<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits (ECTS)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MRA322</td>
<td>Electronic Equipment of Production Automation</td>
<td>3.00 CP (4.5 ECTS)</td>
<td>Functional equipment of discrete electronic automation. Methods and equipment of measuring physical parameters. Evolution of information signals and their processing. Schematics of control systems.</td>
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<tr>
<td>MSE201</td>
<td>Heat Study</td>
<td>2.00 CP (3.0 ECTS)</td>
<td>Subject gives an overview of the basic questions about liquid and gas flows and the most sufficient calculation model choice. Different kinds of flow are viewed and various processes in nature and machine industry fluid circuits are explained. Subject explains how real fluid circuits work. Mostly pneumatic and hydraulic circuits for movement and force generating are overviewed. Components of these circuits are analyzed and properties of those components are viewed. Parameters and calculation principles of hydraulic circuits are shown. Hydraulic circuits for movement generation are analyzed.</td>
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MASTER COURSES

MSE535 Non-Standard Sources of Energy (graduate)
3.00 CP (4.5 ECTS)
The subject gives basic knowledge in matters of non-standard and alternative energy sources, sustainable development theory, legislative acts and strategies on different levels that support and promote use of such energy sources and the modernization of utilization technologies. Huge attention is given to energy sources that have been used already for several centuries – solar, wind, running water (oceans, seas, rivers, tidal and ebb energy), biomass. The potential and the level of the utilization technology of every source is carefully evaluated according to technical, economic, environmental aspects. Emphasis is put on efficiency of energy conversion and total profitability. From the same aspects household and industrial waste, sludge from water treatment plants is considered. Interest is also built towards nuclear energy and hydrogen technologies. All sources are evaluated on the level of EU and the Republic of Latvia development plans.

MSE541 Theory of Boundary Layer (graduate)
4.00 CP (6.0 ECTS)

MRA253 Basics of Technical Design (graduate)
2.00 CP (3.0 ECTS)

MSE432 Thermodynamics and Gas Dynamics (graduate)
3.00 CP (4.5 ECTS)
The subject covers different thermodynamic systems and their characteristics. Energy transition types. Simple and complicated thermodynamic systems.

MMP535 Fracture Theory (graduate)
3.00 CP (4.5 ECTS)

MMP510 Experimental Mechanics and Technical Diagnostics (graduate)
4.00 CP (6.0 ECTS)