Master Sustainable Energy Technology

Paula Verbeek – Academic advisor AT, SET & S&C
August 2020
Welcome to Sustainable Energy Technology!

WHO ARE WE?

<table>
<thead>
<tr>
<th>Camilo Rindt</th>
<th>Paula Verbeek</th>
<th>Marike Koopmans</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program director</td>
<td>Academic advisor</td>
<td>Program coordinator</td>
</tr>
<tr>
<td><a href="mailto:C.C.M.Rindt@tue.nl">C.C.M.Rindt@tue.nl</a></td>
<td><a href="mailto:academic.advisor.at.sc.set@tue.nl">academic.advisor.at.sc.set@tue.nl</a></td>
<td><a href="mailto:M.Koopmans@tue.nl">M.Koopmans@tue.nl</a></td>
</tr>
<tr>
<td>GEM-Z 2.125</td>
<td>Gem. Zuid 1.118</td>
<td>Gem. Zuid 1.120</td>
</tr>
</tbody>
</table>
STUDENT MEETINGS - YR 1

Goals:
- Sharing experiences at the TU/e and in the Master’s program
- Sharing information about what you need to arrange for the next stage of your Master’s program
- Community feeling

Topics Master Kick-off, Specialization and Q meetings:

<table>
<thead>
<tr>
<th>Master Kick-off (August)</th>
<th>Specialization meeting SET</th>
<th>Q1 meeting (October)</th>
<th>Q2/3 meeting (February / March)</th>
<th>Q4 meeting (May / June)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Program Introduction</td>
<td>• Specialization choice - MAP</td>
<td>• Evaluation</td>
<td>• Evaluation</td>
<td>• Evaluation</td>
</tr>
<tr>
<td>• Specialization choice - MAP</td>
<td>• Information session about specialization options</td>
<td>• Specialization choice - MAP</td>
<td>• Quality assurance: course evaluations, NSE enquete</td>
<td>• Internship</td>
</tr>
<tr>
<td>• Information &amp; support</td>
<td>• September 7th</td>
<td>• To do list</td>
<td>• Specialization and mentor</td>
<td>• Graduation project</td>
</tr>
<tr>
<td></td>
<td>14.30 -17.00</td>
<td>• Registration exams and Q2 courses</td>
<td>• Fraud</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Fraud basics</td>
<td>• Skills Lab</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Skills Lab</td>
<td>• Internship</td>
<td></td>
</tr>
</tbody>
</table>

Goals:
- Sharing experiences at the TU/e and in the Master’s program
- Sharing information about what you need to arrange for the next stage of your Master’s program
- Community feeling
ONLINE EDUCATION GUIDE

https://educationguide.tue.nl/

Go to:

• Graduate School
• Master’s Programs
• Sustainable Energy Technology

ALL PROGRAM INFORMATION!
4INFOSET (CANVAS, MANDATORY)
PROGRAM COMMITTEE SUSTAINABLE ENERGY TECHNOLOGY

Staff members:
• Adriana Creatore (Chair)
• Arjan Kirkels
• Roel Loonen
• Michel Speetjens

Student members:
• Vincent Nieuwenhuis
• Beatrix Bos
• Silvia Nieddu
• You?
What do we do?

- Courses evaluation and improvement
- Feasibility and quality of the SET program
- Education and examination regulations
- Management reports

Interested? Join us!

Your opinion matters!
INTRODUCTION MASTER PROGRAM SET

• Program introduction
  • Specialization choice – MAP
  • Exchange program DTU
  • Information & support
Specialists from many fields involved

Cooperation between 6 departments:

• Mechanical Engineering (coordinating department)
• Built Environment
• Electrical Engineering
• Industrial Engineering and Innovation Sciences
• Applied Physics
• Chemical Engineering and Chemistry
# Program overview

## 1st year
- **Core program (30 EC)**
- **Specialization courses (15 EC)**
- **Free electives (incl. homologation, 15 EC)**

## 2nd year
- **Internship**: 15 EC
- **Graduation project**: 45 EC
SET – Core courses

Sustainable Energy Sources (W)

Energy, Economy & Society (IE&IS)

System integration project (10 EC)

Electrical power engineering and system integration (EE)*

Building performance and energy systems simulation (B)

*not for Electrical Engineers
FREE ELECTIVES (15 EC)

Courses on Master level intended to broaden or deepen your knowledge

- extra specialization courses.
- all TU/e courses on Master level
- an extension of the internship with 5 EC
- deficiency courses
- homologation modules that are offered for SET, and complementary to the student’s background (see educationguide.tue.nl)
FREE ELECTIVES (15 EC)

