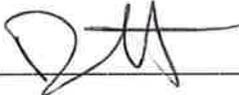


Section 1 - Approvals

[See the separate document entitled "BYU Hawaii Curriculum Proposal Instructions" for instructions. Reminder: delete or replace all text in square brackets. Retain all other text.]

Approvals

Name of Proposal: Chemistry 99

Submitted by: Daniel Scott Signature:  _____

Date: 9/23/14

Procedure	Recommendation/Signature	Date
Faculty Vote: For [<input checked="" type="checkbox"/>], Against [<input checked="" type="checkbox"/>], Abstain [<input checked="" type="checkbox"/>], Absent [<input checked="" type="checkbox"/>]		
1. Approved by Department Biochemistry	Signature:  Chair: Georgi Lukov	<i>Oct. 8, 2014</i>
2. Approved by College Math & Science	Signature:  Dean: Mark Cannon	<i>10/8/14</i>
3. Approved by University Curriculum Committee	Signature:  UCC: Jennifer Lane	<i>10/15/14</i>

Section 2 – Overview (Support)

Summary:

The Center for Academic Excellence that monitors struggling students, along with other statistical data related to why specific classes have high failing rates, have identified specific commonalities amongst students that fail in the previously mentioned classes. Unfortunately, one of these commonalities is the ethnicity of the failing students. A much higher percentage of the failing students are Pacific Islanders and Hawaiians.

The other commonality among these students is their weakness. These students are not identified by The Center for Academic Excellence as being inappropriately prepared or “not being bright enough.” The weakness of these students is almost always related to a failure to obtain sufficiently rigorous study habits and/or time management skills. Often times the failure to obtain these study habits is related to a feeling of depression that is related to an inability of these students to emotionally and culturally adjust in their first semester or so.

The adjustment needed is an adjustment required on many levels. One specific level that relates to the Biochemistry department is a needed adjustment to the collegiate style of studying and learning. Additional findings from the aforementioned studies also suggest that within the last five years this trend of failing students has been increasing amongst these students.

Although failing rates for Chemistry class on campus are not statistically higher than other campuses, the mission of our university would suggest that an extra effort should be made to address the weakness that our University is developing. One might conclude that the changes over the past years are making our university less amenable for our target students. Because of this, it behooves all departments to adjust in an attempt to compensate for the changes that the university is making.

In an attempt to curtail this trend within the biochemistry and other science departments we propose to develop a new Chemistry course, CHEM 99 - Successful Practices in Learning Chemistry. It would be a one credit course focused on study skills, metacognition, and motivation to help students recognize the dedication level necessary to succeed in the sciences.

It would not be a required course, and it would not fulfill any GE requirements, but would give extra help to students going through CHEM 105 and 106.

The course would typically meet three times a week in the evening maybe from 7 to 7:20 and the chemistry tutors would all be required to attend the class.

It would aim at helping students overcome social, emotional, organizational, and cultural barriers. Much of class would be spent solving problems in a group and laidback environment. The tone of the course would allow students to build relationships with other students as study partners mentors or examples which would improve the likelihood of them succeeding in these difficult courses which can sometimes have relatively high fail rates.

The course would be organized in a flipped fashion in which much of the instructional material would be provided outside of class. The practical application of the material would take place in class. Students will use their homework problems from other chemistry courses as exercises to practice the skills that they will be presented outside of class through videos.

The course time will be during tutor hours so that tutors will be TAs for the course and help the students recognize the asset that they are.

Section 4 - Course Proposal (core)

Upon approval, the information presented on this course proposal sheet will become binding on the department and the university. Any material changes require a new course proposal.

Effective Date: Immediately upon approval

College: Math and Science

Course Prefix: CHEM

Course Number: 99

NEW COURSE.

