

# BIOMEDICAL SCIENCES (BIOMED SCI)

## BIOMED SCI 116 Structure of Cells, Tissues, and Organs (8 Units)

*Instructor(s):* Elizabeth Joyce, Barbie Klein

*Prerequisite(s):* none

*Restrictions:* D1

With a patient population that is increasingly medically complex, today's dentist must have a sound understanding of the structure and function of the body. In this course, students will be introduced to human gross anatomy and histology, as well as concepts in general pathology. This provides the foundation for increasingly complex coverage of structure/function relationships that underlie health and disease, with emphasis on those that impact dental care.

**School:** Dentistry

**Department:** Cell And Tissue Biology

**May the student choose the instructor for this course?** No

**Does enrollment in this course require instructor approval?** No

**Graduate Division course:** No

**Is this a web-based online course?** No

**Is this an Interprofessional Education (IPE) course?** No

**May students in the Graduate Division (i.e. pursuing Master or PhD) enroll in this course?** No

**Repeat course for credit?** No

## BIOMED SCI 117 Infection and Host Response; Cell Physiology (8 Units)

*Instructor(s):* Elizabeth Joyce, Zachary Knight

*Prerequisite(s):* none

*Restrictions:* D1

This course will provide a foundation in the microbiologic, immunologic, and pharmacologic therapies used to treat and prevent infectious diseases, which rank among the leading causes of morbidity and mortality world-wide. Additionally, to better understand how medications like local anesthetics work, this course will provide a foundation in membrane structure, membrane transport, signaling, neurophysiology, and local anesthetics. This latter material will dovetail with the subsequent courses.

**School:** Dentistry

**Department:** Cell And Tissue Biology

**May the student choose the instructor for this course?** No

**Does enrollment in this course require instructor approval?** No

**Graduate Division course:** No

**Is this a web-based online course?** No

**Is this an Interprofessional Education (IPE) course?** No

**May students in the Graduate Division (i.e. pursuing Master or PhD) enroll in this course?** No

**Repeat course for credit?** No

## BIOMED SCI 118 Organ Systems and Human Pathophysiology I (8.5 Units)

*Instructor(s):* Elizabeth Joyce, Barbie Klein

*Prerequisite(s):* Successful completion of Biomed 117 or consent of instructor.

*Restrictions:* D1

A contemporary dentist has a solid understanding of medical conditions that will impact the safe delivery of a patient's care. In this course, students will learn about the cardiovascular, respiratory, renal, neurology, gastrointestinal, endocrine, and hematologic systems.

**School:** Dentistry

**Department:** Cell And Tissue Biology

**May the student choose the instructor for this course?** No

**Does enrollment in this course require instructor approval?** No

**Graduate Division course:** No

**Is this a web-based online course?** No

**Is this an Interprofessional Education (IPE) course?** No

**May students in the Graduate Division (i.e. pursuing Master or PhD) enroll in this course?** No

**Repeat course for credit?** No

## BIOMED SCI 127 Oral Pathology (2 Units)

*Instructor(s):* Richard Jordan

*Prerequisite(s):* none

*Restrictions:* D2s, ID2s, ID3s

This course is a clinically focused didactic course that will cover most soft tissue and bone diseases that may be seen in dental patients. Familiarity with etiology, clinical appearances, and treatment of oral mucosal conditions will be important in advising and managing your patients. Included are primary oral diseases and oral manifestations of systemic diseases, which can range from trivial to life threatening.

**School:** Dentistry

**Department:** Orofacial Sciences

**May the student choose the instructor for this course?** No

**Does enrollment in this course require instructor approval?** No

**Graduate Division course:** No

**Is this a web-based online course?** Yes

**Is this an Interprofessional Education (IPE) course?** No

**May students in the Graduate Division (i.e. pursuing Master or PhD) enroll in this course?** No

**Repeat course for credit?** No

## BIOMED SCI 186 Advanced Dissection in Head and Neck Anatomy (1 Units)

*Instructor(s):* Barbie Klein

*Prerequisite(s):* Successful completion of BMS 116

*Restrictions:* Enrollment requires permission of instructor and is limited to the DDS students in 1st, 2nd, 3rd and 4th years.

This advanced elective allows students to review, refine, and consolidate their knowledge of gross anatomy through cadaveric dissection and literature review of clinical applications related to the area of dissection. Each student, in consultation with an instructor, will determine a dissection area (or areas) of interest and develop an individual plan of study. Assessments include a formal presentation of the final prosection and creation of a teaching and learning resource related to the area.

**School:** Dentistry

**Department:** Cell And Tissue Biology

**May the student choose the instructor for this course?** No

**Does enrollment in this course require instructor approval?** Yes

**Graduate Division course:** No

**Is this a web-based online course?** No

**Is this an Interprofessional Education (IPE) course?** No

**May students in the Graduate Division (i.e. pursuing Master or PhD) enroll in this course?** No

**Repeat course for credit?** No

## BIOMED SCI 187 Laboratory Instruction in Gross Anatomy (1.5 Units)

*Instructor(s):* Barbie Klein

*Prerequisite(s):* Successful completion of BMS 116, 117, and 118.

