



Undergrad Research in Biology - BIOL 4304 – 500

M-F: STEM 364

Meeting Times: Variable

Course Description and Prerequisites: This course provides an independent review opportunity that will allow undergraduates majoring in biology to make an original intellectual contribution to the discipline. Research will be conducted in collaboration with a faculty mentor. Variable credit for a total of 3 maximum. Prerequisite: Instructor approval and BIOL 1306, BIOL 1106, BIOL 1307, BIOL 1107. Recommended: BIOL 3104 or 3402 (Evolution). Approval of instructor is required.

Course Objectives:

- Refine Laboratory etiquette, protocols and techniques in biological research, as related to the study of invertebrate evolution and biodiversity
- Learn laboratory skills such as DNA extraction, PCR, specimen photo-documentation
- Process and analyze next generation sequencing data, including sequence assembly, mitochondrial genome reconstruction, gene data mining, gene annotation, etc.
- Use phylogenetic/genomic approaches including sequence data analyses, sequence alignment and phylogenetic reconstruction.
- Develop critical thinking and communication skills as prerequisites for practicing science.

Instructor Information:

Name: Liz Borda, Ph.D.
Telephone number: 210-784-2811
Email address: eborda@tamus.edu
Office hours: Weekly lab meetings or By appointment
Office location: STEM 311P
Lab location: STEM 364

Instructor Expectations: Personal and academic integrity, to be open to new ideas, and to share in a community where individuals from diverse backgrounds and cultures help one another grow intellectually, socially, and personally is expected at all times throughout the course. The faculty and staff of TAMUSA are here to help; however, students must take responsibility for their own learning. Students should strive for a high level of academic performance and to be responsible, respectful, contributing citizens within the university and in outside communities. Above all, students should develop a love of learning that will last a lifetime, along with a life-long interest in maintaining emotional and physical wellness.

Assessment: Grades in this course will be based on assessments of student performance, participation, and attendance, as evaluated by the faculty member. If you believe an error was made in grading please do not hesitate to bring it to my attention as soon as possible. If you find yourself struggling with this course, please talk to the instructor as soon as possible and **do not wait until the end of the semester.** You are always welcome to stop by my office or email me to make an appointment to discuss your concerns.

Grade Scale and Points Distribution

A = >899 B = 799 – 898 C = 699 - 798 D = 599 - 698 F = < 598

Blackboard and Course Communication: All grades will be posted and accessible through the course's Blackboard site. Students must login regularly to both the Blackboard site and to their TAMUSA email account to keep updated on information or changes related to the class. Each student **MUST** have an active TAMUSA e-mail account. This will be the e-mail address that is used for any communication between you and your instructor. E-mail may be sent from student-to-student, or student-to-instructor using the e-mail feature in Blackboard's Communication area. Students who e-mail the instructor Monday-Thursday ordinarily can expect a response within 24 hours. Students who e-mail Friday-Sunday ordinarily can expect a response by Monday morning. The preferred method of communication will always be e-mail or making an appointment (in person or virtually).

Student Support and University Policies:

Please refer to **Important Policies and Resources** in separate document available on Blackboard (Syllabus tab), that provides detailed information on academic accommodations, tutoring and writing support, counseling and wellness resources, emergency preparedness, financial aid attendance requirements, student rights and responsibilities, diversity and inclusion expectations, military and religious accommodations, and other essential university policies and services.