

No. crt.	Department	Coach responsible	Subject	Requirements	Description	Project Start	Project End	Project's profile	No. of students/ project	h/day	Test required
1	CBS	Hunor Bencsics	Material Flow optimization through the value chain	Faculty, skills, technical knowledge	The task is to analyse and improve the entire material flow from incoming products until the finished product leaves the factory. The focus is to reduce the waste from the entire chain, reduce work in progress products (WIP), optimize raw and finished good inventory, improve turnrate, optimize workload of employees. Work out a concept for Conti Plant Timisoara for optimal flow. Analyse applicability (realistic analysis with pro-s and con-s) of kanban, pull orientation, continuous flow. Work out a substantial , realistic recommendation for implementation.	01.11.2011	6-9 months	Production	1	4 or 6	
2	P TR	Florica Naghiu	Tool for automatic configuration of comunication drivers		The tool shall be able to integrate and configure existing drivers (for example comunication related: CAN, serial interface, Flexray) based on customer interface (shared interface files). It will be studied the opportunity of having AUTOSAR compliant results and also the possibility to reuse existing drivers for other microcontrolers	01.03.2012	15.06.2012	SW	2	8	

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3	CAR FM & ESH	Daniel Zambori	Modern office space management. Work place sharing and flexible office concepts.	Architecture, mechanics or any other faculty with technical design and / or lean concepts design subjects. Mandatory skills: AutoCAD or ArchiCAD (advanced), MS Excel and any image processing software (such as Adobe Photoshop).	The scope of the project is to create a flexible office concept for our new office building in Timisoara. A succesful project will have to adress the followings aspects: a) How can be more people accomodated in less then number parity to avaiible working places? b) Design the optimum furniture layout for support functions, regular employees and test groups employeesc; c) Flexible meeting room design and management models; d) Silent and ergonomic workplace design Practical existing aspects (such as existing furniture type, planned office layout and department distribution) and financial constrains have to be followed in all phases of the project.	01.10.2011	01.07.2012	MD	1	2	Interview and practical test in AutoCAD and MS Excel.
4	FF PSAD	Mihaila Flavius	Production flow optimisation	Managementul in productie si transporturi, Mechanic	How to optimize a production flow based on specific production criteria like Cicle Times, Ergonomy, Equipment dimensions, operator work.	Oct-11	Jul-12	Production	1	6	
5	I IC	Bogdan Zaharie	Automated tests for Multimedia sytems, Car Interface	Computer Science student with C and C# knowledge, shall be willing for programming both C and C#	The student shall write automated tests for multimedia system, based on an internally developed tool; Tests are described in an xml format. He will also need to develop new plugin(s) for the tool, in order to extend the current functionality, using C#. C language knowledge is a must also, because in order to fulfill the project, also C code will need to be developed	Jan-12	Jun-12	SW	1	4	C#, C

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6	I ID	Toth Zoltan/Canciu Paul	Automated Integration test	Faculty, skills, technical knowledge	<p>In the new FIAT project an automated integration test could be implemented in the same way as it is done in GM KI3700 project. To accomplish this, the following should be done: 1. Design and implement a new module that will be part of the SW (the module will be configured as in/active from a define in build options file)</p> <p>The module will be used for measuring the runtime of containers, tasks, interrupts; interrupt latency, used stack bytes, startup timing, ssystem state transitions</p> <p>2. Defining a new CANoe simulation that will run a trace, taken from a FIAT car, and will prompt information for the needed user actions.</p>	01.03.2012	01.06.2012	SW	1	6	C

