IMMUNOLOGY – BIOL 4201.001 – FALL 2025 – BLB 140 – Tue/Thur 8 -9:20am

Instructor: Dr. Joy Ogbechi
Office: UNT – Denton LSC B 116
Email: joy.ogbechi@unt.edu
Office Hours: Tuesday/Thursday 11am-12 noon or by appointment (LSC B 116)

HOW TO CONTACT ME

Email is the **best way** to reach me. I typically respond to emails within **48 hours on weekdays** (Monday–Friday). If your question requires a detailed discussion, please come to my office during **scheduled office hours**. If you are unable to attend during regular office hours, you may **request an appointment** via email. Keep in mind that other students may also be waiting to meet with me, so scheduling ahead will help ensure that we have sufficient time for your questions.

COURSE DESCRIPTION

This course offers a comprehensive introduction to the mammalian immune system, exploring its structures, functions, and regulatory mechanisms from both basic science and applied perspectives. Students will learn about the anatomy and specialized microenvironments of the immune system; the components and interactions of innate and adaptive immunity; and the processes of antigen recognition, including the genetic basis of antigen receptors and the mechanisms of antigen processing and presentation.

The course also covers T-cell and B-cell development, as well as the effector responses that eliminate pathogens. Applied and clinical topics include hypersensitivity reactions, autoimmunity, transplantation immunology, immunization strategies, immunodeficiency disorders, and cancer immunology. Throughout the semester, emphasis will be placed on linking molecular and cellular mechanisms to clinical outcomes, helping students connect foundational immunological principles to real-world applications in health and disease.

COURSE OBJECTIVES / LEARNING OUTCOMES

By the end of this course, students will be able to:

1. Describe the anatomy and organization of the immune system, including key cells, tissues, and microenvironments.
2. Differentiate between innate and adaptive immunity and explain their interplay.
3. Explain the molecular basis of immune recognition, including antigen receptor structure and genetics.
4. Outline T-cell and B-cell development, activation, differentiation, and memory formation.
5. Analyze antibody- and cell-mediated effector responses, including temporal and spatial coordination.
6. Discuss hypersensitivity, autoimmunity, transplantation, and chronic inflammation.
7. Evaluate immunization and vaccination strategies.
8. Identify causes and consequences of immunodeficiency and the immune response to cancer.
9. Integrate concepts from cell biology, molecular biology, and biochemistry to explain immune system function.

COURSE MODALITY & MATERIALS

Modality

This course will be delivered through **face-to-face lectures** held **twice a week**, with each session lasting **80 minutes**. Class time will include a mix of lectures, interactive discussions, and in-class activities designed to reinforce key concepts.

Required/recommended textbook

There is **no required textbook** for this course. However, you are strongly encouraged to obtain a reliable immunology reference book to support your learning and provide additional context for lecture material.

A recommended resource is **Kuby Immunology, 9th Edition.**
Authors: Jenni Punt, Sharon A. Stranford, Patricia P. Jones, Judy Owen
Publisher: W.H. Freeman

Canvas
All **lecture slides, announcements, assignments, and grades** will be posted on **Canvas**. You are expected to check Canvas **daily** for updates, as important course information will be communicated through this platform.

iClicker
Engagement, participation, and interaction are important elements of the learning process. We will use **iClicker** in this course, so each student must be registered and have a device (computer, smartphone, or tablet) ready for polling.
You may participate using:

- The **iClicker Student App** (iOS/Android)
- The **iClicker Website** (iclicker.com)
- An **iClicker Device**

When setting up your account, select **University of North Texas** as your institution and enter your **EUID** (Canvas login ID) in the *Student ID* field. Add this course to your list; it will appear each time you log in. Join the session at the start of class—connecting to UNT Wi-Fi is recommended.
Your iClicker participation counts toward your engagement grade. If you miss class, you miss that day's points; no make-ups will be given except in approved circumstances.

iClicker is to be used only for your own participation while present in class. Submitting responses for another student, having someone respond for you, or answering when absent is considered academic dishonesty and will be treated accordingly.

CLASS POLICIES:

All students in the course are expected to know and follow these course policies. These policies are in place to ensure a respectful, fair, and productive learning environment.

Attendance

- Attendance will be recorded during each class session, and students will receive two points for being present.
- **Makeup work** will only be provided for **University-Excused Absences** and must be arranged in advance whenever possible.
- Students with medical absences must provide **official documentation within one week** of the absence. Requests will be reviewed on a case-by-case basis.

Classroom Conduct

- **Cell phones, pagers, and other electronic devices** must be silenced during class.
- Laptops, tablets, or phones used for note-taking or iClicker participation must be used **only for class purposes**.
- Be respectful of your classmates' ability to learn and your instructor's ability to teach. Disruptive behavior will not be tolerated.

Late Work

- **Late work will not be accepted**. All due dates are clearly posted on Canvas—plan ahead to meet deadlines.
- If you encounter **technical problems**, contact your instructor or TA **immediately** and **before** the deadline.

