

**WELCOME to Immunology**  
**MICR 4353 – Fall 2024**

**INSTRUCTOR:** Charles T Spencer, Ph.D. (ctspencer@utep.edu)  
**OFFICE:** Biosciences Bldg, Rm. 5.148 (747-8776)  
**OFFICE HOURS:** Tuesday and Thursday 12:00pm – 1:00pm or [by appointment](#).  
**LECTURE:** Tuesday and Thursday 1:30pm – 2:50pm; Quin 212

**TEXT** for the course: Immunology, ed by Stephen Juris  
Oxford University Press Publisher

**iClicker Cloud App** for smartphones or web access in class  
**Blackboard/web access** during class

**COURSE DESCRIPTION (What will we be doing?):** The course is designed for undergraduate students pursuing Biology, Microbiology, Cellular and Molecular Biochemistry, and other biomedical-related major degrees. The main objective of the course is to provide the students a comprehensive view of the immune system and how it works in health and disease. We will focus our attention in basic mechanisms driving the innate and adaptive immune responses against foreign organisms and molecules. In addition, we will study the molecular mechanisms that trigger and sustain autoimmune and malignant (cancer) processes. Last, but not least, we do hope this course may create or enhance the students' interest in basic and applied research in Immunology.

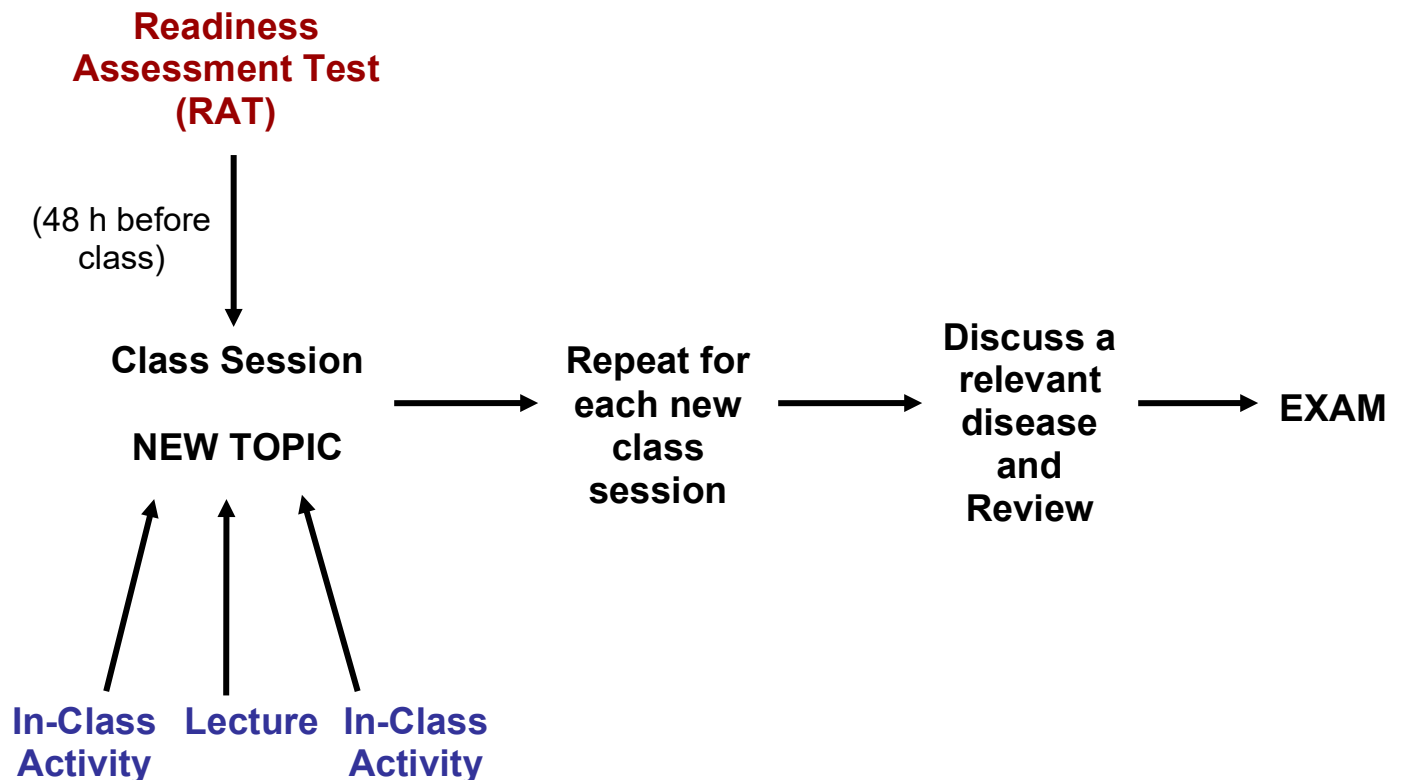
**COURSE GOALS (What do I want you be able to do by the time you get out of this course?):**

