Chemistry MS Accelerated Master's Degree

The Department of Chemistry & Biochemistry offers an Accelerated MS degree program that allows students to simultaneously earn their BS and their MS in Chemistry. Students accepted to the Accelerated MS degree program will be permitted to count up to 9 credits toward both degrees.

Students are encouraged to work closely with their Chemistry & Biochemistry undergraduate advisor and the Accelerated MS advisor to ensure that courses are timed appropriately to maximize their benefits. It is strongly recommended that students meet with the Accelerated MS advisor as soon as possible, ideally before their junior year.

Students in the Accelerated MS program will complete the MS through the non-thesis coursework path. The thesis MS and Professional Science MS programs cannot be combined with this program.

Eligibility

Students need to have fulfilled the core curriculum requirements for the Bachelor of Science in Chemistry degree below prior to applying for the Accelerated MS program.

Related Area Courses

| MATH 1800 | Analytic Geometry and Calculus I | 5 |
| MATH 1900 | Analytic Geometry and Calculus II | 5 |
| MATH 2000 | Analytic Geometry and Calculus III | 5 |
| PHYSICS 2111 | Physics: Mechanics and Heat | 4 |
| PHYSICS 2111L | Mechanics and Heat Laboratory | 1 |
| PHYSICS 2112 | Physics: Electricity, Magnetism, and Optics | 4 |
| PHYSICS 2112L | Electricity, Magnetism, and Optics Laboratory | 1 |

Chemistry Courses

| CHEM 1000 | Chemistry: The Central Science | 1 |
| CHEM 1111 | Introductory Chemistry I (MOTR CHEM 150L) | 5 |
| CHEM 1121 | Introductory Chemistry II | 5 |
| CHEM 2223 | Quantitative Analysis in Chemistry | 4 |
| CHEM 2612 | Organic Chemistry I | 3 |
| CHEM 2622 | Organic Chemistry II | 3 |
| CHEM 2633 | Organic Chemistry Laboratory | 2 |
| CHEM 3302 | Physical Chemistry for The Life Sciences | 3 |
| CHEM 3312 | Physical Chemistry I: Thermodynamics and Kinetics | 3 |
| CHEM 3322 | Physical Chemistry II: Quantum Chemistry and Spectroscopy | 3 |
| CHEM 3333 | Physical Chemistry Laboratory I | 2 |
| CHEM 3412 | Basic Inorganic Chemistry | 3 |
| CHEM 3643 | Advanced Organic Chemistry Laboratory | 2 |

Admission Requirements

Provisional Admission

Applicants are considered for provisional admission if they meet the following criteria.

- Earned 60 hours as an undergraduate
- Have a minimum GPA of 3.0 with a B or better in all core courses listed above
- Have approval from both their Chemistry undergraduate advisor and Chemistry MS Program Director

It is recommended to apply for provisional status as a junior, preferably in the first semester of junior year.

Graduate course options for Provisional students are listed below. Courses completed by undergraduate students who have been provisionally admitted to the Accelerated MS program can count towards both their BS and MS degrees. Courses in this phase will be charged at the undergraduate tuition rate; however, these courses will have “graduate status” to count toward the master’s degree. Courses must be approved before the semester starts. Any 4000-level course taken before admission to the Accelerated MS program will apply to the undergraduate requirements.

Seniors who have earned more than 105 credit hours cannot be considered for the Accelerated MS degree program.

Graduate Admission

Applicants are considered for graduate admission with the following criteria:

- Are in their final semester in undergraduate status
- Have a minimum GPA of 3.0 since being granted provisional status
- Submitted at least one positive recommendation letter from an UMSL Chemistry faculty member
- Submitted to the Chemistry Graduate Admissions Director a statement of purpose explaining why an advanced degree in Chemistry is of interest and why the applicant merits consideration
- Have met with the Chemistry Accelerated MS advisor

Based on the above information, the Chemistry undergraduate advisor, Accelerated MS advisor, and Graduate Admissions Director will determine whether the student can apply for graduate admission. Final decisions concerning graduate admission are made by the Graduate School Director and the Graduate School. Students admitted to the graduate program must take graduate courses until the completion of the MS degree.

Completing the BS and MS Degrees

To finish the Chemistry BS degree, a student must also complete the following requirements.

Two credit hours of advanced elective work                              2
CHEM 4233 | Laboratory in Instrumental Analysis | 2
CHEM 4343 | Physical Chemistry Laboratory II | 2
CHEM 4433 | Inorganic Chemistry Laboratory | 2
CHEM 4612 | Introduction to Macromolecular, Supramolecular, and Nanoscale Chemistry | 1
Courses for Both BS and MS Credit

The following Chemistry courses can count toward both the Chemistry BS and Chemistry MS degree, up to a maximum of 9 credit hours.

- CHEM 4433: Inorganic Chemistry Laboratory (2 credit hours)
- CHEM 5212: Advanced Instrumental Analysis (3 credit hours)
- CHEM 5412: Advanced Graduate Inorganic Chemistry (3 credit hours)

Choose one of the following:
- CHEM 6487: Problem Seminar in Inorganic Chemistry (1 credit hour)
- CHEM 6687: Problem Seminar in Organic Chemistry
- CHEM 6787: Problem Seminar in Biochemistry
- CHEM 5396: Directed Readings in Physical Chemistry

**Total Hours:** 9

Other courses may be allowed upon approval of the Graduate Program Director.

Required and elective courses for the MS degree are shown below.

**Required**

- CHEM 6897: Chemistry Colloquium (must take 3 times) (3 credit hours)

**Electives**

- CHEM 5302: Foundations of Physical Chemistry
- CHEM 5396: Directed Readings in Physical Chemistry
- CHEM 5462: Organometallic Chemistry of the Transition Elements
- CHEM 5494: Special Topics in Inorganic Chemistry
- CHEM 5602: Advanced Organic Chemistry I - Physical Organic
- CHEM 5612: Advanced Organic Chemistry II - Reactions And Synthesis
- CHEM 5652: Spectroscopic Identification of Organic Compounds
- CHEM 5694: Special Topics in Organic Chemistry
- CHEM 5722: Advanced Graduate Biochemistry
- CHEM 5772: Advanced Physical Biochemistry
- CHEM 5774: Bioinformatics
- CHEM 5794: Special Topics in Biochemistry
- CHEM 6487: Problem Seminar in Inorganic Chemistry
- CHEM 6687: Problem Seminar in Organic Chemistry
- CHEM 6787: Problem Seminar in Biochemistry

**CHEM 6905:** Graduate Research in Chemistry (up to 5 hours may be taken)

**Total Hours:** 21

**Awarding of Degrees**

The undergraduate degree may be awarded when the student meets the requirements for the BS degree, including at least 120 total credit hours, completion of the Chemistry core, elective, and laboratory requirements, and completion of the associated requirements. The student must work with the undergraduate advisor and/or the Accelerated MS advisor to apply to graduate. In their final semester in undergraduate status, the student must apply and be admitted to the graduate program, to begin in the semester following the awarding of the undergraduate degree.

The graduate degree will be awarded when the student meets the requirements for the MS degree, which is 30 credit hours of coursework at the graduate level. Required and elective courses for the MS degree are shown above. The student must work with the Accelerated MS advisor and Graduate Program Director to apply to graduate.

If the student fails to enroll for more than one year after receiving the bachelor's degree, the student can still earn the master's degree, but the graduate-level credits earned as an undergraduate cannot be used for the graduate degree.