments/ quizzes and exams will have synchronous times/ due dates.
- **Course assignments, quizzes, and exams will be synchronous.** This means they will all have VERY specific due dates and specific assigned times when you will work on them. **Please review the schedule to ensure you are available during the due dates/times listed for exams and assignments. June 20<sup>th</sup>&21<sup>st</sup> will be lab presentation sessions (at 5:30 pm on Mon. June 20<sup>th</sup> and at 11am and 2pm on Tues. June 21<sup>st</sup>.) Each session will be approximately 2.5 hours and you will be assigned one of these presentation times and must be available for synchronous, online presentation and discussion.**
- This course is designed to run in 5 weeks; so the normal 16 week semester is compressed to run in that time frame. That means that 1 week during the winter semester is equivalent to about 3 weeks during the long term. To accommodate the pace, you should plan on studying/working approximately 6-10 hours/day (Monday through Friday) to meet the requirements of the course.
- **On the first day of the summer session and each Thursday thereafter, there will be a livestream discussion/ question and answer session from 10:00 am-10:45 am.** This session will be livestreamed and recorded and will provide an opportunity to further expand on ideas presented in lecture/ lab.

- The format of the laboratory accompanying the lecture is described in separate section below.

## Required Texts and Materials

Required Texts: There are two required texts.

1. Kuby Immunology 8th edition with Launchpad. If you prefer to have a physical copy of the book you may purchase Launchpad & loose-leaf sheets with ISBN: 9781319188610. If you like an e-book, the Launchpad digital access code comes with full e-book access (ISBN: 9781319147501 or ISBN is 9781319147518).
2. PhysioEx 9.0 (manual): Laboratory Simulations in Physiology with 9.1 (software) Update. ISBN#: 9780321929648

Recommended Text: Contemporary Clinical Immunology and Serology (Pearson Clinical Laboratory Science) 1st Edition. ISBN-13: 978-0135104248 or ISBN-10: 0135104246

## Technology/ Communication Requirements

**Technology:** Students will need to utilize and check their Angelo State University email account daily and when signing up with Kuby Launchpad and for all email communications with the instructor and for course announcements. Additionally, students should maintain the ability to utilize Blackboard to access grades, reading assignments, lectures via Collaborate, exams, quizzes, assessments and other course material.

To successfully complete this course, students need to have access to reliable internet and a computer (a PC or Mac computer/ laptop or iPad) with webcam and microphone capable of utilizing Respondus Lockdown Browser and Respondus Monitor.

Access to exams and quizzes will be through **Blackboard and Respondus Lockdown Browser** and will be audio and video recorded via **Respondus Monitor**. Respondus requires a desktop computer or laptop (not a Chromebook) and a webcam/ microphone. For best results, use an ethernet cable to connect to your Internet source instead of relying on Wi-Fi. Refer to the Blackboard course for Respondus installation instructions.

This class will utilize **Blackboard Collaborate** (which requires a web cam and microphone).

**Communication:** Faculty will respond to email and/or telephone messages within 1 business day (Monday through Friday) during working hours.

All private email communication will be done exclusively through your ASU email address. Check frequently for announcements and policy changes. In your emails to faculty, include the course name and section number in your subject line.

**Virtual communication:** Office hours and/or advising may be done with the assistance of the telephone, Collaborate, etc.

### **Assessments/ Grades:**

Students will be assessed on the above objectives through exams and quizzes as detailed below **and course grades will be determined as indicated in the table below.**

<b>Assessment</b>	<b>Percent of Total Grade</b>
Lab/ Reading Quizzes (150 points) (14 grades worth 12 points each, drop lowest quiz grade- allows 6 bonus points). Note: Lab 7 Presentation counts as 1.5 quizzes= 18 points and lab 8/9 quiz counts as 1.5 quizzes= 18 points.	33.3
4 Exams worth 100 points each, drop lowest exam grade (300 points)	66.7

### **Grading System**

Course grades will be dependent upon completing course requirements and meeting the student learning outcomes.

The following grading scale is in use for this course:

- A = 405 (+) points
- B = 360-404 points
- C = 315-359 points
- D = 270-314 points
- F = fewer than 270 points

### **Assignment and Activity Descriptions**

#### **Laboratory/Quiz component of the course:**

Lab activities are varied and may consist of assigned readings, presentations, discussions, videos, and/ or Physio-Ex lab activities. You are encouraged to take written notes during the lab programs/ discussions/ videos (voice/visual recordings are not permitted). **Following completion of the lab session assignment, an assignment or quiz covering the information presented in lab will be assigned as indicated in the schedule below. Each quiz will be available from 11AM-11 PM on the day assigned. Once a quiz is begun, you will have 15 minutes to complete it.**

