Faculty of Chemical Technology and Engineering

Major: **Materials Science and Engineering**
Dziedziny nauki: **dziedzina nauk inżynieryjno-technicznych**
Dyscypliny naukowe: **inżynieria materiałowa (100%)**
Educational profile: **general academic**
Form of studies: **stationary**
Level of studies: **first cycle**
Specialisation:
Symbol: **MSE_1A_S_2021_2022_Z**

Zachodniopomorski Uniwersytet Technologiczny w Szczecinie

Academic year: 2021/2022
Valid from: 2021-10-01
Annex 1 to the Senat Resolution No.8 of January 25, 2021

Curriculum

Basic	Group	Subsidiary	Modules / Subject symbol	Modules / subject symbol	FZ	L. sem	L. cdr	Total	W	A	L	LK	P	PD	S	PR	ECTS total	Contact hours workload	ECTS
			Modules/Subjects of general education																
			A01a	Physical Education 1	0	1	30	0	0	0	0	0	0	0	30	0	0	0.0	0.0
			A01b	Physical Education 2	0	1	30	0	0	0	0	0	0	0	30	0	0	0.0	0.0
1	1			Electives 1	0	1	45	45	0	0	0	0	0	0	0	0	0	4.0	4.0
			A03	Intellectual Property and Standarization (ISO, EU	0	1	15	15	0	0	0	0	0	0	0	0	0	1.0	1.0
			A04	OHS and Ergonomics	0	1	15	15	0	0	0	0	0	0	0	0	0	1.0	1.0
			A05	Library Orientation/Library Skills Training	0	1	5	0	5	0	0	0	0	0	0	0	0	0.0	0.0
			A06	OHS Training	0	1	5	5	0	0	0	0	0	0	0	0	0	0.0	0.0
			B04a	Foreign Language 1	1	0	75	0	0	0	75	0	0	0	0	0	0	6.0	6.0
			B04b	Foreign Language 2	1	1	75	0	0	0	75	0	0	0	0	0	0	4.0	4.0
			B05	Basics of Scientific Information	0	1	2	2	0	0	0	0	0	0	0	0	0	0.0	0.0
			B06	Ethics for Engineers	0	1	15	15	0	0	0	0	0	0	0	0	0	1.0	1.0
			B07	Technology, Law and the Working Environment	0	1	15	15	0	0	0	0	0	0	0	0	0	1.0	1.0
			B08	Quality Management and Business Economics	0	1	15	15	0	0	0	0	0	0	0	0	0	1.0	1.0
11	1			Electives 11	0	1	180	0	0	180	0	0	0	0	0	0	0	0.0	0.0
				Total	1	11	522	127	5	180	150	0	0	0	60	0	0	28.0	0.0
			Modules/Subjects of core education																
			B01a	Mathematics 1	1	1	60	30	30	0	0	0	0	0	0	0	0	6.0	6.0
			B01b	Mathematics 2	1	1	60	30	30	0	0	0	0	0	0	4.0	0.0	2.5	2.5
			B02	Physics of Materials	1	2	120	45	45	0	0	0	0	0	30	0	12.0	3.0	5.0
			B03	Chemistry	1	2	135	30	30	0	0	0	0	0	75	0	11.0	7.0	6.2
			B09	Biology for Engineers	1	2	90	30	30	30	0	0	0	0	0	0	3.0	3.0	2.5
				Total	5	8	465	165	165	30	0	0	0	0	105	0	36.0	10.0	19.3
			Modules/Subjects of major education																
			C01	Graphical Engineering	0	2	60	15	0	45	0	0	0	0	0	0	0	3.0	2.3
2	1			Electives 2	1	0	30	30	0	0	0	0	0	0	0	0	0	2.0	1.3
			C02	Structure of Solids	0	2	60	15	0	45	0	0	0	0	0	0	0	5.0	2.4
			C03	Intro to Materials Synthesis and Products Analyz	1	2	90	30	30	0	0	0	0	0	30	0	7.0	3.0	3.4
			C04	Materials Processing	0	3	60	30	15	0	0	0	0	0	15	0	6.0	1.5	2.3
			C05	Surface Science and Interfacial Phenomena	0	3	60	15	15	0	0	0	0	0	30	0	5.0	2.0	2.0
			C06	Thermodynamic of Materials	0	3	60	15	15	0	0	0	0	0	30	0	5.0	2.0	2.0
3	1			Electives 3	0	2	75	30	0	45	0	0	0	0	0	0	5.0	0.0	2.9
4	1			Electives 4	0	2	60	15	0	45	0	0	0	0	0	0	4.0	0.0	2.3
			C10	Functional Properties of Materials	1	2	90	30	30	0	0	0	0	0	30	0	6.0	2.0	3.5
			C11	Phase Transformations & Microstructure of Mat	0	3	75	30	15	0	0	0	0	0	30	0	5.0	2.0	2.8
			C12	Chemical and Biochemical Engineering	0	3	60	15	15	0	0	0	0	0	0	0	4.0	0.0	2.4
			C13	Smart and Nanomaterials	1	2	60	15	15	30	0	0	0	0	0	0	6.0	0.0	2.2
			C14	Materials Characterization and Analytical Techn	0	2	60	30	0	0	0	0	0	0	30	0	5.0	3.0	2.2
			C15	Polymer Synthesis, Recycling & Safety	1	2	60	15	0	45	0	0	0	0	0	0	5.0	4.0	2.6
