Mechatronics and Smart Systems Project

Subject area: Mechanical Engineering

University: TalTech
Level: MA2
Teaching mode: hybrid: some students participate online, other students attend real-life
Instructor(s): Eduard Petlenkov, Andres Eek, Peeter Ellervee, Anton Rassõlkin

Short description

This is a practical project course where a team of students is given a real industry or R&D related task to solve a problem, which is new in the field and have some real impact on industry or science. The work is organized as real teamwork with a team leader, management and guided supervisors. The Project ends with an open public demonstration and discussion seminar of the Project results and presenting a journal paper draft ready for the publication in an engineering journal.

Full description

The project course is meant for the students of Mechatronics, IT, Electronics and close specialties having some relevant skills and knowledge for practical work.
The goals of the course are:
- to give students the opportunity to apply and develop the knowledge they have during previous studies in realization of a practical project to develop skills in the field of mechatronics and project work;
- to give students practical and teamwork experience in collaborating at a real industrial problem analysis, project planning and practical problem solving utilizing respective knowledge in mechatronics, electronics and IT and project management;
- to give students the experience of an interdisciplinary project teamwork with supervision of specialists of related areas;
- to give students an opportunity to implement theoretical knowledge and start working towards real R&D projects;
- to give students an experience in compiling a scientific or engineering paper or Conf. presentation as report of the project.

Learning outcomes

The student:
- is capable to manage and contribute in an engineering team contributing to the common goal;
- can apply the theoretical knowledge he/she has previously acquired during the studies;

- can assess the consequences of his/her decisions and actions in a framework of a technology development project;
- can document his/her work and acquired knowledge and can understand it's importance in a group-project setting;
- knows and is able to implement main techniques and methods used for design and instrumentation of industrial mechatronic systems for various technology applications and main integration and prototyping approaches of the systems.

General information

Contact hours per week:	4 (bi-weekly reviews plus meetings with topic supervisor)
Total workload:	156 hours (in student hours for the whole course)
ECTS credits:	6
Language:	English

Course start date:	30 January 2023
Course end date:	09 June 2023
Add. info about start date:	At the moment the first day of the semester is given as the start date of the course, exact schedule will be made available later.
Weekly teaching day/time:	
Time zone:	CET +1 (Estonia, Israel)
Further information:	It is advisable to contact the course supervisor prior to signing up to the course.

Prerequisites:	The course is intended for Master students in electronics, mechatronics, computer engineering or communication engineering.
Activities and methods:	Seminars, Group work, Self-study
Presence on campus:	Final presentation takes place in June 2023, for which presence on campus is recommended.

Final examination

Form:	Written report and final presentation
Date:	
Location/format:	online + TalTech Tallinn campus (June 2023)
Re-sit possibility:	yes
Transcript available:	end of semester

Add. info/requirements:	Final presentation takes place in Tallinn in June 2023. Presence on campus is recommended.

Registration

To register for this course, follow the registration requirements of your **home university** as specified here: www.euroteq.eu/courses-registration.

Administration

Number of places:	Up to 2 EuroTeQ students per group. A group (up to 4 students total) must include 2 local students. In case there will be several groups, up to 4 EuroTeQ students can participate.
Minimum participants:	At least one group (3-4 students). In case there will be several groups, up to 4 EuroTeQ students can participate.
Internal course code:	UTT0110
Contact:	andres.eek@taltech.ee (Andres Eek, course supervisor)

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