

# IMMUNOLOGY

## GENERAL INFORMATION

Spring, 2011

### COURSE ITEMS

#### TITLE & CREDIT:

BIOB 410, Immunology. 3 semester credits, no laboratory.

#### DESCRIPTION:

Immunology is the study of the immune system and how it provides for maintenance of homeostasis, especially in defense mechanisms that protect vertebrates from infection by pathogenic microorganisms. It is among the most intensely investigated disciplines in all of science over the last three decades. It is a complex interdisciplinary science which has relied upon chemistry and biochemistry, molecular biology and molecular genetics, anatomy and physiology, evolution, developmental biology and pathology, as well as infectious disease microbiology, for its own development.

#### OBJECTIVES: relaxed

#### disciplines

We have an ambitious objective in this course. We will investigate, in a rigorous but academic environment, the discipline of Immunology. My objective in immunology is to convey to you the complexity, logic, importance and beauty of the functioning immune system. Because the discipline of immunology is still young, which means that there are many problems yet to be solved, it is less "factual" and less structured than most in science. It is also very experimental. We will attempt to understand the functioning immune system by defining the problems of the field, and then working through the experimentation that has led to, or is leading to solving these problems.

#### PREREQUISITES: through

Students should have successfully completed 3 years of biology and chemistry (i.e. biochemistry and molecular biology). More important than having completed prerequisite course work is the ability and discipline to work independently in advance of class meetings, and the thoughtfulness and confidence to contribute meaningfully to class discussions. Patience is also a desirable behavior when learning immunology. This is a challenging, advanced course, and not a class for freshman or sophomore level students.

#### FORMAT: daily

I have no intentions of giving formal lectures on a daily basis. Rather, we will have discussion sessions. I will assign readings from our text. I will also give you outlines to follow with items of importance noted so that you have a guide to follow and so that you do not feel responsible for reading every page of every chapter in our text in exquisite detail. Reading and participation in discussions is mandatory, and will be a major factor in determining your overall grade.

#### CLASS MEETINGS:

12:50 - 1:50 pm, MWF, COE 423.

### INSTRUCTOR ITEMS

#### INSTRUCTOR:

Michael Dennis  
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Phone and voice mail: 657.2016  
Email: mdennis@msubillings.edu  
Home Page: [www.msubillings.edu/ScienceFaculty/Dennis/](http://www.msubillings.edu/ScienceFaculty/Dennis/)

#### OFFICE HOURS:

MWF: 10:00-11:30 am.  
Other hours: By appointment, or whenever you can catch me in my office.

#### CONSULTATIONS:

will

It is your responsibility to monitor your own progress in class. I encourage you to visit with me regularly to keep track of your progress, but I cannot precisely predict the grade you earn in this course.

Remember the words of the famous philosopher Yogi Berra:

"Predicting things is hard, especially about the future."

## EVALUATION ITEMS

- PROBLEMS:** There will be a daily problem/question that is to be solved in class, and that will be graded. These are designed to ensure that you keep up with the volume of challenging material that we cover. More important, these problems are a mechanism to challenge you to synthesize and utilize the information that you study and that we then cover in class. Many of the questions require interpretations of experimental data.
- EXAMS:** There may be no written examinations. There may be two oral exams: a midterm and a final. I reserve the right to give oral exams in small groups or to give additional oral examinations to students who are less inclined to actively participate in class discussions. You cannot earn an 'A' in this course without an excellent performance in the comprehensive final oral exam.
- ASSIGNMENTS:** I reserve the right to make additional reading or writing assignments, or require written examinations. Hopefully, we will have the opportunity to read some original literature and write succinct critiques of the research.
- ASSESSMENT:** In this course, competency and academic growth are more important than the ability to do well on a written exam. Grading is therefore based on your demonstration of competency. To do well in this course you must be disciplined in your studies and willing to be thoughtful and expressive during class discussions and oral examinations.
- GRADING:** Grades will be based on attentive attendance, demonstrated comprehension of reading assignments, quality of solutions on the daily problems, and contributions to class discussions, as well as the oral exams. If there are additional assignments, I will also use them when determining your grade. Your continued enrollment in this course constitutes your understanding and acceptance that *grades will be determined at the discretion of the instructor*. There is no fixed grade scale: Grade standards are given below.
- STANDARDS:** My interpretation of the university grading scale is as follows:
- |                 |  |
|-----------------|--|
| A = Excellent   | Thorough understanding of all major concepts;<br>and, concepts supported by extensive details.   |
| B = Good        | Thorough understanding of most major concepts;<br>and, concepts minimally supported by details.  |
| C = Average     | General understanding of most major concepts;<br>but, deficiency of, or errors in, many details. |
| D = Not Passing | Weak grasp of even major concepts;<br>or, extensive errors in concepts and details               |
| F = Failure     | Weak grasp of major concepts and many errors in details;<br>or, academic misconduct.             |
- ACADEMIC HONESTY:** It is your responsibility to familiarize yourself with the Student Affairs Handbook (in particular Part IX, B.1, Academic Misconduct). All students are expected to adhere to the highest standards of academic honesty and refrain from any action which is dishonorable or unethical. In all exams, papers, labs, etc., students are expected to submit their own work entirely. Cheating or alleged cheating in any manner will result in a grade of 'F' for the class.

## CLASS ITEMS

- TEXT:** *The Immune System*, 3e, Parham, 2009. The text is well organized, nicely illustrated and reasonably easy to read. This is a highly regarded, frequently used text, and students enjoy it. The text is regularly used in Clinical Lab Science programs as well as medical schools. I have other references available when you need additional information or more detailed explanations of difficult topics.
- SCHEDULE:** We will cover immunology topics sequentially, as they are presented in the assigned text, with only minor changes. We will attempt to maintain the Schedule of Events, but

we will deviate if necessary. I can promise you we will fall behind early, but that we will finish the entire text and in sufficient detail to prepare you for further study.

**ATTENDANCE:** Attendance in class is mandatory. Some absences are understandable, but attentive attendance will be a significant factor in determining your final grade.

**READING GUIDE:** Use the following as a guide for the intensity of your reading effort:

- Read very carefully* = Read and study hard, even the details. The material is very important and fundamental to basic immunology.
- Read carefully* = Read and study well, even the details. The material is important and will be used at later times in the course.
- Read* = Read and understand the concepts well. The concepts are important but the details are not worth memorizing.
- Review* = Read for background and perspective. The material is valuable, it helps provide insight, but it is not essential to 'study' it.
- Summarize* = Read superficially if time permits. The material is interesting or informative, but may not be covered in class.
- Skip* = We will not cover this in class.

**DISABILITIES:** Students with disabilities should contact Disability Support Services so that appropriate accommodations can be made as quickly as possible.

## SUMMARY

**RECOMMENDATIONS:** I recommend you proceed as follows:

- Prepare for class sessions a day (or more) in advance of class.
- Prepare by reading the assigned material using the guidelines provided.
- Prepare a notebook of your work (i.e. class notes).
- Prepare by learning important concepts first, and then supporting the concepts with technical details.
  
- Come to class ready to listen...not to take notes.
- Come to class ready to think...not to be lectured to.
- Come to class with answers...not just questions.

**EXPECTATIONS:** You will be expected to prepare for daily classes and actively participate in class discussions. Each class should require 2-3 hours of preparation. If you are spending more than 4 hours you may be trying to do too much! You will be constantly making decisions about what to study, and to what degree. Frankly, that is what I expect you to do.

**RESPONSIBILITY:** In summary, I expect you to become an active participant in the learning process. You are responsible for your progress in this class, and I am responsible for guiding you and helping you achieve the goals you set for yourself.