Quizzes will be proctored online using Respondus Lockdown Browser and Monitor. During the quiz, you can use any handwritten notes taken while viewing the video,

lecture, or reading material. **No electronic devices (other than the exam device), including calculators, phones, etc. are permitted on desktops/ surrounding exam/quiz areas and no assistance from any other being is permitted. When completing the environment check for Respondus Monitor, ensure that you show a 360 degree view of your space, the ceiling, floor, desk, and your lap. For the quizzes, you will also need to show me the handwritten notes you plan to use.** Each quiz is composed of multiple choice and or short-answer questions and is worth a total of 12 pts total. There will be 14 quizzes/ presentations/ lab assignments worth 12 points each (exception is for presentation and presentation quiz at 18 points each; accounting for 3 lab grades). Only the top 13 grades will be counted, for a total of 156 points. Therefore, if you miss a lab assignment, this will be your lowest/ dropped grade and will replace one missed lab quiz. Missing more than one lab assignment will lead to a zero for that day's exercise. However, there are 6 bonus points calculated in the overall lab quiz total, which can compensate for half of a second missed lab grade (or issues with the 18 point assignments). There will be no additional lab/ quiz make-up opportunities. Therefore, attendance and completion of the quizzes at the assigned times is imperative.

## **Exams:**

**Four (4) exams** are scheduled including the final. The low score of these four exams will be dropped. **Each regular exam (first 3 exams) is scheduled as indicated below and will be available from 11AM- 11 PM. Once an exam is begun, you will have 1 hour and 15 minutes to complete it.** The regular exams are not comprehensive (but you are expected to know the terminology and apply the information presented earlier in the semester). Regular exams cover lecture material, assigned readings & lab material.

**The final, comprehensive exam will be optional for those who have completed and are satisfied with their first 3 exam. It is scheduled to be available from 8:00AM- 1:00 PM and once begun, you will have 1 hour and 15 minutes to complete it.** The final exam is comprehensive and will include questions (but not necessarily the same questions) from the three previous exams, any new information covered since exam #3, and relevant lab information & reading assignments. The final exam is worth 100 points.

**No make-up exams will be administered.** Therefore, attendance is imperative and if an exam is missed, it will become a 0. This should then be the lowest of the 4 exams, and the drop score. Each exam is worth 100 pts. Maximum possible points = 300 (top 3 of 4 exams X 100 points).

Exams will be proctored online using Respondus Lockdown Browser and Monitor.

**When completing the environment check for Respondus Monitor, ensure that you show a 360 degree view of your space, the ceiling, floor, desk, your lap, and a mirrored view of your computer/ monitor. No learning materials (notes, books, handouts, etc) or electronic devices (other than the exam device), including calculators, are permitted on desktops/ surrounding exam areas during exams and no assistance from any other being is permitted.**

# General Policies Related to This Course

All students are required to follow the policies and procedures presented in these documents:

- [Angelo State University Student Handbook](#)<sup>2</sup>
- [Angelo State University Catalog](#)<sup>3</sup>

## Academic Integrity

Students are expected to maintain complete honesty and integrity in all work. Any student found guilty of any form of dishonesty in academic work is subject of disciplinary action and possible expulsion from ASU.

The College of Science and Engineering adheres to the university's [Statement of Academic Integrity](#).<sup>4</sup>

## Accommodations for Students with Disabilities

ASU is committed to the principle that no qualified individual with a disability shall, on the basis of disability, be excluded from participation in or be denied the benefits of the services, programs or activities of the university, or be subjected to discrimination by the university, as provided by the Americans with Disabilities Act of 1990 (ADA), the Americans with Disabilities Act Amendments of 2008 (ADAAA) and subsequent legislation.

Student Disability Services is located in the Office of Student Affairs, and is the designated campus department charged with the responsibility of reviewing and authorizing requests for reasonable accommodations based on a disability. It is the student's responsibility to initiate such a request by contacting an employee of the Office of Student Affairs, in the Houston Harte University Center, Room 112, or contacting the department via email at [ADA@angelo.edu](mailto:ADA@angelo.edu). For more information about the application process and requirements, visit the [Student Disability Services website](#).<sup>5</sup> **All paperwork associated with this request needs to be submitted at least one week prior to accommodation implementation.** The employee charged with the responsibility of reviewing and authorizing accommodation requests is:

Dallas Swafford  
Director of Student Disability Services  
Office of Student Affairs  
325-942-2047  
[dallas.swafford@angelo.edu](mailto:dallas.swafford@angelo.edu)  
Houston Harte University Center, Room 112

## **Incomplete Grade Policy**

It is policy that incomplete grades be reserved for student illness or personal misfortune. Please contact faculty if you have serious illness or a personal misfortune that would keep you from completing course work. Documentation may be required. See ASU Operating Policy 10.11 [Grading Procedures](#)<sup>6</sup> for more information.

