1.	**Field of study**	**Materials Science and Engineering**
2.	Academic year of entry	2014/2015 (summer term)
3.	Academic year for which the revised course structure applies	—
4.	Level of qualifications/degree	second-cycle studies
5.	Degree profile	general academic
6.	Mode of study	full-time
7.	ISCED code	

Legend
Each semester consists of 15 weeks
E/C - examination/course work
E - ECTS
L - lecture, O - all forms of teaching excluding lecture (practical classes, laboratory classes, discussion classes, seminar, proseminar, language classes, field practice, workshop, internship, tutoring)

Plan studiów zatwierdzony przez Radę Wydziału w dniu 06.03.2012 r.

Otrzymują:

1. Dział Kształcenia
2. Wydział Informatyki i Nauki o Materiałach
3. Dziekanat

..... (pieczęć i podpis Dyrektora Instytutu)

..... (pieczęć i podpis Dziekana)

1.	**Field of study**	**Materials Science and Engineering**
2.	Academic year of entry	2014/2015 (summer term)
3.	Academic year for which the revised course structure applies	—
4.	Level of qualifications/degree	second-cycle studies
5.	Degree profile	general academic
6.	Mode of study	full-time
7.	ISCED code	

Specialization: Biomaterials / Intelligent Biomaterials

A

			form of teaching				year 1						year 2		
							semester 1			semester 2			semester 3		
No.	Module	E/C	Total	L	O	Total ECTS	L	O	E	L	O	E	L	O	E
1	Computer networks and their use in materials engineering	Z	45	15	30	3	15	30	3						
2	Engineering materials	Z	45	45		4	45		4						
3	Materials chemistry	E	60	30	30	4	30	30	4						
4	Materials degradation in a biological environment	E	45	30	15	2	30	15	2						
5	Materials structure testing methods	E	60	30	30	4	30	30	4						
6	Selected issues from biomaterials toxicology	E	45	30	15	2	30	15	2						
7	Shape memory alloys	Z	45	30	15	3	30	15	3						
8	Solid state physics	E	60	30	30	4	30	30	4						
9	Unconventional biomaterials	E	45	30	15	3	30	15	3						
10	Dental materials	E	45	30	15	2				30	15	2			
11	Diploma laboratory 1	Z	60		60	4					60	4			
12	Engineering materials designing and manufacturing	E	60	30	30	3				30	30	3			
13	Engineering materials structure and properties forming	E	60	30	30	4				30	30	4			
14	Implants and artificial organs	E	45	30	15	3				30	15	3			
15	Implants of alloys featuring shape memory effect	E	60	30	30	4				30	30	4			
16	Intelligent materials	Z	30	30		1				30		1			
17	M.Sc. seminar 1	Z	30		30	3					30	3			
18	Production and quality management	Z	45	30	15	2				30	15	2			
19	Tissue engineering	Z	30	15	15	2				15	15	2			
20	Diploma laboratory 2	Z	30		30	2								30	2
21	M.Sc. seminar 2	Z	30		30	3								30	3
22	Modelling implants properties by means of FEM	E	60	30	30	3							30	30	3

23	Modification of biomaterials surface	Z	30	30		1							30		1
	TOTAL A:		**1065**	**555**	**510**	**66**	**270**	**180**	**29**	**225**	**240**	**28**	**60**	**90**	**9**

C - OTHER REQUIREMENTS

							year 1						year 2		
			form of teaching				semester 1			semester 2			semester 3		
No.	**Module**	**E/C**	**Total**	**L**	**O**	**Total ECTS**	**L**	**O**	**E**	**L**	**O**	**E**	**L**	**O**	**E**
1	Physical education	Z	30		30	1		30	1						
2	Foreign language	Z	30		30	2					30	2			
3	Intellectual property protection	Z	15	15		1							15		1
4	M.Sc. thesis preparation	Z				20									20
	TOTAL C - OTHER REQUIREMENTS:		**75**	**15**	**60**	**24**	**0**	**30**	**1**	**0**	**30**	**2**	**15**	**0**	**21**
	TOTAL:		**1140**	**570**	**570**	**90**	**480**		**30**	**495**		**30**	**165**		**30**
TOTAL							**1140**								

The study ends with the awarding of a Master's Degree in the field of Materials Science and Engineering: Biomaterials.

