

Transilvania University of Braşov, Romania

Study program: Engineering of Renewable Energy Systems

Faculty:	Product Design and Environment
Study period:	4 years (bachelor)
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	Code	1 st Semester					2 nd Semester				
			C	S	L	P	Cred	C	S	L	P	Cred
01	Mathematical analysis	DIAM01	2	3			5					
02	Chemistry	DICH01	2		1		4					
03	Computer programming and Programming Languages I	DIPC01	1		3		4					
04	Computer assisted graphics I	DIGA01	2		4		6					
05	Materials science and engineering	DISM01	3		2		5					
06	Renewable energy systems	DISER01	1		1		3					
07	Linear algebra, analytical and differential geometry	DIAG02						2	2			5
08	Computer programming and Programming Languages II	DIPC02						1		3		4
09	Computer assisted graphics II	DIGA02						1		3		5
10	Mechanics	DIMC02						3	2			5
11	Physics	DIFZ02						2	1	1		5
12	General economy	DIEG02						1	1			3
13	Modern languages (English, French, German, Spanish)	LS01/02	1	1			3	1	1			3
14	Physical education and sport	EF01/02		1				1		1		1

2nd Year

No. crt.	Course	Code	3 rd Semester					4 th Semester				
			C	S	L	P	Cred	C	S	L	P	Cred
01	Special mathematics	DIMS03	2	2			4					
02	Databases and statistical processing	DIBDPS	1		1		4					
03	Numerical methods	DIMN03	2	2			5					
04	Strength of materials	DIRM03	3	1	2		5					
05	Mechanisms I	DIME03	3		1	1	6					
06	Electrotechnics	DIEA03	2		2		4					
07	Basis of computer-aided design	DIM3D						1		3		3
08	Sustainable development	DIDD04						2		1		3
09	Fluid mechanics and hydraulic machines	DIMF04						2		1		3
10	Electrochemistry and corrosion	DIEC04						3		1		4

11	Thermotechnics and thermal machines	DITMT04						2		1		3
12	Mechanisms II and Machine elements	DIOM04						3		1	1	5
13	Domain practical work	ERPR04						90				4
14	Electrical machines and actuation or Elements of electronics	DIMEA04 DIEE04						2		1		3
15	Modern languages (English, French, German, Spanish)	LS03/04	1	1			2	1	1			2
16	Physical education and sport	EF03/04		1			1		1			1

3rd Year

No. crt.	Course	Code	5 th Semester					6 th Semester				
			C	S	L	P	Cred	C	S	L	P	Cred
01	Finite element method	DIMEF5	2		3		5					
02	Product design and development	DIDP05	2			2	4					
03	Solar thermal systems	DISST05	3		1	1	6					
04	Assisted modeling of mechanisms	DIMAS05	3		2		6					
05	Machine elements II	DIOM05	2			2	4					
06	Communication	DIDC05	1	1			2					
07	Photovoltaic systems	DISFO06						2		2	1	5
08	Conceptual design	DIDC06						2	2		2	5
09	Wind systems	DISE006						2		1	1	5
10	Micro-hydropower systems	DISMH06						2		1	1	5
11	Speciality practical work	PR06						90				4
12	Recyclable materials or Special materials	DIMR05 DIMS05	2		1		3					
13	Tolerances and dimensional control or Mechanical vibrations	DITCD06 DIVM06						2		2		3
14	Aesthetics and Ergonomics or Ecodesign	DIEE06 DIED09						2			1	3

4th Year

No. crt.	Course	Code	7 th Semester					8 th Semester				
			C	S	L	P	Cred	C	S	L	P	Cred
01	Measurement, command and control systems	DISMC07	2		2		5					
02	Constructive design	DIDC07	2			4	5					
03	Hybrid systems and cogeneration	DISHC07	2		2		5					
04	Biomass based energy systems	DISB07	2		2		5					
05	Quality management	DIMC07	2			1	3					
06	Energy audit	DIAE07	2			1	3					
07	Detailed design (10 weeks)	DIDD08						1	1			2
08	Detailed design - Project (10 weeks)	DIDDP08									2	2
09	Project management (10 weeks)	DIMP08						1			1	2
10	Hydrogen technology (10 weeks)	DITH08						2		1		2
11	Waste management (10 weeks)	DIMD08						1		1		2
12	Systems maintenance (10 weeks)	DIMS08						1	1			2
13	Practical work for BSc Thesis elaboration (4 weeks x 22h/week)	DIPP08						88				6

14	BSc Diploma Project (10 weeks x 4h/week+4 weeks x 4 h/week)	DIEP08								4	4
15	Geothermal energy (10 weeks) or Air conditioning systems (10 weeks)	DIEG08 DIIC08					2		2		3
16	Energy management (10 weeks) or Management of environmental quality and audit (10 weeks)	DIME08 DIMC08					2	2			3
17	Smart products (10 weeks) or Mechatronic products (10 weeks)	DIPI07 DIPM07	2		1	1	4				
18	Clean technologies or RES implemented in the built environment	DITC08 DIIS08					2		1		2