MICR 304 Immunology & Serology Spring 2012

Lecture Section 01 (Class # 13781): TR 9:50– 11:05 am, BS-245
Laboratory Section 02 (Class # 13782): TR 11:15 am – 1:45 pm, ASCL 242

Instructor (Lecture)

- Name: **Dr. Edith Porter**
- Class office hours: Mondays 1:00 – 1:30 pm and by appointment, contact Dr. Porter
- Academic advisement: by appointment through the Department office, Mondays 11:30 am – 12:30 pm
- Office location: ASCL 355
- Contact information: eporter@calstatela.edu; (323) 343-6353

Instructor (Laboratory)

- Name: **Dr. Gloria Preza**
- Office hours: Tuesdays and Thursdays 2:15 – 3:00 pm
- Office location: ASCL 242
- Contact information: preza@usc.edu

Prerequisites:

- MICR 300 or MICR 201/202, CHEM 301 and CHEM302, or instructor consent

MOODLE:

- The course will be administered through MOODLE.
- All course related material such as lectures, assignments, useful links, and chats will be accessible through MOODLE.
- CSULA enrolled students have access to the course web site on MOODLE through their myCSULA portal.
- Open enrollment students: contact Dr. Porter

Email account:

- You need an NIS account to connect to MOODLE and receive course related information. You should also provide an alternate email address to the instructor in order to ensure communication when the campus email system is down.

Textbooks:

- Lecture: Janeway's Immunobiology, 8th edition, 2011, Taylor/Garland Science, ISBN: 9780815342434
- Laboratory: Laboratory manual by Dr. Edith Porter, available at the University Bookstore. You will use this manual as your laboratory notebook.

Student learning outcome: Upon successful completion of this course you will

- be able to define the key players of an immune response and explain how they are orchestrated
- be able to apply this knowledge in understanding diseases related to a dysfunctional immune system
- appreciate how immunology can be used as a tool in clinical and research settings
- have been familiarized with a biomedical laboratory environment
- have been introduced to scientific data analysis, interpretation, and dissemination

Attendance:

- Lecture and Laboratory attendance is mandatory.
- Some experiments may run longer and for some experiments you have to come in the following day to read results.

Study suggestions:

- Always read the assigned chapter and study the accompanying illustrations before attending lectures.
- You must have carefully read the laboratory manual for the experiment of the day before coming to lab.
- Form study groups with your peers.
- Contact your instructors by email and/or visit office hour when you are unclear about the material covered.
- Utilize the resources at the writing center (http://www.calstatela.edu/centers/write_cn/).
- Learn to recognize when you need help, and get help in a timely manner.

Performance evaluation: **750 points total**

Lecture: 400 points

80	Case studies (3 with 10 points each, 1 final case study with 50 points)
20	Research seminar synopsis
100	Midterm
200	Final Comprehensive Examination

Active learning exercises will be incorporated in the lecture and student contributions will be considered as extra credit for the final grade. Detailed instructions for the ***case studies*** including resources will be posted on the web. A two page ***research seminar synopsis*** will be prepared based on the research seminar "The battle for iron in the inflamed gut" presented by Dr. Raffatellu. You will summarize the presentation (background, hypothesis, experimental approach, key findings, and conclusion), critically evaluate the talk and its content, and briefly discuss how this relates to our class. ***Midterm and final examination*** will include 10 points for a ***brief report*** on a current publication (published during the term of this quarter) in the general news (newspapers, web etc) that relates to immunology, either in health and disease or as a tool. An article from a science journal is not appropriate. The type written report will be in the following form: indicate title and author(s), the source and date of publication; a summary of the article (~ ½ page), a short description of what captured your attention/why you chose this article, and a brief discussion how the selected article relates to immunology and this class specifically. You will turn in the completed report along with a hard copy of the news article during the lecture exam. The ***final exam*** will consist of two components: First, individual completion of the exam during the first 100 minutes, then completion of a portion of the exam in small groups of students during remaining time. The instructor will assign the members of the group. 10% of the points achieved in the small group exam will be added to the individual scores of each group member as extra credit.

Laboratory: 350 points

80	Quiz 1 and 2 (40 pts each)
40	4 Graphs (10 pts each, due 1 week after completion and class discussion of the experiment)
50	Poster session (Poster 30, Poster presentation 10, Poster evaluations 10)
30	Term paper
50	Notebook
100	Final comprehensive examination

Grades:

Based on the % points achieved out of the total achievable points (750 Points) you can earn:

	B+: ≥ 86 % (645 pts)	C+: ≥ 76 % (570 pts)	D+: ≥ 66 % (495 pts)
A : ≥ 93 % (697.5 pts)	B : ≥ 83 % (622.5 pts)	C : ≥ 73 % (547.5 pts)	D : ≥ 63 % (472.5 pts)
A- : ≥ 90 % (675 pts)	B- : ≥ 80 % (600 pts)	C- : ≥ 70 % (525 pts)	D- : ≥ 60 % (450 pts)

In borderline cases (passing/ non-passing or grade levels) participation in lecture and laboratory will be considered for the final grade.

