

School of Life Sciences

Director

Bazylnski, Dennis A. (2006), Associate Professor; Ph.D., University of New Hampshire, Durham.

Graduate Coordinator

Andres, Andrew J. (2002), Associate Professor; Ph.D., Indiana University, Bloomington.

Graduate Faculty

de Belle, J. Steven (1997), Associate Professor; Ph.D., York University, Toronto, Canada.

Devitt, Dale A. (2005), Professor; Ph.D., University of California, Riverside.

Elekovich, Michelle M. (2003), Assistant Professor; Ph.D., University of Washington, Seattle.

Gibbs, Allen G. (2005), Assistant Professor; University of California, San Diego.

Hedlund, Brian P. (2003), Assistant Professor; Ph.D., University of Washington, Seattle.

Hoshizaki, Deborah K. (1996), Associate Professor; Ph.D., University of California, Berkeley.

McGaw, Iain J. (1998), Associate Professor; Ph.D., University of Wales, Bangor, United Kingdom.

Meacham, Susan L. (1998), Associate Professor; Virginia Polytechnic and State University, Blacksburg.

Neuman, Dawn S. (1990), Professor and Vice Provost for Academic Resources; Ph.D., University of Washington, Seattle.

Reiber, Carl L. (1993), Professor; Ph.D., University of Massachusetts, Amherst.

Riddle, Brett R. (1990), Professor; Ph.D., University of New Mexico, Albuquerque.

Roberts, Stephen P. (1999), Associate Professor and Associate Director; Ph.D., Arizona State University, Tempe.

Robledo, Eduardo A. (2002), Assistant Professor; Ph.D., University of Wisconsin, Madison.

Rodríguez-Robles, Javier A. (2002), Assistant Professor; University of California, Berkeley.

Schulte, Paul J. (1990), Associate Professor; Ph.D., University of Washington, Seattle.

Shen, Jeffery Q. (2000), Associate Professor; Ph.D., Washington University, St. Louis.

Smith, Stanley D. (1985), Professor; Ph.D., Arizona State University, Tempe.

Stark, Lloyd R. (1999), Associate Professor; Ph.D., Pennsylvania State University, University Park.

Starkweather, Peter L. (1978), Professor; Dartmouth College, Hanover, New Hampshire.

Thompson, Daniel B. (1990), Associate Professor; Ph.D., University of Arizona, Tucson.

van Breukelen, Frank (2002), Assistant Professor; Ph.D., University of Colorado, Boulder.

Walker, Lawrence R. (1992), Professor; Ph.D., University of Alaska, Fairbanks.

Wing, Helen J. (2005), Assistant Professor; Ph.D., University of Birmingham, Edgbaston, United Kingdom.

Yasbin, Ronald E. (2003) Professor and Dean of the College of Sciences; Ph.D., University of Rochester, New York.

Professors Emeriti

Babero, Bert B. (1965-1987), Emeritus Professor; Ph.D., University of Illinois.

Deacon, James E. (1960-2002), Emeritus Distinguished Professor; Ph.D., University of Kansas, Lawrence.

Murvosh, Chad M. (1964-1992), Emeritus Professor; Ph.D., Ohio State University, Columbus.

Niles, Wesley E. (1968-2002), Emeritus Professor; Ph.D., University of Arizona, Tucson.

Yousef, Mohamed K. (1968-1994), Emeritus Distinguished Professor; Ph.D., University of Missouri.

The School of Life Sciences (SoLS) offers programs of studies leading to the Master of Science and Doctor of Philosophy degrees. Each degree requires a research thesis (M.S.) or dissertation (Ph.D.). Research leading to the M.S. and Ph.D. degrees may be conducted in one or more of the following fields: cellular and molecular biology; genetics; microbiology; physiology; population, community, and ecosystem ecology; evolutionary biology; systematics; and biogeography. The School has well-equipped laboratories to support faculty and graduate student research. These facilities are enhanced through access to a number of specialized scientific resources, including the Nevada Genomics Center and SoLS DNA Sequencing Facility (which house state-of-the-art equipment that includes an RT-PCR machine, an Amersham Typhoon imager, a microarray printer, hybridization capacity and scanner, and a DNA capillary sequencer); the Nevada Center for Biological Imaging (which houses a Zeiss LSM-510 confocal laser scanning microscopy system mounted on either upright or inverted Zeiss microscope bodies); the Ecophysiological Research facility (which includes a greenhouse designed to support experiments at elevated levels of carbon dioxide); an AAALAC-accredited animal care facility; and regional natural history collections, including those of the Wesley E. Niles Herbarium and the Marjorie Barrick Museum. Investigators from the Nevada System of Higher Education's Desert Research Institute also contribute to our graduate program. Numerous funding opportunities are available through state-funded graduate assistant programs via statewide initiatives or in association with individual faculty research programs. Prospective students should make contact with one or more faculty members to familiarize themselves with their current research interests, opportunities for conducting research projects, and funding availability. A list of faculty research interests and admission materials are available on-line at the School's web site.

