

PLAN OF STUDIES

FACULTY: Computer Science and Management

MAIN FIELD OF STUDY: Informatics

EDUCATION LEVEL: 1st / 2nd-* level, ~~licencjat~~ / ~~inżynier~~ / magister / ~~magister inżynier~~*

FORM OF STUDIES: full-time / ~~part-time~~*

PROFILE: general academic / ~~practical~~ *

SPECIALIZATION: Computer Engineering

LANGUAGE OF STUDY: English

Faculty Council Resolution of 29 May, 2018

In effect since 01 October, 2018

*delete as applicable

Plan of studies structure (optionally) 1) in point layout

	CNPS	ECTS	CNPS	ECTS	CNPS	ECTS	CNPS	ECTS									
	900	30	900	30	900	30	900	30									
20	Foreign Language I		Modelling and analysis of Web-based systems	Elective Course M3.1	Research Methodology		90	3 ECTS	20								
19	Foreign Language II				180	6 ECTS			Monographic Subject		19						
18	60								180	6 ECTS	90		18				
17	2 ECTS										3 ECTS		17				
16	Advanced Databases		Parallel and Distributed Computing	Elective Course M3.2	Business modeling and analysis		90	3 ECTS	16								
15					180				6 ECTS		90		15				
14					210				7 ECTS		180		6 ECTS		14		
13					7 ECTS				3 ECTS		90		3 ECTS		13		
12	Advanced Topics in Artificial Intelligence		Mobile and Multimedia Systems	Elective Course M3.3	MSc Thesis II		540	18 ECTS	12								
11									180		6 ECTS		180		6 ECTS		11
10									210		7 ECTS		180		6 ECTS		10
9									7 ECTS		6 ECTS		180		6 ECTS		9
8	Information Systems Modelling and Analysis		Software System Development	Physics of Contemporary Computer Science		540	18 ECTS	120	4 ECTS	8							
7				180						6 ECTS		15		Recent Advances in Computer Science		7	
6				210						7 ECTS		180		6 ECTS		6	
5				7 ECTS						6 ECTS		60		Ethics of new technologies		5	
4	System Modelling and Analysis		Foundations of Knowledge Engineering	Fundamentals of Business and Intellectual Property		75	2 ECTS	90	3 ECTS	4							
3				180						6 ECTS		180		6 ECTS		3	
2				6 ECTS						6 ECTS		75		MSc Thesis I		2	
1				1						2		3		4		1	
sem	1		2		3		4		total								
w/sem	20/300		20/300		20/300		20/300		80/1200								

2) in hourly layout

	CNPS	ECTS	CNPS	ECTS	CNPS	ECTS	CNPS	ECTS		
	900	30	900	30	900	30	900	30		
20	Foreign Language I		Modelling and analysis of Web-based systems		Elective Course M3.1	4h E	Research Methodology	20		
19	Foreign Language II						20000	19		
18	03000	20200 E					Monographic Subject	18		
17							10100	17		
16	Advanced Databases	10021	Parallel and Distributed Computing	Elective Course M3.1	4h E	Business modeling and analysis	16			
15						11000	15			
14						Diploma Seminar	14			
13						00002	13			
12	Advanced Topics in Artificial Intelligence	20020 E	Mobile and Multimedia Systems	10300	Elective Course M3.2	4h E	MSc Thesis	12		
11								11		
10								10		
9								9		
8	Information Systems Modelling and Analysis	22000 E	Software System Development	20020	Physics of Contemporary Computer Science	10001		000(12)0	8	
7					7					
6					Recent Advances in Computer Science	00001			6	
5					Ethics of new technologies	00001			5	
4	System Modelling and Analysis	21001 E	Foundations of Knowledge Engineering	22000 E	Fundamentals of Business and Intellectual Property	20000		MSc Thesis I	4	
3					3					
2					2					
1					00020	1				
sem	1		2		3		4		total	
w/sem	20/300		20/300		20/300		20/300		80/1200	

