



**RTU Course "Master Thesis"**  
**15016 Siltumenerģētisko sistēmu katedra**

**General data**

Code	MSE002
Course title	Master Thesis
Course status in the programme	Graduation Test
Course level	Post-graduate Studies
Course type	Professional
Responsible instructor	Jaundālders Sigurds
Academic staff	Turlajs Daniels
Volume of the course: parts and credits points	1 part, 20.0 Credit Points, 30.0 ECTS credits
Language of instruction	LV, EN, RU, DE
Possibility of distance learning	Not planned
Abstract	The Master Thesis is completed in the Syllabus Heat Power and Thermal Engineering that goes in power industry, heat power branch. The papers are worked out on topical problems and a wide variety of topics: heat production, diversification of fuels, energy efficiency, district heating, thermal treatment of materials, drying, low-potential heat utilization, with heat pumps, for example, Organic Rankine Cycle (ORC) units use, etc. Every topic covers world experience, experiments on existing and created units are done, technical processes and apparatus are designed, produced, tested.
Goals and objectives of the course in terms of competences and skills	The aim of the work is to enhance interest of master program students in research and pedagogical work in the current branches of heat power industry, as well as to develop the ability to provide individual and original solutions of problems, technological processes, design of units and apparatus.
Recommended literature	<ol style="list-style-type: none"> <li>1. LR Enerģētikas likums</li> <li>2. LR Atjaunojamo energoresursu enerģijas likums</li> <li>3. Visi uz enerģētiku attiecināmie pasaules, ES, Latvijas: likumi direktīvas, noteikumi, standarti.</li> <li>4. Pasaules Enerģētikas Padomes (WEC) izdotie materiāli, t.sk. konferenču, sapulču, semināru materiāli.</li> <li>5. RTU zinātniško rakstu krājumi (kā arī citu nozares konferenču materiāli).</li> <li>6. Barkans J., Žalostība D. On the Global Climate Change. World Energy Council, RTU Publishing House, R.:2010.</li> <li>7. Periodiskais izdevums „Enerģētika un Pasaule”</li> <li>8. Periodiskais izdevums „Enerģētika un automatizācija”</li> <li>9. RTU un katedras metodiskie norādījumi galā pārbaudījuma darbu noformēšanai.</li> </ol>

**Learning outcomes and assessment**

Learning outcomes	Assessment methods
The ability to analyze scientific, research and technical literature sources and create new ideas.	A positive evaluation for the analysis and conclusions drawn from scientific, research, technical literature sources is received.
Acquired research calculation methods and is able to use them to solve necessary problems.	A positive evaluation on the understanding of research methods is received.
Understanding of modern technologies and ability to use them in practice.	A positive evaluation on the understanding of heat production, distribution and use technologies is received.
Ability to complete calculations and work out drafts with the help of appropriate software.	A positive evaluation on the ability to use calculation, design and industrial software is received.
Ability to present and defend worked out materials and results.	Has proved the ability to present and defend worked out materials and results.

**Study subject structure**

Part	CP	ECTS	Hours per Week			Tests		
			Lectures	Practical	Lab.	Test	Exam	Work
1.	20.0	30.0	0.0	0.0	0.0			*