



UNIVERSITETI / UNIVERSITY
"ISA BOLETINI"
MITROVICË

Course Curriculum Model (Syllabus)		
Faculty:	FACULTY OF MECHANICAL AND COMPUTER ENGINEERING	
Department:	Economics Engineering	
Level:	Bachelor	
Code of the course:	303 EE	
Course:	Design of Technological Processes	
Course Status:	Elective	Mandatory/ Elective
Semester:	(V)	Winter/Summer
Number of hours per week:	2+2	
ECTS:	5	
Time / location:	Wednesday, 9 ⁰⁰ -10 ³⁰ , K5	
Year of studies:	2024/2025	
Lecturer:	Prof. Dr. Avdi Salihu	
Assistant:		
Contact details:	Professor	Assistant
Email:		
Telephone:		
C o u r s e d e s c r i p t i o n	This course explores the principles and methodologies of designing technological processes for efficient production, encompassing content and objectives, order of operations, production dimensioning, time and cost considerations, computer-aided design, and the broader impact on overall business performance.	
P u r p o s e (G o a l s)	The purpose of the "Design of Technological Processes" course is to equip students with the knowledge and skills necessary for systematically designing efficient and optimized technological processes. The course covers topics such as process analysis, variant generation, production dimensioning, time and cost considerations, computer-aided design, and their impact on overall business performance. Students will gain practical insights into the integration of technological process design across different company functions, enhancing their ability to contribute to effective and innovative production strategies.	

L e a r n i n g o u t c o m e s	Upon successful completion of the course in the BSc program in Economics Engineering, students should demonstrate the following learning outcomes: • Ability to analyze and optimize technological processes for enhanced efficiency and performance. • Skill in generating and evaluating alternative process designs, considering factors such as cost, time, and resource utilization. • Competence in utilizing computer-aided design tools to streamline and enhance technological processes. • Understanding and application of models to determine production time and costs, with an awareness of the economic implications of different process choices. • Integration Across Functions: Ability to understand and integrate technological process design considerations across various functions within a company, fostering effective interdisciplinary collaboration.
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	Weeks	Lecture
P r o g r a m	<i>First week:</i>	Introduction to Technological Process Design (TPD) • Understanding the objectives and scope of TPD • Overview of the content and structure of the course
	<i>Second week:</i>	Determining the Type and Order of Operations • Importance of sequencing operations in process design • Techniques for determining the order of operations
	<i>Third week:</i>	Generation of Technological Process Variants • Methods for generating and evaluating process variants • Considerations for optimizing process alternatives
	<i>Fourth week:</i>	Production Dimensioning and Tolerances • Importance of dimensional accuracy in production • Positioning and tightening techniques • Managing processing errors
	<i>Fifth week:</i>	Production Time and Methods for Determination • Analyzing the time structure of production • Methods for determining production time • Time-based considerations in process design
	<i>Sixth week:</i>	Production Cost Calculation Models • Cost elements in production • Models for calculating production costs • Cost optimization strategies
	<i>Seventh week:</i>	TPD Report and Production Design • Creating comprehensive TPD reports • Integrating design considerations into the production process
	<i>Eighth week:</i>	Computer-Aided Design (CAPP) Process Design • Introduction to Computer-Aided Design in process design • Application of CAPP tools in optimizing processes
	<i>Ninth week:</i>	TPD Requirements Across Company Functions • Understanding how TPD interacts with different functions in a company • Collaboration and communication among departments
	<i>Tenth week:</i>	Production Monitoring and Control, Productivity Management • Techniques for monitoring and controlling production processes • Productivity management strategies

Eleventh week:	Sales and Supply, Design, Construction, and Management - Integrating TPD considerations into sales and supply chain processes - Aligning design, construction, and management with TPD objectives
Twelfth week:	Report on Production/Business Strategies and TPD - Developing strategies based on TPD outcomes - Aligning production and business goals
Thirteenth week:	Impact of Technological Processes on Business Performance - Analyzing how technological processes influence overall business performance - Identifying areas for improvement and optimization
Fourteenth week:	Submission of Coursework Submission and presentation of individual or group coursework
Fifteenth week :	Summary Final Project - Final project presentations - Course evaluation and feedback

