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UMM ACADEMIC AFFAIRS DISCIPLINE COVER SHEET #2	<i>SEMESTER</i> <i>CURRICULUM CHANGES</i>	FORM B (2/00)
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FORM B: DISCIPLINE OBJECTIVES AND REQUIREMENTS

(Submit to Division Chair)

Note: All changes become effective the fall semester following Campus Assembly approval.

Discipline: Chemistry	Date Sept, 2000
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See instructions given in separate document.

I. Introductory Statement:

Coursework in chemistry spans the four traditional areas of analytical, inorganic, organic, and physical chemistry. Ancillary areas such as biochemistry and geochemistry are available through interdisciplinary coursework with the biology and geology disciplines. Although majors concentrate primarily on chemistry, they must also do work in beginning physics and calculus. The beginning chemistry courses satisfy the physical sciences component of the general education requirements.

Chemistry majors, particularly in upper division courses, do hands-on work with chemical instrumentation and use computers in both software and hardware applications. The faculty prides itself on working closely with its students on undergraduate research projects, directed studies, and undergraduate teaching assistantships. In addition, chemistry majors are encouraged to complete summer research internships at university and industrial labs or at other research facilities, both locally and nationally.

Study in chemistry is the prerequisite for many preprofessional programs at UMM. Students who also do work in the Division of Education can obtain licensure in secondary education. About two-thirds of UMM's chemistry majors pursue postgraduate work toward a doctoral degree—most of them in chemistry, many in medicine, but also in other health-related fields, such as veterinary medicine and dentistry, in biological fields related to chemistry, and in a variety of other fields. The other third directly enter the job market upon

graduation, primarily in the chemical industry or in secondary education.

II. Objectives:

Objectives—The chemistry curriculum focuses on the structure of and the conditions required for material change. It is designed to prepare students for graduate study in chemistry or related fields or for a career in chemical industry or in secondary

teaching.

III. Assessment:

No change.

IV. Requirements for a Major:

~~Chem 1101-1102—General Chemistry I— or Chem 1111-1112—Honors General Chemistry I-II~~

Chem 1102 – General Chemistry II *or* Chem 1102H – General Chemistry II (Honors)

Chem 2301 – Organic Chemistry I

Chem 2302 – Organic Chemistry II

Chem 2311 – Organic Chemistry Lab I

Chem 2312 – Introduction to Research

Chem 3101 – Analytical Chemistry

Chem 3501 – Physical Chemistry I

Chem 3502 – Physical Chemistry II

Chem 3511 - Physical Chemistry Lab

Chem 4901 – Chemistry Seminar I

Chem 4901- Chemistry Seminar II

Math 1101 – Calculus I

Math 1102 – Calculus II

Phys 1101 – Physics I

Phys 1102 – Physics II

Plus two courses from:

Chem 3111 – Instrumental Analysis

Chem 3701 – Inorganic Chemistry

Chem 3801 - History of Chemistry

Chem 3811 – Macromolecules

Chem 4301 – Bioorganic Chemistry

Chem 43XX – Synthesis

Chem 45XX - Molecular Spectroscopy

Chem 45XX – Theoretical Chemistry

Chem 47XX – Advanced Inorganic Chemistry

Or another course approved by the chemistry discipline

Students interested in biochemistry can design an area of concentration in consultation with the chemistry faculty. It is suggested that the coursework include:

Chem 1101 - General Chemistry I

Chem 1102 - General Chemistry II (or honors section)

Biol 1101 – Freshman Seminar in Biological Principles

Biol 2111 - Cell Biology

Chem 2301 - Organic Chemistry I

Chem 2311 - Organic Chemistry I Lab

Chem 2302 - Organic Chemistry II

Chem 2321 - Introduction to Research

Biol 3101 - Genetics (with lab)

Biol 3121 - Molecular Biology (with lab)

Biol 4211 – Biochemistry

Biol 4611 – Biochemistry Lab

Chem 3101 - Analytical Chemistry

Chem 3501 - Physical Chemistry I

Chem 4XXX - Bioorganic Chemistry

In addition, supporting coursework in physics and calculus is required.

Additional electives in chemistry and biology are also required. Supporting courses must be approved by the chemistry faculty.

V. Requirements for a Minor:

Chem 1101-1102 – General Chemistry I-II

~~or~~ Chem 1101-1102H – General Chemistry I + General Chemistry II (Honors)

Chem 1102 – General Chemistry II or Chem 1102H – Honors: General Chemistry II

three additional Chem lecture courses numbered 2301 or above, two of which must include lab or have a concurrent lab registration

Required courses may not be taken S-N except where noted. Up to 8 credits of coursework with a grade of D may be used to meet the minor requirements if offset by an equivalent number of credits of A or B.

VI. Requirements for Teacher Preparation:

VII. Other heading (include heading title) :