

Course Inventory Change Request

New Course Proposal

Date Submitted: 01/23/15 7:26 am

Viewing: CHEM 3070: Physical Chemistry II

Last edit: 01/23/15 7:30 am

Changes proposed by: kbringhurst

Course Prefix: CHEM Course Number:
3070

Effective Semester: Spring 2016

Department: Physical Sciences (PS)

School: School of Science & Technology

Course Title:

Physical Chemistry II

Short Course Title: Physical Chemistry II

Credits: 4

Workload Factors: 4

Primary Grade Type: Standard Letter

Secondary Grade
Type:

Instructor No

In Workflow

1. PS Chair
2. SC Admin
3. SC Dean
4. University Curriculum Committee Chair
5. Banner

Approval Path

1. 01/23/15 7:30 am
Kelly Bringhurst
(kbringhurst):
Approved for PS
Chair
2. 01/23/15 9:07 am
Ruth Bruckert
(bruckert): Approved
for SC Admin
3. 01/23/15 1:37 pm
Eric Pedersen
(pedersen):
Approved for SC
Dean

Permission Required:

Repeatable for Credit: No

Schedule Type: Lecture Hrs/Wk: 4

Catalog Prerequisites? Yes

Catalog Prerequisites:
CHEM 3060 (Grade C or higher) and MATH 2210 (Grade C or higher)

Grade Required on C

Prerequisite(s):

Corequisites? No

Course/Lab Fee? No

Instruction Index Code: NAT202

GE Status No

Requested:

Catalog Description

Introduction to microscopic and bulk thermodynamics, partition functions, theory of electrolytes and electrochemistry, and chemical kinetics.

Course Rotation:

Spring (even)

Justification for course/change:

As students receive a solid background in inorganic and organic chemistry through the CHEM 1210/1220/2310/2320 Chemistry series (~70-80 students per year), this course is an appropriate ensuing course for students wishing to learn more details about physical chemistry, specifically thermodynamics and kinetics systems. This class will be required for a chemistry major or as an elective for the chemistry minor.

Library Resources Adequate: Yes

Tech Resources Adequate: Yes

Comparable Courses:
(use USHE course first)

Institution	Prefix/Number	Credit(s)	Course Title
University of Utah	CHEM 3070	4	Thermodynamics and Chemical Kinetics
Utah State University	CHEM 3070	4	Physical Chemistry II
Utah Valley University	CHEM 3070	4	Physical Chemistry II

Course Learning

Outcomes:

1. Students will be able to problem solve and critically think about thermodynamic and kinetic problems and extrapolate solutions based on learned theory.
2. Students will understand that thermodynamics gives relationship between macroscopic observables and that these can be evaluated using statistical mechanics.
3. Students will be able to clearly define the conditions of the kinetic-molecular theory and be able to calculate the pressure of an ideal gas from its premises.
4. Students will be able to take their learning of thermodynamics and kinetics and be able to communicate current knowledge in the field in written form
5. Students will be able to define the rate of a reaction. Understand the definition of a rate constant and rate coefficient. Integrate the rate equation for simpler systems.

How do your Course

Learning Outcomes

align to your

Program Learning

Outcomes?

The course learning outcomes clearly align and map to the program learning outcomes in the way that students will demonstrate knowledge about thermodynamic and kinetic laws, understand how knowledge was generated and validated, and be able to communicate their knowledge in various forms.

Schedule of lesson

activities that meet

Course Learning

Outcomes

There will be homework from Mastering Chemistry online resources that will allow students to demonstrate their knowledge on each chapter. There will be weekly quizzes that students will take to have students demonstrate knowledge. Three tests will be given through the semester along with a final exam to have students demonstrate mastery of key concepts. There will be a student generated report on current thermodynamic and/or kinetic theory finding that student will have to submit for grading at the end of the semester.

Assessment activities

that provide

evidence of student

learning

Homework, quizzes, tests, written report

Course Reviewer

Comments

bruckert (12/08/14 10:30 am): Rollback: see Sharon's email 12/4/14

lee_s (01/20/15 8:45 pm): Rollback: slee: 1) add (Grade C or higher). next to the prerequisite course.

lee_s (01/21/15 11:04 am): Rollback: slee: (Grade C or higher). notation needs to appear next to the prerequisite courses.

lee_s (01/22/15 8:18 pm): Rollback: slee: requested change hasn't been made.

Key: 1553