



Department of Automobiles and Automobile Economy

The educational objectives of the mechanical engineering program are to graduate mechanical engineers who can: practice professionally as team members or leaders in both local and global, multidisciplinary environments; advance their careers in mechanical engineering or other fields through promotions, positions of increasing responsibilities or professional certification; contribute to the welfare of the society, and respond to its needs with consideration of ethical and environmental issues; engage in advanced academic and research careers; and pursue entrepreneurial endeavours.

Students are offered mechanical engineering electives concentrated in five areas: The Design concentration integrates elements of the mechanical engineering program and utilizes modern computer methods to enable the engineer to model, analyze and design mechanical components and



systems. The power concentration provides the engineering background for optimum use of energy resources; calculation of energy loads; design, selection and integration of conventional and non-conventional energy systems and components. The Industrial concentration enables the engineer to analyze, design, integrate, automate and manage industrial systems. The Materials and Manufacturing concentration focuses on ways of controlling material composition, treatment, and manufacturing in order to meet design requirements, and achieve desired levels of performance. The Mechatronics concentration focuses on computer programming, automatic control, sensor technology and microprocessor as well as manufacturing techniques.

Automotive Engineering

Automotive engineering is a combination of mechanical, electrical and materials science. Engineers in this field can design new vehicles or look for ways to improve existing automotive engineering technology.

Read on to learn more.

Inside Automotive Engineering

Automotive engineers can design and test brake systems, engines, safety mechanisms, fuel technologies and transmissions. In the field, engineers use design software to devise new vehicle designs or systems. Some engineers also use grinders, machine tools and workshop presses to fabricate prototype parts for testing. Individuals interested in designing, testing and creating automotive systems may be drawn to this line of work.



Education Information

A 4-year degree is the minimum qualification for most automotive engineering positions (bachelor). Undergraduate programs in this field are most commonly offered in automotive engineering technology, which can cover the basic principles of engineering along with modern vehicle design requirements in terms of safety, fuel economy and industrial manufacturing.



While master's degree programs in automotive engineering are available, automotive engineering is a complex and interdisciplinary field, so students may also find relevant coursework through graduate programs in electrical engineering, environmental engineering and mechanical engineering. Here are a few articles from *Study.com* offering information about degree programs related to this field of study.

- [Selecting a Car Engineering Program](#)
- [Automotive Design Programs](#)
- [Auto Design Training](#)
- [Selecting an Automotive Engineering Graduate School](#)
- [Master's Degree in Automotive Engineering](#)



Why study Automotive Engineering at NTU Dnipro Politechnic?

- Form the base for a career in mechanical engineering in area specialising in automotive technology
- Gain knowledge in design and operation of vehicles
- Get to know how to apply the principles of mathematics and physics to the real mechanisms
- Learn the skills that will lead you to management roles as a professional engineer
- Dive into the amazing worlds of transport, manufacturing, power plant, vehicle dynamics and many others

