



Santiago Canyon College

DEPARTMENT PLANNING PORTFOLIO

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DEPARTMENT PLANNING PORTFOLIO
 DEPARTMENT: Physics and Engineering
 DIVISION: Mathematics and Sciences
 ACADEMIC YEAR: 2013-2014

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 DLAs on forces (150A), energy and momentum (150B), thermodynamics (150A/250B), mechanical waves (150A/250C), light (150B/250C), and Faraday's law (150B/250B). Modify the existing DLAs for electricity and magnetism for students taking 150B.	rutan_craig, swift_cynthia	Ongoing	Continued funding of STAR Center.	In Progress

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4. Create additional workshops for all physics courses.	rutan_craig, swift_cynthia	Ongoing	Compensation for instructors to lead the workshop.	In Progress
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Increase the number of physics class sections offered each semester.

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
2. Offer two lab sections tied to a larger lecture course for Physics 250A and 250B.	All Members, rutan_craig, swift_cynthia	Ongoing beginning in Fall 2013	Additional 2.55 LHE for each additional lab section that can be scheduled. Access to a lecture room that seats between 56 and 64 students.	In Progress
3. Revise the curriculum for Physics 210/211 & 279/289 to prevent frequent class cancellation due to low enrollment.	rutan_craig	Spring 2012	None	Completed
4. Offer new Physics 150A+150AC and 150B+150BC sequence to replace 210/211 & 279/289	swift_cynthia	Ongoing beginning in Fall 2013	No additional LHE required. LHE actually reduced from 11.1 to 6.55.	In Progress

Improve student performance in laboratory courses.

1. Create new laboratory activity using current balances.	rutan_craig	Fall 2014	None	In Progress
2. Create new laboratory activity on the photoelectric effect.	rutan_craig	Spring 2014	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
5. Create two new labs on mechanical waves using string oscillator and Pasco resonance tubes.	rutan_craig	Spring 2014	String oscillators (9) and sine wave generators (9) that have already been ordered. The department already received	In Progress

the Pasco resonance tube in
Spring 2013.

Improve the transfer rates of engineering majors at SCC.

1. Offer supplemental instruction to Physics 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	Completed
4. Begin offering new engineering courses.	rutan_craig	Spring 2014/Fall 2014 (pending course to course articulation)	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