

Pre-college Academy in Technology and Science Summer 2003

FOR HIGH SCHOOL STUDENTS

The Pre-college Academy

Summer 2003

at NJIT is a

five-week program

for academically

talented high school

students who want

to get a jump on

their college careers.

July 1 – August 8, 2003

NJIT

New Jersey Institute of Technology

*A Public
Research University*

*National Tier 2 Research University
–U.S. News & World Report*

Summer 2003 Course Offerings

Chemistry

125/127 Fundamentals of Chemistry I and Lab (4 credits): The basic concepts of chemistry will be examined, including atomic theory, stoichiometry, electronic structure and periodicity, molecular structure and bonding, gases, liquids, solids and solutions. Laboratory activities will focus on these topics.

126/124 Fundamentals of Chemistry II and Lab (4 credits): A continuation of Chem 125. Topics will include chemical thermodynamics, chemical equilibrium, acids and bases, kinetics, electrochemistry, nuclear chemistry and organic chemistry. Laboratory activities will focus on these topics.

"My son's summer academy experience was both enjoyable and productive."

Parent from
Park Ridge, NJ

Computing Sciences

112 Introduction to Computing (5 credits): This course is for high school students who are interested in computer science and/or considering computer science as a major field of study. Fundamentals of computer science are introduced. Emphasis is on programming methodology, problem solving, structure and representation of data. Topics include algorithm design, data abstraction, logical data structures (lists, stacks, queues, trees, etc.), physical representation of data, design and analysis of algorithms operating on the structures including internal searching, sorting, recursion and string processing. The C++ language is fully discussed and serves as the vehicle to illustrate many of the concepts.

Engineering

FED 101C/D Fundamentals of Engineering Design, Computer Aided Design/Graphics Component and Design Component (2 credits):

This course is a study of technical graphics and the computer as a technical drawing tool. Introduces projections and multi-view drawings and visualization, discusses geometry commonly used in engineering design graphics, orthographic projections, dimensioning techniques, tolerance and introduction to auxiliary and sectional views. Applies the software program pro/ENGINEER to various problems. The

design component involves interdisciplinary teams working on open-ended engineering projects. The learning modules introduce real engineering problems. This component will cover product design and development, processes, manufacturing, and measurements.

Mathematics

102 Modern Precalculus (6 credits): This course is an intensive non-traditional approach to precalculus employing curriculum innovations for the preparation of students for college calculus. The course infuses calculus techniques into the precalculus curriculum. The format includes both regular class and workshop environments with a focus on student problem-solving.

111 Calculus I (4 credits): Considers the theory and techniques of differentiation and integration with applications of both processes to engineering and science.

112 Calculus II (4 credits): Topics include the differentiation and integration of inverse trigonometric, exponential and logarithmic functions; further methods of integration; finite series; Taylor series; and applications of the definite integral to physical problems.

"Challenges and fun – that's what you have in the summer academy."

Student from
River Vale, NJ

Physics

111/111A Physics I and Physics Lab (4 credits): This course deals with the study of elementary mechanics. Emphasis is on the fundamental concepts and laws of mechanics, especially conservation laws. Topics discussed are: motion; equilibrium and Newton's laws of motion; work, energy and momentum; and conservation laws. Lab must be taken concurrently.

"The professor was willing to spend extra time with me for study sessions."

A physics student



About NJIT

Founded in 1881 as Newark Technical College, New Jersey Institute of Technology is New Jersey's public technological research university. Situated in the University Heights section of Newark, NJIT contributes to the region's development and economic growth through programs of instruction, research and public service.

NJIT is among the leading comprehensive technological universities in the nation. The university has state-of-the-art facilities with more than two million square feet of space located on a forty-five-acre campus. The university offers full- and part-time undergraduate and graduate studies through six schools: Newark College of Engineering, the New Jersey School of Architecture, the College of Science and Liberal Arts, the New Jersey School of Management, the Albert Dorman Honors College, and the College of Computing Sciences.

Recreational facilities include indoor racquetball courts; indoor track; six-lane competition pool; a fitness and weight training center; tennis courts; and facilities for fencing, judo, aerobics and dance, softball, basketball and more.

On-campus Security

NJIT has one of the safest campuses in the state. Our professionally trained campus police force is on duty twenty-four hours a day, seven days a week, and entry to every residence hall is monitored around the clock.

Special Things to Know about NJIT

- According to *Yahoo! Internet Life* magazine, NJIT is the "perennially most wired" public university in America.
- *U.S. News & World Report's* "2002 Annual Guide to America's Best Colleges" ranked NJIT as a National Tier 2 Research University.
- *Mademoiselle* ranked NJIT as the second-most Internet-connected university in the nation.
- NJIT is home to one of the nation's largest university-based environmental research centers.
- NJIT's pre-college programs have been recognized as a national model for pre-college education.

