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| For Academic Affairs and Research Use Only | |
| Proposal Number |  |
| CIP Code: |  |
| Degree Code: |  |

**New or Modified Course Proposal Form**

**[X] Undergraduate Curriculum Council**

**[ ] Graduate Council**

|  |
| --- |
| **[ ]New Course, [ ]Experimental Course (1-time offering), or [X]Modified Course (Check one box)** |

Signed paper copies of proposals submitted for consideration are no longer required. Please type approver name and enter date of approval.

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| --- | --- |
| John Hershberger 10/20/2020 Enter date… **Department Curriculum Committee Chair** | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enter date…  **COPE Chair (if applicable)** |
| William Burns 9/30/2020 **Department Chair** | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enter date…  **Head of Unit (if applicable)** |
| John Hershberger 10/20/2020 Enter date…  **College Curriculum Committee Chair** | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enter date…  **Undergraduate Curriculum Council Chair** |
| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enter date… **Director of Assessment (new courses only)** | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Enter date…  **Graduate Curriculum Committee Chair** |
| Lynn Boyd 10/26/2020 **College Dean** | Alan Utter 4/27/2021  **Vice Chancellor for Academic Affairs** |
| David Harding Enter date…  **General Education Committee Chair (if applicable)** |  |

1. **Contact Person (Name, Email Address, Phone Number)**

Willliam Burns, [wburns@astate.edu](mailto:wburns@astate.edu) 870-972-2535

1. **Proposed starting term and Bulletin year for new course or modification to take effect**

Fall 2021

**Instructions:**

*Please complete all sections unless otherwise noted. For course modifications, sections with a “Modification requested?” prompt need not be completed if the answer is “No.”*

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|  | **Current (Course Modifications Only)** | **Proposed (New or Modified)**  *(Indicate “N/A” if no modification)* |
| **Prefix** | **Chem** | **NA** |
| **Number\*** | **1043** | **NA** |
| **Title** | **Fundamental Concepts of Chemistry** | **NA** |
| **Description\*\*** | A one semester chemistry survey course introducing selected fundamental concepts including dimensional analysis, mole concept, atomic and molecular structure, nomenclature, chemical reactions, thermochemistry, intermolecular inter­actions, gases, mixtures, kinetics, equilibrium and acid base chemistry. Corequisite, CHEM 1041. Fall, Summer. | A one semester chemistry survey course introducing selected fundamental concepts including dimensional analysis, mole concept, atomic and molecular structure, nomenclature, chemical reactions, thermochemistry, intermolecular inter­actions, gases, mixtures, kinetics, equilibrium and acid base chemistry. Corequisite, CHEM 1041. Prerequisite, completion of MATH 1023, MATH 1043, or a MATH course for which these are a prerequisite. Fall, Summer. |

***\**** (Confirm with the Registrar’s Office that number chosen has not been used before and is available for use. For variable credit courses, indicate variable range. *Proposed number for experimental course is 9*. )

\*\*Forty words or fewer as it should appear in the Bulletin.

1. **Proposed prerequisites and major restrictions** **[Modification requested? Yes]**

(Indicate all prerequisites. If this course is restricted to a specific major, which major. If a student does not have the prerequisites or does not have the appropriate major, the student will not be allowed to register).

1. Yes Are there any prerequisites?
   1. If yes, which ones?

Completion of MATH 1023 or a higher level MATH course. Corequisite CHEM 1041.

* 1. Why or why not?

Mathematics is a fundamental and necessary aspect of all the physical sciences.

1. No Is this course restricted to a specific major?
   1. If yes, which major? Enter text...
2. **Proposed course frequency [Modification requested? No]**

(e.g. Fall, Spring, Summer; if irregularly offered, please indicate, “irregular.”) *Not applicable to Graduate courses.*

Enter text...

1. **Proposed course type [Modification requested? No]**

Will this course be lecture only, lab only, lecture and lab, activity (e.g., physical education), dissertation/thesis, capstone, independent study, internship/practicum, seminar, special topics, or studio? Please choose one.

Enter text...

1. **Proposed grade type [Modification requested? No]**

What is the grade type (i.e. standard letter, credit/no credit, pass/fail, no grade, developmental, or other [please elaborate])

Enter text...

1. No Is this course dual-listed (undergraduate/graduate)?
2. No Is this course cross-listed?

*(If it is, all course entries must be identical including course descriptions. Submit appropriate documentation for requested changes. It is important to check the course description of an existing course when adding a new cross-listed course.)*

**a.** – If yes, please list the prefix and course number of the cross-listed course.

Enter text...