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7	I ID	Nicusor Bordinc	Graphical HMI configurator	Faculty, skills, technical knowledge	<p>In our daily work a tool that allows configuration of the HMI (Human Machine Interface) is necessary, as this is done manually, by editing XML files. This tool should be an IDE (Integrated Development Environment) which handles XML and PNG/TTF files. Some of the requirements are:</p> <ul style="list-style-type: none"> • Adding/editing graphical elements with a drag & drop interface (like a Visual Studio Windows Forms Designer) • Toolbox for graphical elements: icon, texts, lists, etc • HMI project management (manage all the files of the project: add/remove to project, exclude, etc) • Validating the HMI project (check for the correct syntax, dependencies between files, etc) • Resource view (view the image files, the fonts) • Measurement of the distances between graphic elements 	01.03.2012	01.06.2012	SW	1	6	C test HighLevel (C++)
8	I ID	Ferenc Markus	Mechanical design of a flying display	Faculty of mechanics, ProEngineer or Catia V5, kinematics, general mechanical engineering skills	<p>Mechanical design of an flying display used in automotive industry potentially for primary customers. Develop the mechanism to open/close a cavity for the iPhone and USB connection. Design in ProEngineer the assembly and simulate by animation its functionality. Kinematic calculation of the movement mechanism</p>	01.01.12	2012	MD	1	4	the regular test for ME candidates

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9	I ID	Marius Martinescu & Werner Zanzinger	Mechanical design of a Head up Display	Faculty of mechanics, ProEngineer or Catia V5, kinematics, optical and general mechanical engineering skills	Mechanical design of an head up display used in automotive industry potentially for low cost cars. Develop the optical and mechanical concept for image projection on the windshield. Design in ProEngineer the assembly and simulate by animation it's functionality. Realize the 2D drawings for several components and the customer drawing. Kinematic calculation for the mirrors adjustment and open close device integrated in the dashboard.	01.01.12	2012	MD	2	4	the regular test for ME candidates
10	P ES	Florin Contiu	Improvements for automatic software analysis.	Faculty: Computer Science/ Automatics/ Electronics in terminal year. - C# language programming. - Ability to learn fast new programming languages. - Files manipulation, XML and MySQL database manipulation knowledge will be an advantage	The student will implement improvements in C# for a program to automatically generate a complete report which contains all SW data relevant to determine the integrity of a production SW dump file. For this, the student will have to study industrialization data and find a solution for a simple configuration data to check and analyze dump files for any SW project. The program is able to search for inputs on several drives and get the project configuration from a specific xml file. The program also maintains a MySQL database which contains the production data archive with references for all products. Beside the SW analyze the tool is doing a NVMY analyze report by calling another existing tool.	01.01.2012	30.06.2012	SW	1	4	C++

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11	P ES	Manciu Christian	Install Engine Dyno bench for test purposes	SW know how. Electronics know how. Diesel Engine Systems know how. Mechanical knowlege (basic) Can be 2 students: - one with knowledge on electronics & SW - one with knowledge on thermal engines (Diesel engine systems)	Instalation and start-up of an engine dyno and peripheral equipppment. (ECU, measurement, conditioning). Complete engine of a Diesel car will be available at Politehnica. The engine have to be mounted on a dyno bench for testing purposes. All technical problems: wiring between sensors, ECU, mechanical mounting of engine, conditioning, measurement devices have to be solved in order to start the engine on dyno bench environment. After this phase is accomplished we can start to test different strategies on Diesel engine, tunning, define new strategies to be developed.	01.01.2012	30.06.2012	SW		4 or 8	
12	P ES	KOTLAR Aurelian	Small Engine(1 cylinder MPI) Control Unit	Electronics. Self-motivated, with strong learning abilities. Basics understanding of engine systems. Advanced knowledge of electronics, control systems, software algorithms, C programming language	The base for this project is the Evaluation board for MC33812 – KIT33812ECUEVME. What needs to be done: 1. Create a Load Box for testing the Evaluation Board 2. Generate the Crankshaft and run the Control Software on the Loadbox 3. Adjust parameters for gasoline, air and advance in order to run it on a real 1 cylinder scooter engine 4. Run the Evaluation Board on the scooter Engine	Mar-12	Jun-12	HW	1	6	HW