The **Pre-college Academy at NJIT** is a five-week program for academically talented high school students who want to get a jump on their college careers. Participants earn up to eight college credits in small, customized classes taught by faculty who have been recognized for their commitment to teaching excellence. This year's academy will run July 1- August 8.

At the end of the program, grades are recorded on an NJIT transcript. Course credits can be applied toward an undergraduate degree at NJIT and at most other colleges and universities.

Pre-college Academy students have the option of living on the NJIT campus during the week or commuting to the university. As a campus resident, you will live in one of NJIT's modern, air-conditioned dormitories, arriving Sunday night of each week and leaving on Friday during the day. Specially trained counselors will help make your stay comfortable.

Pre-college Academy Features

- Morning and afternoon college credit courses
- Classes taught by first-rate faculty
- Midday break to pursue special interests, such as athletic and recreational activities, career exploration or library and laboratory research
- Peer learning with other talented high school students
- A scholarly, multicultural university experience
- Full room and board (optional)

Key Dates to Remember

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| April 25: | Application deadline |
| May 16: | Notification of acceptance |
| June 6: | Notification of intention to enroll; tuition and fees, and room and board deposits due |
| June 30: | Check-in for on-campus residents |
| July 1: | First day of Pre-college Academy Summer 2003; registration; balance of tuition and fees, and room and board due |
| Aug. 8: | Last day of Summer 2003 Pre-college Academy |

NJIT does not discriminate on the basis of sex, sexual orientation, race, color, disability, veteran's status, national or ethnic origin, or age in the administration of student programs. Campus facilities are accessible to the disabled.

How to Apply

Students who can demonstrate superior academic ability, intellectual curiosity and maturity are invited to apply. The application process, outlined below, will help us to assess these qualities.

- Complete the application.
- Submit a copy of your high school transcript.
- Have your guidance counselor, principal or other appropriate school official provide a letter of recommendation on school letterhead.
- Submit a copy of your PSAT or SAT scores, if available.
- Be sure your parent or guardian signs the application.
- Submit a \$50 application fee.
- Have your guidance counselor send all application materials, including application fee, by April 25, 2003, to:

Summer Academy
Center for Pre-college Programs
New Jersey Institute of Technology
University Heights
Newark, NJ 07102-1982

Make check or money order payable to: NJIT–Pre-college Academy.

Program Costs

Tuition and Fees

Application fee:	\$50 (non-refundable)
Tuition fee:	\$256 per credit
Student fee:	\$292*
Textbooks:	Costs depend on course(s) taken. Books can be purchased at the NJIT Bookstore on the first day of the academy

On-campus Living Costs

Room:	\$700 (5 nights/week, 5 weeks)
Board:	\$350

Fees for room and board cover lodging and meals from July 1 through August 8, 2003. Students who commute can purchase food at the university.

If you and your family cannot meet the cost of the academy, we suggest that you talk with your high school personnel or representatives of community or local business organizations about financial assistance. NJIT may award a limited number of partial scholarships.

Pre-college Acceptance Procedures

Notification of acceptance into the summer 2003 academy will be by May 16, 2003. If you plan to attend, follow these procedures:

- By June 6, notify the NJIT Center for Pre-college Programs of your intention to enroll.
- By June 6, send a check or money order for \$250 which will be applied towards your total tuition and fees.
- To reside on campus, send a check or money order by June 6 for \$250 which will be applied toward your total room and board costs.
- Note: The balance for all tuition, fees and room and board costs will be due on registration day, July 1.
- Note: Late application will be considered on a space-available basis and will require an additional fee. Make check or money order payable to: NJIT–Pre-college Academy.

Pre-college Registration and Check-in

- Students who will be living on campus can check into a residence hall on Monday, June 30.
- Registration takes place on July 1.

Refunds

Deposits can be refunded if written notification of cancellation is received by the Center for Pre-college Programs before June 1, 2003. Students who notify the university in writing of their withdrawal from the program will be eligible for a refund of tuition, and room and board fees. The calculation of refunds will be pro-rated based upon the date the Center for Pre-college Programs receives written notification of withdrawal.

To Learn More

For detailed descriptions of courses offered, information on specific financial awards for which you may qualify or any other information, please call Diana Muldrow, (973) 596-3679 or e-mail muldrow@adm.njit.edu.

Note: Applications are closely reviewed and are considered on a case-by-case basis. Prior to accepting registrations, the university may, in some cases, make recommendations to students about their ability to complete the courses for which they wish to register.

* Subject to Board of Trustees approval.



New Jersey Institute of Technology

*A Public
Research University*

UNIVERSITY HEIGHTS
NEWARK, NJ 07102-1982

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NEWARK, NJ

CENTER FOR PRE-COLLEGE PROGRAMS