COURSE DESCRIPTION CARD

<table>
<tr><td colspan="10">Faculty of Electrical Engineering</td></tr>
<tr><td>Field of study</td><td colspan="6">Electrical and Electronic Engineering</td><td colspan="2">Degree level and programme type</td><td>bachelor's degree, full time programme</td></tr>
<tr><td>Specialization/ diploma path</td><td colspan="6">-</td><td colspan="2">Study profile</td><td>-</td></tr>
<tr><td rowspan="2">Course name</td><td colspan="6" rowspan="2">Radio and Television Devices</td><td colspan="2">Course code</td><td>IS-FEE-10018W</td></tr>
<tr><td colspan="2">Course type</td><td>elective</td></tr>
<tr><td rowspan="2">Forms and number of hours of tuition</td><td>L</td><td>C</td><td>LC</td><td>P</td><td>SW</td><td>FW</td><td>S</td><td>Semester</td><td>winter</td></tr>
<tr><td>30</td><td></td><td>30</td><td></td><td></td><td></td><td></td><td>No. of ECTS credits</td><td>6</td></tr>
<tr><td>Entry requirements</td><td colspan="9">-</td></tr>
<tr><td>Course objectives</td><td colspan="9">The principal objective of lectures is to cover the fundamentals of work and structures of radio and television receivers and radio communication transceivers. The CD and DVD basis of works, and introduction to some elements of electroacoustic are presented.</td></tr>
<tr><td>Course content</td><td colspan="9">Superheterodyne receiver. ZIF (Zero Intermediate Frequency) receiver. Main functional blocks of radio receiver. Signals in radio receiver - analysis in MATLAB. Stereophony and stereo modulation. Digital radiocommunication transceivers. Analysis structure of radio receivers and mobile phones. IC for radiocommunication blocks. RDS system. Television receiver - main functional blocks. RFID systems. CD, DVD. Electroacoustic elements loudspeakers, headphones, microphones.</td></tr>
<tr><td>Teaching methods</td><td colspan="9">lecture, laboratory class, specialization workshop.</td></tr>
<tr><td>Assessment method</td><td colspan="9">lecture: oral exam, two small tests during lecture; laboratory class: tests, evaluation of reports; specialization workshop: evaluation of report.</td></tr>
<tr><td>Symbol of learning outcome</td><td colspan="7">Learning outcomes</td><td colspan="2">Reference to the learning outcomes for the field of study</td></tr>
<tr><td>LO1</td><td colspan="7">has a knowledge of work principles of basis transceivers structures;</td><td colspan="2"></td></tr>
<tr><td>LO2</td><td colspan="7">has a knowledge of principles of electroacoustic elements;</td><td colspan="2"></td></tr>
<tr><td>LO3</td><td colspan="7">has some skills of the measurement methods of radio receiver blocks;</td><td colspan="2"></td></tr>
<tr><td>LO4</td><td colspan="7">has some skills of the measurement methods of electroacoustic elements.</td><td colspan="2"></td></tr>
<tr><td>LO5</td><td colspan="7"></td><td colspan="2"></td></tr>
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LO6		
LO7		
LO8		
Symbol of learning outcome	Methods of assessing the learning outcomes	Type of tuition during which the outcome is assessed
LO1	evaluating the student's reports and preparation for the classes	LC
LO2	evaluating the student's reports and preparation for the classes , tests on lecture content	L, LC
LO3	evaluating the student's reports, tests on lecture content	L, LC, SW
LO4	evaluating the student's reports, tests on lecture content	L, LC. SW
LO5		
LO6		

Student workload (in hours)		No. of hours
Calculation	lecture attendance	30
	preparation for and participation in exams/tests	30
	participation in laboratory classes	30
	participation in laboratory classes	15
	preparation for laboratory reports	30
	TOTAL:	135

Quantitative indicators	HOURS	No. of ECTS credits
Student workload – activities that require direct teacher participation	60	2
Student workload – practical activities	60	2

Basic references	1. Coleman C.: An introduction to radio frequency engineering. Cambridge University Press, 2004. 2. Egan W. F.: Practical RF system design. J. Wiley & Sons, 2003. 3. Quizheng Gu: RF system design of transceivers for wireless communications. Springer, 2006. 4. Lozano-Nieto A.: RFID design fundamentals and applications. CRC Press, 2010. 5. Glen B.: Electroacoustic devices: microphones and loudspeakers. Focal Press, 2010.
Supplementary references	1. Sorrentino R., Bianchi G.: Microwave and RF engineering. Wiley, 2010. 2. Whitaker J. C.:The RF transmission systems handbook. CRC Press, 2002.

Organisational unit conducting the course	Department of Photonics, Electronics and Light Technique	Date of issuing the programme
Author of the programme	Maciej Sadowski, Ph. D. Eng.	13.02.2020

L – lecture, C – classes, LC – laboratory classes, P – project, SW – specialization workshop, FW - field work, S – seminar