



# SYLLABUS

**MLSC 320 Fundamentals of Immunology  
Summer 2023**

# MLSC 320 Fundamentals of Immunology

## Department of Medical Laboratory Sciences

### Interactive Online Format

This course follows a condensed accelerated interactive online format and has multiple deadlines per week. You are expected to login regularly during the course to participate in the online discussions. Please plan accordingly. You are completing the work from a regular semester in half the time.

Also, please keep in mind while this online class is not self-paced, it is asynchronous. You can arrange your schedule flexibly during each week, but you **MUST** participate each week. You are expected to “show up” to class by interacting throughout each week in the graded discussion forums. Additionally, you will have written assignments presentations and papers due regularly each week.

Adequate Internet access and setting aside enough time each week to complete discussions and assignments during the duration of the course is critical. To be successful, plan to spend time daily on the course.

**Please review the Dates & Deadlines widget on the right side of your course in LearningHub for the last day to withdraw for a full refund.**

### Instructor Contact

**Instructor:** Noemi Gonzalez, MS, MT (ASCP)

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**Phone:** 423.236.2930

### Other Assistance

Username and password assistance	<a href="mailto:helpdesk@andrews.edu">helpdesk@andrews.edu</a>	(269) 471-6016
Enrollment and withdrawal questions	<a href="mailto:sderegister@andrews.edu">sderegister@andrews.edu</a>	(269) 471-6323
Technical assistance with online courses	<a href="mailto:dlit@andrews.edu">dlit@andrews.edu</a>	(269) 471-3960
Exam requests and online proctoring	<a href="mailto:sdeexams@andrews.edu">sdeexams@andrews.edu</a>	(269) 471-6566
Distance Student Services - any other questions	<a href="mailto:sdestudents@andrews.edu">sdestudents@andrews.edu</a>	(269) 471-6566

## Part 1: Course Information

### Course Descriptions

Immunology presented in the context of laboratory medicine focusing on fundamental principles including: Innate and acquired immune systems of the human organism; immunoglobulin production, structure, function, and diversity; antigen characteristics, variety, and specific red cell groups; tolerance and memory; complement structure and function; cell mediated immunity function and regulation; autoimmune disorders; transplantation and tumor immunology; immunodeficiency disorders; principles and procedures of techniques used in modern immunology lab.

## Prerequisites

BIOL 165 or BIOL 221

## Required Text/Material

Punt, J., Stranford, S., Jones, P. & Owen, J. (2019). *Kuby Immunology* (8<sup>th</sup> ed.). New York, NY: W.H. Freeman and Company.

*Additional handouts and other supplemental reading may be required as part of the course reading material.*

**NOTE:** We recommend getting textbooks through Amazon as they ship rapidly to most locations and offer more used and ebook options. If you choose to use the Andrews Bookstore, be sure you order the texts listed in the syllabus for your enrolled section (970-999). Then check delivery date before you order as it is essential to have the materials from day one.

- *Guest students*, contact your financial advisor at your home university.
- *Degree students* using federal financial aid should discuss textbook costs with their financial advisor before purchasing books, if they wish to include this in their budget.

## Credit Hour and Commitment

This course is offered for 3 semester credit; therefore, it is expected that you will spend 135 total hours on this course. Note that as an 8-week course, it is the equivalent of a semester course offered in half the time. You should budget about 3.5 hours per weekday. You'll spend your time reading, accessing instructional materials, reviewing concepts, and taking tests.

A recommended weekly schedule to divide your time is provided:

Readings and Reviewing material: 10-12 hours

Videos, Quizzes and Forums: 2-3 hours

Weekly Zoom review: 1 hour

Taking Exams: 1 hour

## Student Learning Outcomes

Upon completion of this course, the student is expected to demonstrate achievement of at least 70% in written and practical examinations on the following:

- Describe the concepts involved in adaptive and innate immunity.
- Discuss the various cells and their involvement in the immune response.
- Explain the lymphoid system's role in the immune response.
- Diagram the structures of various immunoglobulins.
- Describe the functions of the various immunoglobulins.
- Discuss the theories of antibody formation and the production of antibodies.
- Discuss the interaction of the various cells involved in the immune response.
- Discuss the cell-mediated immune response.
- Describe the various factors involved in the regulation of the immune response.
- Discuss the genetic control of immunity.
- Explain the concept of immunological tolerance.
- Discuss the activation, biological effects, and effects of deficiencies of the complement system.