5	1			Electives 5	0	2	75	30	0	0	0	0	0	0	45	0	6.0	4.0	2.8
6	1			Electives 6	0	2	75	30	0	0	0	0	0	0	45	0	5.0	3.0	2.8
7	1			Electives 7	1	2	120	30	30	0	0	0	0	0	60	0	8.0	4.0	4.5
			C19	Functional Materials and Devices	0	2	60	30	0	0	0	0	0	0	30	0	3.0	1.5	2.2
			C20	Adhesives and Coatings	0	2	60	15	0	0	0	0	0	0	45	0	5.0	3.0	3.0
			C21	Porous Structures and Foams	1	1	60	30	0	30	0	0	0	0	0	0	6.0	0.0	2.3
8	1			Electives 8	0	2	60	0	0	0	0	15	0	45	0	0	4.0	0.0	2.7
			C23	Composite and Advanced Materials	1	1	60	30	0	0	0	0	0	0	30	0	6.0	4.0	3.1
			C24	Mechanics of Materials	0	2	30	15	0	15	0	0	0	0	0	0	2.0	0.0	1.1
9	1			Electives 9	0	1	15	15	0	0	0	0	0	0	0	0	1.0	0.0	0.7
			C25	Bio-inspired Materials & Structures	0	2	30	15	0	15	0	0	0	0	0	0	1.0	0.0	1.0
			C26	Materials for Healthcare	0	3	75	30	15	0	0	0	0	0	30	0	4.0	1.5	2.7
10	1			Electives 10	0	1	15	15	0	0	0	0	0	0	0	0	1.0	0.0	0.6
12	1			Electives 12	0	1	0	0	0	0	0	0	0	0	0	0	15.0	0.0	8.7
				Total	8	56	1695	615	195	270	0	45	0	45	0	525	0	140.0	40.5	74.8
			Elective modules/subjects																
1	1		A02a	European History	0	1	45	45	0	0	0	0	0	0	0	0	0	4.0	0.0
			A02b	European Art and Music	0	1	45	45	0	0	0	0	0	0	0	0	0	4.0	0.0
11	1		D01a	Biomaterials Science Project Research	0	1	180	0	0	180	0	0	0	0	0	0	0	0.0	0.0
			D01b	Materials Engineering Project Research	0	1	180	0	0	0	180	0	0	0	0	0	0	0.0	0.0
2	1		C01a	Intro to MatSci	1	0	30	30	0	0	0	0	0	0	0	0	0	0.0	1.3
			C01b	Intro to MatEng	1	0	30	30	0	0	0	0	0	0	0	0	0	0.0	1.3
3	1		C08a	Computational Methods in MatSci: Data Science	0	2	75	30	0	45	0	0	0	0	0	0	0	0.0	2.9
			C08b	Computational Methods in MatSci: Simulation an	0	2	75	30	0	45	0	0	0	0	0	0	0	0.0	2.9
4	1		C09a	Intro to Experimental Methods: Nanomaterials El	0	2	60	15	0	45	0	0	0	0	0	0	0	0.0	2.3
			C09b	Intro to Experimental Methods: Biomaterials Eng	0	2	60	15	0	45	0	0	0	0	0	0	0	0.0	2.3
5	1		C16a	Intro to Biomaterials: Implants and Devices	0	2	75	30	0	0	0	0	0	0	45	0	6.0	4.0	2.8
			C16b	Intro to Biomaterials: Drug Delivery and Biosens	0	2	75	30	0	0	0	0	0	0	45	0	6.0	4.0	2.8
6	1		C17a	Structural Deformation in Materials	0	2	75	30	0	0	0	0	0	0	45	0	5.0	3.0	2.8
			C17b	Fatigue, Fracture and Wear	0	2	75	30	0	0	0	0	0	0	45	0	5.0	3.0	2.8
7	1		C18a	Micro- and Nanofabrication of Materials	1	2	120	30	30	0	0	0	0	0	60	0	8.0	4.0	4.5
			C18b	Advanced Manufacturing Processes	1	2	120	30	30	0	0	0	0	0	60	0	8.0	4.0	4.5
8	1		C22a	Case Studies in Biomaterials	0	2	60	0	0	0	0	15	0	45	0	0	4.0	0.0	2.7
			C22b	Case Studies in Medical Devices	0	2	60	0	0	0	0	15	0	45	0	0	4.0	0.0	2.7
9	1		C24a	Management and Project Planning	0	1	15	15	0	0	0	0	0	0	0	0	1.0	0.0	0.7
			C24b	Innovation Teams	0	1	15	15	0	0	0	0	0	0	0	0	1.0	0.0	0.7
10	1		C27a	Entrepreneurship for Engineers	0	1	15	15	0	0	0	0	0	0	0	0	1.0	0.0	0.6
			C27b	Strategies for Startups	0	1	15	15	0	0	0	0	0	0	0	0	1.0	0.0	0.6
12	1		D02a	Dissertation Research in MatSci	0	1	0	0	0	0	0	0	0	0	0	0	15.0	0.0	8.7
			D02b	Dissertation Research in MatEng	0	1	0	0	0	0	0	0	0	0	0	0	15.0	0.0	8.7
			Internship																
			P01	Practicum (Internship)	0	1	6	0	0	0	0	0	0	0	0	6	6.0	6.0	0.0
				Total	0	1	6	0	0	0	0	0	0	0	0	6	6.0	6.0	0.0
			Complementary subjects																
			U01	Intro to Chemistry	0	2	45	15	30	0	0	0	0	0	0	0	0.0	0.0	0.0
			U02	Intro to Biology	0	2	45	15	30	0	0	0	0	0	0	0	0.0	0.0	0.0
				Total	0	4	90	30	60	0	0	0	0	0	0	0	0.0	0.0	0.0
				TOTA	14	78	2682	907	365	480	150	45	0	45	60	630	0	210.0	56.5	111.7