Be aware:
- No overlap between courses allowed (in free electives and specialization)
- You need approval of the courses

TU/e courses on Bachelor level only if:
- indicated as necessary by the department admission committee upon admission to the program and/or
- necessary as personal deficiency courses and/or
- necessary as homologation module for specific groups of students
HOMOLOGATION COURSES

Opportunity to work on deficiencies

• 4MW20 Matlab simulink (2.5 EC, Q1)
  ➢ For international / non-TU/e students without matlab experience

• 4SE010 Heat, flow and thermodynamics (2.5 EC, Q1)
  ➢ For BSc electrical engineering
  ➢ Not needed for BSc Mechanical Engineering!

These and other deficiency courses on bachelor level can be included in free electives (permission examination committee needed, 15 credits max, discuss with your mentor)
# First year schedule

<table>
<thead>
<tr>
<th>Quarter 1</th>
<th>Quarter 2</th>
<th>Quarter 3</th>
<th>Quarter 4</th>
</tr>
</thead>
</table>
| • Building performance and energy systems simulation  
• Electrical power engineering and system integration  
• choice (homologation?) | • Sustainable Energy Sources  
• Energy, Economy & Society  
• choice | • Project part 1  
• choice  
• choice | • Project part 2  
• choice  
• choice |

**Choice = free elective or specialization**
ONLINE AND ON CAMPUS EDUCATION SET - Q1, Q2

Q1
- 7LY3M0 Building perf and energy systems simulation (B)
  - Timeslot C -
  - lectures
  - tutorials
- 5LEE0 Electrical power eng and system integration (EE)
  - Timeslot D -
  - lectures
  - Instruction
- 4WM20 Homologation Matlab Simulink (W)
  - Timeslot E1
- 4SE010 - Homologation Heat and Flow thermodynamics
  - Timeslot E2

Q2
- 4EM70 Sustainable energy sources(W)
  - Timeslot A -
  - lectures
  - project work
- 0EM140 Energy, economy and society (IE&IS)
  - Timeslot E -
  - lectures
  - Tutorials
- Specialization course
  - Timeslot B, C, D -
  - lectures

Exams?
INTRODUCTION MASTER PROGRAM SET

- Program introduction
- Specialization choice – MAP
- Exchange program DTU
- Information & support
PROGRAM OVERVIEW

1st year
- Core program (30 EC)
- Specialization courses (15 EC)
- Free electives (incl. homologation, 15 EC)

2nd year
- Internship 15 EC
- Graduation project 45 EC
Specialization themes

- Energy & society (IE&IS)
- Electrical power systems (EE)
- Application in built environment (B, W)
- Sources, fuels & storage (W, AP, ST)
<table>
<thead>
<tr>
<th>Specializations SET &amp; research groups</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Energy &amp; society</strong></td>
</tr>
<tr>
<td>Human Technology Interaction (IE&amp;IS)</td>
</tr>
</tbody>
</table>

*Groups with a cap

**Only for students with bachelor's degree Chemical Engineering or comparable
Electives for specialization

- 15 EC for specialization courses
- Choose from the list ‘specialization courses SET 2020-2021’
- Courses are linked to (not limited to; just offered by) a section
- You can choose every specialization course from the list!
- Most courses are 5 EC, some are 2.5 EC
- Discuss with your mentor which courses suit your specialization and personal profile
Master Allocation Procedure (4MAPSET)

Implemented within the Department of Mechanical Engineering to allocate students to research groups:

• affects students within the research groups in the Department of Mechanical Engineering
• can also affect students choosing a research group in one of the partner departments

For more detailed information go to educationguide.tue.nl
## MAP: CAPACITY 2020-2021

<table>
<thead>
<tr>
<th>Sections</th>
<th>MW-</th>
<th>AIES-W</th>
<th>MSE-W</th>
<th>AT</th>
<th>SET</th>
<th>S&amp;C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mechanical Engineering</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>department</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAP 2020-2021</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control Systems</td>
<td>28</td>
<td>8</td>
<td>8</td>
<td>10</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td>Technology</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dynamics and Control</td>
<td>29</td>
<td>5</td>
<td>6</td>
<td>16</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>Energy Technology</td>
<td>32</td>
<td>7</td>
<td></td>
<td>8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mechanics of Materials</td>
<td>36</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Microsystems</td>
<td>19</td>
<td>4</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power &amp; Flow</td>
<td>44</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Polymer Technology</td>
<td>27</td>
<td>2</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Timeline MAP (4MAPSET)