- 1) to *know the language* of Immunology
- 2) to *understand fundamental concepts* of Immunology
- 3) to *solve problems* based on information and facts in Immunology
- 4) to *value* the application of Immunology to modern medical treatment
- 5) to *engage* in open-minded and well informed discussions on the impact of biomedical discoveries on our family and friends

**COURSE APPROACH:** I will conduct this course in a combination of self-teaching, team-learning, and traditional lecture.

- 1) The “self-teaching” component is reading the textbook and utilizing the Blackboard site associated with this course. Quizzes will be posted on Blackboard, otherwise known as Readiness Assessment Tests (RATs). These RATs will assess your basic understanding of the required reading for the upcoming class sessions. YES, you will be quizzed on reading material BEFORE it is covered in class. This helps you to keep up with the material and helps me design the class session.
- 2) The “team-learning” will entail the formation of teams of 4 individuals per group (no more – no less!!). Team membership is for the duration of the semester. The teams are to be utilized for in-class activities. The activities are designed to cover course material and have the teams “teach” while conducting the activity.
- 3) We will not entirely get away from lectures. During each course period, I will lecture on the overall concepts and applications of the topic of the day. In particular, problematic material, identified from the RAT scores, will be reinforced during lecture.

**SO, THIS IS WHAT THE COURSE WILL LOOK LIKE:**



**RATS** – “Readiness Assessment Tests”. These quizzes are designed to quickly assess your familiarity with the new material. The RAT will only cover the material for the new topic (the new upcoming session) and it requires that you read the new topics before coming to class. The RATs are posted on Blackboard 48 hrs before the class session. You will have only 45 minutes in which to take the RAT and you will not receive your score for the RAT until the quiz period is completed. Moreover, you can only access the RAT once! Correct answers will not be provided but you will be informed if you got a question wrong; this is to help you figure out the material on your own. To determine what material the RAT will be covering and when they will be available to take, look at the final page of this syllabus. The questions will cover new vocabulary words and overview of new general concepts.

**LECTURES** - I will be using Power Point Presentations (due to the structure of the room). All my presentations will be posted on Blackboard before class session, however updated versions may not be posted until after class session (this depends on how much I decide to redesign the session).

**IN-CLASS ACTIVITIES** – Interspersed with lecture, you will get into your teams and conduct an in-class activity. The activities are designed to help you go over and to apply concepts being covered. All activities must be conducted as a team. Team activities will end up on a test somehow.

**iClicker Cloud.** In-class interactive questioning system that allows professor to gauge the level of student understanding and students to ask anonymous questions. These will be used throughout the class period and semester. The sum total will be accounted for in the final grade.

**EXAMS** - The course is divided into FIVE sections and you will have an exam for each section. See the syllabus for the dates of the Exams or the Blackboard Calendar. These are progress exams that will test your understanding and your ability to APPLY all material covered in the text, in class, and on activities. Exams only cover material during that section of the course and will be administered online using Lockdown Browser. Please download and install this program prior to arriving for the exam to save time during the examination. Exams are given in the same lecture room.

Exams will be given in two parts. The first will be taken as a group. You will work together to discuss the questions and answer. These will be submitted and then the second part will be taken individually for the remainder of the time. Your total grade for the exam will consist of 80% individual score and 20% group score.

**GRADING POLICY:** Your grade will be determined on the basis of a comprehensive assessment of your skills and their development using the following elements.