**b.** – **Yes / No** Can the cross-listed course be used to satisfy the prerequisite or degree requirements this course satisfies?

Enter text...

1. No Is this course in support of a new program?

a. If yes, what program?

Enter text...

1. No Will this course be a one-to-one equivalent to a deleted course or previous version of this course (please check with the Registrar if unsure)?

a. If yes, which course?

Enter text...

**Course Details**

1. **Proposed outline** **[Modification requested? No]**

(The course outline should be topical by weeks and should be sufficient in detail to allow for judgment of the content of the course.)

Enter text...

1. **Proposed special features** **[Modification requested? No]**

(e.g. labs, exhibits, site visitations, etc.)

Enter text...

1. **Department staffing and classroom/lab resources**

No change

1. Will this require additional faculty, supplies, etc.?

No

1. No Does this course require course fees?

*If yes: please attach the New Program Tuition and Fees form, which is available from the UCC website.*

**Justification**

**Modification Justification (Course Modifications Only)**

1. Justification for Modification(s)

The undergraduate bulletin indicates general education “mathematics requirements must be completed within the first 45 hours earned toward a degree.” Because of the inherent mathematical basis of the physical sciences, it is anticipated student performance in this course will improve if students have completed the general education math requirement as a prerequisite.

**New Course Justification (New Courses Only)**

1. Justification for course. Must include:

a. Academic rationale and goals for the course (skills or level of knowledge students can be expected to attain)

Enter text...

b. How does the course fit with the mission of the department? If course is mandated by an accrediting or certifying agency, include the directive.

Enter text...

c. Student population served.

Enter text...

d. Rationale for the level of the course (lower, upper, or graduate).

Enter text...

**Assessment**

**Assessment Plan Modifications (Course Modifications Only)**

1. **Yes / No** Do the proposed modifications result in a change to the assessment plan?

*If yes, please complete the Assessment section of the proposal*

**Relationship with Current Program-Level Assessment Process (Course modifications skip this section unless the answer to #18 is “Yes”)**

1. What is/are the intended program-level learning outcome/s for students enrolled in this course? Where will this course fit into an already existing program assessment process?

Enter text...

1. Considering the indicated program-level learning outcome/s (from question #19), please fill out the following table to show how and where this course fits into the program’s continuous improvement assessment process.

*For further assistance, please see the ‘Expanded Instructions’ document available on the UCC - Forms website for guidance, or contact the Office of Assessment at 870-972-2989.*

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| --- | --- |
| **Program-Level Outcome 1 (from question #19)** | Type outcome here. What do you want students to think, know, or do when they have completed the course? |
| Assessment Measure | Please include direct and indirect assessment measure for outcome. |
| Assessment  Timetable | What semesters, and how often, is the outcome assessed? |
| Who is responsible for assessing and reporting on the results? | Who (person, position title, or internal committee) is responsible for assessing, evaluating, and analyzing results, and developing action plans? |

*(Repeat if this new course will support additional program-level outcomes)*

**Course-Level Outcomes**

1. What are the course-level outcomes for students enrolled in this course and the associated assessment measures?

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| **Outcome 1** | Type outcome here. What do you want students to think, know, or do when they have completed the course? |
| Which learning activities are responsible for this outcome? | List learning activities. |
| Assessment Measure | What will be your assessment measure for this outcome? |

*(Repeat if needed for additional outcomes)*

**Bulletin Changes**

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| **Instructions** |
| **Please visit** [**http://www.astate.edu/a/registrar/students/bulletins/index.dot**](http://www.astate.edu/a/registrar/students/bulletins/index.dot) **and select the most recent version of the bulletin. Copy and paste all bulletin pages this proposal affects below. Please include a before (with changed areas highlighted) and after of all affected sections.**  **\*Please note: Courses are often listed in multiple sections of the bulletin. To ensure that all affected sections have been located, please search the bulletin (ctrl+F) for the appropriate courses before submission of this form.** |

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**~~CHEM 1043. Fundamental Concepts of Chemistry~~** ~~A one semester chemistry survey course introducing selected fundamental concepts including dimensional analysis, mole concept, atomic and molecular structure, nomenclature, chemical reactions, thermochemistry, intermolecular inter­actions, gases, mixtures, kinetics, equilibrium and acid base chemistry. Corequisite, CHEM 1041. Fall, Summer.~~

