FAIRMONT STATE UNIVERSITY™

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MEMORANDUM

TO: Faculty Senate

FROM: Susan Ross

DATE: 11/2/2021

SUBJECT: Curriculum Proposal # 21-22-07

I recommend the approval of the attached Curriculum Proposal 21-22-07. The proposal seeks to decrease lab classroom hours from 3 hour to 2 hours per week in the General Chemistry I and II courses (CHEM 1101 and CHEM 1102). Student credit hours for the courses remain the same and the proposal has not impact on the General Studies transferability among in-state receiving institutions.

cc: Dianna Phillips
Lori Schoonmaker
Stephanie Gabor
Laura Ransom
Steve Roof

CURRICULUM PROPOSAL (Submit one electronic copy to the Executive Director of Academic Programs by the second Tuesday of the month.)

Proposal Number:	#21-22-07
School/Department/Program:	Science and Technology/Natural Sciences/Chemistry
Preparer/Contact Person:	Kayla Lantz
Title of Degree Program	Assistant Professor of Chemistry
Telephone Extension:	X4499
Date Originally Submitted:	Oct. 2021
Revision (Indicate date and label it Revision #1, #2, etc.):	
Implementation Date Requested:	Fall 2022

I **PROPOSAL ABSTRACT**. Write a brief abstract, not exceeding 100 words, which describes the proposed changes.

The chemistry program wants to decrease the total lab hours in the General Chemistry I and II courses (CHEM 1101 and 1102) from 3 hours to 2 hours per week. While we are teaching the same types of lab experiments and information, the introduction of a pre-lab assignment requiring the students to read and perform calculations prior to attending, the students are spending less time in lab. Additionally, the integration of computer graphing software into each experiment means that students spend less time hand-copying data tables and graphs. The proposed changes have no impact on the General Studies transferability among in-state college or university receiving institutions.

II. **DESCRIPTION OF THE PROPOSAL**. Provide a response for each letter, A-G, and for each Roman Numeral II–V. If any section does not apply to your proposal, reply N/A.

A. Deletion of course(s) or credit(s) from program(s) Total hours deleted: _____0_____

B. Addition of course(s) or credit(s) from program(s) Total hours added: _____0_____

C. Provision for interchangeable use of course(s) with program(s)

D. **Course Description Revision**: Include, as an appendix, a revised course description, written in complete sentences, suitable for use in the university catalog.

E. **Course Changes:** Identify changes to existing courses such as changes to title, course number, learning outcomes, and elective or required status.

Chem 1101 and Chem 1102 (General Chemistry I and General Chemistry II) lab hours would decrease from one 3-hour lab per week, to one 2-hour lab per week.

F. **Create a New Course**(s) information (if applicable): For each new course complete the following:

1. **Course Catalog Information:**

a. Course prefix (subject area) and number:	
b. Course title:	
c. Course term(s) (e.g., Fall, Summer only):	
d. Credit hours/Variable credit:	
e. Repeatability (number of repeat credit hours):	
f. **Prerequisite/Corequisites/Restrictions/Cross-listings:** If none, simply indicate with N/A (Not Applicable):	
g. ***Co-requisite*** (include subject prefix and course number):	
h. ***Cross-listings*** (e.g., PSYC 2230 and SOCY 2230):	
i. **Grade Type:** Indicate whether students will be assigned a standard A-F final grade or Credit/No Credit (CR/NCF) grade:	
j. Required Course or Elective Course:	
k. Course Fees (Indicate amount):	

2. **New Course Supplemental/Supporting Documentation**:

   a. **Course Catalog Description**: Include, as an appendix, a course catalog description written in complete sentences that will be published in the university catalog. The word length for a catalog description should be less than 80 words. Do not include any prerequisites, corequisites or any other restrictions in the description.

   b. **Course Learning Outcomes (CLO's):** These should be stated in terms of what new knowledge and/or skills students should be able to demonstrate upon successful completion of the course. Present course learning outcomes as a bulleted list predicated with "Upon successful completion of this course, students should be able to…"

   c. **Course Outline:** Attach a course outline consisting of at least two levels.

   d. **Assessments:** Describe generally how student's achievement of the course learning outcomes will be assessed

3. **Shared Course**: If this is a shared course, attach a memo from the Deans of the affected Schools explaining the rationale for course being shared.

G. Attach an itemized summary of the present program(s) affected, if any, and of the proposed change(s).

Describe how this proposal affects the hours needed to complete this program. Specifically, what is the net gain or loss in hours? Use the format for Current and Proposed Programs in Appendix A.

III. RATIONALE FOR THE PROPOSAL

A. **Quantitative Assessment**: Indicate the types of assessment data, i.e., surveys, interviews, capstone courses, projects, licensure exams, nationally-normed tests, locally developed measurements, accreditation reports, etc., that were collected and analyzed to determine that curricular changes were warranted. Quantitative data is preferred.

In previous years, students were not asked to read and complete calculations prior to lab attendance and a majority of the experiments required students to hand-draw data tables and graphs, which was fairly time intensive. While the materials covered, and labs performed, are similar; we have started having students read through the procedures and safety information prior to lab, and the instructor checks pre-lab calculations at the beginning. Additionally, we implemented the use of automated temperature and pH probes that collect and graph simultaneously. Over the last 2-3 semesters, on average the Chem 1101 and Chem 1102 labs are finished within 1.5 hours.

B. **Qualitative Assessment**: Based upon the assessment data above, indicate why a curricular change is justified. Indicate the expected results of the change. Be sure to include an estimate of the increased cost, or reduction in cost of implementation. FOR EXAMPLE: Will new faculty, facilities, equipment, or library materials be required?

These changes to student preparedness and lab technology have significantly decreased the amount of time students spend in lab. We currently have 3 hours allotted for a single lab session; however, over the last 2-3 semesters students are finished well within 2 hours. The course credit hours would remain unchanged, as students receive 3 credit hours for the lecture, and 1 credit hour for the lab, which is typically 2-3 hours depending on the course level. In addition, the same content is covered. Lastly, the reduction to a 2-hour lab session would decrease the cost to the University.

IV. APPROVAL

Should this proposal affect any course or program in another school, a memo must be sent to the Dean of each school impacted and a copy of the memo(s) must be included with this proposal. In addition, the Deans of the affected schools must sign below to indicate their notification of this proposal.

By signing here, you are indicating your college's/school's notification of this proposal.

College/School	Dean	Signature
Sci Tech	Steven Root	Steven Root

V. Should this proposal affect any course to be added or deleted from the general studies requirements, a memo from the chair of the General Studies Committee indicating approval of the change must be included with this proposal.

VI. ADDITIONAL COMMENTS.

This course will still meet the course transfer agreement among WV institutions, as it covers the same content, is still a 4 credit hour course, and contains a lab.

APPENDIX A

New Course Description

Chem 1101
A study of the theoretical concepts needed to understand typical chemical phenomena. The course addresses the nature of science, matter and measurements, the stoichiometry of chemical reactions, solutions and the calculation of concentration, energy relationships in chemistry, modern atomic theory, chemical bonding and molecular structure and the classification of reactions. 3 lectures and one 2-hour laboratory per week.

Chem 1102
This course is an extension of CHEM 1101. It covers acid-base theory, chemical equilibrium, oxidation-reduction and an introduction to organic chemistry which includes the various classes of organic compounds, their nomenclature, structure, properties and reactions. The synthesis of polymers and their uses are included. The course consists of 3 hours of lecture and one 2-hour laboratory per week. PR: CHEM 1101. Spring semester only.