## **Plagiarism**

Plagiarism is a serious topic covered in ASU's [Academic Integrity policy](#)<sup>7</sup> in the Student Handbook. Plagiarism is the action or practice of taking someone else's work, idea, etc., and passing it off as one's own. Plagiarism is literary theft.

In your discussions and/or your papers, it is unacceptable to copy word-for-word without quotation marks and the source of the quotation. It is expected that you will summarize or paraphrase ideas giving appropriate credit to the source both in the body of your paper and the reference list.

Papers are subject to be evaluated for originality. Resources to help you understand this policy better are available at the [ASU Writing Center](#).<sup>8</sup>

## **Student Absence for Observance of Religious Holy Days**

A student who intends to observe a religious holy day should make that intention known in writing to the instructor prior to the absence. See ASU Operating Policy 10.19 Student Absence for [Observance of Religious Holy Day](#)<sup>9</sup> for more information.

## **Title IX at Angelo State University**

The University prohibits discrimination based on sex, which includes pregnancy, sexual orientation, gender identity, and other types of Sexual Misconduct. Sexual Misconduct is a broad term encompassing all forms of gender-based harassment or discrimination including: sexual assault, sex-based discrimination, sexual exploitation, sexual harassment, public indecency, interpersonal violence (domestic violence and/or dating violence), and stalking. As a faculty member, I am a Responsible Employee meaning that I am obligated by law and ASU policy to report any allegations I am notified of to the Office of Title IX Compliance.

Students are encouraged to report any incidents of sexual misconduct directly to ASU's Office of Title IX Compliance and the Director of Title IX Compliance/Title IX Coordinator at:

Michelle Boone, J.D.

Director of Title IX Compliance/Title IX Coordinator

Mayer Administration Building, Room 210

325-942-2022

[michelle.boone@angelo.edu](mailto:michelle.boone@angelo.edu)

You may also file a report online 24/7 at [www.angelo.edu/incident-form](http://www.angelo.edu/incident-form).

If you are wishing to speak to someone about an incident in confidence you may contact the University Health Clinic and Counseling Center at 325-942-2173 or the ASU Crisis Helpline at 325-486-6345.

For more information about Title IX in general you may visit [www.angelo.edu/title-ix](http://www.angelo.edu/title-ix).<sup>10</sup>

## Modifications to the Syllabus

This syllabus, including grade evaluation and course schedule, is subject to modification.

### Immunology Tentative Schedule (Summer Session I June 2022-July 2022)

<b>DUE DATE (Approximate)</b>	<b>Biology 3413 (MTWRF) TOPICS in Approximate lecture order</b>	<b>Kuby Chapter</b>	<b>Lab Module Assignments/Quiz Due by 11:00pm on the dates listed in the first column; quizzes are timed with 15 minutes for completion</b>
June 6	Livestream discussion 10 am Review Syllabus and Blackboard Site		
June 7	Exam 1 Part 1: Course introduction; comparison of natural & acquired immunity (humoral vs cell mediated); inflammation	1 and supplemental reading	Lab 1 and quiz 1 My Score = _____
June 8	Exam 1 Part 2: History; Humoral immunity; Characteristics of antigens (epitopes, immunogenicity, cryptic, sequestered, haptens) and antibodies	1 and portions of 3, 12	Lab 2 and quiz 2 My Score = _____
June 9	Livestream discussion 10am Exam 1 Part 3: Characteristics of antigens (continued) and receptors (TCR/BCR/ antibodies). Antibody classes and structure. Primary vs secondary response. Immune system cells and tissues and abnormalities overview.	2	Lab 3 and quiz 3 My Score = _____
June 10	Exam 2 Part 1: Immune system cells and tissues- detailed including development; interactions, TLRs & PAMPS, first and second signals,	2, 8, 9	Lab 4 and quiz 4 My Score = _____



