Nr. crt.	Title	Description	Technical knowledge required	Tests	Nr. Stud	Coach
1	Design parts of a HUD	Design in Creo some of the following parts as 3D model +2D drawing: • Side wall • Motor holder • Lager • Heat sink / Heat sink assembly • Screen • Mirror (aspherical / folded) / mirror assembly If the Creo knowledge is not available, 1 week is needed for the basic training Creo 4.	PRO E/CREO	MD	2	Versigan Adrian / Toader Delia
2	Java applications to manage XML files	There are some Java applications which either generate reports out of XML files or generate other XML files. Document Object Model(DOM) technology is used. Some updates are necessary to be done.	Java Eclipse, XML, GitHub	Java, C#, C++	1	Baltes Lucian / Guzun Viaceslav
3	Demo Software for Head Up Display	The project aims to create a demo software for a Head Up Display. To achieve this, the original software must be changed or extended so that different functionalities can be activated and displayed (digital speed, navigation indication, etc.) according to a predefined schedule. Additional functionalities have already been implemented (see enumeration below). Also, as part of this project, these functionalities will be extended using the HMI framework.	C programming language - intermediate/advanced C++ programming language - beginner XML configuration - optional	ANSI C, microcontrollers, C++	3	Emil Guran/Magdalena Danaiata/Bianca Popescu
4	Thermal management for automotive products	The student will learn the basis of thermal management, including theoretical knowledge and technological solutions used in the industry. He will have a deep dive in the current thermal management process and solutions at Continental and receive as tasks to investigate a product with a need for active thermal management and propose solutions for this taking in consideration the technological and financial aspect of such a product. Innovative solutions will be researched as well inside the theme.	Mechanics or Hydraulics/Mechanics of fluids	HW, MD	2	Mihail Miron Golu/ Latcau Ruben

Nr. crt.	Title	Description	Technical knowledge required	Tests	Nr. Stud	Coach
5	SW/ Algorithm Test	Perform SW Tests for different modules: Communication (CAN, Ethernet), Diagnosis, Error Handling. Perform Algorithm Tests for different modules: Camera blockage, Unsteady Driving, Head Lamp Assist. You will learn how to use hw equipment, simulation environments, execute tests, interpret test results and write test report.	Mandatory: C/ C++ Optional: microcontrollers	C, micro	10	Amza Cristian
6	Design of system to protect the air flow sensor	To create the design for electronic. The mechanical part is done, and we must add the electronically part for sensor protection. To create the design for electronic. The mechanical part is done, and we must add the electronically part for sensor protection. Responsibility is to design and create the electronically part to read the sensor and to give the commands to the air valve.	electronics or electrotechnics	HW	1	Maxim Daniel
7	Design of device for measurement of springs characteristic	To do the mechanical part for device and to choose the sensors. Responsibility is to design and create the mechanical part, to choose the sensors and to complete calculation of mechanical system. Scope:	mechanical and mechatronic	MD	3	Maxim Daniel
8	Study of rubber dampers in vibration analyses	Development of a method for accurate definition of rubber dampers behavior in vibration analysis. Objectives: • Theoretical study of damping for rubber materials • Method implementation in FEM software (proper material characterization, boundary conditions, etc.) • Result calibration with experimental data (upon availability of data set)	Mechanical vibrations Material science Finite element method	MD	1	Cristian Petrus & Karla Kun

Nr. crt.	Title	Description	Technical knowledge required	Tests	Nr. Stud	Coach
9	Influence of glass fiber on thermoplastic material properties	Plastic materials, though widely used in automotive industry, lack stiffness and mechanical strength. The most common way to improve the mechanical properties of a plastic material is to add fillers, like glass fibers (GF), which improve the structural properties like strength, stiffness and reduce the part shrinkage, but also impart some unwanted conditions and properties in the process/product, like increase in density, decrease in melt flow and increase in brittleness, etc. Some properties depend significantly on the fiber orientation, which in turn depends on flow direction, geometrical feature of the mold and gate positions. Therefore, the project objectives are: - Influence of t GF content on mechanical properties (tensile strength, fatigue, elastic modulus, elongation @ break, impact strength, etc.); - Influence of GF content on thermal properties (thermal expansion	Mechanical	MD	1	Buzdugan Monica
10	Tolerance calculations in C#	For this project you will work together with experienced mechanical engineers to develop a tolerance calculation tool. The tool will be used on a daily basis by the mechanical team using statistical and worst case approach.	electronics or electrotechnics	C#	1	Szecsi Edward
11	Snake (the game)	For this project you will implement the famous game from Nokia 3310: Snake. Using a microcontroller, a display and a lot of fun.	electronics or electrotechnics	C, micro	1	Popescu Florin
12	Create software for automatization of devices	To do the automatization for devices in Labview or programing the microcontrollers. Responsibility is to design and create the SW part, to read the sensors and to give the commands to the devices.	electronics or electrotechnics	C, C++	1	Maxim Daniel

