



March 17	Putting it all together:: T & B cell interaction	11, pages 269-298
March 22	Cytokines	12, pages 303-324
March 24	Complement	13, pages 329-349
March 29	Cell-Mediated Effector Responses	14, pages 351-370
March 31	Leukocyte migration and inflammation	15, pages 371-392
April 5	Hypersensitivity Reactions	16, pages 395-419
April 7	Hypersensitivity Reactions	16, pages 395-419
April 12	<b>EXAM # 4</b>	
April 14	Immune System in Health and Disease and Autoimmunity	17, pages 425-446 20, pages 497-515
April 19	Vaccines and Transplantation	18, pages 449-464 21, pages 517-536
April 21	AIDS	19, pages 467-477
April 26	Cancer and the Immune System	22, pages 539-563
April 28	Paper Presentations	
May 3	<b>Final Exam Week- No Class</b>	
<b>May 5</b>	<b>Final- Exam # 5: 4:00-6:00 PM</b>	

**Assigned Textbook:** Immunology, 5<sup>th</sup> Edition

Author: Richard Goldsby, Thomas Kindt, Barbara Osborne, and Janis Kuby  
W.H. Freeman and Company, New York, 1999

**Course Description:** Immunobiology is a course geared for the advanced upper level Junior/Senior and Graduate student. The student will be expected to have a background in concepts learned from Microbiology, Cell Biology, and Genetics. When the student completes the course in Immunobiology they will be able to read and understand peer evaluated articles in prestigious journals. The student will be current in their knowledge of immunology and immunological concepts and techniques. The course will cover and in depth description of antigen recognition and clearance, interactions between APC's, and T and B lymphocytes, developmental and activation processes involved in immune cell responses, discussion of AIDS, Cancer and Transplantation research, and how the immune system relates to health and disease.

**Course Grading:** There will be 5 exams, based on 500 percentage points. These exams will be made up of multiple choice, true-false, matching and short answer essay questions. The questions will attempt to examine the student's level of understanding rather than ability to memorize the important concepts presented. Thus, the student will have to be able to interpret and synthesize and put together the ideas presented. While each exam will cover the material presented since the previous exam, since an understanding of the new material that is presented is based on a strong foundation of previous material learned, the exams will often cover some of the material from earlier exams.

In addition to the exams, each student (or groups of two students each??) will write and present a relevant and recent research topic in immunology. This research paper will be a **powerpoint** presentation given to the class towards the end of the semester. The assignments will be given within the first three weeks of class. The presentation will be worth 75 points, and will be graded on the following criteria: amount of research done {at least **two** recent articles should be reviewed}, the presentation of the material in a clear manner, the student's understanding of the material, the ability of the student to demonstrate relevance of the material to understanding immunology, a description of up-to-date technology used in the research, and the powerpoint slide program itself.

The course will also employ, at times, a FORUM DISCUSSION and/or WebCT format on the IPFW network. Each student will be expected to, ON A BI-WEEKLY BASIS, turn in a title and abstract from a journal that is related to a topic in immunology. Each student will be graded on their participation in the Forum discussion on each question presented. Participation is worth 50 points.

Class attendance and class participation (I will call on you when least expected ☺☺☺) will be required of all class members. If an exam has to be made up the student MUST inform the professor PRIOR to the exam and the make up will be composed strictly of essay questions. The exam must be made up within two class meetings of when the exam was scheduled. The professor can be reached either through e-mail or direct voice contact (PHONE for those used to the old fashioned way of communicating!!), or direct eye contact (person-to-person together in the same room). I have found that despite having either someone else's notes or powerpoint notes, that much is missed in overall understanding when students are not in class.

*Immunobiology Laboratory, BIOL 565*  
*Spring, 2005*  
**Tentative Schedule**  
**Tuesday & Thursday 6:00-7:15 – SB 367**

- Week 1: January 11<sup>th</sup> – Introduction to the Laboratory in Immunobiology  
Organization of the Labs  
Tour of the Facilities: Lab, Lab in SB 302, Labs in LSRC, animal rooms in LSRC
- Week 2: January 18<sup>th</sup> – Cells and Organs of the Immune System  
Dissection:  
    Bone marrow cell isolation  
    Spleen cell isolation  
    Thymus cell isolation  
Wright's Stain
- Week 3: January 25<sup>th</sup> – Cell counting (hemocytometer, Coulter Counter)  
B cell isolation & purification (Nylon wool & Ficoll Hypaque)  
T cell isolation & purification (Nylon wool & Ficoll Hypaque)  
Macrophage enrichment (Thioglycollate injection IP)  
Phagocytosis
- Week 4: February 1<sup>th</sup> – Preparation of Sterile Cell Cultures- Proliferation with mitogens (MTT)  
Preparation of Brain Homogenate for Western Blot
- Week 5: February 8<sup>th</sup> – Complement inhibition assays
- Week 6: February 15<sup>th</sup> – Precipitation assays (Ochterlony)  
Forensics Ochterlony test
- Week 7: February 22<sup>th</sup> – Immunoelectrophoresis
- Week 8: March 1<sup>st</sup> – PAGE and Western Blots
- March 8<sup>th</sup> – Spring Break**

Week 9: March 15<sup>th</sup> – PAGE and Western Blots

Week 10: March 22<sup>nd</sup> – ELISA assays (Plate Preparation)

Week 11: March 29<sup>th</sup> – ELISA assays

Week 12: April 5<sup>th</sup> – Jerne Plaque Assay

Week 13: April 12<sup>th</sup> – Mixed Lymphocyte Reaction (MLR) HLA compatibility

Week 14: April 19<sup>th</sup> – Make-up Day

Week 15: April 26<sup>th</sup> – Make-up Day

There will be no lab book for this course. The student should purchase a **lab note book** and keep a daily/weekly journal of the experiments, the protocol, and observations that are made. Your lab note book will be collected at the end of the semester and graded. You may pick up the lab book at the end of the grading period if you want it back.

The grade that you receive will be determined by lab reports that you write and turn in after each experiment. These reports should completely describe the general protocol used, the experimental design, and the results observed. It should be written so that a person coming to you for advice on how to run an experiment will be able to perform that experiment by referring only to your lab book! WRITE EVERYTHING DOWN IN AN ORGANIZED MANNER 😊😊😊😊