Admission Requirements to the M.S. and Ph.D. Programs in the School of Life Sciences

1. A baccalaureate (B.S., B.A.) degree in biological sciences or its equivalent.
2. A minimum grade point average (GPA) of 3.00 (on a 4.00 scale) for all undergraduate work.
3. Satisfactory scores on the General Graduate Record Examination (GRE). Successful applicants to the program generally have scores among the upper 50th percentile of examinees taking the GRE.
4. Letters of recommendation (two letters for the M.S. Program; three letters for the Ph.D. Program) from individuals familiar with the applicant's academic record and potential for advanced study in the biological sciences.
5. A written statement that includes:
 - a. summary of research interests
 - b. reason(s) for wishing to earn an advanced degree
 - c. motivation for attending UNLV
 - d. possible faculty mentors
6. Submission of official transcripts of all colleges and universities attended.

7. Submission of a completed application form and payment of fees required by the Graduate College.
8. All international students whose first language is not English or who have not received baccalaureate or Master's degrees from an institution in which the language of instruction is English must take the TOEFL (Test of English as a Foreign Language) examination.

To facilitate efficient processing of applications, duplications of some materials are required.

Accordingly, please send the documents listed in 3, 4, 5, 6, 7, and 8 to:

Graduate Admissions Committee
 School of Life Sciences
 University of Nevada, Las Vegas
 4505 S. Maryland Parkway, Box 454004
 Las Vegas, NV 89154-4004

Please also send the documents listed in 6, 7, and 8 to:

Graduate College
 University of Nevada, Las Vegas
 4505 S. Maryland Parkway, Box 451017
 Las Vegas, NV 89154-1017

For details regarding application deadlines and the application review process, see the School of Life Sciences' *Graduate Student Handbook*, which is available at <http://sols.unlv.edu/gradhandbook.html>.

Degree Requirements for the Master of Science (M.S.) Degree

Specific degree requirements, including those listed below, are described in detail in the School of Life Sciences' on-line *Graduate Student Handbook* <http://sols.unlv.edu/gradhandbook.html>.

1. Master's students are required to complete a minimum of 30 credit hours beyond their undergraduate degree. At least 18 of these hours must be completed at the 700-level. All students must take BIOL 701 (*Ethics in Scientific Research*), preferably during their first year in residence. All students must also take at least six (6) credits of BIOL 796 (*Graduate Seminar*) and at least six (6) credits of BIOL 797 (*Thesis*) during their residency in the Program.
2. In addition to the aforementioned general requirements, students must complete the specific course work required by the Section (*e.g.*, Ecology and Evolutionary Biology, Cell and Molecular Biology, Microbiology, and Integrative Physiology) to which they belong. See SoLS's *Graduate Student Handbook* <http://sols.unlv.edu/gradhandbook.html> for specific requirements.
3. Students may request a maximum of 15 graduate credits taken at UNLV prior to admission into SoLS's Graduate Program to be counted towards the 30 credit hour minimum graduation requirement, provided that those credits were not used to fulfill undergraduate requirements and that a minimum grade of "B" (3.00) was earned in each course.
4. At least 50 percent of the total credits required to complete the Master's degree must be earned at UNLV

after admission into the Graduate Program.