- I. **Readiness Assessment Tests (RATs):** A total of 30 RATs will be provided to you. However, only the top 25 scores will count towards your grade (your five lowest RAT scores will be dropped). There will NO be makeups of RATs, missed RATs will be given a zero which can count toward your lowest grades.
- II. **iClicker Questions:** Random numbers questions will be asked periodically during random class sessions that relate to material recently covered or to be covered in a class session. Although questions can be discussed amongst teammates, every student must respond with their own individual REEF account. iClicker questions and their points cannot be made up.
- III. **Group Activities:** At various times throughout the semester, you will work in groups to complete activities designed to reinforce fundamental concepts or apply those concepts in the interpretation of data. The dates for these activities will not be announced in advanced and they cannot be made up if missed.
- IV. **Progress examinations:** A total of four examinations will be administered throughout the semester. All will count towards your grade.
- V. **Final Examination:** A cumulative final will be administered during Finals Week at our designated time. Questions on the final will cover major topics from the progress exams and the new material in the fifth section of the course which is built on the foundational material from earlier in the semester. This exam will can be used to *replace* your lowest exam grade. This exam is not optional.
- VI. **Attendance:** Attendance will not be taken independently. Attendance will be monitored through answering iClicker questions and participation in Group work. Your attendance in class is your decision; however, neither the iClicker nor Group work points can be made up if you choose not to attend class.

## GRADING POLICY:

Exams	400 points
RATs	125 points (25 quizzes/5 pts each)
Group work	125 points
iClicker	150 points

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800 Points Total

A = 716 – 800 pts	(90-100%)
B = 636 - 715 pts	(80 – 89%)
C = 556 – 635 pts	(70 – 79%)
D = 476 – 555 pts	(60 – 69%)
F = < 475 pts	(59% and below)

I do round off – so, an 89.6% is an “A” – but an 89.2% is a “B”. I do not push an 89.2% to an “A” considering that you will be given several opportunities to improve your grade (only the top 25 highest RAT scores out of 30 are kept and the lowest Exam grade is exchanged with your grade for the Final if it is higher). DO NOT ASK FOR EXTRA CREDIT OPPORTUNITIES, these are those opportunities.

Grades are not based on a curve. Everyone will receive a grade that is reflective of the effort put into the course, the knowledge learned during the course, and the skills acquired during the course.

**You EARN your grade; I do not give you a grade.**

## **MAKEUP POLICY:**

**(1) RATs:** *The date of RATs will never change!* So don't complain that you didn't know – it is posted on this syllabus. **Since quite a few of the RATs will be dropped, there will be no makeups.** Missed RATs will be given a zero and can count toward your lowest grade.

**(2) EXAMS:** *The date of EXAMS will never change!* If you know ahead of time that you will not be available to take an exam, notify me and I will schedule for you to take the exam early, with no penalty. If you miss an exam and you can provide PROOF for your absence (you were admitted to the hospital for example), the exam will be rescheduled, at my convenience but must be taken before the graded exam is distributed to the class. If you miss the exam, and you cannot provide proof for your absence that I accept, there are **NO makeups!!** Due to the split nature of the exam, the group part of the exam cannot be made up. In this case, your grade will consist solely of your individual score.

**CONTESTING:** If anyone wants to contest the wording of a quiz question or of an exam question or contest that there could be more than one answer on a question, DO NOT contact me during class. **E-mail me.** If you can appropriately present your case, can rationally explain your point of view, I may give you credit (not guaranteed). If anyone wants to contest the scoring of an assignment, email me and I will review your argument for the assignment, however, this will entail an entire review of the assignment and could result in regrading, including earning a lower grade. Contested grades are to be filed within 1 (one) week of the grade being returned.

**MISSING CLASS:** Attendance will not be monitored. It is up to you to determine whether you need to be here or not. Keep in mind that there are no makeups for missing iClicker questions. If you are not in class or forgot your iClicker, you do not receive points. Since numerous questions are given over the semester each individual question does not have many points. iClicker questions will be given sporadically throughout the semester.

**CIVILITY STATEMENT:** All smart phones and tablets must be turned off or placed on silent mode. DO NOT answer phones while in class! In addition, please show up to class on time. It's quite disturbing to have individuals stroll into class late. Lastly, although laptops are allowed in class as a resource for class material (Blackboard access for example); however, they CANNOT be used for other activities other than those related to class.