Nr. crt.	Title	Description	Technical knowledge required	Tests	Nr. Stud	Coach
13	Testing and control of BLDC motor.	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.	electronic components, microcontrollers	Micro, HW	2	Mihailescu Adrian
14	Layout design for electrification projects : electric vehicle battery heater , junction box for electric vehicle , switch box etc.	To learn and improve the layout design process for electric vehicle battery heater , junction box for electric vehicle , switch box etc.	Zuken, Pads, Eagle, Mentor etc	HW	1	Birdeanu Mircea
15	Demonstrator for Selective Catalytic Reduction System Demonstrator for electrification projects	To design and build a demonstrator for Selective Catalytic Reduction System. The demonstrator should be relevant in showing the main functionalities of a SCR system in an attractive and meaningful manner. To design and build a demonstrator for electrification projects (battery heater, junction box for electric vehicle etc). The demonstrator should be relevant in showing the main functionalities in an attractive and meaningful manner.	CAD (Creo ,preferred)	MD	2	Birdeanu Mircea
16	Multiplayer Arcade AI challenge	A team of 2-3 students have to do the following: - [As a team] Create a game in which 2 spaceships are facing each other, trying to launch projectiles at each other. The ships are not controlled by players. They have an autonomous moving and shooting algorithm. This game will be created on a cluster instrument. EOL team provides a “space invaders” game from a previous summer practice. - [As individuals] Create their own algorithm for a ship to be used within a “duel” The game follows a specific set of rules defined by the team.	C	C	3	Sanatescu Stefan

Nr. crt.	Title	Description	Technical knowledge required	Tests	Nr. Stud	Coach
17	Automatic testing of an Airbag Control Unit	As a student in Passive Safety Test Group you will learn about Airbag Control Unit, get in contact with the latest test equipment on the market, use SW functions to control complex/Real Time measuring equipment. Inside our team we have several exciting projects open for you: - develop HW & SW tools that enable automatic test activities for the Airbag Control Unit. - develop automatic tests using C# and the preexisting	Good programming skills. Basic electronics & uController know-how	C, C#, HW	2	Murgulescu Antonie
18	Arbitrary waveform generator	Develop HW and SW system capable to import arbitrary wave form parameters via PC and can be used to supply stand-alone the connected automotive sensors in order to test robustness of sensors against voltage drops. (Demo sample already exists, student must understand and upgrade the existing system in order to optimize it)	HW Digital/Analog, Labview, Excel, Measurement Equipment's (Oscilloscope, Voltage Amplifier)	HW, micro	2	Ciucur Radu
19	Metrology for climatic chambers	Scope and usage of climatic chambers in environmental testing - Understand how climatic chambers work - Settings and equipment's particularities - Test profiles used to simulate different Test environments - Simulation of different stress climates in order to Test products reliability - International and OEM standards related to environmental testing on automotive products - Intermediate checks - Verifications - Accuracy measurements	thermal and humidity measurement, basic physics	n/a	1	Arcadie Secu / Boca Adrian
20	Current Measurement Board Schematic and Layout Design	Design a circuit which measures inductively current in the specified range of micro Amps to Amps scale Create a schematic into the specific tool (EAGLE or PADS) Simulate the schematic and review Create the layout design by following the design rules on 2 or more layers Simulate the layout traces for residual inductive, capacitive, resistive parameters Create a BOM with the required parts Review the final design and generate the execution files for PCB population	Spice, Eagle, Mentor Graphics (PADS), Zuken, Electronics Knowledge, PCB	HW	2	Opincariu Adrian

Nr. crt.	Title	Description	Technical knowledge required	Tests	Nr. Stud	Coach
21	WISE Implementation	Implement WISE as master product data management platform in all BU locations and segments. Tasks – WISE KB buildup and update, HTML based community design, measurements and reports creation, process description and modeling, training material update	HTML, basic mechanical design understanding	MD	1	Oana Gainar/ Daniel Muresan
22	Implementation of heat pipes for Radar and Camera projects	Analyze the thermal efficiency of heat pipes and develop an implementation guideline. Include in thermal solution investigation Peltier elements and their respective controllers. Setup experiments, create measurement results and analyze results.	Basic electronics knowledge Electrical measurements techniques. Statistical analysis (basic).	HW, MD	2	Dragan Cristina/ Santa Ioana
23	C Coding and Matlab/Simulink modeling for Heating Ventilation Air Conditioning	Implement, redesign and optimize of existing generic software modules for Heating Ventilation Air Conditioning functionality in Matlab/ Simulink, System Design Automation (SDA) specific toolbox. Coding and testing of the designed modules. Testbench testing on project Engine Control Unit (ECU) The Heating Ventilation Air Conditioning functionality consists in:	• Technical University in the field of Automation, Computer Science, Electronics and Communication. • Knowledge of controlling • Knowledge of Matlab package, especial Simulink • C programming	C, Micro, Matlab	1	Groza Aurelian/Nicu Constantin
24	Vehicle motion determination - modeling in Matlab/Simulink and Auto-Code generation	motion functionality in Matlab/ Simulink System Design Automation (SDA) specific toolbox and generate C code based on the model. The vehicle motion determination functionality consists in: › Acquisition of vehicle speed signal › Vehicle motion acquisition by CAN › Vehicle speed source priority › Vehicle speed calculation	Knowledge of controlling Knowledge of Matlab/Simulink and C programing	C, Micro, Matlab	1	Beredich Adriana/ Nicu Constantin