DUE DATE (Approximate)	Biology 3413 (MTWRF) TOPICS in Approximate lecture order	Kuby Chapter	Lab Module Assignments/Quiz Due by 11:00pm on the dates listed in the first column; quizzes are timed with 15 minutes for completion
<b>Monday, June 13</b>	<b>Exam 1= 100 points</b> Exam will be available on Blackboard on this date only from 11am-11 pm. The exam is timed. Once you begin, you will have 1 hour and 15 minutes to complete it.	<b>My Score =</b> _____	
<b>June 14</b>	Exam 2 Part 2: Immune system cells and tissues- detailed including properties of antigen presenting cells, lymphocytes, NK cells; MHC	<b>2, 8, 9</b>	<b>Lab 5 and quiz 5</b> My Score = _____ <b>and Lab 7 presentation prep</b>
<b>June 15</b>	Exam 2 Part 3: Tissues of the immune system / Positive and negative selection; Allergies	<b>2, 8, 9</b>	<b>Lab 7 presentation prep</b>
<b>June 16</b>	<b>Livestream discussion 10am</b>		<b>Lab 6 and quiz 6</b> My Score = _____; <b>Lab 7 presentation prep</b>
<b>June 17</b>	Exam 2 Part 4: B & T cell receptors and signaling; MHC (overview)	<b>7 and supplemental</b>	<b>Lab 7 submit presentation by 11pm 6/18 (Saturday)</b> My Score = _____; (score 7 given following presentation on June 20 or 21)
<b>June 20</b>	Exam 2 Part 4: continued from above	<b>7 and supplemental</b>	<b>Lab 8/9 presentations; 5:30 pm</b>
<b>June 21</b>			<b>Lab 8/9 presentations; 11am and 2 pm</b>
<b>June 22</b>	Exam 3 Part 1: Antigen receptors (Abs & TCRs) genetics of how diversity is achieved; MHC (genetics and natural functions; practical aspects including transplants, role in autoimmunity, tissue typing)	<b>3, 5, 12 and supplemental</b>	<b>Study for lab quiz 8/9</b>
<b>June 23</b>	<b>Livestream discussion 10am</b> <b>Study for Exam 2</b>		<b>Quiz for Labs 8 &amp; 9 presentations</b> My Score = _____;
<b>Friday, June 24</b>	<b>Exam 2= 100 points</b> Exam will be available on Blackboard on this date only from 11am-11 pm. The exam is timed. Once you begin, you will have 1 hour and 15 minutes to complete it.	<b>My Score =</b> _____	
<b>June 27</b>	Exam 3 Part 2: T cells and complement; <b>LAST DAY to DROP</b>	Portions of Ch 10-14, Ch 17 and	<b>Lab 10 and quiz 10</b> My Score = _____;
<b>June 28</b>	Exam 3 Part 2: continued; innate immunity; danger model;	supplemental reading	

<b>DUE DATE (Approximate)</b>	<b>Biology 3413 (MTWRF) TOPICS in Approximate lecture order</b>	<b>Kuby Chapter</b>	<b>Lab Module Assignments/Quiz Due by 11:00pm on the dates listed in the first column; quizzes are timed with 15 minutes for completion</b>
June 29	Exam 3 Part 3: Cytokine role in the immune response. Tolerance, transplants; autoimmunity, Th1 & Th2 responses, sepsis)	Ch 16	Lab 11 and quiz 11 My Score = _____;
June 30	Livestream discussion 1pm Exam 3 Part 4: The immune system: applications in medicine (cancer, vaccines/ primary & secondary response, monoclonal antibodies, blood banking, transplants, etc.)	Ch 19; Nobel Prize reading and supplemental reading	Lab 12 and quiz 12 My Score = _____;
July 1	Exam 4: Hypersensitivities (Type I-4) and more medical applications	Ch 15	Lab 13 and quiz 13 My Score = _____;
Monday, July 4th	HOLIDAY Exam 3 catch up/ study day		
Tuesday, July 5	Exam 3= 100 points Exam will be available on Blackboard on this date only from 11am-11 pm. The exam is timed. Once you begin, you will have 1 hour and 15 minutes to complete it.	My Score = _____	
July 6	Study for Exam 4		Lab 14 and quiz 14 My Score = _____;
July 7	Livestream discussion 1pm Course Review	120, 121, 123-126	
Friday, July 8th	COMPREHENSIVE FINAL EXAM= 100 points Exam will be available on Blackboard on this date only from 8am-1:00 pm. The exam is timed. Once you begin, you will have 1 hour and 15 minutes to complete it.	My Score = _____	

<sup>1</sup> <https://blackboard.angelo.edu/>

<sup>2</sup> <https://www.angelo.edu/student-handbook/>

<sup>3</sup> <https://www.angelo.edu/catalogs/>

<sup>4</sup> <https://www.angelo.edu/student-handbook/community-policies/academic-integrity.php>

<sup>5</sup> <https://www.angelo.edu/services/disability-services/>

<sup>6</sup> <https://www.angelo.edu/content/files/14197-op-1011-grading-procedures>

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<sup>7</sup> <https://www.angelo.edu/student-handbook/community-policies/academic-integrity.php>

<sup>8</sup> [https://www.angelo.edu/dept/writing\\_center/academic\\_honesty.php](https://www.angelo.edu/dept/writing_center/academic_honesty.php)

<sup>9</sup> <https://www.angelo.edu/content/files/14206-op-1019-student-absence-for-observance-of>

<sup>10</sup> <https://www.angelo.edu/services/title-ix/>