

655C CLINICAL CHEMISTRY

Students must obtain permission from the course coordinator who will obtain faculty approval based on availability prior to enrollment in this course

Course Description: The student will be introduced to the clinical laboratory. Laboratory testing will be approached from both a clinical and analytical perspective. Analytical aspects cover testing methods (e.g., immunoassay, mass spectrometry, etc.) in addition to sources of error in testing. Clinical interpretation includes electrolytes, blood gases, cardiac markers, renal and liver function testing, urine drug testing, and protein electrophoresis interpretation for monoclonal gammopathies. The student will be introduced to concepts used for the evaluation of reference intervals, analytical test performance, and diagnostic test performance.

Department: Pathology & Laboratory Medicine

Prerequisites: UC Irvine students must have successfully completed the basic science curriculum. Extramural students must be in the final year of undergraduate medical education and have completed course work equivalent to UC Irvine's Clinical Pathology and General Pathology courses.

Restrictions: Students must obtain permission from faculty prior to enrollment

Elective Director: Robert A. Edwards, M.D., Ph.D., UC Irvine School of Medicine, Department of Pathology & Laboratory Medicine, Med Sci I, Room D435, Irvine CA 92697, 949-824-8576, redwards@uci.edu

Instructing Faculty: Bridgit Crews, PhD, DABCC (CT) and clinical laboratory specialist staff.

Course Website: None

Who to Report to First Day: Contact site coordinator for this information

Location to Report on First Day: Contact site coordinator for this information

Time to Report on First Day: Contact site coordinator for this information

Elective Coordinator: Stefani Ching, UC Irvine School of Medicine, Department of Pathology & Laboratory Medicine, Med Sci I, Room D440, Irvine, CA 92697-4800, (949) 824-5367, stefani.ching@uci.edu

Site: UC Irvine Medical Center

Periods Available: Throughout the year but will depend on the availability of the instructors and laboratory staff

Duration: 2 weeks minimum

Number of Students: 2

- **UC Irvine students** must officially enroll for the course by contacting the Scheduling Coordinator via email or phone (714) 456-8462 to make a scheduling appointment.
- **Extramural students** enrolled at a U.S. LCME medical school must use VSAS to apply. To apply please refer to this website <https://students-residents.aamc.org/attending-medical-school/electives-and-make-courses/applyingaway-electives-vsas/>
- For any questions regarding this rotation, please contact Stefani Ching, UC Irvine School of Medicine, Department of Pathology & Laboratory Medicine, Med Sci I, Room D440, Irvine, CA 92697-4800, (949) 824-5367, stefani.ching@uci.edu

Course Objectives: At the end of this rotation the student will be able to:

- Discuss appropriate ordering and interpretation for various laboratory tests.
- Interpret specific laboratory test results including: urine drug testing, electrolytes, troponin, renal and liver function testing, and serum and urine protein electrophoresis.

- Describe the role of the clinical pathologist as a medical director and clinical consultant.

Key Topics:

Interpretation of:

- Cardiac markers
- Electrolytes
- Blood Gases
- Renal and Liver function tests
- Urine Drug Testing
- Serum Protein Electrophoresis for Monoclonal Gammopathies

Competencies:

- Discuss analytical performance of laboratory tests.
- Evaluate diagnostic performance of laboratory tests.
- Discuss appropriate selection and interpretation of laboratory tests.

Attitudes & Commitments: learn to recognize the breadth of information that must be incorporated into the clinical reasoning process

Educational Activities:

- Assignment to clinical lab workbench
- Discussion with clinical chemist and/or clinical pathologist
- Review tests requiring interpretation
- Sign-out with attending
- Attend quality and staff meetings
- Attend conferences

What Students Should do to Prepare for the Rotation: NA

Clinical Responsibilities of the Student: Preview test results requiring review by a pathologist and formulate an interpretation. Interact with clinical staff as requested and consult with technical staff as needed.

Patient Care Responsibilities: See Above Call

Schedule of the Student: none **Procedures**

to be learned by the Student:

- Evaluation of laboratory tests
- Test interpretation
- Aspects of laboratory management

Percentage of Time Student will participate in Ambulatory Setting (Blood Bank/Mobile Collection Event): None

Conference/Lecture/Small Group Sessions: There is not standardized material for this course

Course Hours Weekly Summary:

	Computer Assisted Instruction
5.0	Case Based
5.0	Conference
0.0	Clinic

Content Theme Integration:

- Biostatistics
- Decision Making
- Epidemiology
- Evidence Based Medicine
- Informatics
- Population Based Medicine
- Research Methods
- Technology Assessment

Recommended Reading: Selected in accordance with case material.

Official Grading Policy: The student will receive a grade of Honors, Pass or Fail. The student's final grade will be submitted on the standard UC Irvine elective form. Based upon attendance, initiative and course knowledge. If the student fails the elective, a grade of "F" will be permanently recorded on his/her transcript. The student can repeat the course for a second grade; however, the "F" will not be removed from the transcript.