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13	I BS	Pop Valentin	Test Automatization for Nissan BCM projects	Automation and Computer Science, experince in developing programs using C language. Experince with embedded environments would be a plus. Experice in working with devices like: osciloscop, power supply.	Actual way of performing SW testing within I BS IBC is split in two parts: manual and automatic testing. Goal for this diploma project is to increase the automatic testing in order to decrease the effort for running effectively the test scenarios	Oct-11	Apr-12	SW	1	4 or 6	C, uC, Sw engineering
14	I IC	Pop Valentin	Smart Filter View	Technical faculty, Object-Oriented Programming and Design	Embedded applications (and not only) use log files to record system behavior and help developers investigate problems as they appear. Most of the time a log file is investigated, the information which the developer looks for is a small piece in a large pile. Since the log size is usually very big, looking for the needed information manually is time consuming, therefore filters must be applied to speed up the process	01.03.2012	01.06.2012	SW	1	4	Java or C++.
15	PSAD	Tudor Barbu	Serial multipelxor	Faculty of electronics and telecommunications. Good HW knowledge	For the ACU projects we need to create a HW/SW solution that will work as a serial muultiplexor in order to be able to manage multiple serial devices vie one single serial communication port from the PC. The project will consist in designing and implementing both the HW and the SW interface.	01.10.2011	01.07.2011	HW	1	4	
16	I CV&AM	Iura Boncalo	Ambiental temperature controller	Faculty, skills, technical knowledge: AC/ETC UPT , knowledge in Matlab/Simulink and Visual C#. Basic knoledge in hardware	Project made in Matlab/Simulink and Visual C# that controls the temperature using a fan and heat source. The Low Level Drivers are available and also the hardware parts. The student should develop the Simulink model and a PC application to see and change the behavior in real time.	01.03.2012	01.06.2012	SW	1	4	Matlab/Simulink, C#, Logic

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17	I CV&AM	Milosev Vladimir	Modular Door Locking Unit	Technical university, basic hardware, good C programming skills, microcontroller programming knowledge	Goal of the project is to design a modular door locking unit which will lock one vehicle door and will be able to receive data from the vehicle remote control. The unit must be capable of interconnecting with other identical units to form a complete door locking system. Available equipments are: Freescale HCS08 uC based hardware and door latch actuators.	01.03.2012	01.06.2012	SW	2	4	Embedded C, microcontroller and logic test
18	I CV&AM	Milosev Vladimir	Vehicle Simulation Unit	Technical university, basic hardware/physics knowledge, good C programming skills, microcontroller programming knowledge	Short description: Goal of the project is to design a unit which simulates the functionality of a vehicle engine/gearbox assembly. Available equipments are: a PowerPC microcontroller based development board, Drive/Neutral/Reverse switch, instrument cluster for speed/RPM display, acceleration pedal and a gearbox shaft speed simulation unit.	01.03.2012	01.06.2012	SW	2	4	Embedded C, microcontroller and logic test
19	I BS	Adrian RADU	Generic LF/RF Transmitter and Receiver for Car Key ID.	PC SW Application; Faculty: UPT (Computer Science/ Automatics/ Electronics and Telecommunications); Skills: work as a team, creative, fast learning; Technical knowledge: Visual C#, C	The current thesis shall implement a tool that shall be able to receive and transmit LF and RF data. The concept is to have an external tool controlled by a PC application. Create PC SW Application for controlling the device in Visual C# and for data processing.	01.11.2011	01.06.2012	SW	1	4	C, Microcontrollers
20	I BS	Adrian Stef	Generic LF/RF Transmitter and Receiver for Car Key ID.	HW Device; Faculty: UPT (Computer Science/ Automatics/ Electronics and Telecommunications); Skills: work as a team, creative, fast learning; Technical knowledge: C, Microcontrollers	The current thesis shall implement a tool that shall be able to receive and transmit LF and RF data. The concept is to have an external tool controlled by a PC application. Create External HW device that is able to perform LF/ RF raw data transmission and reception.	01.11.2011	01.06.2012	HW	1	4	C, Microcontrollers, HW