1. Set of obligatory and optional courses and groups of courses in semestral arrangement

Semester 1

Obligatory courses number of ECTS points 27

No..	Course/group of courses code	Name of course/group of courses (denote group of courses with symbol GK)	Weekly number of hours					Field-of-study educational effect symbol	Number of hours		Number of ECTS points		Form ² of course/group of courses	Way ³ of crediting	Course/group of courses			
			lec	cl	lab	pr	sem		ZZU	CNPS	total	BK classes ¹			university-wide ⁴	practical ⁵	kind ⁶	type ⁷
1	INZ0108Wcs	System Modelling and Analysis (GK)	2	1			1	K2INF_W01 K2INF_W05 K2INF_U05	60	180	6	3,6	T	E		(2)	PD	Ob.
2	INZ0109Wps	Advanced databases (GK)	1				2	1	K2INF_W05 K2INF_U05	60	210	7	4,2	T	Z	(3)	K	Ob.
3	INZ0110Wp	Advanced Topics in Artificial Intelligence (GK)	2				2		K2INF_W06 K2INF_U08	60	210	7	4,2	T	E	(3)	S	Ob.
4	INZ0113Wc	Information System Modelling and Analysis (GK)	2	2					K2INF_W04	60	210	7	4,2	T	E		K	Ob.
Total			7	3			4	2		240	810	27	16,2					

Optional courses (minimum 60 hours in semester, 3 ECTS points)

No..	Course/group of courses code	Name of course/group of courses (denote group of courses with symbol GK)	Weekly number of hours					Field-of-study educational effect symbol	Number of hours		Number of ECTS points		Form ² of course/group of courses	Way ³ of crediting	Course/group of courses			
			lec	cl	lab	pr	sem		ZZU	CNPS	total	BK classes ¹			university-wide ⁴	practical ⁵	kind ⁶	type ⁷
1		Foreign language I		3				K2INF_U04	45	60	2	1,2	T	Z	O		KO	W
2		Foreign language II		1				K2INF_U04	15	30	1	0,6	T	Z	O		KO	W.
Total				4					60	90	3	1,8						

¹BK – number of ECTS points assigned to hours of classes requiring direct contact of teachers with students

²Traditional – enter T, remote – enter Z

³Exam – enter E, crediting – enter Z. For the group of courses – after the letter E or Z - enter in brackets the final course form (lec, cl, lab, pr, sem)

⁴University-wide course /group of courses – enter O

⁵Practical course / group of courses – enter P. For the group of courses – in brackets enter the number of ECTS points assigned to practical courses

⁶ KO – general education, PD – basic sciences, K – field-of-studies, S – specialization

⁷ Optional – enter W, obligatory – enter Ob

Altogether in semester

Total number of hours					Total number of ZZU hours	Total number of CNPS hours	Total number of ECTS points	Number of ECTS points for BK classes ¹
lec	cl	lab	pr	sem				
7	7	0	4	2	300	900	30	18

¹BK – number of ECTS points assigned to hours of classes requiring direct contact of teachers with students

²Traditional – enter T, remote – enter Z

³Exam – enter E, crediting – enter Z. For the group of courses – after the letter E or Z - enter in brackets the final course form (lec, cl, lab, pr, sem)

⁴University-wide course /group of courses – enter O

⁵Practical course / group of courses – enter P. For the group of courses – in brackets enter the number of ECTS points assigned to practical courses

⁶ KO – general education, PD – basic sciences, K – field-of-studies, S – specialization