Modules / subject symbol	First year 1st semester Lecturing classes W	A	L	LK	P	PD	S	ECTS	Practical classes A	L	PR	ECTS	ECTS total/ seminar
Modules/Subjects of general education													
A01a									30 z			0.0	0.0
A01b													0.0
Electives 1								4.0					4.0
A03								1.0					1.0
A04								1.0					1.0
A05	5 z							0.0					0.0
A06								0.0					0.0
B04a			75 e					6.0					6.0
B04b													0.0
B05									2 z				0.0
B06									15 z				0.0
B07									15 z				0.0
B08									15 z				0.0
Electives 11													0.0
Total	80	0	5	0	0	0	75	0	0	0	0	0	12.0
Modules/Subjects of core education													
B01a	30 e	30 z						6.0					6.0
B01b									30 e	30 z			0.0
B02	45 e	45 z						9.0			30 z		3.0
B03													0.0
B09									30 e	30 z	30 z		0.0
Total	75	0	75	0	0	0	0	15.0	0	0	30	0	3.0
Modules/Subjects of major education													
C01									15 z		45 z		0.0
Electives 2									30 e				0.0
C02													0.0
C03													0.0
C04													0.0
C05													0.0
C06													0.0
Electives 3													0.0
Electives 4													0.0
C10													0.0
C11													0.0
C12													0.0
C13													0.0
C14													0.0
C15													0.0
Electives 5													0.0
Electives 6													0.0
Electives 7													0.0
C19													0.0
C20													0.0
C21													0.0
Electives 8													0.0
C23													0.0
C24									15 z		15 z		0.0
Electives 9													0.0
C25													0.0
C26													0.0
Electives 10													0.0
Electives 12													0.0
Total	0	0	0	0	0	0	0	0.0	45	0	0	45	0.0
Elective modules/subjects													
A02a								4.0					4.0
A02b								4.0					4.0
D01a													0.0
D01b													0.0
C01a	30 e												0.0
C01b	30 e												0.0
C08a													0.0
C08b													0.0
C09a													0.0
C09b													0.0
C16a													0.0
C16b													0.0
C17a													0.0
C17b													0.0
C18a													0.0
C18b													0.0
C22a													0.0
C22b													0.0
C24a													0.0
C24b													0.0
C27a													0.0
C27b													0.0
D02a													0.0
D02b													0.0
Internship													
P01													0.0
Total	0	0	0	0	0	0	0	0.0	0	0	0	0	0.0
Complementary subjects													
U01													0.0
U02													0.0
Total	0	0	0	0	0	0	0	0.0	0	0	0	0	0.0
TOTA	80	0	0	75	0	0	0	27.0	30	0	30	0	3.0

