BIO 330-01, Immunology/Virology, Fall 2011

BIOL 330: Immunology/Virology – Fall Semester, 2011

Time: Monday, Wednesday, Friday (10:00 am - 10:50am)
Location: Palmer Building 208

Instructor: Oliver Sturm, PhD, sturmo@rhodes.edu, phone: 901 356 3202

Course Goal:
The objective of this course is to provide a thorough introduction into virology and immunology.
The virology lectures first introduce the principles of virus structure, replication and genetics. Then we will use case studies to gain insight into the strategies that viruses use to spread from one individual to another, to enter and "hijack" the biosynthetic machinery of the host cells and to evade the immune response of the host organism. By investigating the reproduction strategies of different viruses we can infer the pathological consequences of viral infection and evaluate efficient therapies. Finally, we will also study various virus related diseases and their epidemiology.
The immunology lectures explain the structure and the function of the cells and organs of the human immune system. The mechanisms and components of the innate and adaptive immune responses are covered. Then we apply this knowledge by studying topics of clinical relevance such as immunological tolerance, autoimmune diseases, transplantation immunology and the immune response to pathogens and cancer immunotherapy.

Reading Material:
"Kuby Immunology", 6th edition ("K")
"How pathogenic viruses work" by Lauren Sompeyrac ("S")

Course schedule:

	Date	Contents	Reading
1	8/24/11	History of Immunology	K Ch.1
2	8/26/11	Overview of the Immune response	S Ch.2; K Ch. 1
3	8/29/11	Infectious Diseases and Pathogens	
4	8/31/11	Viruses	S. Ch.1
5	9/2/11	Prions	
6	**9/5/11**	**Labor Day – no class**	
7	9/7/11	Respiratory Viruses – Influenza	S Ch.3
8	9/9/11	Respiratory Viruses – Rhinovirus and Measles	S Ch.3
9	9/12/11	Enteric Viruses – Rotavirus	S Ch.4
10	9/14/11	Enteric Viruses – Adenovirus, Hepatitis A	S Ch.4
11	9/16/11	Parentally transmitted viruses –Hepatitis B/C	S Ch.5
12	9/19/11	Parentally transmitted viruses –HTLV	S Ch.5
13	9/21/11	Sexually transmitted viruses – HIV	S Ch.6
14	9/23/11	Sexually transmitted viruses - Herpes Virus, Papillomavirus	S Ch.6
15	**9/26/11**	**Exam 1**	

16	9/28/11	Cells of the Immune System	K Ch.2
17	9/30/11	Organs of the Immune System	K Ch.2
18	10/3/11	Innate Immunity	K Ch.3
19	10/5/11	Antigens and Antibodies Part1	K Ch. 4
20	10/7/11	Antigens and Antibodies Part2	K Ch. 4
21	10/10/11	Immunoglobulin Genes	K Ch. 5
22	10/12/11	Antigen-Antibody Interactions (Applications)	K Ch. 6
23	**10/14/11**	**Half term exam**	
24	**10/17/11**	**Fall break – no class**	
25	10/19/11	The Complement System	K Ch. 7
26	10/21/11	MHC Complex and Ag Presentation	K Ch. 8
27	10/24/11	T-Cell Receptor	K Ch. 9
28	10/26/11	T-Cell Part 1	K Ch. 10
29	10/28/11	T-Cell Part 2	K Ch. 10
30	10/31/11	B-Cell Generation, Activation, Differentiation Part 1	K Ch. 11
31	11/2/11	B-Cell Generation, Activation, Differentiation Part 2	K Ch. 11
32	11/4/11	Cytokines	K Ch. 12
33	11/7/11	Leukocyte Activation and Migration Part 1	K Ch. 13
34	11/9/11	Leukocyte Activation and Migration Part 2	K Ch. 13
35	**11/11/11**	**Exam 3**	
36	11/14/11	Cell-Mediated Cytotoxic Responses	K Ch. 14
37	11/16/11	Hypersensitivity Reactions	K Ch. 15
38	11/18/11	Tolerance and Autoimmunity	K Ch. 16
39	11/21/11	Transplantation Immunology	K Ch. 17
	11/23/11	**Thanksgiving – no class**	
	11/25/11	**Thanksgiving – no class**	
40	11/28/11	Immune response to Infections Diseases	K Ch. 18
41	11/30/11	Vaccines	K Ch. 19
42	12/2/11	Immunodeficiencies and AIDS	K Ch. 20
43	12/5/11	Cancer and the Immune System	K Ch. 21
44	12/7/11	Experimental Systems	K Ch. 22
45	12/9/11	Review	
46	**12/10/11**	**Final exam – Saturday, 8:30 am**	

Slides: Powerpoint slides and review articles will be provided by email, on the College Acad_Dept_Pgm file server or via the Moodle course management system.

Attendance and Class Preparation: Attendance is required at all sessions. You will be expected to have read assigned material prior to class and to participate fully in discussions of the readings. Poor attendance, poor preparation, or insufficient participation in discussions will result in a decrease of up to ten percent of the final grade.

Examinations: Exams and quizzes must be taken at the scheduled times except in cases of medical or personal emergency. In such cases, the Course Instructor must be

consulted for approval **prior to the exam time or as soon as possible afterwards**. The Course Director may allow a rescheduled exam or may average grades without the exam at his or her discretion. Exams and quizzes missed for reasons deemed inexcusable will receive a grade of zero.

Technical difficulty in accessing electronic material will not be accepted as an excuse for missing or delaying a quiz or exam. You should always anticipate the possibility of such difficulties and obtain electronic or hard copies of materials well in advance of each exam or quiz.

Grading: You will be evaluated on the basis of your performance on examinations, quizzes, and participation during class discussion. The relative weights of these components are as follows:

Attendance and Participation	=	10 %
Exam 1	=	20 %
Half–term exam	=	20 %
Exam 2	=	20 %
Final exam	=	30 %

Midterm and final grades will be determined strictly according to the following scale:

A	93.0 – 100	C	73.0 – 76.9
A-	90.0 – 92.9	C-	70.0 – 72.9
B+	87.0 – 89.9	D+	67.0 – 69.9
B	83.0 – 86.9	D	63.0 – 66.9
B-	80.0 – 82.9	D-	60.0 – 62.9
C+	77.0 – 79.9	F	0 – 59.9

Communication: Please do not hesitate to email or call if there are questions or an emergency that keeps you from class. I will read my email regularly and will use email to contact individual students and send group messages to the class. Thus, you should check your account on a daily basis. **Timely email communications from your instructors carry the same weight as do announcements made in class.**

Honor Code: Your conduct in this course must adhere to the Rhodes College Honor Code.