Course Proposal – Introduction to undergraduate research

Rational for the course

What purpose will the course serve?

Introduce students to research topics and techniques, which would be expected of them upon transfer to a four school. This would go a long way to prevent students from transferring out of a science or engineering program or not graduating. This would also be a complementary to our present programs. None of the other community colleges have such a course.

How does the proposed course fit into the existing curriculum?

This course will complement all our present science and engineering programs increasing the knowledge level of our students

Does the proposed course add needed depth and/or breadth to the program/curriculum?

This course would add both depth and breadth. This course would carry and extra credit and provide additional content

What would be the relationship between the proposed course and the existing courses?

This would be a one credit course. Academic advisors can recommend this course to potential science and engineering students. Instructors could provide a percentage or extra credit to their grading scheme to students involved in this course.

Goals

a. Increase academic skill level of our students
b. Make our science and engineering programs superior to those offered by other community colleges
c. Increase retentions in science and engineering programs after transfer to a four year school

Objectives

a. Add an extra credit to the science and engineering programs
b. Teach students how to conduct science research
c. Introduce students to scientific literage
d. Provide the skills to analysis and publish undergraduate research

Curriculum

WebGuru will be the framework for the curriculum of this course. WebGuru is an interactive web-based tool that addresses all aspects of undergraduate research. List of _____

1. Introduction
    a. What constitutes undergraduate research
    b. How to get started
2. Learning to use new instruments
    a. Get to know the instruments you would work with
    b. Importance of the instrument manual
    c. Run practice on the instrument
    d. Run
3. Scientific literature search
    a. Online sources
    b. Library based resources
    c. General search guidelines
4. Reading the primary literature
    a. Understanding the abstract
    b. Introduction
    c. Details of the research methodology
5. Laboratory notebook
    a. What kind to use

b. Purpose of a lab notebook
c. Dos and don'ts
d. What would be recorded in the lab book

6. Getting the most out of a technical
   a. Outline
   b. Introduction
   c. Result and discussion
   d. Conclusion

7. Time Management
   a.
   b.

What would a course description look like?

This is a course for community college students who intent to transfer to four year schools and purse a science track towards a BS degree. To the course intends to equip the students with the skills a four year school might take for granted. This course will give the student an idea as to where his or her interests are and what it would take to pursue them further. Also, it will give the students a understanding of the working life of a researcher. This course goes through the formulation process of research plan, data collection and interpretation. Students will present their results to the rest of the class.

What would course objectives look like?

a. To give students an understanding of the importance of research
b. To help students develop strategies to access information
c. To introduce students to print an electronic resources
d. To cultivate organizational abilities
e. To build on critical thinking skills
f. To increase students awareness to legal and ethical procedures
g. To help student with writing skills
h. To familiarize students with science related resources

i. To help the student develop time management skills

What would learning objectives look like?

a. Be better equipped to choose a research topic in future at a four year school

b. Be able to develop a research learning contract

c. Be able plan a project

d. Be knowledgeable of the different types of research and be better equipped to make a career choice.

e. Be able to construct a hypothesis

f. Have an appreciation of the scientific method

g.