Modules / subject symbol	First year 2nd semester Lecturing classes W	A	L	LK	P	PD	S	ECTS	Practical classes A	L	PR	ECTS	ECTS total/ seminar
Modules/Subjects of general education													
A01a													0.0
A01b									30 z			0.0	0.0
Electives 1													0.0
A03													0.0
A04													0.0
A05													0.0
A06													0.0
B04a													0.0
B04b					75 z			4.0					4.0
B05								0.0					0.0
B06								1.0					1.0
B07								1.0					1.0
B08								1.0					1.0
Electives 11													0.0
Total	47	0	0	0	75	0	0	7.0	30	0	0	0	7.0
Modules/Subjects of core education													
B01a													0.0
B01b	30 e	30 z						4.0					4.0
B02													0.0
B03	30 e	30 z						4.0			75 z		7.0
B09	30 e	30 z	30 z										0.0
Total	90	0	90	0	30	0	0	11.0	0	0	75	0	7.0
Modules/Subjects of major education													
C01	15 z			45 z				3.0					3.0
Electives 2	30 e							2.0					2.0
C02													0.0
C03													0.0
C04													0.0
C05													0.0
C06													0.0
Electives 3													0.0
Electives 4													0.0
C10													0.0
C11													0.0
C12													0.0
C13													0.0
C14													0.0
C15													0.0
Electives 5													0.0
Electives 6													0.0
Electives 7													0.0
C19													0.0
C20													0.0
C21													0.0
Electives 8													0.0
C23													0.0
C24													0.0
Electives 9													0.0
C25													0.0
C26													0.0
Electives 10													0.0
Electives 12													0.0
Total	45	0	0	45	0	0	0	0.0	0	0	0	0	0.0
Elective modules/subjects													
A02a													0.0
A02b													0.0
D01a													0.0
D01b													0.0
C01a	30 e												0.0
C01b	30 e												0.0
C08a													0.0
C08b									30 z		45 z		5.0
C09a									15 z		45 z		4.0
C09b									15 z		45 z		4.0
C16a													0.0
C16b													0.0
C17a													0.0
C17b													0.0
C18a													0.0
C18b													0.0
C22a													0.0
C22b													0.0
C24a													0.0
C24b													0.0
C27a													0.0
C27b													0.0
D02a													0.0
D02b													0.0
Internship													
P01													0.0
Total	0	0	0	0	0	0	0	0.0	0	0	0	0	0.0
Complementary subjects													
U01													0.0
U02													0.0
Total	0	0	0	0	0	0	0	0.0	0	0	0	0	0.0
TOTA	182	0	90	0	75	0	0	23.0	30	0	75	0	7.0

