

GE CRITERIA APPROVAL FORM

Course Number and Title: CHEM 341/ BUS 341/ ECON 341. Drug Discovery and Development

Faculty Member(s) Proposing Course: Prof. Philip Hampton, Prof. William Cordeiro, and Prof. Dennis Muraoka,

Indicate which of the following categories would be satisfied by this course by marking an "X" on the appropriate lines. Courses may be placed in up to two GE categories as appropriate. Upper Division Interdisciplinary GE courses may be placed in two categories plus the UDIGE category.

	A1: Oral Communication
	A2: English Writing
	A3: Critical Thinking
X	B1: Physical Sciences
	B2: Life Sciences
	B3: Mathematics
	B4: Computers and Technology
	C1: Fine Arts
	C2: Literature
	C3: Languages & Cultures
X	D: Social Perspectives
	E: Human Psychological & Physiological Perspectives
X	Upper Division Interdisciplinary GE

Lab Included? Yes _____ No X

Please provide a brief explanation of how the proposed course meets each of the criteria for the selected General Education categories.

All Category B courses shall:

- Promote the understanding and appreciation of the methodologies of math or science as investigative tools and the limitations of mathematical or scientific endeavors

This course will examine the chemical and biochemical approaches to examining the drug discovery process. The course will begin with a discussion of the Scientific Method and how it is applied to Drug Discovery and the limitations of the Scientific Method. In addition, the strengths and limitations of chemical and biochemical methodologies as applied to drug discovery and development will be examined.

- Present mathematical or scientific knowledge in a historical perspective and the influences of math or science on the development of world civilizations, both past and present

The course will present a historical perspective on the development of chemical and biochemical approaches to drug discovery. The progress of the field of drug discovery from folk medicines to genomics and rational drug design will be examined and the impact of these developments on civilization will be discussed.

- Apply inductive and deductive reasoning processes and explore fallacies and misconceptions in the mathematical or scientific areas.

The application of deductive and inductive reasoning processes is fundamental to the Drug Discovery Process. Students in the course will be taught how to reason from experimental data to form conclusions regarding drug efficacy. In addition to presenting examples of good scientific reasoning, students will learn to differentiate good reasoning from fallacies, misconceptions and poor reasoning.

Category B-1 Physical Sciences—Chemistry, Physics, Geology, and Earth Sciences courses shall:

- Present the principles and concepts of the physical sciences and the physical universe.

The course will include chemistry and biochemical principles and concepts as applied to the Drug Discovery and Development Process.

All Category D courses shall:

- Promote understanding of how the issues relevant to social, political, contemporary/historical, economic, educational or psychological realities interact with each other within the realm of human experience

The course will integrate and examine the economic, business, social, and political realities of the drug discovery process and how they interact

- Focus on how a social science discipline conceives and studies human existence

The course will take economic, business, social, and political views of the process by which drugs are discovered and developed including the relationships between scientists, businesspersons, and the public and how each is affected by the drug discovery process. Ethical issues regarding the development of orphan drugs, drug pricing, and drug availability will be examined.

- Address issues using the methods commonly employed by a social science discipline.

The course will utilize economic and business methods to examine the drug discovery and development process.

In addition to meeting Category A-E criteria as appropriate all Upper Division Interdisciplinary GE courses shall:

- Emphasize interdisciplinarity by integrating content, ideas, and approaches from two or more disciplines

The course will integrate content and ways of knowing from the Life Science (biological and biochemistry), Physical Science (chemical and biochemistry), and Social Science (economics, business, political science, and philosophy) perspectives. Team-teaching and/or guest lecturers from individuals in the pharmaceutical and legal organizations in Ventura County will ensure that multiple perspectives and an interdisciplinary approach are reflected in the course.

- Include substantive written work* consisting of in-class writing as well as outside class writing of revised prose.

As part of the course, students will write a major research paper where they develop a fictitious pharmaceutical company that discovers a new drug and markets it. The paper will involve multiple parts that evolve from early pre-clinical discoveries (science) to managerial challenges, drug pricing, and marketing (economics and business). After each stage of the writing of the parts of the research paper, students will be provided with feedback on how the grammar, style, and content of the laboratory reports could be improved. At the end of the semester, students will resubmit integrated research paper as a revised portfolio.