Freshman Cluster Proposal
Healthier Living/Engineering

1. What is the theme you propose for your group of courses? In what ways do you think this theme speaks to issues important to our freshman population? To the University’s mission?

One pathway (Healthier Living) is designed for the Health Sciences students who wish to go onto the nursing program; who, if successful in completing their program, would go into careers helping create healthier lives for themselves and their patients. The alternative pathway is designed for engineering students (Engineering). It is designed to provide the new engineering students with a solid foundation upon which to understand engineering as a profession designed to provide better living for humans, including design and use of materials and structures that pose less risk and greater physical efficiency for the people who use those materials and structures, and less environmental damage from their construction, manufacture, and use.

2. List the three courses (prefix, number, title, units)

Fall: Chemistry 1615 Survey of Basic Chemistry for Healthier Living, for Health Sciences students who wish to go onto the nursing program (pre-nursing); or Chemistry 1101 General Chemistry (5), for Engineering majors

Winter: Biological Sciences 2011 Anatomy and Physiology (5) for pre-nursing, or, for engineering majors, Engineering 1011 Introduction to Engineering (3)

Spring: Psychology 1005 General Psychology (5) for both pre-nursing and engineering students

3. Explain how the theme will be used to integrate course content in each course. (Describe the contribution of each discipline’s perspective on the theme that will help create a coherent learning experience for the students.)

This cluster as described here has both a Pre-Nursing option and an Engineering option. This includes different Chemistry courses for the two student groups to meet the major’s specific needs. The design of this cluster will allow us to split off a cluster for Engineering students.

The Pre-Nursing option includes courses in Chemistry, Psychology, and Biological Sciences. Each of these three disciplines study processes that contribute to the health of people; in this cluster the foundational concepts and principles of these processes will be examined. In Chemistry 1615 students will learn about the nature of matter in terms of atoms, and the bonding and periodic trends of chemical elements. In addition, they will learn the structures and reactions of important organic chemicals and the properties of the major types of biomolecules. The course will emphasize the relationship of chemical processes to the functioning of living organisms. It is required for admission to the Nursing program. Biological Sciences 2011 will provide an understanding of the workings of the human body. This knowledge helps people make wise choices about their health and builds the foundation for understanding medical interventions for and repairs to the human body.
Psychology 1005 will bring in the basic processes underlying human behavior, perception, motivation, learning and thinking, and emotion as they influence health and decisions about health. It will also introduce the psychological aspects of health including the effects of stress and psychological disorders.

The Engineering option substitutes Chemistry 1101 (offered to freshmen majoring in the physical sciences), which provides a more technical focus on atoms and molecules and their interactions. This prepares Engineering students for the required Materials Science course offered later in their lower division curriculum. In place of Biological Sciences 2011, Engineering students will take Engineering 1011 with a focus on the role of engineering decisions on sustainability and environmental concerns, and on the impact of engineering decisions on the health of people who use the engineer’s products. Industrial engineers apply a combination of natural and behavioral sciences to design systems. Chemistry 1101 and Psychology 1005 provide basic knowledge in these areas. Chemistry 1101 provides basic knowledge about the structure of materials, while Psychology 1005 provides basic knowledge about how humans use their sensory and cognitive systems to interact with the systems designed by engineers. The Engineering 1011 course teaches students how this knowledge applies to the creative and healthy solution to engineering problems.

4. Explain how each course in the proposed learning community will support student learning of each of the lower division general education area learning outcomes and General Education requirements (passed by Academic Senate February 17, 2004). Please use the GE course application forms to address this question. (If the course has already been approved for GE credit, and the current application form was used, please attach a copy. If the course has not yet been approved for GE credit, the use of the application form will permit review for GE credit, even if the cluster application is not selected.

Chemistry 1615 GE application documents are attached. Chemistry 1101 has GE approval, and the application document is attached. Similarly, Psychology 1000 and its variations (Psychology 1005) have GE approval; the application is attached. Lastly, the GE application document is attached for Engineering 1011, too.

5. Attach course outlines for the three courses. Each course outline should indicate how the theme would be used in the course and any student activities that cross all three courses. (For example, will there be common reading(s) in the three courses? Will there be common assignments, or assignments on which students work the entire year? Will students keep a cluster portfolio? Will there be a common service learning experience for the students? Etc.)

Course syllabi for all courses involved are attached.
Approved by Department Chairs:

Ann M. Fortland

Signature

Sandi Natamell

Signature

Dawn R. Davis

Signature

Chemistry 03/17/14

Department

Date

ENGL 3/17/14

Department

Date

BIO 3/18/14

Department

Date

Approved by College Dean/Associate Dean from each participating college:

Signature

3/19/14

Date

Signature

Date

Signature

Date

Signatures of three faculty members: Ideally, the person who will teach the courses will participate in the cluster planning. However, recognizing the staffing difficulties departments face, the faculty member who plans the cluster must agree to provide a thorough orientation to the expectations and methods developed for the learning community to the actual instructor. If monies are available, faculty should be available for meetings in the late spring to plan integration points in the yearlong curriculum.

Preston A. Befeld

Signature

March 17, 2014

Date

3/17/14

3/17/14

Date

Signature

3/18/14

Date

Signature

3/19/14

Date

Proposals should be submitted as soon as possible and no later than Friday, April 4, 2014. Please submit proposals to sally.murphy@csueastbay.edu and linda.beebe@csueastbay.edu.

While Colleges do not approve courses for GE, College approval assures support for departmental participation.