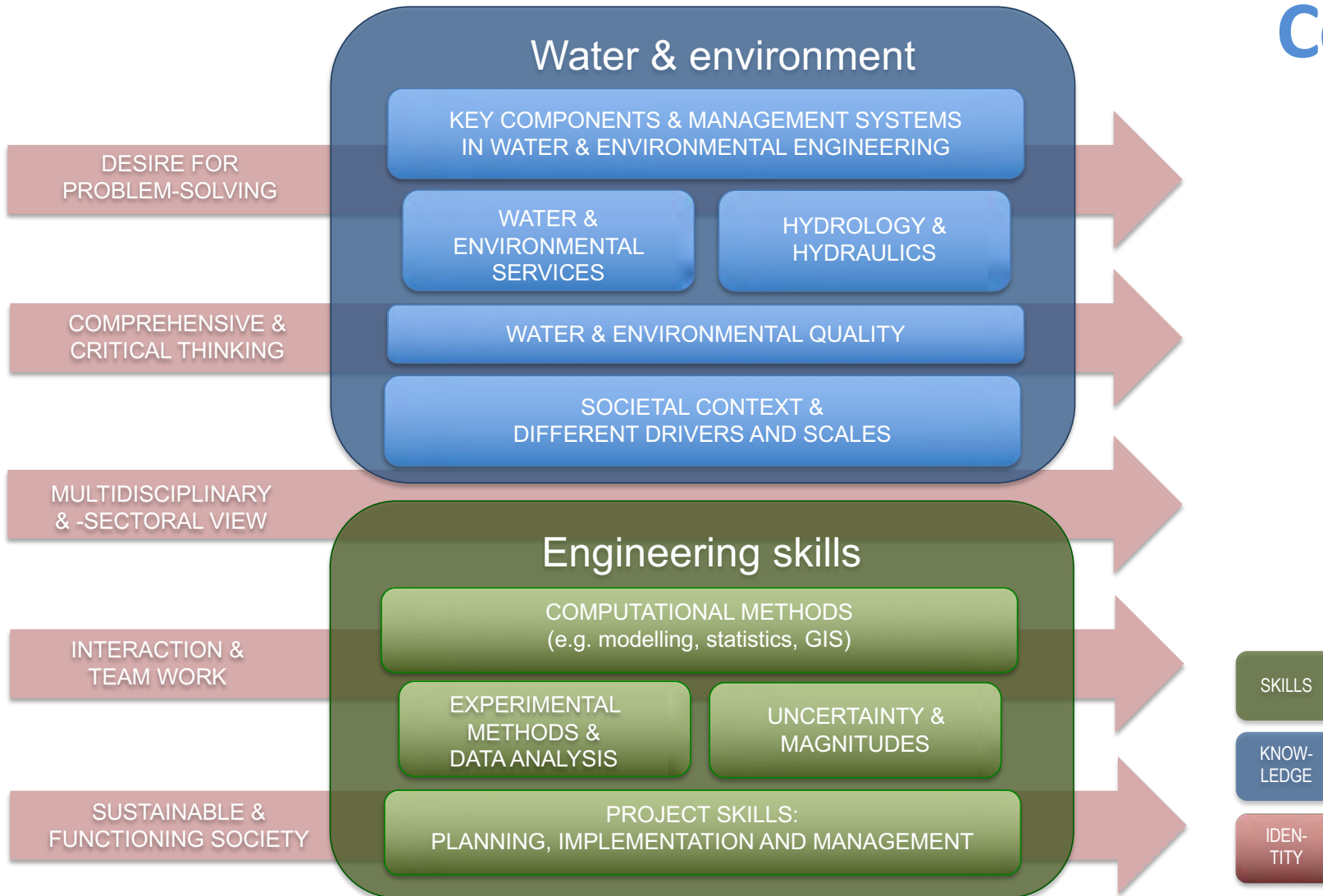# *WAT COMPETENCES?*

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

June 2018

COMPETENCES

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

KNOW-LEDGE

IDEN-TITY

Our graduate is able to: **ILOs: knowledge**

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**

ILOs: identity
(i.e. general working-life 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**