⁷ Optional – enter W, obligatory – enter Ob

Semester 2

Obligatory courses number of ECTS points 30

No.	Course/group of courses code	Name of course/group of courses (denote group of courses with symbol GK)	Weekly number of hours					Field-of-study educational effect symbol	Number of hours		Number of ECTS points		Form ² of course/group of courses	Way ³ of crediting	Course/group of courses			
			lec	cl	lab	pr	sem		ZZU	CNPS	total	BK classes ¹			university-wide ⁴	practical ⁵	kind ⁶	type ⁷
1	INZ0135Wl	Modelling and Analysis of Web-based Systems (GK)	2		2			K2INF_W06, K2INF_U07 K2INF_U08 K2INF_U09	60	180	6	3,6	T	E		(3)	S	Ob.
2	INZ0136Wcl	Parallel and Distributed Computing (GK)	2	1	1			K2INF_W06, K2INF_U07 K2INF_U08 K2INF_U09	60	180	6	3,6	T	E		(2)	S	Ob.
3	INZ0137Wl	Mobile and Multimedia Systems (GK)	1		3			K2INF_W06, K2INF_U07 K2INF_U08 K2INF_U09	60	180	6	3,6	T	Z		(4)	S	Ob.
4	INZ0138Wp	Software System Development (GK)	2			2		K2INF_W04 K2INF_U07	60	180	6	3,6	T	Z		(3)	K	Ob.
5	INZ0139Wc	Foundation of Knowledge Engineering (GK)	2	2				K2INF_W02, K2INF_U05 K2INF_U05	60	180	6	3,6	T	E			K	Ob.
Total			9	3	6	2			300	900	30	18						

Altogether in semester

Total number of hours					Total number of ZZU hours	Total number of CNPS hours	Total number of ECTS points	Number of ECTS points for BK classes ¹
lec	cl	lab	pr	sem				
9	3	6	2	0	300	900	30	18

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³Exam – enter E, crediting – enter Z. For the group of courses – after the letter E or Z - enter in brackets the final course form (lec, cl, lab, pr, sem)

⁴University-wide course /group of courses – enter O

⁵Practical course / group of courses – enter P. For the group of courses – in brackets enter the number of ECTS points assigned to practical courses

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⁷Optional – enter W, obligatory – enter Ob

Semester 3

Obligatory courses number of ECTS points 10

No..	Course/group of courses code	Name of course/group of courses (denote group of courses with symbol GK)	Weekly number of hours					Field-of-study educational effect symbol	Number of hours		Number of ECTS points		Form ² of course/group of courses	Way ³ of crediting	Course/group of courses			
			lec	cl	lab	pr	sem		ZZU	CNPS	total	BK classes ¹			university-wide ⁴	practical ⁵	kind ⁶	type ⁷
1	INZ0156Ws	Physics of Contemporary Computer Science (GK)	1				1	K2INF_W01	30	120	4	2,4	T	Z			S	Ob.
2	INZ0166S	Ethics of new technologies					1	K2INF_W07 K2INF_K03	15	60	2	1,2	T	Z			S	Ob.
	INZ0167W	Fundamentals of Business and Intellectual Property	2					K2INF_W08	30	90	3	1,8	T	Z				
	INZ0301S	Recent Advances in Computer Science		1				K2INF_W03 K2INF_U01 K2INF_U07	15	15	1	0,6	T	Z			S	Ob.
Total			3	1			2		90	285	10	6						

Optional courses (minimum 30 hours in semester, 2 ECTS point)

No..	Course/group of courses code	Name of course/group of courses (denote group of courses with symbol GK)	Weekly number of hours					Field-of-study educational effect symbol	Number of hours		Number of ECTS points		Form ² of course/group of courses	Way ³ of crediting	Course/group of courses			
			lec	cl	lab	pr	sem		ZZU	CNPS	total	BK classes ¹			university-wide ⁴	practical ⁵	kind ⁶	type ⁷
1	INZ0142P	MSc Thesis I				2		K2INF_U03, K2INF_U08	30	75	2	1,2	T	Z		P	S	W.
Total						2			30	75	2	1,2						

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³Exam – enter E, crediting – enter Z. For the group of courses – after the letter E or Z - enter in brackets the final course form (lec, cl, lab, pr, sem)

⁴University-wide course /group of courses – enter O

⁵Practical course / group of courses – enter P. For the group of courses – in brackets enter the number of ECTS points assigned to practical courses

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⁷Optional – enter W, obligatory – enter Ob

Optional courses (Optional module M 3.1) (minimum 60 hours in semester, 6 ECTS points)

