

„GHEORGHE ASACHI” TECHNICAL UNIVERSITY OF IASI
FACULTY OF MACHINE MANUFACTURING AND INDUSTRIAL MANAGEMENT

Level of qualification: **Bachelor studies**

Field of study: **Industrial Engineering**

Programme of Study: **Digital Production Systems**

Conferred title: engineer degree

Study duration: 4 years, 240 ECTS

Form of education: *full-time*

CURRICULUM - 1st year of study

No.	Course name	Course code	Type	Pre-requisite	1 st semester							2 nd semester							
					No of hours				Hours	Ev	PC	No of hours				Hours	Ev	PC	
					C	S	L	P	SI			C	S	L	P	SI			
1	Linear Algebra, Analytical and Differential Geometry	CMMI-L-1.01	MC	-	3	2	0	0	65	E	5								
2	Mathematical Analysis 1	CMMI-L-1.02	MC	-	2	2	0	0	59	E	4								
3	Computer Programming	CMMI-L-1.03	MC	-	1	0	2	0	39	E	3								
4	Descriptive Geometry and Technical Drawing 1	CMMI-L-1.04.a	MC	-	2	3	0	0	65	C	5								
5	Chemistry	CMMI-L-1.05	MC	-	1	0	1	0	26	C	2								
6	Materials Science	CMMI-L-1.06	MC	-	2.5	0	2	0	79	E	5								
7	Fundamentals of Economics	CMMI-L-1.07.a	MC	-	2	0	0	0	53	C	3								
8	Physical Training and Sports 1	CMMI-L-1.08	MC	-	0	1	0	0	13	C	1								
9	Professional Communication	CMMI-L-1.09	OC	-	2	0	0	0	26	C	2								
	History of Technics	CMMI-L-1.10	OC	-															
10	Mathematical Analysis 2	CMMI-L-2.01	MC	C1,C2								3	1.5	0	0	79	E	5	
11	Computer-Aided Engineering Graphics and Applied Informatics	CMMI-L-2.02	MC	C3								1	0	4	0	65	C	5	
12	Descriptive Geometry and Technical Drawing 2	CMMI-L-2.03	MC	C4								2	3	0	0	65	C	5	
13	Theoretical Mechanics 1	CMMI-L-2.04	MC	C1,C2								4	1.5	1	0	71	E	6	
14	Materials Technology	CMMI-L-2.05	MC	C5								3	0	1	0	59	E	4	
15	Physical Training and Sports 2	CMMI-L-2.06	MC	-								0	1	0	0	13	C	1	
16	Structured Programming Languages	CMMI-L-2.07	OC	-								2	0	2	0	66	E	4	
	Object-Oriented Programming Languages	CMMI-L-2.08	OC	-															
17	Elementary Mathematics 1	CMMI-L-2.09	FC	-	0	3	0	0	39	C	3								
18	Psychology of Education	DPPD-SPU-01	FC	-	2	2	0	0	64	E	5								
19	Elementary Mathematics 2	CMMI-L-2.10	FC	-								0	2	0	0	53	C	3	
20	Elements of Metric Spaces with Applications	CMMI-L-2.11	FC	-								2	2	0	0	79	C	5	
21	Pedagogy 1	DPPD-SPU-02	FC	-								2	2	0	0	64	E	5	
	Total hours per week, total evaluations and credits per semester					15.5	8	5	0	425	4E	30	14	7	8	0	418	4E	30
							28				5C		28					3C	

Abbreviation: MC - Mandatory Course; OC- Optional Course; FC - Free Course;

SI - Individual (Non Assisted) Study; C – Course; S – Seminary;

L – Laboratory; P - Project; Ev - evaluation type (E-exam, C-colloquium), K- ECTS credits

Prerequisites: C1 - Mathematical Analysis 1; C2 - Linear Algebra, Analytical and Differential Geometry; C3 - Computer Programming; C4 - Descriptive Geometry and Technical Drawing 1; C5 - Materials Science.

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CURRICULUM - 2nd year of study