Nr. crt.	Title	Description	Technical knowledge required	Tests	Nr. Stud	Coach
25	Graphical User Interface Tool for Aggregate Sequences Optimisation	Design and implement a GUI Graphical User Interface Tool to facilitate the module sequencies analysis analysis and optimization inside the aggregegagate. The tools will have an grafical interface similar with PDA RunIn tool, be capable to parse the aggregate on the specification side, also on the SW code and returns: › View of the functions inside the aggregate › The order they are called (manag) › Info about variables, in what functions are created and	Automation and Computers, Electronics and Telecommunications Engineering and Electrical and Power Engineering	Java, C#, C++	1	Lacatusu Mihaela, Nicu Constantin
26	Module SW development for embedded transmission system	Learning the process and performing an industrial SW for automotive products. Requirements analysis, design concept, coding in C language and integration in a complete project.	Good knowledge of microcontrollers and understanding of programming principles	C, micro	1	Traila Raluca, Paunescu Cristian
27	eHorizon enhanced automated test tool	For state-of-the art eHorizon project (see link) we want to enhance our automated testing framework for Mobile, W-LAN, Ethernet, CAN, UDS, USB interfaces as well as other SW components. Application will be implemented in C++ and QT under Linux OS and will implement a client-broker service on TCP over USB to enable us direct interaction with project components mentioned above.	Good C, C++ or Java Knowledge of GUI would be a plus	C, micro, C++	2	Gusa Remus
28	Over-the-Air Update tool	For state-of-the art eHorizon project (see link) we want to enhance our testing capabilities of over-the-air update over Mobile, W-LAN communication, Ethernet interfaces. Application will be implemented in C++ and QT under Linux OS and will implement a MQTT client-broker service to enable us data transfer of different sizes on a protocol then we will define together.	Good C, C++ or Java Knowledge of GUI would be a plus	C, Micro, C++	2	Gusa Remus

Nr. crt.	Title	Description	Technical knowledge required	Tests	Nr. Stud	Coach
29	Create a single MATLAB script with interactive GUI by combining different already available MATLAB scripts (sensor specific) used to evaluate Anechoic Chamber test results.	For each Continental radar type, there is a MATLAB script developed to generate a graphic representation and a Power Point presentation of the measurement results, using raw data excel files from Anechoic Chamber. Scope of the project is to unify these separate scripts, which have running constrains related to MATLAB version and Windows version, under a single script with GUI that allows you to select type of the Radar, Anechoic Chamber location where measurements were	Signal processing theory (Signal modeling, adaptive filtering) would be an advantage	Matlab and hardware	1	Drai Cristina/Samfirescu Constantin
30	Demo Application for an Embedded Linux Platform	Our group is responsible with creating a modern platform that offers various services for our application developers such as: - Bluetooth - Wi-fi - GPS - GSM/3G - Touchscreen - USB Connection	Experience with an OOP language (C++ or Java) Some embedded experience would be a plus Some Linux experience would be a plus	C++ or Java	2	Muresan Dragos
31	Project Dashboard Web Application	Our group is responsible with creating a modern platform that offers various services for our application developers such as: - Bluetooth - Wi-fi - GPS - GSM/3G - Touchscreen - USB Connection	Familiar with an OOP language (C++ or Java) Familiar with a web related scripting language (Javascript, Ruby)	C++ or Java	2	Muresan Dragos
32	Module test with Tessy tool	Based of SW design specification it will be needed to develop test cases for testing SW modules at module level using Tessy tool.	Good knowledge and understanding of C language	ANSI C, microcontrollers	2	Guzun Viaceslav

Nr. crt.	Title	Description	Technical knowledge required	Tests	Nr. Stud	Coach
33	Automation Test Environment for Instrument Clusters	We develop a test environment based on LAbview and Java. The students will work together with some experienced colleagues to implement the environment and use for testing real projects.	LabView	LabView, Java, Matlab	2	Hutuleac Emanuel
34	Redesigned Test Box Interface	Develop and deploy a test interface that commands the relay cards, resistor cards and frequency cards of a redesigned test box.	LabVIEW	LabView	1	Onea Cosmin/Tincu Andrei
35	Machine Learning Algorithm Implementation	Analyze and start implementation of a machine learning algorithm to be used in system testing activities.	LabVIEW or C#	LabVIEW or C#	2	Onea Cosmin/Tincu Andrei
36	ASPICE self-assessment tool	We want to create a self-assessment tool to support our R&D organization in preparation for ASPICE assessments. Tool should contain all BPs/GPs for HIS scope areas. For each BP/GP, a list of expectations is listed so that the BP/GP can be reached with a Fully rating. Each discipline leader that uses the tool for a self-evaluation can select what is the degree of fulfillment for each BP/GP. Based on this, a consolidated output is given	C#	ANSI C, C++,	1	Olteanu Oana/Miclaus Alexandru

