Department Introduction Master Kick-Off 2024

Master's program Electrical Engineering   28 August 2024

Elmine Meyer, Program Leader Master Electrical Engineering
Harald van den Meerendonk, Academic Advisor Master Students Electrical Engineering

Welcome

Ramiro Serra

- Program Director Electrical Engineering

Elmine Meyer

- Program Leader Master Electrical Engineering
- Assistant professor Electromagnetics

Harald van den Meerendonk

- Academic advisor master, pre-master and HBO-TOP students Electrical Engineering

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Department Introduction

- 08:45h – Walk-in with coffee and tea

- 09:00h – Introduction TU/e and Electrical Engineering

- 09:10h – General information for all master students

- 09:30h – Specific information about the curriculum

- 09:45h – Walk to Flux

- 10:00h – Tour de Flux

- 12:00h – Lunch

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Before we continue…

Are you a pre-master student?

- Pre-Master kickoff on 2 September 2024 at 10:45h in Atlas -1.825

- Invitation has already been sent

- Today's information is of interest AFTER you have completed the pre-Master's program

Furthermore:

- This presentation will be shared on the education guide.

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Electrical Engineering - Mission

Mission of the department

- acquire, share and transfer knowledge, skills and understanding in the whole field of "Electrical Engineering" through education, research and valorization.

Our impact

- Provide well-educated engineers to society, answering regional, national and international demand.

- Contribute to the development of technology and societal progress by performing outstanding research.

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Electrical Engineering – some numbers

- 2-year Master's Program (Accredited)

- 908 BSc EE/AT and 396 MSc EE students

- 121 first year MSc EE students 2024-2025

- 92 graduates per year

- 275 PhD students

- 102 full-time TU/e academic staff members

- Student-to-staff ratio: 12

Electrical Engineering – some numbers

- 40% international students

- Close collaboration with Brainport:
  High tech region of The Netherlands

- Eco system of 5000+ companies, like Philips,
  NXP, ASML, OCE, TNO, …

- Companies need some 200 graduates per year
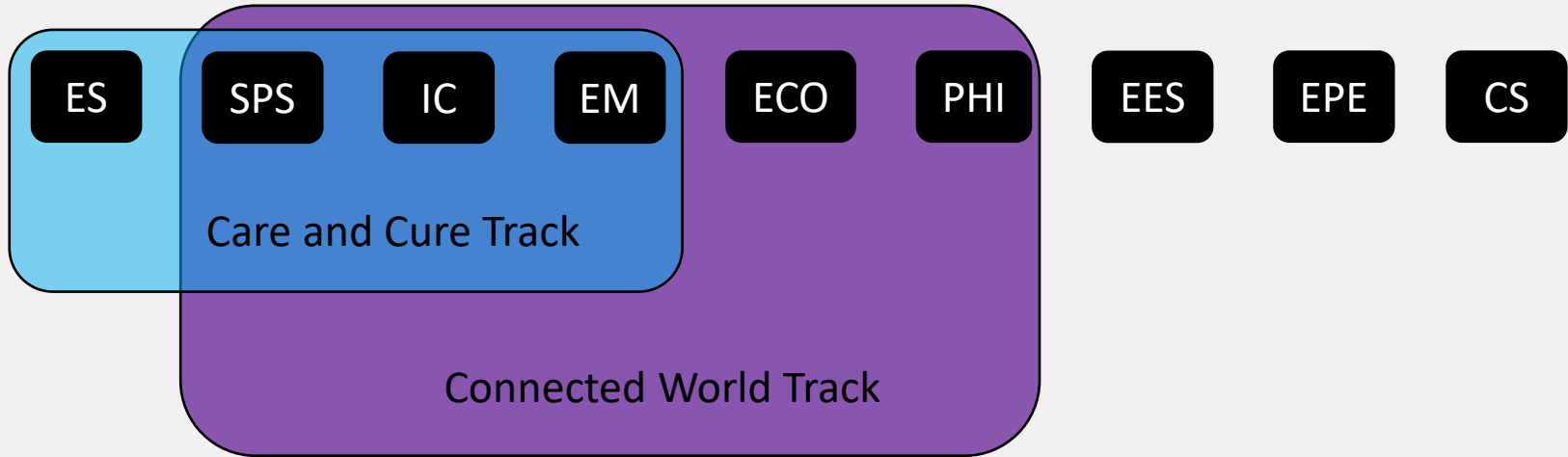
Electrical Engineering – home base

Flux building

Study spaces for students in Flux

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General information for all master students

- Choosing research group/specialization and core courses
- Master Marketplace
- Mentoring
- Broadening
- IND Study Progress Check
- Registration for courses and exams
- Safety and health
- Education guide
- Academic advisor

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What do you need to do as a new master student?

