

**J. Sargeant Reynolds Community College
Course Content Summary**

Course Prefix and Number: BIO 299

Credits: 4

Course Title: Supervised Study in Ecology - Advanced

Course Description (including lecture hours, lab hours, total contacts)

Assigns problems for independent study by the student incorporating previous instruction and supervised by the instructor. Provides the student an opportunity to research scientific literature on their selected topic, design a field study to be conducted, assemble and analysis observed field data, and complete a final report on this research. Prerequisites: one year of college biology (including BIO 102) and MTH 163 or MTH 166 or faculty approval. Lecture 2 hours. Laboratory 6 hours. Total 8 hours per week.

General Course Purpose:

The purpose of this course is to introduce the student to the process of scientific research, conducted in a systemic fashion utilizing the scientific method and concluding with the presentation of a scholarly journal article. Student will conduct a detailed and complex research project. The course may be used as an elective in the Science AS degree.

Course Prerequisites/Corequisites (Entry-level competencies **required** for enrollment)

Prerequisites: one year of college biology (including BIO 102) and MTH 163 or MTH 166 or faculty approval.

Course Objectives (Each item should complete the following sentence.)

Upon completing the course, the student will be able to:

- a. Understand and implement the scientific method to study biological problems.
- b. Complete a thorough scientific literature search.
- c. Utilize experimental design to develop research protocols.
- d. Collect, analyze and statistically evaluate data.
- e. Explain data and trends and correlate the data to what is currently known in the field.
- f. Present the research by writing a journal-level article for possible publication, as well as presenting the data at a formal scientific meeting.

Major Topics to be Included:

- a. General Ecology Concepts
- b. Natural History of Researched Organisms
- c. Animal Behavior Topics
- d. Population Ecology Concepts

Effective Date of Course Content Summary (Month, Date Year): January 1, 2011