No..	Course/group of courses code	Name of course/group of courses (denote group of courses with symbol GK)	Weekly number of hours					Field-of-study educational effect symbol	Number of hours		Number of ECTS points		Form ² of course/group of courses	Way ³ of crediting	Course/group of courses			
			lec	cl	lab	pr	sem		ZZU	CNPS	total	BK classes ¹			university-wide ⁴	practical ⁵	kind ⁶	type ⁷
1	INZ0158Wcs	Parallel Computer Architecture (GK)	2	1			1	K2INF_W06,	60	180	6	4,2	T	E			S	W.
2	INZ0159Wl	Advanced Computer Network (GK)	2		2			K2INF_W06, K2INF_U09	60	180	6	4,2	T	E		(3)	S	W
Total			2	1	1				60	180	6	4,2						

Optional courses (Optional module M 3.2) (minimum 60 hours in semester, 6 ECTS points)

No..	Course/group of courses code	Name of course/group of courses (denote group of courses with symbol GK)	Weekly number of hours					Field-of-study educational effect symbol	Number of hours		Number of ECTS points		Form ² of course/group of courses	Way ³ of crediting	Course/group of courses			
			lec	cl	lab	pr	sem		ZZU	CNPS	total	BK classes ¹			university-wide ⁴	practical ⁵	kind ⁶	type ⁷
1	INZ0160Wl	Advanced Computer Graphic (GK)	2		2			K2INF_W06, K2INF_U08 K2INF_U09	60	180	6	4,2	T	E		(3)	S	W.
2	INZ0161Wl	Digital Image Processing (GK)	2		2			K2INF_W06, K2INF_U08 K2INF_U09	60	180	6	4,2	T	E		(3)	S	W
3	INZ0162Wl	Multimedia Information Systems (GK)	2		2			K2INF_W06, K2INF_U08 K2INF_U09	60	180	6	4,2	T	E		(3)	S	W
4	INZ0163Wl	User Interface Development (GK)	2		2			K2INF_W06, K2INF_U08 K2INF_U09	60	180	6	4,2	T	E		(3)	S	W

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³Exam – enter E, crediting – enter Z. For the group of courses – after the letter E or Z - enter in brackets the final course form (lec, cl, lab, pr, sem)

⁴University-wide course /group of courses – enter O

⁵Practical course / group of courses – enter P. For the group of courses – in brackets enter the number of ECTS points assigned to practical courses

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⁷Optional – enter W, obligatory – enter Ob

5	INZ0302WI	Video Game Design (GK)	2		2			K2INF_W06 K2INF_U08 K2INF_U09	60	180	6	3,6	T	E		P(3)	S	W
Total			2		2				60	180	6	4,2						

Optional courses (Optional module M_3.3) (minimum 60 hours in semester, 6 ECTS points)

No..	Course/group of courses code	Name of course/group of courses (denote group of courses with symbol GK)	Weekly number of hours					Field-of-study educational effect symbol	Number of hours		Number of ECTS points		Form ² of course/group of courses	Way ³ of crediting	Course/group of courses				
			lec	cl	lab	pr	sem		ZZU	CNPS	total	BK classes ¹			university-wide ⁴	practical ⁵	kind ⁶	type ⁷	
1	INZ0164Wlp	Data Warehouses (GK)	1		2		1			60	180	6	4,2	T	E		(3)	S	W.
2	INZ0165Wl	Expert Systems (GK)	2		2					60	180	6	4,2	T	E		(3)	S	W
Total			2		2				60	180	6	4,2							

Altogether in semester

Total number of hours					Total number of ZZU hours	Total number of CNPS hours	Total number of ECTS points	Number of ECTS points for BK classes ¹
lec	cl	lab	pr	sem				
8	1	5	2	4	300	900	30	18

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²Traditional – enter T, remote – enter Z

³Exam – enter E, crediting – enter Z. For the group of courses – after the letter E or Z - enter in brackets the final course form (lec, cl, lab, pr, sem)

