Basic and Clinical Immunology  
2015-2016  
(Phila- IMSP 573S-Fall; IMSP 574S-Winter)  
Credit hours: 3 credit hours total  
(Fall Term 1.5 and Winter Term 1.5 respectively)  
Drexel University College of Medicine

I. FACULTY

<table>
<thead>
<tr>
<th>FACULTY</th>
<th>DEPARTMENT</th>
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<td>215.762.1289</td>
</tr>
</tbody>
</table>

Direct Faculty Assistance: Students can call or communicate by email with the faculty responsible for a given lecture during the week of such lecture, if clarification of specific points is needed. The designation QL = Queen Lane offices and NCB = Center City offices (18th floor).

II. COURSE ADMINISTRATION

The Course Director for Basic and Clinical Immunology is Dr. Kirsten Larson. Her office is at Queen Lane in room G47. Preferred method of communication is through email klarson@drexelmed.edu. All administrative matters relating to the course should be addressed to her. It is the responsibility of the student to notify the course director and/or the professional studies office administrators when circumstances arise that prevent the student from meeting his/her responsibilities in the course. Failure to do so may cause unnecessary complications. To complement the course, weekly office hours for IMS/MMS/DPMS students at the Center City Campus will be offered by Drs. Vanessa Pirrone and Christina Kollias. In most instances, office hours will be provided in the NCB 18th floor conference room.

III. COURSE OVERVIEW

The Basic and Clinical Immunology course is designed to provide a foundation in the basic concepts of immunology and then illustrate the role of immune system in clinical medicine. It commences with the important components (cells, tissues, antibodies, immunoglobulins, and cytokines) involved in regulation and host defense against infectious agents. Introductory lectures serve to describe and differentiate between innate mechanisms and adaptive immunity mediated by functional B and T lymphocytes and their products. B cell and T cell activation, regulation, and tolerance will be described. Cellular interactions between cells and the cytokines made by helper T cell subsets and other components of the immune system (B cells, CTL., NK cells, macrophages, eosinophils etc.) will be integrated. Finally, clinical immunology will be discussed. Topics covered include: tumor immunology; immune responses against microbial threats; hypersensitivity reactions including allergy, asthma and anaphylaxis; autoimmunity and autoimmune diseases; mechanisms of transplant rejection; and immunodeficiency disorders.
IV. COURSE MATERIALS – TEXTBOOKS AND TECHNOLOGY

Students are strongly advised to purchase either the Parham or Abbas text; however, if the student has another recent immunology textbook (2008 or later), it can be used. Students should remember that certain content has changed over the past few years.

“Required” Texts:


   This book is available online through the Drexel College of Medicine Library. This short book does an excellent job of highlighting major concepts. It was created specifically for the needs of medical students. This text is HIGHLY RECOMMENDED to give a broad understanding of the material.


   This is a well-written text specifically created for medical students. It uses human data and figures where possible. Faculty will be strongly encouraged to use it as a resource for their lectures.

Other recommended textbooks (order is based on preference):

  This text is extremely well written. It provides better descriptions along with an experimental approach to teaching immunology.

  This book takes a very elementary approach to immunology and integrates it with microbiology. Students who have not studied immunology before may find it a useful reference.

  This text provides a very detailed discussion of immunology. It includes many of the same figures in Parham’s textbook. If students used this text in a previous course, they generally like it. Students who have never had immunology generally find the depth of this textbook overwhelming.

Technology:

Course notes will be provided in a PDF format via the Webcampus website (http://webcampus.drexelmed.edu/pmph_courses/). It is the student’s responsibility to have a mechanism to download the files. These requirements do not extend beyond those required of the IMS, MMS, and DPMS programs.
V. COURSE OVERVIEW

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VI. LEARNING OBJECTIVES

Knowledge

Basic and Clinical Immunology presents the most important principles governing the function of the immune system. The students are encouraged to synthesize these concepts into a working understanding of immune responses through a number of small group activities and case studies. Upon successful completion of the Basic and Clinical Immunology course, the student should be able to …

1. Describe the functions of (a) innate immunity; (b) cellular immunity and (c) humoral immunity;
2. Describe how these components communicate and interact to provide immune defense;
3. Describe an immune response to extracellular bacteria, intracellular bacteria, and a virus from initiation to resolution
4. Discuss how the immune system develops and maintains tolerance;
5. Describe how the immune system can damage “host” tissues resulting in disease through the hypersensitivities, autoimmunity and transplantation.

A set of learning objectives is provided at the beginning for each lecture and small group activity. Students should utilize these as a guide throughout the course.

Drexel Student Learning Priorities

In addition to developing core knowledge of the course content, the five small group and conference activities will provide the students with an opportunity to develop a series of professional skills. During the sessions, students will need to demonstrate critical thinking and information literacy as they work in a team to interpret clinical data in the context of course material and/or identify outside sources to answer case specific questions. During the sessions, the teams will need to work together effectively to achieve shared goals.

