<table>
<tr><td>Title of Course</td><td colspan="3">Computer System Architecture</td></tr>
<tr><td>Semester</td><td colspan="3">Spring</td></tr>
<tr><td rowspan="2">Teaching Hours per Course:</td><td>Total</td><td>- Lectures:</td><td>- Tutorials:</td></tr>
<tr><td>45</td><td>15</td><td>30</td></tr>
<tr><td>ECTS Credits</td><td colspan="3">4</td></tr>
<tr><td colspan="4">The content of education</td></tr>
<tr><td>Aims of Course</td><td colspan="3">The aim of the course is to present the theoretical foundations of digital technology and devices used for processing and storing information. The most important components of a computer, peripheral devices and issues related to communication between these elements are discussed. During practical classes, students will learn about issues related to the design of logical circuits and assembly programming.</td></tr>
<tr><td>Program</td><td colspan="3">Lectures:
• Evolutions of architectures
• Processor - basic functional blocks and operation
• Processor (control unit, microcode, operating modes)
• Techniques for increasing processor performance
• Modern processor architectures and instruction sets
• CISC, x86
• RISC, AVR, ARM
• Virtualization
• Parallel processing

Tutorials:
• A very simple computer model, its machine language and assembler
• Boolean algebra - basic definitions, properties
• Boolean algebra and logical gates
Fundamentals of digital circuit design (including Karnaugh maps)</td></tr>
<tr><td>Conditions of completion</td><td colspan="3">Lectures: test with closed questions; +1 for correct answer, -1 for wrong answer, 0 for leaving question unanswered (min. -N points, max. +N points). Open-ended questions are also possible, scored depending on the level of difficulty of the question (min. 0 points, max. M points).
> 86% of N+M: A
> 72% of N+M: B
> 58% of N+M: C
> 44% of N+M: D
>= 30% of N+M: E
< 30% F

Tutorials:
Two written test with open problems of different type to solve. Positive mark (A-E) is required for both of them.

Final mark: average grades from lectures and tutorials (positive mark from A to E is required for both of them).</td></tr>
<tr><td>Teacher</td><td colspan="3">PhD. Piotr Fulmański</td></tr>
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