Reg No: TFAE01/20252

Faculty of Health, Science and Technology
Physics

Syllabus

Degree Project for Master of Science in Engineering, Engineering Physics

Course Code:	TFAE01
Course Title:	Degree Project for Master of Science in Engineering, Engineering Physics *Examensarbete för civilingenjörsexamen i teknisk fysik*
Credits:	30
Degree Level:	Master's level
Progressive Specialisation:	Second cycle, contains degree project for Master of Arts/Master of Science (120 credits) (A2E)

Major Field of Study:
TKA (Engineering Physics)

Course Approval
The syllabus was approved by the Faculty of Health, Science and Technology 2025-03-03, and is valid from the Autumn semester 2025 at Karlstad University.

Prerequisites
225 ECTS credits completed in the Master programme in Engineering Physics, or equivalent

Learning Outcomes
The aim of the course is for students to develop and demonstrate the knowledge and skills required for qualified professional work in engineering.

Knowledge and understanding
Upon completion of the course, students should be able to:
- demonstrate knowledge of the scientific basis and proven experience of engineering physics and insight into current research and development, and

- demonstrate in-depth knowledge in their chosen subareas.

Competence and skills
Upon completion of the course, students should be able to:
- demonstrate the ability to identify, formulate, and handle complex problems critically, independently, and creatively, participate in research and development projects, thus contributing to knowledge development,
- demonstrate the ability to plan and use adequate scientific and engineering methods to carry out qualified tasks within given frames, including timeframes,
- demonstrate the ability to integrate knowledge acquired in their studies critically and systematically,
- perform information searches and independently identify relevant information,
- demonstrate the ability to present and discuss their conclusions and the knowledge and arguments on which these are based clearly, both orally and in writing, and
- conform to standard scientific practice in term of structure, formal aspects, and correct referencing in written reports.

Judgement and approach
Upon completion of the course, students should be able to:
- evaluate research with regard to relevant scientific and ethical aspects, and
- evaluate and critically review results obtained in relation to science literature and demonstrate the ability to identify their own need of further knowledge.

Content
The course is carried out in the form of an individual project, supervised by university staff. The degree project gives students the opportunity to acquire in-depth knowledge and skills in a particular area. Students work independently and are responsible for the process and the result. The project is chosen in consultation with the supervisor. The purpose, objective, method, and time plan of the project must be approved by the examiner before the project is begun. In case two students collaborate on a larger project, their individual problem formulations must be clearly stated at the start of the project. The students write and present individual reports. Students are required to act as reviewer and opponent of a another student's project, or equivalent.

Supervision is provided for the duration of the course. Reregistered students are only offered supervision if circumstances permit.

Reading List
See separate document.

Examination
Assessment is based on the following components: problem formulation, implementation, written report, oral presentation, and performance as a opponent. The report is to be written in Swedish or English. If the report is written in English, a title and summary in Swedish must be added.

If students have a decision from Karlstad University entitling them to Targeted Study Support due to a documented disability, the examiner has the right to give such students an adapted examination or to examine them in a different manner.

Grades
One of the grades Distinction (VG), Pass (G), or Fail (U) is awarded in the examination of the course. For students in Engineering, one of the grades 5 (Pass with Distinction), 4 (Pass with Some Distinction), 3 (Pass), or U (Fail) is awarded in the examination of the course.

Quality Assurance
Follow-up relating to learning conditions and goal-fulfilment takes place both during and upon completion of the course in order to ensure continuous improvement. Course evaluation is partly based on student views and experiences obtained in accordance with current regulations and partly on other data and documentation. Students will be informed of the result of the evaluation and of any measures to be taken.

Course Certificate
A course certificate will be provided upon request.

Additional information
The local regulations for studies at the Bachelor and Master levels at Karlstad University stipulate the obligations and rights of students and staff.