

## Master of Science in Water Resources

Study programme valid from: 2007/08

Study programme approved: 2007-08-20

In addition to the study programme for the Master of Science in Water Resources, the general regulations for and information from the Faculty of Engineering at Lund University also apply.

### 1 Aims and Objectives

#### 1.1 Aims

The aim of this Master of Science programme is to provide knowledge, skills and values related to water resource engineering. The programme is designed with foreign students in mind. On completion of the programme, students will be able to work in the water resources sector and be able to deal with matters relating to water resource engineering in a professional manner.

The Master of Science in Water Resources aims to

- offer a broad educational programme which covers the most important aspects of water resources
- highlight the need to treat water resources in an integrated manner
- give the students the opportunity to specialise in a chosen field of water resource engineering
- offer access to the latest knowledge about and relevant methods of water resource engineering
- impress on the students the importance of a scientific approach
- take advantage of the opportunities available in a multi-national group of students.

#### 1.2 Objectives of the Master of Science in Water Resources

(The general objectives are stated in the Higher Education Ordinance 1993:100. The following is concretisation of these objectives) (Translation based on the official English translation of the Higher Education Ordinance)

*Objectives*

To satisfy the requirements of the Degree of Master of Science in Water Resources the student must demonstrate the knowledge and skills required to work independently with water resource engineering.

#### *Knowledge and understanding*

To satisfy the requirements of the Degree of Master of Science in Water Resources the student must:

- demonstrate knowledge and understanding of water resource engineering by displaying broad knowledge within the field, in-depth knowledge of certain aspects of the field and a deep insight into current research and development, and
- demonstrate in-depth knowledge of the methods used in water resource engineering.

#### *Skills and Abilities*

To satisfy the requirements of the Degree of Master of Science in Water Resources the student must:

- demonstrate an ability to integrate critically and systematically knowledge acquired from a variety of approaches on water resource engineering,
- be able to analyse, assess and handle complex phenomena, issues and situation despite having access to limited information,
- demonstrate an ability to identify and formulate issues in an independent and creative manner,
- be able to plan and execute advanced assignments using suitable methods within a given time period and thereby be able to contribute to the development and evaluation of knowledge,
- demonstrate an ability to give a clear account of and discuss his/her conclusions orally, in writing and in visual presentations, with various degrees of difficulty,
- be able to do this in a dialogue with various users both nationally and internationally,
- demonstrate the skills and abilities required to participate in research and development or to be able to work independently in highly qualified areas of activity.

#### *Judgement and Approach*

To satisfy the requirements of the Degree of Master of Science in Water Resources the student must:

- demonstrate an ability to make decisions with regard to relevant scientific, social and ethical aspects in water resource engineering,
- be able to demonstrate an awareness of ethical aspects of research and development,
- demonstrate an insight into the potential and limitations of scientific knowledge in water resource engineering, its role in society and the responsibility of individuals for how it is used,
- demonstrate an ability to identify his/her need of additional knowledge and to be able to take responsibility for the further development of his/her knowledge.

### 2 The Scope and Levels of the Programme

#### 2.1 The Scope of the Programme

The Master of Science programme is a 2-year postgraduate programme comprising 120 higher education credits.

#### 2.2 Levels

The courses included in the programme have been divided into levels of difficulty. The level is stated in the syllabus for each course. The levels used are Level 1 and Level 2. These levels are defined in the Higher Education Act Chapter 1 §§ 8-9. In the Faculty of Engineering, the courses at Level 1 are further divided into Level 1a and level 1b. Level 1b denotes a progression in difficulty from Level 1a.

The courses at Level 2 constitute specialist studies in a master's degree.

### 3 The Structure of the Programme

The Master of Science programme consists of obligatory courses of 45 higher education credits, of optional courses of 45 higher education credits and a degree project of 30 higher education credits.

# Masterutbildning i vattenresurshantering: utbildningsplan

---

## 3.1 Courses Offered in the Master of Science in Water Resources

The courses included in the first year are detailed in the curriculum and schedule. The language of instruction for all courses is English

## 3.2 Degree Project

To satisfy the requirements of the Degree of Master of Science in Water Resources, the student must have completed an independent study (degree project) of at least 30 higher education credits which has been examined at the Faculty of Engineering, Lund University. The degree project is to be completed in accordance with the conditions specified in the appropriate syllabus approved by the Faculty Board. The student may commence work on the degree project when he/she has completed at least 50 higher education credits that can be included in his/her degree. The degree project is to be in a relevant field of study.

## 4 Grading

Grades are given for the full courses and for interim tests. The interim tests for each course are specified in the relevant syllabi. For each full course one of two scales is used, either Fail, 3, 4, 5 or Fail/Pass. In cases where alternative systems of grading are used for interim courses this is stated in the syllabus. The transcript of the degree certificate only includes full courses which the student has passed (PASS, 3, 4, 5). Grades in the Swedish educational system are goal-oriented, i.e. the student's achievements are measured in relation to the goals of the programme of study and bear no relation to any ranking of a particular group of students.

## 5 Degree

### 5.1 Degree Requirements

To be awarded a Degree of Master of Science in Water Resources the student shall have successfully completed 120 higher education credits in the courses specified and of which the degree project shall constitute 30 higher education credits. At least 90 higher education credits, which also include the degree project, are to be studied at the Faculty of Engineering, Lund

University. The number of higher education credits at Level 2 shall be at least 75 and include the degree project.

### 5.2 Degree Certificate and Title

When the requirements of the degree programme have been satisfied, the student has the right, on application, to be awarded a degree certificate for the Degree of Master of Science (two years) in Water Resources.

## 6 Specific Admission Requirements

To be admitted to the programme of study for the Degree of Master of Science in Water Resources applicants are required to have a first degree of at least 180 higher education credits. The educational programme or courses that entitle admission to the programme should be in the subject areas of mathematics, hydraulics and geology.

Students are required to have a good knowledge of English. Applicants with an upper secondary education from the Nordic countries are assumed to satisfy the basic requirements of proficiency in English. Other applicants are expected to satisfy the following requirements: a TOEFL score of 550 (213 computer-based and 80 Internet) or more, IELTS 6.0, or the Cambridge Certificate of Proficiency. Exemption can be made for students with English as their mother tongue, or who have completed a higher education course in English that satisfies the requirements for eligibility.

Applicants are accepted, in the first instance, on the basis of their grades or equivalent. Grades are considered alongside the content of the degree programme studied and which gives eligibility for admission to the programme. Equal opportunities apply and students from the under-represented gender are given priority in cases of equal merit.

## 7 Accreditation

### 7.1 Accreditation of an Entire Course

Students have the right, on request and following an assessment, to have previous studies accredited. Decisions regarding accreditation are taken by the Faculty Board. In deciding on accreditation an assessment is made on whether the previous

studies referred to can be considered to be equivalent to a specific course in the programme or on the degree to which they are consistent with the goals of the programme. The Board will decide whether the course from which the student is exempt is the one included in the degree or whether the course that is accredited is the one included. The decision taken by the Board will state which of the courses is to be included in the degree. At least 90 higher education credits, which also include the degree project, are to be studied at the Faculty of Engineering, Lund University. Courses that are cited as satisfying the admission requirements for the programme cannot be accredited.