Nr. crt.	Title	Description	Technical knowledge required	Tests	Nr. Stud	Coach
37	Adjustable Voltage switching power supply	Project practice achievements: • Schematic electronic components calculation starting from initial project requirements • Schematic realization and check • Eagle two layer layout realization and check • Manual mounting the electronic parts • Functionality tests, output values programing and measurement.	Diode, Bipolar Transistor, MOSFET, OPAMP, 8bit microcontrollers HW and programing language.	HW	2	Gulea Bogdan
38	Programable current sink	Project practice achievements: • Schematic electronic components calculation starting from initial project requirements • Schematic realization and check • Eagle two layer layout realization and check • Manual mounting the electronic parts • Functionality tests, output values programing and measurement.	Diode, Bipolar Transistor, MOSFET, OPAMP, 8bit microcontrollers HW and programing language.	HW	2	Gulea Bogdan
39	Intelligent backlight Design for Head-up Displays LED chains	Project practice achievements: • Schematic electronic components calculation starting from initial project requirements • Schematic realization and check • Eagle two layer layout realization and check • Manual mounting the electronic parts • Functionality tests, output values programing and measurement.	Diode, Bipolar Transistor, MOSFET, OPAMP, 8bit microcontrollers HW and programing language.	HW	2	Gulea Bogdan
40	Fuel low pressure pump control improvement	You will have the chance to learn the basic principles of low pressure pump functionality by developing and improving the data acquisition and control by implementing in C the models developed in Matlab/Simulink. In this project you will learn the development process, technologies and tools used in engine projects. All the process steps, technologies and tools will be used on real	Matlab/ Simulink: basic C : basic / advanced Basics of Automotive, Microcontrollers	C	1	Dumitrascu Constantin, Dragomir Ademona / Ciprian Toma

Nr. crt.	Title	Description	Technical knowledge required	Tests	Nr. Stud	Coach
41	SW development process from design and implementation to testing	Become familiar with the SW development for one of the most complex aggregate in P ES – Injection Realization. This is the control algorithm for Gasoline injector. In this project you will learn the development process, technologies and tools used in engine projects. All the process steps, technologies and tools will be used on real tasks. Scope of the practice is to understand the incremental development, the change and the configuration management and see the needs that are coming from	C languages, Microcontrollers	C	1	Turi Elisabeta / Toma Ciprian
42	eLearning project	Online web platform, which gathers different eLearning materials with different levels of interactivity. The users will have accounts and dedicated dashboards where all the studied materials can be consulted. Also, each user can add new training materials by following specific steps.	Web Development (HTML, CSS, JavaScript), Object Oriented Principles and Concepts, C++ is a plus	C++, C#, Java	2	Giurgiu Adela
43	Support in Development of Audio / Media Infotainment Applications	The IIe department is providing software for Infotainment Systems. For our developments teams, focused on audio and media functionality, we are looking for motivated students to be involved in the development process. The selected candidate will be involved into the real software development process, being in close contact with Project Leader, Software Architects, Developers & Testers in order to get all information needed. Our projects are	Fair knowledge of programming: C, C++ OS: Unix/Linux	ANSI C, C++	3	Petric Ruxandra
44	Development of Automated Testing	The IIe department is providing software for Infotainment Systems. An important step of the software lifecycle is to validate the produced software so it meets the customer requirements, meaning that it will behave according the specifications. While automating as many test scenarios will increase the test coverage, and will decrease the number of problems that are not observed by manual testing. We are using also an automated test platform in order to write test cases.	Fair knowledge of programming: C, C++; scripting Python, C shell OS: Unix/Linux	ANSI C, C++	2	Arpad Simo