- Differentiate between mechanisms of immunity to bacteria, viruses, fungi, and parasites.
- Discuss tumor immunity.
- Discuss the mechanism involved, the cells involved, and reactions involved in the various hypersensitivities.
- Describe the genetics and mechanisms involved in transplantation and rejection.
- Discuss the diagnostic testing in immunology that includes laboratory safety, quality assurance, and the various techniques employed in the modern immunology laboratory.
- Critically analyze laboratory data and correlate it with a given disease state.

### Program-Level Learning Outcomes

This course provides the foundations for the Clinical Year Immunology course and serves as the theoretical framework for several other clinical year courses.

## Part 2: Course Methods and Delivery

### Methods of Instruction

Methods of instruction include assigned readings from the textbook and the course material. Students are expected to study and be prepared to take six (6) unit examinations based on the materials/chapters assigned. Additional resources, such as Zoom meetings, videos, and other material will be provided to highlight subject material and help the student prepare for exams. The textbook is required and assigned readings are an integral part of success in this course. Review and regular participation in the course is essential to good performance.

### Technical Requirements

- Computer: PC (Win 7 or newer) or MAC (10.6 or better)
- A webcam with microphone, and speakers (or plug in headset)
- Internet: 2.4 Mbps or faster DSL, cable or Wi-Fi connection
- Browser: Current version of Chrome or Firefox
- Software: MS Office 2013 or newer ([Office 365 available here](#))

### LearningHub Access

This course is delivered online through LearningHub at <http://learninghub.andrews.edu>

Your username and password are your Andrews username and password. You need to activate your username and password to access LearningHub.

Please do this online here: <https://vault.andrews.edu/vault/pages/activation/information.jsp> if you haven't already. If you need assistance, call or email us: (296) 471-6016 or <mailto:helpdesk@andrews.edu>.

If you need technical assistance at any time during the course, or to report a problem with LearningHub, please email [dlit@andrews.edu](mailto:dlit@andrews.edu) or call (269) 471-3960.

## Part 3: Course Requirements

**Important Note:** This online class is **not** self-paced. You can arrange your schedule flexibly during each week, but you **MUST** participate each week. Commit to the weekly learning tasks and deadlines, which include reading assignments, reviewing PP slides, completion of review quizzes, participation in forum discussions, and completing unit exams. A weekly Zoom meeting will be held on Tuesdays at 5:00 pm.

**Question and Answer Sessions:** Question and Answer sessions are scheduled so that students can interact with the course instructor and seek clarification on difficult items. The instructor reserves the right to leave the classroom after 30 minutes if no student is present.

**Tips for Success:** To accomplish the objectives for this course, students are encouraged to follow these suggestions:

1. Read the assigned reading assignments in the textbook.
2. Review the PowerPoint for the corresponding chapter.
3. Use the expected learning outcomes to outline (take notes) the most important aspects of each chapter.
4. Take the review quiz (two attempts allowed; the higher score will be recorded in the gradebook).
5. Consult the course instructor if you are having difficulties understanding a particular concept.

## Assessments

### Review Quizzes

Unit review quizzes are offered through the LearningHub platform. Students must plan and allow adequate time to complete the Reviews. For each review quiz, two attempts are allowed. The higher score will be entered in the gradebook.

### Forums

Students are expected to participate in weekly forum discussions, which include an initial forum entry and at least one forum response. Points may be deducted for missing, late, or incomplete forum submissions. Forum discussions are considered late if not posted by the Thursday of the week following the scheduled timeline.

