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No. crt.	Department	Subject	Requirements	Description	Project Start	Project End	No. of students/project	h/day	Test required	Diploma Project Type (master or bachelor)
1	ADAS	Branch Tree Generator for C Code	<ul style="list-style-type: none"> <li>Automation and Computer Science Faculty;</li> <li>C programming;</li> <li>Compiling techniques.</li> </ul>	Realization of a code parser that analyzes C code and creates a branch tree for each function. Based on the branch tree, a set of testcases is then generated for each function to cover all possible execution pathes.	Flexible	Flexible	1	4/6/8	C programming	Bachelor
2	ADAS	Self-driving Robot Car Based on Webcam	<ul style="list-style-type: none"> <li>Automation and Computer Science Faculty;</li> <li>C programming;</li> <li>Embedded Linux programming;</li> <li>Image processing algorithms.</li> </ul>	Realization of self-driving algorithms for a robot car based on visual recognition of the driving path. The algorithms will run on a Raspberry PI and will control a four-wheel-drive robot car chassis. Visual information of the driving path will be aquired via a webcam connected to the Raspbery module.	Flexible	Flexible	2	4/6/8	C programming, Microntrollers	Bachelor/ Master
3	CEP	SMT OEE (overall equipment efficiency) improvement	<ul style="list-style-type: none"> <li>Technical Faculty;</li> <li>Good English level;</li> <li>Good knowledge of Microsoft Office Package (Power Point and Excel).</li> </ul>	Monitoring the SMT lines performance and collecting data for identifying the main detractors. Define the corrective action together with the project team. Increasing the SMT lines output, by reducing the cycle time (always placement to be bottleneck).	January 2018	July 2018	1	4/6/8	n/a	Bachelor/ Master
4	IBS	Redesign of I/O Aquisition Board	<ul style="list-style-type: none"> <li>Automation and Computer Science Faculty;</li> <li>Electronics and Telecommunication Engineering Faculty;</li> <li>Microcontrollers;</li> <li>Soldering, drilling;</li> <li>Schematic and PCB design (Eagle);</li> <li>Mechanical design.</li> </ul>	We currently have an old I/O aquisition board. We want to upgrade this board at HW level: - Usage of standard development board (e.g. Atmel Arm V71Q); - Design of digital (TTL levels) aquisition; - Design of analog aquisition; - Design of DAC signal generation; - Design of TTL signal generation; - Box and packaging concept.	January 2018	July 2018	1	6/8	Microcontrollers, HW Design, Schematic/ PCB Design	Bachelor
5	IBS	Redesign of I/O Aquisition Board	<ul style="list-style-type: none"> <li>Automation and Computer Science Faculty;</li> <li>Electronics and Telecommunication Engineering Faculty;</li> <li>C language (C++ optional);</li> <li>Microcontrollers;</li> <li>Schematic and PCB reading/ interpretation (Eagle);</li> </ul>	We currently have an old I/O aquisition board. We want to upgrade this board at SW level (depends on HW level upgrade); - Usage of standard development board (e.g. Atmel Arm V71Q); - Usage of Atmel core SW library; - Portation of CAN software; - Portation of SPI, Digital I/O and Signal generation SW.	January 2018	July 2018	1	6/8	C programming, Microcontrollers, Communication SW (CAN/ LIN/ UART)	Bachelor
6	IBS	Logic Analyzer HW Multiplexing	<ul style="list-style-type: none"> <li>Automation and Computer Science Faculty;</li> <li>Electronics and Telecommunication Engineering Faculty;</li> <li>Digital design, signal aquisition;</li> <li>Soldering, drilling;</li> <li>Schematic and PCB reading/ interpretation (Eagle);</li> <li>Mechanical design.</li> </ul>	We currently have an Logic Analyzer 8/16 channels digital signals We need to have more inputs on the same Logic Analyzer unit using digital signal multiplexing.	January 2018	July 2018	1	6/8	HW design, Schematic/ PCB design	Bachelor

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7	I CV&AM	eHorizon Cutting-edge Automated Test Console	<ul style="list-style-type: none"> <li>Automation and Computer Science Faculty or Applied Informatics Faculty;</li> <li>Knowledge of GUI would be a plus.</li> </ul>	<p>For state-of-the art eHorizon project (see link) we want to enhance our testing capabilities to include an user friendly console for automated testing of Mobile, W-LAN communication, Ethernet, CAN, UDS, USB interfaces as well as other SW components. Application will be implemented in C++ and QT under Linux OS.</p> <p>Link to eHorizon project:  <a href="https://www.youtube.com/watch?v=1y0KJeEaPa0">https://www.youtube.com/watch?v=1y0KJeEaPa0</a></p>	September 2017	April 2018	1	4/6/8	C++ or Java	Bachelor/ Master
8	I CV&AM	Demonstrator for eHorizon Projects	<ul style="list-style-type: none"> <li>Automation and Computer Science Faculty or Applied Informatics Faculty;</li> </ul>	<p>The eHorizon based projects have a behaviour that needs to be „invisible“ for the driver, for demonstrating the system capabilities a presentation stand that mimics the dynamic behaviour of a real environment is needed for the ECU to present it's full capabilities.</p> <p>This project involves both a data oriented approach, using high level languages for presenting the output, working with various network elements etc. and low level elements needed for generating the dynamic behaviour(eg. working with microcontrollers , controlling stepper motor etc.)</p>	September 2017	April 2018	1	4	C++, Microcontrollers	Bachelor
9	I CV&AM	Wireless Communication Test Tool	<ul style="list-style-type: none"> <li>Technical Faculty;</li> <li>Labview knowledge;</li> <li>C# knowlegde.</li> </ul>	Develop an application written in LabVIEW (or C#) used for testing wireless communications like GSM, 3G etc. for our automotive products.	January 2018	April 2018	1	4	LabVIEW or C#	Bachelor/ Master