No.	Course name	Course code	Type	Pre-requisite	1 st semester							2 nd semester							
					No of hours				Hours	Ev	PC	No of hours				Hours	Ev	PC	
					C	S	L	P	SI			C	S	L	P	SI			
1	Special Mathematics	CMMI-L-3.01	MC	C1	2.5	2	0	0	52	E	4								
2	Computer-Aided Numerical Calculus	CMMI-IIND-3.02	MC	C1,C2	2	0	2	0	52	C	4								
3	Physics	CMMI-L-3.03	MC	C3	4	2	2	0	91	E	7								
4	Theoretical Mechanics 2	CMMI-IIND-3.04	MC	C3	1.5	0	1	0	46	C	3								
5	Strength of Materials 1	CMMI-L-3.05	MC	C3,C1	2.5	1	1	0	72	E	5								
6	Mechanisms	CMMI-L-3.06	MC	C3	2	1	1	0	79	E	5								
7	Physical Training and Sports 3	CMMI-L-3.07	MC	-	0	1	0	0	13	C	1								
8	English Language 1	CMMI-L-3.08	OC	-	0	1	0	0	13	C	1								
	French Language 1	CMMI-L-3.09	OC	-															
	German Language 1	CMMI-L-3.10	OC	-															
9	Strength of Materials 2	CMMI-L-4.01	MC	C4								3	2	0	0	45	E	4	
10	Machine Elements 1	CMMI-L-4.02	MC	C4,C5								3	0	0	2	65	E	5	
11	Fluid Mechanics 1	CMMI-L-4.03	MC	C3								3	1.5	1	0	58	E	5	
12	Tolerances and Dimensional Control	CMMI-L-4.04	MC	-								3	0	2	0	45	E	4	
13	Mechanical Vibrations	CMMI-IIND-4.05	MC	C3								2	0	1	0	39	C	3	
14	Physical Training and Sports 4	CMMI-L-4.06	MC	-								0	1	0	0	13	C	1	
15	Field of Study Practical Training (3 weeks x 30 hours = 90 hours)	CMMI-IIND-4.07	MC	-												18	C	4	
16	Thermodynamics	CMMI-L-4.08	OC	C6								2	0	1	0	39	C	3	
	Heat and Mass Transfer	CMMI-L-4.09	OC	C6															
17	English Language 2	CMMI-L-4.10	OC	-								0	1	0	0	13	C	1	
	French Language 2	CMMI-L-4.11	OC	-															
	German Language 2	CMMI-L-4.12	OC	-															
18	Elementary Physics	CMMI-L-3.11	FC	-	0	2	0	0	53	C	3								
19	Computational Geometry	CMMI-L-3.12	FC	-	2	2	0	0	79	C	5								
20	Pedagogy II	DPPD-SPU-03	FC	-	2	2	0	0	64	E	5								
21	Ethics and Academic Integrity	CMMI-L-4.13	FC	-								2	1	0	0	39	C	3	
22	Specialty Didactics	DPPD-SPU-04	FC	-								2	2	0	0	64	E	5	
	Total hours per week, total evaluations and credits per semester					14.5	7	7	0	418	4E	30	15	5.5	5	2	335	4E	30
						28				4C		28					5C		

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L – Laboratory; P - Project; Ev - evaluation type (E-exam, C-colloquim), K- ECTS credits

Prerequisites: C1 - Mathematical Analysis 1, 2; C2 - Computer Programming;

C3 - Theoretical Mechanics 1; C4 - Strength of Materials 1; C5 - Mechanisms; C6 - Physics

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CURRICULUM - 3rd year of study

No.	Course name	Course code	Type	Pre-requisite	1 st semester							2 nd semester						
					No of hours				Hours	Ev	PC	No of hours				Hours	Ev	PC
					C	S	L	P	SI				C	S	L	P	SI	
1	Machine Elements 2	CMMI-IIND-5.01	MC	C1	2	0	0	1	39	E	3							
2	Quality Control	CMMI-IIND-5.02	MC	-	2	0	1	0	39	C	3							
3	Hydraulic and Pneumatic Machines	CMMI-SPD-5.03	MC	C2	2	0	2	0	52	C	4							
4	Fundamentals of Cutting and Surface Generation 1	CMMI-SPD-5.04	MC	C3	2	0	2	0	79	E	5							
5	Cutting Tools Design 1	CMMI-SPD-5.05	MC	C3	2	0	1	1	79	E	5							
6	Fundamentals of Technical Creativity	CMMI-SPD-5.06	MC	-	2	1	0	0	39	C	3							
7	Electrical Engineering and Electronics	CMMI-L-5.07.a	OC	C4	4	0	2	0	78	E	6							
	Industrial Electrical Engineering	CMMI-L-5.08.a	OC	C4														
8	English Language 3	CMMI-L-5.15	OC	-	0	1	0	0	13	C	1							
	French Language 3	CMMI-L-5.16	OC	-														
	German Language 3	CMMI-L-5.17	OC	-														
9	Fundamentals of Cutting and Surface Generation 2	CMMI-SPD-6.01	MC	C5								3	0	2	0	65	E	5
10	Machine Tools Design	CMMI-SPD-6.02	MC	C1								2	0	0	2	52	E	4
11	Cutting Tools Design 2	CMMI-SPD-6.03	MC	C6								2	0	1	2	65	E	5
12	Machine Tools for Plastic Deformation	CMMI-SPD-6.04	MC	C1								3	0	1	2	51	E	5
13	Industrial Management	CMMI-L-6.07	MC	-								2	1	0	0	39	C	3
14	Speciality Practical Training (3 weeks x 30 hours = 90 hours)	CMMI-SPD-6.08	MC	-											18	C	4	
15	Jigs and Fixtures	CMMI-SPD-6.09	OC	C1								2	0	1	1	25	E	3
	Heat Treatments	CMMI-SPD-6.10	OC	-														
16	English Language 4	CMMI-L-6.15	OC	-								0	1	0	0	13	C	1
	French Language 4	CMMI-L-6.16	OC	-														
	German Language 4	CMMI-L-6.17	OC	-														
17	Elasticity and Plasticity Theory	CMMI-SPD-5.12	FC	-	2	0	2	0	52	C	4							
18	Computer Aided Training	DPPD-SPU-04	FC	-	1	1	0	0	32	C	2							
19	Pedagogic Training I	DPPD-SPU-05	FC	-	0	0	3	0	48	C	3							
20	Classroom Management	DPPD-SPU-06	FC	-								1	1	0	0	30	C	3
21	Pedagogic Training II	DPPD-SPU-07	FC	-								0	0	3	0	32	C	2
22	Entrepreneurial education	CMMI-L-6.18	FC	-								2	0	1	0	93	C	5
Total hours per week, total evaluations and credits per semester					16	2	8	2	418	4E	30	14	2	5	7	328	5E	30
						28				4C		28					4C	