## Rubrics

### Forum Discussions Rubrics

Criteria	10 Exceptional	8 Proficient	6 Satisfactory	4 Emerging	0 Unsatisfactory
<b>Content &amp; Organization</b>	Forum discussion makes relevant connections and shares excellent insightful ideas.	Forum discussion is relevant to competency, is well organized, and sounds scholarly.	Forum discussion is generally relevant to competency. It is logically arranged and organized to express the desired concept.	Forum discussion is somewhat relevant, it is poorly focused, and not well organized.	Forum discussion is not relevant to competency; lacks focus and organization.
<b>Knowledge Base</b>	The forum discussion shows evidence of carefully evaluated knowledge and a synthesis of multiple theoretical perspectives.	The forum discussion shows evidence of an expanding knowledge base and includes analysis of theoretical perspectives.	The forum discussion shows evidence of analysis of a well-documented knowledge base and an understanding of core theories.	The forum discussion shows evidence of comprehension of a narrow knowledge base.	The forum discussion shows evidence of little or no evidence of knowledge base.
<b>Mechanics</b>	The forum discussion is free of mechanical errors; smooth flow and effective transitions enhance strong scholarly communication.	The forum discussion has few mechanical errors, improved flow, and strong transitions increase comprehensibility.	The forum discussion generally follows mechanical conventions, but with some minor errors; appropriate transitions.	The forum discussion has frequent mechanical errors; ineffective transitions and flows from point to point.	The forum discussion has numerous mechanical errors, making comprehension almost impossible.

**Important:** A satisfactory score will not be sufficient to achieve a passing score for this portion of the course. MLS students are expected to achieve a minimum of “proficient” scores in all discussion forums.

## Exams

There will be six (6) closed book unit exams corresponding to the reading assignments and PowerPoint presentations.

**All exams must be taken with a proctor in a setting with no course material in sight including the textbook, notes, or electronic material relating to the course.**

All exams in this course require proctoring. Follow prompts in the course space to set up your exam session. In each module that contains an exam, you will find what to review and what materials are allowed (if any) during the exam.

Please read the important information about taking exams and how online proctoring works at [www.andrews.edu/distance/students/exams.html](http://www.andrews.edu/distance/students/exams.html). The follow the instructions that apply to your situation on the [exam request form](#) to set up your exam session.

Please note that an exam code is never released to the student. All students must present photo identification before each exam session. Exams can only be proctored after a deadline with approval directly from the instructor to the Testing Center ([sdeexams@andrews.edu](mailto:sdeexams@andrews.edu) or 269-471-6566). No exam is returned to the student for review. The instructor, to aid studying for future exams can provide feedback on exams.

**Schedule:**

All times in the schedule are for the U.S. Eastern Time Zone.

Week	Lessons	Readings	Assignments
Intro	These items will need to be completed before you will have access to the rest of the course	Orientation Course Overview Introductions Academic Integrity	Student Introductions Academic Integrity Quiz Academic Integrity Statement
<b>Week 1</b> June 12-15	UNIT 1: Fundamental Concepts in Immunology	Kuby Chapters 1 - 3 (refer to ELOs for specific areas of focus) Chapters 1 - 3 PowerPoints	Unit 1: Discussion Forum: Initial Post <b>Due Tuesday, June 13, 11:59 p.m.</b> <b>Review Meeting</b> <b>Tuesday, June 13, 5:00 p.m.</b> Unit 1: Review Quiz Unit 1: Discussion Forum: Responses <b>PROCTORED Unit 1 Exam</b> <b>Due Thursday, June 15, 11:59 p.m.</b>
<b>Week 2</b> June 16-22	UNIT 2: Modes of Immune Response	Kuby Chapters 4 & 5 (refer to ELOs for specific areas of focus) Chapters 4 & 5 PowerPoints	Unit 2: Discussion Forum: Initial Post <b>Due Monday, June 19, 11:59 p.m.</b> <b>Review Meeting</b> <b>Tuesday, June 20, 5:00 p.m.</b> Unit 2: Review Quiz <i>Optional Extra Credit: Paper on Nobel Prize for Immunologic Research</i> Unit 2: Discussion Forum: Responses <b>PROCTORED Unit 2 Exam</b> <b>Due Thursday, June 22, 11:59 p.m.</b>
<b>Week 3</b> June 23-29	UNIT 3: Gene Expressions & Antigen Presentation	Kuby Chapters 6 & 7 (Refer to ELOs for specific areas of focus) Chapters 6 & 7 PowerPoints	Unit 3: Discussion Forum 1: Initial Post <b>Due Monday, June 26, 11:59 p.m.</b> <b>Review Meeting</b> <b>Tuesday, June 27, 5:00 p.m.</b> <i>Optional Extra Credit: Unit 3: Discussion Forum 2</i> Unit 3: Review Quiz Unit 3: Discussion Forum 1: Responses <b>PROCTORED Unit 3 Exam</b> <b>Due Thursday, June 29, 11:59 p.m.</b>
<b>Week 4</b> June 30- July 6	UNIT 4: Cellular Development, Activation, Differentiation and Memory (Part 1)	Kuby Chapters 8 & 10 (Refer to ELOs for specific areas of focus) Chapters 8 & 10 PowerPoints	Unit 4: Discussion Forum 1: Initial Post <b>Due Monday, July 3, 11:59 p.m.</b> <b>Review Meeting</b> <b>Tuesday, July 4, 5:00 p.m.</b> Unit 4 pt 1: Review Quiz Unit 4: Discussion Forum 1: Responses <b>Due Thursday, July 6, 11:59 p.m.</b>
<b>Week 5</b> July 7-13	UNIT 4: Cellular Development, Activation, Differentiation and Memory (Part 2)	Kuby Chapters 9 & 11 (Refer to ELOs for specific areas of focus) Chapters 9 & 11 PowerPoints	Unit 4: Discussion Forum 2: Initial Post <b>Due, Monday July 10, 11:59 p.m.</b> <b>Review Meeting</b> <b>Tuesday, July 11, 5:00 p.m.</b> Unit 4 pt 2: Review Quiz Unit 4: Discussion Forum 2: Responses <b>PROCTORED Unit 4 Exam</b> <b>Due Thursday, July 13, 11:59 p.m.</b>



