

Program: Biochemistry

Course Name: Advanced Topics in Biochemistry and Molecular Biology:
Selected Topics in RNA Activities and Metabolism (the topic is variable)

Course Number: 572

Course Director: Barbara L. Stitt, Ph.D. Room 403 MRB. Tel. 2-8152 email.
stitt@temple.edu (the instructor is variable)

Credits: 2

Semester: Fall, alternate years

Times: Meets once a week for 2 hours

Location: MRB 408

Prerequisites: Macromolecules (Biochemistry 534) or other introductory molecular biology course, and an introductory biochemistry course.

Description: The subject matter and instructor for this course may vary. The course may be taken more than once for credit when different topics are considered. The goals of the RNA course are to

- 1) Develop the ability to read scientific papers critically
- 2) Develop the ability to write a critique of a paper
- 3) Practice oral presentation/leading a discussion
- 4) For the RNA topic: to learn background/current status of research in several areas involving RNA, including
 - A. Chemistry by RNA: ribozymes; the ribosome
 - B. RNA editing
 - C. Nonsense-mediated decay
 - D. Antisense oligonucleotides
 - E. siRNA & miRNA
 - F. Other small RNAs in eukaryotes and prokaryotes
 - G. The RNA world

Students are expected to participate in class by contributing to discussion. Students are also expected to discuss seminal papers in the field in a journal club setting. Sessions are a mix of (1) introductory lectures/discussions of review papers (mostly by the instructor) (2) discussions of key papers (not necessarily current), some led by students (3) discussions of more current papers, some led by students.

Readings: selected from the primary and review literature, and updated each year that the course runs.

The grade in the RNA course is based 35% on the presentations led by the student (2-3 per student, depending on course enrollment), 30% on a ~5-page written critique of a paper chosen by the instructor, and 35% on participation in class discussion. Class attendance is required; more than two absences will affect the final grade.