## Master of Science

# Chemistry (MS)

The Department of Chemistry and Biochemistry offers a program of study leading to the degree of master of science. This program offers a sound academic background of coursework and research to prepare the student for further graduate study or employment in fields requiring an advanced degree. Areas of specialization within the program include: analytical chemistry, biochemistry, environmental chemistry, inorganic chemistry, materials chemistry, organic chemistry, and physical chemistry.

## Admission

An application (http://www.odu.edu/admission (http://www.odu.edu/admission/)), transcripts, two letters of recommendation from former college instructors, a resume, a writing sample, and an essay about career goals are required for consideration of admission to the program. The submission of Graduate Record Examination (GRE) scores is optional for domestic students, but strongly recommended for international applicants. All international applicants must satisfy ODU's English proficiency requirements for admission. International students can demonstrate English proficiency by providing an Internet Based TOEFL (iBT) or IELTS score. Admission to regular status requires a grade point average of 3.00 in the major and 2.80 overall (on a 4.00 scale). General university admission requirements also apply. In addition, a Bachelor of Science degree (or equivalent) with a major in chemistry (or another science) is expected, although applications from majors in all science disciplines are welcome. Undergraduate courses in organic chemistry, inorganic chemistry, analytical chemistry (quantitative and instrumental analysis), physical chemistry, and calculus are required for regular admission. Deficiencies in any of these areas will be identified and must be rectified by taking undergraduate coursework.

To be considered for a teaching assistantship, students must demonstrate both written and oral fluency in the English language. All domestic and international students who are not native English speakers are required to take the SPEAK test. Students who have a score of 26 or better on the Speaking portion of the iBT TOEFL or a score of 8 on the IELTS are eligible to request a waiver for the SPEAK test requirement.

## Curriculum Requirements

### Core Courses

There are six core areas. These are:

- analytical chemistry
- biochemistry
- environmental chemistry
- inorganic chemistry
- organic chemistry
- physical chemistry

Students enrolled in either the research/thesis or non-thesis option must take one course from each of three different core areas.

### Options

Candidates for the master's degree have two options in their program: the Research/Thesis option and the Non-Thesis option.

**Thesis option**

| | | |
|---|---|---|
| Courses | | 24 |
| Research and Thesis | | 6 |
| CHEM 790 | Master's Seminar | 1 |
| **Total Credit Hours** | | **31** |

**Non-thesis option***

| | | |
|---|---|---|
| Courses | | 27 |
| Independent study | | 3 |
| CHEM 790 | Master's Seminar (**) | 1 |
| **Total Credit Hours** | | **31** |

* Ph.D students seeking a non-thesis master's degree after the successful completion of candidacy can use six credits of CHEM 898 toward this 27 credit requirement and additionally substitute CHEM 898 for CHEM 698.

** Ph.D. students seeking a non-thesis master's degree after successful completion of their candidacy can substitute CHEM 890 for CHEM 790.

Up to 15 hours may be taken in related courses given by other departments pending approval from the Graduate Studies Committee of the Department of Chemistry and Biochemistry. At least 60 percent of the credit hours must be from 600-level courses or higher.

Students who earn a grade of less than a B- in any two graduate courses will not be allowed to continue in the M.S. program.

## Additional Requirements

### Writing Proficiency Policy

The departmental graduate committee will request a writing sample from each new student. The graduate committee will refer students in need of remedial assistance to the Writing Center.

### Seminar

All students are required to register for seminar (CHEM 790, one credit, pass/fail) and attend departmental seminars for one semester.

### Research and Thesis

During their first semester (and not later than the end of their first academic year), students electing the Research/Thesis Option are required to interview the chemistry graduate faculty, choose a graduate faculty research advisor, and select a research committee in consultation with their advisor and the Graduate Program Director. Upon completion of their research, students must write a formal thesis describing their research, present their work in a public seminar, and pass an oral examination by their research committee.

### Non-Thesis Option

Not later than the end of their first academic year, students electing the Non-Thesis Option are required to interview the chemistry graduate faculty and choose an independent study advisor. Non-thesis students and their independent study advisor will then agree upon an independent study project. Upon completion of their independent study project, non-thesis students must write a formal Independent Study Report acceptable to their independent study advisor and the Graduate Studies Committee and pass an oral exam on their project.