**INCLUSIVITY STATEMENT:** In this course, each voice in the classroom has something of value to contribute. Please take care to respect the different experiences, beliefs, and values expressed by students and faculty involved in this course. In support of UTEP's commitment to diversity, this course welcomes individuals of all ages, backgrounds, citizenships, (dis)abilities, sexes, education levels, ethnicities, family statuses, genders, gender identities, races, religions, sexual orientations, or other visible or non-visible differences. I will not tolerate disrespectful language or behavior on the basis of any status, identity or prior experience.

**CHOSEN NAME/PRONOUNS:** I will gladly honor your request and work to address you by a chosen name or specific gender pronoun. Please advise me of this preference at your comfort.

**ACADEMIC DISHONESTY:** It is the policy of the University of Texas at El Paso that academic dishonesty is a completely unacceptable mode of conduct and will not be tolerated in any form. All persons involved in academic dishonesty will be disciplined in accordance with University regulations and procedures.

For further information, please refer to UTEP's Handbook of Operating Procedures, Chapter 1: Student Conduct and Discipline <http://admin.utep.edu/Default.aspx?PageContentID=2084&tabid=30292> . Please also see Plagiarism and Scholastic Integrity webpage, at UTEP's Library: <http://libraryweb.utep.edu/research/plagiarism.php>

It is expected that each student must submit work that they have completed. Work submitted that was not directly written by you (such as using AI-writing technology, e.g. ChatGPT) is considered dishonest and will result in a 0 for the assignment. Persistent submission of work performed by someone/something else will be report to the Office of Student Conduct for evaluation

**ADA ACCESSIBILITY:** Students who need an accessible classroom or access to adjustable tables or chairs, should register no later than the last week in September for Spring Semester, or by the first week in April for Summer and Fall

Semester with the Center for Accommodations and Support Services (CASS) (<http://sa.utep.edu/cass/>). CASS is located in Union East 106, phone 915-747-5148, email [cass@utep.edu](mailto:cass@utep.edu). If a student has or suspects he/she has a disability and needs an accommodation, he/she should contact the CASS.

**MILITARY STATEMENT:** If you are a military student with the potential of being called to military service and/or training during the course of the semester, you are encouraged to contact the instructor by phone and/or email at the earliest convenience.

**IMMUNOLOGY COURSE SCHEDULE – FALL 2024**

<b>WEEK</b>	<b>DATE</b>	<b>TOPICS</b>
<b>1</b>	Aug 27	Introduction, Group formation, Overview of the Immune System
	Aug 29	OVERALL CONCEPT = Innate Immunity
<b>2</b>	Sept 3	Topics to be covered: A System of responses
	Sept 5	Immediate Response
<b>3</b>	Sept 10	Induced Response
	Sept 12	<b>EXAM 1</b>
<b>4</b>	Sept 17	OVERALL CONCEPT = Antigen Recognition
	Sept 19	Topics to be covered: Innate Receptor Structure
<b>5</b>	Sept 24	T cell Receptors and Diversity
	Sept 26	B cell Receptors and Diversity
<b>6</b>	Oct 1	Antigen Processing and Presentation
	Oct 3	<b>EXAM 2</b>
<b>7</b>	Oct 8	OVERALL CONCEPT = Immune cell development and selection
	Oct 10	Topics to be covered: Innate Immune cell development
<b>8</b>	Oct 15	T cell Development
	Oct 17	B cell Development
		Positive and Negative Selection
<b>9</b>	Oct 22	<b>Exam 3</b>
	Oct 24	OVERALL CONCEPT = Anatomy of the Immune Response
<b>10</b>	Oct 29	Topics to be covered: T cell activation
	Oct 31	B cell activation
<b>11</b>	Nov 5	Immunological Memory
	Nov 7	
<b>12</b>	Nov 12	<b>EXAM 4</b>
	Nov 14	OVERALL CONCEPT = Immunology in Medicine
<b>13</b>	Nov 19	Topics to be covered: Mucosal Immunity
		Innate-Adaptive Co-evolution
	Nov 21	
<b>14</b>	Nov 26	
	Nov 28	Thanksgiving Holiday – <b>NO CLASS</b>
<b>15</b>	Dec 3	Topics to be covered: Failure of defenses
	Dec 5	Autoimmunity
		Allergy
		Transplantation
		Cancer
		<b>FINAL:</b> Thursday, December 12 <sup>th</sup> at 1:00 – 3:45 pm

**November 1st – Course Drop Deadline** - I will not “drop” you from the course; this is your responsibility. It is the policy of the College of Science that only a student can drop himself or herself from a course. In addition, the College of Science will remain aligned with the University and will not approve any drop requests after the semester drop date.



