FSG3119 Integrated Course in Engineering Mechanics 7.5 credits

Sammanfattande kurs i teknisk mekanik

This is a translation of the Swedish, legally binding, course syllabus.

Establishment

Course syllabus for FSG3119 valid from Spring 2022

Grading scale

P, F

Education cycle

Third cycle

Specific prerequisites

Admitted to the PhD-program in Engineering Mechanics. For parts of the content, it is an advantage to have completed the majority of courses of the doctoral program in Engineering Mechanics.

Language of instruction

The language of instruction is specified in the course offering information in the course catalogue.

Intended learning outcomes

The aim of the course is to certify that all PhD-students in the program have a common base of knowledge and understanding, skills and abilities, ethical values and attitudes at the profound level required for a PhD degree. In particular, the course shall give the PhD-students the skills and abilities to analyse, and in a constructive and critical manner review others work of research. This course, together with the other courses taken by the student, the thesis and its public defense aim to ensure that the formal requirements as stipulated by regulations ("examensordning" and KTH) are satisfied.

By taking this course the student shall be able to:

- demonstrate a wide knowledge in structure- and biomechanics/acoustics/fluid mechanics and a systematic understanding of the field
- demonstrate familiarity with scientific methodology in general and especially in mechanics
- demonstrate the ability of scientific analysis and synthesis, independent critical review and assessment of new issues and situations
- demonstrate intellectual independence, scientific integrity and the ability to make ethical assessments in research
- demonstrate deeper insight in the possibilities and limitations of science, its role in society and human responsability for its use
- demonstrate the ability to clear and concise, oral and written presentation and discussion of research and research results
- demonstrate an increased ability to contribute with knowledge and skills to sustainable societal development towards an equal, inclusive and climate-neutral society.

Course contents

- General knowledge of the goal for PhD-studies
- Basic theory, phenomena and methods in engineering mechanics
- Basics for issues of scientific integrity
- Acing as reviewer (opponent and grading comittee) for other doctoral students' dissertations with fedback from the suspervisors.
- Active participation in semanars and othe research presentations at the department.
- ctive participation in international conference.
- Active participation in work-shops related to the sustainability goals (including gender equality, diversity and equal opportunities).

Examination

- RAP1 - Report, 7.5 credits, grading scale: P, F

Based on recommendation from KTH’s coordinator for disabilities, the examiner will decide how to adapt an examination for students with documented disability.

The examiner may apply another examination format when re-examining individual students.

If the course is discontinued, students may request to be examined during the following two academic years.

The course is of wide character, comprises several areas in engineering mechanics and also material from research integrity and sustainability. This is the reason behind the name of the course "Integrated course ...". Note that the course intends to certify that the requirements, as stipulated by the Higher Educastion Ordinance of r a PhD-degree, of a wide knowledge in the field of the subject are fulfilled and in particcular aspects not covered by the thesis and its oral defence.

Other requirements for final grade

Consists of eight components

- Oral exam.
- Research integrity seminars with project. (Counts as part of the required minimum of 20 seminars/year.)
- Presentation of own work or scientific piublication (minimum one per semester within the research group).
- One opponent exercise with written report.
- Exercises (twice) as member of examination committee with written reports.
- Presentation of own work in at least one international conference.
- Participate disputations, licentiate- and other seminars at the department (≥20/year and approved by the supervisors). At least seminar each semester should be explicitly related to sustainability and/or equality/gender issues.
- Participation in arranged work-shops (with project) in sustainability and equality/gender issues. (Counts as part of the required minimum 20 seminars/year).

Ethical approach

- All members of a group are responsible for the group's work.
- In any assessment, every student shall honestly disclose any help received and sources used.
- In an oral assessment, every student shall be able to present and answer questions about the entire assignment and solution.