Full Title: Successful Practices in Learning Chemistry

Short Title (for Transcript, 30-char max): Success Practices Chemistry

Catalog Entry (50-word recommended maximum): 99. **Successful Practices in Learning Chemistry** (1) (F, W, S) A course designed to give students who are taking any chemistry courses the necessary skills, awareness, and connections to succeed in any of their general, organic, bio or physical chemistry courses.

Prerequisites: none

Credit Hours: 1

Frequency: F, W, S

Grading Method: A-B-C

Course Fees: No fees.

Learning Objectives: Each student who passes this course will become more familiar with how to succeed in chemistry and other difficult courses that require a high level of attention to detail and dedicated out of class study. It will also provide a media for incoming students who are dealing with cultural, emotional and contextual differences to get the necessary advice from faculty and the support from surrounding students to navigate their scientific major.

This course directly amplifies the learning objective of all of the chemistry course that will be taught on campus. Therefore it will

1. Possess a working knowledge of the unifying principles of biochemistry and the physical sciences.
2. Demonstrate the ability to correctly perform essential chemistry laboratory skills.
3. Demonstrate the ability to apply biochemical and physics principles and laboratory skills to solve scientific problems.
4. Convey scientific ideas and knowledge clearly and professionally, in both written and oral forms.
5. Have an awareness of current biochemical and physical science issues and their impact on society
6. Demonstrate significant progress along targeted career path

Assessment Methods: The ultimate assessment for the effectiveness of this course will be the grades of the students in their other chemistry courses. Although this course itself will be graded apart from their individual chemistry courses, the effectiveness of this course will be

identified by the decrease in the percentage of students that fail the chemistry courses. That is also the ultimate goal of this course.

For this class specifically, a grade will be related to class participation and the demonstration of students' ability to exercise the skills they will be taught. These skills will be observed by the faculty instructor and a grade will be assessed accordingly. The grade will also be dependent on the student's participation in outside of class lectures which will be provided through video. Completed out of class assignments will also be collected via canvas as evidence that the task was completed successfully.

[A sample course syllabus should normally be inserted after this page. The syllabus itself is supporting material. The information on the current page is core material.]

Portion of the course catalog that would need to be changed.

<http://catalog.byuh.edu/node/117>

The entry for Chem 99 would go above Chem 100.

99. Successful Practices in Learning Chemistry (1) (F,W,S) A course designed to give students who are taking any chemistry courses the necessary skills, awareness, and connections to succeed in any of their general, organic, bio, or physical chemistry courses.

Sample syllabus on next page.

Brigham Young University- Hawaii

Chemistry 99- Successful Practices in Learning Chemistry (1 credit)

Winter 2015

Class Time: TBA

Class Location: McKay 133

Instructor: Daniel Scott, Ph.D.

Email: sdanielm@byuh.edu

Office Phone: 675-3813

Office Location: McKay 145

Office Hours: M,W,F 9:50-10:50 a.m.

Course Overview: The goal of Chem 99 is to help you understand the rigor needed to succeed in a college chemistry course. The course will introduce you to the concept of metacognition and help you begin to think about the world around you differently. The course will allow you to use your study time in the most effective way. You will be introduced to tutors and fellow students that are willing to work with you to help all excel in their understanding of chemical concepts through effective dedication and time management. The course will be a relaxed environment where all students taking any chemistry class will be invited to attend (members of the class as well as students who are not signed up for the course.) This is done in an effort to increase your trust in each other as a team attempting to accomplish the difficulty that is your science major.

Brigham Young University- Hawaii's framework for student learning is prepare, engage and improve.

In this course, you will prepare by doing tasks that will help you become familiar with effective approaches to studying for a difficult class. In class you will engage in your chemistry class's (any other chemistry class you are currently taking) specific homework and use the tools that you are presented outside of class to engage in your assignments and exam preparation.

This class will specifically help you learn concepts that will allow you to become successful in your other chemistry classes. This means that, as all chemistry class in the Biochemistry department share the same outcomes, this course will enhance your ability to...

