

Innovative Teaching – Course Redesign project (ITCR)

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PHYS 50: General Physics

This course covers particle kinematics & dynamics, work & energy, linear momentum, rotational motion, fluids, vibrations, and sound.

Brief description of the course and its place in the curriculum

Undeclared students hoping to major in engineering or a physical science must first succeed in Physics 50.

Except for math and computer science, Physics 50 is a pre-requisite for all future courses in the STEM curricula.

Success in Physics 50 strongly predicts success as a STEM major.

Summary of course re-design activities

Demand for Phys 50 has dramatically increased in recent years. The Chair of Physics and Dean of the College of Science have supported my request to teach one large section (240 students) of Physics 50 in Science 142, which increases our current capacity by more than 60%. To date, the course has only been taught in smaller classrooms (e.g. Science 258) with an enrollment of 45.

I will develop **new curricula to actively engage students in lecture and to utilize the new technology in this lecture hall.**

- (1) I have already begun to implement elements of the flipped-classroom model.
- (2) I plan to acquire feedback during lecture by conducting surveys via text message.
- (3) I will also develop new lab activities that will address students' lack of proficiency in math.