Week	Lessons	Readings	Assignments
<b>Week 6</b> July 14-20	UNIT 5: Immune Responses (Part 1)	Kuby Chapters 12 & 14 (Refer to ELOs for specific areas of focus) Chapters 12 & 14 PowerPoints	Unit 5: Discussion Forum 1: Initial Post <a href="#">Due Monday, July 17, 11:59 p.m.</a> <b>Review Meeting</b> <a href="#">Tuesday, July 18, 5:00 p.m.</a> Unit 5 pt 1: Review Quiz Unit 5: Discussion Forum 1: Responses <a href="#">Due Thursday, July 20, 11:59 p.m.</a>
<b>Week 7</b> July 21-27	UNIT 5: Immune Responses (Part 2)	Kuby Chapters 15 & 16 (Refer to ELOs for specific areas of focus) Chapters 15 & 16 PowerPoints	Unit 5: Discussion Forum 2: Initial Post <a href="#">Due Monday, July 24, 11:59 p.m.</a> <b>Review Meeting</b> <a href="#">Tuesday, July 25, 5:00 p.m.</a> Unit 5 pt 2: Review Quiz <i>Optional Extra Credit: Unit 5 Hypersensitivity Assignment</i> Unit 5: Discussion Forum 2: Responses <b>PROCTORED Unit 5 Exam</b> <a href="#">Due Thursday, July 27, 11:59 p.m.</a>
<b>Week 8</b> July 28-August 4	UNIT 6: Vaccines, Immunodeficiency Disorders, Tumor Immunology & Laboratory Methods	Kuby Chapters 17 - 20 (Refer to ELOs for specific areas of focus) Chapters 17 - 20 PowerPoints	Unit 6: Discussion Forum: Initial Post <a href="#">Due Monday, July 31, 11:59 p.m.</a> <b>Review Meeting</b> <a href="#">Tuesday, August 1, 5:00 p.m.</a> Unit 6: Review Quiz <i>Optional Extra Credit: Chapter 13 Extra Credit Quiz</i> Unit 6: Discussion Forum <b>PROCTORED Unit 6 Exam</b> <a href="#">Due Thursday, August 3, 11:59 p.m.</a>

### Completing Assignments

All assignments for this course will be submitted electronically through LearningHub unless otherwise instructed.

## Part 4: Grading Policy

### Graded Course Activities

Percent %	Description	Points (Approximately)
15	Discussion Forum Participation: (6) Initial Forum Entry Responses entry	40 pts. total 30 pts. each 10 pts. each
15	Review Quizzes (8)	10 pts. each
70	Lecture Exams (6)	50-100 pts. each
100	Total Percent Possible	
2% Extra credit through assignments marked as optional in the schedule and course space.		

### Viewing Grades in Moodle

- Click into the course.
- Click on the **Grades** link in Administration Block to the left of the main course page.



