

Biology 415/5415: Immunology
Monday 6-9pm, MSB 210
3 semester hours
Syllabus Spring 2014

Instructor: Erin Norcross, Ph.D.
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Office Hours: TBA

Instructional Materials:

Kuby Immunology. 6th edition (2007). Owen, Judy, Jenni Punt, and Sharon Stranford. W. H. Freeman and Co.

Catalog Course Description & Prerequisites:

BIO 415 – Immunology Credits, 3 sem. hrs.

Prerequisite(s): BIO 305 and CHE 142.

A study of multiple aspects of the immune response. This course cannot be changed from credit to audit.

BIO 5415 – Immunology Credits, 3 sem. hrs.

Prerequisite(s): Graduate standing.

A study of multiple aspects of the immune response. This course cannot be changed from credit to audit.

Rationale:

An understanding that the immune response is a double-edge sword, i.e. knowing that there are both beneficial and deleterious effects of the immune response is critical to the knowledge base for any undergraduate or graduate student entering the biomedical professions.

Objectives:

1. describe innate and adaptive immunity.
2. compare and contrast immunogens and antigens.
3. summarize antibody structure and function.
4. explain antigen-antibody interactions.
5. explain antibody structure genetics.
- 6 compare and contrast the biology of B and T lymphocytes.
7. explain the role of the MHC in the immune response.
8. describe the activation and function of T and B cells.
9. explain the role of selected cytokines in the immune response
10. compare and contrast tolerance and autoimmunity.
11. compare and contrast the different complement activation pathways
12. summarize and explain the four types of hypersensitivity.
13. explain transplantation immunology.

Undergraduate Grading: Grading will be based on a weighted point system

4 Comprehensive Lecture Exams (100 pts each)

Quizzes/Assignments (total of 80 pts)

A 100-90% B 89.9-80% C 79.9-70% D 69.9-60% F Below 59.9

Graduate Grading: Grading will be based on a weighted point system

4 Comprehensive Lecture Exams (100 pts each)

Graduate student only presentation & report (50 pts)

Quizzes (total of 80 pts)

A 100-90% B+ 89.9-88% B 87.9-80 C+ 79.9-78% C 77.9-70 D 69.9-60% F Below 59.9

Your grade is calculated by determining the total number of points earned and dividing that by the total number of points possible. This decimal is then multiplied by 100% to determine your overall percentage grade.

It is your responsibility to keep up with your grades throughout the semester!!!

Course Format: This course will be taught in a lecture format supplemented with PowerPoint presentations, primary source articles, case-based learning, and group interactions. The instructor reserves the right to change the format at any time to allow for the enhancement of the learning environment

Quizzes: Every Monday at the start of class, a comprehensive lecture quiz will be given. The eight highest quiz scores will count. If you accumulate more than eight perfect quizzes, each additional perfect score will add one point to an exam score. Missing a quiz **for any reason** will count as a zero for that quiz. There will be NO make-up quizzes.

Exams: There will be a total of four lecture exams and one lab exam. All exams will be **cumulative**. Each exam will contain a minimum of 25% information from the previous exam. There will be no official final exam in that the fourth exam will be comprehensive and will serve as the “final” exam. Exams and quizzes may include, but is not limited to, true-false, multiple choice, fill-in-the-blank, matching, diagrams for labeling, short answer, discussion, and problem solving questions. Missing an exam due to an unexcused absence will result in a zero for that exam. Any exam missed for an excused absence must be made up **within a week**. An excused absence is defined as an absence due to personal illness, death of a relative, or a school related function. You must have an **official letter** before an excused absence is granted. Students missing an exam due to a school related function must coordinate taking their exam with me **prior** to the absence.

Attendance: Mississippi College requires students to attend 75% of all class meetings for courses they are enrolled in. If a student misses more than 25% the class meetings for a course they are to receive a failing grade based on attendance. Strict adherence to Mississippi College's class attendance policy is as follows: “Any student whose absences, whether excused or unexcused, exceed 25% of the class meetings will receive a grade of "F" in the course.” **Attendance in class is expected.** The student (not the instructor) is responsible for any instructions, assignments, or work missed during an absence within one week of the absence. Tests missed during an excused absence must also be made up within one week. Tests missed during an unexcused absence will **not** be made up. **Refer to the Mississippi College Undergraduate Catalog for clarification of any point in relation to attendance.**

Graduate Student Presentation & Paper: Graduate students are expected to give a 15 minute presentation (12 minutes of discussion with 3 minutes question/answer) on a topic assigned by the instructor. Pairs of students will work together to present their topic as a PowerPoint presentation. Good presentations will focus on the immunological aspect of the assigned topic. Furthermore, students will each write a 400 word abstract regarding their topic. The presentations will be worth 30 points and the abstract worth 20 points. Presentations and abstracts are due April 7th.

Behavior: We will maintain a professional, respectful class environment. Please notify the instructor first if there is a perceived problem. **You may not use your cell phone in class!** That includes texting, checking the weather; shopping, using the calculator... you get the point.

Early Alert System: Mississippi College has adopted the practice of finding students early in the semester who may be exhibiting behaviors that could ultimately have a negative impact on their academic progress. These behaviors are often called “red flag” behaviors and include, but are not limited to, excessive absences, poor test grades, and lack of class participation or evidence of non-engagement. Identifying these behaviors early gives the instructor the opportunity to raise the “red flag” on behalf of a particular student so that the student can take the appropriate action to redirect his/her progress. The system alerts the student, the student’s advisor, and the Office of Student Success.