5. Students should register for at least nine (9) credits each semester if they are receiving financial support from SoLS; otherwise they must register for at least six (6) credits each semester. Students working on their thesis must register for at least three (3) credits each semester (excluding summer) until the Master's Thesis is completed and given final approval.
6. Students must confer with their Thesis Advisor prior to enrollment in their first semester. The Advisor will assist with designing an initial graduate degree program (*i.e.*, an outline of the courses that the student will complete for the degree), engage in discussions about possible research directions, and introduce the student to the personnel and resources of the School of Life Sciences.
7. Students must form an Advisory Committee before the end of their first semester in the Graduate Program. This Committee will be composed by the Thesis Advisor (who will serve as the Committee Chair), two members of SoLS's Graduate Faculty, and a Graduate Faculty Representative from UNLV (but outside of SoLS).
8. Students must meet with their Advisory Committee at least once every year (*i.e.*, from January to October), and a written report of this meeting must be submitted to SoLS's Graduate Operations Committee by November 1.
9. The Advisory Committee will review the student's past academic background and, taking into consideration the student's research interests, determine his/her definitive graduate degree program.
10. Students must comply with the deadlines indicated in SoLS's *Graduate Student Handbook* <http://sols.unlv.edu/gradhandbook.html> for submitting required paperwork to the Graduate College.
11. A student will be placed on academic probation if a minimum 3.00 grade point average is not maintained in all work taken as part of the graduate degree program. A grade of "C" or less in two graduate-level classes will cause a student to be placed on academic probation.
12. The M.S. candidate will present a seminar on his/her thesis work that is open to all interested parties, including the general public. This public seminar will be widely advertised at least seven (7) days before it takes place, and will be followed by an oral defense of the thesis research before the Advisory Committee and any other Graduate Faculty member who wishes to attend.
13. Students are expected to complete all the requirements for the Master's degree in 2-3 years.

Master's students may be withdrawn from the Program and separated from the Graduate College if they fail to fulfill any of the requirements for the degree within the specified timeline. See SoLS's *Graduate Student Handbook* <http://sols.unlv.edu/gradhandbook.html> for specific requirements.

Degree Requirements for the Doctor of Philosophy (Ph.D.) Degree

Specific degree requirements, including those listed below, are described in detail in the School of Life Sciences' on-line *Graduate Student Handbook* <http://sols.unlv.edu/gradhandbook.html>.

1. Doctoral students are required to complete a minimum of 60 credit hours beyond their undergraduate degree, unless they are entering the program with a master's degree from another institution (see below). At least 36 of these hours (18 for a student with an awarded M.S. degree) must be completed at the 700-level. All students are expected to take BIOL 701 (*Ethics in Scientific Research*), preferably during their first year in residence. All students must also take at least six (6) credits of BIOL 796 (*Graduate Seminar*) and at least six (6) credits of BIOL 799 (*Dissertation*) during their residency in the Program. BIOL 799 may be repeated for credit as needed, but only 18 credits may be counted towards the 60 credit hour minimum graduation requirement.
2. In addition to the aforementioned general requirements, students must complete the specific course work required by the Section (*e.g.*, Ecology and Evolutionary Biology, Cell and Molecular Biology, Microbiology, and Integrative Physiology) to which they belong. See SoLS's *Graduate Student Handbook* <http://sols.unlv.edu/gradhandbook.html> for specific requirements.
3. Students may request a maximum of 15 graduate credits taken at UNLV prior to admission into SoLS's Graduate Program to be counted towards the 30 credit hour minimum graduation requirement, provided that those credits were not used to fulfill undergraduate requirements and that a minimum grade of "B" (3.00) was earned in each course.
4. Students entering the Doctoral Program with an M.S. degree from another institution must complete at least 30 credit hours at UNLV. The reduction from the 60-credit minimum will only occur if course work completed for the M.S. degree is relevant to the student's doctoral degree, and as such the completed work must be unanimously approved by the student's research advisory committee for the reduction to be granted. No Thesis or Dissertation units can be applied toward the reduction of the 60-credit minimum.
5. Students should register for at least nine (9) credits each semester if they are receiving financial support from the School; otherwise they must register for at least six (6) credits each semester. Students working on their dissertation must register for at least three (3) credits each semester (excluding summer) until the Dissertation is completed and given final approval.
6. Students must confer with their Dissertation Advisor prior to enrollment in their first semester. The Advisor will assist with designing an initial graduate degree program (*i.e.*, an outline of the courses that the student will complete for the degree), engage in discussions about possible research directions, and introduce the student to the personnel and resources of the School of Life Sciences.
7. The student must form an Advisory Committee before the end of his/her first semester in the Graduate Program. This Committee will be composed by the Dissertation Advisor (who will serve as the Committee Chair), two members of SoLS's Graduate Faculty, and a Graduate Faculty Representative from UNLV (outside of SoLS). Students are encouraged to include a fifth Committee member who is an expert on the student's field of research. This fifth Committee member can have an academic affiliation outside of UNLV.
8. Students must meet with their Advisory Committee at least once every year (*i.e.*, from January to October), and a written report of this meeting must be submitted to SoLS's Graduate Operations Committee by November 1.
9. The Advisory Committee will review the student's past academic background and, taking into consideration the student's research interests, determine his/her definitive graduate degree program.
10. Students must comply with the deadlines indicated in SoLS's Graduate Student Handbook <http://sols.unlv.edu/gradhandbook.html> for submitting required paperwork to the Graduate College.
11. Students must take the comprehensive examination before the end of their fifth semester of residency in the Graduate Program. The exam must be held at least three (3) weeks before the last day of instruction of any given term. The exam will include both a written and an oral component, and will assess whether the student has reached the appropriate level of knowledge and analytical skills necessary for his/her field of study. The examination is developed or administered by the Doctoral Advisory Committee or an *ad hoc* Committee composed of Graduate Faculty within the Section to which the student belongs. See SoLS's *Graduate Student Handbook* <http://sols.unlv.edu/gradhandbook.html> for information on the possible outcomes of the exam. Students who fail to pass the exam within the specified timeline will be withdrawn from the Program and separated from the Graduate College.
12. Doctoral students are advanced to candidacy after passing their comprehensive examination and successfully completing a minimum of 36 credits required by the Section to which they belong. Specific curricular requirements for each SoLS Section are described in detail in SoLS's *Graduate Student Handbook* <http://sols.unlv.edu/gradhandbook.html>.
13. Each doctoral student should teach for a minimum of two semesters in the undergraduate curriculum of the School of Life Sciences. During that time the student will receive a Graduate Teaching Assistantship.
14. A student will be placed on academic probation if a minimum 3.00 grade point average is not maintained in all work taken as part of the graduate degree program. A grade of "C" or less in two graduate-level classes will cause a student to be placed on academic probation.
15. The Ph.D. candidate will present a seminar on his/her dissertation work that is open to all interested parties, including the general public. This public seminar will be widely advertised at least seven (7) days before it takes place, and will be followed by an oral defense of

