WAT COMPETENCES?

COMPETENCES AND RELATED INTENDED LEARNING OUTCOMES (ILOs) OF MASTER’S PROGRAMME IN WATER AND ENVIRONMENTAL ENGINEERING

June 2018
Water & environment

- Key components & management systems in water & environmental engineering
- Water & environmental services
- Hydrology & hydraulics
- Water & environmental quality
- Societal context & different drivers and scales

Engineering skills

- Computational methods (e.g. modelling, statistics, GIS)
- Experimental methods & data analysis
- Uncertainty & magnitudes
- Project skills: planning, implementation and management

Desire for problem-solving

Comprehensive & critical thinking

Multidisciplinary & sectoral view

Interaction & team work

Sustainable & functioning society

Skills

Knowledge

Identity
Our graduate is able to:

1) Recognise the key **components and management systems in water and environmental engineering**, and understand the relevance of **sustainability** for the field

2) Understand the principles of the **hydrological cycle** and movements of water in natural and built environments

3) Define and differentiate the main sections of **water and environmental services**, including treatment of water and waste water as well as environmental risk analysis and life cycle assessment

4) Understand the key principles of **water and environmental quality**, and their relation to pollution, contamination and restoration

5) Identify the **societal context** relevant to the water and environment, and comprehend the different **scales** (spatial and temporal) and key **drivers** (e.g. climate change, population growth, urbanization, pollution) applicable to water and environmental engineering
ILOs: skills

Our graduate is able to:

1) Apply **key computational methods** (e.g. modelling, statistics, GIS) related to water and environmental engineering

2) Understand relevant **experimental methods and data analysis** processes, including the use of data archives

3) Comprehend **uncertainty and different orders of magnitude** related to the measurements, data analysis and modeling

4) Recognise and analyse the main components of water- and environment-related **planning, implementation and management processes**, and use related basic project skills
Our graduate:

1) Is motivated and has a desire for **problem-solving**

2) Thinks in a **comprehensive and critical manner** about his/her work and field

3) Maintains a **multidisciplinary and -sectoral view** related to water and environmental engineering

4) Is able to work as a part of a team and has relevant skills for **interaction and communication**

5) Promotes a **sustainable and functioning society**

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**ILOs: identity**

(i.e. general working-life skills)