RĪGAS TEHNISKĀ UNIVERSITĀTE

RTU Course "Electrical Engineering and Electronics"

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General data

Code	EEE226
Course title	Electrical Engineering and Electronics
Course status in the programme	Compulsory/Courses of Limited Choice
Course level	Undergraduate Studies
Course type	Academic
Field of study	Power and Electrical Engineering
Responsible instructor	Ņikita Nadežņikovs
Academic staff	Vladimirs Hramcovs Vladimirs Ņikišins Genadijs Zaļeskis Aigars Vītols Vairis Janovskis Ludmila Lavrinoviča Andrejs Podgornovs
Volume of the course: parts and credits points	1 part, 2.0 Credit Points, 3.0 ECTS credits
Language of instruction	LV
Annotation	Development of electric circuits and understanding of circuits diagrams. Elements of electric circuits, differential equations. Three-phase alternating current systems. Transformers. DC and AC electric machines, principles of their operation. Semiconductor devices. Rectifiers. Elements of digital technique. Microprocessors.
Goals and objectives of the course in terms of competences and skills	Introduction to electrical engineering and electronics elements and their work in the electrical equipment and electrical installations. Introduction of electric circuit calculation methods and praktical experience in working with electric measuring instruments, resistors, coils, capacitors, semiconductor equipment, etc. Introduction to issues and problems of electricity production and use.
Recommended literature	1. Nadežņikovs Ņ. Elektrotehnika un elektronika. Prezentācijas materiāli. -R.: RTU, http://omega.rtu.lv/etp, 2008. 2. Priednieks Ē. Elektriskās ķēdes un to vienādojumi. - R.: RTU Izdevniecība, 2002. 3. Priednieks Ē. Elektriskās mašīnas elektrotehnikas kursā. - R.: RTU Izdevniecība, 1992. 4. Zītars U. Elektronikas pamati. - R.: RTU Izdevniecība, 2002. 5. Zolbergs J. Vispārīgā elektrotehnika. - R.: Zvaigzne, 1974. 6. Elektrotehnikas un elektronikas laboratorijas darbi.- R.: RTU Izdevniecība, 1999. 7. Grafoanalītisko darbu uzdevumi elektrotehnikā. - R.: RTU izdevniecība, 1990.
Course prerequisites	Electricity and magnetism, higher math. department: differential equations, complex numbers methods, vector algebra

Course outline

Theme	Hours
Direct current circuits	4
Alternating current circuits elements	2
Single phase circuits series	4
Branch single phase circuits	4
Transition processes in the elektrical circuits	4
Three phase circuits	2
Elekctrical machines	4
Electron devices	8

Learning outcomes and assessment

Learning outcomes	Assessment methods

Study subject structure

Part	CP	Hours per Week			Tests		
		Lectures	Practical	Lab.	Test	Exam	Work

1.	2.0	1.0	0.0	1.0		*	