

The College of New Jersey

# Recruiting Today's Students to be

# Tomorrow's Pre-Engineering Teachers

## Who?

Rising high school seniors interested in understanding how problems are solved through principles of engineering design and who want to prepare for a fulfilling future as a pre-engineering teacher.

## What?

A week-long pre-engineering teaching experience funded by TCNJ's Center for Excellence in STEM Education. Eligibility to receive fully funded room and board sponsored by NJ TSA,

## When?

July 12 - 17, 2015

## Where?

The College of New Jersey

## Why?

Learn about teaching engineering and technological literacy principles and how to make a real difference in this exciting and high demand profession.



## Mission Statement

The College of New Jersey's Summer Pre-Engineering Teacher Academy is offered to high school rising seniors interested in teaching science, technology, engineering, and math (STEM) principles in an exciting, relevant, and real-world engineering design environment. This program is designed to attract students to the field of pre-engineering education through exposure to curriculum and practicum experiences that focus on teaching. A national shortage of technology/pre-engineering teachers exists in New Jersey and nationally.

The National Academy of Engineering (NAE) and other professional engineering societies have identified as a national imperative the need for students to gain technological literacy, strengthen their interest and skills in STEM principles, and in increasing numbers enter engineering and other design fields. Studies have shown that if students, especially female students, are not provided design and engineering experiences in school, they are very unlikely to consider a technological field of study.

TCNJ'S Pre-Engineering Teacher Academy aims to capture the interests of high school students as an effective recruitment strategy toward resolving this shortfall.



## Who is Eligible

Any student who is taking a college preparatory program with a strong interest in STEM principles, who has completed his/her junior year, and is currently maintaining a GPA of 3.0. Students enrolled in **TSA** or a **PLTW** program or **NJ High-Tech** program or who attends one of our partner schools are strongly encouraged to apply. If your guidance department received this application, you are in a partner school.

## Selection Criteria

Students who are selected for this program must meet the following criteria:

1. Applicants must currently be a rising high school senior
2. Enrolled in a college preparatory program
2. GPA of 3.0 or better on a 4.0 scale
3. Recommended by a STEM teacher
4. Prepare an essay
5. Complete an interview (if requested)

## Program Organization

Registration will be limited to twenty rising high school seniors. Room and board will be provided by TCNJ and NJ Technology Student Association. Students are required to attend every daily session. Letters of invitation will be sent directly to participants.

## Financial

No tuition is charged for the Pre-Engineering Teacher Academy. TCNJ will cover expenses for books, materials, meals, snacks, and all other related program costs, not to include transportation expenses to and from The College of New Jersey. Participants will incur no costs to attend this event, other than those required for personal transportation needs. All academic costs are covered under the Department of Technological Studies. All room and board expenses will be covered by the Technology Student Association.



## Transportation Required

Parents/guardians are responsible for transporting students to and from the program at its start and upon its completion. Specific times and the location of pick-up and drop-off areas will be provided



## Program Description

The Pre-Engineering Teacher Academy serves as an excellent long-term recruitment strategy to increase the pool of candidates interested in

becoming pre-engineering teachers. Benefits of the Academy include:

- Introduction to pre-engineering teaching and the profession
- Opportunities to meet with distinguished TCNJ faculty, educational leaders, and teachers to discuss issues pertinent to pre-engineering education
- Participation in creative hands-on pre-engineering activities
- Experience making a difference in a student's life
- Joining other students in an fun and creative atmosphere learning team building exercises, principles of Science, Technology Engineering, and Math.

While on the TCNJ campus, high school students will experience learning as individuals and as productive citizens as they explore new concepts and ideas. Students will experience the profession as they are guided through issues pertinent to pre-engineering education. Students will experience the classroom as they become acquainted with teachers and teaching on a personal and professional level. Working in small groups, students will plan and teach a pre-engineering lesson to groups of middle school students. Each participant will be required to complete all assignments, keep a portfolio, and write a summary report about his/her experiences in the Pre-Engineering Teacher Academy.



## To Apply, Students Must:

- Attach an essay (150-200 words typed) explaining why you are interested in pursuing a career as a Pre-Engineering teacher.
- Complete the attached Application Form.
- Attach a list of school and community activities, including special projects, STEM courses, offices held, leadership positions, and the amount of time devoted to each. Include paid work experience, as well as volunteer positions.



# Application

**Applications will not be processed until all materials are received.**

**Application Deadline: June 24, 2015**

Please email or fax applications with attachments to:

Allison Goeke  
Pre-Engineering Teacher Academy  
The College of New Jersey  
Email: goeke2@tcnj.edu  
Fax: 609-771-3330

TCNJ Summer High School  
Pre-Engineering Teacher Academy  
July 12 - 17, 2015

**Additional Information:**  
Dr. Steve O'Brien, Chairperson  
Department of Technological Studies  
609-771-2782/2543  
obriens@tcnj.edu

Application Deadline: June 24, 2015

Date: \_\_\_\_\_

Name of Student: \_\_\_\_\_ Date of Birth: \_\_\_\_\_

Current Grade: \_\_\_\_\_ Grade Point Average on 4.0 Scale: \_\_\_\_\_

Student Email Address: \_\_\_\_\_

Home Mailing Address: \_\_\_\_\_

City: \_\_\_\_\_ Zip: \_\_\_\_\_

County: \_\_\_\_\_

Home Phone: \_\_\_\_\_

Parent/Guardian Work Phone: \_\_\_\_\_

Parent/Guardian Email Address: \_\_\_\_\_

Parent/Guardian Cell Phone: \_\_\_\_\_

School Name: \_\_\_\_\_

School Address: \_\_\_\_\_

Name of STEM Teacher who is recommending you: \_\_\_\_\_

STEM Teacher's Email Address: \_\_\_\_\_

**Please Include Required Attachments with Application**

## For Parent/Guardian

I give permission for my child to attend TCNJ's Summer Pre-Engineering Teacher Academy from July 12 - 17, 2015

\_\_\_\_\_  
Signature of Parent/Guardian

\_\_\_\_\_  
Date

The College of New Jersey, primarily an undergraduate institution, provides academically prepared students with a challenging education and a rewarding residential experience, small classes and a prestigious faculty. TCNJ has been recognized for excellence in U.S. News and World Report, The Fiske Guide to Colleges, Barron's Profiles of American Colleges, and Peterson's Competitive Colleges.

Students who are accepted into the Summer Pre-Engineering Teacher Academy will take part in the On-Campus Residence Program.