**Schedule for  
Readiness Assessment Tests (RATs)  
FALL 2024**

- The RATs are posted on Blackboard but will not become available (you will not have access to the RAT) until 48 hrs before the class session.
- You will have only 30 minutes in which to take the RAT and you will not receive your score for the RAT until the quiz period is completed.
- Moreover, you can only access the RAT once!
- Correct answers will not be provided but you will be informed if you got a question wrong; this is to help you figure out the material on your own.
- All RATs will “open” or become available at 12:00 pm (noon) of the date indicated and will “close” or become unavailable at 12:00 pm (noon) of the date indicated
- Since quite a few of the RATs will be dropped, there will be no makeups (5 RATs that will be dropped).
- Please be aware that our syllabus is subject to change and that page numbers differ between different textbook editions.

RAT	Date Open	Date Closed	TOPIC	Reading
1	Mon, Aug 26	Fri, Aug 30	Welcome!	Syllabus
2	Mon, Aug 26	Fri, Aug 30	Introduction to Immunology	pgs 1-33
3	Sun, Sept 1	Tues, Sept 3	Innate Immunity	pgs 34-48
4	Tues, Sept 3	Thurs, Sep 5	Innate Cellular Response	pgs 48-62
5	Sun, Sep 8	Tues, Sep 10	Complement	pgs 63-84
6	Tues, Sep 10	Thurs, Sep 12	Exam Review	
7	Sun, Sep 15	Tues, Sep 17	Adaptive Immunity	pgs 85-96
8	Tues, Sep 17	Thurs, Sep 19	Receptor generation and diversity	pgs 97-122
9	Sun, Sep 22	Tues, Sep 24	Antigen recognition by T cells	pgs 151-162
10	Tues, Sep 24	Thurs, Sep 26	Antigen Processing and Presentation	pgs 162-179
11	Sun, Sep 29	Tues, Oct 1	B cell receptor and antibodies	pgs 245-272
12	Tues, Oct 1	Thurs, Oct 3	Exam Review	
13	Sun, Oct 6	Tues, Oct 8	T cell development	pgs 123-132
14	Tues, Oct 8	Thurs, Oct 10	T cell selection	pgs 133-150
15	Sun, Oct 13	Tues, Oct 15	B cell development	pgs 213-230
16	Tues, Oct 15	Thurs, Oct 17	B cell selection	pgs 230-244
17	Sun, Oct 20	Tues, Oct 22	Exam Review	
18	Tues, Oct 22	Thurs, Oct 24	T cell activation	pgs 180-197
19	Sun, Oct 27	Tues, Oct 29	T cell effector functions	pgs 197-212
20	Tues, Oct 29	Thurs, Oct 31	B cell activation	pgs 273-286
21	Sun, Nov 3	Tues, Nov 5	B cell effector functions	pgs 287-305
22	Tues, Nov 5	Thurs, Nov 7	Immunological Memory	pgs 306-320
23	Sun, Nov 10	Tues, Nov 12	Exam Review	
24	Tues, Nov 12	Thurs, Nov 14	Mucosal Immunity	pgs 336-360
25	Sun, Nov 17	Tues, Nov 19	Pathogen Evasion	pgs 361-391
26	Tues, Nov 19	Thurs, Nov 21	Immunodeficiencies	pgs 392-422
27	Sun, Nov 24	Tues, Nov 26	Allergies	pgs 423-449
28	Tues, Nov 26	Sun, Dec 1	Autoimmunity	pgs 450-479
29	Sun, Dec 1	Tues, Dec 3	Transplantation Immunology	pgs 480-509
30	Tues, Dec 3	Thurs, Dec 5	Cancer Immunology	pgs 510-538