

Oakland University
Clinical and Diagnostic Sciences

MLS 4230: Medical Immunology
(Previously MLS 423)
Winter 2018

Professor: Rebekah Martin, Ph.D., MLS(ASCP)^{CM}
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Lecture Day/Time: TR 3:00-4:15pm
Lecture Location: HHB 4043

Office Hours: Tu/Th, 1:00-2:00pm,
or by appointment

Course Description:

This course is designed to introduce the student to the principles and practices of Immunology. It will be taught from a medical/clinical approach with emphasis on cellular and molecular interactions. The course begins with an introduction to the basis of the immune response, followed by the consequences associated with an immune response. Topics include hypersensitivity disorders, mechanisms for rejection of transplanted tissues, immunodeficiency, and the development of autoimmunity. Both the biologic basis and the clinical aspects of immunological disorders will be covered.

Required Text:

The Immune System 4th Ed. by Peter Parham ISBN: 978-0815345268

Additional Reference Text:

Cellular and Molecular Immunology 9th edition, by Abbas, Lichtman and Pillai, Elsevier, Saunders, 2012.
ISBN: 978-0323479783.

Course Objectives:

The student will achieve upon completion of this course the ability to:

1. Define immunity and describe the physiologic function of the immune system
 2. Interpret clinical data and correlate it with immune physiology
 3. Describe and apply current uses of clinical immunology testing
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Class Policies:

1. **Academic conduct policy:** All members of the academic community at Oakland University are expected to practice and uphold standards of academic integrity and honesty. Academic integrity means representing oneself and one's work honestly. Misrepresentation is cheating since it means students are claiming credit for ideas or work not actually theirs and are thereby seeking a grade that is not actually earned. For further information on academic dishonesty at Oakland University, visit <https://www.oakland.edu/pace/policies-procedures>
Following are some examples of academic dishonesty:
 - a. **Cheating on examinations.** This includes using materials such as books and/or notes when not authorized by the instructor, copying from someone else's paper, helping someone else copy work, substituting another's work as one's own, theft of exam copies, or other forms of misconduct on exams.
 - b. **Plagiarism** is using someone else's work or ideas without giving that person credit; by doing this, students are, in effect, claiming credit for someone else's thinking. Whether students have read or heard the information used, they must document the source of information. When dealing with written sources, a clear distinction should be made between quotations (which reproduce information from the source word-for-word within quotation marks) and paraphrases (which digest the source of information and produce it in the student's own words). Both direct quotations and paraphrases must be documented. Even if students rephrase, condense or select from another person's work, the ideas are still the other person's, and failure to give credit constitutes misrepresentation of the student's actual work and plagiarism of another's ideas. Buying a paper or using information from the Internet without attribution and handing it in as one's own work is plagiarism.
 - c. **Unauthorized collaboration** on computer assignments and unauthorized access to and use of computer programs, including modifying computer files created by others and representing that work as one's own.
2. **You are expected to prepare for and take exams on the date and time scheduled.** Additional time for exams will not be allowed if you are tardy. You will receive a zero for missed exams due to unexplained absences.

