

# College of Sciences

**Web Site:** <http://sci.odu.edu>

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The College of Sciences degree programs are designed to prepare students for careers in the sciences or 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 and Earth Sciences, Physics, and Psychology. The Departments of Biological Sciences, Chemistry and Biochemistry, Computer Science, Mathematics and Statistics, Ocean and Earth Sciences, and Physics cooperate with the Darden College of Education and Professional Studies to provide the necessary courses for certification to teach in the Commonwealth.

## Undergraduate Degree Requirements for all Majors in the College of Sciences

### Core Requirements

Fulfilling the University General Education Requirements for a specific program satisfies the degree requirements for the College of Sciences. Refer to the University General Education section of this Catalog for details about which courses satisfy the skills, ways of knowing, and upper-division requirements of the General Education program.

Additional major requirements are listed under the various departmental programs.

### General Requirements

1. Students wishing to take a major or a minor in the College of Sciences must declare with the appropriate department.
2. The College of Sciences allows a maximum of four hours of activity credit to be applied toward any degree granted by the college. Activity credit beyond the four-hour maximum may be permitted in unusual circumstances with the written approval of the dean of the college. Activity credit required by a student's major department will not be counted toward the credit limitation. (See the Catalog section on Activity Credits for the definitions and other restrictions on activity course credits.)

## College of Sciences Degree Programs

Subject	BS	MS	PhD
Biology	X	X	X <sup>1</sup>
Biochemistry	X	X <sup>2</sup>	X <sup>3</sup>
Chemistry	X	X	X
Clinical Psychology			X <sup>4</sup>
Computer Engineering		X <sup>5</sup>	X <sup>5</sup>
Computer Science X		X	X
Computer Science (Computer Information Sciences)		X <sup>6</sup>	
Mathematics	X	X <sup>7</sup>	X <sup>7</sup>
Ocean and Earth Science	X	X	
Oceanography			X

Physics	X	X	X
Psychology	X	X	X <sup>8</sup>

- 1 Ecological sciences. Training opportunities are available with faculty in the Departments of Biological Sciences, Chemistry and Biochemistry, and Ocean and Earth Sciences.
- 2 Emphasis area within chemistry master's degree program.
- 3 Emphasis area within chemistry Ph.D. program.
- 4 Doctor of Philosophy (Ph.D.) offered through the Virginia Consortium Program in Clinical Psychology, sponsored by Norfolk State University and Old Dominion University.
- 5 Offered jointly with the College of Engineering and Technology.
- 6 Offered jointly with the Strome College of Business.
- 7 Computational and applied mathematics, with emphases in applied mathematics and statistics/biostatistics.
- 8 Health psychology, human factors psychology, and industrial/organizational psychology.

## Old Dominion University/Eastern Virginia Medical School Early Assurance Program in Medicine

The Early Assurance Program in Medicine is designed to encourage highly qualified students to receive a BS from Old Dominion University and an M.D. from Eastern Virginia Medical School. Students apply during their sophomore semester at Old Dominion University. Upon successful completion of the program requirements and graduation from Old Dominion University, a student accepted into the ODU/EVMS Early Assurance Program in Medicine will be guaranteed admission to Eastern Virginia Medical School. Additional information and admission requirements can be found at the following address: <https://www.odu.edu/sci/academics/advising/bmsmd> (<https://www.odu.edu/sci/academics/advising/bmsmd/>).

## Policy for the Awarding of Bachelor's Degrees To Students Attending Professional School in Medically Related Fields

Old Dominion University students attending an accredited medical, dental, pharmacy, or veterinary school without a bachelor's degree shall be given the opportunity of receiving the bachelor's degree in accordance with the prescribed criteria as follows:

1. The student applying for the degree must complete a minimum of 90 semester hours of undergraduate credit prior to attending professional school.
2. The student must fulfill the General Education requirements of the University and the College of Sciences.
3. Thirty of the last thirty-six hours prior to professional school must be taken at Old Dominion University. A minimum of 12 hours at the 300/400 level in the major program must be taken at Old Dominion University.
4. This policy is applicable to any bachelor's degree offered by Old Dominion University. It must be kept in mind, however, that all departmental requirements must be met either prior to professional school or by using courses taken during the first year of professional school. This latter course of action requires written petition to and approval by the appropriate departmental chair. In either case the student must complete at least two-thirds of the major requirements for the degree prior to attending professional school.
5. The degree is to be awarded only after completion of one year of professional school with acceptable academic performance (to be determined by a letter from the professional school stating that the student is eligible to matriculate for the second year).
6. The student would apply for the bachelor's degree on completion of one year of professional school. Certification by the appropriate department chair is required as usual.