VII. ASSIGNMENTS AND LEARNING ACTIVITIES

We realize that different students learn best in different ways. Some learn best when they read, others when they hear a lecture. Some prefer “just the facts”, while others prefer descriptions of clinically-oriented situations. Some do fine with passive learning, others require interactive learning. In an effort to fulfill the needs of all of our students, our faculty members employ various teaching strategies:

1. Fact-oriented lectures and textbook readings. Questions are encouraged.
3. Small group problem-solving exercises were designed to reinforce important concepts, and to practice and improve verbal skills, professional peer interaction skills, and ability to critically evaluate data.

IMS/MMS/DPMS students will be taught through multiple online lectures. Students are also expected to participate in multiple small group and discussion sessions. There will be three small group sessions that involve working immunological through problems with 4-6 peers. The students will also be assigned one case study during the second half of the course where they are responsible for helping the faculty member during a conference to guide the class in integrating clinical immunology with medicine. **Attendance is mandatory for all sessions. Students can be excused by the professional studies office because of emergency, illness, OR medical school interview.** It is the student’s responsibility to make up any of the material missed.

VIII. **STUDENT EVALUATION**

**Examinations**

This course will include 3 examinations that consist of multiple-choice questions. In most cases, students will receive their grade within 24 hours of the assessment unless there is a technology failure. Each content hour will have 3-5 questions per lecture, and many questions will integrate more than one lecture. The overall ratio of questions to course hour will be determined by the faculty based upon the content’s significance.

Quizzes are designed to give students timely and direct feedback on how well they understand the material; however, their scope and complexity are different than the examinations. Because immunology is a cumulative discipline, studying for them should also prepare the student to take full advantage of upcoming lectures and small group activities. The schedule lists the lectures covered on each of the quizzes. **Students should keep in mind that immunology is a cumulative discipline; therefore, they will be required to remember earlier major concepts on subsequent quizzes and exams.**

Students will be responsible for the material in:
- Online lectures
- Lecture handouts
- Small group activities
- Case applications
- Case presentations

**BREAKDOWN OF COURSE GRADE**

<table>
<thead>
<tr>
<th>Section</th>
<th>Online lectures</th>
<th>Small Group</th>
<th>Self-study</th>
<th>Review</th>
<th>% of course content</th>
<th>Number of points † (% of grade‡)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic Immunology</td>
<td>~12.5</td>
<td>5</td>
<td>0.5</td>
<td>5</td>
<td>~60%</td>
<td>Exam 1 22 pts (~16%) Exam 2 43 pts (~28%)</td>
</tr>
<tr>
<td>Nov - Dec</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clinical Immunology</td>
<td>7.5</td>
<td>6.5</td>
<td>0</td>
<td>1</td>
<td>~40%</td>
<td>Exam 3 70 pts (or 44%)</td>
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<tr>
<td>Jan - Feb</td>
<td></td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>Participation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>6 pts (or 3%)</td>
</tr>
</tbody>
</table>

† This number indicates the approximate number of questions on each exam based on a course with 145 points. * The last exam will include approximately 40 basic comprehensive questions in addition to the questions from the module. ‡ Percentages are only approximate estimates of the grade.

**Student Self-Assessment**
In order to self-monitor progress during the course, students are provided questions at the end of most sessions, sets of practice problems over broad areas of content, and online self-assessment quizzes. This should give students timely and direct feedback on how well they understand the material. It should be noted that these questions do not have demonstrate the scope and complexity of those on the examinations. Because immunology is a cumulative discipline, studying for them should also prepare the student to take full advantage of upcoming lectures and small group activities. In addition, the course will integrate multiple problem-solving sessions and clinical case studies to facilitate integration of course content in a clinically relevant manner.

Attendance and participation in the group activities will contribute to the participation portion of the grade. Practice problem results will not be counted towards the course grade. Please note that, occasionally, the course website and/or the Webcampus server experiences problems. In the event that access or other malfunctions occur, every reasonable attempt will be made to make these materials available in a timely manner. However, in no cases will difficulties in accessing exercises or keys result in altering the course schedule.

**Grading (IMS, MMS, and DPMS (Year 2) Students)**

The final grade will be composed of the results of all Basic and Clinical Immunology questions on examinations and the participation points. The determination of grades A through F will be made by the faculty after review. As a general guide, students with the following overall course averages will receive grades based on the following cutoffs:

- A 94%
- A- 91%
- B+ 89%
- B 84%
- B- 80%
- C+ 76%
- C 70%
- D 67%
- F ≤66%

The faculty reserves the right to modify these guidelines upon completion of the course; however, any changes would be in the student’s favor. IMS, MMS, and Year 2 DMPS students can remediate a D in this course by exam. Successful passage of this remediation exam with a grade of 70 or above will result in a change of the student’s final grade to a C. IMS, MMS, and Year 2 DMPS students cannot remediate an F in this course by exam.