Exams

- Arrive at least **5 minutes before** the scheduled start time.
- At the instructor's discretion, students arriving late may not be allowed to take the exam.
- Once you begin the exam, **you may not leave the room and return**.
- All exams will be **closed-book, closed-notes**, unless otherwise specified.

Academic Integrity

- Each student must work **independently** on all assignments unless specifically instructed otherwise.
- **Academic dishonesty**, including cheating, plagiarism, and the use of AI tools will not be tolerated.
- Students found in violation may receive **zero** on the assignment, and possible removal from the course and/or a report to the **Dean of Students Office**.
- If you are found to have plagiarized or used AI, you will also be **ineligible for extra credit** for the remainder of the semester.

HOW TO SUCCEED IN THIS COURSE

Success in this course depends on consistent engagement and active participation. Because immunology is cumulative, each topic builds upon concepts introduced earlier, missing even one lecture can make later material more challenging to grasp. To give yourself the best chance of success:

- Attend every class
- Review lecture slides before class and take detailed notes during the lecture.
- Ask questions during class or email me if something is unclear.
- Study regularly
- Use office hours
- Form study groups

ASSESSMENT & GRADING

Your final course grade will be based on a total of **500 points**, distributed as follows:

- **Exam 1** – 100 points
- **Exam 2** – 100 points
- **Exam 3** – 100 points
- **Exam 4** – 100 points *(given during the university-assigned Final Exam time)*
- **Weekly Quizzes & Activities** – 100 points

Total Possible Points: 500

All **exams will consist of multiple-choice questions (MCQs)** and will be **non-cumulative**, covering only the material from each thematic block. Questions will be drawn from lectures, assigned readings, and in-class activities (including iClicker sessions). After you complete Exam 4, students may take an **optional cumulative test** in the remaining time. This grade may be used to replace the lowest grade from Exams 1, 2, 3 or 4.

Weekly quizzes are designed to reinforce key concepts and help you stay engaged with the material. All quiz scores will count toward your final grade.

Extra Credit Opportunities

Students may choose to participate in additional approved activities for extra points toward their final grade. These activities are optional and will be announced in class and/or on Canvas. Participation is encouraged for enrichment but is not required to earn a passing grade.

GRADE IN COURSE:

Points	Percentage	Grade Letter grades assigned
450+	90%+	A
400-449	80-89.9%	B
350-399	70-79.9%	C
300-349	60-69.9%	D
<299	<60%	F

DISABILITIES ACCOMMODATION

The University of North Texas makes reasonable academic accommodation for students with disabilities. Students seeking accommodation must first register with the Office of Disability (ODA)

to verify their eligibility. If a disability is verified, the ODA will provide you with an accommodation letter to be delivered to faculty to begin a private discussion regarding your specific needs in a course. You may request accommodations at any time; however, ODA notices of accommodation should be provided as early as possible in the semester to avoid any delay in implementation. Note that students must obtain a new letter of accommodation for every semester and must meet with each faculty member prior to implementation in each class. Students are strongly encouraged to deliver letters of accommodation during faculty office hours or by appointment. Faculty members have the authority to ask students to discuss such letters during their designated office hours to protect the privacy of the student. For additional information see the Office of Disability Accommodation website at http://www.unt.edu/oda. You may also contact them by phone at 940-565-4323.

COURSE SCHEDULE

(Tentative – dates may shift)

Theme 1: Foundations of the Immune System

- **Lecture 1:** Introduction & Overview of the Immune System
- **Lecture 2:** Cells, Organs, and Microenvironments
- **Lecture 3:** Recognition & Response
- **Lecture 4:** Innate Immunity
- **Lecture 5:** Complement System

Exam 1: September 18, 2025

Theme 2: Antigen Recognition and Lymphocyte Development

- **Lecture 6:** The Organization and Expression of Lymphocyte Receptor Genes
- **Lecture 7:** The Major Histocompatibility Complex (MHC) and Antigen Presentation
- **Lecture 8:** T-Cell Development
- **Lecture 9:** B-Cell Development

Exam 2: October 16, 2025

Theme 3: Activation and Effector Functions

- **Lecture 10:** T-Cell Activation, Helper Subset Differentiation, and Memory
- **Lecture 11:** B-Cell Activation, Differentiation, and Memory Generation
- **Lecture 12:** Effector Responses: Antibody- and Cell-Mediated Immunity
- **Lecture 13:** The Immune Response in Space and Time

Exam 3: November 12, 2025

Theme 4: Applied and Clinical Immunology

- **Lecture 14:** Allergy, Hypersensitivities, and Chronic Inflammation
- **Lecture 15:** Tolerance, Autoimmunity, and Transplantation
- **Lecture 16:** Immunization and Vaccines
- **Lecture 17:** Immunodeficiency Diseases
- **Lecture 18:** Cancer and the Immune System

Final Exam: December 9, 2025 (8:00-10:00am)

Note: Dates for exams 1-3 may change depending on the pace of the course. However, **exam dates will never be moved earlier** than the published date.

EAGLE ALERT & CALENDAR CHANGE STATEMENT

If UNT closes due to weather or emergency, you will be notified through Eagle Alert. The course schedule is subject to change.

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