## Prehealth Advisement–Prehealth Advisory Committee

Students seeking careers in medicine, dentistry, osteopathy, optometry, podiatry, veterinary medicine, or pharmacy should request advisement as early as possible from the Prehealth Advisory Committee, as well as from their major or other academic advisor. This is to obtain general information of value in gaining acceptance to the professional school of choice, such as how and when to apply for admission, preparation for preprofessional tests and interviews, obtaining letters of evaluation and recommendation, and choosing among the many different schools and professions. Advice is also given on course selection, although only the academic advisor can formally approve these selections.

Students seeking admission to medical, dental and other medically related professional schools should confer with the Prehealth Advisory Committee in their junior year concerning the preparation of letters of evaluation by the Committee.

To receive prehealth advisement, please contact Reneldo Randall, Chair of the Prehealth Advisory Committee located in MGB 236, (757) 683-6790.

## Departments

- Biological Sciences (<http://catalog.odu.edu/undergraduate/sciences/biological-sciences/>)
- Chemistry and Biochemistry (<http://catalog.odu.edu/undergraduate/sciences/chemistry-biochemistry/>)
- Computer Science (<http://catalog.odu.edu/undergraduate/sciences/computer-science/>)
- Mathematics and Statistics (<http://catalog.odu.edu/undergraduate/sciences/mathematics-statistics/>)
- Ocean and Earth Sciences (<http://catalog.odu.edu/undergraduate/sciences/ocean-earth-sciences/>)
- Physics (<http://catalog.odu.edu/undergraduate/sciences/physics/>)
- Psychology (<http://catalog.odu.edu/undergraduate/sciences/psychology/>)

