Linnæus University

Dnr: 2019/2014-3.1.2.2

Course syllabus

Faculty of Technology

Department of Building Technology

4BY364 Vetenskaplig metodik och planering, 5 högskolepoäng
4BY364 Scientific Methodology and Planning, 5 credits

Main field of study
Civil Engineering

Subject Group
Building Technology

Level of classification
Second Level

Progression
A1N

Date of Ratification
Approved by Faculty of Technology 2019-06-10
The course syllabus is valid from spring semester 2020

Prerequisites
General entry requirements for studies on second level with field specific requirements:

- Bachelor of Science within technology 180 credits, or equivalent qualification
- English B/English 6

Objectives

Knowledge and understanding
For a passing grade the student must demonstrate

- knowledge and understanding of fundamental concepts of scientific methodologies in the field of Engineering science.
- knowledge and understanding of fundamental elements of planning of scientific research in the field of Engineering science.

Skills and Abilities
For a passing grade the student shall be able to

- identify a problem or opportunity that justifies research effort
- critically assess the state-of-the-art and identify the gap in knowledge
- give a critical account of previous research of relevance for a specific project

- formulate aim, scope and specific objectives of scientific projects
- identify or design relevant research methods
- communicate the research motivation, aims, specific objectives and methods to professional audiences in formal oral presentations,
- communicate the research motivation, aims, specific objectives and methods in formal writing format of academic and technical reports and thesis.

Assessment skills and problem approach
For a passing grade the student shall demonstrate ability to

- critically assess and compare the reliability and validity of scientific methods

Content
The course consists of the following units:

- Fundamental concepts of methodology of empirical sciences
- Ethical and social aspects of scientific research, intellectual property copyright
- Techniques of effective written communication in academic writing in English
- Mechanics of writing and literature search for academic/technical reports
- Identification of a problem or opportunity that justifies research effort
- Critical assessment of the state-of-the-art and identification of the gap in knowledge
- Formulation of the aim, scope and specific objectives of scientific projects
- Identification and assessment of relevant research methods
- Techniques of effective oral communication
- Critical review of scientific works and opposition

Type of Instruction
The course consists of lectures, seminars, and providing feedback to the oral presentation and written technical report of an advanced scientific project students develop during the course. The students are required to perform literature studies on their own. Oral and written presentations of scientific project are compulsory elements of the course.

Examination
The course is assessed with the grades A, B, C, D, E, Fx or F.

Grade A constitutes the highest grade on the scale and the remaining grades follow in descending order where the grade E is the lowest grade on the scale that will result in a pass. Grade F is a failing grade, reflecting student’s unsatisfactory performance in the course (i.e. received the grade F).

Examination is done through oral presentation at final seminars where students are graded for their performance as Respondents and Opponents (2 credit A-F) and graded written research report and written opponent report (3 credits AF). The final grade is determined based on these graded course outcomes.

Repeat examination is offered in accordance with Local regulations for courses and examination at the first and second-cycle level at Linnaeus University.

If the university has decided that a student is entitled to special pedagogical support due to a disability, the examiner has the right to give a customised exam or to have the student conduct the exam in an alternative way.

Course Evaluation

During the implementation of the course or in close conjunction with the course, a course evaluation is to be carried out. Results and analysis of the course evaluation are to be promptly presented as feedback to the students who have completed the course. Students who participate during the next course instance receive feedback at the start of the course. The course evaluation is to be carried out anonymously.

Other

Grade criteria for the A–F scale are communicated to the student through a special document. The student is to be informed about the grade criteria for the course by the start of the course at the latest.

The course material is presented on an Internet website for students. Access to the Internet and computers is available in the university's computer rooms and at the university library.

Required Reading and Additional Study Material

Required reading

Björklund, Maria & Paulsson, Ulf (2014). Academic papers and theses to write and present and to act as an opponent. Studentlitteratur: Lund. ISBN:9789144093765. 152 pages.

Literature provided by the department

The Student's Guide to Writing Spelling, Punctuation and Grammar, John Peck & Martin Coyle, 3’rd ed, 2012, 184 pages.