Transilvania University of Braşov, Romania

Study program: Welding Engineering

Faculty:	**Materials Science and Engineering**
Study period:	**4 years**
Academic year structure:	**2 semesters (14 weeks per semester)**
Examination sessions (two):	**winter session (January/February)**
	summer session (June/July)

Courses per years (C= course; S = seminar; L = laboratory; P = project)

1st Year

No. crt.	Course	Language of instruction	1st Semester					2nd Semester				
			C	S	L	P	Cred	C	S	L	P	Cred
1	Mathematical Analysis	Romanian	3	1			4					
2	Computer and Programming languages	Romanian	3	0	1		5					
3	Descriptive Geometry	Romanian	2		1		4					
4	Materials science and engineering I	Romanian	2		1		4					
5	General chemistry	Romanian	2		1		4					
6	Materials Technology I	Romanian	1		2		3					
7	Mechanics	Romanian	2	1			4					
8	Materials Technology II	Romanian						2		1		4
9	Materials science and engineering II	Romanian						2		1		4
10	Linear Algebra, Analytical Geometry, and Differential Geometry	Romanian						2	1			4
11	Technical Drawing and Infographics	Romanian						1		2		3
12	Numerical methods	Romanian						2		2		4
13	Physics	Romanian						2		1		4
14	Applied Computer Science (I)	Romanian						2		1		4
15	Academic Writing	Romanian						1				1
16	English language	English	1	1			2	1	1			2
17	Physical Education and Sports	Romanian		1			1		1			1

2nd Year

No. crt.	Course	Language of instruction	3rd Semester					4th Semester				
			C	S	L	P	Cred	C	S	L	P	Cred
1	Special mathematics	Romanian	2	1			4					
2	Strength of Materials I	Romanian	2	1	1		5					
3	Ecology and environmental protection	Romanian	2		2		5					
4	Technical devices	Romanian	2		2		5					
5	Dimensional control	Romanian	2		3		5					
6	Electrotechnics	Romanian	2		1		4					
7	Probability Theory and Mathematical Statistics	Romanian						1		2		3
8	Quality Management	Romanian						2		2		4

9	Strength of Materials II	Romanian						2	1	1		4
10	Machine Elements	Romanian						2		1		3
11	Machine Elements - project	Romanian									1	2
12	Thermodynamics	Romanian						2		1		3
13	Bases of Technical Computer Assisted Design	Romanian						3		2		5
14	Field Practice (90 hours)	Romanian										4
15	English language	English	1	1			2	1	1			2
16	Physical Education and Sports	Romanian		1			1		1			1

3 rd Year

No. crt.	Course	Language of instruction	5th Semester					6th Semester				
			C	S	L	P	Cred	C	S	L	P	Cred
1	Elements of Electronics in Industrial Engineering	Romanian	2		1		4					
2	Theory of Welding Processes	Romanian	2		1		4					
3	Fundamentals of Industrial Engineering	Romanian	2		1		3					
4	Finite Element Method	Romanian	2		2		4					
5	Mechanical Machining	Romanian	2		2		4					
6	Electrical Equipment and Drives for Welding (I)	Romanian	2		2		4					
7	Theory of Welding Processes	Romanian	2		1		4					
8	Occupational Health and Safety in Welding Industry	Romanian	2		1		4					
9	Surface Protection	Romanian	1		1		3					
10	Fusion welding Technology (I)	Romanian						2		2		5
11	Pressure welding technology (I)	Romanian						2		1		3
12	Electrical Equipment and Drives for Welding (II)	Romanian						2	1	1		4
13	Design of welded structures (I)	Romanian						2		1	1	4
14	Specialized Practice (90 hours)	Romanian										4
15	Technical Drawing and Infographics (II)	Romanian						2		2		3
16	Computerization and Optimization of Welding Processes	Romanian						2		2		4
17	Operation of Machining Equipment	Romanian						2	1			3

4th Year

No. crt.	Course	Language of instruction	7 th Semester					8th Semester				
			C	S	L	P	Cred	C	S	L	P	Cred
1.	Fusion welding technology (II)	Romanian	2		1		4					
2.	Fusion welding technology project	Romanian				2	2					
3.	Pressure welding technology (II)	Romanian	2		1	1	5					
4.	Mechanization and automation of welding processes	Romanian	3		2		5					
5.	Design of welded structures (II)	Romanian	2		2		4					
6.	Materials and heat treatments for welding	Romanian	2		2		5					
7.	Quality Inspection of Welded Joints	Romanian	2		2		5					
8.	Joining Processes of Non-Metallic Materials	Romanian						2		2		4

9.	Robotic Welding Processes	Romanian						2		1	1	5
10.	Related Welding Processes	Romanian						2		2		4
11.	Damage analysis of welded structures	Romanian						2		1		3
12.	Bases of experimental research	Romanian						2		2		3
13.	Welding Certification	Romanian						2		1		3