Nr. crt.	Title	Description	Technical knowledge required	Tests	Nr. Stud	Coach
45	Flowers recognition as part of an agricultural robot	The project is to implement an application which shall recognize flowers. The design shall be suitable to be executed in an embeded environment (raspberry pi). The first implementation shall run on PC, the followings ones, on both -PC and embedded. Keywords: Machine learning, SVM, neural networks Dataset: https://www.kaggle.com/alxmamaev/flowers-recognition	C++ a must Java, Python nice to have Linux OS knowledge	C++	2	Rotar Dan / Gavrilescu Cristian
46	Automotive Applications for a Customized Embedded Linux Distro	1. Configuration, building, deployment and testing of a custom embedded Linux distribution and related SDK. 2. Creation and validation of Automotive Applications for a custom Linux distribution using specific HW targets and the generated SDK In the first stage of the project, the student will receive guidance on how to build custom Linux Images and SDKs, as well as how to deploy them on different HW targets. In the second part of the project, the student is	C/C++, Linux, serial comm., OSI Would be a plus: RPI boards, SDKs, OpenEmbedded (bitbake), packages and package managers (rpm, deb, ipk), image files, file systems, Continuous	C, IT	2	Girban Gabriel / Gavrilescu Cristian
47	Fixing of large display with adhesive tapes.	The scope of this project is to develop a concept, to design and produce the necessary parts and equipment, for testing a large display fixed with the help of adhesive tapes. The student will have the opportunity to learn the clusters basics, to make CAD design, to get in contact and to see how the sample shop/machines are working. As well the student need to get in contact with adhesive tape supplier and together to choose the best tape for the application. At the end the student can take part at the acquirement	The student should have finished II year of Technical University	MD	1	Stefanut Daniel
48	Instrument Cluster BlueTooth connectivity	In touch with new trends for instrument clusters connectivity requirements, develop Android / IOS based mobile application and embedded software that allows BlueTooth communication between mobile and vehicle instrument cluster. Main tasks: - Get to know the Bluetooth internal communication protocol and what a device needs to implement to allow others to connect via Bluetooth	ANSI C, Embedded systems / Microcontrollers, Mobile App development	ANSI C, Microcontrollers	1	Paunescu Cristian

Nr. crt.	Title	Description	Technical knowledge required	Tests	Nr. Stud	Coach
49	Automated testing of inter-controller communication in an eHorizon body control unit project	Develop a set of automated test cases that cover the features impacted by the communication between the real-time RTOS controller and the Linux controller of an eHorizon body control unit. Main tasks: - Understand the architecture of the dual controller ECU and the features implemented on the real-time controller - Get to know the Linux simulator application that will	ANSI C, Embedded systems / Microcontrollers	ANSI C, Microcontrollers, C#	2	Paunescu Cristian
50	Dynamic graph visualization of the base software architecture in an instrument cluster project	Develop a PC software tool (C#) which generates a graphical overview of the embedded software architecture for an instrument cluster base software project. The tool will use as input configuration files (pseudo language format) of the base software modules. Main tasks: - Understand software architecture of an instrument cluster base software project - Parse input files and store useful information in internal data structures	ANSI C, Embedded systems / Microcontrollers	ANSI C, Microcontrollers, C#	1	Paunescu Cristian
51	Requirements management in IMS	In Powertrain Engine Systems the development is supported by a platform called IMS (Integrated MKS Solution) which is a customized version of MKS platform (Mortice Kern Systems) that contains several tools. One of the tools is IMS Integrity which covers 4 areas of engineering in Engine Systems. One of these 4 areas is Requirements Management. The customer requests must be documented in IMS, analyzed and the information must be decomposed and disseminated to all the impacted architectural elements.	automobile and thermal engine - general information about how they work - it's a plus but not required	n/a	1	Taurescu Sebastian / Popoviciu Felicia
52	EOL Embedded "Winamp"	Create an embedded application that can play a stream of data in MP3 format. The stream of data ("MP3 file", "WAV file", "Raw Data file") can come as: - Data is already available in a RAM space - Data is already available in a FLASH space (more memory available) - Data is streamed over CAN to the application	Embedded C Microcontrollers	Ansi C, microcontrollers	1	Stefan Sanatescu/Daniel Lupu

Nr. crt.	Title	Description	Technical knowledge required	Tests	Nr. Stud	Coach
53	EOL embedded chess game	Create a chess game on one of the active cluster instrument projects that uses a 5inch display or larger. The full game rules must be implemented, it will be 2-player turn based, with 5 inputs (4 arrow keys and a select button). The game should feature a scoreboard and which player needs to move next.	Embedded C Microcontrollers	ANSI C, microcontrollers	1	Stefan Sanatescu/Daniel Lupu
54	Cluster Instruments reprogramming via Ethernet	The scope of the project is to develop an Ethernet protocol able to reprogram Instrument Clusters. Memory devices to be reprogrammed are: - internal flash memory of microcontroller - external SPI serial NOR flash memory The access to memory devices should be based on usage the existing software drivers for every memory device.	Embedded C Microcontrollers	ANSI C, microcontrollers	2	Lupu Daniel
55	Auto-code generation from SDA models for “Engine temperature” (ENTE) aggregate	SDA is a Continental specific tool based on Matlab and Simulink. The student must improve already existing SDA models to have 100% test coverage and to be able to generate code based on the respective models. This means creating test cases in SDA and scaling the models for auto-code generation.	Systems Theory: good Numerical Control Systems: good Low level programming (C, embedded C): good	ANSI C, Matlab	1	Padurean Dorian/Popoviciu Felicia
56	Android and HMI development for connectivity in Instrument Clusters	In our days, a truck it's a network of intelligent devices, controlling different parts of the truck. The instrument cluster communicates with all the other devices and provides information to the driver, being the main interface with the driver. The new trends in Instrument Cluster development for trucks and motorbikes are to connect the cluster with the smartphone and implement, in the instrument cluster side, features like phone calls handling, social	Basic Knowledge of ANSI C Basic Knowledge of C# Logical thinking Knowledge of HMI Development tools, Photoshop or similar tools is an advantage Knowledge of Model Based Development language e.g. Matlab-Simulink is an advantage	ANSI C, C#	3	Cagnea Florin