1. Possess a working knowledge of the unifying principles of biochemistry and the physical sciences.
2. Demonstrate the ability to correctly perform essential chemistry laboratory skills.
3. Demonstrate the ability to apply biochemical and physics principles and laboratory skills to solve scientific problems.
4. Convey scientific ideas and knowledge clearly and professionally, in both written and oral forms.
5. Have an awareness of current biochemical and physical science issues and their impact on society
6. Demonstrate significant progress along targeted career path

Grading: Grading in this course will be based on your out of class preparation and your in class efforts to apply techniques for good study, to your chemistry classes' assignments. You will be required to attend class and you will be required to use class time wisely. You will also be encouraged to form study groups and to interact with tutors in the class that will always be available to you to answer any questions.

		A	=	93-100%
		A-	=	90-92%
		B+	=	87-89%
		B	=	83-86%
		B-	=	80-82%
		C+	=	77-79%
		C	=	73-76%
		C-	=	70-72%
		D+	=	67-69%
		D	=	63-66%
		D-	=	60-62%
		F	=	<60%
Attendance	100			
Homework	100			
<u>Class preparation</u>	<u>100</u>			
Total Points	300			

Honesty: You must be honest in class and in your life to truly find happiness. No plagiarism, fabrication, falsification, cheating, or other academic misconduct as described at http://services.byuh.edu/honorcode/Academic_Honesty_Policy#sources.

Preventing Sexual Harassment: Title IX of the education amendments of 1972 prohibits sex discrimination against any participant in an educational program or activity that receives federal funds, including Federal loans and grants. Title IX also covers student-to-student sexual harassment. If you encounter unlawful sexual harassment or gender-based discrimination, please contact the Human Resource Service at **780-8875** (24 hours).

Special Needs: Brigham Young University-Hawai'i is committed to providing a working and learning atmosphere, which reasonably accommodates qualified person with disabilities. If you have any disability that may impair your ability to complete this course successfully, please contact the students with Special Need **Counselor Leilani Auna** at **675-3999** or **675-3518**. Reasonable academic accommodations are reviewed for all students who have qualified documented disabilities.

If you need assistance or if you feel you have been unlawfully discriminated against on the basis of disability, you may seek resolution through established grievance policy and procedures. You should contact the Human Resource Services at **780-8875**.

Tentative Chemistry 99 Course Outline *Winter 2015*

(Disclaimer: Schedule is subject to change – changes will be announced in class.)

Thursday Oct. 9th Withdrawals begin as W or WF

Date	Out of Class Assignments.
Jan 8	Metacognition
Jan 10	Metacognition
Jan 12	Reading and Review
Jan 15	Reading and Review
Jan 17	Concentration and Effort
Jan 19	Concentration and Effort
Jan 22	The Fallacy of Multitasking
Jan 24	The Fallacy of Multitasking
Jan 26	Study Strategies
Feb 29	Study Strategies
Feb	Study Strategies
Feb 3	Effective Learning Strategies
Feb 6	Effective Learning Strategies
Feb 8	Effective Learning Strategies
Feb 10	Extrinsic Motivation
Feb 13	Extrinsic Motivation
Feb 15	Intrinsic Motivation
Feb 17	Intrinsic Motivation
Feb 20	Cognitive Principles
Feb 22	Cognitive Principles
Feb 24	Cognitive Principles
Mar 27	Meaning and Comprehension
Mar 29	Meaning and Comprehension
Mar 31	Meaning and Comprehension
Mar 3	Overcoming Old Learning Habits
Mar	Overcoming Old Learning Habits
Mar 7	Overcoming Old Learning Habits
Mar 10	Meaning and Comprehension
Mar 12	Meaning and Comprehension
Mar 14	Meaning and Comprehension
Mar 17	Visualization

Mar 19	Visualization
Mar 21	Visualization
Apr 24	Deep Processing
Apr 26	Deep Processing
Apr 28	Deep Processing
Apr 1	Essential components of Learning
Apr 3	Essential components of Learning
Apr 5	Essential components of Learning