Engineering

College of Design, Engineering, & Commerce

Engineering in general:

Engineers apply mathematic, scientific, technical, and design knowledge to address problems and tasks faced by businesses and governments. Engineering may involve developing new processes, such as environmentally sound methods of waste disposal, or designing new products, such as a lighter, stronger, and more flexible plastic.

Manufacturers employ engineers to design and develop products such as consumer and industrial electronics, fabricated metals, machine tools, chemical compounds, transportation equipment, aircraft, communication equipment, and space vehicles. Engineers also develop the production processes necessary to create those products, from designing the machinery to designing the factories where the machinery is operated.

Besides manufacturing, some engineers test and inspect products and structures to increase cost-effectiveness or safety. Such engineers typically engage in more service-oriented careers, often working for firms that contract their services to other businesses or government agencies.

Engineers are often the crucial link between goals and reality. Once a company or government agency decides that it needs a certain product or process, the next step is for an engineer or team of engineers to create it as efficiently as possible within a budget. Engineers can have a hand in all phases of development, from idea conception, design and development, implementation, testing, production, and maintenance to sales and customer support.

Description of Major:

The mission of the BS in Engineering program is to develop in students the necessary knowledge and analytical skills for professional engineering practice or for successful graduate studies. The curriculum of the program consists of a course of study in mathematics, science, liberal arts, business and engineering during the four years of undergraduate study. Students will have the flexibility to tailor the program to their own specific needs by selection of an appropriate minor track of courses during their sophomore year. Minor tracks include: mechanical engineering, architectural engineering, environmental engineering, industrial and systems engineering or textile engineering. The resulting course of study achieves a balance between science, engineering, the liberal arts and business to provide an understanding of the economic and social implications of engineering activity, and to develop creative talents.

The BS Engineering Program at Philadelphia University incorporates all of the contemporary thinking related to engineering education that has been studied in the National Academy of Engineering publication “The Engineer of 2020 – Visions of Engineering in the New Century”.

Specializations:

Typically, engineers specialize in one particular area of engineering; engineering specialties include aerospace, agricultural, architectural, biomedical, chemical, civil, computer hardware, computer software, electrical, environmental, geological, industrial, marine, materials, mechanical, nuclear, and petroleum engineering. Currently, there are about a million and a half engineers in the United States. Among the largest engineering specialties, in terms of the number of engineers practicing them, are computer software engineering, electrical and electronics engineering, civil engineering, mechanical engineering, and industrial engineering, including health and safety engineering.¹
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Careers/Job titles:
- Aerospace Engineer
- Aerospace Technology Assistant
- Applications Engineer
- Associate Automation Engineer
- Associate Service Engineer
- Automation Engineer
- CAD Engineer
- Civil Engineer
- Consultant
- Electronics Engineer
- Energy Project Manager
- Engineer/Programmer
- Engineering Technician
- Environmental Engineer
- Field Service Engineer
- General Engineer
- Industrial Engineer
- Logistics Specialist
- Manager
- Materials Engineer
- Network Support Engineer
- Product Development Associate
- Programmer Analyst
- Safety Engineer
- Statistician

Who employs PhilaU graduates? ²
- Pfizer
- Herrmann Ultrasonics
- LEED AP
- www.csOutreach.com
- T.E.A.M., Inc.
- Albany Engineered Composites
- Ethicon
- Unlimited Technology
- ABEQS.ORG
- Venetian Macau Limited
- DAC
- Covidien
- CIGNA
- MWAA
- Federal Prison Industries
- Federal-Mogul Corporation
- NASA
- Switlik Parachute Company
- Greenfield Manufacturing Company
- First Data Corporation
- Netapp
- Huawei Experience
- Unify
- GlaxoSmithKline Biologicals
- EMC
- Susquehanna Bancshares Inc Engineered Arresting Systems Corp.
- Johnson & Johnson
- Norheimer Engineering
- Inductotherm Group
- eOriginal, Inc.
- Sun Microsystems
- Flexicon Corporation
- DAS Architects, Inc.
- Thornton Tomasetti
- Target
- Magid Glove and Safety
- Comcast Cable
- Lucid Security Inc
- Ethicon Biosurgery

Helpful websites:
- Jobs: Engineerjobs.com -- http://www.engineerjobs.com/
- What is engineering -- http://whatisengineering.com/
- What do Engineers Do? -- http://www.egr.msu.edu/future-engineer/what

Major worksheet brought to you by:
Career Services Center | Kanbar Campus Center, Suite 313
CONTACT US! phone: (215) 951-2930 | email: careerservices@philau.edu | website: www.philau.edu/career

¹ Industry and major information taken from the Philadelphia University website at several locations: Undergraduate Degree Programs (http://www.philau.edu/academics/undergrad.html), the Undergraduate Catalog (www.philau.edu/catalog/Cat200708), and WetFeet.com, a company and career research database.
² Places of employment of graduates researched from LinkedIn