California State University Channel Islands

NEW COURSE PROPOSAL

Courses must be submitted by October 15, 2014, and finalized by the end of that fall semester for the next catalog (2015-16) production.

Use YELLOWED areas to enter data.

DATE (*Change if modified and redate file with current date)*) 10/7/2014

PROGRAM AREA(S) CHEMISTRY COURSE NUMBER: 481

1. Course Information. *[Follow accepted catalog format.]*

Prefix(es) (Add additional prefixes if cross-listed) **and Course No. CHEM 481**

Title: ENTREPRENEURSHIP IN SCIENCE AND TECHNOLOGY Units: 3

X Prerequisites Junior or senior standing

Corequisites

Consent of Instructor Required for Enrollment

Catalog Description (Do not use any symbols): How to identify, understand and solve problems through the development of technology and science based business models. Topics include product development using science and technology; market analysis; business design including product, service and process development; marketing and financing a business; and technology management including road-mapping and intellectual property management.

Grading Scheme:

x A-F Grades

Credit/No Credit

Optional (Student Choice)

Repeatability:

Repeatable for a maximum of units

Total Completions Allowed

Multiple Enrollment in Same Semester

Course Level Information:

x Undergraduate

Post-Baccalaureate/Credential

Graduate

Mode of Instruction/Components (*Hours per Unit are determined by CSU policy*).

	Units	Hours per Unit	Default Section Size	Graded Component	CS & HEGIS # (Filled in by the Provost's Office)
Lecture	3	1	24	x	
Seminar		1			
Laboratory		3			
Activity		2			
Field Studies					
Indep Study					
Other Blank					

Leave the following hours per week areas blank. The hours per week will be filled out for you.

3 hours lecture per week

hours per week

2. Course Attributes:

General Education Categories: All courses with GE category notations must be submitted to the GE website: http://summit.csuci.edu/geapproval. Upon completion, the GE Committee will forward your documents to the Curriculum Committee.

A (English Language, Communication, Critical Thinking)

A-1 Oral Communication

A-2 English Writing

A-3 Critical Thinking

B (Mathematics, Sciences & Technology)

B-1 Physical Sciences

B-2 Life Sciences – Biology

B-3 Mathematics – Mathematics and Applications

B-4 Computers and Information Technology

C (Fine Arts, Literature, Languages & Cultures)

C-1 Art
C-2 Literature Courses
C-3a Language
C-3b Multicultural

D (Social Perspectives)
E (Human Psychological and Physiological Perspectives)
UDIGE/INTD Interdisciplinary
Meets University Writing Requirement (Graduation Writing Assessment Requirement)
Meets University Language Requirement

American Institutions, Title V Section 40404: Government US Constitution US History
Regarding Exec Order 405, for more information: http://senate.csuci.edu/comm/curriculum/resources.htm

Service Learning Course (Approval from the Center for Community Engagement must be received before you can request this course attribute).

Online Course (Answer YES if the course is ALWAYS delivered online).

Lab Fee Request – Lab fee requests should be directed to the Student Fee Committee.

3. Justification and Requirements for the Course. (Make a brief statement to justify the need for the course)

A. Justification: Provides an upper division elective for chemistry students interested in entrepreneurship. A free elective for any other students who are interested in pursuing start-up oppurtunities in the STEM fields. We have received funding to develop this course from Venture Well (formerly NCIIA) and have developed ties to the tech start-up community in the county. Several faculty members have experience starting up tech ventures and consulting these start-ups. There is additional support from CSUPERB, who is also hosting an iCORP competition that our students will participate in. We also plan on inviting faculty from business and economics, and from other STEM disciplines to team-teach the course and consider incorporating it into their curriculum.

B. Degree Requirement:
Requirement for the Major/Minor
x Elective for the Major/Minor
Free Elective

Note: Submit Program Modification if this course changes your program.

4. Student Learning Outcomes. List in numerical order. Please refer to the Curriculum Committee's "Learning Outcomes" guideline for measurable outcomes that reflect elements of Bloom's Taxonomy: *http://senate.csuci.edu/comm/curriculum/resources.htm*. The committee recommends 4 to 8 student learning outcomes, unless governed by an external agency (e.g., Nursing).