Legend
Each semester consists of 15 weeks
E/C - examination/course work
E - ECTS
L - lecture, O - all forms of teaching excluding lecture (practical classes, laboratory classes, discussion classes, seminar, proseminar, language classes, field practice, workshop, internship, tutoring)

Plan studiów zatwierdzony przez Radę Wydziału w dniu 06.03.2012 r.

Otrzymują:

1. Dział Kształcenia
2. Wydział Informatyki i Nauki o Materiałach
3. Dziekanat

..... (pieczęć i podpis Dyrektora Instytutu)

..... (pieczęć i podpis Dziekana)

1.	**Field of study**	**Materials Science and Engineering**
2.	Academic year of entry	2014/2015 (summer term)
3.	Academic year for which the revised course structure applies	—
4.	Level of qualifications/degree	second-cycle studies
5.	Degree profile	general academic
6.	Mode of study	full-time
7.	ISCED code	

Specialization: Biomaterials / Biomaterials Testing Methods

A

				form of teaching				year 1						year 2		
								semester 1			semester 2			semester 3		
No.	Module	E/C	Total	L	O	Total ECTS	L	O	E	L	O	E	L	O	E
1	Computer networks and their use in materials engineering	Z	45	15	30	3	15	30	3						
2	Engineering materials	Z	45	45		4	45		4						
3	Materials chemistry	E	60	30	30	4	30	30	4						
4	Materials degradation in a biological environment	E	45	30	15	2	30	15	2						
5	Materials structure testing methods	E	60	30	30	4	30	30	4						
6	Selected issues from biomaterials toxicology	E	45	30	15	2	30	15	2						
7	Solid state physics	E	60	30	30	4	30	30	4						
8	Unconventional biomaterials	E	45	30	15	3	30	15	3						
9	X-ray, electron, and neutron diffraction	Z	45	30	15	3	30	15	3						
10	Dental materials	E	45	30	15	2				30	15	2			
11	Diploma laboratory 1	Z	60		60	4					60	4			
12	Engineering materials designing and manufacturing	E	60	30	30	3				30	30	3			
13	Engineering materials structure and properties forming	E	60	30	30	4				30	30	4			
14	Implants and artificial organs	E	45	30	15	3				30	15	3			
15	M.Sc. seminar 1	Z	30		30	3					30	3			
16	Modern microscopic and spectral methods	E	60	30	30	4				30	30	4			
17	Nuclear techniques in materials testing	Z	30	30		1				30		1			
18	Production and quality management	Z	45	30	15	2				30	15	2			
19	Tissue engineering	Z	30	15	15	2				15	15	2			
20	Diploma laboratory 2	Z	30		30	2								30	2
21	M.Sc. seminar 2	Z	30		30	3								30	3
22	Scanning probe microscopy	Z	30	30		1							30		1

23	Testing biomaterials corrosion resistance and biocompatibility	E	60	30	30	3									30	30	3
	TOTAL A:		**1065**	**555**	**510**	**66**	**270**	**180**	**29**	**225**	**240**	**28**	**60**	**90**	**9**

C - OTHER REQUIREMENTS

			form of teaching				year 1						year 2		
							semester 1			semester 2			semester 3		
No.	**Module**	**E/C**	**Total**	**L**	**O**	**Total ECTS**	**L**	**O**	**E**	**L**	**O**	**E**	**L**	**O**	**E**
1	Physical education	Z	30		30	1		30	1						
2	Foreign language	Z	30		30	2					30	2			
3	Intellectual property protection	Z	15	15		1							15		1
4	M.Sc. thesis preparation	Z				20									20
	TOTAL C - OTHER REQUIREMENTS:		**75**	**15**	**60**	**24**	**0**	**30**	**1**	**0**	**30**	**2**	**15**	**0**	**21**
	TOTAL:		**1140**	**570**	**570**	**90**	**480**		**30**	**495**		**30**	**165**		**30**
TOTAL							**1140**								

The study ends with the awarding of a Master's Degree in the field of Materials Science and Engineering: Biomaterials.

