

# Research Methodology MT2521

## Project - 5 ECTS

### ***The aims of the project are to be able to:***

- *find and define an engineering problem,*
- *perform a literature search,*
- *form a research question(s) and hypothesis,*
- *solve the problem in a creative and unique way,*
- *validate and verify the solution using experimental tools,*
- *report the research project as an short 2 page paper,*
- *apply a paper template in professional way,*
- *present and dispute the project,*
- *review a research paper,*
- *organize the project using suitable tools such as work plan, milestones etc;*
- *cooperate within a well organised project group,*

### ***Objective:***

The project should deal with a method/algorithm to measure/estimate some complex quantity such as a quality of product or service; or a performance evaluation of the algorithm or system etc.

The proposed method should be **modeled** theoretically (mathematical mode, computer model etc.) and then **implemented** on suitable software or hardware and **validated** quantitatively by simulation or measurement.

You may base your solution on a similar known approach but the improved method must be your own creative and unique solution. All similarities have to be refereed and quoted properly.

### ***Project organisation:***

- Projects are carried out in 2-3 person groups.
- The project is managed in a professional way, including a work plan, milestones and deliveries, team organisation, meeting agendas and minutes etc.
- The project is reported as an extended abstract of max 2 pages using a suitable template. It should consist of: title; abstract; key words; review of related works; problem statement, and project objectives and scope; solution description, conclusions and references. Authors' biographies are also included in the report.
- The paper template and instruction have to be used in a professional way.
- The project is approved on a base of the written report and the oral presentation.
- Each student reviews a scientific paper.
- The workshops and assignments are compulsory part of the project.

### ***Project grading:***

The final grade of the project can be: Fail or Pass (Swedish U or G).

The project assessment is a basis of bonus which can improve your examination result. The bonus is granted on your **individual** achievements, therefore the most important parts of the bonus are:

- the individual project proposal (Milestone 1),
- the individual peer review of paper.

The bonus can be implemented only if your paper achieves an above average quality.

There are two levels of the bonus: G and VG. Both G and VG increase the examination grade from D to C. Furthermore the bonus VG can also increase the examination grade from C to B or from B to A. Please notice that grade A is possible only if you are granted by bonus VG, since the highest grade from the viva is B.