

## Center for Pre-College Programs

The **Center for Pre-College Programs** at New Jersey Institute of Technology was established in 1978. Our mission is to increase access to scientific and technological fields among traditionally underrepresented populations (e.g. minorities and women) and to improve the teaching of science , technology, engineering and mathematics (STEM). The Center annually serves more than 6,000 elementary and secondary students, teachers and parents.

## Education and Training Institute

The **Education and Training Institute**, the instructional component of the Center, provides K-12 teachers with pre-engineering curriculum modules and training in order to encourage pre-college students to pursue STEM careers. The Institute manages the state affiliation of the national pre-engineering program, Project Lead The Way.

## Education And Training Institute

**Workshops at Your School or District**  
*Bring exciting and engaging hands-on, inquiry workshops to meet the needs of your school or district!*

## Professional Development Workshops

# NJIT

New Jersey Institute of Technology

**Education and Training Institute**

**Center for Pre-College Programs**

**New Jersey Institute of Technology**

**Cypress Hall Annex**

**University Heights**

**Newark, New Jersey 07102-1982**

# NJIT

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## Implementing Standards-based Lessons

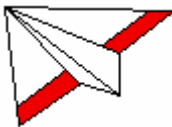
*(Workshop for Elementary/Secondary School Teachers)*

The articulation of measurable learning objectives and assessment of student work are key components to standards-based lesson planning. Participants and workshop leaders will collaboratively work through the process of identifying student learning behaviors that are linked to the NJ standards and cumulative progress indicators as demonstrated in the student work products described a standards-based lesson plan.

## Scientific Inquiry and the Engineering Design

*(Workshop for Elementary/Secondary School Teachers)*

Compare the scientific inquiry and engineering design processes through solving a design challenge. Participants will apply the engineering design process to hands-on activities such as creating paper airplanes, building towers or constructing a Rube Goldberg device.



## Create Your Site Specific Workshop

*(Workshops for Elementary/Secondary School Teachers)*

Collaborate with the workshop leaders from NJIT's Center for Pre-College Programs to develop an engaging, educational workshop for your school or district in science, technology, engineering or mathematics (STEM). Any workshop from the Center can be conducted at your specific site. For more information or to arrange for a workshop at your school or district, complete and mail the Request for Workshop form or call 973-596-6445. Workshops must have a minimum of 12 participants.

## Energy In—Energy Out

*(Workshop for Elementary/Secondary School Teachers)*

Explore the mathematics and scientific principles of relative motion (kinematics) in mechanical engineering. Participants will conduct classroom activities to model concepts in machines, mechanisms and energy.



## Building Robots with LEGO Mindstorms & Robolab Software

*(Workshop for Elementary/Secondary School Teachers)*

Learn about key concepts to design and build a robot using the LEGO Mindstorms school set. Participants will identify strategies to integrate and control the input/output (I/O) devices through the physical design and Robolab programming. Examples of robotics activities and challenges that use LEGO components as the design criteria will be presented.

## Workshop Request Form

Request more information for on-site workshops      Tentative Date      # Hours

- Implementing Standards-based Lessons**
- Scientific Inquiry and the Engineering Design Process**
- Energy In—Energy Out**
- Building Robots with LEGO Mindstorms & Robolab Software**
- Site Specific Topic:** \_\_\_\_\_

Send inquiries to:      **Center for Pre-College Programs**  
**New Jersey Institute of Technology**  
Cypress Hall Annex  
University Heights  
Newark, New Jersey 07102-1982

Direct phone inquiries to: 973-596-6445

\_\_\_\_\_  
First Name      Middle Initial      Last Name

\_\_\_\_\_  
District Name

\_\_\_\_\_  
School Name, if applicable

\_\_\_\_\_  
District/School Address

\_\_\_\_\_  
District/School City      State      Zip Code

\_\_\_\_\_  
Work Phone      Alternate Phone

\_\_\_\_\_  
Work E-mail Address

\_\_\_\_\_  
Alternate E-mail Address

\_\_\_\_\_  
Date of Request:

*All workshops may be conducted within a school or district, for more information call 973-596-6445.*

*NJIT is registered with the New Jersey Department of Education as a Professional Development Provider # 189*