Legend
Each semester consists of 15 weeks
E/C - examination/course work
E - ECTS
L - lecture, O - all forms of teaching excluding lecture (practical classes, laboratory classes, discussion classes, seminar, proseminar, language classes, field practice, workshop, internship, tutoring)

Plan studiów zatwierdzony przez Radę Wydziału w dniu 06.03.2012 r.

Otrzymują:

1. Dział Kształcenia
2. Wydział Informatyki i Nauki o Materiałach
3. Dziekanat

..... (pieczęć i podpis Dyrektora Instytutu)

..... (pieczęć i podpis Dziekana)

1.	**Field of study**	**Materials Science and Engineering**
2.	Academic year of entry	2014/2015 (summer term)
3.	Academic year for which the revised course structure applies	—
4.	Level of qualifications/degree	second-cycle studies
5.	Degree profile	general academic
6.	Mode of study	full-time
7.	ISCED code	

Legend
Each semester consists of 15 weeks
E/C - examination/course work
E - ECTS
L - lecture, O - all forms of teaching excluding lecture (practical classes, laboratory classes, discussion classes, seminar, proseminar, language classes, field practice, workshop, internship, tutoring)

Plan studiów zatwierdzony przez Radę Wydziału w dniu 06.03.2012 r.

Otrzymują:

1. Dział Kształcenia
2. Wydział Informatyki i Nauki o Materiałach
3. Dziekanat

..... (pieczęć i podpis Dyrektora Instytutu)

..... (pieczęć i podpis Dziekana)

1.	**Field of study**	**Materials Science and Engineering**
2.	Academic year of entry	2014/2015 (summer term)
3.	Academic year for which the revised course structure applies	—
4.	Level of qualifications/degree	second-cycle studies
5.	Degree profile	general academic
6.	Mode of study	full-time
7.	ISCED code	

Specialization: Materials Science / Materials Testing Methods

A

			form of teaching				year 1						year 2		
							semester 1			semester 2			semester 3		
No.	Module	E/C	Total	L	O	Total ECTS	L	O	E	L	O	E	L	O	E
1	Computer networks and their use in materials engineering	Z	45	15	30	3	15	30	3						
2	Engineering materials	Z	45	45		4	45		4						
3	Materials chemistry	E	60	30	30	4	30	30	4						
4	Materials science	Z	45	30	15	4	30	15	4						
5	Materials structure testing methods	E	60	30	30	4	30	30	4						
6	Nuclear techniques in materials testing	Z	30	30		1	30		1						
7	Solid state physics	E	60	30	30	4	30	30	4						
8	Unconventional techniques for materials manufacturing	Z	75	30	45	3	30	45	3						
9	X-ray, electron, and neutron diffraction	Z	45	30	15	3	30	15	3						
10	Computer modelling of materials structure and properties	E	90	30	60	4				30	60	4			
11	Diploma laboratory 1	Z	60		60	4					60	4			
12	Engineering materials structure and properties forming	E	60	30	30	4				30	30	4			
13	M.Sc. seminar 1	Z	30		30	3					30	3			
14	Modern microscopic and spectral methods	E	60	30	30	4				30	30	4			
15	Production and quality management	Z	45	30	15	2				30	15	2			
16	Project management	Z	45	30	15	2				30	15	2			
17	Surface structure and its modifications	E	60	30	30	4				30	30	4			
18	Diploma laboratory 2	Z	30		30	2								30	2
19	M.Sc. seminar 2	Z	30		30	3								30	3
20	Physical methods of materials testing	E	60	30	30	3							30	30	3

21	Scanning probe microscopy	Z	30	30		1							30		1
	TOTAL A:		**1065**	**510**	**555**	**66**	**270**	**195**	**30**	**180**	**270**	**27**	**60**	**90**	**9**