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
<th>Time</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Centrally organized specialization</td>
<td>September 7th</td>
<td>14.30-17.00</td>
<td>Possibility for sections to organize an extra information meeting</td>
</tr>
<tr>
<td>information meeting</td>
<td></td>
<td></td>
<td>1st, 2nd and 3rd preference for a section in OSIRIS STUDENT: 4MAPSET / 4MAPSET</td>
</tr>
<tr>
<td>Possibility for sections to organize an</td>
<td></td>
<td></td>
<td>Upload CV + motivation letter in CANVAS</td>
</tr>
<tr>
<td>extra information meeting</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Selection round 1</td>
<td>Week 3 – 4 of Q1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Selection round 2</td>
<td>15 – 27 September 2020</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Selection round 2</td>
<td>Week 5 of Q1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Selection round 2</td>
<td>First half of week 6 of Q1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Specialization meeting SET**

September 7th
14.30-17.00
(Monday)
COACHING

Mentor (lecturer)
• Supervises you when making a choice for your specialization electives and when composing your curriculum
• Supervises you when making a choice for an internship & graduation project
• Discusses your plans to improve your professional skills
• Supports you in thinking about your career path

Please make sure to contact your mentor to discuss these topics

Thesis supervisor
Is responsible for your graduation project
COACHING

Academic advisor: Paula Verbeek
Gemini-Zuid 1.118
Academic.advisor.at.sc.set@tue.nl

• Advice and help to enhance study progress (organise your courses; make a planning; information about electives or traineeship, personal circumstances,......)
• Information about how to organise study issues and regulations
• Personal and confidential appointments
STUDENT MENTORS

1. Help new students to get acquainted with each other, the master’s program, TU/e and the city of Eindhoven

2. Help new students to get acquainted with studying at TU/e

3. Keeping an eye on new students: are they doing okay?
INTRODUCTION MASTER PROGRAM SET

- Program introduction
- Specialization choice – MAP
- Exchange program DTU
- Information & support
EXCHANGE PROGRAM: DTU SE - TU/e SET

https://www.dtu.dk/english/Education/Incoming-students/Exchange
EXCHANGE PROGRAM: DTU SE - TU/e SET

WHAT

• For TU/e-SET students: yr 1 at TU/e, yr 2 at DTU
  For DTU-SE students: yr 1 at DTU, yr 2 at TU/e

• 5 students per year, max 2 students per section

• Involved sections:
  • Energy Technology & Fluid Dynamics (Mechanical Engineering)
  • Electrical Energy Systems (Electrical Engineering)
  • Power & Flow (Mechanical Engineering)
  • Plasma & Materials Processing (Applied Physics)
EXCHANGE PROGRAM: DTU SE - TU/e SET
WHY IS THIS A OPPORTUNITY?

• International experience
• More possibilities to construct an optimal course portfolio making use of courses offered at DTU
• Opportunity to study at two world-leading universities
• Get a supplement in your MSc diploma
EXCHANGE PROGRAM: DTU SE - TU/e SET
INFORMATION

More information about this program can be found on:

- 4INFOSET (CANVAS)

- Education guide SET (from September/October 2020 onwards!)
INTRODUCTION MASTER PROGRAM SET

- Program introduction
- Specialization choice – MAP
- Exchange program DTU
- Information & support
ONLINE EDUCATIONAL SYSTEMS

MyTU/e: online portal

Education guide: Program overview, elective courses list, homologation courses, procedures, examination committee, teaching and examination rules

Osiris: course and exam registration, progress overview

Canvas: Learning management system, course information, course materials, assignments, 4INFOSC, etc.

MyTimetable: personal time schedule

More information + videos: https://educationguide.tue.nl/studying/services/online-systems/
INFORMATION ABOUT PROGRAM AND COURSES

- educationguide.tue.nl (click “Graduate School”) or via intranet site https://intranet.tue.nl

- Program overview
- Elective courses list
- Homologation courses
- Procedures
- Examination committee
- Teaching and examination rules
COURSE INFORMATION

Canvas and OSIRIS:

• Program news

• Course info and communication: schedule, lecture notes, examples of exams

• Registration for courses and exams (in time!)
COURSE REGISTRATION / EXAM REGISTRATION

You have to register for your courses and exams in Osiris!

