PHAR 7202: Principles of Microbiology and Immunology

Fall 2025

Course Description
This course provides an overview of medical microbiology and immunology.

Additional Course Description
This course provides an overview of medical microbiology and immunology and the host-microbe interactions in infectious diseases in humans. It integrates the basic concepts of the immune response to infectious agents and other triggers and their roles in disease. It also provides an introduction to the rational management, prevention, and control of infectious diseases.

Course Credit
2 credit hours

Pre-Requisites
None

Co-Requisites
None

Class Meeting Days, Time & Location
Tuesday & Thursday: 11:00 am to 12:00 pm
Room: WTB 133

Course Coordinator
Chowdhury S. Abdullah, B. Pharm., M. Pharm., Ph.D.
W.T. Brookshire Hall Room # 344
Phone number: 903.566.6287
Email: cabdullah@uttyler.edu
Office hours: Tuesday & Thursday: 12 pm to 1 pm
Preferred method of contact: Email

Course Instructor
Joseph S. Glavy, Ph.D.
W.T. Brookshire Hall Room # 364
Phone number: 903.566.6217
Email: jglavy@uttyler.edu
Office hours: Tuesday & Thursday: 12 pm to 1 pm
Preferred method of contact: Email

Fisch College of Pharmacy (FCOP) and UT Tyler Policies
This is Part 1 of the syllabus. Part 2 contains UT Tyler and the FCOP policies and procedures. For experiential courses (i.e., IPPE and/or APPE), the Experiential Manual contains additional policies and instructions that supplement the Syllabus Part 1 and 2. Please note, the experiential manual may contain policies with different deadlines and/or instructions. The manual should be followed in these cases.

Required Materials

1. Most class materials will be posted on the course Canvas site. The site address is uttyler.edu/canvas.
2. Doan T, Lievano F, Viselli SM, Swanson-Mungerson M (2022). Lippincott® Illustrated Reviews: Immunology. 3rd Edition. ISBN: 9781975151331. Lippincott Williams & Wilkins, Wolters Kluwer. (Available online through the Robert R. Muntz Library http://library.uttyler.edu/).
3. Cornelissen CN, Hobbs MM (2020). Lippincott® Illustrated Reviews: Microbiology. 4th Edition. ISBN: 9781496395856. Lippincott Williams & Wilkins, Wolters Kluwer. (Available online through the Robert R. Muntz Library http://library.uttyler.edu/).
4. Riedel S, Hobden JA, Miller S, Morse SA, Mietzner TA, Detrick B, Mitchell TG, Sakanari JA, Hotez P, Mejia R. eds (2019). Jawetz, Melnick, & Adelberg's Medical Microbiology. 28th Edition. ISBN: 978-1-260-01202-6. McGraw-Hill Education. (Available online through the Robert R. Muntz Library http://library.uttyler.edu/).

Additional Recommended Materials

1. Levinson W (2014). Review of Medical Microbiology and Immunology. 13th Edition. ISBN: 978-0-07-181811-7. McGraw-Hill Education. (On reserve at the Robert R. Muntz Library).
2. Abbas AK, Lichtman AH, Pillai S (2023). Basic Immunology: Functions and Disorders of the Immune System. 7th Edition. ISBN-13: 978-0443105197. Elsevier.

Using Artificial Intelligence (AI)

AI is not permitted in this course at all.

The work submitted by students in this course will be generated by themselves. This includes all process work, drafts, brainstorming artifacts, editing, and final products. This extends to group assignments where students must create collaboratively create the project. Any instance of the following constitutes a violation of UT Tyler's Honor Code: a student has another person/entity do any portion of a graded assignment, which includes purchasing work from a company, hiring a person or company to complete an assignment or exam, using a previously submitted assignment and/or using AI tools.

Course Format

The course may include, but is not limited to, the following activities:

1. Independent study of selected readings
2. Individual readiness assessment tests (e.g., iRATs)
3. Individual application of content and concepts (e.g., homework, assignments)
4. Lecture
5. Team-based learning, active learning strategies:
    - Team readiness assessment tests (tRATs)
    - Team application of content and concepts

Course Learning Outcomes (CLOs)

CLOs	PLO(s) Assessed for this CLO (1-12)	ACPE Appendix 1	Grading Method	Assessment Methods
1. Understand microbes' genetics, antibiotic mechanisms, and antimicrobial resistance, and differentiate between bacterial, viral, fungal, and parasitic infections regarding pathogenesis.	1	Medical Microbiology	ES	1,2
2. Understand the microbes' structure and function, identify clinically important bacteria, and apply diagnostic methods to detect infections.	1	Medical Microbiology	ES	1,2
3. Understand the immune responses to clinically important microorganisms, i.e., viruses, bacteria, protozoa, fungi, and worms	1	Medical Microbiology	ES	1,2
4. Understand the structure and function of the immune system, including the roles of innate and adaptive immunity	1	Immunology	ES	1,2
5. Explain the molecular mechanisms underlying immune responses and immune tolerance	1	Immunology	ES	1,2
6. Understand the clinical aspects of immunity, including hypersensitivity, autoimmune diseases, and immunodeficiencies	1	Immunology	ES	1,2
7. Evaluate immunotherapeutic strategies, including biologics, antibodies, and cell therapy	1	Immunology	ES	1,2

Course Assessment Methods

	Assessment Method	Description *A brief description of each summative assessment that may be used in this course (This is to allow the college to identify which ACPE standards are being assessed)*
1	Exams are in ExamSoft or other electronic or paper-based platforms	Standard multiple-choice questions (MCQs), true/false questions, fill-in-the-blank questions, hotspot questions, short-answer questions, essay questions, and problem-based questions. Exams are cumulative.
2	Team Application, Individual assignment	Students may be assessed based on a structured report including molecular mechanisms of immunology and immunotherapies

Grading Policy & Grade Calculation

Grades will be determined based on any or all the following: the evaluation of individual and team readiness assessment tests (iRATs, tRATs), individual cumulative assessment tests (exams and final examinations), application assignments, participation in team-based projects, and other assessment methods. Examinations and RATs may consist of but are not limited to multiple-choice, select all that apply, true/false, fill-in-the-blank, hot spot, short-answer, essay, and problem-based questions.

