

THE UNIVERSITY OF NORTH CAROLINA ASHEVILLE

FACULTY SENATE

Senate Document Number SD4824S

Date of Senate Approval 04/04/2024

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Statement of Faculty Senate Action:

**APC Document 41 (BIOL): Add new course, BIOL 299: Scientific Community Engagement; Reinstate BIOL 336: Parasitology, adding it to the Evolution and Critical Thinking and Quantitative Analysis categories**

**Effective date: Fall 2024**

1. **Add:** On page 99, new course, **BIOL 299: Scientific Community Outreach in Biology**

**299 Scientific Community Engagement in Biology (1-3)**

Directed community outreach engaging community members in Biological STEM educational activities. This course is designed to give students scientific outreach and communication experience. The nature of the course is determined by a mutual agreement between student and faculty mentor. This course is available to students of all levels and may be repeated for a total of three hours credit. Will not count towards biology elective requirements. Prerequisite: permission of instructor. See department chair.

**Impact Statement:**

1. Curriculum contribution. This addition will create a 200-level course to give students credit who are working with faculty on scientific outreach projects to the broader community. It will not count toward the Biology major or minor requirements.
2. Course information.
  - Students will work with their faculty member to design community outreach experiences
  - Students and their faculty mentor will conduct these community outreach programs
  - Students will be encouraged to reflect upon their experiences with community outreach
  - Students should develop their skills in scientific communication with non-scientists

*Anticipated class size:* These will be run like independent study programs for individual students

*Scheduled class time:* To be worked out with faculty mentor and student

*Instructional format:* The course will be taught on an individual basis.

*Special space or materials:* These courses will be run out of individual mentors' laboratories and will use materials provided by the mentor either through professional development funds, or internal or external grant funding.

3. Faculty contribution. This course is available for all Biology faculty to teach, and will be taught as an overload.
4. Timing. This course will be offered on an as needed basis.
5. Delivering the curriculum. This course is available for all Biology faculty to teach and will not impact the department's ability to contribute to university requirements.
6. Common Numbering System: This course is not part of the CNS.

**Rationale:** Scientific outreach and communication with non-scientists is an ever-increasing need. We recently revised our Departmental Values Statement to recognize these efforts by our faculty members. Faculty members have been doing scientific outreach in many ways for years, sometimes with students, sometimes not. This course will provide an opportunity to include students in these outreach efforts while gaining academic credit, although this will not count for the major. This course will further mentoring efforts between Biology faculty and our students, and may give students who are not interested in pursuing research another avenue for extracurricular enhancement activities.

2. **Add:** On page 100, new course description for **BIOL 336, Parasitology:**

**336 Parasitology (4)**

Class and laboratory study of morphology, physiology, ecology, disease processes, epidemiology, and management of major parasitic phyla. A case study approach is used for developing a critical understanding of the ecology and adaptive mechanisms that enable a parasite to live within the body of a host in an ecological and management context. Prerequisites: BIOL 134, 135 and 210. Even years Spring.

**Impact Statement:**

1. Curriculum contribution. This will reinstate a 300-level course to the curriculum within the Biology Department that applies to the *Evolution* or *Critical Thinking and Quantitative Analysis* upper-level electives in the major, and it will be a 300-level elective for minors.

2. Course information.

*Course SLOs:* By the end of the course, students should be able to:

- Describe the distinguishing characteristics of principal parasites of humans, plants, and animals.
- Detail the direct and indirect impact that parasites play in our lives, even for those that do not directly parasitize humans.
- Identify parasites at the individual and population level based on host symptomology.
- Develop and design intervention and management strategies for parasites impacting humans, plants, and animals.
- Independently contribute to case study discussions individually and in groups.

*Anticipated class size:* 14, limited by classroom space constraints; the lab component of this offering is key and is the limiting factor on class size.

*Scheduled class time:* This class will meet for 150 minutes of traditional lecture each week (either three 50 minute classes or two 75 minute classes with one 150 minute lab period each week

*Instructional Format:* This offering will consist of both a lecture and lab sections. The lecture will focus on developing background knowledge of major parasitic phyla while the lab will focus on hands-on experience with these organisms. A case study approach will be used both to stimulate a critical thinking and problem solving to management challenges and to introduce students to a learning environment similar to graduate school seminars.

*Special space or materials:* A lab will be required for this course, but it could be taught in almost any of the Biology Department teaching labs.

*Faculty workload:* This course will count as six contact hours for the faculty member teaching it.

3. Faculty contribution. This course has been designed by Dr. Filgueiras and will be taught by her.
4. Delivering the curriculum. Dr. Filgueiras taught the lecture portion of this offering last Spring (2023). She will continue teaching this course with the lab in even years spring.
5. Common Numbering System: This course is not part of the CNS.

**Rationale:** This course was previously taught by Dr. Stuart, who retired. Dr. Filgueiras taught the lecture portion last Spring in response to student demand. Student demand for this course continues to be high as it is a valuable 300-level elective for Biology Majors, especially those who are Pre-Med or Pre-Vet. Furthermore, the course provides instruction into an area of biology not able to be addressed in other courses in the biology department, including providing specific knowledge into organisms and interactions that are not covered in the curriculum of other courses, yet needed by students pursuing careers in human medicine, veterinary medicine, and agriculture.

Inclusion of this course offers several potential positive impacts on our students. First, the course provides majors with an additional 300-level elective that satisfies either the *Evolution* or *Critical Thinking and Quantitative Analysis* elements of the major. Second, the course uses a case study approach in addition to traditional lectures to expose students to graduate-school level critical thinking and independent research that will benefit them in future careers. Third, this offering, especially the lab, provides hands-on experience with organisms and interactions that are not addressed by other offerings in the Department of Biology, yet are critical for pursuing careers in medicine, veterinary science, and agriculture.

3. **Delete:** On page 97, in item II under Major in Biology:

- a) Evolution: BIOL 331, 332, 334, 335, 351, 360, 365, 424
- e) Critical Thinking and Quantitative Analysis: BIOL 338, 344, 345, 350, 360, 365, 426, 442, 443

**Add:** On page 97, in place of deleted entry:

- a) Evolution: BIOL 331, 332, 334, 335, 336, 351, 360, 365, 424
- e) Critical Thinking and Quantitative Analysis: BIOL 336, 338, 344, 345, 350, 360, 365, 426, 442, 443

**Impact Statement:** Students will be able to use BIOL 336 for either the Evolution or the Critical Thinking and Quantitative Analysis category.

**Rationale:** Editorial change to add BIOL 336 to the list of courses for the two categories.