

The text below shall be regarded as a more in-depth syllabus applicable to MIST for project courses such as, for example, EF2228 and SD2930

Intended learning outcomes

After completing the course you should have some practical experience of performing one or several typical tasks in the field of space technology, including data analysis and development or evaluation of measurement techniques and instrumentation, designing part of a space vehicle or investigating the effects of space environment on various systems in space. You should be able to formulate a realistic goal for a time-restricted task, plan it, follow up the execution with the help of the formulated plan, and to be able to document your work in an effective way.

Your work also includes close co-operation with other students working with another part or aspect of a space system – in this case MIST, a nanosat in the Cubesat class. You will learn to regard your work as part of a design or test activity on system level. The objective is that you will learn the basics of technical work on a space system as performed in industry.

Course main content

The project tasks may include

- design of a component of a satellite instrument or space vehicle system
- investigation of space environment effects on space technology
- numerical simulation of an important aspect of a space system such as temperature variations during spaceflight, control of the attitude of the satellite, and the availability of onboard electrical power during different mission phases.
- testing of a space system or a part thereof and evaluation of the test results
- design of tools (software or hardware) for testing critical functions of a space vehicle
- literature search and summary of a particular field
- programming of data processing and presentation tools.

Disposition

The work will take place during approximately 10 weeks. In MIST students work in "sub-teams" and each such team has its own supervisor/tutor. However, each student submits an individual report at the end of the semester. The supervisor/tutor will be available during much of the project time, but it is essential that you are willing to work independently. Co-ordination among the students is the task of a student especially appointed to this function – "the student team leader". In MIST there is also a part-time professional project manager responsible for i.a. the availability of technical and human resources to support the work of the students. The work on MIST extends over several semesters so there is also a part-time teaching assistant responsible for facilitating the transfer of knowledge between student teams from different semesters.

Eligibility

For single course students: 60 hp and documented proficiency in English B or equivalent.

Literature

No fixed literature. Relevant material will be distributed by the supervisor. In MIST there is also extensive documentation available in an on-line library.

Examination

PRO1 - Project Assignment, 15.0, grade scale: P, F

A written time plan and final report, and at least one written progress report are required. In MIST the final report shall also be presented orally at project reviews to which representatives from the local space industry are invited. All reporting shall be done in English.