the dissertation research before the Advisory Committee and any other Graduate Faculty member who wishes to attend.

16. Students are expected to complete all the requirements for the Ph.D. degree in 5-6 years.

Doctoral students may be withdrawn from the Program and separated from the Graduate College if they fail to fulfill any of the requirements for their degree within the specified timeline. See SoLS's *Graduate Student Handbook* <http://sols.unlv.edu/gradhandbook.html> for specific requirements.

Biology

The listing of graduate courses is constantly under review by the faculty. For the most complete and current description of course availability, please see the course schedule for an academic session or contact the School of Life Sciences directly. Prerequisites are considered guidelines; roughly equivalent courses are often accepted as fulfilling prerequisite requirements. Some courses are taught on an "on demand" basis; therefore, students should form interest groups and approach the appropriate faculty members to request a specific course.

BIO 701 **1 credit** **Ethics in Scientific Research**

Examination of ethical problems in scientific research, including the falsification and manipulation of data, public access and peer review, and decisions concerning research problems and support. Prerequisite: Graduate standing.

BIO 703 **3 credits** **Biochemical Genetics**

Detailed study of the structure of nucleic acids and the molecular genetic mechanisms of replication, transcription, and induction and repression of genetic information. Biochemical genetics of gene transfer. Prerequisites: BIO 300 and CHEM 471.

BIO 705 **1-3 credits** **Secondary Education: Teaching Evolution and the Nature of Science**

Focus on Science and Creationism and hands-on activities and inquiry-based computer simulations that can be used in classrooms to illustrate evolutionary principles. Workshop taught using scientific methods so educators are well-versed in methods of evolutionary study and principles. Follow up sessions explore implementations of lessons from workshop.

BIO 711 **3 credits** **Advanced Eukaryotic**

Focuses on the biology and genetics of common model organisms: *C. elegans*, *Drosophila*, *Arabidopsis*, Zebrafish, and mouse, and their relationship to the biology of human health and agriculture. The goal is help students understand current research topics in functional genetics and genome manipulation. May be repeated to a maximum of six credits. Prerequisite: Consent of instructor.