General Policies:

No make-up examination/test/quiz/reports. Missed events will be set as "0 points" unless satisfactorily justified (e.g. doctors slip). **Assignments turned in late will not be accepted**! No make-up laboratory sessions. Lecture and Laboratory absences need to be satisfactorily justified (e.g. doctor's appointment), and you are responsible to acquire the missed material. You must provide your own **laboratory coat, safety glasses, grease pen, pencil and colored markers.** Please inform the instructor immediately about any allergies against gloves. The Drop/Incomplete and Academic/Honesty policies explained in the University General Catalogue will be strictly followed. Students are expected to read and abide by the **University's Academic Honesty Policy**, which can be found at http://www.calstatela.edu/academic/senate/handbook/ch5a.htm. Students who violate this policy will be subject to disciplinary action, and may receive a failing grade in the course for a single violation. **You are responsible for the prerequisites** for this course and are encouraged to discuss any questions regarding the policies and prerequisites with the instructor. **Students with disabilities**: Reasonable accommodation will be provided to any student who is registered with the Office of Students with Disabilities and requests needed accommodation. Please contact the instructor ASAP to arrange appropriate accommodations!

You are strongly encouraged to work with the instructors throughout the course.
Drafts for pre-evaluation of any course assignment are always welcome and highly recommended.

Session	Date	Lecture (TR 9:50 – 11:05 am, BS-244)	Laboratory (TR 11:15 am – 1:45 pm, ASCL-242)
1 Tue	4.03.12	Course requirements, student assessment **Overview** Immune system, Hematopoiesis	Check in, laboratory and safety rules Microscopy (blood cells, lymphatic organs)
2 Thu	4.05.2012	Antimicrobial peptides and lipids	Excel training from 12:15 pm-1:45 pm in the library Cation depletion of saliva
3 Tue	4.10.2012	Complement	Lysoplate ***(Graph 10 pts)*** Radial agar diffusion with *E. coli*
4 Thu	4.12.2012	Phagocytes Chemotaxis	Complement total hemolytic activity ***(Graph 10 pts)*** Discuss: complement fixation reaction
5 Tue	4.17.2012	Epithelial cells	Phagocytosis
6 Thu	4.19.2012	NK-cells **Adaptive Immunity** Lymphocytes	Epithelial cells and normal microbiota Hemocytometer ***Quiz 1 (40 pts)***
7 Tue	4.24.2012	Antibodies (B-cell Receptor) ***Case 1 (10 pts)***	Immune electrophoresis Radial immunodiffusion
8 Thu	4.26.2012	B- cells	Quantitative ELISA CRP agglutination
9 Tue	5.01.2012	T-cell Receptor	SDS-PAGE (saliva) Lysozyme immunoblot – Day 1
10 Thu	5.03.2012	T-cells ***Case 2 (10 pts)***	Lysozyme immunoblot – Day 2
11 Tue	5.08.2012	**Interaction of Innate and Adaptive Immunity** Major histocompatibility complex Cytokines	Discuss: Hemagglutination, indirect hemagluttination assays Notebook check
12 Thu	5.10.2012	***Midterm (100 pts)***	Detection of antinuclear auto-antibodies ***Quiz 2 (40 pts)***
13 Tue	5.15.2012	**Failures of the Immune system** Immune evasion Superantigens	Introduction to flow cytometry Monoclonal antibodies
14 Thu	5.17.2012	Hypersensitivities ***Case 3 (10 pts)***	Lymphocyte typing for CD4 and CD8 ***(Graph 10 pts)*** Poster/Term paper assignment
15 Tue	5.22.2012	Dr. Manuela Raffatellu, UC Irvine: "The battle for iron in the inflamed gut" ***(Research seminar synopsis 20 pts)***	Leukocyte isolation from sheep blood Principles of tissue culture techniques
16 Thu	5.24.2012	Tolerance, Apoptosis Autoimmune diseases	Mixed leukocyte culture
17 Tue	5.29.2012	Immune deficiencies	Determination of cell proliferation and cytotoxicity using the XTT assay ***(Graph 10 pts)***
18 Thu	5.31.2012	**Immunodiagnostic and Immunotherapies** Serology	Poster preparation
19 Tue	6.05.2012	Tumor immunology Tumor therapy	***Poster presentation (50 pts)*** ***Term paper draft due (15 pts)***
20 Thu	6.7.2012	***Final Case Study (50 pts)*** (Student presentations)	***Final comprehensive exam (100 pts)*** ***Notebook due (50 pts)***

Laboratory Term paper (30 pts) due on Monday, June 11, 2012

Final Examination (200 pts): Thursday, June 14, 2012; 8:00 – 10:30 am