Nr. crt.	Title	Description	Technical knowledge required	Tests	Nr. Stud	Coach
57	Automated Integration Test for Body Control Units	In our days, a truck it's a network of intelligent devices, controlling different parts of the truck. The Body Controller is the brain that manages important functions in a vehicle, from controlling the lights, wipers or doors, to monitoring the vehicle and reporting errors. After the separate functionalities of a product are implemented, they have to be integrated together and the whole system needs to be tested to assure the correct behavior. We need you to implement a tool for	Basic Knowledge of SW Programming e.g. C Language Logical thinking Knowledge of microcontrollers is an advantage Knowledge of Model Based Development language e.g. Matlab-Simulink is an advantage	ANSI C,	1	Cagnea Florin
58	SW Development for Motorbike Instrument Cluster	In our days, a truck it's a network of intelligent devices, controlling different parts of the truck. The instrument cluster communicates with all the other devices and provides information to the driver, being the main interface with the driver. Model Based Development represent the next generation in SW Programming. Highly complex applications can be created in a visual and natural manner. Design, implementation and testing are done in	Basic Knowledge of SW Programming e.g. C Language Logical thinking Knowledge of microcontrollers is an advantage Knowledge of Model Based Development language e.g. Matlab-Simulink is an advantage	ANSI C, Matlab	2	Cagnea Florin
59	FEA generic	Tools: LeCroy oscilloscope, Test template, IMS, FEA Automated tool The task would be to build up and stand for FEA automatic test . The idea is to gather the knowledge of existing testbenches and optimize the existing program for testing. The task is also to be checked the existing manual tests witch might be automatic. The SW used is Excel based, plus other specific diagnose	electronics	Hardware	1	Mangu Vladut/Zamfira Sorin
60	ASICs SMPS	Tools: LeCroy oscilloscope, Test template, IMS Daily tasks: - Understanding of the requirements and the description of the switching mode power supply modules - Understanding of the ASICs requirements - Support in the testing setups - Support in ASICs power supply testing	electronics	Hardware	1	Botezatu Vasile/Zamfira Sorin

Nr. crt.	Title	Description	Technical knowledge required	Tests	Nr. Stud	Coach
61	Airbag sensors testing bench	~~Tools: LeCroy oscilloscope, Test template, IM3~~ Daily tasks: - Understanding of the requirements and the description of the sensor module module - Understanding of the Sensor requirements - Support in the testing setups - Support in Sensor testing	electronics	Hardware	1	Prodan Alexandru/Zamfira Sorin
62	Global Data Assignment Tool	~~Develop a tool capable to analyze code in order to~~ identify potential problems that could derive from unwanted optimizations introduce by compiler CTC 5.0 (and above) The tool has to be able to identify the beginning and end of a function The tool has to be able to identify assignments of global variables (including assignments in ECM3 RAM check macros) The tool has to be able to identify if the optimization	Programming JAVA, ANSI C: good	ANSI C, Java	1	Moga Doru/Toma Ciprian
63	Design of Adaptive Neural Network with Local Linearized OE Models for L1 Torque Structure using Matlab/Simulink.	Design a Torque Monitoring model based on an adaptive Neural Network with Local Linearized OE structures using Matlab/Simulink based toolboxes (SDA). Adapt the model to the case study project requirements Design the model using the Matlab/Simulink SDA Implement the model using SDA Autocode feature on a real-time system (CPU) Evaluate results	Systems Theory: excellent Systems Identification: excellent Numerical Control Systems: good Signal Processing: good Optimization Techniques: good Programming ANSI C: good	ANSI C, Matlab/Simulink	2	Gelu Ioanas/Toma Ciprian
64	CES CAN Development Boards	~~The result of the project will be a Development Board~~ used for future debugging and investigations of the CAN interface. This Development Board can be used also for in vehicle debugging. Latest CAN chips are considered from the Automotive market. The success of the project is measured by sending a command over the Vector Environment and reading back the same data over Ethernet from the Devkit-MPC5748G. This project is intended to be continued also for a	Students minimum 3rd year HW Knowledge Required: Signal and Systems, Basic Electronics, Automotive Interface Design, CAN protocol overview.	HW, C, Microcontrollers	2	Csaba Tarcean/Tiberiu Molnar