- a. You will have **75 minutes** to complete your exams.
 - b. If you arrive in class on exam day after the first person has left the room, you may not be allowed to take the exam.
3. **Assignments:** Assignments must be turned in at the assigned submission date and time. Assignments turned in late will lose 10% for each 24-hour period they are late.
4. **Attendance:** In accordance with professional behavior, it is expected that you will attend course lectures and be punctual. If you are unable to come to a class, professional courtesy asks that you send an email to me explaining your absence, however, attendance for this class is not mandatory.
5. **Excused Absence Policy:** This policy for university excused absences applies to participation as an athlete, manager or student trainer in NCAA intercollegiate competitions, or participation as a representative of Oakland University at academic events and artistic performances approved by the Provost or designee. Students shall inform their instructors of dates they will miss class due to an excused absence prior to the date of that anticipated absence. For activities such as athletic competitions who schedules are known prior to the start of a term, students must provide their instructors during the first week of each term a written schedule showing days they expect to miss classes. For other university-excused absences, students must provide each instructor at the earliest possible time the dates that they will miss.
 - a. Make-up work
 - i. It is the responsibility of the student to request from the instructor an opportunity to complete missed assignments, activities, labs, examinations or other course requirements in a timely manner.
 - ii. Students are responsible for all material covered in classes that they miss, even when their absences are excused, as defined above.
 - iii. Missed classroom activities will be rescheduled at the discretion of the instructor.
6. **Add/Drops:** The university policy will be explicitly followed. It is the student's responsibility to be aware of deadline dates for dropping courses.
7. **Special Considerations:** Students with disabilities who may require special considerations should make an appointment with campus Disability Support Services, 106 North Foundation Hall, phone 248 370-3266. Students should also bring their needs to the attention of the instructor as soon as possible. For this class, you are required to bring me a Letter of Accommodation from Disability Support Services if you need any special considerations. For academic help, such as study and reading skills, contact the Academic Skills/Tutoring Center, 103 North Foundation Hall, phone 248 370-4215.
8. **Religious Observance Policy:** Oakland University policy to be developed. If you have a conflict with class due to a Religious Observance, please alert me ahead of time to make up assignments or exams. You will receive a zero for missed assignments or exams due to unexplained absences.
9. **Student Sexual Misconduct Policy: Sexual Misconduct** by a student can occur in any University sponsored program, both on- campus and off-campus or at an off campus location if the effects of the misconduct adversely affects or creates a hostile environment on campus, endangers or threatens the health or safety of any person, and/or is detrimental to the University's interests and/or educational mission. Sexual misconduct is unwelcome conduct of a sexual nature without consent and includes *sexual harassment, sexually hostile environments and sexual violence*. Review sexual misconduct policies, reporting procedures, and resources at <https://www.oakland.edu/policies/health-and-safety/625/>
10. **Diversity:** At Oakland University, actions defines our unwavering commitment to diversity. We accept and support our differences and commonalities, whether in race, sex, gender identity, gender expression, sexual orientation, age, height, weight, disability, color, religion, creed, national origin or ancestry, marital status familial status or veteran status, class, geography, language, socioeconomic status, or other aspects of the human condition. Review information on diversity, equity and inclusion at <https://www.oakland.edu/diversity>
11. **Emergency Preparedness:** In the event of an emergency arising on campus, the instructor will notify you of actions that may be required to ensure your safety. It is the responsibility of each student to understand the evacuation and "lockdown" guidelines to follow when an emergency is declared. These simple steps are a good place to start:
 - a. OU uses an emergency notification system through text, email, and landline. These notifications include campus closures, evacuation, lockdowns and other emergencies. Register for these notifications at oupolice.com/em/alerts.

- b. Ensure that one cellphone is on in order to receive and share emergency notifications with the instructor in class.
- c. If an emergency arises on campus, call the OUPD at 248-370-3331. Save this number in your phone, and put it in an easy-to-find spot in your contacts.

12. **Email Communication:** During the business week (Mon-Fri 8-5pm) I will typically respond to emails within 24 hours. I may not respond to emails right away during the evening or over the weekend. Before you send me an email, make sure the information you require is not available elsewhere (OU website, Moodle, syllabus etc.) and make sure you include a greeting, your name, class section, brief message, and a salutation (this is good practice and a good habit to get into; once we have established contact we can be less formal).

13. **Electronic Devices Policy:** You may use cell phones, laptops, and other electronic devices for learning purposes or urgent matters. Please keep phones on silent or vibrate. If your use of these devices becomes disruptive to me or your colleagues, I reserve the right to dismiss you from the classroom and/or take points from upcoming assignments.