## Programs

### Bachelor of Science Programs

- Biochemistry (BS) (<http://catalog.odu.edu/undergraduate/sciences/chemistry-biochemistry/biochemistry-bs/>)
- Biochemistry with a Major in Biochemistry-Research (BS) (<http://catalog.odu.edu/undergraduate/sciences/chemistry-biochemistry/biochemistry-research-bs/>)
- Biochemistry with a Major in Secondary Chemistry Education (6-12) (BS) (<http://catalog.odu.edu/undergraduate/sciences/chemistry-biochemistry/biochemistry-secondary-chemistry-education-6-12-bs/>)
- Biology (BS) (<http://catalog.odu.edu/undergraduate/sciences/biological-sciences/biology-bs/>)
- Biology with a Major in Biology-One Health (BS) (<http://catalog.odu.edu/undergraduate/sciences/biological-sciences/biology-one-health-bs/>)
- Biology with a Major in Biomedical Sciences (BS) (<http://catalog.odu.edu/undergraduate/sciences/biological-sciences/biology-biomedical-sciences-bs/>)
- Biology with a Major in Biomedical Sciences-Pre Health (BS) (<http://catalog.odu.edu/undergraduate/sciences/biological-sciences/biology-biomedical-sciences-pre-health-bs/>)
- Biology with a Major in Marine Biology (BS) (<http://catalog.odu.edu/undergraduate/sciences/biological-sciences/biology-marine-bs/>)
- Biology with a Major in Secondary Biology Education (6-12) (BS) (<http://catalog.odu.edu/undergraduate/sciences/biological-sciences/biology-secondary-education-6-12-bs/>)
- Chemistry (BS) (<http://catalog.odu.edu/undergraduate/sciences/chemistry-biochemistry/chemistry-bs/>)
- Chemistry with a Major in Chemical Forensic Science (BS) (<http://catalog.odu.edu/undergraduate/sciences/chemistry-biochemistry/chemistry-chemical-forensic-science-bs/>)
- Chemistry with a Major in Chemistry Pre-Med (BS) (<http://catalog.odu.edu/undergraduate/sciences/chemistry-biochemistry/chemistry-pre-med-bs/>)
- Chemistry with a Major in Chemistry-Research (BS) (<http://catalog.odu.edu/undergraduate/sciences/chemistry-biochemistry/chemistry-research-bs/>)
- Chemistry with a Major in Secondary Chemistry Education (6-12) (BS) (<http://catalog.odu.edu/undergraduate/sciences/chemistry-biochemistry/chemistry-secondary-education-6-12-bs/>)
- Mathematics with a Major in Actuarial Mathematics (BS) (<http://catalog.odu.edu/undergraduate/sciences/mathematics-statistics/mathematics-actuarial-bs/>)
- Mathematics with a Major in Applied Mathematics (BS) (<http://catalog.odu.edu/undergraduate/sciences/mathematics-statistics/mathematics-applied-bs/>)
- Mathematics with a Major in Big Data Analytics (BS) (<http://catalog.odu.edu/undergraduate/sciences/mathematics-statistics/mathematics-big-data-analytics-bs/>)
- Mathematics with a Major in Secondary Mathematics Education (6-12) (BS) (<http://catalog.odu.edu/undergraduate/sciences/mathematics-statistics/mathematics-secondary-education-6-12-bs/>)
- Mathematics with a Major in Statistics/Biostatistics (BS) (<http://catalog.odu.edu/undergraduate/sciences/mathematics-statistics/mathematics-statistics-biostatistics-bs/>)
- Ocean and Earth Science with a Major in Environmental Sciences (BS) (<http://catalog.odu.edu/undergraduate/sciences/ocean-earth-sciences/ocean-earth-science-environmental-sciences-bs/>)
- Ocean and Earth Science with a Major in Geology (BS) (<http://catalog.odu.edu/undergraduate/sciences/ocean-earth-sciences/ocean-earth-science-geology-bs/>)
- Ocean and Earth Science with a Major in Marine Science Technology (BS) (<http://catalog.odu.edu/undergraduate/sciences/ocean-earth-sciences/ocean-earth-science-marine-technology-bs/>)
- Ocean and Earth Science with a Major in Middle School Science Education (6-8) (BS) (<http://catalog.odu.edu/undergraduate/sciences/ocean-earth-sciences/ocean-earth-science-middle-school-education-6-8-bs/>)
- Ocean and Earth Science with a Major in Oceanography (BS) (<http://catalog.odu.edu/undergraduate/sciences/ocean-earth-sciences/ocean-earth-science-oceanography-bs/>)
- Ocean and Earth Science with a Major in Secondary Earth Science Education (6-12) (BS) (<http://catalog.odu.edu/undergraduate/sciences/ocean-earth-sciences/ocean-earth-science-secondary-education-6-12-bs/>)
- Physics (BS) (<http://catalog.odu.edu/undergraduate/sciences/physics/physics-bs/>)
- Physics and Master of Business Administration (BS, MBA) (<http://catalog.odu.edu/undergraduate/sciences/physics/physics-business-administration-bs-mba/>)
- Physics with a Major in Astrophysics (BS) (<http://catalog.odu.edu/undergraduate/sciences/physics/physics-astronomy-bs/>)
- Physics with a Major in Physics and Electrical Engineering (BS, BSEE) (<http://catalog.odu.edu/undergraduate/sciences/physics/physics-electrical-engineering-bs/>)
- Physics with a Major in Physics-Professional (BS) (<http://catalog.odu.edu/undergraduate/sciences/physics/physics-professional-bs/>)
- Physics with a Major in Secondary Physics Education (6-12) (BS) (<http://catalog.odu.edu/undergraduate/sciences/physics/physics-secondary-education-6-12-bs/>)
- Psychology (BS) (<http://catalog.odu.edu/undergraduate/sciences/psychology/psychology-bs/>)

## Bachelor of Science in Computer Science Programs

- Computer Science (BSCS) (<http://catalog.odu.edu/undergraduate/sciences/computer-science/computer-science-bscs/>)
- Computer Science with a Major in Secondary Computer Science Education (6-12) (BSCS) (<http://catalog.odu.edu/undergraduate/sciences/computer-science/computer-science-secondary-education-6-12-bscs/>)