*Restrictions:* Enrollment requires permission of instructor.

This course provides advanced training for dental students interested in anatomical sciences. Upper-class students will serve as teaching assistants for 1st year dental students in virtual gross anatomy laboratory sessions. It provides reinforcement of anatomic knowledge covered in the 1st year of dental education in preparation for National Board exams. Students also gain experience instructional methods and the opportunity to explore careers in academic dentistry with a teaching component.

**School:** Dentistry

**Department:** Cell And Tissue Biology

**May the student choose the instructor for this course?** No

**Does enrollment in this course require instructor approval?** Yes

**Graduate Division course:** No

**Is this a web-based online course?** No

**Is this an Interprofessional Education (IPE) course?** No

**May students in the Graduate Division (i.e. pursuing Master or PhD) enroll in this course?** No

**Repeat course for credit?** No

## BIOMED SCI 215 Laboratory Rotation (1-8 Units)

*Instructor(s):* Staff

*Prerequisite(s):* None.

*Restrictions:* None.

Research experience in the laboratory of Biomedical Sciences faculty members.

**School:** Graduate Division

**Department:** Biomedical Sciences Program

**May the student choose the instructor for this course?** Yes

**Does enrollment in this course require instructor approval?** No

**Graduate Division course:** Yes

**Is this a web-based online course?** No

**Is this an Interprofessional Education (IPE) course?** No

**May students in the Graduate Division (i.e. pursuing Master or PhD) enroll in this course?** Yes

**Repeat course for credit?** Yes

## BIOMED SCI 216 Supervised Study (1-5 Units)

*Instructor(s):* Elizabeth Crouch

*Prerequisite(s):* None

*Restrictions:* None.

Library research and directed reading under supervision of a member of the faculty.

**School:** Graduate Division

**Department:** Biomedical Sciences Program

**May the student choose the instructor for this course?** No

**Does enrollment in this course require instructor approval?** No

**Graduate Division course:** Yes

**Is this a web-based online course?** No

**Is this an Interprofessional Education (IPE) course?** No

**May students in the Graduate Division (i.e. pursuing Master or PhD) enroll in this course?** Yes

**Repeat course for credit?** Yes

## BIOMED SCI 221 Seminars in Biomedical Sciences (1 Units)

*Instructor(s):* Matthew Kutys

*Prerequisite(s):* none

*Restrictions:* none

Seminar: Weekly seminar series held at Parnassus and livestreamed to the UCSF community, or held virtually via Zoom in some cases. Seminar speakers chosen by a BMS faculty committee after soliciting suggestions from all BMS faculty and students. Seminar topics will include recent experimental findings in human biology and disease.

**School:** Graduate Division

**Department:** Biomedical Sciences Program

**May the student choose the instructor for this course?** No

**Does enrollment in this course require instructor approval?** No

**Graduate Division course:** Yes

**Is this a web-based online course?** No

**Is this an Interprofessional Education (IPE) course?** No

**May students in the Graduate Division (i.e. pursuing Master or PhD) enroll in this course?** Yes

**Repeat course for credit?** Yes

## BIOMED SCI 225A Biostatistics and Computational Biology (2.5 Units)

*Instructor(s):* Adam Ferguson

*Prerequisite(s):* None.

*Restrictions:* Admission to UCSF Graduate Program or permission of instructor.

This course provides a module-based overview of the biostatistical ideas and tools needed to work as a biomedical researcher. The course includes classes in Unix, Python and R. Other modules cover study designs, summarizing data, distributions, hypothesis testing, using R for biostatistical analysis, performing and reporting reproducible analysis, multiple test correction, and practical considerations for outliers and robust statistics.

**School:** Graduate Division

**Department:** Biomedical Sciences Program

**May the student choose the instructor for this course?** No

**Does enrollment in this course require instructor approval?** Yes

**Graduate Division course:** Yes

**Is this a web-based online course?** No

**Is this an Interprofessional Education (IPE) course?** No

**May students in the Graduate Division (i.e. pursuing Master or PhD)**

**enroll in this course?** Yes

**Repeat course for credit?** No

## BIOMED SCI 225B Science Communication for Biomedical Scientists (3 Units)

*Instructor(s):* Tomasz Nowakowski

*Prerequisite(s):* None.

*Restrictions:* Admission to UCSF Graduate Program or permission of instructor.

An integrative course emphasizing frontiers in cell and molecular biology of human tissue and organ systems. It is intended to provide a foundation in human anatomy, histology, immunology, physiology and pathobiology for graduate students. Rather than a comprehensive course, selected topics will be discussed in depth. The emphasis may shift each year, depending on which topics are relevant and timely.