C - OTHER REQUIREMENTS

			form of teaching				year 1						year 2		
							semester 1			semester 2			semester 3		
No.	**Module**	**E/C**	**Total**	**L**	**O**	**Total ECTS**	**L**	**O**	**E**	**L**	**O**	**E**	**L**	**O**	**E**
1	Physical education	Z	30		30	1		30	1						
2	Foreign language	Z	30		30	2					30	2			
3	Intellectual property protection	Z	15	15		1							15		1
4	M.Sc. thesis preparation	Z				20									20
	TOTAL C - OTHER REQUIREMENTS:		**75**	**15**	**60**	**24**	**0**	**30**	**1**	**0**	**30**	**2**	**15**	**0**	**21**
	TOTAL:		**1140**	**525**	**615**	**90**	**495**		**31**	**480**		**29**	**165**		**30**
TOTAL							**1140**								

The study ends with the awarding of a Master's Degree in the field of Materials Science and Engineering: Materials Science.

Legend
Each semester consists of 15 weeks
E/C - examination/course work
E - ECTS
L - lecture, O - all forms of teaching excluding lecture (practical classes, laboratory classes, discussion classes, seminar, proseminar, language classes, field practice, workshop, internship, tutoring)

Plan studiów zatwierdzony przez Radę Wydziału w dniu 06.03.2012 r.

Otrzymują:

1. Dział Kształcenia
2. Wydział Informatyki i Nauki o Materiałach
3. Dziekanat

..... (pieczęć i podpis Dyrektora Instytutu)

..... (pieczęć i podpis Dziekana)

1.	**Field of study**	**Materials Science and Engineering**
2.	Academic year of entry	2014/2015 (summer term)
3.	Academic year for which the revised course structure applies	—
4.	Level of qualifications/degree	second-cycle studies
5.	Degree profile	general academic
6.	Mode of study	full-time
7.	ISCED code	

Specialization: Materials Science / Functional Materials

A

			form of teaching				year 1						year 2		
							semester 1			semester 2			semester 3		
No.	Module	E/C	Total	L	O	Total ECTS	L	O	E	L	O	E	L	O	E
1	Computer networks and their use in materials engineering	Z	45	15	30	3	15	30	3						
2	Engineering materials	Z	45	45		4	45		4						
3	Materials chemistry	E	60	30	30	4	30	30	4						
4	Materials science	Z	45	30	15	4	30	15	4						
5	Materials structure testing methods	E	60	30	30	4	30	30	4						
6	Shape memory alloys	Z	45	30	15	3	30	15	3						
7	Solid state physics	E	60	30	30	4	30	30	4						
8	Unconventional techniques for materials manufacturing	Z	75	30	45	3	30	45	3						
9	Computer modelling of materials structure and properties	E	90	30	60	4				30	60	4			
10	Diploma laboratory 1	Z	60		60	4					60	4			
11	Engineering materials structure and properties forming	E	60	30	30	4				30	30	4			
12	M.Sc. seminar 1	Z	30		30	3					30	3			
13	Production and quality management	Z	45	30	15	2				30	15	2			
14	Project management	Z	45	30	15	2				30	15	2			
15	Selected applications of functional materials	E	60	30	30	4				30	30	4			
16	Surface structure and its modifications	E	60	30	30	4				30	30	4			
17	The influence of defects on functional materials properties	Z	30	30		1				30		1			
18	Diploma laboratory 2	Z	30		30	2								30	2
19	M.Sc. seminar 2	Z	30		30	3								30	3
20	Optical crystals	E	60	30	30	3							30	30	3

21	Quasi-crystalline materials	Z	30	30		1							30		1
	TOTAL A:		**1065**	**510**	**555**	**66**	**240**	**195**	**29**	**210**	**270**	**28**	**60**	**90**	**9**

C - OTHER REQUIREMENTS

							year 1						year 2		
			form of teaching				semester 1			semester 2			semester 3		
No.	**Module**	**E/C**	**Total**	**L**	**O**	**Total ECTS**	**L**	**O**	**E**	**L**	**O**	**E**	**L**	**O**	**E**
1	Physical education	Z	30		30	1		30	1						
2	Foreign language	Z	30		30	2					30	2			
3	Intellectual property protection	Z	15	15		1							15		1
4	M.Sc. thesis preparation	Z				20									20
	TOTAL C - OTHER REQUIREMENTS:		**75**	**15**	**60**	**24**	**0**	**30**	**1**	**0**	**30**	**2**	**15**	**0**	**21**
	TOTAL:		**1140**	**525**	**615**	**90**	**465**		**30**	**510**		**30**	**165**		**30**
TOTAL							**1140**								

The study ends with the awarding of a Master's Degree in the field of Materials Science and Engineering: Materials Science.

