**Syllabus**

**PHY 4936- Renewable Energy in Developing Countries**

**Adopted for the Study Abroad program in Vietnam**

PHY 4936 is a 3 credit hour course that is offered by the Department of Physics under Selected Topics. This course is designed for both science and non-science majors. Both letter grade and S/U grade options are available. This course can be used to satisfy the university credit requirements.

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**Course Content:**

With steadily increasing population that is expected to exceed 9 billion by year 2050, the destiny of the human race will be determined by how we harness, use, and conserve energy in both developed and developing nations. 80% of the world’s population is concentrated in developing countries while they consume only 30% of global commercial energy. With rapid increases in population, industrialization and accompanying living standards, especially in the Asian continent, demand for energy is expected to quadruple by year 2050.

Most developing countries have abundant [renewable energy](http://en.wikipedia.org/wiki/Renewable_energy) resources, including [solar energy](http://en.wikipedia.org/wiki/Solar_energy), [wind power](http://en.wikipedia.org/wiki/Wind_power), [geothermal energy](http://en.wikipedia.org/wiki/Geothermal_energy), and [biomass](http://en.wikipedia.org/wiki/Biomass). This course will focus on the science of reviewable energy, how these resources are used in developing countries for the long-term societal and global benefit, and the effect of social and political conditions, consumer knowledge, and demand for products or services, in the future direction of renewable energy.

In addition to classroom learning, students will take part in several field trips to rural villages in Vietnam to learn what energy sources are available for people in remote areas of developing countries and how they manage their energy needs.

**Suggested Text:**

Energy, Environment, and Climate by Richard Wolfson, 2nd edition,

W. W. Norton & Company, New York

Students will discuss published literature on this subject. Most of the needed reading material will be on Blackboard.

**Course Evaluation:**

At the end of the course students will prepare a written paper of a topic selected during class. They will also take part in a poster presentation of a project jointly with their Vietnamese student partners.