10	I CV&AM	Automation of Quality Assurance Status Setting in Diagnostics&Services	<ul style="list-style-type: none"> <li>Technical Faculty;</li> <li>Medium programming skills (C, Excel VBA);</li> <li>Excellent communication skills;</li> <li>Being able to work independently and take initiative.</li> </ul>	<p>The project objective is the creation of an e.g. Excel based tool in order to automatize the reporting of quality assurance activities within a development project.</p> <p>Medium C and Excel VBA know-how are needed in order to gather data information from different files and tools.</p> <p>As our Quality Assurance team member, you will interact independently with 3 worldwide locations in UK, Germany and Romania, therefore your communication and problem solving skills will be thoroughly tested. Also, initiative and attention to detail are required for the day to day activities as well as preparing an accurate reporting mechanism.</p>	September 2017	May/ June 2018	1	6/8	C, C#, C++, VC++	Bachelor
11	I ID	Automatic Test of Diagnostic Package on HeadUp Display projects	<ul style="list-style-type: none"> <li>Automation and Computer Science Faculty or Applied Informatics Faculty;</li> <li>Programming skills;</li> <li>Analytical thinking;</li> <li>uTAS usage (internal tool).</li> </ul>	<p>Diagnostic package is an application part of the HUD2G project. As the package size is middle to big, automatic test are the solution to have less error on deliveries.</p> <p>Automatic test option reduces the testing time, shows errors which might be not observed by human testing due lack of full tests at each delivery.</p> <p>Test case code will be implemented using internally developed uTAS tool: inputs are sent as free telegrams using the CAN bus, responses are also received as free telegrams: results are computed in the uTAS macro functions (tool specific language).</p> <p>The thesis is considered as finished when all test from the module specification are passed, and logged in the text file.</p>	September 2017	December 2018	1	8	n/a	Bachelor

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12	I ID	Universal image generator for Head-up and Secondary display	<ul style="list-style-type: none"> <li>• Electronics and Telecommunications Engineering Faculty;</li> <li>• 3rd year student;</li> <li>• Any ECAD tool (Zuken is preferred);</li> <li>• Digital electronics;</li> <li>• VHDL.</li> </ul>	<p>The goal is to create an image generator that uses computer video card and feeds the HDMI signal to various LVDS inputs.</p> <p>Routing of video signal from HDMI output to the selected video input is done with an FPGA.</p>	October 2017	March 2018	1	2	HW	Bachelor
13	I ID	Aplicatie de testare generica a Microcontrolerelor	<ul style="list-style-type: none"> <li>• Automation and Computer Science Faculty or Applied Informatics Faculty.</li> </ul>	<p>Proiectul presupune implementarea unei aplicatii care contribuie la testarea capabilitatilor perifericelor unui microcontroller. Acestea sunt GPIO, ADC, PWM, Video, PCM, comunicatii (I2C, SPI, CAN, etc.).</p> <p>Aplicatia este centrata in jurul conceptului general de microcontroller.</p>	September 2017	May 2018	2	8	C (optional), Python, C++ or C#	Bachelor/ Master
14	PSS	Continuous Integration for Algorithm and tools development	<ul style="list-style-type: none"> <li>• Automation and Computer Science Faculty or Applied Informatics Faculty;</li> <li>• C;</li> <li>• C++;</li> <li>• Python.</li> </ul>	<p>In algorithm development process there are steps which requires synchronization between the projects and regularly checks of the product maturity and quality. We want to configure a continuous integration server to perform the following jobs:</p> <ul style="list-style-type: none"> <li>• Compilation check;</li> <li>• Tests run;</li> <li>• Regression check;</li> <li>• Performance check;</li> <li>• Internal code metrics check;</li> <li>• other.</li> </ul>	August 2017	October 2017	1	6/8	Algorithm	Bachelor/ Master
15	PSS	Sensor simulation for test environment	<ul style="list-style-type: none"> <li>• Electronics and Telecommunications Engineering Faculty;</li> <li>• Automation and Computer Science Faculty or Applied Informatics Faculty;</li> <li>• Faculty of Physics;</li> <li>• Faculty of Electrotechnics;</li> <li>• Basic C programming language knowledge;</li> <li>• Basic knowledge of embedded systems and microcontrollers;</li> <li>• Good English level.</li> </ul>	<p>Create the simulation files for generating sensor behavior; the files are used by a tool to simulate a real sensor behavior.</p> <p>Daily tasks: requirements understanding, create scripts, review and test scripts.</p> <p>A mentor will support you to stepwise take over own responsibility after an initial training phase which will familiarize you with specific tools.</p>	October 2017	May 2018	2	4/6	C programming, Microcontrollers	Bachelor/ Master
16	P TR	BLDC Motor Control Performance Testing	<ul style="list-style-type: none"> <li>• Electronics and Telecommunications Engineering Faculty;</li> <li>• Automation and Computer Science Faculty or Applied Informatics Faculty;</li> <li>• Electronic components;</li> <li>• Microcontrollers.</li> </ul>	<p>The project consists in studying and understanding of project specification relative to the TCU (Transmission Control Unit) electrical tests, BLDC and DC motor functionality and TCU functionality.</p>	July 2017	June 2018	2	6	Microcontrollers, Hardware	Bachelor/ Master
17	P TR	Design of an Automotive Connector System	<ul style="list-style-type: none"> <li>• Faculty of Mechanics.</li> </ul>	<p>Design of a automotive connector system from requirements to testing.</p>	February 2018	June 2018	1	4	Mechanics	Bachelor/ Master