Yeshiva University
Career Center

GUIDE TO MAJORS AT YESHIVA COLLEGE: PRE-ENGINEERING

Choosing a major can be stressful, but it is important to understand that you can pursue almost any career regardless of which major you choose. While there are some exceptions, most entry-level positions simply require general transferable skills—those that can be learned in one setting and applied in another. Relevant experience through internships and activities is generally more important to employers than a major. It is best to choose an area that you find interesting and where you have the ability to do well.

What is the Pre-Engineering Major?

Engineering is the application of mathematics and science in the production of systems, processes, machines and structures for the benefit of society. YU offers combined engineering programs with Columbia University and Stony Brook University. Under the 3-2 plan, a student who attends Yeshiva for three years, maintains a 3.0 average, and receives the recommendation of the pre-engineering adviser, is admitted to Columbia University School of Engineering and Applied Science and to College of Engineering and Applied Sciences of Stony Brook University as a junior. The student attends Columbia or Stony Brook for two years and, upon successful completion of the program, Yeshiva confers the Bachelor of Arts degree and Columbia or Stony Brook confer the Bachelor of Science degree. There is also a 4-2 plan option available; please contact academic advising for more details.

Students interested in an engineering career have the option of majoring in pre-engineering or choosing from a variety of related majors including chemistry, computer science, mathematics, and physics

What can I do with a Major in Pre-Engineering?

Engineering prepares students for fields that require scientific skill coupled with creative thinking and problem solving. In today's world, engineers should expect to contribute more than mere technical competence on the job. An undergraduate engineering degree is excellent preparation for graduate or professional study as well as immediate employment in a number of occupations that require similar skills, including:

<u>Business/Finance</u>
- Accountant
- Actuary

<u>Engineering Field</u>
- Aerospace Engineer
- Agricultural Engineer
- Architect
- Astronomer
- Biomedical Engineer
- Chemical Engineer
- Civil Engineer
- Computer-Aided Design Engineer
- Electrical Engineer
- Engineering Consultant
- Engineering Technician
- Environmental Engineer
- Design Engineer
- Manufacturing Engineer
- Mechanical Engineer
- Metallurgical Engineer
- Mining Engineer

- Network Engineer/Specialist
- Nuclear Engineer
- Operations Engineer
- Petroleum Engineer
- Process Engineer
- Product Engineer
- Software Engineer
- Systems Engineer
- Test Engineer

Scientific Research
- Biomedical Equipment Technician
- Chemist
- Forensic Scientist
- Medical Technician
- Meteorologist
- Microbiologist
- Nuclear Medicine Technologist
- Occupational Safety Specialist

- Sales Representative, Scientific Industries
- Technology
- Clinical Laboratory Technologist
- Computer Programmer
- Computer Scientist
- Instrumentation Technician
- Inventory Control Specialist
- Manufacturing Technologist
- Naval Architect
- Systems Analyst
- Technical Writer
- Tool Designer
- Toy Designer
- Urban/Regional Planner
- Webmaster

Requires Graduate Study
- Patent Lawyer
- Pharmacologist
- Physician
- Professor

Skills and Abilities

Pre-engineering majors gain scientific-based skills through their coursework as well as a creative sense in applying these principles to larger problems. Students in this major learn to think critically, conceptualize new ideas, and work with members of a team to apply new concepts. Some of the additional skills and abilities cultivated through the Pre-engineering major include:

Critical Thinking/ Decision Making
- Logical thinking patterns
- Ability to analyze and interpret data
- Identifying and solving complex problems
- Using logic and reasoning
- Considering the relative costs and benefits of potential actions

Interpersonal
- Teamwork
- Organizational and efficiency skills
- The ability to listen to and understand information and ideas presented through verbal and written communication

Research
- Advanced quantitative skills
- Computer literacy
- Systemizing and testing skills