Upon completion of the course, the student will be able to:

1. Describe the scientific method and how it is used to approach scientific problems, specifically by justifying the science behind their idea and how it will solve the problem they are proposing for their business.
2. Evaluate past and current applications of science and technology to a problem, and propose solutions to these problems that include reasoning behind the science of their ideas.
3. Disseminate their business plan to a general audience, both in writing and orally.
4. Justify the viability of both the science and technology, and the economic sustainability of their business proposal using the fundamental principles of science, economics, and business practices.
5. Develop a business plan that includes a business model canvas, market sizing and evaluation, and financing.
6. Examine and discuss alternative business models, including social business and non-profit models.

5. Course Content in Outline Form. *[Be as brief as possible, but use as much space as necessary]*

1. THE SCIENTIFIC METHOD, PROCESS, AND APPLICATION
2. BUSINESS MODELING & DESIGN: DEVELOPING TECHNOLOGY AN SCIENCE BASED BUSINESS MODEL
3. MARKET SIZING AND EVALUATION
4. INTELLECTUAL PROPERTY
5. SCIENCE & TECHNOLOGY EVALUATION OF SCALING AND APPLYING AN IDEA
6. BUSINESS ORGANIZATION & MANAGEMENT
7. PATHWAYS TO VENTURE FINANCING
8. NON-PROFIT AND SOCIAL BUSINESS MODELS
9. BUSINESS PLAN COMPETITION PARICIPATION (ICORP)

Does this course content overlap with a course offered in your academic program? **Yes** **No** x
If YES, what course(s) and provide a justification of the overlap.

Does this course content overlap a course offered in another academic area? **Yes** **No** x
If YES, what course(s) and provide a justification of the overlap.

Overlapping courses require Chairs' signatures.

6. Cross-listed Courses (*Please note each prefix in item No. 1) Beyond three disciplines consult with the Curriculum Committee.*
A. List Cross-listed Courses (Signature of Academic Chair(s) of the other academic area(s) is required).
List each cross-listed prefix for the course:

B. Program responsible for staffing: Chemistry

7. References. *[Provide 3 - 5 references. For references more than 10 years old, provide a one-sentence explanation of relevance.]*

Entrepreneurship for Scientists and Engineers, K. Allen, Prentice Hill (2009)
Technology Entrepreneurship, T.N. Duening, R.A. Hisrich, M.A. Lechter, Academic Press, 2nd Ed. (2014)
Social Entrepreneurship for the 21st Century, G.L. Keohane, Mc-Graw Hill (2013)

8. Tenure Track Faculty Qualified to Teach This Course.

Simone Aloisio
Ahmed Awad
(note – This course will likely be taught by lecturer faculty who have experience consulting start-up companies.)

9. Requested Effective Date:
First semester to be offered: Fall 2015

10. New Resources Requested. Yes **No** x
If YES, list the resources needed.

A. Computer Needs (data processing, audio visual, broadcasting, other equipment, etc.)

B. Library Needs (streaming media, video hosting, databases, exhibit space, etc.)

C. Facility/Space/Transportation Needs

D. Lab Fee Requested **Yes** **No** x **(Lab fee requests should be directed to the Student Fee Committee)**

E. Other

11. Will this new course alter any degree, credential, certificate, or minor in your program? Yes No

If, YES attach a program update or program modification form for all programs affected.

Deadline for New Minors and Programs: October 1, 2014.

Priority deadline for Course Proposals and Modifications, and for Program Modifications: October 15, 2014.

Last day to submit forms to be considered during the current academic year: April 1, 2015.

Simone Aloisio	Sep 29, 2014
Proposer of Course (Type in name(s). Signatures will be collected after Curriculum approval)	Date

Approval Sheet

Course Prefix and number:

If your course has a General Education Component or involves Center affiliation, the Center will also sign off during the approval process.

Multiple Chair fields are available for cross-listed courses.

The CI program review process includes a report from the respective department/program on its progress toward accessibility requirement compliance. By signing below, I acknowledge the importance of incorporating accessibility in course design.

Program Chair		
	Signature	Date
Program Chair		
	Signature	Date
Program Chair		
	Signature	Date
General Education Chair		
	Signature	Date
Center for International Affairs Director		
	Signature	Date
Center for Integrative Studies Director		
	Signature	Date
Center for Multicultural Engagement Director		
	Signature	Date
Center for Civic Engagement Director		
	Signature	Date
Curriculum Chair		
	Signature	Date
AVP		
	Signature	Date