MLSC 320 Fundamentals of Immunology
Summer 2020
MLSC 320 Fundamentals of Immunology
Department of Medical Laboratory Sciences

Interactive Online Format
This course follows an interactive online format and has weekly Thursday deadlines. You are expected to log in regularly during the course to participate in the online discussions. Please plan accordingly. 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: Melissa Poua, MS, MT (ASCP)
Email: pouam@andrews.edu
Office: 269.471.3277

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

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

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

NOTE: Textbooks for online courses may be purchased from any supplier. For financial aid in payment, contact your financial advisor at the university where you are completing your degree.
Andrews University degree students who have confirmed that funds are available will then purchase the books themselves and send receipts to their financial advisor for reimbursement.

**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
- Internet connection (DSL, LAN, or cable connection desirable).

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 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**

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

**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. 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 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.

<table>
<thead>
<tr>
<th>Week</th>
<th>Lessons</th>
<th>Readings</th>
<th>Assignments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intro</td>
<td>These items will need to be completed before you will have access to the rest of the course</td>
<td>Orientation Course Overview Introductions Academic Integrity</td>
<td>Student Introductions Academic Integrity Quiz Academic Integrity Statement</td>
</tr>
<tr>
<td><strong>Week 1</strong></td>
<td><strong>UNIT 1: Fundamental Concepts in Immunology</strong></td>
<td>Kuby Chapters 1 - 3 (refer to ELOs for specific areas of focus) Chapters 1 - 3 PowerPoints</td>
<td><strong>Unit 1: Discussion Forum</strong> <strong>Unit 1: Review Quiz</strong> <strong>PROCTORED Unit 1 Exam</strong> Due Thursday, June 11 by 11:59 pm</td>
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<tr>
<td><strong>Jun 8-11</strong></td>
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<tr>
<td><strong>Week 2</strong></td>
<td><strong>UNIT 2: Modes of Immune Response</strong></td>
<td>Kuby Chapters 4 &amp; 5 (refer to ELOs for specific areas of focus) Chapters 4 &amp; 5 PowerPoints</td>
<td><strong>Unit 2: Discussion Forum</strong> <strong>Unit 2: Review Quiz</strong> <strong>Optional Extra Credit: Paper on Nobel Prize for Immunologic Research</strong> <strong>Review Meeting, Tues, June 16, 5:00 pm</strong> <strong>PROCTORED Unit 2 Exam</strong> Due Thursday, June 18 by 11:59 pm</td>
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<td><strong>Jun 12-18</strong></td>
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<td><strong>Week 3</strong></td>
<td><strong>UNIT 3: Gene Expressions &amp; Antigen Presentation</strong></td>
<td>Kuby Chapters 6 &amp; 7 (Refer to ELOs for specific areas of focus) Chapters 6 &amp; 7 PowerPoints</td>
<td><strong>Unit 3: Discussion Forum 1</strong> <strong>Optional Extra Credit: Unit 3: Discussion Forum 2</strong> <strong>Unit 3: Review Quiz</strong> <strong>Review Meeting, Tues, June 23, 5:00 pm</strong> <strong>PROCTORED Unit 3 Exam</strong> Due Thursday, June 25 by 11:59 pm</td>
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<td><strong>Jun 19-25</strong></td>
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<tr>
<td><strong>Week 4</strong></td>
<td><strong>UNIT 4: Cellular Development, Activation, Differentiation and Memory (Part 1)</strong></td>
<td>Kuby Chapters 8 &amp; 10 (Refer to ELOs for specific areas of focus) Chapters 8 &amp; 10 PowerPoints</td>
<td><strong>Unit 4: Discussion Forum</strong> <strong>Unit 4 pt 1: Review Quiz</strong> <strong>Review Meeting, Tues, June 30, 5:00 pm</strong> <strong>Due Thursday, July 2 by 11:59 pm</strong> <strong>PROCTORED Unit 4 Exam</strong> Due Thursday, July 9 by 11:59 pm</td>
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<td><strong>Jun 26 - Jul 2</strong></td>
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<tr>
<td><strong>Week 5</strong></td>
<td><strong>UNIT 4: Cellular Development, Activation, Differentiation and Memory (Part 2)</strong></td>
<td>Kuby Chapters 9 &amp; 11 (Refer to ELOs for specific areas of focus) Chapters 9 &amp; 11 PowerPoints</td>
<td><strong>Unit 4 pt 2: Review Quiz</strong> <strong>Review Meeting, Tues, July 7, 5:00 pm</strong> <strong>PROCTORED Unit 4 Exam</strong> Due Thursday, July 9 by 11:59 pm</td>
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<td><strong>Jul 3-9</strong></td>
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<td><strong>Week 6</strong></td>
<td><strong>UNIT 5: Immune Responses (Part 1)</strong></td>
<td>Kuby Chapters 12 &amp; 14 (Refer to ELOs for specific areas of focus) Chapters 12 &amp; 14 PowerPoints</td>
<td><strong>Unit 5 pt 1: Review Quiz</strong> <strong>Review Meeting, Tues, July 14, 5:00 pm</strong> <strong>Due Thursday, July 16 by 11:59 pm</strong></td>
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<td><strong>Jul 10-16</strong></td>
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<tr>
<td><strong>Week 7</strong></td>
<td><strong>UNIT 5: Immune Responses (Part 2)</strong></td>
<td>Kuby Chapters 15 &amp; 16 (Refer to ELOs for specific areas of focus) Chapters 15 &amp; 16 PowerPoints</td>
<td><strong>Unit 5 pt 2: Review Quiz</strong> <strong>Optional Extra Credit: Unit 5 Hypersensitivity Assignment</strong> <strong>Review Meeting, Tues, July 21, 5:00 pm</strong> <strong>PROCTORED Unit 5 Exam</strong> Due Thursday, July 23 by 11:59 pm</td>
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<td><strong>Jul 17-23</strong></td>
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<td><strong>Week 8</strong></td>
<td><strong>UNIT 6: Vaccines, Immunodeficiency Disorders, Tumor Immunology &amp; Laboratory Methods</strong></td>
<td>Kuby Chapters 17 - 20 (Refer to ELOs for specific areas of focus) Chapters 17 - 20 PowerPoints</td>
<td><strong>Unit 6: Discussion Forum</strong> <strong>Unit 6: Review Quiz</strong> <strong>Optional Extra Credit: Chapter 13 Extra Credit Quiz</strong> <strong>Review Meeting, Tues, July 28, 5:00 pm</strong> <strong>PROCTORED Unit 6 Exam</strong> Due Thursday, July 30 by 11:59 pm</td>
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<tr>
<td><strong>Jul 24 – July 30</strong></td>
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</table>
Completing Assignments
All assignments for this course will be submitted electronically through LearningHub unless otherwise instructed.