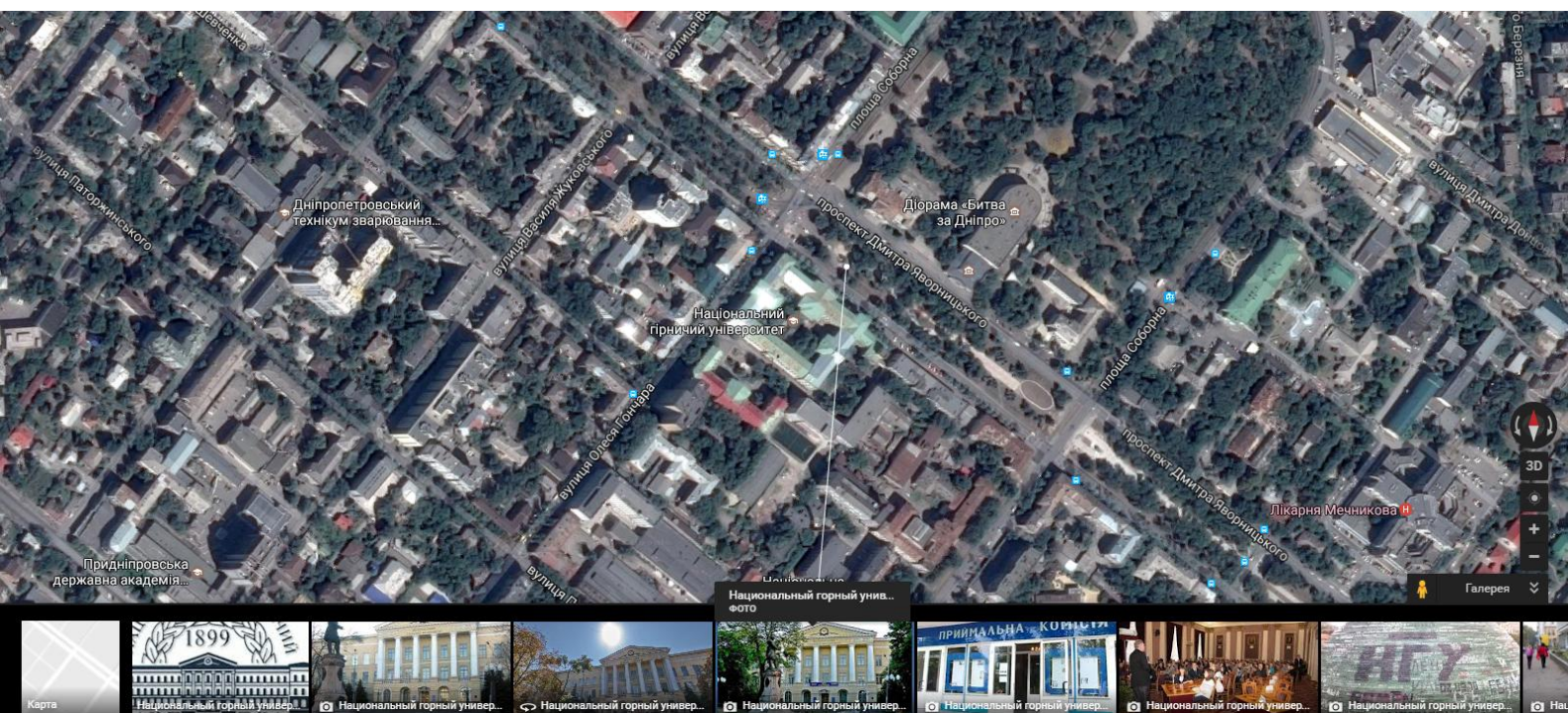


- Develop the ability to apply various methods of problem solving
- EU associated membership status allows free access to European educational area, students exchange, entrepreneurship, scholar programs participation.
- Accreditation
- NTU Dnipro Politechnic is accredited according to ISO 9001, accredited by Ministry of Education of Ukraine.

