

**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: Assigns problems for independent study by the student, incorporating previous instruction and supervised by the instructor. Provides students an opportunity to research scientific literature on their selected topic, design a field study to be conducted, assemble and analyze observed field data, and complete a final report on this research. Prerequisites: One year of college biology (including BIO 102) and MTH 161 or MTH 167 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 and Co-requisites:

Prerequisites: One year of college biology (including BIO 102) and MTH 161 or MTH 167 or faculty approval.

Course Objectives:

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;
and
- 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: January 1, 2011