Nr. crt.	Title	Description	Technical knowledge required	Tests	Nr. Stud	Coach
65	Automotive CAN to Ethernet Bridge	The result of the project will be a tool called Continental Engineering Services Integration Tooling – Media Bridge (CESIT-MB2) that can be used to convert data from three separated CAN interfaces to an 100Base-T1 Ethernet standard uplink. It can be used e.g. to interconnect automotive ECU's to Automotive gateways (Automotive GTW) thereby optimizing: harness size and internal CAR architecture.	Students: 2-3 year of study HW Knowledge Required: Signal and Systems, Basic Electronics, Ethernet Design , Basic OSI Model Overview MD Knowledge Required: Catia/Creo knowledge, tolerance calculation, Technical drawing, Manufacturing technologies. SW Knowledge Required: Basic	HW, MD	2	Csaba Tarcean/Tiberiu Molnar
66	Low Power bi-directional DC-DC converter	For balancing series connected Li-po batteries there is a need of a bi-directional 5V DC-to-DC converter. The converter shall operate between 2.5 to 4.5V, with a current of maximum 1A, and an efficiency higher than 70%. To achieve possibility of bi-directional operation, the control of the switch timings should be done by a microcontroller. The microcontroller regulates the direction of the energy flow and receives commands over a RS232 (or USB-to serial) computer interface.	Electronics, Programming, PCB design, Manufacturing	microcontrollers, hardware	2	Kotlar Aurelian
67	Power Line Communication Electronic Control Unit	Create a control unit that activates a power load (2-5A). The communication with the device should be made on the supply line, with the use of two transceivers over the power line. The scope of the project is to demonstrate the feasibility of using the power line to communicate with an Electronic Control Unit. The ECU should be composed of a known development board (e.g. Arduino) on top of which a shield shall be created to contain: Power supply, Transceiver(Yamar	Electronics, Programming, PCB design, Manufacturing	ANSI C, microcontrollers, hardware	2	Kotlar Aurelian
68	Electric Vehicles Charging Monitoring	A device to monitor the charging of the Electric vehicles. The charging monitor should be connected to the vehicle 12V supply line, and be able to record the high voltage battery charging parameters on a SD-card (current, voltage battery, battery temperature, etc). A known microcontroller platform might be used (e.g. Arduino), to connect to the vehicle CAN network and eavesdrop the data related to charging. The data should be logged on the SD-card.	CAN bus communication, CAN messages decoding, Electronics, PCB design, Software (C / Arduino)	microcontrollers, hardware	2	Kotlar Aurelian

Nr. crt.	Title	Description	Technical knowledge required	Tests	Nr. Stud	Coach
69	Multiphase high-power DC-DC converter	Create a design for a high power buck DC to DC converter that can be used for operating loads from the 48V vehicle battery. A 1kW converter is needed to operate a high power load, by slowly increasing the power applied to it. Using a design guide from Texas Instruments (http://www.ti.com/lit/an/slva882/slva882.pdf) create a 4-phase design with an operating frequency below 10kHz. To control the buck converters, an FPGA platform shall be used to generate the clock timings.	Electronics, Programming, PCB design, Manufacturing	microcontrollers, hardware	2	Kotlar Aurelian
70	Mechanical drawings	Support customer projects in creating mechanical drawings in CAD.	Faculty: Mechanics, Mechatronics, Robotics. Specific technical knowledge required: mechanics, German speaker is a plus	mechanics	1	Lazar Dalin / Postaru Camelia
71	Team Assistant	Support team leader in administrative and organizational tasks (meetings, workshops, travelling, customer events, team events, material promotion, recruiting new employees, so on). Can also be responsible for innovating the administrative internal process.	Faculty: student at any university who has an interest in this kind of job. Specific technical knowledge required: Microsoft Office package, English is a must; German language is a plus; French is optional	Language test	1	Postaru Camelia
72	German to English translation	Support customer projects in their documentation. Translating from German to English documentation received from customer and deliver English to German documentation to customer.	German language know how	German Language test	1	Stupar Patricia

Nr. crt.	Title	Description	Technical knowledge required	Tests	Nr. Stud	Coach
73	Library protection for Matlab/Simulink models	Create a library protection that disables the possibility of changing the input and output ports numbering.	Faculty: Automatics and Computer, West University – Informatics. Matlab /Simulink ; German speaker is a plus	Matlab	1	Muntean Ioana
74	Graphical Interface for automatization of SW development	Create a Matlab GUI which allows the user to validate and correct his model against a specific set of rules (model name, block color convention, unique handler for each DD variable), handling libraries, run in MIL and SIL several models or the whole project.	Automatics and Computer, West University – Informatics. OOP, C#, C++, JAVA, Matlab /Simulink ; German speaker is a plus	ANSI C, C++, C#, Java, Matlab	1	Muntean Ioana
75	Project structure & workflow standardization	Create, define and standardize project structure at BU level. Using the IMS/MKS toolchain. The responsibility will be to define and create an application to standardize workflow in customer projects.	Faculty: Automatics and Computer, West University – Informatics, Business development. OOP, C#, C++, JAVA, German speaker is a plus	ANSI C, C++, C#, Java,	1	Oprea Sergiu
76	Test Software Configuration (PCNV) auto-updater	Currently in TSW there are C components which need manual updates to match Autosar Arxml configurations. A Java Emitter Template solution which automatically generates these components would significantly reduce configuration errors and improve team response time for urgent requests.	Faculty: Computer Science/Engineering. Java Basics	Java, ANSI C	1	Cristea Mihai/Dinu Boran

