Course Approval Form

For instructions see:
http://registrar.gmu.edu/facultystaff/catalog-revisions/course/

Action Requested:

- [ ] Create new course
- [ ] Inactivate existing course
- [X] Modify existing course (check all that apply)
  - [X] Title
  - [X] Credits
  - [X] Repeat Status
  - [ ] Grade Type
  - [X] Prereq/coreq
  - [ ] Schedule Type
  - [X] Restrictions
  - [ ] Other:

Course Level:

- [X] Undergraduate
- [ ] Graduate

College/School: COS
Department: CHEMISTRY & BIOCHEMISTRY
Submitted by: G.L.R. WEATHERSPOON
Ext: 3-1456
Email: grobert1@gmu.edu
Subject Code: CHEM
Number: 212
(Do not list multiple codes or numbers. Each course proposal must have a separate form.)

Effective Term:

- [X] Fall
- [ ] Spring
- [ ] Summer

Year 2016

Title:
Current: General Chemistry
Banner (30 characters max w/ spaces):
New: General Chemistry – II

Fulfills Mason Core Req? (undergrad only)

- [X] Currently fulfills requirement ***natural science lecture***
- [ ] Submission in progress

Credits: (check one)

- [X] Fixed — 3 or
- [ ] Variable — to

Repeat Status: (check one) **N2*****

- [ ] Not Repeatable (NR)
- [ ] Repeatable within degree (RD)
- [ ] Repeatable within term (RT)

Maximum credits allowed: 3

Grade Mode: (check one)

- [ ] Regular (A, B, C, etc.)
- [ ] Satisfactory/No Credit
- [ ] Special (A, B C, etc. +IP)

Schedule Type: (check one) LEC can include LAB or RCT

- [ ] Lecture (LEC)
- [ ] Lab (LAB)
- [ ] Recitation (RCT)
- [ ] Internship (INT)
- [ ] Independent Study (IND)
- [ ] Seminar (SEM)
- [ ] Studio (STU)

Prerequisite(s):
CHEM 211, CHEM 213

Corequisite(s):
CHEM 214

Instructional Mode:

- [ ] 100% face-to-face
- [ ] Hybrid: ≤ 50% electronically delivered
- [ ] 100% electronically delivered

Restrictions Enforced by System: Major, College, Degree, Program, etc. (include code)
"C" grade or higher in CHEM 211 and CHEM 213 OR transfer equivalencies for CHEM 211 and CHEM 213.
Concurrent enrollment in CHEM 214 or prior grade of "C" or higher in CHEM 214 or transfer equivalency.

Equivalencies: (check only as applicable)

- [X] YES, course is 100% equivalent to: CHEM 202
- [ ] YES, course is being renumbered to/will replace the following:

Catalog Copy for NEW Courses Only (Consult University Catalog for models)

Description (No more than 60 words, use verb phrases and present tense)	**Notes** (List additional information for the course)
CHEM 211 and CHEM 213 are prerequisites to CHEM 212. Fundamentals of colligative properties, reaction rates and equilibrium. Topics include kinetics, properties of solutions, ionic equilibrium, chemical thermodynamics, electrochemistry, and nuclear chemistry. Students majoring in science, engineering, or mathematics should choose this course sequence.	- Repeat Status = N2; limits the maximum number of attempts that a student can take the course to 2 attempts without departmental approval. - CHEM 212 (3 credit lecture) + CHEM 214 (1credit lab) are equivalent to CHEM 212 (4 credit linked lecture & lab course) prior to Fall 2016. - Fulfills Mason Core requirement in natural science lecture. - Credit will not be given for this course and CHEM 103, CHEM 104. - CHEM 212 is equivalent to CHEM 202 prior to Fall 2016.

Indicate number of contact hours: Hours of Lecture or Seminar per week: 3 Hours of Lab or Studio: 0
When Offered: (check all that apply) [X] Fall [X] Summer [X] Spring

Approval Signatures

Department Approval — Date
College/School Approval — Date

If this course includes subject matter currently dealt with by any other units, the originating department must circulate this proposal for review by those units and obtain the necessary signatures prior to submission. Failure to do so will delay action on this proposal.

