

# BIOMEDICAL SCIENCES (BIOMED SCI)

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

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

*Prerequisite(s):* none

*Restrictions:* D1

*Activities:* Lecture, Laboratory

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

**Course Grading Convention:** P/NP (Pass/Not Pass) or S/U (Satisfactory/Unsatisfactory)

**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) Winter

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

*Prerequisite(s):* none

*Restrictions:* D1

*Activities:* Lecture, Seminar, Independent Study, Project

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

**Course Grading Convention:** P/NP (Pass/Not Pass) or S/U (Satisfactory/Unsatisfactory)

**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 (9 Units) Spring

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

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

*Restrictions:* D1

*Activities:* Lecture, Seminar

Patients are living longer with complex medical issues making it more important than ever for dentists to understand the most common conditions that can impact the safe delivery of dental care. In this course students will learn about the normal function and diseases of the respiratory, renal, cardiovascular and nervous systems as well as the common therapies used to treat conditions affecting them.

**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

**Course Grading Convention:** P/NP (Pass/Not Pass) or S/U (Satisfactory/Unsatisfactory)

**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 126 Organ Systems and Human Pathophysiology II (5 Units) Fall**

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

*Prerequisite(s):* none

*Restrictions:* D2

*Activities:* Lecture

A contemporary dentist has a solid understanding of medical conditions that will impact the safe delivery of their care. In this course, students will learn about the 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

**Course Grading Convention:** P/NP (Pass/Not Pass) or S/U (Satisfactory/Unsatisfactory)

**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) Winter**

*Instructor(s):* Richard C Jordan

*Prerequisite(s):* none

*Restrictions:* D2 and ID3 students

*Activities:* Lecture

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

**Course Grading Convention:** P/NP (Pass/Not Pass) or S/U (Satisfactory/Unsatisfactory)

**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) Fall, Winter, Spring, Summer**

*Instructor(s):* Barbie A Klein

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

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

*Activities:* Lab science

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

**Course Grading Convention:** P/NP (Pass/Not Pass) or S/U (Satisfactory/Unsatisfactory)

**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) Fall**

*Instructor(s):* Barbie A Klein

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

*Restrictions:* Enrollment requires permission of instructor.

*Activities:* Lab skills

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

**Course Grading Convention:** P/NP (Pass/Not Pass) or S/U (Satisfactory/Unsatisfactory)

**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) Fall, Winter, Spring, Summer**

*Instructor(s):* Staff  
*Prerequisite(s):* None.

Restrictions: None.

Activities: Laboratory, Lab science

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

**Course Grading Convention:** P/NP (Pass/Not Pass) or S/U (Satisfactory/Unsatisfactory)

**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) Fall, Winter, Spring**

*Instructor(s):* Tien Peng, Bruce M Wang  
*Prerequisite(s):* None

Restrictions: None.

Activities: Independent Study

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

**Course Grading Convention:** P/NP (Pass/Not Pass) or S/U (Satisfactory/Unsatisfactory)

**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) Fall, Winter, Spring**

*Instructor(s):* Matthew L Kutys  
*Prerequisite(s):* none

Restrictions: none

Activities: Seminar

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

**Course Grading Convention:** P/NP (Pass/Not Pass) or S/U (Satisfactory/Unsatisfactory)

**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 Investigating Human Biology and Disease (2.5 Units) Fall**

*Instructor(s):* Adam R Ferguson  
*Prerequisite(s):* None.

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

Activities: Lecture, Workshop, Discussion

This course aims to provide students with practical knowledge and experience in approaches and methods used in biomedical research. \n-Biostatistics & computational biology. Introduction to Unix/Python/ R. Study designs, hypothesis testing, biostatistical & reproducibility analysis. \n-Practical selectives. Intended to provide a foundation for graduate students in methods used to understand human cells, tissues, & organs, and to illustrate how these methods illuminate physiology and pathobiology.

**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

**Course Grading Convention:** P/NP (Pass/Not Pass) or S/U (Satisfactory/Unsatisfactory)

**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) Winter**

*Instructor(s):* Mary Helen Barcellos-Hoff

*Prerequisite(s):* None.

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

*Activities:* Lecture, Project, Workshop

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

**Course Grading Convention:** Letter Grade

**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 230 Advanced Topics in Cancer Research (0.5 Units) Fall**

*Instructor(s):* Trevor G Bivona

*Prerequisite(s):* None.

*Restrictions:* None.

*Activities:* Lecture, Seminar

Lectures will guide understanding of the epidemiologic, molecular genetic, cell and pathobiological aspects of cancer focusing on 1) regulatory and effector mechanisms, 2) the cells constituting tumor microenvironments, and 3) relationships between basic biomedical research and their clinical applications. In Advanced Topics, students will present literature reports based on Lecture content supported by a Faculty Discussion leader who will pose an interesting/controversial spin on the topic.

**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

**Course Grading Convention:** Letter Grade, P/NP (Pass/Not Pass) or S/U (Satisfactory/Unsatisfactory)

**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) Fall, Winter, Spring, Summer**

*Instructor(s):* Staff

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

*Restrictions:* None

*Activities:* Lab science

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

**Course Grading Convention:** P/NP (Pass/Not Pass) or S/U (Satisfactory/Unsatisfactory)

**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) Winter**

*Instructor(s):* Noelle D L'etoile

*Prerequisite(s):* None

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

*Activities:* Lecture, Discussion

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

**Course Grading Convention:** Letter Grade

**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) Fall***Instructor(s):* Jeroen P. 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.

Activities: Lecture, Project

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**Course Grading Convention:** Letter Grade, P/NP (Pass/Not Pass) or S/U (Satisfactory/Unsatisfactory)**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) Spring***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.

Activities: Lecture, Independent Study

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**Course Grading Convention:** P/NP (Pass/Not Pass) or S/U (Satisfactory/Unsatisfactory)**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) Fall, Winter, Spring***Instructor(s):* Staff

Prerequisite(s): None

Restrictions: None

Activities: Lecture, Workshop

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**Course Grading Convention:** P/NP (Pass/Not Pass) or S/U (Satisfactory/Unsatisfactory)**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