



## COURSE SYLLABUS

# Research Methods and Communication, 7.5 credits

*Forskningsmetoder och kommunikation, 7,5 högskolepoäng*

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| <b>Course Code:</b> TFKG18                            | <b>Education Cycle:</b> First-cycle level                              |
| <b>Confirmed by:</b> Dean Apr 6, 2018                 | <b>Disciplinary domain:</b> Technology (75%) and social sciences (25%) |
| <b>Revised by:</b> Director of Education Jun 26, 2023 | <b>Subject group:</b> TE9  |
| <b>Valid From:</b> Aug 1, 2023                        | <b>Specialised in:</b> G1N   |
| <b>Version:</b> 5                                     | <b>Main field of study:</b> Industrial Engineering and Management      |

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### Intended Learning Outcomes (ILO)

After a successful course, the student shall

Knowledge and understanding

- show familiarity of basic concepts and perspectives concerning the scientific method
- display knowledge and understanding of how scientific work is conducted concerning problem definition, methodology, data collection, analysis of results and reference management
- demonstrate comprehension of a scientific approach including problem definition, rigorous methodology, and scientific arguments

Skills and abilities

- demonstrate the ability to critically assess and extract major components of a scholarly journal article
- demonstrate the ability to read and interpret scholarly journal article
- demonstrate the ability to plan and conduct an oral and graphic presentation
- demonstrate the ability to search and retrieve relevant literature and information

Judgement and approach

- demonstrate the ability to evaluate relevant scientific aspects of scholarly journal articles
- demonstrate an understanding of the importance to reproduce and use other people's material in a correct way.

### Contents

The course provides basic knowledge of the scientific method. In addition, the course provides the ability to critically examine scholarly journal articles, and the skill to understand and interpret scientific work in writing as well as orally using appropriate computer tools.

The course contains the following elements:

- Scientific approach
- Problem definition
- Methods of data collection, processing, analysis and interpretation of data

- Reference management
- Critical review of scientific work
- Journal article structure
- Communication skills
- Oral presentation skills
- Programs for word processing and graphic presentation
- Styles to create consistent documents.

### **Type of instruction**

The course is conducted through lectures, assignments and seminars.

The teaching is conducted in English.

### **Prerequisites**

General entry requirements and Physics 1, Chemistry 1, Mathematics 3c or Physics A, Chemistry A, Mathematics D and English 6 or English B in the Swedish upper secondary school system or international equivalent (or the equivalent).

### **Examination and grades**

The course is graded 5,4,3 or Fail.

Registration of examination:

| Name of the Test         | Value       | Grading |
|--------------------------|-------------|---------|
| Examination <sup>1</sup> | 4 credits   | 5/4/3/U |
| Assignments and Seminars | 3.5 credits | U/G     |

<sup>1</sup> Determines the final grade of the course, which is issued only when all course units have been passed.

### **Course literature**

The literature list for the course will be provided 8 weeks before the course starts.

Säfsten, K., & Gustavsson, M. (2020). Research methodology: for engineers and other problem-solvers. Studentlitteratur.

The Interactive Anti-Plagiarism Guide, accessible via learning platform, PING PONG.

Additional texts (maximum 150 pages) in the form of free internet resources may be