**CHEM 1043. Fundamental Concepts of Chemistry** A one semester chemistry survey course introducing selected fundamental concepts including dimensional analysis, mole concept, atomic and molecular structure, nomenclature, chemical reactions, thermochemistry, intermolecular inter­actions, gases, mixtures, kinetics, equilibrium and acid base chemistry. Corequisite, CHEM 1041. Prerequisite, completion of MATH 1023, MATH 1043, or a MATH course for which these are a prerequisite. Fall, Summer

**CHEM 1052. Fundamental Concepts of Organic and Biochemistry** A continuation of CHEM 1043 with a focus on the role of chemistry in human body functions. Prerequisites CHEM 1043 and CHEM 1041. Fall, Spring.

**CHEM 2002. Computers in Chemistry** Introduction to computer software and common practices used in the analysis and presentation of scientific data. Corequisite or prerequisite, CHEM 1023 and CHEM 1021. Spring.

**CHEM 2004. Descriptive Inorganic Chemistry** Systematic study of the chemistry of the ele­ments with problem solving using microcomputers. Lecture four hours per week. Special course fees may apply. Prerequisite, CHEM 1021 and C or better in CHEM 1023. Fall.

**CHEM 2393. Special Problems** Selected special or current topics of interest to faculty and students that require no prerequisite courses. This course is appropriate for a general student au­dience. See individual semester schedules for more information about each offering. Irregular.

**CHEM 3051. Try Out the Classroom** Introductory classroom experience led by ASU STEM faculty and area teachers. Topics include Arkansas science/math curriculum, classroom management, laboratory safety, and basic teaching skills. Students will develop and present science/math activi­ties in area classrooms and campus outreach. Prerequisites, 8 CHEM credit hours. Fall.

C**HEM 3054. Quantitative Analysis** Emphasizes quantitative and critical analysis based on standard analytical techniques and instrumentation. Topics include statistics, material equilibria, basic skills in instrumentation and electroanalytical methods. Lecture two hours, laboratory six hours per week. Special course fees may apply. Prerequisites, MATH 2204 or 2194, CHEM 1021, and C or better in CHEM 1023. Spring.

**CHEM 3101. Organic Chemistry I Laboratory** Laboratory skills illustrating the principles of Organic Chemistry I. Three hours per week. Special course fees may apply. Corequisite or pre­requisite, CHEM 3103. Credit for this course is contingent upon earlier or simultaneous completion of CHEM 3103. Fall, Spring, Summer.

**CHEM 3103. Organic Chemistry I** Study of the nomenclature, bonding, preparations and reactions of compounds of carbon, including aliphatic and aromatic hydrocarbons, haloalkanes, alcohols, and ethers. Lecture three hours per week. Special course fees may apply. Prerequisites, CHEM 1021 and C or better in CHEM 1023. Fall, Spring, Summer.

**CHEM 3111. Organic Chemistry II Laboratory** Laboratory skills illustrating the principles of Organic Chemistry II. Three hours per week. Special course fees may apply. Prerequisite, CHEM 3101. Credit for this course is contingent upon earlier or simultaneous completion of CHEM 3113. Fall, Spring, Summer.

**CHEM 3113. Organic Chemistry II** Continuation of Organic Chemistry I, including the study of phenols, aldehydes, ketones, carboxylic acids and their derivatives, amines, proteins, carbohydrates, lipids and nucleic acids. Spectroscopic methods of structure determination are also presented. Lecture three hours per week. Special course fees may apply. Prerequisites, CHEM 3101 and C or better in CHEM 3103. Fall, Spring, Summer.

**CHEM 3124. Physical Chemistry I** Systematic, rigorous development of fundamental chemi­cal concepts presented in a unified lecture and laboratory format. Special course fees may apply. Prerequisites, PHYS 2044 or PHYS 2064, and MATH 3254. Fall.

**CHEM 3134. Physical Chemistry II** Systematic, rigorous development of fundamental chemical concepts presented in a unified lecture and laboratory format. Prerequisite, CHEM 3124. Spring.

**CHEM 3153. Survey of Physical Chemistry** A one semester course exploring the systematic development of fundamental chemical concepts. Special course fees may apply. Prerequisites, PHYS 2044 or PHYS 2064, MATH 2204 or MATH 2194, CHEM 3113. Spring.