Digital Systems and Design

Code: ELEC3057
Extent: 20-25 credits
Language: English
Teacher in charge: Stephan Sigg
Administrative contact: Emma Perilä

Target group: All bachelor’s students with sufficient prerequisite knowledge. Not for Digital Systems and Design major students.

Application procedure: Open for all students of Aalto University

Quotas and restrictions: No quotas.

Prerequisites: Basic skills in programming (e.g. CS-A1111/CS-A1113 Basics in Programming Y1 or CS-A1110 Programming 1), and 1st year math courses for engineers or equivalent knowledge. A basic command of python programming language or the ability to adopt it independently is required. Students are requested to check the prerequisites of the courses before signing up.

Content and structure of the minor

<table>
<thead>
<tr>
<th>Code</th>
<th>Name</th>
<th>ECTS</th>
<th>Period</th>
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<tbody>
<tr>
<td></td>
<td>Compulsory course:</td>
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<tr>
<td>ELEC-A7200</td>
<td>Signals and Systems*</td>
<td>5</td>
<td>I-II</td>
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<td>Optional courses. Choose 15-20 cr:</td>
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<tr>
<td>ELEC-A7100</td>
<td>C-programming*</td>
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<td>III-V</td>
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<tr>
<td>ELEC-C9610</td>
<td>Basics in Electronics*</td>
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<td>I-II</td>
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<tr>
<td>ELECA5240</td>
<td>Computer Lab in Digital Signal Processing Basics</td>
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<td>I-II</td>
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<tr>
<td>ELEC-A7151</td>
<td>Object oriented programming with C++*</td>
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<tr>
<td>ELECC9801</td>
<td>Design Thinking and Electronic Prototyping</td>
<td>5</td>
<td>I-II</td>
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<tr>
<td>ELEC-C7420</td>
<td>Basic principles in Networking*</td>
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<td>III-IV</td>
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<tr>
<td>ELECC9600</td>
<td>Electronic circuits*</td>
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<td>IV-V</td>
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<tr>
<td>ELECC9810</td>
<td>Introduction to Estimation, Detection and Learning</td>
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<td>III-IV</td>
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<tr>
<td>ELECC8201</td>
<td>Control and Automation*</td>
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<td>III-IV</td>
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<tr>
<td>ELEC-E8001</td>
<td>Embedded Real-Time Systems</td>
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<td>I-II</td>
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<tr>
<td>ELECC9410</td>
<td>Photonics and optical communications</td>
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<td>I-II</td>
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</tbody>
</table>

* Students that have studied other courses with identical or similar content in their studies are required to choose other optional courses.