



## INTEGRATED MECHANICAL ENGINEERING DESIGN

Domeniul de studii: Inginerie Mecanică

### Descriere

Integrated Mechanical Engineering Design (IMED) is the only master's degree program in Romania in the field of Mechanical Engineering taught in English. The overall objective of the program is to provide future graduates with the theoretical foundations, skills and abilities needed to use modern integrated CAD methods to design mechanical engineering products in the light of future developments towards the fourth industrial revolution (Industry 4.0).

### Relevanța pentru piața muncii

Graduates of the program can work, among others, as research engineers in research institutes in the field of mechanical engineering (INCAS, COMOTI) or they can occupy positions such as research engineer, mechanical engineer designer, mechanical engineer expert, inspector or specialist referent mechanical engineer within companies in the field of mechanical engineering and related fields (SKF, Holcim, Bosch, Walter Tosto, Renault, Dacia, Mercedes, Airbus, Eurocopter, Expleo Group, Segula Technologies, Akka Technologies, Bertrandt, eXcent Defi, etc.).

### Competențe obținute

Through the acquired skills and abilities, graduates will be able to design advanced mechanical components and systems, build their physical model to analyse and study them experimentally and create a virtual model to simulate their behaviour using modern software applications (CATIA, Autodesk Inventor and Nastran, SolidWorks, Ansys and Fluent, etc.). They will also be able to select the most suitable materials and technologies (including additive manufacturing technologies - 3D printing) for the development of the studied mechanical products/systems, evaluate their reliability and find innovative solutions for their optimization.

### Discipline (selecție)

Modelling and Simulation in Mechanical Engineering; Finite element method; Advanced calculus of structures; Product development; Virtual prototype for product development; Reliability of complex products; Mechanical design of renewable energy systems.

### Teme de cercetare (selecție)

Transverse rotor wind turbine power generation system; Development of a spring-damper subassembly for passenger cars; Design and 3D simulation of body models with high aerodynamic characteristics; The reliability and durability of the disc brake system.

### Alte informații de interes

The master's program offers opportunities to students interested in study mobility within the European inter-university cooperation programs (Erasmus+, Athens, EPS, etc.).

**Limba de predare:** English

**Durata:** 2 ani

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**Detalii:** <https://masterupb.wixsite.com/imed>

