Master's Degree Programme in Environmental Engineering
60 ECTS

MASTER’S DEGREE PROGRAMME IN ENVIRONMENTAL ENGINEERING (ylempi AMK) 60 ECTS

credits

Degree
Master’s Degree in Environmental Engineering

Duration
60 credits, 1.5 years

The duration of the degree is from 1 years to 2 years depending on student’s personal study plan. All advanced professional studies as well as research methods are offered during the first academic year.

Objectives

Working in the field of urban planning today is a demanding task for the professionals.

New working skills and understanding of multidimensional environmental projects are needed.

The new programme is intended for those who have working experience from the field and want to improve their skills and professional knowledge of environmental issues.

The education covers the following subject areas:

1. Urban planning and collaboration
2. Climate change and its environmental impacts
3. Environmental management
4. GIS in environmental planning and research
5. Environmental technology and research

The new degree programme provides a professionally oriented and international knowledge base to meet the challenges in modern urban planning. The professionals in the field today need more information based on environmental sciences, as well as working skills in contemporary planning processes.

The focus of universities of applied sciences is on advanced work-oriented teaching and on applied research and development. Thus learning assignments and the research-oriented development project of the programme are implemented closely to the student’s own work and organization or the thesis can be carried out with the projects run by the university.

The degree programme provides students with a higher university of applied sciences degree – Master of Environmental Technology – which produces the same qualification for public and private positions as an academic master’s degree from traditional universities.

The obligatory courses for all the students in the programme are Research process and research methods, Urban and community planning and Master’s thesis and research seminars. The student is able to choose courses from other Master’s Programmes in LUAS (Lahli University of Applied Sciences) or in other FUAS universities (Häme UAS and Laurea UAS).

Learning outcomes of Master’s degree programmes at Universities of Applied Sciences

At Universities of Applied Sciences, the Master’s degree comprises advanced vocational studies, elective studies and a final thesis or final project.

Studies leading to the Master’s degree provide the student with

• broad and advanced knowledge and the skills for developing the professional field and the theoretical skills for working in demanding expert and leadership positions in the field;

• a profound understanding of the field, its relation to working life and society at large as well as the knowledge and skills needed for following and analysing both theoretical and professional developments in the field;

• the capacity for life-long learning and the continuous development of one’s own expertise;

• good language and communication skills required in working life;

• and the knowledge and skills needed to function and communicate in the field internationally.

The aim of advanced professional studies is to provide the student with an opportunity to deepen the application of theory in practice, analytical skills, project management skills, and participation skills in research and development as well as social skills.

The aim of the final thesis or project is to develop and demonstrate the capacity to apply researched information and use the chosen methodologies to analyse and solve problems as well as to develop the capacity for independent expert work.
University of Applied Sciences Master's degrees represent level 7 in the European Qualifications Framework, EQF. The reference levels within the EQF are based on learning outcomes described as knowledge, skills and competences.

**TABLE 1. Learning outcomes relevant to level 7 in the European Qualifications Framework (EQF).**

<table>
<thead>
<tr>
<th>Component</th>
<th>Learning outcomes</th>
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<tbody>
<tr>
<td>Knowledge</td>
<td>Highly specialised knowledge, some of which is at the forefront of knowledge in a field of work or study, as the basis for original thinking and/or research. Critical awareness of knowledge issues in a field and at the interface between different fields.</td>
</tr>
<tr>
<td>Skills</td>
<td>Specialised problem-solving skills required in research and/or innovation in order to develop new knowledge and procedures and to integrate knowledge from different fields.</td>
</tr>
<tr>
<td>Competence</td>
<td>Manage and transform work or study contexts that are complex, unpredictable and require new strategic approaches. Take responsibility for contributing to professional knowledge and practice and/or for reviewing the strategic performance of teams.</td>
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</tbody>
</table>

In the Finnish National Framework for Qualifications and Other Learning (NQF), the learning outcomes include five components: 1) knowledge, 2) work method and application, 3) responsibility, management and entrepreneurship, 4) evaluation, and 5) key skills for lifelong learning.

**TABLE 2. Learning outcomes relevant to level 7 in the Finnish National Qualifications Framework (NQF).**

<table>
<thead>
<tr>
<th>Component</th>
<th>Learning outcomes</th>
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<tbody>
<tr>
<td>Knowledge</td>
<td>Understands comprehensive and highly specialised concepts, methods and knowledge corresponding to the special competence in his/her field, which are used as the basis for independent thought and/or research. Understands questions pertaining to the field and interfaces between various fields and evaluates them and new knowledge critically.</td>
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<tr>
<td>Work method and application (skills)</td>
<td>Possesses the capability to solve demanding problems in research and innovation activities, where new methods and procedures are developed and knowledge from various fields is applied and combined.</td>
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<tr>
<td>Responsibility, management and entrepreneurship</td>
<td>Possesses the capability for independent work in demanding expert duties in the field or as an entrepreneur. Possesses the capability to manage and develop complex, unpredictable and new strategic approaches. Possesses the capability to manage work and/or people.</td>
</tr>
<tr>
<td>Evaluation</td>
<td>Possesses the capability to evaluate the activities of individuals or groups. Possesses the capability to accumulate knowledge and practices in his/her field and/or take responsibility for the development of others.</td>
</tr>
<tr>
<td>Key skills for lifelong learning</td>
<td>Possesses the capability for continuous learning. Knows how to communicate verbally and in writing both to audiences in the field and outside it. Possesses the capability to communicate at an advanced international level and to interact in one official language and at least one foreign language.</td>
</tr>
</tbody>
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**Learning methods**

The studies are part-time studies and can be completed alongside a normal day job. Full-time study is also possible. Study methods include cooperative learning processes, independent work, contact lessons, e-learning, seminars and a research-oriented development project (30 ECTS) leading to a master’s thesis. Each course includes an average of four day contact lessons. The contact lessons take place during the intensive weeks according to a separate schedule mainly in Lahti. Most lessons are recorded and they can be listened afterwards.

A part of the studies will be offered in co-operation with the other Master’s Degree Programmes of Lahti University of Applied Sciences and Federation of Universities of Applied Sciences (FUAS).