## Letter Grade Assignment

Letter Grade	Percentage
A	93-100%
A-	90-92%
B+	88-89%
B	83-87%
B-	80-82%
C+	78-79%
C	73-77%
C-	70-72%
D	60-69%
F	0-59%

## Part 5: Course Policies

### Withdrawal and Incomplete Policies

The current withdrawal policy can be found online at <https://www.andrews.edu/distance/students/gradplus/withdrawal.html>. The incomplete policy is found online at <http://www.andrews.edu/weblmsc/moodle/public/incompletes.html>.

### Late Work

Due dates are listed both in the LearningHub course space and in the syllabus. Late work will have 10% of the earned points deducted.

### Maintain Professional Conduct Both in the Classroom and Online

The classroom is a professional environment where academic debate and learning take place. Your instructor will make every effort to make this environment safe for you to share your opinions, ideas, and beliefs. In return, you are expected to respect the opinions, ideas, and beliefs of other students—both in the face-to-face classroom and online communication. Students have the right and privilege to learn in the class, free from harassment and disruption.

### Netiquette

In this course you will communicate with your classmates and instructor primarily in writing through the discussion forum and e-mail.

"Online manners" are generally known as "netiquette." As a general rule, you should adhere to the same classroom conduct that you would "off-line" in a face-to-face course. Some examples of proper netiquette are:

1. Avoid writing messages in all capital letters. THIS IS GENERALLY UNDERSTOOD AS SHOUTING.
2. Be careful what you put in writing. Even if you are writing an e-mail message to one person, assume that anyone could read it. Though you may send an e-mail to a single person, it is very easy to forward your message to hundreds or thousands of people.

3. Grammar and spelling matter. Online courses demand the same standard of academic communication and use of grammar as face-to-face courses.
4. Never use profanity in any area of an online course. The transcripts of online course discussion forums, e-mail, and chat sessions are savable.
5. When responding to messages, only use "Reply to All" when you really intend to reply to all.
6. Avoid unkindly public criticism of others. Publicly criticizing others in an inappropriate way is known as "flaming." Consider this course a practice forum for selecting your verbiage thoughtfully and professionally.
7. Use sarcasm cautiously. In the absence of nonverbal cues such as facial expressions and voice inflections, the context for your sarcasm may be lost, and your message may thus be misinterpreted.
8. In a face-to-face setting, our tone of voice and facial expressions may convey as much of our meaning as the words we use. In a written message, the subtext of your meaning may be confused or misinterpreted. Write clearly. Use active verbs.

***[Source: University of Maryland, Communications Department]***

### Academic Accommodations

Students who require accommodations may request an academic adjustment as follows:

1. Read the Andrews University Disability Accommodation information at <https://www.andrews.edu/services/sscenter/disability/>
2. Download and fill in the disability form at <http://www.andrews.edu/services/sscenter/disability/accommodationsreqform.pdf>. Preferably type answers. To save a digital copy, 1) print to file and save or 2) print and scan. Email the completed form and disability documentation (if any) to [success@andrews.edu](mailto:success@andrews.edu) or fax it to (269) 471-8407.
3. Email [sdestudents@andrews.edu](mailto:sdestudents@andrews.edu) to inform the School of Distance Education that a disability has been reported to Student Success.

### Commitment to Integrity

As a student in this course, and at the university, you are expected to maintain high degrees of professionalism, commitment to active learning, participation in this course, and integrity in your behavior in and out of this online classroom.

### Commitment to Excellence

You deserve a standing ovation based on your decision to enroll in, and effectively complete this course. Along with your pledge of "commitment to Integrity" you are expected to adhere to a "commitment to excellence." Andrews University has established high academic standards that will truly enhance your writing and communication skills across the disciplines and in diverse milieu with many discourse communities in the workplace.

### Honesty

Using the work of another student or allowing work to be used by another student jeopardizes not only the teacher-student relationship but also the student's academic standing. Lessons may be discussed with other students, tutors may help to guide a student's work, and textbooks, encyclopedias and other resource materials may be used for additional assistance, but the actual response must be the student's own work. A student who gives information to another student to be used in a dishonest way is equally guilty of dishonesty.

Any violation of this policy will be taken before the Higher Education Academic and Curriculum Committee for appropriate punitive action.

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