College of Sciences

http://www.odu.edu/sci

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Ph.D.
- Biomedical Sciences
- Chemistry
- Clinical Psychology
- Computational and Applied Mathematics
- Computer Science
- Ecological Sciences
- Oceanography
- Physics
- Psychology

Master's
- Biology
- Chemistry
- Computational and Applied Mathematics
- Computer Science
- Ocean and Earth Sciences
- Physics
- Psychology

Overview
The College of Sciences’ degree programs are designed to prepare students for careers in the sciences and to lay broad foundations for specialized training in these fields of knowledge.

The college is comprised of the Departments of Biological Sciences, Chemistry and Biochemistry, Computer Science, Mathematics and Statistics, Ocean, Earth and Atmospheric Sciences, Physics, and Psychology. The Departments of Biological Sciences, Chemistry and Biochemistry, Mathematics and Statistics, Ocean, Earth and Atmospheric Sciences, and Physics cooperate with the Darden College of Education to provide the necessary courses for a Masters of Science in Education in the respective field.

Programs
The College of Sciences has developed graduate programs in the basic and applied sciences that meet the needs of the Eastern Virginia region, the state, the nation and the world. These programs address a variety of challenges, ranging from basic research to the quest for solutions to contemporary problems in science. The importance of these challenges is reflected by the more than $18 million in research and training grants currently generated by the college. The college provides the nation with much-needed graduate programs in broad fields of concentration leading to both master’s and doctoral degrees. Related program emphases within the major areas of study are designed to meet the professional needs of the students and communities served.

The college’s faculty of 190 highly skilled professional educators is devoted to guiding students toward an assimilation of the most current scientific theories, research, and practices.

College Financial Aid
The College of Sciences has established teaching and research assistantship stipends that range from $6,400 to $20,500. The responsibility for distributing these assistantship stipends lies in each department. In addition, each department has fellowship and tuition exemption funds available for competitive distribution.

Dominion Graduate Scholars
Programs in the College of Sciences offer a number of very competitive awards for graduate students newly admitted into Ph.D. programs. Some of these are Dominion Graduate Scholar appointments that carry a stipend of $18,000 for a 12-month period and full tuition exemptions. These Scholars must be enrolled in at least nine hours of graduate courses each semester, and three graduate credits during the summer to meet institutional eligibility requirements. These students are expected to be scholars in residence and spend full time in pursuit of their studies. Since the teaching or research experience will be more limited than for other awards, the Scholars will have sufficient time to devote to their academic studies.

All admission materials are considered as a part of the evaluation process. Students apply to specific graduate programs and may inquire about the Dominion Graduate Scholarship. After a student has been appointed to a Dominion Scholarship, the graduate program director will submit a copy of their letter-of-offer, letter-of-acceptance and the awardee's credential summary.

Minimum criteria for eligibility are as follows:

1. GRE scores: 310 combined verbal and quantitative, and at least a 4.0 on the analytical writing section.
2. GRE scores (older version): 1200 combined verbal and quantitative, or 1300 in any two of verbal, quantitative, or analytical.
3. Undergraduate GPA of 3.20 overall and 3.50 in the major, out of 4.00 maximum.
4. Evidence of research aptitude by undergraduate thesis/research, publications, M.S. thesis and/or letters of reference.
5. Information concerning the Dominion Graduate Scholar Program may be obtained from the graduate program director for the program of interest.
6. Written acknowledgment from a faculty member agreeing to serve as the student’s major advisor, if the student is accepted.

Doctor of Philosophy - Biomedical Sciences
Robert E. Ratzlaff, Graduate Program Director

In this interdisciplinary program all students are required to master a broad knowledge of the basic biomedical sciences. Integration of the basic courses is reinforced by a rotation of laboratory experiences and by special seminars that highlight disciplinary interrelationships and approaches to biomedical research. The student progresses from a core of basic courses to in-depth study of specific biomedical problems. This includes advanced doctoral courses and the doctoral research project. Under the guidance of the graduate faculty, the student will integrate knowledge from the broad spectrum of biomedical disciplines into his or her focus on an area of specialization.

The program graduate will be a scientist with a broad biomedical education and a demonstrated ability to carry out original and creative research, cognizant of the disciplinary interfaces and implications and capable of pursuing and/or recommending continuing lines of study. He/she will be prepared to bridge the gap between practice and discovery in the art of medicine and the practice of science. The graduate is capable of serving in an industrial, governmental, or academic teaching or research setting, either independently or as a member of a team.

Admission
The requirements for admission to the biomedical sciences Ph.D. program are as follows:

1. A bachelor’s degree from an accredited college or university with a B (3.00) average. Students with advanced degrees are encouraged to apply.
2. GRE scores: 300 combined verbal and quantitative, and at least a 3.5 on the analytical writing section.
3. GRE scores (older version): 1000 combined verbal and quantitative.
4. Prior training in biology (two years), calculus and/or statistics, and organic chemistry (one year). Additional courses in biology, chemistry, and physics are recommended.

**Curriculum and Requirements**

To accomplish the objectives of the program, the student:

1. Enrolls in the basic biomedical sciences courses to develop a broad foundation for more advanced course work and dissertation research;
2. Selects appropriate advanced course work approved by the guidance committee;
3. Completes at least 79 credit hours beyond the bachelor’s degree or 48 credit hours beyond the master’s degree;
4. Presents two seminars;
5. Passes either
   a. written and oral qualifying examinations on course work or
   b. an NIH-style grant proposal written on a research question in an area not specific to the planned research in the mentor’s laboratory and an oral exam on the grant proposal and on coursework;
6. Develops an interdisciplinary research proposal in NSF or NIH format that is accepted by the guidance committee;
7. Performs publishable research to demonstrate the ability to complete original and creative research projects; and
8. Prepares and successfully defends a dissertation.

**Application Procedures**

The completed application for the biomedical sciences Ph.D. program will include the following items:

1. Transcripts of all college course work. Transcripts will be official transcripts sent by the registrars of the colleges attended.
2. Graduate Record Examination (GRE) test scores, sent directly from the Educational Testing Service to the Old Dominion University Graduate Admissions Office. The Medical College Admissions Test (MCAT) can substitute for the GRE (minimum score 26).
3. A statement of personal goals and academic objectives.
4. Three letters of recommendation, preferably from faculty members at colleges attended who are familiar with the applicant’s academic and research capabilities.
5. A completed application form.
6. Receipt of the application fee. Checks should be made payable to Old Dominion University.
7. Test of English as a Foreign Language (TOEFL) test scores, sent directly from the ETS to ODU International Graduate Admission Office must accompany international applications for applicants with a degree issued outside of the United States.

Applications to Old Dominion University can be completed on-line [http://www.odu.edu/admission/graduate](http://www.odu.edu/admission/graduate).

The applicant is responsible to ensure that all application materials are received and the application is complete in all respects.

**Financial Aid**

Sources of financial aid available to biomedical sciences Ph.D. students include

1. waivers of tuition,
2. research and teaching assistantships and
3. loans.