Course content

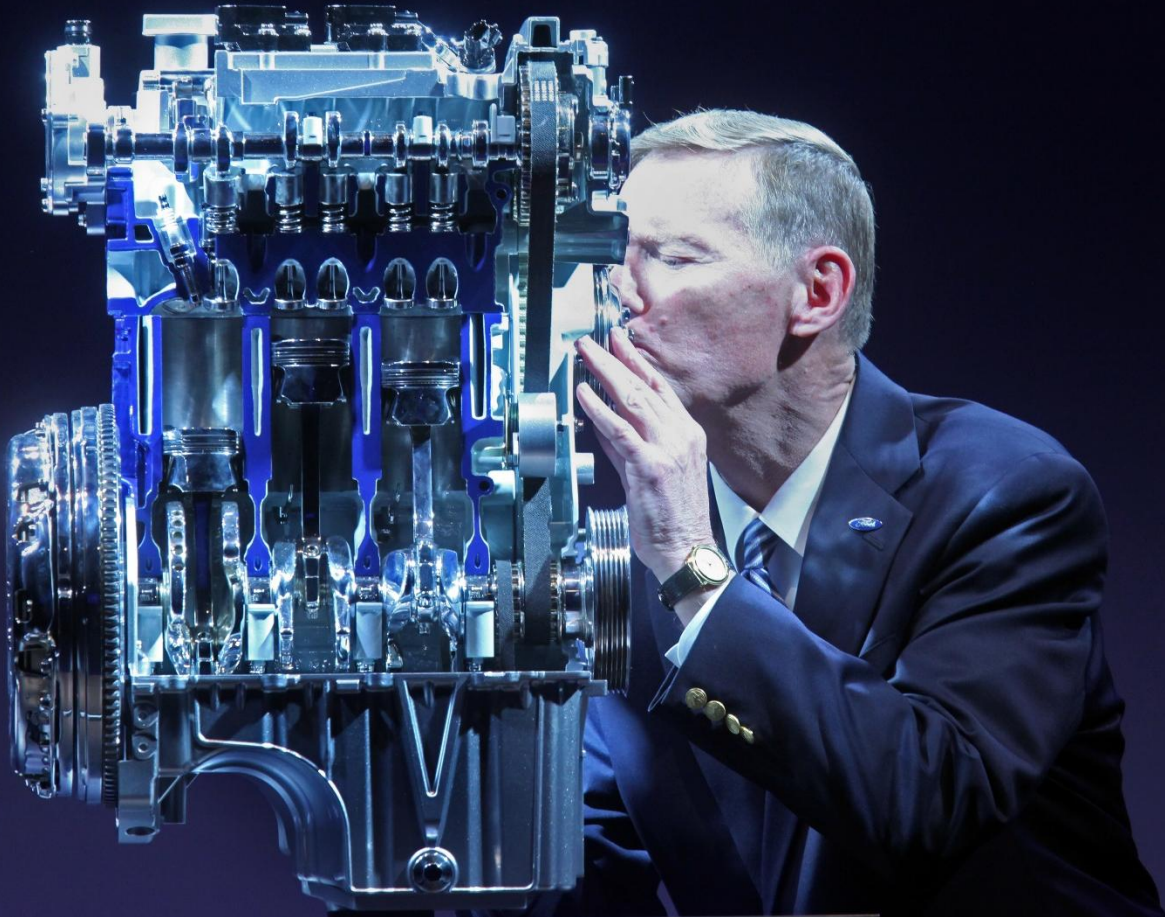
- **First year**
 - Emphasis is on developing basic mathematical, scientific and communication skills. Topics include Design and Manufacture, Materials Science, Engineering Sciences, Electronics and Mathematics.
- **Second year**
 - Subjects include: Machine Design, Electrical Machines, Fluid Mechanics, Thermodynamics, Design and Manufacture, Advanced Mathematics and Strength of Materials.
- **Third year**
 - Subjects include Applied Thermodynamics, Fluid Mechanics, Material Design and Manufacture, Control Engineering and Instrumentation, Management and Automotive Technologies.
- **Fourth year**
 - Students undertake an individual research project in the area of automotive technology. Taught subjects include A Review of Selected Automotive Technologies, Manufacturing Management, Design and options from Fluid Mechanics, Thermodynamics, Strength of Materials and Machine Dynamics.







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Career Options

Individuals who have completed automotive engineering technology undergraduate programs may seek positions as engineer assistants. However, most students earn a degree and enter the workforce as engineers. Students who earn a graduate degree can work as automotive engineering supervisors. Many automotive engineering positions are focused on automotive design or testing. Check out the links below for more information about employment opportunities in this field.

- [Automotive Engineering Technician](#)
- [Automotive Design Engineer](#)
- [Automotive Engineer](#)
- [Automobile Designer](#)
- [Vehicle Designer](#)