⁴University-wide course /group of courses – enter O

⁵Practical course / group of courses – enter P. For the group of courses – in brackets enter the number of ECTS points assigned to practical courses

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⁷Optional – enter W, obligatory – enter Ob

Semester 4

Obligatory courses number of ECTS points 6

No..	Course/group of courses code	Name of course/group of courses (denote group of courses with symbol GK)	Weekly number of hours					Field-of-study educational effect symbol	Number of hours		Number of ECTS points		Form ² of course/group of courses	Way ³ of crediting	Course/group of courses			
			lec	cl	lab	pr	sem		ZZU	CNPS	total	BK classes ¹			university-wide ⁴	practical ⁵	kind ⁶	type ⁷
1	INZ0151W	Research Methodology	2						30	90	3	1,8	T	Z			K	Ob.
2	INZ0152Wc	Business modeling and analysis (GK)	1	1					30	90	3	1,8	T	Z			K	Ob.
Total			3	1					60	180	6	3,6						

Optional courses (minimum 240 hours in semester, 24 ECTS points)

No..	Course/group of courses code	Name of course/group of courses (denote group of courses with symbol GK)	Weekly number of hours					Field-of-study educational effect symbol	Number of hours		Number of ECTS points		Form ² of course/group of courses	Way ³ of crediting	Course/group of courses			
			lec	cl	lab	pr	sem		ZZU	CNPS	total	BK classes ¹			university-wide ⁴	practical ⁵	kind ⁶	type ⁷
1	INZ0153W1	Monographic Subject (GK)	1		1				30	90	3	1,8	T	Z		(1)	S	W
2	INZ0154S	Diploma Seminar	0				2		30	90	3	1,8	T	Z			S	W
3	INZ0155D	MSc Thesis II	0			12			180	540	18	10,8	T	Z		P	S	W
Total			1		1	12	2		240	720	24	14,4						

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²Traditional – enter T, remote – enter Z

³Exam – enter E, crediting – enter Z. For the group of courses – after the letter E or Z - enter in brackets the final course form (lec, cl, lab, pr, sem)

⁴University-wide course /group of courses – enter O

⁵Practical course / group of courses – enter P. For the group of courses – in brackets enter the number of ECTS points assigned to practical courses

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⁷Optional – enter W, obligatory – enter Ob

Altogether in semester

Total number of hours					Total number of ZZU hours	Total number of CNPS hours	Total number of ECTS points	Number of ECTS points for BK classes ¹
lec	cl	lab	pr	sem				
4	1	1	12	2	300	900	30	18

Set of examinations in semestral arrangement

Course code	Names of courses ending with examination	Semester
INZ0110 INZ0113 INZ0108	1. Advanced Topics in Artificial Intelligence 2. Information System Modeling and Analysis 3. System Modelling and Analysis	1
INZ0135 INZ0136 INZ0139	1. Modelling and Analysis of Web-based Systems 2. Parallel and Distributed Computing 3. Foundation of Knowledge Engineering	2
INZxxx INZxxx INZxxx	1. Elective Course M3.1 2. Elective Course M3.2 3. Elective Course M3.3	3

3. Numbers of allowable deficit of ECTS points after particular semesters

Semester	Allowable deficit of ECTS points after semester

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⁴University-wide course /group of courses – enter O

⁵Practical course / group of courses – enter P. For the group of courses – in brackets enter the number of ECTS points assigned to practical courses

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⁷Optional – enter W, obligatory – enter Ob

1	7
2	13
3	0

Opinion of student government legislative body

.....

Date Name and surname, signature of student representative

.....

Date Dean's signature

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³Exam – enter E, crediting – enter Z. For the group of courses – after the letter E or Z - enter in brackets the final course form (lec, cl, lab, pr, sem)

⁴University-wide course /group of courses – enter O

⁵Practical course / group of courses – enter P. For the group of courses – in brackets enter the number of ECTS points assigned to practical courses

⁶ KO – general education, PD – basic sciences, K – field-of-studies, S – specialization

⁷ Optional – enter W, obligatory – enter Ob