BIO 714 **3 credits** **Population Genetics**

Examines the interactions of evolutionary processes, such as natural selection, genetic drift, gene flow, and mutation, and effects of these interactions on population differentiation, speciation, and extinction. Theoretical and empirical approaches to the study of DNA substitutions and quantitative genetic change addressed. Prerequisites: MATH 181 and BIO 310 or consent of instructor.

BIO 722 **3 credits** **Advanced Taxonomy of Vascular Plants**

Identification, classification, and evolutionary relationships of the subfamilies and tribes of the composite, legume, and grass families. Three hours laboratory. Prerequisite: BIO 422.

BIO 730 (A, B, & C) **1-6 credits** **Advanced Research in the Biological Sciences**

Designed for graduate students working in areas specific to the Biological Sciences. Includes the opportunity for research on topics not specifically covered in listed courses from three general areas: a) ecology & evolution, b) organismal physiology, c) cell & molecular biology. The above sections may be taken for 1-6 credits each with a maximum of twelve credits with the consent of instructor. Prerequisites: Graduate standing in the M.S. or Ph.D. program and consent of instructor.

BIO 742 **2 credits** **Topics in Advanced Plant Physiology**

Advanced treatment of current topics in plant physiology. Topics for consideration selected from one of the three following major subject areas: (a) Water relations, ion balance, and mineral nutrition; (b) Photosynthesis, intermediary metabolism, and plant growth; and (c) Stress physiology. Instructor and students decide which area covered during a given semester. May be repeated to a maximum of six credits. Prerequisite: BIO 442.

BIO 743 **3 credits** **Ecological Plant Physiology**

Examination of the physiological responses and adaptations of terrestrial plants to their environment. Primary topics covered include microclimate analysis, water relations, gas exchange, nutrient relations, and adaptations to stress. Adaptations of plants from contrasting physical environments emphasized. Prerequisites: BIO 340 and BIO 442.

BIO 745 **3 credits** **Arid Zone Soils**

(*Same as GEOL 740.*) Role soils have in the soil-plant-atmospheric continuum of arid regions, influence of arid zone soils on all aspects of plant growth and development, influence of soil forming factors on the development of arid soils. Prerequisite: Consent of instructor.

BIO 748 **3 credits**
Environmental Physiology

Examination of physiological responses, including adaptation and acclimatization to extreme physical environments. Consideration of desert, tropical, arctic, mountain, and aquatic environments and their physiology, ecological, and phylogenetic implications.

BIO 763 **3 credits**
Vertebrate Reproductive Biology

Study of vertebrate reproduction at the systematic, organismal and population levels. Individual or group projects. Prerequisites: BIOL 350, 448 or 465, and consent of instructor.

BIO 781 **3 credits**
Population and Evolutionary Ecology

Advanced topics in population growth, population interaction and evolution in ecological systems. Includes reading and class discussion of both theoretical and empirical material with emphasis on individual student analysis and integration. Three hours of lecture and discussion. Prerequisites: BIO 340 or equivalent and consent of instructor.

BIO 783 **3 credits**
Community and Ecosystem Ecology

Readings and evaluation of the highest levels of organization in ecology through: a) exploration of the fundamental concepts of community distributions, structure, organization, and change; and b) analysis of ecosystem-level processes of primary and secondary production and nutrient cycling. Prerequisites: BIO 340 or equivalent and consent of instructor.

BIO 784 **3 credits**
Conservation Biology

Science of scarcity and diversity viewed from the perspective of understanding the causes and consequences of extinction as well as the conditions necessary for maintenance of biotic diversity. Review regional and worldwide developments in this emerging subdiscipline. Prerequisite: BIO 340 or consent of instructor.

BIO 786 **3 credits**
Bioenergetics

Review of primary and secondary productivity and associated topics dealing with ecosystem energetics. Four hours laboratory. Prerequisite: Consent of instructor.

BIO 787 **1-3 credits**
Research Laboratory Rotation

Provides an opportunity for newly admitted graduate students to experience the research of Biological Sciences graduate faculty through one-on-one interactions. Gives graduate students the information they need to make informal choices about the lab(s) where they carry out their thesis and dissertation research. May be repeated to a maximum of three credits. S/F grading only. Prerequisite: Admission as a regular graduate student in the M.S. or Ph.D. program.