Legend
Each semester consists of 15 weeks
E/C - examination/course work
E - ECTS
L - lecture, O - all forms of teaching excluding lecture (practical classes, laboratory classes, discussion classes, seminar, proseminar, language classes, field practice, workshop, internship, tutoring)

Plan studiów zatwierdzony przez Radę Wydziału w dniu 06.03.2012 r.

Otrzymują:

1. Dział Kształcenia
2. Wydział Informatyki i Nauki o Materiałach
3. Dziekanat

..... (pieczęć i podpis Dyrektora Instytutu)

..... (pieczęć i podpis Dziekana)

1.	**Field of study**	**Materials Science and Engineering**
2.	Academic year of entry	2014/2015 (summer term)
3.	Academic year for which the revised course structure applies	—
4.	Level of qualifications/degree	second-cycle studies
5.	Degree profile	general academic
6.	Mode of study	full-time
7.	ISCED code	

Specialization: Materials Science / Computer Modelling of Materials

A

			form of teaching				year 1						year 2		
							semester 1			semester 2			semester 3		
No.	Module	E/C	Total	L	O	Total ECTS	L	O	E	L	O	E	L	O	E
1	Computer networks and their use in materials engineering	Z	45	15	30	3	15	30	3						
2	Engineering materials	Z	45	45		4	45		4						
3	Materials chemistry	E	60	30	30	4	30	30	4						
4	Materials science	Z	45	30	15	4	30	15	4						
5	Materials structure testing methods	E	60	30	30	4	30	30	4						
6	Review of programming languages used in materials engineering	Z	45	30	15	3	30	15	3						
7	Solid state physics	E	60	30	30	4	30	30	4						
8	Unconventional techniques for materials manufacturing	Z	75	30	45	3	30	45	3						
9	Advanced numerical methods in materials modelling	Z	30	30		1				30		1			
10	Basics of ab initio methods of computer materials modelling	E	60	30	30	4				30	30	4			
11	Computer modelling of materials structure and properties	E	90	30	60	4				30	60	4			
12	Diploma laboratory 1	Z	60		60	4					60	4			
13	Engineering materials structure and properties forming	E	60	30	30	4				30	30	4			
14	M.Sc. seminar 1	Z	30		30	3					30	3			
15	Production and quality management	Z	45	30	15	2				30	15	2			
16	Project management	Z	45	30	15	2				30	15	2			
17	Surface structure and its modifications	E	60	30	30	4				30	30	4			
18	Analysis of experimental data obtained in selected spectroscopic studies of materials	Z	30	30		1							30		1
19	Diploma laboratory 2	Z	30		30	2								30	2
20	M.Sc. seminar 2	Z	30		30	3								30	3

21	Modelling of processes proceeding in engineering materials	E	60	30	30	3							30	30	3
	TOTAL A:		**1065**	**510**	**555**	**66**	**240**	**195**	**29**	**210**	**270**	**28**	**60**	**90**	**9**

C - OTHER REQUIREMENTS

							year 1						year 2		
			form of teaching				semester 1			semester 2			semester 3		
No.	**Module**	**E/C**	**Total**	**L**	**O**	**Total ECTS**	**L**	**O**	**E**	**L**	**O**	**E**	**L**	**O**	**E**
1	Physical education	Z	30		30	1		30	1						
2	Foreign language	Z	30		30	2					30	2			
3	Intellectual property protection	Z	15	15		1							15		1
4	M.Sc. thesis preparation	Z				20									20
	TOTAL C - OTHER REQUIREMENTS:		**75**	**15**	**60**	**24**	**0**	**30**	**1**	**0**	**30**	**2**	**15**	**0**	**21**
	TOTAL:		**1140**	**525**	**615**	**90**	**465**		**30**	**510**		**30**	**165**		**30**
TOTAL							**1140**								

The study ends with the awarding of a Master's Degree in the field of Materials Science and Engineering: Materials Science.

