Rīgas Tehniskā universitāte 13.12.2025 21:04



RTU Course "Power Electronics Equipment"

33000 Faculty of Computer Science, Information Technology and Energy

General data

Code	REA402
Course title	Power Electronics Equipment
Course status in the programme	Compulsory/Courses of Limited Choice
Responsible instructor	Dmitrijs Pikuļins
Volume of the course: parts and credits points	1 part, 3.0 credits
Language of instruction	LV
Annotation	Primary and secondary energy sources. Secondary power supply: rectification, filtering and stabilization. Linear and switch mode power supply. Compensation type linear power supply. Low output supply. Buck and boost converters.
Goals and objectives of the course in terms of competences and skills	The goal of the course is to acquire theoretical knowledge to understand modern electronic power supply tasks and practical skills to solve them. To be able to analyze power supply circuits. To conduct experiments, analyze results and make conclusions.
Structure and tasks of independent studies	Independent reading and research of study materials. Providing theoretical rationale for each laboratory. Processing of the results and defence.
Recommended literature	Obligātā/Obligatory: 1. Vainovskis, E. Pusvadītāju radioelektronika. Rīga: Zvaigzne, 1985. 210 lpp. 2. Mohan, N., Undeland, T.M., Robbins, W.P. Power electronics. Converters, applications, and design. J.Wiley & Sons, 2003. 802 p. 3. Mikroelektronikas komponentes un pamatshēmas. M.Frohn, W.Oberthür, H-J.Siedler, M.Wiemer, P.Zastrow. VPIC izdevniecība, 2003. 512 lpp. Papildu/Additional: 1. Браун, М. Источники питания. Расчет и конструирование. Киев: МК-Пресс, 2005. 288 с. 2. Фолкенберри, Л.М. Справочное пособие по ремонту электрических и электронных систем. Москва: Энергоатомиздат, 1989. 416 с. 3. Семенов, Б.Ю. Силовая электроника: от простого к сложному. Москва: СОЛОН-Пресс, 2005. 416 с. 4. С.Рама Редди. Основы силовой электроники. Москва: Техносфера, 2006. 288 с.
Course prerequisites	RRE102 Electricity and Magnetism AND REA204 Electron Devices

Course contents

Content		Full- and part-time intramural studies		Part time extramural studies	
		Contact Hours	Indep. work	Contact Hours	Indep. work
		2	0	0	0
		2	0	0	0
		2	0	0	0
		2	0	0	0
		2	0	0	0
		2	0	0	0
		2	0	0	0
		2	0	0	0
		2	0	0	0
		2	0	0	0
		2	0	0	0
		2	0	0	0
		2	0	0	0
		2	0	0	0
		2	0	0	0
		2	0	0	0
	Total:	32	0	0	0

Learning outcomes and assessment

Learning outcomes	Assessment methods		

Part	СР	Hours		Tests			
		Lectures	Practical	Lab.	Test	Exam	Work
1.	3.0	1.5	0.0	0.5		*	