



Undergraduate Professional Study Programme in Mechanical Engineering

LEARNING OUTCOMES

After finishing this study program student will acquire following competencies:

Generic competencies:

- Ability to use a second language in professional literature and professional communication
- Ability to apply knowledge in mathematics and physics to engineering issues
- Ability to use techniques, skills and modern tools necessary in engineering practice
- Ability to relate engineering design, manufacturing and marketing to user's requirements for products and services
- Ability to identify, model and solve engineering issues.

Personal competencies:

- Knowledge of contemporary issues in the professional area and society
- Responsibility, consistency, accuracy and promptness
- Ethical and moral approach to work
- Critical evaluation of arguments, assumptions and data in order to make opinion and contribute to the solution of a problem
- Readiness to do fieldwork and work under non-standard conditions
- Work experience with project teams and in industry
- Presenting information, ideas, problems and solutions to the professional and general public
- Communication skills in professional communications and with clients in both English and Croatian
- Positive professional and personality traits
- Adaptability to new technologies and techniques as a part of lifelong learning process
- Openness to new knowledge, experience and cultural circumstances
- Flexibility and adaptability in finding technical solutions based on unquestionable observance of basic ethical principles, regulations and rules of professional conduct.

Subject specific competencies:

- Ability to write and update technical, technology, working and offering documentation
- Ability to construct or to choose machine elements and assemblies and define technological production process
- Ability to carry out calculation for constructions relating to strength and deformations
- Ability to solve engineering tasks including kinematics and dynamics of mechanisms
- Ability to propose types of material, technological procedure and important properties for construction element and conditions of exploitation



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- Ability to plan and overwatch mass production and projects and optimize resource
- Ability to develop foundations for modern approach to maintenance
- Ability to apply basic business principles and terms related to entrepreneurship, costs, importance of businesses in economic environment
- Ability to apply basic principles in modelling and assembling products using processing systems regarding production logistics
- Ability to carry out calculation of machine structure elements
- Ability to analyse combustion engine operating
- Ability to design and maintain hydraulic and pneumatic systems and use them in all technical fields
- Ability to program CNC (Computer Numerical Control) Machines, CAD (Computer-aided Design) and CAM (Computer-aided Manufacturing) Systems
- Ability to control the operation of robots and manipulators
- Ability to plan a waste treatment and recycling system



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