Course Grading:

3 exams	50 pts each	150 points
4 Quizzes	25 pts each	100 points
5 Case Studies	15 pts each	75 points
Cumulative Final Exam	125 pts	125 points
TOTAL		450 points

Approximate Grading Scale: Please note that this grading scale is approximate.

Grade	Grade Point	%	Grade	Grade Point	%	Grade	Grade Point	%	Grade	Grade Point	%
A	4.0	98-100	B	3.0	80	C	2.0	70	D	1.0	60
A	3.9	97	C	2.9	79	D	1.9	69	No Credit	0.0-0.9	0-59
A	3.8	95-96	C	2.8	78	D	1.8	68			
A	3.7	93-94	C	2.7	77	D	1.7	67			
A	3.6	90-92	C	2.6	76	D	1.6	66			
B	3.5	89	C	2.5	75	D	1.5	65			
B	3.4	87-88	C	2.4	74	D	1.4	64			
B	3.3	85-86	C	2.3	73	D	1.3	63			
B	3.2	83-84	C	2.2	72	D	1.2	62			
B	3.1	81-82	C	2.1	71	D	1.1	61			

Schedule: Dates are subject to change at the discretion of the professor

Week	Date	Topic	Due (11:59pm on Moodle)	Text
1	Thurs 1/4	Course Intro Topic 1: Immune Cells and Tissues		Parham Ch 1 Abbas Ch 2
2	Tues 1/9	2: Innate Immunity – Defense barriers, Innate Cells, & Cytokines		P Ch 1, 2-2 A Ch 4
	Thurs 1/11	Finish Topic 2 3: Innate Immunity – Sensing Systems		A Ch 4
3	Tues 1/16	Quiz 1 (Topics 1-3) 4: Adaptive Immunity – Antibody Structure & Function	Case #1 Due	P Ch 4 A Ch 5, 8
	Thurs 1/18	Continue Topic 4		
4	Tues 1/23	5: Adaptive Immunity – T Cell Receptor Structure		P Ch 5 A Ch 6,7,8
	Thurs 1/25	Quiz 2 (Topics 4-5) 6: MHC, Antigen Processing, & HLA		
5	Tues 1/30	Continue Topic 6		
	Thurs 2/1	EXAM I (Topics 1-6)		
6	Tues 2/6	7: B Cell Development	Case #2 Due	P Ch 6 A Ch 8
	Thurs 2/8	Continue Topic 7		
7	Tues 2/13	8: T Cell Development & Selection		P Ch 7 A Ch 8, 15
	Thurs 2/15	Quiz 3 (Topic 7) Continue Topic 8		
8	Tues 2/20	WINTER BREAK		
	Thurs 2/22			
9	Tues 2/27	9: T Cell Activation & Function		P Ch 8 A Ch 8, 9, 10
	Thurs 3/1	Continue Topic 9		
10	Tues 3/6	EXAM II (Topics 7-9)		
	Thurs 3/8	10: B Cell Activation & Antibody Function		P Ch 9 A Ch 12
11	Tues 3/13	Continue Topic 10	Case #3 Due	
	Thurs 3/15	11: Complement System		P Ch 2 A Ch 13
12	Tues 3/20	12: Adaptive Immunity and Memory		P Ch 11 A Ch 12
	Thurs 3/22	13: Vaccination		P Ch 11 A Ch 16
13	Tues 3/27	EXAM III (Topics 10-12)		
	Thurs 3/29	Continue Topic 13	Case #4 Due	
14	Tues 4/3	14: Immune Evasion & Immunodeficiency		P Ch 13 A Ch 21
	Thurs 4/5	Quiz 4 (Topics 13-14) 15: Hypersensitivity		P Ch 14 A Ch 19
15	Tues 4/10	16: Autoimmunity	Case #5 Due	A Ch 15
	Thurs 4/12	17: Laboratory Testing (Recorded Lecture)		A pg 531
16	Tues 4/17	Review and Catch up as needed		
	Thurs 4/19	FINAL EXAM 3:00pm-5:00pm		