Legend
Each semester consists of 15 weeks
E/C - examination/course work
E - ECTS
L - lecture, O - all forms of teaching excluding lecture (practical classes, laboratory classes, discussion classes, seminar, proseminar, language classes, field practice, workshop, internship, tutoring)

Plan studiów zatwierdzony przez Radę Wydziału w dniu 06.03.2012 r.

Otrzymują:

1. Dział Kształcenia
2. Wydział Informatyki i Nauki o Materiałach
3. Dziekanat

..... (pieczęć i podpis Dyrektora Instytutu)

..... (pieczęć i podpis Dziekana)

1.	**Field of study**	**Materials Science and Engineering**
2.	Academic year of entry	2014/2015 (summer term)
3.	Academic year for which the revised course structure applies	—
4.	Level of qualifications/degree	second-cycle studies
5.	Degree profile	general academic
6.	Mode of study	full-time
7.	ISCED code	

Specialization: Materials Science / Materials for Medicine

A

			form of teaching				year 1						year 2		
							semester 1			semester 2			semester 3		
No.	Module	E/C	Total	L	O	Total ECTS	L	O	E	L	O	E	L	O	E
1	Computer networks and their use in materials engineering	Z	45	15	30	3	15	30	3						
2	Engineering materials	Z	45	45		4	45		4						
3	Materials chemistry	E	60	30	30	4	30	30	4						
4	Materials science	Z	45	30	15	4	30	15	4						
5	Materials structure testing methods	E	60	30	30	4	30	30	4						
6	Metallic biomaterials	Z	45	30	15	3	30	15	3						
7	Solid state physics	E	60	30	30	4	30	30	4						
8	Unconventional techniques for materials manufacturing	Z	75	30	45	3	30	45	3						
9	Ceramic and polymer materials in medicine	E	60	30	30	4				30	30	4			
10	Computer modelling of materials structure and properties	E	90	30	60	4				30	60	4			
11	Diploma laboratory 1	Z	60		60	4					60	4			
12	Engineering materials structure and properties forming	E	60	30	30	4				30	30	4			
13	M.Sc. seminar 1	Z	30		30	3					30	3			
14	Production and quality management	Z	45	30	15	2				30	15	2			
15	Project management	Z	45	30	15	2				30	15	2			
16	Shape memory alloys in medicine	Z	30	30		1				30		1			
17	Surface structure and its modifications	E	60	30	30	4				30	30	4			
18	Advanced IT techniques in medicine	E	60	30	30	3							30	30	3
19	Diploma laboratory 2	Z	30		30	2								30	2
20	M.Sc. seminar 2	Z	30		30	3								30	3

21	Nanomaterials in medicine	Z	30	30		1							30		1
	TOTAL A:		**1065**	**510**	**555**	**66**	**240**	**195**	**29**	**210**	**270**	**28**	**60**	**90**	**9**

C - OTHER REQUIREMENTS

			form of teaching				year 1						year 2		
							semester 1			semester 2			semester 3		
No.	**Module**	**E/C**	**Total**	**L**	**O**	**Total ECTS**	**L**	**O**	**E**	**L**	**O**	**E**	**L**	**O**	**E**
1	Physical education	Z	30		30	1		30	1						
2	Foreign language	Z	30		30	2					30	2			
3	Intellectual property protection	Z	15	15		1							15		1
4	M.Sc. thesis preparation	Z				20									20
	TOTAL C - OTHER REQUIREMENTS:		**75**	**15**	**60**	**24**	**0**	**30**	**1**	**0**	**30**	**2**	**15**	**0**	**21**
	TOTAL:		**1140**	**525**	**615**	**90**	**465**		**30**	**510**		**30**	**165**		**30**
TOTAL							**1140**								

The study ends with the awarding of a Master's Degree in the field of Materials Science and Engineering: Materials Science.

