LUNDS UNIVERSITET

LTH
LUNDS TEKNISKA HÖGSKOLA

# Programme syllabus

# Master's Programme in Membrane Engineering for Sustainable Development

- Programme code: TAMET
- Scope: 120 credits
- Cycle: Second
- Approved by: Carl Grey
- Validity: 2025/2026
- Date of approval: 13 February 2025

## 1. Aim and learning outcomes

### 1.1 Aim

The programme is an Erasmus Mundus Joint Master's Degree carried out by Lund University together with Université de Montpellier (France), Université Toulouse III-Paul Sabatier (France), University of Chemistry and Technology Prague (Czech Republic), Universidade Nova de Lisboa (Portugal), Universidad de Zaragoza (Spain) and University of Twente (Netherlands).

The overall objective is to:

- expand students' knowledge in membrane engineering in order to provide specialist skills that are valuable and in demand in industry or academic research.
- promote excellence, innovation, mobility and diversity in high-quality courses related to membrane science and engineering at the interface between materials science and chemical engineering.
- provide students with tools to address environmental and sustainability challenges and provide effective membrane-

based solutions in the fields of Energy, Food, Bio and Health, and Water.

## 1.1 Learning outcomes for a Degree of Master of Science (120 credits)

(The Higher Education Ordinance 1993:100)

**Knowledge and understanding**

For a Degree of Master of Science (120 credits), the student shall

- demonstrate knowledge and understanding in the main field of study, 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 main field of study.

**Competence and skills**

For a Degree of Master of Science (120 credits), the student shall

- demonstrate the ability to critically and systematically integrate knowledge and analyse, assess and deal with complex phenomena, issues and situations, even with limited information,
- demonstrate the ability to identify and formulate research issues critically, autonomously and creatively as well as 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 both nationally and internationally to report clearly and discuss their conclusions and the knowledge and arguments on which they are based in dialogue with different audiences, and

- 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 (120 credits), the student shall

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

### 1.2 Further studies

Students who have achieved a second-cycle degree (Master of Science) will meet the general entry requirements for third-cycle studies.

## 2 Programme structure

The programme includes 90 credits of compulsory courses and a degree project worth 30 credits.

Semesters 1 and 2 are not studied at Lund University but at one of the partner universities. Students choose one of three tracks in semesters 1 and 2: Membrane Materials, Chemical Engineering, or Membrane Engineering and Project Management.

In semesters 3 and 4, students may choose to specialise in Water at the Faculty of Engineering, LTH, Lund University. Semesters 3 and 4 may also be studied at partner universities based on the student's choice of one of three specialisations: Energy, Food, Bio and Health, or Water.

For course offerings at the partner universities see https://mesd.edu.umontpellier.fr

### 2.1 Third semester specialisation in Water at Lund University, LTH

The courses are listed in the programme curricula and timetable for autumn 2024.

### 2.2 Fourth semester at Lund University, LTH

Degree project (30 credits) is listed in the programme curricula and timetable.

## 3 Specific admission requirements

To be eligible for the Master's Programme in Membrane Engineering for Sustainable Development, applicants are required to have a Bachelor of Science or equivalent in Chemistry, Physics, Materials Engineering, Chemical Engineering or Biochemical Engineering. English 6 or equivalent is also a requirement.

Admission to the programme is handled by Université de Montpellier https://mesd.edu.umontpellier.fr

## 4 Degree

### 4.1 Degree requirements

For a Degree of Master of Science (120 credits) students must successfully complete courses comprising 120 credits, including a degree project worth 30 credits. At least 90 credits must be second-cycle credits and at least 60 credits of those must be in the main field of study, including the degree project.

### 4.2 Degree and degree certificate

When students have fulfilled the degree requirements, they are entitled to apply for a Degree of Master of Science (120 credits). Main field of study: Membrane Engineering.