



Santiago Canyon College

DEPARTMENT PLANNING PORTFOLIO

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DEPARTMENT PLANNING PORTFOLIO
 DEPARTMENT: Physics and Engineering
 DIVISION: Mathematics and Sciences
 ACADEMIC YEAR: 2011-2012

Department's Vision:

The Physics and Engineering Department envisions a comprehensive general education and transfer program for students in chemistry, physics, and engineering. The courses offered encourage students to pursue lifelong learning and interest in the physical universe, engineering, and, technology.

Department's Mission:

The mission is to help students understand and appreciate the physical universe by promoting scientific literacy and encouraging curiosity, involvement, and enthusiasm in science and to apply that knowledge to future technology.

| GOALS/TASKS/ACTIVITIES | WHO'S RESPONSIBLE | ESTIMATED TIMELINE/COMPLETION | RESOURCES NEEDED | PROGRESS |
|--|----------------------------|-------------------------------|--|-------------|
| Improve the problem solving skills of physics students. | | | | |
| 1. Create new example problems to be solved by students during lecture, in pairs, on the tablet computers. | rutan_craig | Ongoing | None | In Progress |
| 2. Integrate the use of tablet computers into course lectures. | rutan_craig | Ongoing | None | In Progress |
| 3. Create additional directed learning activities (DLAs) for all physics courses. | rutan_craig, swift_cynthia | Ongoing | Continued funding of STAR Center. | In Progress |
| 4. Create additional workshops for all physics courses. | rutan_craig, swift_cynthia | Ongoing | Compensation for instructors to lead the workshop. | In Progress |
| Improve efficiency of physics labs. | | | | |

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|--|-------------------------------|---------|------------------|-------------|
| 1. Hire lab technician or science laboratory coordinator for the Physics program. Currently the physics faculty are responsible for setting up all labs, putting all lab equipment away, maintaining lab equipment, and ordering all equipment and supplies. This situation is not ideal and will become more problematic as the program grows and the proposed engineering program begins at SCC. | rutan_craig, swift_cynthia | unknown | \$60000 annually | In Progress |
|--|-------------------------------|---------|------------------|-------------|

Improve student performance in laboratory courses.

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|---|-------------------------------|-------------|------|-------------|
| 1. Create new laboratory activity using current balances. | rutan_craig | Fall 2012 | None | In Progress |
| 2. Create new laboratory activity on the photoelectric effect. | rutan_craig | Spring 2013 | None | In Progress |
| 3. Modify laboratory experiments to ensure students are mastering the desired skills. | rutan_craig, swift_cynthia | Ongoing | None | In Progress |
| 4. Modify laboratory assessment activities to ensure they are accurately measuring student understanding. | rutan_craig, swift_cynthia | Ongoing | None | In Progress |

Improve the transfer rates of engineering majors at SCC.

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|--|---------------|-------------|--|-------------|
| 1. Offer supplemental instruction to Physics 217/250A students to increase their chances of success. | swift_cynthia | Ongoing | Continued funding of SI after Title V grant is completed. | In Progress |
| 2. Create additional directed learning activities (DLAs) for Physics 227/250B and 237/250C to be completed in the STAR Center. | rutan_craig | Ongoing | Continued funding of the STAR Center after the completion of the Title V grant. | In Progress |
| 3. Create new courses needed for students transferring into an engineering major. These will include statics, dynamics, materials science, and network analysis. | rutan_craig | Summer 2012 | None | In Progress |
| 4. Begin offering new engineering courses. | rutan_craig | Spring 2013 | Adjunct instructors to teach the courses and the ability to offer the course no matter how many students are enrolled. | In Progress |

Number of active session(s): 2

