

Chemistry, MS

Admission Requirements

~~Individuals with at least the equivalent of the B.A. degree in the natural sciences may be admitted to the Graduate School as candidates for the M.S. degree or as precandidates for the Ph.D. degree in chemistry. A student in the M.S. program may request to transfer to the Ph.D. program by petition to the department.~~

~~The department admissions committee considers applicants' grade point averages and normally requires above-average performance in all areas of chemistry as well as physics and mathematics, or other evidence of high aptitude for graduate work in chemistry. Applicants' GRE scores, letters of recommendation, and academic programs are also considered. In some cases the committee may require successful completion of undergraduate course work as a condition of enrollment as a regular student.~~

~~Students with bachelor's degrees in fields other than chemistry may be admitted to pursue graduate studies in chemistry, but they must make up background deficiencies, usually by taking undergraduate course work.~~

Applicants must meet the general graduate admission requirements of the Graduate School, described in the UMSL Bulletin. Applications may be completed online

In addition to the Graduate School admission requirements, the following requirements apply to the MS in Chemistry program:

- BS or BA in a scientific discipline is required, although other degrees will be considered for strong candidates. The admission committee will evaluate previous coursework to determine potential for success.
- Minimum of 3.00 GPA on 4.0 scale. Students whose GPA is 2.75 to 2.99 may be admitted under some circumstances.
- Two Letters of Recommendation.
- Official transcripts from all universities attended.
- The Graduate Record Examination General Test is NOT required, but may add value to the application.
- International students are required to document English proficiency by providing scores from an internationally accepted standardized examination prior to admission decision.

Degree Requirements

~~Within two years of initial enrollment, candidates for the M.S. degree in chemistry must demonstrate proficiency at the undergraduate level in four of the following five areas: biochemistry, organic, inorganic, physical, and analytical chemistry.~~

~~A minimum of 30 hours is required, normally including 3 hours in CHEM 6897 Chemistry Colloquium. No more than 3 hours in CHEM 6897 may be applied toward the 30 credit hours.~~

30 hours are required to earn a Master of Science in Chemistry and the advanced curriculum can be customized for each student. Students may choose to focus their coursework in a few, some, or all chemical disciplines including organic, inorganic, biochemical, physical, and analytical chemistry.

Distribution Requirement

~~Students may choose to focus their coursework efforts in one of four broadly defined subdiscipline areas (biochemistry, inorganic, organic, or physical chemistry). At least 6 hours of chemistry coursework in one (or more) subdisciplines(s) outside of their major emphasis area must be completed. The following courses do not fulfill the distribution requirement:~~

CHEM 4212	Instrumental Analysis	3
CHEM 4233	Laboratory in Instrumental Analysis	2
CHEM 4302	Survey of Physical Chemistry with Applications to the Life Sciences	3
CHEM 4343	Physical Chemistry Laboratory II	2
CHEM 4412	Advanced Inorganic Chemistry	3
CHEM 4433	Inorganic Chemistry Laboratory	2
CHEM 4712	Biochemistry	3
CHEM 4733	Biochemistry Laboratory	2

Master of Science without Thesis

~~Unlike the thesis option, students need not be enrolled full-time.~~ Students may be enrolled part-time to complete the degree without a thesis. Of the required 30 hours, 15 credits must be at the 5000 level and 3 must be earned by taking 3 separate semesters of CHEM 6897, Colloquium. ~~A maximum of 6 credits of CHEM 6905, Graduate Research in Chemistry, may be included in place of 4000 level courses; a maximum of 12 hours taken in 3000 level or above courses outside the department may be accepted with prior approval of the Director of Graduate Studies.~~

Master of Science ~~in Chemistry~~ with Thesis

Students selecting this option must be enrolled full-time for at least two consecutive semesters. During this time, students are expected to enroll in CHEM 6905, Graduate Research in Chemistry, and conduct their thesis research. ~~A maximum of 12 hours of may be applied toward the required 30 hours. At least 9 hours must be at the 5000 level, excluding CHEM 6905.~~ Of the required 30 credits, 15 must be taken at the 5000 level and 3 must be earned by taking 3 separate semesters of CHEM 6897, Colloquium. ~~A maximum of 9 hours in 3000 level or above courses outside the department may be accepted if students receive prior approval of their advisers and the Director of Graduate Studies. Students are expected to follow all other general requirements of the Graduate School regarding master's degree and thesis requirements.~~

Master of Science Degrees for Doctoral Students

Doctoral students may receive a Master's degree in their program for work completed towards the doctoral degree. To receive a Master's degree, doctoral students must complete 30 credit hours of courses, with at least 15 of these credit hours in courses numbered at or above the 5000 level. No more than 3 hours in CHEM 6897, 3 hours from a combination of CHEM 6487, CHEM 6687, CHEM 6787, CHEM 6812, CHEM 6822 and CHEM 6832, and 6 hours of CHEM 6905 may be applied.

~~There are no distribution requirements for the Master's degree for Doctoral students.~~

The non-dissertation courses presented for the M.S. degree may not include any of the following courses:

CHEM 4212	Instrumental Analysis	3
CHEM 4233	Laboratory in Instrumental Analysis	2
CHEM 4302	Survey of Physical Chemistry with Applications to the Life Sciences	3
CHEM 4343	Physical Chemistry Laboratory II	2
CHEM 4412	Advanced Inorganic Chemistry	3
CHEM 4433	Inorganic Chemistry Laboratory	2
CHEM 4712	Biochemistry	3
CHEM 4733	Biochemistry Laboratory	2

Justification for request:

Proposal

Remove proficiency (4 of 5 areas) and distribution (6 credit hours out of focus area) requirements from MS Chemistry & Biochemistry degree (30 credit hours).

Purpose

1. Remove hesitations in applying to the MS program.
2. Encourage students with degrees in different disciplines to apply for the MS Chemistry & Biochemistry program.
3. Allow for customization of MS degree (e.g. Organic Chem emphasis or Inorganic Chem emphasis).

Comments

1. MS advisor shall still encourage students to take MS courses in a variety of disciplines. This will likely happen anyway due to the availability of courses. Please note that MS applications are rigorously evaluated to ascertain the potential success of each student and balance that with the desire to increase the numbers of MS students.
2. The dual-listed (stacked 4000/5000) courses have helped the MS program over the last 2 years and additional dual courses will further aid the enrollment opportunities. This has also helped with the proficiency requirements and I believe many students will still take these courses.
3. Each discipline area is encouraged to strengthen and market their course offerings and design a path for a Certificate in that discipline area (e.g. Biochemistry graduate certificate or Physical Chem graduate certificate).
4. Tinkering with the structure of a given course may make it attractive to students from different interest areas and provide them with an opportunity to succeed in the course. This type of adaptation may also help broaden the overall offerings of the program.