

# BIOCHEMISTRY (BIOCHEM)

## BIOCHEM 198 Supervised Study (1-6 Units) Fall, Winter, Spring, Summer

*Instructor(s):* Staff

*Prerequisite(s):* Consent of instructor.

*Restrictions:* None.

*Activities:* Independent Study

Library research and directed reading under supervision of a member of the faculty with the approval of the chairperson of the department.

**School:** Medicine

**Department:** Biochemistry And Biophysics

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

**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:** 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

## BIOCHEM 200A Structure of Macromolecules (3 Units) Fall

*Instructor(s):* Dyche Mullins, David S Booth

*Prerequisite(s):* Calculus, physical chemistry, organic chemistry, and an advanced course in biology.

*Restrictions:* Instructor approval required for non-Tetrad students.

*Activities:* Lecture

Training in the fundamental principles governing the behaviors of biological macromolecules and the use of modern techniques in the study of these behaviors. Topics covered are: thermodynamics (entropy, equilibrium, cooperative interactions); kinetics and catalysis; structure and function of macromolecules (DNA, membranes, proteins) by X-ray and electron optics; kinetics and structure of cooperative enzymes and systems of biological control. Special emphasis on small group discussion format.

**School:** Graduate Division

**Department:** Biochemistry And Molecular Biology 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

## BIOCHEM 201A Biological Regulatory Mechanisms (4 Units) Winter

*Instructor(s):* Raul Andino-Pavlovsky

*Prerequisite(s):* Calculus, physical chemistry, organic chemistry, introductory biochemistry, an advanced course in biology, and Genetics 200A.

*Restrictions:* Instructor approval required

*Activities:* Lecture, Project, Workshop

Understanding the molecular basis for fundamental regulatory principles underlying biological processes. Topics covered are: DNA replication, RNA transcription, genome structure and organization, protein translation.

**School:** Graduate Division

**Department:** Biochemistry And Molecular Biology 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

## BIOCHEM 210 Special Topics (3 Units) Fall, Winter, Spring

*Instructor(s):* Staff

*Prerequisite(s):* None

*Restrictions:* First-year graduate students. All other graduate and professional students with permission of Program and instructor.

*Activities:* Lecture, Independent Study

Discussion of selected areas in biochemistry, biophysics, and biomathematics.

**School:** Graduate Division

**Department:** Biochemistry And Molecular Biology 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

### **BIOCHEM 215 Laboratory Rotation (3 Units) Fall, Winter, Spring, Summer**

*Instructor(s):* Natalia Z Jura  
*Prerequisite(s):* Consent of instructor

*Restrictions:* Must be enrolled in the Tetrad Graduate Program

*Activities:* Laboratory, Lab science

A laboratory rotation course to familiarize new departmental graduate students with various approaches to biochemical and biophysical research.

**School:** Graduate Division  
**Department:** Biochemistry And Molecular Biology 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

### **BIOCHEM 220 Biochemistry Basic Science Seminar Series (1 Units) Fall, Winter, Spring**

*Instructor(s):* Natalia Z Jura  
*Prerequisite(s):* None

*Restrictions:* None

*Activities:* Lecture

Weekly seminar series on topics of current interest in the basic sciences.

**School:** Graduate Division  
**Department:** Biochemistry And Molecular Biology 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?** No

### **BIOCHEM 221 Selected Topics (1 Units) Fall, Winter, Spring**

*Instructor(s):* Natalia Z Jura  
*Prerequisite(s):* None

*Restrictions:* Must be a current Tetrad student

*Activities:* Seminar

Presentations of selected topics in biochemistry by graduate students in the Department of Biochemistry.

**School:** Graduate Division  
**Department:** Biochemistry And Molecular Biology 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

### **BIOCHEM 241 Startup 101 (3 Units) Winter**

*Instructor(s):* Charles S. Craik  
*Prerequisite(s):* No

*Restrictions:* No

*Activities:* Lecture, Project

This course examines how to build impactful, scalable life science/healthcare businesses from a science/technology base. Guest lectures will be delivered by entrepreneurs, investors and industry experts on topics such as opportunity recognition, business models, intellectual property, clinical/regulatory, reimbursement, capital and investor presentations. The final session will be an opportunity to pitch to investors for feedback. Enrollment is by application.

**School:** Graduate Division  
**Department:** Biochemistry And Molecular Biology 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

**BIOCHEM 250 Research (1-8 Units) Fall, Winter, Spring, Summer**

*Instructor(s):* Staff

*Prerequisite(s):* Completion of 2 quarters of Biochem 215 in the year prior

*Restrictions:* Students must be in year 2 or above

*Activities:* Laboratory, Independent Study, Lab science

The course is intended to give students hands-on experience in investigation of a fundamental question in biology using modern techniques and approaches in Biochemistry. The scope of the research project, formulation of hypothesis, and the necessary experimental approaches taken to test the hypothesis will be determined based on active input from the student and the lab's Principle Investigator. The student is expected to become increasingly independent in each of these aspects of the project.

**School:** Graduate Division

**Department:** Biochemistry And Molecular Biology 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