**School:** Graduate Division

**Department:** Biomedical Sciences Program

**May the student choose the instructor for this course?** No

**Does enrollment in this course require instructor approval?** Yes

**Graduate Division course:** Yes

**Is this a web-based online course?** No

**Is this an Interprofessional Education (IPE) course?** No

**May students in the Graduate Division (i.e. pursuing Master or PhD)**

**enroll in this course?** Yes

**Repeat course for credit?** No

## BIOMED SCI 250 Research (1-8 Units)

*Instructor(s):* Staff

*Prerequisite(s):* Completion of prior laboratory rotations.

*Restrictions:* None

Dissertation research in a Biomedical Sciences Program approved laboratory.

**School:** Graduate Division

**Department:** Biomedical Sciences Program

**May the student choose the instructor for this course?** Yes

**Does enrollment in this course require instructor approval?** Yes

**Graduate Division course:** Yes

**Is this a web-based online course?** No

**Is this an Interprofessional Education (IPE) course?** No

**May students in the Graduate Division (i.e. pursuing Master or PhD)**

**enroll in this course?** Yes

**Repeat course for credit?** Yes

## BIOMED SCI 255 Basic Genetics & Genomics (4 Units)

*Instructor(s):* Robert Nussbaum, Anita Sil

*Prerequisite(s):* None

*Restrictions:* Students who are not in a UCSF graduate program must get permission from the instructor to take the course.

The scope of this graduate level course in genetics is to convey an understanding of basic genomics and molecular genetics, of the use of genetic animal model systems and of the analytical principles of simple and complex human genetic traits.

**School:** Graduate Division

**Department:** Biomedical Sciences Program

**May the student choose the instructor for this course?** No

**Does enrollment in this course require instructor approval?** Yes

**Graduate Division course:** Yes

**Is this a web-based online course?** No

**Is this an Interprofessional Education (IPE) course?** No

**May students in the Graduate Division (i.e. pursuing Master or PhD)**

**enroll in this course?** Yes

**Repeat course for credit?** No

### **BIOMED SCI 260 Cell Biology (4 Units)**

*Instructor(s):* Jeroen Roose, Bassem Al-Sady

*Prerequisite(s):* no

*Restrictions:* Enrollment limited to students in the BMS, DSCB, OCS and MSTP programs. Other students may enroll only with consent of course directors.

The scope of this course is to convey an understanding of the function and organization of molecules and organelles inside and outside the cell and how these are used to construct a multicellular tissue and organ.

The course will concentrate on questions related to how cells function, including how they grow, divide and die, and how they move, secrete and communicate.

**School:** Graduate Division

**Department:** Biomedical Sciences Program

**May the student choose the instructor for this course?** No

**Does enrollment in this course require instructor approval?** Yes

**Graduate Division course:** Yes

**Is this a web-based online course?** No

**Is this an Interprofessional Education (IPE) course?** No

**May students in the Graduate Division (i.e. pursuing Master or PhD) enroll in this course?** Yes

**Repeat course for credit?** No

### **BIOMED SCI 270 Special Topics in Biomedical Sciences (3 Units)**

*Instructor(s):* Staff

*Prerequisite(s):* None. Completion of first-year curriculum in Biomedical Sciences or another experimental biology graduate program is helpful but not essential.

*Restrictions:* Biomedical Sciences graduate students and other graduate and professional students with interest in Biomedical Sciences. Permission from instructor is required.

Each course offering will focus on literature of a current important area of Biomedical Sciences research. Students will be expected to read assigned papers critically before class and to present and discuss papers in class. Students will also be expected to write and present a brief research proposal based upon their reading.

**School:** Graduate Division

**Department:** Biomedical Sciences Program

**May the student choose the instructor for this course?** Yes

**Does enrollment in this course require instructor approval?** No

**Graduate Division course:** Yes

**Is this a web-based online course?** No

**Is this an Interprofessional Education (IPE) course?** No

**May students in the Graduate Division (i.e. pursuing Master or PhD) enroll in this course?** Yes

**Repeat course for credit?** Yes

### **BIOMED SCI 300 Methods in Teaching Human Biology and Disease (1 Units)**

*Instructor(s):* Staff

*Prerequisite(s):* None

*Restrictions:* None

*Lecture/discussion:* Practical experience in the methods and problems of teaching human biology and disease. Includes analysis of texts and supporting material, discussion of teaching techniques, preparing for and conducting discussion or laboratory sections, formulating examinations under supervision of instructor.

**School:** Graduate Division

**Department:** Biomedical Sciences Program

**May the student choose the instructor for this course?** Yes

**Does enrollment in this course require instructor approval?** No

**Graduate Division course:** Yes

**Is this a web-based online course?** No

**Is this an Interprofessional Education (IPE) course?** No

**May students in the Graduate Division (i.e. pursuing Master or PhD) enroll in this course?** Yes

**Repeat course for credit?** Yes