Modules / subject symbol	Second year 3rd semester Lecturing classes W	A	L	LK	P	PD	S	ECTS	Practical classes A	L	PR	ECTS	ECTS total/ seminar
Modules/Subjects of general education													
A01a													0.0
A01b													0.0
Electives 1													0.0
A03													0.0
A04													0.0
A05													0.0
A06													0.0
B04a													0.0
B04b													0.0
B05													0.0
B06													0.0
B07													0.0
B08													0.0
Electives 11													0.0
Total	0	0	0	0	0	0	0	0.0	0	0	0	0	0.0
Modules/Subjects of core education													
B01a													0.0
B01b													0.0
B02													0.0
B03													0.0
B09													0.0
Total	0	0	0	0	0	0	0	0.0	0	0	0	0	0.0
Modules/Subjects of major education													
C01													0.0
Electives 2													0.0
C02	15 z			45 z				5.0					5.0
C03	30 e	30 z						7.0	4.0		30 z	3.0	7.0
C04	30 z	15 z						6.0	4.5		15 z	1.5	6.0
C05	15 z	15 z						5.0	3.0		30 z	2.0	5.0
C06	15 z	15 z						5.0	3.0		30 z	2.0	5.0
Electives 3													0.0
Electives 4													0.0
C10													0.0
C11													0.0
C12													0.0
C13													0.0
C14													0.0
C15													0.0
Electives 5													0.0
Electives 6													0.0
Electives 7													0.0
C19													0.0
C20													0.0
C21													0.0
Electives 8													0.0
C23													0.0
C24				30 z				2.0					2.0
Electives 9													0.0
C25													0.0
C26													0.0
Electives 10													0.0
Electives 12													0.0
Total	120	0	75	0	60	0	0	5.0	0	0	0	0	0.0
Elective modules/subjects													
A02a													0.0
A02b													0.0
D01a													0.0
D01b													0.0
C01a													0.0
C01b													0.0
C08a													0.0
C08b													0.0
C09a													0.0
C09b													0.0
C16a													0.0
C16b													0.0
C17a													0.0
C17b													0.0
C18a													0.0
C18b													0.0
C22a													0.0
C22b													0.0
C24a													0.0
C24b													0.0
C27a													0.0
C27b													0.0
D02a													0.0
D02b													0.0
Internship													
P01													0.0
Total	0	0	0	0	0	0	0	0.0	0	0	0	0	0.0
Complementary subjects													
U01													0.0
U02													0.0
Total	0	0	0	0	0	0	0	0.0	0	0	0	0	0.0
TOTA	120	0	75	0	60	0	0	5.0	0	0	0	0	0.0

Modules / subject symbol	Second year 4th semester Lecturing classes W	A	L	LK	P	PD	S	ECTS	Practical classes A	L	PR	ECTS	ECTS total/ seminar
Modules/Subjects of general education													
A01a													0.0
A01b													0.0
Electives 1													0.0
A03													0.0
A04													0.0
A05													0.0
A06													0.0
B04a													0.0
B04b													0.0
B05													0.0
B06													0.0
B07													0.0
B08													0.0
Electives 11													0.0
Total	0	0	0	0	0	0	0	0.0	0	0	0	0	0.0
Modules/Subjects of core education													
B01a													0.0