Nr. crt.	Title	Description	Technical knowledge required	Tests	Nr. Stud	Coach
77	Interrupt priority checker / optimizer	This tool will sort the project interrupts, based on some rules in order to improve overall Realtime on the project.The sorting interrupt will be done as: External Communication group, Internal communication group, Time event group1, Time event group1, Time event group	Faculty: Computer, Automation. OOP	C++, C#, Java	1	Dinu Boran/Calin Bireescu
78	GUI for CheckSum tool	A simple GUI (graphical user interface) has to be created for an existing tool which performs check sum computations of code files. The GUI has to be created for getting the needed parameters, export them in XML format and calls the existing executable for actual computation.	OOP, XML	C++, C#, Java	1	Mihai Ionas
79	SPI Buss analyzer	The SPI analyzer system will provide to user a GUI interface that show chronologically evens on the SPI bus and a device that communicate with PC via USB. All SPI characteristics have to be settable but GUI.	CTI / ISE Faculty. C and C# languages, Communication interfaces basics	ANSI C, microcontrollers, C++, C#, Java	1	Dinu Boran / Mihai Ionas
80	Code File Editor	This SW tool have to provide to user the following features: Editing , splitting, merging, adding, creating, checksum of S19/Hex/BIN types file, Multiple view of data : big/little endian, 8/16/32bit,ASCII, Show continues address ranges inside file, Jump to address	CTI / ISE Faculty. C# or Java languages	C++, C#, Java	1	Dinu Boran / Mihai Ionas

Nr. crt.	Title	Description	Technical knowledge required	Tests	Nr. Stud	Coach
81	Generic Diagnosis Test Environment	Define a generic test environment using CAPL in CANoe or Visual Studio that can be used to test Diagnosis in all MFST projects only by configuring the CAN ID's or message names.	Programming	ANSI C, C++	1	Popescu Ionut/ Chedves Ciprian
82	Test Setup for RSSI Electronic Key measurement	You will work with complex test tool environment and stat of the art laboratory measurement tools (e.g. signal generators, oscilloscopes, spectrum analyzer, power supplies) The scope is to create a test setup where to control a generated low frequency field sent to the electronic key, and to evaluate the UHF response from the key You will learn about RF measurement, antennas,	Electronic and RF knowledge are a plus. Basic programming knowledges	Hardware, ANSI C	1	Miclea Razvan/Chedves Ciprian
83	Testing Wireless Power Charging Log Tool	In this diploma project you will test a windows application, used for Wireless Charging Performance testing (performance tests of an multifunction smartphone terminal product in front of top smartphones on the market) called WPC (Wireless Power Charger) Log Tool. You will learn: -how to develop test cases against requirements. -how to run test cases.	Electronics knowledge are a plus. Basic programming knowledges	HW	1	Popescu Ionut/ Chedves Ciprian
84	Custom phone application capable of communicating with computer on WiFi/BT	Develop a phone application capable of give information's related to battery status, phone temperature to a computer using wireless technology: WiFi or Bluetooth. The app shall be able start other apps, activating/ deactivating NFC based on the request received from the computer.	ANSI C, C++, C#,	**ANSI C, C++, C#,**	1	Chedves Ciprian

Nr. crt.	Title	Description	Technical knowledge required	Tests	Nr. Stud	Coach
85	Automation of System Test Cases	Automate (create scripts for) System Test Cases, using Continental Automotive tools and programming solutions. Run and debug the created scripts to ensure a proper and stable operation. You will have the chance to learn about Continental Smart Access products, testing process and equipment.	medium programming skills, basic electronics knowledge	ANSI C, microcontrollers, hardware	2	Pop Emiliana/Chedves Ciprian
86	ECU pinout Automated Testing	The student will be able to understand what Test Automation means, for what it is used and how it is used. The tools used in order to do tests in automated mode will be presented. Learning how to prepare the environment for testing, to develop scripts and to analyze the results will be also purposes of the project.	Electronics knowledge, programming language (C, Python)	ANSI C, microcontrollers, Matlab, hardware	1	Burcu Mirela/Stanescu Mirabela / Bugudan Radu
87	SQMP support	Support for SQMP activities. CPT tool maintenance - this tool provides the possibility to collect information about projects and their components from G30 to G90 of Continental PLC. The web based application enables the user to fill in the information online, save the information and edit it later. The data can be exported to Excel for reporting purposes for different matters.	Strategic Orientation, Quality Orientation, Decision Making, Motivation others, Passion and Commitment		1	Spulbar Anisoara