**DPMS (Year 1) Students** The final grade will be composed of the results of all Basic and Clinical Immunology questions on examinations and quizzes and the participation points. The determination of grades of Pass and Fail will be made by the faculty after examination. To receive a passing grade, students must receive a grade of 70% or above. The faculty reserves the right to modify these guidelines upon completion of the course; however, any changes would be in the student’s favor. Students cannot remediate a failure in this course by exam.

**Remedial Work**

If students have a final course average of C- or D, they may sit for a cumulative remediation exam. If the student passes this remediation exam, their original course grade will be replaced with the final letter grade of C. Students may not earn a grade higher than a C when utilizing the remediation option unless the student retakes the course the next year.

**IX. COURSE POLICIES**

**Make-Up Exams**
In the event of illness or other circumstances that prevent the student from sitting for an examination, quiz, or activity, students must contact the Director of the Division of Pre-medical and Pre-health Programs, Dr. Blanche Young (blanche.young@drexelmed.edu). With permission from Dr. Young, a make-up assessment will be scheduled. Please consult current Student Handbook of the Graduate School of Biomedical Sciences and Professional Studies for further policy details.

**Please keep in mind that failure of the student to make up the quiz by the time of the next exam will result in a grade of zero.**  THIS COURSE DOES NOT DROP GRADES

**Make-Up Small Group Activities**

Students can be excused by the professional studies office because of emergency, illness, **OR medical school interview**. If possible, students should contact the course director **prior to the absence**, and he/she will be given credit for the activity. It will be the student’s responsibility to learn the material missed.

**Student Self-Assessment**

Self-assessments do not count towards the student’s grade; therefore, they cannot be made up.

**School Closures**

The course runs from November 3, 2015 until February 3, 2016. For closing or delayed opening of Drexel University College of Medicine center city campus due to snow or other weather emergencies, please visit [http://www.drexelmed.edu/News/weather.asp](http://www.drexelmed.edu/News/weather.asp) (this page only lists the IMS/MMS/DPMS programs, but applies to all of the programs within the Division of Pre-medical and Pre-health Programs). Alternatively, call 215-762-UNIV (8648), or listen for the school code (213) on radio station KYW-1060 (AM). Cancelled classes will be made up at the end of the semester, time permitting.

**Course Drop/Withdrawal Policy**

Please note that “dropping” a course and “withdrawing” from a course are distinct actions and are governed by different policies. The University’s Course Drop and Course Withdrawal Policies are available at [http://www.drexel.edu/provost/policies/course_drop.asp](http://www.drexel.edu/provost/policies/course_drop.asp). Specific deadlines for course withdrawals will be emailed to all Division of Pre-medical and Pre-health students in the fall of 2015 semester.

**Academic Integrity**

Students are expected to exhibit the highest degree of integrity and professionalism in all aspects of their work. Anyone found violating the honor code on an assignment or examination in this course will automatically receive a grade of 0 (zero) for that particular assignment or test. Plagiarism on any assignment will result in a grade of 0 for that assignment. Students will adhere to professional standards of scholarly conduct as outlined in the current Student Handbook of the Graduate School of Biomedical Sciences and Professional Studies. Academic misconduct will be handled per the Official University Policy concerning academic misconduct as outlined in [http://www.drexel.edu/provost/policies/academic_dishonesty.asp](http://www.drexel.edu/provost/policies/academic_dishonesty.asp) and [http://www.drexel.edu/studentlife/judicial/honesty.html](http://www.drexel.edu/studentlife/judicial/honesty.html)

**ACADEMIC SUPPORT SERVICES**

**Tutoring**
The Center for Academic Success attempts to provide a tutor for all courses in addition to support services including: test-taking, writing, study skills, computer skills and English as a second language. Tutoring is a free service. For more information please contact:

Center for Academic Success (CAS)
http://www.drexel.edu/cchc/studentlife/Departments/Academic_Success
Drexel University, Center City Hahnemann Campus
New College Building - 245 N. 15th St.
Suite 1602, Mail Stop 526
Philadelphia, PA 19102
215.762.8121

Disability Services
Students with disabilities requesting accommodations and services at Drexel University need to present a current accommodation verification letter (AVL) to faculty before accommodations can be made. AVL’s are issued by the Office of Disability Services (ODS). For additional information, contact ODS at

Office of Disability Services (ODS)
http://www.drexel.edu/oed/disabilityResources/students
3201 Arch St., Street, Suite 210
Philadelphia, PA 19104
215.895.1401 (V) or 215.895.2299 (TTY)