## Minor Programs

- Biology Minor (<http://catalog.odu.edu/undergraduate/sciences/biological-sciences/biology-minor/>)
- Chemistry Minor (<http://catalog.odu.edu/undergraduate/sciences/chemistry-biochemistry/chemistry-minor/>)
- Computer Science Minor (<http://catalog.odu.edu/undergraduate/sciences/computer-science/computer-science-minor/>)
- Mathematics-Actuarial Mathematics Minor (<http://catalog.odu.edu/undergraduate/sciences/mathematics-statistics/mathematics-actuarial-mathematics-minor/>)
- Mathematics-Applied Mathematics Minor (<http://catalog.odu.edu/undergraduate/sciences/mathematics-statistics/mathematics-applied-mathematics-minor/>)
- Mathematics-Statistics/Biostatistics Minor (<http://catalog.odu.edu/undergraduate/sciences/mathematics-statistics/mathematics-statistics-biostatistics-minor/>)
- Ocean and Earth Science Minor (<http://catalog.odu.edu/undergraduate/sciences/ocean-earth-sciences/ocean-earth-science-minor/>)
- Physics Minor (<http://catalog.odu.edu/undergraduate/sciences/physics/physics-minor/>)
- Psychology Minor (<http://catalog.odu.edu/undergraduate/sciences/psychology/psychology-minor/>)
- Web Programming Minor (<http://catalog.odu.edu/undergraduate/sciences/computer-science/web-programming-minor/>)

## Certificate Programs

- Human Factors Certificate (<http://catalog.odu.edu/undergraduate/sciences/psychology/human-factors-certificate/>)
- Spatial Analysis of Coastal Environments Certificate (<http://catalog.odu.edu/undergraduate/sciences/ocean-earth-sciences/spatial-analysis-coastal-environments-certificate/>)

## BA or BS to MBA (Master of Business Administration) Linked Program

The linked BA/MBA or BS/MBA program is an early entry to the MBA program of study. The early-entry program is designed for well qualified non-business undergraduate ODU students to start their MBA program prior to completing their undergraduate degree. Well qualified non-business undergraduate students may take MBA-level courses as early as three semesters prior to graduation and count up to 12 graduate credits toward their undergraduate degree. Students participating in the early-entry program must earn a minimum of 150 credit hours (120 discrete credit hours for the undergraduate degree and 30 discrete credit hours for the graduate degree). Early-entry program students should carefully consider their undergraduate degree program requirements when planning their course of study. Students in the early-entry program work in close consultation with the MBA Program Office and should refer to information in the Strome College of Business section in the graduate catalog (<http://catalog.odu.edu/graduate/stromecollegeofbusiness/>) to develop an individualized plan of study based on the required coursework.

## BA or BS to MPA (Master of Public Administration) Linked Program

The linked BA/MPA or BS/MPA program provides qualified Old Dominion University undergraduate students with the opportunity to earn a master's degree in public administration while taking credits in the MPA program as an undergraduate student. The program is designed for highly motivated

students with the desire to immediately continue their education after the bachelor's degree. The program is especially relevant to individuals seeking to work (or currently working) in the public or non-profit sectors, but is suitable for students from any undergraduate major. Graduate courses may be taken during the fall and spring semester of the student's senior undergraduate year. Up to 12 graduate credits can count toward both the undergraduate and graduate degree and can meet upper-level General Education requirements. After receiving the undergraduate degree, a student will continue with the MPA program, taking MPA courses until completing the required 39 credit hours. Students in the linked program must earn a minimum of 150 credit hours (120 discrete credit hours for the undergraduate degree and 30 discrete credit hours for the graduate degree).

Requirements for admission to the graduate program can be found in the School of Public Service section of the Graduate Catalog (<http://catalog.odu.edu/graduate/business/public-service/>). For additional information, please contact the School of Public Service in the Strome College of Business.

## Research and Service Centers

### Center for Coastal Physical Oceanography

The Commonwealth Center for Coastal Physical Oceanography focuses research efforts on major physical processes in the coastal ocean. These processes include continent scale currents, exchange with the open ocean, and effects of global change. Techniques focus on computer modeling and analysis of existing data bases. The center provides advanced computer resources, technical support, and funding for faculty, research associates, and students. Visitors are encouraged to use the facility during either short- or long-term stays.

### Center for Accelerator Science

The Center for Accelerator Science, established in partnership with Thomas Jefferson National Accelerator Facility (Jefferson Lab), aims to meet the nation's need for scientists who will advance the sciences and technologies of particle accelerators and light sources for use in basic science, applied science and industry.