

UNIVERSITY OF MINNESOTA

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March 21, 2018

Memo To: UMM Steering Committee

From: Janet Ericksen, Chair, Curriculum Committee *JAE*

Subject: UMM Curriculum Course Change Proposals, Spring 2018

Below are items approved by the Curriculum Committee, which we request be placed on the agenda for the April 3, 2018 meeting of the Campus Assembly.

All Curriculum Committee Change Proposals for this year and past years can be found at www.morris.umn.edu/committees/Curriculum/.

A summary of votes cast by Curriculum Committee members is presented below:

Division of Science and Mathematics Proposals:

Course Action	Meeting Date	Vote (For-Against-Abstentions)
Chemistry (Chem) Course Revision: Chem 3801 – History of Chemistry Course Revision: Chem 4351 – Bioorganic Chemistry	Mar. 19	(9-0-0)
Geology (Geol) Course Revision: Geol 3601 – Introduction to Geochemistry		

JSE/dkp

Multiple Course Revisions

This form is for presenting changes to Curriculum Committee; the information will still need to be entered in ECAS. Sending this form to Curriculum Committee for approval means Discipline and Division approval has been received.

Date: 3/2/18

Disciplines: Chemistry and Geology

Curriculum Committee Approval Date: 3/19/18

Course Revision #1 CHEMISTRY 3801

Give complete UMM catalog entry (deletions in strikethru font, additions underlined)

Course change from inactive to active and from 4 credits to 2 credits

~~CHEM 3801. History of Chemistry. (4 cr; prereq 1102; fall, odd year) Theories of atoms, elements, principles. Alchemy. Pneumatic chemistry. Phlogiston. Lavoisier and chemical revolution. Dalton and atomic weight scales. Physical and chemical atoms. Cannizzaro and Karlsruhe Congress. Einstein, Perrin and the reality of atoms. Niels Bohr and periodic table.~~

(2 cr; prereq 2301; periodic spring) Survey of the historical development of chemical understanding. Mining: redox and acid-base chemistry. Dalton/Faraday: species and ions. Watt/Rumford/Gibbs/Boltzmann: thermodynamics. Perkin: chemical industry. The periodic table. Winkler: gases and the environment. Ions, atoms, electrons, and bonding. Rational design.

Rationale for change: Re-activation of inactive class due to new faculty with expertise/interest to teach it. Change from 4 credit to 2 credit, half-semester course to provide students with greater flexibility in scheduling. Supports additional breadth in rotated electives. (Rotation of electives means no resource concerns.) Description updated to reflect content for 2 credits and faculty expertise.

Course Revision #2 CHEMISTRY 4351

Give complete UMM catalog entry (deletions in strikethru font, additions underlined)

Course change from 4 credits to 2 credits

~~CHEM 4351. Bioorganic Chemistry. (4 cr; prereq 2302 or 2304, Biol 4211; spring, every year) Discussion of the theory of enzyme catalysis and catalytic antibodies, experimental determination of catalytic mechanisms for a variety of organic reactions in biological systems, and elucidation of biosynthetic pathways. Involves extensive reading in the primary literature.~~

(2 cr; prereq: 2302 or 2304, Biol 4211; periodic spring) Discussion of the theory of enzyme catalysis, determination of catalytic mechanisms for a variety of organic reactions in biological systems, and elucidation of biosynthetic pathways. Involves analysis of the primary literature.

Rationale for change: Course is being dropped to two credits to provide more breadth of topics covered while being less in-depth compared to the prior credit load. Will be paired with new biochemistry 2 credit elective covering a related topic.

Course Revision #3 GEOLOGY 3601

Give *complete* UMM catalog entry (deletions in strikethru font, additions underlined)

Change course prereq

GEOLOGY 3601. Introduction to Geochemistry. (4 cr; ~~prereq 1101 or Chem 1101~~ prereq (or co-req) 2101 or Chem 1102 or instr consent; periodic fall)

Applying chemistry to geologic problems such as weathering, sedimentary processes and diagenesis, formation of evaporites and ore deposits, magma genesis and magmatic differentiation; thermodynamic functions and the Phase Rule; oxidation potential and Eh-pH diagrams; isotopic geochemistry and geochronology. (three 65-min lect)

Rationale for change: The co-requisites/prerequisites were adjusted after consultation with Chemistry Discipline faculty regarding the intended course structure and content. These changes more accurately account necessary coursework to improve chances of student success and to encourage the enrollment by a broader range of students, beyond the Geology Discipline.