These messages are intended to help a student recognize an area of concern and to encourage him/her to make some choices to improve the situation. When a student receives an Early Alert message, the student should quickly make an appointment to talk with his/her professor about the situation. Also, students can make full use of the Office of Student Success to set academic goals and connect to campus resources.

Academic Integrity: All students are expected to complete their assignments based on their own skills and knowledge, unless otherwise directed by the instructor. Studying as groups is highly recommended and suggested. All instances of academic dishonesty will also be reported to the department chair, the division and as appropriately to the college administration (to include the Dean of Academic/Student Affairs or other administrative officials) as necessary. The instructor also reserves the right to remove a student or students from the class as deemed necessary due to acts of academic indiscretion. Mississippi College students should display academic integrity in all situations. Honesty is expected from all students at all times. Dishonesty, such as cheating, plagiarism, and falsifying information, is a serious offense and is subject to severe penalty. Adherence to the Mississippi College “Honesty Policy” (Mississippi College Undergraduate Bulletin) will be followed. **Refer to the Mississippi College Undergraduate Catalog for clarification of any point in relation to Academic Integrity.**

Writing Center

The Mississippi College Writing Center, supervised by Dr. Steve Price, offers writing consultations free-of-charge to MC students. The Center is staffed by highly-qualified undergraduate tutors who conduct interactive, one-on-one sessions with students of all disciplines. The goal is to help writers at any stage of their writing process, from choosing topics to organizing their thoughts, from deep revision to grammar.

To schedule an appointment, drop by the LRC area on the first floor of the Leland Speed Library; call 601.925.7289; or email WritingCenter@mc.edu. Walk in visits are also available.

Special accommodations at Student Counseling Services: In order for a student to receive disability accommodations under Section 504 of the Americans with Disabilities Act, he or she must schedule an individual meeting with the Director of Student Counseling Services **immediately upon recognition of their disability** (if their disability is known they must come in before the semester begins or make an appointment **immediately** upon receipt of their syllabi for the new semester). The student must bring with them written documentation from a medical physician and/or licensed clinician that verifies their disability. If the student has received prior accommodations, they must bring written documentation of those accommodations (example Individualized

Education Plan from the school system). Documentation must be current (**within 3 years**). The student must meet with SCS **face-to face** and also attend two (2) additional follow up meetings (one mid semester before or after midterm examinations and the last one at the end of the semester). Please note that the student may also schedule additional meetings as needed for support through SCS as they work with their professor throughout the semester. Note: Students must come in **each semester** to complete their Individualized Accommodation Plan (example: MC student completes fall semester IAP plan and even if student is a continuing student for the spring semester they must come in again to complete their spring semester IAP plan).

Student Counseling Services is located in Alumni Hall Room #4 or they may be contacted via email at: mbryant@mc.edu or rward@mc.edu or by phone at 601-925-7791.

Important college dates:

January 20, MondayMartin Luther King Holiday, No Day or Night Classes
 January 23, Thursday Last Day To Drop a Full Semester Class with 100% Tuition Refund
 March 10-16.....Spring Break
 March 17, Monday Classes Resume
 March 21, Friday LAST DAY TO DROP A FULL SEMESTER CLASS
 April 21, Monday (No day classes; night classes will meet) Easter Holiday - Offices Closed
 April 28-30, Monday – WednesdayDead Days
 April 30, Wednesday Last day of classes; night exams begin
 May 1, Thursday Study Day
 May 2- May 7, Friday, Saturday, Monday, Tuesday, WednesdayFinal Exams
 May 9-10, Friday and Saturday Graduate and Undergraduate May Graduations

*****Instructors have the right to change the syllabus as needed. This may include, but is not limited to exam dates, material covered, etc.*****

Course Outline & Schedule:

Week	Date(s)	Topic(s)/Reading(s)
1:	1/13	Introduction to Immunology (Chapters 1-2)
2:	1/20	<i>Martin Luther King Jr. Day = No classes meet!!</i>
3:	1/27	Innate Immunity (Chapter 3)
4:	2/3	Complement (Chapter 7)
5:	2/10	Antigens and Antibodies (Chapter 4); Exam #1
6:	2/17	Organization and Expression of Immunoglobulin Genes (Ch. 5)
7:	2/24	MHC and Antigen Presentation (Chapter 8)
8:	3/3	T Cell Receptor (Chapter 9); Exam #2
9:	3/10 – 14	<i>Spring Break = No classes meet!!</i>
10:	3/17	T Cell Maturation, Activation, and Differentiation (Chapter 10)
11:	3/24	B Cell Generation, Activation, and Differentiation (Chapter 11)
12:	3/31	B Cell Generation, Activation, and Differentiation (Chapter 11)
13:	4/7	Exam #3 ; Graduate Student Presentations
14:	4/14	Cytokines & Inflammation (Chapters 13-14)
15:	4/21	Hypersensitivity, Tolerance, and Autoimmunity (Chapters 15-16)
16:	4/28	Transplant Immunology & Vaccines (Chapters 17-18)

Final Exam/Exam 4: Monday, May 5th at 6:00pm