



Major field of study:  
Level of education:  
Educational profile:  
Specialisation:  
The specialisation  
description:

### **Management and Production Engineering**

**1st degree studies (Bologna first cycle)**

**General academic**

**Production and Innovation Management**

The specialization "Production and Innovation Management", offered in the first degree of full-time studies in the field of "Management and Production Engineering", enables students to acquire knowledge, skills and competences necessary to apply modern management methods and techniques in technological enterprises oriented towards product and technological innovations.

The specialties include the following specialization subjects:

- Modelling in Production Engineering
- Technological Documentation
- Assessment of the Effectiveness of Investment Projects
- Product Development in an Enterprise
- New Products Prototyping
- Computer Aided Production Management
- Technological Entrepreneurship
- Marketing Management and Market Research
- Ecological Engineering

Graduates acquire knowledge and practical skills in the field of:

- mathematical modeling and computer simulation in the description of complex phenomena as tools of analysis in the decision-making process,
- rules for the creation and use of documentation aimed at manufacturing products in simple machining processes,
- strength of materials (knowledge of the relationship between forces and deformations, taking into account basic mechanical properties; language of instruction - English),
- methods and techniques for planning new and developing existing products,
- prototyping of products, making stereographic models (including the development of the shape and dimensions of the model in 3D, performing the necessary strength calculations of critical structural walls and developing manufacturing technology),
- construction and functionality of information systems supporting production management, practical skills in formulating and solving selected single- and multi-criteria decision problems with the use of modeling with the use of a spreadsheet,
- launching and conducting innovative business activities based on technological ventures,
- principles of creating and analyzing technical documentation with elements of pro-ecological engineering and organizational design.

Subjects in the field of specialization are conducted by academic teachers with both scientific achievements and experience resulting from professional practice or cooperation with enterprises. Lectures and exercises, seminars and laboratories are conducted with the use of multimedia presentations, specialized software, modern machines and devices for



### The graduate profile:

rapid prototyping and reverse engineering, auxiliary materials for students. The teaching methods used also include team and individual projects.

The knowledge and skills acquired under the specialization "Production and Innovation Management" are the continuation and extension of the knowledge and skills acquired by the graduate during his education in the field of "Management and Production Engineering". A graduate of the "Production and Innovation Management" specialization is equipped with knowledge and practical skills in the field of product design and development, prototyping, planning, organizing and managing production using mathematical modeling, information technologies, the principles of creative problem solving and pro-ecological design of processes and products.

The graduate has knowledge, skills and social competences that predispose him to hold independent positions in modern technology companies; in the role of both the creator of the technique as well as the production organizer and manager. It is characterized by the ability to interdisciplinary and innovative approach in solving technical and organizational problems, with particular emphasis on computer-aided decision support and production management techniques..

### The specialisation tutor:

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