SOFIA UNIVERSITY "St. KLIMENT OHRIDSKI"

CURRICULUM

Rector,

(signature)

Professional Direction: Physical Sciences

Educational degree: Master of sciences (M. Sc.)

Educational Subject: Engineering Physics

Duration: 3 Terms

Master's Programme:
Wireless Networks and Devices

Form of Education: full time

Professional Qualification:
Master in Engineering Physics –
Wireless Networks and Devices

CONTENS

V4 (2012/2013)

№	COURSE	Type of course: C, E, O	Exam E	Exam during the term T	ECTS- credits	Total hours in compulsory classes	Hours			Hours during the terms		
										Terms		
							Lectures	Seminar classes	Laboratory classes	I term (winter) total hours	II term (summer) total hours	III term (winter) total hours
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**		**10**	**11**	**12**	**13**

1	2	3	4	5	6	7	8		10	11	12	13
	COMPULSORY COURSES											
1	Modulations and coding in the digital communications	C	1		**6**	75	45	15	15	45+15+15	-	-
2	Wireless networks and protocols	C	1		**4.5**	60	45	15	0	45+15+0	-	-
3	Computer practice in communication systems	C		1	**4.5**	45	0	0	45	0+0+45	-	-
4	Information and statistics in the wireless communications	C	2		**4.5**	60	45	15	0	-	45+15+0	-
5	Microwave communication devices and systems	C	2		**6**	75	45	15	15	-	45+15+15	-
3c	Integrated circuits and devices for wireless networks	C	2		**4.5**	60	45	15	0	-	45+15+0	-
4c	Laboratory practice in Integrated circuits and devices for wireless networks	C		2	**5**	45	0	0	45	-	0+0+45	-
	INTRODUCTORY SELECTABLE COURSES (the students must choose 1 course from the introductory selectable courses with 5 ECTS credits (1/5)											
1	Introduction to wireless communications	IE	1		**5**	60	30	30	0	30+30+0	-	-
2	Applied Electrodynamics for MSc students	IE	1		**5**	60	30	30	0	30+30+0	-	-
3	Modern Physics for Engineers	IE	1		**5**	60	60	0	0	60+0+0	-	-
	SELECTABLE COURSES (Ist term: 2 courses with 10 ECTS credits (2/10); IInd term: 2 courses with 10 ECTS credits (2/10)											
1	Interfaces in the wireless communications	E	1		**5**	60	30	0	30	30+0+30	-	-
2	Mobile radio-channels	E	1		**5**	60	30	30	0	30+30+0	-	-
3	Microwave measurements in communications	E	1		**5**	60	30	0	30	30+0+30	-	-
4	Fixed and Mobile satellite communication systems	E	1		**5**	60	30	15	15	30+15+15	-	-
5	Software toolbox on MATLAB for communication applications	E	1		**5**	60	30	0	15	30+0+15	-	-
6	Practical programming on Visual C++	E		1	**5**	60	30	0	30	30+0+30	-	-
7	Management of the communication networks	E	1		**5**	60	30	30	0	30+30+0		
8	Processors in the wireless communications	E	2		**5**	60	30	0	30	-	30+0+30	-
9	Antennas for the wireless communication systems	E	2		**5**	60	30	15	15	-	30+15+15	-
10	RFID's	E	2		**5**	60	30	15	15	-	30+15+15	-
11	Security of the communication networks and systems	E	2		**5**	60	30	30	0	-	30+30+0	-
12	Operational systems and open-source applications in the communications (Lab. exercises)	E		2	**5**	45	0	0	45	-	0+0+45	-
13	Electromagnetic compatibility (EMC)	E		2	**5**	60	30	15	15	-	30+15+15	-
14	Management of the innovations	E	2		**5**	60	30	30	0		30+30+0	

13	One-term course in advanced topics in communications (winter)	E		1	**5**	60	30	30		30+30	-	-
14	One-term course in advanced topics in communications (summer)	E		2	**5**	60	30	30		-	30+30	-
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**
	Hours for education in Compulsory Classes	C	5	2	**35**	420	225	75	120	180	240	0
	Total hours for education in the MCs program (compulsory, selectable, educational practice, M.Sc. thesis)				**90**	990	315	705		345	345	300
	Number of exams at the end of the term									4	4	MSc. Thesis
	Number of exams during the term									2	2	1
	Total ECTS credits	**Totally 90 ECTS credits**								**30**	**30**	**30**

					Educational Practices in Training Groups					MSc thesis	
					Name of the training group	Term	Weeks	Hours	ECTS credits		MSc. Thesis : (**15 ECTS credits**)
					Educational practice Wireless Networks and Devices (elective)	3	15	150	**15**		First Session: January-February
					Individual preparation of the master thesis (elective; *instead of the practice*)	3	15	150	**15**		Second Session: July
The form of control is exams during the 3rd term. The supervisor of the practice is responsible for the control exam.											

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Notes:

1. The CIRRICULUM of the Master's Programme is approved by the Faculty Council of the Faculty of Physics (Протокол № ..... /.....)
2. The lecture courses are holding in the Faculty in Physics, Educational Hall A410 "Prof. Stefan Alexandrov".
3. The students pay the yearly taxes, approved by the Academic Council of the Sofia University "St. Kliment Ohridski".
4. The English language is the official language of the Master's programme.
5. The programme is supporting by Bulgarian and foreign companies in the area of communication and electronics.
6. The Master's Programme has Programme Council, which includes the lecturers of the compulsory courses, one representative of the supporting companies and one student (the group leader). The Programme Council is responsible for the whole educational process. The Programme Chair is responsible for the operative management of the educational process.
7. The each Lecturer of the Master's Programme has responsibility to ensure suitable educational materials in English. They should be preliminary approved by the Programme Council.
8. The each student gets officially an individual task in the frame of one of the Training groups (2-5 students). The each group has Supervisor (lecturer in the program), which is responsible for the education of the students into the group. The education is problem-orientated. The students are working in-group. Each student presents own results of his/her personal task as a part of the whole training project. The final project is the MSc. Thesis of the student.

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