

The S.T.E.M. Project at PCCC

Science * Technology * Engineering * Mathematics

What is STEM?

STEM refers to the various initiatives being developed that support the **science, technology, engineering and mathematics students**. Projects are broad -ranging, including course and program development, as well as increasing and improving direct support services for students.

The development of STEM initiatives began in the Spring of 2009, after PCCC was notified it had received a *U.S. Department of Education Grant* in the Fall of 2008

Now very familiar faces in the 3rd floor science area, Dr. Kate Joyce is the STEM Project Director and Thomas Van Aken was hired as the STEM Lab Coordinator.

New Science Equipment

As a result of STEM funds, we have been able to purchase some new State-of-the-Art Science Equipment. Thom Van Aken has been very busy with this aspect of the STEM project.

For Engineering we are acquiring a 3D graphic printer, enabling engineers to have dimensional designs printed at remote locations. This enables faculty to introduce the new current remote manufacturing technologies to our engineering students in a very vivid way.

For Biology labs, we have acquired dissection microscopes that directly connect to computers for image storage and graphic manipulation.

A Laptop cart with 24 State-of the Art computers is available for use by all classes in the Science Department.

The New STEM Lab

We have a "new" lab--the lab up in A312-- formerly the Nursing lab. Thanks to STEM funding, PCCC was able to completely renovate this room and include state- of- the- art lecture capture media equipment. This multipurpose science lab allows for multiple configuration possibilities due to its movable lab tables and hanging plugs.

Physics classes and the Green Energy course now have a home here. Tutoring is available in this lab for science and math students when classes are not in session.

TUTORING HOURS are posted on all lab doors in the Science area, the CIS area in the Hamilton Building and the Math Lab in the Pruden Building

Improving Courses

Improving courses and curricula to become more student "engaging" is an aspect of STEM that is not yet visible but will, we hope, have a lasting effect on student learning. For example, the faculty teaching Biology I and II are meeting weekly going over various new possibilities using some of the new "lab quest" equipment.

Several CIS courses are being redesigned or have been redesigned.

A goal is to design labs that are more inquiry based or based in problem solving. In the science courses students will have more opportunities to design experiments that answer real scientific questions.

STEM Contact #s : 973-684-4856
973-684-4855

kjoyce@pccc.edu & tvanaken@pccc.edu

STEM Dual Enrollment Project

The local Paterson and Passaic High School districts have begun dual enrollment projects with PCCC as a result of PCCC STEM. Over 100 high school students are now taking some STEM courses and obtain both high school and college credit for these classes. Dr. Kate Joyce, who has worked closely with the various high schools, anticipates a few more course offerings in the Spring. The U.S. Department of Education strongly encourages such initiatives as it saves students both time and money while beginning a college education.

Examples of courses offered for dual enrollment:

Rosa Parks: Website Design
Harp Academy: Chemistry
Kennedy HS: Precalculus
Eastside HS: Statistics
Passaic HS: Precalculus

Field Trips

STEM sponsored two field trips so far this semester. One trip, on October 23, was to the New Jersey Marine Sciences Consortium at Sandy Hook with 75 Paterson high school and PCCC students to learn about coastal ecology.

The second trip was to the American Museum of Natural History in New York City on November 6. Over 90 students, faculty and guests had a wonderful experience at the museum. STEM plans a trip in early December to Edison National Historic Site, the home and laboratory of Thomas Edison, in West Orange, NJ.

-Coming again in the Spring-

The Annual Regional High School Robotics Competition