

Master of Science in Water Resources: Programme syllabus

MSc in Water Resources

Programme code: TAWLU

Cycle: Second

Approved by: Programmes board 2

Validity: 2011/12

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In addition to the syllabus, general regulations and information for the Faculty of Engineering apply to this programme.

1 Aim and learning outcomes

1.1 Aim

This internationally oriented master's programme aims to develop the knowledge, skills and judgement of students in the field of water resource management. 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 management in a professional manner.

The Master of Science in Water Resources aims to

- offer a broad programme of study 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 management;
- offer access to current knowledge about and relevant methods of water resource management;
- impress on the students the importance of a scientific approach;
- take advantage of the opportunities available in a multinational group of students.

1.2 Learning outcomes

The general outcomes for the degree of master are stated in the Higher Education Ordinance (SFS 1993: 100). Below is a more detailed formulation of these outcomes.

Outcomes

For a degree of Master of Science in Water Resources students must demonstrate the knowledge and skills required for working independently with water resource management.

Knowledge and understanding

For a degree of Master of Science in Water Resources students shall

- demonstrate knowledge and understanding in the field of water resources, including both broad knowledge of the field and a considerable degree of specialised knowledge in certain areas of the field as well as insight into current research and development work; and
- demonstrate specialised methodological knowledge in the field of water resources.

Skills and abilities

For a degree of Master of Science in Water Resources students shall

- demonstrate the ability to critically and systematically integrate knowledge of water resources from several perspectives and to analyse, assess and deal with complex phenomena, issues and situations even with limited information;
- demonstrate the ability to identify and formulate issues critically, autonomously and creatively and to plan and, using appropriate methods, undertake advanced tasks within predetermined time frames and so contribute to the formation of knowledge, as well as the ability to evaluate this work;
- demonstrate the ability in speech and writing to report clearly and discuss their conclusions and the knowledge and arguments on which they are based in dialogue with different audiences both nationally and internationally.
- demonstrate the skills required for participation in research and development work or autonomous employment in some other qualified capacity.

Judgement and approach

For a degree of Master of Science in Water Resources students shall

- demonstrate the ability to make assessments in the field of water resources informed by relevant disciplinary, social and ethical aspects and also to demonstrate awareness of ethical aspects of research and development work;
- demonstrate insight into the possibilities and limitations of research on water resources, its role in society and the responsibility of the individual for how it is used;
- demonstrate the ability to identify their need for further knowledge and take responsibility for their ongoing learning.

1.3 Further studies

On completion of the second-cycle degree, students have basic eligibility for third-cycle studies.

2 The scope and levels of the programme

2.1 The scope of the programme

The master's programme is a two-year second-cycle programme comprising 120 higher education credits.

2.2 Levels

The courses on the programme are divided into levels. The level is indicated in the relevant course syllabus. The relevant levels are first cycle (G) and second cycle (A). These levels are defined in the Higher Education Act, Chapter 1 Section 8-9. First-cycle courses at the Faculty of Engineering are further subdivided into First cycle 1 (G1) and First cycle 2 (G2). G2 courses presuppose knowledge acquired on G1 courses. Second-cycle courses may constitute specialisations in a Master's degree.

3 Programme structure

The programme consists of compulsory courses comprising 45 credits, elective courses comprising 45 credits and a degree project worth 30 credits.

3.1 Courses

The courses included in semesters 1 and 2 are indicated in the timetable. All courses are taught in English. In addition to these courses, students are entitled to accreditation of 7.5 credits of courses in Swedish (organised by Lund University for exchange students).

3.2 Degree project

For a degree of Master of Science in Water Resources students must complete an independent project (degree project) of no less than 30 credits as part of the course requirements. The degree project must be completed in accordance with the valid course syllabus and must deal with a relevant subject.

4 Grades

Grades are awarded both for entire courses and for course components, when applicable. Course components are indicated in the relevant syllabus. Grades for an entire course are awarded

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according to a scale of four grades (Fail, 3, 4, 5) or a scale of two grades (Fail, Pass). If another scale of grades is applied, this is indicated in the course syllabus. Only entire passed courses (according to the four-grade scale) are included on the degree certificate. Grades awarded in Swedish higher education are criterion-referenced, i.e. the performances of students are assessed with reference to the relevant learning outcomes and no internal ranking of students is made.

5 Degree

5.1 Degree requirements

For a degree of Master of Science in Water Resources students must successfully complete courses comprising 120 credits, including a degree project worth 30 credits. 75 credits must be second-cycle credits, including the degree project. Students who wish to include in the degree courses not listed in the timetable must submit an application to this effect to the relevant programmes board.

5.2 Degree and degree certificate

When students have completed all the degree requirements, they are entitled to apply for a degree certificate for a Master of Science (120 credits) in Water Resources.

6 Specific admission requirements

6.1 Admission requirements

To be admitted to the Master's programme in Water Resources, students must have a first degree of 180 credits in a subject of relevance to the programme. The first degree must include courses in mathematics, hydraulics and geology. Students must also have documented proficiency in English corresponding to at least English B in Swedish upper secondary school, as specified on the programme website. Language requirements are further specified at www.studera.nu.

6.2 Selection

The applicants' grades or equivalent are the main criteria for selection. In addition, the subjects included in the applicants' first degree are considered.

7 Credit transfer

Students are entitled to have previous studies considered for credit transfer, on application. The programmes board decides on credit transfer. When considering credit transfer, the board assesses whether the previous studies correspond to a given course on the programme or whether the previous studies meet the learning outcomes of the programme. A favourable decision will state whether it is the previous course or the course for which credits are transferred that is to be listed on the degree certificate. Credit transfer is not permitted for courses included in the first degree.