Part 4: Grading Policy

Graded Course Activities

<table>
<thead>
<tr>
<th>Percent %</th>
<th>Description</th>
<th>Points (Approximately)</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>Discussion Forum Participation: (6)</td>
<td>40 pts. total</td>
</tr>
<tr>
<td></td>
<td>Initial Forum Entry</td>
<td>30 pts. each</td>
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<tr>
<td></td>
<td>• Responses entry</td>
<td>10 pts. each</td>
</tr>
<tr>
<td>15</td>
<td>Review Quizzes (8)</td>
<td>10 pts. each</td>
</tr>
<tr>
<td>70</td>
<td>Lecture Exams (6)</td>
<td>50-100 pts. each</td>
</tr>
<tr>
<td>100</td>
<td>Total Percent Possible</td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Letter Grade</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>93-100%</td>
</tr>
<tr>
<td>A-</td>
<td>90-92%</td>
</tr>
<tr>
<td>B+</td>
<td>88-89%</td>
</tr>
<tr>
<td>B</td>
<td>83-87%</td>
</tr>
<tr>
<td>B-</td>
<td>80-82%</td>
</tr>
<tr>
<td>C+</td>
<td>78-79%</td>
</tr>
<tr>
<td>C</td>
<td>73-77%</td>
</tr>
<tr>
<td>C-</td>
<td>70-72%</td>
</tr>
<tr>
<td>D</td>
<td>60-69%</td>
</tr>
<tr>
<td>F</td>
<td>0-59%</td>
</tr>
</tbody>
</table>
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 or fax it to (269) 471-8407.
3. Email 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.