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21	I BS	Cristian SARACIN	Near Field Communication Application for Car Key ID	Faculty: UPT (Computer Science/ Automatics/ Electronics and Telecommunication); Technical knowledge and skills: good embedded devices knowledge, advanced ANSI C programming knowledge, advanced Java programming knowledge.	Develop a system which uses the Near Field Communication (NFC) technology for information exchange between a Car Key ID and a portable device (e.g. Smartphone). The diploma thesis project implies the creation of: a generic NFC application on a embedded device; a generic NFC application on a portable device	01.11.2011	01.06.2012	SW	1	4 or 6 or 8	ANSI C, Java, Microcontrollers
22	PSAD	Pahontu Nicolae	High Speed Data Transmission path for ADAS camera sensors	Electronics, Telecommunication, Computer, Automatics, Electrotehnic	Develop a Data Transmission System which connects an ADAS camera sensor to a remote Electronic Unit situated at 5 meter distance. The system must provide a bandwidth that ensures the transfer of images with 45MHz PixCLK frequency and 12bit/pixel resolution. (Image dimension will be up to 1200 x 720 pixels).	01.11.2011	15.06.2012	HW	1	4h	HW TEST
23	P ES	Boran Dinu	Advanced device for generation and measurement digital signals with communication on SPI	Faculty: Computer or Electronics, Skills: C programming language, Technical knowledge: electronics (read and understand a schematics, base knowledge in microcontrollers), use of measurement devices (oscilloscope, multimeter, etc)	This device is standalone chip (FPGA) that is able to generate PWM signals with programmed timing and measures PWM signals with high resolution(100ns on 24bit). Periode and dutycycle for generated signals are received via SPI from user. The results of measured signals are sent via SPI to the user. Each pin could be programmed via SPI as OUT(for generating) or IN (for measurement).	01.01.2012	01.07.2012		1	6h - 8h	C language and Microcontrollers.

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24	PSAD	Victor Tomescu	Benchmark of IMAP-CAR2 – Parallel processing on multi-core DSP	Student in final year of study at Politehnica University or Informatics University. Knowledge of C programming language. Knowledge of DSP / microcontroller programming	<p>The automotive industry has increased in the last years considering the number of functions being controlled by DSPs and microcontrollers. More and more functions are requested by car manufacturers and this creates a trend of introducing multi core processing. The diploma project consists in benchmarking the power of a DSP developed by Renesas which consists of 64 processing cores. Different algorithms and functions should be created and executed on this processor while execution time is measured (e.g. image filters, checksum calculation). The results should be compared with results from our current DSP and a presentation report shall be prepared.</p> <p>This new DSP is a candidate for the future platform of image processing DSPs for our division. A mentor will be assigned for offering support during the implementation of the project. Development environment and evaluation boards with full documentation are available.</p>	Nov-11	Jun-12		2	4h - 8h	C (or C++) student test and optional ADAS SW test before interview
25	PSAD	Duma Doru Stelian	Smart Trigger Box	a. Faculty, skills, technical knowledge. ETC or AC, final year	<p>The Smart Trigger Box generates a signal with configurable parameters, with the output triggered by an event. The GUI (Grafic User Interface) will be developed using Labview. It has to allow pulse width setting in steps down to 1μs, trigger delay setting, burst setting. First target application: firing interruption testing.</p>	1.10.2011	15.06.2012		1	4h	Labview knowledge

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26	IT	Jibotean Andra & Zsadanyi Silvia	Footprint Optimal design and simulation for high power integrated circuits	Zuken CR5000 basic knowledge. PCB technology. Good knowledge of electrical (analogue and digital) circuits. Good knowledge of English Good knowledge of English	Study of international standards for footprint design. Calculation and creation of CR5000 Footprint (heatsink area). IC's Thermal simulation (heat dissipation) with Mentor FloTherm	1st of March	30th June		1	4h	PCB technology and Layout
27	PSAD	Murgulescu Antonie	Development of cranking applications using the Agilent function generator	Faculty: Automatics and Computer Science or Informatics. Year: terminal. Knowledge: Visual C++ or C# – multiple documents & dialog based user interface design. Basic knowledge is using electrical measurement equipment and power supplies.	In our daily work we try to automate as much as possible the testing process of the Airbag Control Unit. To do this we have created a development framework(CFramework) that eases the access to the HW instruments(eg. Power supply, DMMs, Switching relays ...) and to the configuration and report files. The framework is developed in Visual C 6.0, is modular and can be easily extended to support new features. Our project for Diploma Thesis consists in designing and implementing of an application that is capable to control the Agilent function generator and simulate the cranking waveforms(voltage dropps that appear on the battery lines when the engine starts)	Dec. 2011	June 2012:	SW	1	4h	