Legend
Each semester consists of 15 weeks
E/C - examination/course work
E - ECTS
L - lecture, O - all forms of teaching excluding lecture (practical classes, laboratory classes, discussion classes, seminar, proseminar, language classes, field practice, workshop, internship, tutoring)

Plan studiów zatwierdzony przez Radę Wydziału w dniu 06.03.2012 r.

Otrzymują:

1. Dział Kształcenia
2. Wydział Informatyki i Nauki o Materiałach
3. Dziekanat

..... (pieczęć i podpis Dyrektora Instytutu)

..... (pieczęć i podpis Dziekana)

1.	**Field of study**	**Materials Science and Engineering**
2.	Academic year of entry	2014/2015 (summer term)
3.	Academic year for which the revised course structure applies	—
4.	Level of qualifications/degree	second-cycle studies
5.	Degree profile	general academic
6.	Mode of study	full-time
7.	ISCED code	

Specialization: Materials Science / Nanomaterials

A

			form of teaching				year 1						year 2		
							semester 1			semester 2			semester 3		
No.	Module	E/C	Total	L	O	Total ECTS	L	O	E	L	O	E	L	O	E
1	Computer networks and their use in materials engineering	Z	45	15	30	3	15	30	3						
2	Engineering materials	Z	45	45		4	45		4						
3	Materials chemistry	E	60	30	30	4	30	30	4						
4	Materials science	Z	45	30	15	4	30	15	4						
5	Materials structure testing methods	E	60	30	30	4	30	30	4						
6	Phase transitions in amorphous and nanocrystalline materials	Z	45	30	15	3	30	15	3						
7	Solid state physics	E	60	30	30	4	30	30	4						
8	Unconventional techniques for materials manufacturing	Z	75	30	45	3	30	45	3						
9	Computer modelling of materials structure and properties	E	90	30	60	4				30	60	4			
10	Diploma laboratory 1	Z	60		60	4					60	4			
11	Engineering materials structure and properties forming	E	60	30	30	4				30	30	4			
12	M.Sc. seminar 1	Z	30		30	3					30	3			
13	Magnetic nanomaterials	Z	30	30		1				30		1			
14	Metallic glasses and nanomaterials	E	60	30	30	4				30	30	4			
15	Production and quality management	Z	45	30	15	2				30	15	2			
16	Project management	Z	45	30	15	2				30	15	2			
17	Surface structure and its modifications	E	60	30	30	4				30	30	4			
18	Diploma laboratory 2	Z	30		30	2								30	2
19	M.Sc. seminar 2	Z	30		30	3								30	3
20	Nanocomposites	Z	30	30		1							30		1

21	Non-magnetic nanomaterials	E	60	30	30	3							30	30	3
	TOTAL A:		**1065**	**510**	**555**	**66**	**240**	**195**	**29**	**210**	**270**	**28**	**60**	**90**	**9**

C - OTHER REQUIREMENTS

							year 1						year 2		
			form of teaching				semester 1			semester 2			semester 3		
No.	**Module**	**E/C**	**Total**	**L**	**O**	**Total ECTS**	**L**	**O**	**E**	**L**	**O**	**E**	**L**	**O**	**E**
1	Physical education	Z	30		30	1		30	1						
2	Foreign language	Z	30		30	2					30	2			
3	Intellectual property protection	Z	15	15		1							15		1
4	M.Sc. thesis preparation	Z				20									20
	TOTAL C - OTHER REQUIREMENTS:		**75**	**15**	**60**	**24**	**0**	**30**	**1**	**0**	**30**	**2**	**15**	**0**	**21**
	TOTAL:		**1140**	**525**	**615**	**90**	**465**		**30**	**510**		**30**	**165**		**30**
TOTAL							**1140**								

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Plan studiów zatwierdzony przez Radę Wydziału w dniu 06.03.2012 r.

Otrzymują:

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..... (pieczęć i podpis Dyrektora Instytutu)

..... (pieczęć i podpis Dziekana)