All examinations, tests, and assignments, including the final examination, are **cumulative.** Students are responsible for the material presented in the prior courses. The grading scale for all graded materials is below. The final course grade will be assigned according to the calculated percentage, and **the percentages will not be rounded upward or downward**. For additional information, see the examination/assessment policy.

Standard Grade Calculation*

Individual Component	**98%**
iRATs/Other Individual Activities	3%
Exam-1	25%
Exam-2	25%
Final Exam (Comprehensive)	45%
Team Component	**2%**
t-RATs/Team Application (s)/Project	2%
Total	**100%**

The final course letter grade will be determined according to the following grading scheme:

A	90 - 100 %
B	80 - 89.999 %
C	70 - 79.999 %
D	65.0 - 69.999 %
F	< 65.0 %

PHAR 7202 Course Schedule				
WEEK	**DAY**	**TOPIC**	**Instructor**	**CLO**
1	08/26	Medical Microbiology: **Introduction to Microbiology and Pathogenicity of Microorganisms *iAPP**	Dr. Abdullah	1, 2
	08/28	Medical Microbiology: **Viruses, virus structure, and replication *iRAT**	Dr. Glavy	1, 2
2	09/02	Medical Microbiology: **Clinically Important Viruses *iRAT**	Dr. Glavy	1, 2
	09/04	Medical Microbiology: **Mycology and Parasitology *iRAT**	Dr. Glavy	1, 2
3	09/09	Medical Microbiology: **Bacterial Structure, Growth, and Metabolism *tRAT**	Dr. Abdullah	1, 2
	09/11	Medical Microbiology: **Prokaryotic Genetics and Mutations *tAPP**	Dr. Abdullah	1, 2
4	09/16	Medical Microbiology: **Clinical Diagnostics and Identification Methods *iAPP**	Dr. Abdullah	1, 2
	09/18	Medical Microbiology: **Clinically important bacteria and diseases *tAPP**	Dr. Abdullah	1, 2
5	09/23	Review Class	Dr. Abdullah	
	09/25	**Exam 1 On class materials from 08/26 to 09/18; 10:30 am – 12 pm**	Dr. Abdullah	
6	09/30	Medical Microbiology: **Antimicrobial Agents***	Dr. Glavy	1, 2
	10/02	Immunology: **Introduction to the Immune System***	Dr. Abdullah	4, 5
7	10/07	Immunology: **Antigens and Receptors***	Dr. Abdullah	4, 5

	10/09	Immunology: **Cells of the Innate Immune System***	Dr. Abdullah	4, 5
8	10/14	Immunology: **Innate Immune Function***	Dr. Abdullah	4, 5
	10/16	Immunology: **Molecules of Adaptive Immunity***	Dr. Abdullah	4, 5
9	10/21	Immunology: **Cells and Organs of the Adaptive Immune System***	Dr. Abdullah	4, 5
	10/23	Immunology: **Generation of Immune Diversity***	Dr. Abdullah	4, 5
10	10/28	Immunology: **B Lymphocytes Activation and Effector Functions***	Dr. Abdullah	
	10/30	**Review Class**	Dr. Abdullah	
11	11/04	**Exam-2** **On class materials from 09/30 to 10/23; 11 am -12:30 pm**	Dr. Abdullah	4, 5
	11/07	Immunology: **T Lymphocytes Activation and Effector Functions***	Dr. Abdullah	4, 5
12	11/11	Immunology: **Hypersensitivity Reactions***	Dr. Abdullah	4, 5, 6
	11/13	Immunology & Medical Microbiology **Immunity to Viruses, SARS-CoV-2 (COVID-19), Bacteria, Protozoa, Fungi, and Worms***	Dr. Abdullah	3, 4, 5, 6
13	11/18	Immunology & Medical Microbiology **Immune Pharmacotherapeutics and Biologicals/Vaccines***	Dr. Abdullah	1, 2, 7
	11/20	Immunology: **Tumor Immunity***	Dr. Abdullah	4, 5, 6
11/24 – 11/28	M-F	**Thanksgiving Break**	RELAX & STUDY	

14	12/02	Immunology: **Immune Deficiencies** **Primary and Secondary** **Immune Deficiencies (AIDS)***	Dr. Abdullah	4, 5, 6
	12/04	Immunology: **Autoimmunity and** **Autoimmune Diseases***	Dr. Abdullah	4, 5, 6
15	12/11	***Comprehensive Final Exam*** ***(9 am – 12 pm)***	Dr. Abdullah	

**Expect iRATs/tRATs/individual or team application tests (iAPPs/tAPPs)*

Please note that dates, topics, and assignments are subject to change. In the event of a change, you will be given ample notification of the change.

Tuesdays & Thursdays from 11:00 am to 12:00 pm