BIO 789 **1-3 credits**
Independent Graduate Study

Project credits for M.A.S. students in some field of Biological Sciences. Proposed project for study must be submitted in writing to the M.A.S. graduate program coordinator. May be repeated to a maximum of six credits. Prerequisite: Graduate standing.

BIO 790 **1-3 credits**
Graduate Problems in Biology

Special problems for graduate study in some field of biology. Problems include non-thesis research projects, reading and conference, and library research. May be repeated to a maximum of twelve credits. Prerequisite: Graduate standing in Biological Sciences.

BIO 791 **2 credits**
Special Topics in Biology

Review of recent literature in a specialized area of biology. Topics selected and published in the class schedule. May be repeated once for credit.

BIO 792 **1-3 credits**
Advanced Topics in Cell and Molecular Biology

Includes papers, oral presentations and discussion of current literature in these fields. Topics announced with each offering. May be repeated to a maximum of twelve credits. Prerequisites: Graduate standing and consent of instructor.

BIO 793 **1-2 credits**
Advance Topics in Ecology and Evolution

Discussions of current topics in evolution and organismal ecology. Specific topics are determined in advance by the participants and can vary weekly. Students are required to select articles from the primary literature and lead discussions of those papers, including the elucidation of their major strengths and weaknesses. May be repeated to a maximum of six credits.

BIO 794 **3 credits**
Techniques in Molecular Biology

Introduction to the techniques of modern molecular biology including: separation of nucleic acids by centrifugation, chromatography, and electrophoresis; purification of proteins; determination of nucleic acid and protein sequences; fractionation of cellular components; and cloning and expression of specific genes. Three to nine hours laboratory per week. May be repeated to a maximum of six credits. Prerequisite: BIO 210 or BIO 300 or CHEM 471 or CHEM 474-475.

BIO 795 **2 credits**
Teaching Strategies for University Science Courses

Designed for graduate students in the sciences and will prepare you for University-level science teaching, whether pursuing a research-based or teaching-based faculty position. We explore different learning theories, current research about learning science and applying them to teaching and the development of a personal teaching philosophy.

BIO 796 **1-2 credits**

Graduate Seminar

Preparation and presentation of seminars on topics of current interest in biology. Topic changes by semester; see class schedule. May be repeated to a maximum of twelve credits. Prerequisite: Graduate standing in biology.

BIO 797 **3-6 credits**

Thesis

May be repeated but only six credits applied to the student's program. Enrollment by consent of instructor only. S/F grading only.

BIO 799 **3-6 credits**

Dissertation

Research analysis and writing toward completion of dissertation and subsequent defense. May be repeated but a maximum of only 18 credits may be applied to the degree program. S/F grading only. Prerequisites: Graduate standing in the Biology Ph.D. program and consent of instructor.

Graduate credit may be obtained for courses designated 600 or above. Full descriptions of these courses may be found in the *Undergraduate Catalog* under the corresponding 400 number. Credit at the 600 level normally requires additional work.

- BIO 604 Principles of Neurobiology
- BIO 607 Molecular Biology
- BIO 609 Virology
- BIO 611 Molecular Evolution
- BIO 618 Microbial Ecology
- BIO 622 Taxonomy of Vascular Plants
- BIO 625 Genomics
- BIO 626 Plant Anatomy
- BIO 631 Ichthyology
- BIO 632 Herpetology
- BIO 633 Ornithology
- BIO 634 Mammalogy
- BIO 641 Field Ecology
- BIO 642 Principles of Plant Physiology
- BIO 644 Principles of Plant Ecology
- BIO 645 Cell Physiology Laboratory
- BIO 647 Comparative Animal Physiology
- BIO 648 Endocrinology
- BIO 653 Immunology
- BIO 660 Microbial Physiology
- BIO 665 Vertebrate Embryology
- BIO 668 Histology
- BIO 670 Topics in Applied Microbiology
- BIO 671 Aquatic Ecology
- BIO 672 Limnology
- BIO 680 Introduction to Biological Modeling
- BIO 685 Microbial Genetics
- BIO 687 Principles of Systematics
- BIO 689 Developmental Genetics
- BIO 690 Biogeography

The following courses offered by other departments may also be taken for graduate credit:

- CHEM 672 Biochemistry Laboratory
- STA 691 Statistics for Scientists I
- STA 692 Statistics for Scientists II
- STA 693 Applied Regression Analysis
- STA 695 Nonparametric Statistics