

RTU Course "Research Seminars in the Field of Telecommunications"

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General data

Code	RDE705
Course title	Research Seminars in the Field of Telecommunications
Course status in the programme	Compulsory/Courses of Limited Choice; Courses of Free Choice
Responsible instructor	Vjačeslavs Bobrovs
Academic staff	Sandis Spolītis Laura Skladova
Volume of the course: parts and credits points	2 parts, 4.0 Credit Points, 6.0 ECTS credits
Language of instruction	LV, EN
Annotation	The proper scientific and systematic approach for reporting and presenting obtained results is one of the fundamental skills for telecommunication engineers, especially when reporting new technologies and solutions. Therefore, the study course focuses on promising fields in telecommunications and the latest updates, latest data transmission solutions, traffic analysis, and signal quality evaluation methods in data transmission systems. After the study course is taken, students will be able to theoretically, analytically, and experimentally prepare the results to reach the goal and cover the bachelor thesis topic. The study course will provide bachelor students with the opportunity to test the results by presenting them with the possible publication.
Goals and objectives of the course in terms of competences and skills	The study course aims to give the necessary information and support to plan and realize the bachelor thesis. The tasks of the study course: <ul style="list-style-type: none"> • to introduce with the organization and implementation of the bachelor work development; • to introduce with the requirements of the bachelor thesis from the industry; • to develop the ability to create and evaluate the realization steps, analyse the obtained results and ensure the logical structure of the bachelor thesis; • to improve and develop the presentation requirements and the necessary skills in the bachelor thesis work presenting.
Structure and tasks of independent studies	Independent work is organized as studying, analysing, and presenting obtained scientific literature regarding bachelor thesis topic.
Recommended literature	Obligātā/Obligatory: 1.K. Morgan. "Technical Writing Process" Better On Paper Publication, 2015. - 247 p. 2.K. Van Laan "The Insider's Guide to Technical Writing", XML Press, 2012. – 346 p. 3. Supe, A., Olonkins, S., Udaļčovs, A., Ģeģere, L., Mūrnieks, R., Prigunovs, D., Senkāns, U., Grube, J., Elsts, E., Spolītis, S., Ozoliņš, O., Bobrovs, V. Cladding-Pumped Erbium/Ytterbium Co-Doped Fiber Amplifier for C-Band Operation in Optical Networks. Applied Sciences, 2021, Vol. 11, No. 4 4. Supe, A., Zaķis, K., Ģeģere, L., Redka, D., Poriņš, J., Spolītis, S., Bobrovs, V. Raman Assisted Fiber Optical Parametric Amplifier for S-Band Multichannel Transmission System. Fibers, 2021, Vol. 9, No. 2, pp.1-11. 5. Salgals, T., Alnis, J., Mūrnieks, R., Brice, I., Poriņš, J., Andrianov, A., Anashkina, E., Spolītis, S., Bobrovs, V. Demonstration of a Fiber Optical Communication System Employing a Silica Microsphere-Based OFC Source. Optics Express, 2021, Vol. 29, No. 7, pp.10903-10913. Papildu/Additional: 1.N. Duarte "Resonate: Present Visual Stories that Transform Audiences", Wiley, 2010. – 248 p. 2.C. Gallo "The Presentation Secrets of Steve Jobs", McGraw-Hill Education, 2009. – 272 p. Citi informācijas avoti/Other sources of information: 1. https://www.itu.int/en/ITU-T/publications/Pages/recs.aspx 2. https://www.etsi.org/ 3. https://ieeexplore-ieee-org.resursi.rtu.lv/Xplore/home.jsp 4. https://www.osapublishing.org/jocn/home.cfm 5. https://www.sciencemag.org/careers/2016/03/how-seriously-read-scientific-paper 6. https://www.gsma.com/ 7. https://www.fiercetelecom.com/ 8. https://searchnetworking.techtarget.com/
Course prerequisites	Telecommunication systems and their realization.

Course contents

Content	Full- and part-time intramural studies		Part time extramural studies	
	Contact Hours	Indep. work	Contact Hours	Indep. work
Writing and realization of bachelor thesis. Analysis of specific examples.	10	10	0	0
Available scientific equipment for bachelor thesis. Specific examples from scientific laboratories.	10	10	0	0
Presentations given by leading experts from telecommunications industry. Different examples of bachelor thesis. Discussion.	20	20	0	0
Realization steps of bachelor thesis. Discussion about the importance of presentation and presentation skills.	10	10	0	0

Logical and structural definition of the bachelor thesis goal and necessary tasks.	20	20	0	0
The definition of bachelor thesis topic, presentation of the content and discussion.	10	10	0	0
Total:	80	80	0	0

Learning outcomes and assessment

Learning outcomes	Assessment methods
Understands the planning of the thesis and propose solutions.	Tests, practical works, exam. Criteria: is able to analyse different examples and distinguish good planning from bad.
Is able to evaluate the available scientific equipment as splicing machines, reflectometers, optical fibres, optical fibre connections, simulation programs, measuring equipment to realize the bachelor thesis.	Tests, practical works, exam. Criteria: students know the available laboratory equipment for bachelor thesis.
Is able to evaluate possible realization in Telecommunications Institute and define the goal of the thesis.	Practical works, exam. Criteria: students are able to discuss topical questions freely in telecommunication field.
Can prepare the presentation about the results obtained and analysed in the bachelor thesis.	Practical works, exam. Criteria: students get marks for the preparation of the presentation.
Is able to work with audience and deliver precisely the main idea of the obtained results to the audience.	Practical works, exam. Criteria: students get marks for the giving of the presentation.

Evaluation criteria of study results

Criterion	%
Tests	25
Practical works	25
Exam	50
Total:	100

Study subject structure

Part	CP	Hours per Week			Tests			Tests (free choice)		
		Lectures	Practical	Lab.	Test	Exam	Work	Test	Exam	Work
1.	2.0	1.0	1.0	0.0		*			*	
2.	2.0	1.0	1.0	0.0		*			*	