



ACADEMIC PROPOSAL

Date Received by Committee Chair 4/5/06

- 1. Teacher Education Committee on (date submitted) _____
- 2. Academic Affairs Committee on (date submitted) _____
- 3. Graduate Affairs on (date submitted) _____

From (School/Department) Chemistry

Signature of Unit Head [Signature]

Person to be Contacted M. Elizabeth Gurnack

Type of Action (check one): Addition Deletion Substantive Change
 Submission for File Other (please specify) _____

Action desired for (check one): Program Course Other (specify) Addition to Area D Core Course/Program Name and (for courses) Course Description and Hours Credit:

Addition of CHEM 1100 to Area D in Core curriculum

Brief Description of Proposal:
This is a proposal to include CHEM 1100 (Chemical Discoveries in History) as an Area D (list B) option.

This section to be completed by appropriate Committee Chair (and Secretary of Faculty Senate):

Check Committee taking Action:
(1) Teacher Education Committee (2) Academic Affairs (3) Graduate Affairs

Action taken by Committee: (Check One) Approved Not Approved Tabled

Comments/Reasons for Non Approval or Tabling:

Signature of Chair [Signature] Date 4/5/06

Requires action of the Faculty Senate and Faculty? Yes or No (Check one)

Faculty Senate Action: Forwarded by the Senate to the Faculty (Check one):
 With Endorsement Without Endorsement, or Remanded back to Committee

Signature of Secretary, Faculty Senate [Signature] Date 04/13/2006

Must include course outline attached before being presented at general faculty meeting

1. Will this proposal change the requirements for any degree program? If so, explain and attach existing and proposed program sheets with changes clearly marked.

no

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2. Is the proposed course/program recommended or required by an accrediting agency? Is so, explain.

no

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3. Is the proposed course/program substantially similar to an existing one in another GSW department or school? Is so, explain and justify.

no

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4. Justification and/or objectives for proposal (including relationship to GSW Strategic plan, if appropriate).

This course will offer more options under the Area D core curriculum. It is designed to appeal to non-science majors due to its historical aspect, yet contain sufficient analytical components to qualify it for an Area D course. It will also appeal to science majors. It is not meant to replace CHEM 1211 or CHEM 1212 (Principles in Chemistry).

5. What additional resources will be required to implement the proposal? Faculty? Facilities? Equipment? Library holdings? Others?

none

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6. What impact will this proposal have on other courses, programs, departments, schools, or units?

This would add a choice for all students in the area D of the core from list B. (See attached.)

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7. Anticipated start date: Fall 2007

8. Estimated number of students enrolled first semester: _____ Enrolled on a continuing basis _____

9. Required attachments for this proposal:

- Course outlines must include the course number, course title, course description for the Bulletin (followed by credit hour designations including lab hours, if appropriate), course content, and learning objectives for the course. A suggested text and a bibliography may be included as well.
- Proposals for new degree must include a curriculum sheet.
- Proposals for changes in degree programs must include existing and proposed curriculum sheets with changes clearly marked.

TO: _____

COURSE OUTLINE
Department of Chemistry
Georgia Southwestern State University

CHEM 1100
Chemical Discoveries in History
Credit: Three (3) semester hours

Catalog description:

CHEM 1100. Chemical Discoveries in History. This course covers the major important discoveries in chemistry from ancient times to the present. The developments in theory, experimentation and technology are discussed along with the significant contributions of scientists through the ages. CHEM 1100. (3-0-3)

Prerequisite(s):

None

Course Objectives and Learning Outcomes:

After completion of this course, the student will be able to:

- a. Describe the state of chemical understanding in ancient times.
- b. Discuss the importance of alchemy to the development of chemistry.
- c. List the scientists whose contributions were important to the development of modern chemistry.
- d. Describe the experiments performed by the major contributors of chemical theory and experimentation.
- e. Explain the significance of each of the above experiments. In particular they will be able to list what questions were asked, describe how they were investigated and their results, and explain what conclusions can be made from the results.
- f. Provide examples of how chemistry has contributed to the advancement of a variety of fields such as materials development, photography, agriculture, computers, etc.

Course outline/content:

- I. Ancient understanding of chemistry
 - i. Ancient speculations and practical chemistry
 - ii. alchemy
- II. Precursors to modern chemistry
 - i. Iatrochemistry, Pneumatic chemistry
 - ii. Combustion and phlogiston
 - iii. Technological developments
 - iv. Elements
 - v. Lavoisier, Cavendish, Priestley, Scheele, etc.
- III. Beyond 1800

- i. General, analytical and physical chemistry
- ii. Organic chemistry and Biochemistry

Methods of instruction:

Methods of instruction include lecture, readings from various primary sources.

Textbooks:

The suggested text for this course is “The Norton History of Chemistry” by William H. Brock.

