



Photos: Liam Nadire

Pre-Engineering Newsletter

September 2010

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There will be an all-school lecture on November 1st from 7:00PM to 8:00PM given by Dr. Eduardo Glandt, Dean of the School of Engineering and Applied Science at UPenn

"If I could come back for another life, I would not want to be Brad Pitt or Bill Gates. I would want to be an engineering student, with the whole world open before me."

Eduardo Glandt, Dean

Pre-E field trip to IBM facility in Poughkeepsie, NY.

This fall, the Pre-E program is planning to have a major Pre-E field trip, open to all students, to tour, for about 4 hours, the IBM facility in Poughkeepsie, NY.

Pre-Engineering Certificate approved by Kent Faculty Committee

Last May 2010, the Pre-Engineering Program Certificate was unanimously approved by the faculty committee. Kent School aims to introduce interested students to the practice and profession of engineering through coursework and extra-curricular activities, such as the FIRST Robotics competition, summer programs, guest lectures, and field trips.

Requirements for a Kent School Pre-E Certificate

In order to receive a Pre-E certificate from Kent School, a student is expected to fulfill the following requirements.

Category 1: Pre-E courses (at least 4)

Kent offers an array of courses which can be taken for credit toward the certificate, which include, but is not limited to:

- Engineering Design*
 - Architecture*
 - Computer Science*
 - Structures: Design and Testing*
 - AP Physics B (proposed for fall 2010 by the Science department)
 - Any course that uses hands-on activities will be reviewed for Pre-E relevance upon teacher's request.
- (* one term suffices)

Category 2: Participation in a Pre-Engineering Activity

- (1) Robotics via FIRST
- (2) JETS (The Junior Engineering Technical Society)
 - TEAMS competition
 - NEDC (an annual engineering design competition to design and build an assistive technology device to help a person with a disability)
- (3) Independent Study project or other activities - with the supervision/advising of a faculty member or an outside professional

Category 3: Attendance at extra-curricular activities

- FIELD TRIPS
- GUEST SPEAKERS

Category 4: Participation in a summer program. Summer Programs or Independent Study projects will be expected. Research is highly recommended.

Pre-E Program's Partnership with Parametric Technology S.A. (PTC) in progress

A notice was placed in a publication from ASEE, referring to Kent School's development of a pre-engineering program and asking for partners with the expertise to help build the infrastructure of the program. This past summer, a meeting was set up with the Vice president of the PTC Global Education and the Education Program Manager of Mathcad to generate a partnership. <http://www.ptc.com/company/history-and-acquisitions.htm>

Things to do at the IBM facility:

- 1) Tour some of the Test and Assembly floors
- 2) Tour the Green Data Center
- 3) Attendance at panels set up by the IBM education initiative

If you are interested to be part of this exciting adventure, contact Dr. Nadire (or reply to this e-mail)

Visit in January by Dr. Stacy Klein-Gardner, Professor at Vanderbilt University's School of Engineering and director of K-12 STEM outreach

In January, Professor Gardner will be visiting Kent to learn about our Pre-E program and its direction, sharing with us some of her work and findings on K-12 STEM programs, speaking to a student audience, and visiting with our college office to discuss students' paths to engineering schools.

AES Engineers Scholarship Deadline Approaching

AES Engineers scholarship deadline is less than a month away. \$500 is awarded to the winner(s) each year. Scholarship Deadline - October 8, 2010

Application Process: Students will submit an essay on one of the two topics that appear on the scholarship page of our web site <http://www.aesengineers.com/scholarships.htm>



Free site licenses of Mathcad Software to Kent School Students and Faculty

First, PTC approved of all Kent students with MathCad, engineering software widely used in mechanical, civil, and electrical engineering for engineering calculations. PTC's biggest customers are NASA, Boeing, Raytheon, and Research in Motion.

PTC sponsoring Kent Robotics

The second main component of the partnership is to be a sponsor of Kent Robotics Team in FIRST and provide free licenses of the famous Pro-engineering software that PTC develops. PTC also develops Windchill Product Point, which combined with the Pre-Engineering software provide perhaps the most powerful CAD/CAM solution in high tech industry today. "One of PTC's corporate priorities at this time is to provide support for innovative educational programs designed to increase the numbers of students prepared to pursue careers in STEM fields. One way that PTC pursues this goal is through its sponsorship of both the FIRST Robotics Competition and the Real World Design Challenge. PTC sponsors many teams in each competition, providing them with free site licenses and free training in the use of its products."

<http://www.ptc.com/company/index.htm>

"Today's top engineers use Mathcad to perform, document and share calculation and design work. The unique Mathcad visual format and scratchpad interface integrate live, standard mathematical notation, text and graphs in a single worksheet - making Mathcad ideal for knowledge capture, calculation reuse, and engineering collaboration.

Mathcad is engineering calculation software that drives innovation and offers significant personal and process productivity advantages for product development and engineering design projects. Unlike proprietary calculating tools and spreadsheets, Mathcad lets engineers design and document engineering calculations simultaneously with comprehensive applied math functionality and dynamic, unit-aware calculations."

<http://www.ptc.com/products/mathcad/>

Kent Pre-engineering Program Acquires a Robotic Arm

A Robotic Arm was donated by RP Automation Inc. based in Bethel, CT. On June 20, 2010, the robot was installed in Schoolhouse Room 411. Dan Cleary from the Technology department and faculty members Mike Green from the



Science department, Matt Hislop and Dr. Nadire from the Math department attended the initial training session run by Mr. Ben Clark, the engineering manager of RP Automation. A second training session is scheduled for September 2010.

Thank you for your time and feel free to contact me if you need more information.

Dr. Nadire
Wentz Pre-Engineering Program Director
Kent School