No.	Responsible	Department	Theme	Type	Short description	Thesis of diploma/bachelor work (max. 3-4)
1	Hajduk	GED-HWP8	**Implementing haptic feedback in consumer electronic devices.**	**DP/BP**	Searching for available solutions. Different solutions - description (prost / const). Choose one of prefered solution, develop/buil/test a prototype. uC programming skills needed)	
2	Kopčík	GED-SDC5	**Porovnanie parametrov C a C++ programov pre embedded systémy**	**DP/BP**	Navrhnúť a realizovať vzorové funkcie a projekty pre porovnanie výpočtovej náročnosti, nárokov na pamäť (ROM/RAM) rovnakých programov naprogramovaných v jazykoch C a C++ pri rôznych stupňoch optimalizácie. Popísať výhody a nevýhody objektového programovacieho jazyka pri použití v embedded systémoch.	
3	Kopčík	GED-SDC5	**Návrh a realizácia dosky testovacieho prípravku**	**DP/BP**	Navrhnúť a realizovať testovací prípravok pre multiplexovanie analógových a digitálnych signálov medzi testovaným a testovacím prípravkom. Vytvoriť program na prijímanie riadiacich správ a vysielanie výsledkov testov. Testovací prípravok bude obsahovať mikrokontrolér PSoC5.	
4	Laškody	GED-SDC5	**Kalmanov filter pre odhad polohy rotora synchrónneho motora**	**DP/BP**	Návrh a simulácia pozorovateľa synchrónnej polohy pre synchrónny stroj. Cieľom práce je navrhnúť pozorovateľa (napr. EKF) synchrónnej polohy synchrónneho stroja. Simuláciou overiť funkčnosť a presnosť pozorovateľa. Experimentálne overiť funkčnosť v embedded systéme.	
5	Pituk	GED-VSC2	**Simulation tool for simulations of "Standby mode Lifetime test" - electronics of home appliances**	**DP/BP**	Creation the first phase of simulation tool: to define milestones and phases, where we will implement real data, which are collected from real measurements to the simulator. To find the best solution for simulation tool. Work with the key factors of real test - Optimalisation and improvement the current test. Target: To keep or increase quality of test (simulation in future) and decrease time of testing.	
6	Šároši	GED-VSS1	**Nelineárna štrukturálna analýza nalisovania remenice na hriadeľ**	**DP/BP**	Vytvorenie MKP modelu a simulácia procesu lisovania remenice na hriadeľ pri zohľadnení tolerancií dielov a návrh lisovacích síl.	

7	Perduľák	GED-SEI1	**Complex system simulations**	**DP/BP**	Creating one complex simulation tool by using currently existing simulation software used for electronic, motors etc. (math-lab, pspice etc.) Create complex simulation system for complete electronic and drive. Priority is to use already owned tools within GED (Global Electronic & Drives system), like for example Mathlab, Ansys, Orcad, Flux, Comsol, etc. (detailed list of sw. tools will be provided). Following fundamental simulation analyzes are performed in GED and should be interconnected: - Electrical circuits (invertors, etc.) - Thermal conditions (design of heatsinks, etc.) - Electromagnetics forces (rotor-stator influence, etc.) - Electro-mechanical stress (bonding etc.) - Structural analyzes (mechanical features, etc.)	1. Overview and compare existing simulation sw.tools used by B/S/H/ 2. Select the best cooperating sw tools (max. 3) to fulfil B/S/H/ requirements 3. Verify results on simple simulation model
8	Guľa	GED-SEI1	**Vytvorenie simulacneho modelu pre motor s axialnym magnetickym tokom**	**DP/BP**	Computer-aided simulation model of electromagnetic curcuit for a axial flux drive with PCB stator, based on available prototypes and demonstration samples.	1. Develop a computer-aided simulation model of electromagnetic curcuit for a axial flux drive with PCB stator. 2. Verify the results of the simulation with measured values of one of the demonstration examples 3. Provide deidealization of input parameters and boundary conditions of the model in order to match the simulated results with the measured state 4. Project the model on at least one other available demonstration samples
9	Spišak	GED-SEI1	**Measuring AC Mains Voltage in (SELV) Separated Extra Low Voltage System**	**SP**	Various electronic circuits/parts in SELV systems of home appliances require AC Mains Voltage under-/over voltage protection and/or information about AC Mains Voltage value for their correct function.	1. Comparing existing solutions of measuring AC Voltage in SELV systems and finding most simple, cost effective solution. 2. Parameters to measure via SELV isolation: AC Mains peak value, RMS value, frequency, zero cross event. 3. Seeking for most cost effective solution to measure at least one of mentioned parameters (i.e. peak value in range of +/- 600 V peak, 5% tolerance). 4. Very low standby power consumption of proposed measuring circuit (<100mW)