Unit Name	Unit Approval Name	Unit Approver's Signature	Date

For Graduate Courses Only

Graduate Council Member — Provost Office — Graduate Council Approval Date

For Registrar Office's Use Only: Banner_____Catalog_____

revised 6/22/15

Course Proposal Submitted to the College of Science Curriculum Committee (COSCC)

The form above is processed by the Office of the University Registrar. This second page is for the COSCC's reference. Please complete the applicable portions of this page to clearly communicate what the form above is requesting.

FOR ALL COURSES (required)

Course Number and Title: CHEM 212 General Chemistry-II

Date of Departmental Approval: 10/12/2015

FOR INACTIVATED/REINSTATED COURSES (required if inactivating/reinstating a course)

- Reason for Inactivating/Reinstating:

FOR MODIFIED COURSES (required if modifying a course)

- Summary of the Modification: Lecture and lab components of GenChem-2 are being decoupled so that students will have the flexibility to repeat only the portion of the course where they want to improve their grade, rather than the entire coupled course. This option is currently available to transfer and summer students from other universities, but not our traditionally matriculating GMU students.

- Text before Modification (title, repeat status, catalog description, etc.):

  - CHEM 212 - General Chemistry (4:3:3); Not Repeatable
  - Basic facts and principles of chemistry, including atomic and molecular structure, gas laws, kinetics, equilibrium, electrochemistry, nuclear chemistry, and properties and uses of the more important elements and their compounds.
  - Fulfills Mason Core requirement in natural science (lab).
  - **Prerequisite(s):** CHEM 211. Prerequisite enforced by registration system.
  - **Notes:** Credit will not be given for this course and CHEM 103, 104. Students majoring in science, engineering, or mathematics should choose this course sequence.
  - **Hours of Lecture or Seminar per week:** 3
  - **Hours of Lab or Studio per week:** 3

- Text after Modification (title, repeat status, catalog description, etc.):

  - CHEM 212 - General Chemistry-I (3:3:0); Repeat Status = N2
  - Fundamental principles of atomic and molecular structure; chemical bonding; basic concepts of chemical reactions and thermochemistry; and properties of gases, liquids, and solids.
  -
  - Fulfills Mason Core requirement in natural science (lecture).
  - **Prerequisite(s):** CHEM 211, CHEM 213. Prerequisite enforced by registration system.
  - **Notes:** Credit will not be given for this course and CHEM 103, CHEM 104. Students majoring in science, engineering, or mathematics should choose this course sequence.

  - **Hours of Lecture or Seminar per week:** 3
  - **Hours of Lab or Studio per week:** 0

- Reason for the Modification:
  1. Quite a few of our transfer students come from VCU, Christopher Newport, William & Mary (usually summer session students), JMU, Norfolk State, ODU, UVA, Virginia State and Virginia Tech. The traditional students at these universities experience academic hiccups the same as

our students, however, the de-coupled nature of their GenChem lecture/lab courses makes it easier for them to repeat the component they failed rather than the entire course. We service many of these students when they return to the Fairfax area for summer session and the bookkeeping is rather interesting.

2. We have lab waivers but not lecture waivers, which means that our students are required to repeat lecture and lab if they fail the course. Decoupling the linked courses would allow OUR STUDENTS to repeat the failed component only, i.e. repeat lab only if they pass the lecture portion of the course---the same as is currently done with organic, physical, instrumental analysis, inorganic and biochemistry courses. The mechanism that we currently have in place for transfer students (and summer sessions) allows visiting students to enroll in lecture or lab only, which gives them an unfair advantage over traditional GMU matriculating students.
3. Decoupling the lecture and lab components of the course would eliminate the need for lab waivers each semester. Currently, the office staff is bombarded and interrupted with phone calls, non-scheduled office visits and email requests for information regarding eligibility and filing of lab waivers.
4. Enrollment snapshots would accurately reflect the numbers as they stand, independently of each other, in the lecture and lab courses. This will eliminate the mismatch that students often encounter when lab waivers have been filed and there are open seats in lab, yet the lecture shows as CLOSED.
5. Coding for CHEM 212 will be modified to reflect concurrent/co-requisite enrollment in lecture and lab.

FOR NEW COURSES (required if creating a new course)

- Reason for the New Course:
- Relationship to Existing Programs:
- Relationship to Existing Courses:
- Semester of Initial Offering:
- Proposed Instructors:
- Insert Tentative Syllabus Below