Further clarification of mathematics and science requirements in Areas A and D:

- For students majoring in mathematics, physics, chemistry, biology, engineering technology, architecture, computer science, geology, geography (B.S.), forestry, pharmacy, or physical therapy, pre-calculus will be the required mathematics course in Area A (Essential Skills) at all institutions.
- Institutions may require pre-calculus in Area A for majors in agricultural science, environmental science, science education and mathematics education. (They must file these requirements with their core proposals.) Effective with students entering in summer 2001, pre-calculus will be required in Area A for majors in secondary science or mathematics education at all institutions.
- Calculus is required in Area A for all engineering majors and for all programs at Georgia Institute of Technology.
- All "science" programs approved system-wide for pre-calculus in Area A may specify a higher level math course in Area D.II. (The rest of D.II may not be specified for any particular science).
- In institutions in which trigonometry serves as an immediate prerequisite for Calculus I, then the completion of trigonometry will be regarded as completion of pre-calculus in Area A. Institutions do not need Council on General Education approval to add such trigonometry courses to Area A, but the course catalog and the institution's listing of Area A courses on the core curriculum website (http://www.usg.edu/academics/core_curriculum/a-e.html) should indicate that the trigonometry course in Area A meets the pre-calculus requirement.
- According to the Learning Support Administrative Procedures, students exiting Learning Support need to be prepared for the institution's first core curriculum course in an area. Thus, a student exiting Learning Support mathematics must be prepared to take College Algebra or Introduction to Mathematical Modeling. A student exiting Learning Support does not need to be prepared to take pre-calculus even if this is the first core curriculum course that counts in the student's major.
- The Council on General Education recommended that the following courses proposed by institutions be rejected as substitutions for algebra or mathematical modeling in Area A; symbolic logic, elementary statistics, and math for liberal arts. (Mathematics courses other than college algebra, mathematical modeling, calculus, or pre-calculus require approval for inclusion in Area A.)
- Area D requirements for health professions majors (D.II.b):
 - Students in the health professions, including nursing, must fulfill the Area D science requirement with a two-semester laboratory sequence in either physics, chemistry, or biology.
 - The only biology courses that may be used to fulfill this requirement are Introductory

Biology (designed for non-science majors) and Principles of Biology (designed for science majors).

- The Survey of Chemistry sequence (CHEM 1151 and CHEM 1152) has been designed for the Area D health professions track (D.II.b). Health professions majors have the option of taking the Survey of Chemistry sequence or the sequence appropriate for science majors (D.II), but they may not fulfill their D.II.b. requirements with chemistry courses designed for non-science majors under D.I.
- Non-science majors may use the Survey of Chemistry sequence to fulfill the D.I. science requirement, but it may not be used to fulfill the D.II science requirements for science majors not in the health professions.

In Area D, two courses must be entirely science courses; the third course could be science, mathematics, or technology or an interdisciplinary blend of these three. Technology courses and those in the sciences for Core Area D are to be analytic in nature and have a problem-solving component.

Speech courses may be included in Area C if they include analytical, historical, critical and/or appreciative components. Creative writing and technical communication courses may not be included in Area D.

Courses in the fine arts, social sciences, humanities, and in the institutional options areas of the core should include analytical, historical, critical and/or appreciative realms. These courses should be introductory and broadly focused.

Institutional physical education activity/basic health requirements are not to be placed in Institutional Options. These requirements may be in excess of the maximum number of hours indicated for undergraduate degrees.

AREA D: Mathematics, Science, Technology

Area D (10 hrs min)	Hrs	Term	Grade
Non-Science Majors Only:			
Lab Science (List A)	4		
NonLab/Lab Science (List A or B)	3/4		
NonLab/Lab Science, Math or Technology (List A, B or C)	3/4		
Science or Non-Science Majors:			
Lab Science Sequence (List A)	8		
NonLab/Lab Science, Math or Technology (List A, B or C)	3/4		

List A	Hrs
BIOL 1107/1107L Essentials of Biology I/Lab	4
BIOL 1108/1108L Essentials of Biology II/Lab	4
BIOL 2107 Principles of Biology I with Lab	4
BIOL 2108 Principles of Biology II with Lab	4
CHEM 1211/1211L Principles of Chemistry I/Lab	4
CHEM 1212/1212L Principles of Chemistry II/Lab	4
GEOL 1121 Introductory Geosciences I with Lab	4
GEOL 1122 Introductory Geosciences II with Lab	4
PHYS 1111 Introductory Physics I with Lab	4
PHYS 1112 Introductory Physics II with Lab	4
PHYS 2211 Principles of Physics I with Lab	4
PHYS 2212 Principles of Physics II with Lab	4

List B	Hrs
BIOL 1107 Essentials of Biology I	3
BIOL 1108 Essentials of Biology II	3
BIOL 1500 Applied Botany	3
CHEM 1211 Principles of Chemistry I	3
CHEM 1212 Principles of Chemistry II	3
GEOL 1211 The Earth's Evolving Environment	3
GEOL 1221 Solar System Exploration	3
PHYS 1221 Solar System Astronomy	3
PHYS 1222 Stellar Astronomy	3

List C	Hrs
CIS 2000 Desktop Publishing & Multimedia Presentations	3
CIS 2100 Microcomputer Interfacing & Configuration	3
CIS 2300 Business Applications Programming	3
CSCI 1301 Intro to Structured Programming	4
CSCI 1302 Adv Structured Programming	4
CSCI 2100 Assembly Language Programming	3
CSCI 2500 Discrete Structures	3
MATH 1113 Precalculus	3
MATH 1120 Calculus	4
MATH 2204 Elementary Statistics	3
PSYC 1102 Psychology as a Natural Science	3

Note:

1. BIOL 1107/1107L and 1108/1108L are not open to students with credit in BIOL 2107 or 2108.
2. PHYS 1111 and 1112 are not open to students with credit in PHYS 2211 or 2212.
3. PSYC 3301 Psychological Statistics and SOCI 3301 Sociology Statistics cannot be used to meet Core Area D requirements.

effective 2005-2006