- **Registration courses**
  - 20 working days before start quarter
  - Missed the deadline? AKR deadline
    - Up to fifteen working days prior to quarter 2, 3 and 4 = €20,- administration costs
    - Missed this extended AKR deadline? Then registration is not possible anymore

- **Registration Exams**
  - You are only allowed to take the exam with an exam registration
  - You can withdraw until 5 working days prior to the exam period
  - You have to register for the retake (this is not done automatically)
BOOKS AND READERS

• Education guide: course information and study material

• Readers are available in Canvas (or in the webshop)

• Some books are offered for reduced prices by study associations (Simon Stevin: http://tuestudieboeken.nl )
  (TUEboeken.nl) Do not buy them in advance!!
## QUESTIONS / HELP

<table>
<thead>
<tr>
<th>Who</th>
<th>What</th>
<th>Where</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Academic Advisor</strong></td>
<td>• Study related questions and problems</td>
<td>Paula Verbeek: <a href="mailto:academic.advisor.at.sc.set@tue.nl">academic.advisor.at.sc.set@tue.nl</a></td>
</tr>
<tr>
<td></td>
<td>• Study Progress</td>
<td>Gemini Zuid 1.118</td>
</tr>
<tr>
<td></td>
<td>• Study Skills</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Planning</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Personal circumstances</td>
<td></td>
</tr>
<tr>
<td><strong>Lecturers</strong></td>
<td>• Course content and Course information</td>
<td>Don’t hesitate to ask questions during lectures in Q1</td>
</tr>
<tr>
<td><strong>Study Management Advisors</strong></td>
<td>• For extra support in developing study skills and planning skills</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Individual sessions:</td>
<td></td>
</tr>
<tr>
<td></td>
<td><a href="https://educationguide.tue.nl/organization/advisors-and-tutors/study-management-advisor/">https://educationguide.tue.nl/organization/advisors-and-tutors/study-management-advisor/</a></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Courses / training:</td>
<td></td>
</tr>
<tr>
<td></td>
<td><a href="https://educationguide.tue.nl/broadening/group-training-sessions/">https://educationguide.tue.nl/broadening/group-training-sessions/</a></td>
<td></td>
</tr>
<tr>
<td><strong>Student Counselor / Student Psychologist</strong></td>
<td>• (extra) facilities, for example about studying with special needs, extra tentation time or (re-)enrollment</td>
<td><a href="https://educationguide.tue.nl/organization/advisors-and-tutors/student-counsellor/">https://educationguide.tue.nl/organization/advisors-and-tutors/student-counsellor/</a></td>
</tr>
</tbody>
</table>
## QUESTIONS / HELP

<table>
<thead>
<tr>
<th>Who</th>
<th>What</th>
<th>Where</th>
</tr>
</thead>
</table>
| Education Office AT, SET, S&C | • Program results and grades  
• Forms  
• Administrative procedures | Gemini Zuid GEM-Z 1.110  
Opening hours: 12.00 – 14.00 (Mon – Fri)  
CSA.AT.SC.SET@tue.nl |
| Education Guide    | • Program website                                                     | https://educationguide.tue.nl                                          |
| My TU/e            | • Portal to all information systems: Osiris, Canvas, My Timetable, Catalogue, book my space, e-mail, education guide, etc. | https://mytue.tue.nl  
### QUESTIONS / HELP

<table>
<thead>
<tr>
<th>Who</th>
<th>What</th>
<th>Where</th>
</tr>
</thead>
</table>
| Osiris | • Program overview  
• Overview progress  
• Course registration and information  
• Exam registration  | Via portal My Tue  
Helpdesk:  
osiris@tue.nl |
| Canvas | • Course supporting system, additional course information, assignments, group discussions, online digital material, etc. | Via portal My Tue  
Helpdesk:  
canvas@tue.nl |
| ESA | • TU/e & program enrollment  
• Tuition fees  
• AKR deadline  | esa@tue.nl  
Frontoffice desk at Metaforum |
| And more | • NoteBook service centrum  
• ICT support  
• Library  
• Book My space  
• Printing  
• ..........  | Metaforum  
SEL/SOL (Level 3A) |
TU/E ENERGY ACTIVITIES

Strategic area energy

- Eindhoven Energy institute
- Energy lectures
- Team energy

• Energy days
• Energy Now congresses
• Energy cafes
• Energy challenges
HOW TO PREPARE FOR YOUR MSc PROGRAM?

➢ Be informed
  • Read all information about the master’s program at http://educationguide.tue.nl ➔ check the ‘To-do list’!

➢ Course registration / exam registration
  • Subscribe for master’s courses and exams (check deadlines)

➢ Quarter 1
  • Start following courses from 31 August on (check MyTimetable)
  • Join the mandatory meeting about Occupational Health Hazard and CANS
  • Join the specialization meeting on September 7th and participate in the MAP Procedure
  • ENJOY YOUR MSC PROGRAM!