Literature	
L i t e r a t u r e	<i>Nechat Qehaja, Projektimi i proceseve teknologjike, Fakulteti I Inxhiërisë Mekanike, Prishtinë, 2017</i> - Fatmir Çerkini, Projektimi i proceseve teknologjike (Handout), Fakulteti i Shkencave të Aplikuara – Ferizaj 1. Prof.Dr.Ing.A.Bushati - Algoritme punimi në „Teknologji mekanike”,Tiranë, 2. Adnan Bodinaku –Teknologjia mekanike 2,I dhe II, Tiranë, 3. Halevi, G. ; Principles of Process Planning, Chapman & Hall, London, 2. 4. Gačnik, V., Vodonik, F. : Projektiranje tehnoloških procesa, tehnička knjiga, Zagreb

T e a c h i n g m e t h o d o l o g y	The teaching methodology for the course may involve a combination of the following: - Lectures: In-class lectures can be used to introduce new concepts and techniques, as well as to provide an overview of the course material. - Hands-on exercises: Students can be provided with hands-on exercises to practice using the software and tools covered in the course. These exercises can be done individually or in groups, depending on the class size and available resources. - Case studies: Case studies can be used to illustrate real-world applications of techniques in various industries, such as aerospace, automotive, and consumer products. - Guest lectures - Projects: Assigning projects to students can help them apply the concepts and techniques covered in the course to real-world problems. These projects can be done individually or in groups and can be tailored to the interests and skills of the students. - Discussions and critiques: Engaging students in class discussions and critiques can help them develop their communication and critical thinking skills, as well as provide valuable feedback on their work.			
	Contribution to student workload (which should correspond to student learning outcomes - 1 ECTS credit = 25 hours)			
	Activity	Hours	Days/weeks	Total
	Lectures	2	15	30
	Exercise sessions (with TA)	2	15	30
	Practical work	3	3	9

	Office hours	1	15	15
	Fieldwork	1	2	2
	Midterms, seminars	2	2	4
	Homework	3	2	6
	Self-study	4	3	12
	Final exam preparation	3	3	9
	Time spent in exams	2	2	4
	Projects, presentations, etc.	2	2	4
Total				125

E v a l u a t i o n	Assessment methodology:		
	• Homework assignments • Design projects • Quizzes and exams • Presentations • Lab assignments • Class participation • Final project		
	(according to the Statute and Regulation for studies of UMIB)		
	Tests / Colloquia (First Test) (Second test)	15%	
		15%	
	Practical test during exercises (Essay)		
	Workshop seminar		
	Interpretation and presentation of artistic creativity and other works.		
	Assignments and courses during the semester	15%	
	Professional practice		
	Other,(Specify) Participation	10%	
	Final exam	45%	
	Total	100%	
	Final grade	Points (%)	Mark
		91 – 100	10
		81 - 90	9
		71 - 80	8
		61 - 70	7
		51 - 60	6

Criteria for regular attendance and rules of etiquette during the organization of the lesson are set.

Computer work:

Graphic works, I have to draw and write with a computer. In the works it is obligatory to respect the criteria for both the visual and the content aspect of the required works.

Ethics in teaching:

Graphic works should be personal works of each student. There will be no tolerance for copying, "borrowing" from the Internet or any other material. The same or similar works will have negative evaluations in the final evaluation of the student.

Time:

In agreement with the students, the deadlines for submitting works will be determined. There will be no tolerance for delays in the submission of works. Failure to arrive at the time when the assignment is explained does not justify the student for not submitting the paper. The deadline will be given earlier. If you are going to travel abroad, then you need to submit the paperwork in advance. The student has the right to request a consultation with the professor whenever he / she deems it reasonable and necessary for the performance of his / her work.

Rules of conduct and academic policies:

- active participation of students in lectures o participation in discussion, comments and free expression of opinion, opinion and academic position (with arguments)
- Mandatory independent work and use of additional sources of information (various scientific websites, scientific journals, conference proceedings, etc.)
- Respecting lecture schedules without compromising academic freedom (silent cell phones) of respecting the word, thoughts and ideas of colleagues,
- It is not allowed to arrive late and leave without a valid reason from the lecture, test or exam o preparation and holding of relevant lectures, (obligation of the teacher).
- if the student is absent more than four times without reason in lectures and exercises, does not receive the signature for attendance. o the student cannot take the exam without an official document,
- if the student is dissatisfied with the grade obtained, has the right to complain in writing to the dean, within two working days after the announcement of the results, UMIB Statute o if the student does not follow the rules, in the exam uses tools that are not allowed, it is evaluated with a negative grade.

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Mitrovica; 29/04/2023

Prof. Dr. Avdi Salihu