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Prerequisites: C1 - Machine Elements 1; C2 - Fluid Mechanics 1; C3 - Tolerances and Dimensional Control; C4 - Physics; C5 - Machine Tools and Cutting Manufacturing 1; C6 - Cutting Tools Design 1.

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Form of education: *full-time*

CURRICULUM - 4th year of study

No.	Course name	Course code	Type	Pre-requisite	1 st semester					2 nd semester									
					No of hours				Hours	Ev	PC	No of hours				Hours	Ev	PC	
					C	S	L	P				SI	C	S	L				P
1	Machine Tools and Machinery Manufacturing Technology	CMMI-SPD-7.01	MC	C1	3	0	1	0	52	E	4								
2	Gear Manufacturing Machines	CMMI-SPD-7.02	MC	C2	2	0	2	0	79	E	5								
3	Automatic and CNC Machine Tools	CMMI-SPD-7.03	MC	C2	2.5	0	2	1	65	E	5								
4	Hydraulic Drive and Control of Machine Tools and Production	CMMI-SPD-7.04	MC	C3	2.5	0	2	1	85	E	6								
5	Electrical Drive and Control of Machine Tools	CMMI-SPD-7.05	MC	C4	2	0	1	0	66	C	4								
6	Computer-Aided Design of Machine Tools and Machinery 1	CMMI-SPD-7.06	MC	C5	2	0	2	0	32	C	3								
7	Processes and Machine Systems Dynamics	CMMI-SPD-7.07	OC	C2	2	0	1	0	39	C	3								
	Special Machine Tools	CMMI-SPD-7.08	OC	C2															
8	Flexible Manufacturing Systems	CMMI-SPD-8.01	MC	C2								3	0	0	1	79	E	5	
9	Production Systems Modeling and Simulation	CMMI-SPD-8.02	MC	C2								2	0	2	0	52	E	4	
10	Reliability and Maintainability	CMMI-SPD-8.03	MC	C6								2	1	0	0	39	C	3	
11	Non-Conventional Technologies	CMMI-SPD-8.03	MC	-								2	0	2	0	52	E	4	
12	Robotics and Robotic Systems	CMMI-SPD-8.04	MC	C2								3	0	1	0	52	E	4	
13	Computer-Aided Design of Machine Tools and Machinery 1	CMMI-SPD-8.05	OC	C5								1	0	2	0	39	C	3	
	Automatization of Manufacturing Systems	CMMI-SPD-8.06	OC	C2															
14	Diploma Project 1	CMMI-SPD-8.07	MC	-								0	0	0	4	52	C	4	
15	Diploma Project 2 (2 weeks.x 30 hours = 60 hours)	CMMI-SPD-8.08	MC	-											21	C	3		
16	English Language 5	CMMI-L-7.15	FC	-	0	1	0	0	13	C	1								
	French Language 5	CMMI-L-7.16	FC	-	0	1	0	0	13	C	1								
	German Language 5	CMMI-L-7.17	FC	-	0	1	0	0	13	C	1								
17	Industrial Logistic Systems	CMMI-SPD-7.09	FC	-	2	0	1	0	39	C	3								
18	Entrepreneurial education	CMMI-L-7.18	FC	-	1	0	2	0	93	C	5								
19	English Language 6	CMMI-L-8.15	FC	-								0	1	0	0	13	C	1	
	French Language 6	CMMI-L-8.16	FC	-								0	1	0	0	13	C	1	
	German Language 6	CMMI-L-8.17	FC	-								0	1	0	0	13	C	1	
20	Applied Entrepreneurial education	CMMI-L-8.18	FC	-								2	0	0	1	39	C	3	
	Total hours per week, total evaluations and credits per semester				16	0	10	2	418	4E	30	13	1	7	5	386	4E	30	
					28					3C		26					4C		
21	Diploma Exam	CMMI-SPD-ED	MC															E	10

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Prerequisites: C1 - Fundamentals of Cutting and Surface Generation 1; C2 - Machine Tools Design; C3 - Hydraulic and Pneumatic Machines; C4 - Electrical Engineering and Electronics; C5 - Computer-Aided Engineering Graphics and Applied Informatics; C6 - Special Mathematics.