- Choose your research group
- Choose your core courses
- Register your research group in the Master Marketplace
- Decide if you want to do one of the master tracks
- Setup your study program
- Write your Personal Development Plan (PDP)
- Sign the TU/e Code of Scientific Conduct
- Plan a mentor meeting
- Check your notebook requirements
- Follow the Safety and Health training
- Canvas information channel
- Approve your study program   see the Checklist on the education guide

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Choose your research group

- Choose a research group (specialization) where you want to do your graduation project.

- Check the research websites of our nine research groups via the education guide: https://educationguide.tue.nl/programs/graduate-school/masters-programs/electrical-engineering/curriculum/specialization-electives

  Check the website of StudentBody, with video presentations: https://www.studentbody.nl/explore-your-master/

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Choose your core courses for Q1

- Choose three core courses based on your preferred research group:
https://educationguide.tue.nl/programs/graduate-school/masters-programs/electrical-engineering/curriculum/core-courses/

- Register for the courses of the first quarter.
For new/external master students only: the deadline for registration has been extended until **6 September 2024**. Please, send an email to ESA@tue.nl if you want to register for a course since Osiris is closed for course registration.

- Read the checklist to see what you need to do as a new master student (Downloads):
https://educationguide.tue.nl/programs/graduate-school/masters-programs/electrical-engineering/curriculum

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Master Marketplace

Online tool for
>   1. Registration of research groups (=specialization)
>   2. For planning and defining your study program
>   3. Overview of available internship and graduation projects

1. Why registration of research groups?
>   - get to know in advance how many master students choose a research group, so that:
>   - research groups can guarantee sufficient graduation projects and scientific staff
>   - specialization is part of your study program

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Master Marketplace

2. Why filling in your study program?
- Know in an early stage if your choice of specialization electives and free electives is according to the regulations of the Master's program
- Know in an early stage if your choice of specialization electives and free electives is sufficient for the research group where you want to do your graduation
- Use the Master Marketplace to plan your courses and automatically generate your study program as an Excel file (or fill in the Excel file manually!)

3. Why overview of projects?
- An online central place for available projects for internship and graduation
- Get insight in research activities of the research groups
- Scientific staff can upload their projects

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Master Marketplace (1) – Register specialization

To do (see also checklist):

- Save your preferred research group/specialization in the Master Market Place before **14 September 2024**. Changing group/specialization later is always possible
- Choose specialization from this academic year 2024-2025 (e.g. "IC in 2024-2025")

https://master.ele.tue.nl

- Master Marketplace is open for all new master students of Electrical Engineering

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Master Marketplace (1) – Register specialization

Register For Specialization Path

[Course Planner] [Download Filled Approval Form]

Student: ⊘

Cohort: ⊘
2020

Origin: ⊘ *
Other institute

Institute (if not TU/e): ⊘

Specialization Path: ⊘ *
← Enter specialization here

[Save] ← Save specialization here
Fields marked with * are required.

[Feedback]

By Kolibri Solut

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Master Marketplace (1) – Register specialization

- After **14 September 2024**, mentors from the research groups will be informed about all students who have selected their group for their specialization.

- Name and email address will be sent to your mentor

- Each research group has its own mentor(s), see Mentoring

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Master Marketplace (2) – Planning courses

- In the Master Marketplace, you can plan your courses (core, specialization electives and free electives) for your study program using the Course Planner according to the curriculum (see education guide)

- You can plan
  - All master EE courses (directly from the MMP)
  - Other department courses (you have to add them yourself)
  - Other courses (e.g. from other universities or abroad, you have to add them yourself)

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Master Market Place (2) – Course Planner empty

Master Market Place (2) – Course Planner filled in

Course Planner

from BSc EE TU/e, started in 2019
Specialization path: SPS in 2019-2020

← Back to registrations

	Q1	Q2	Q3	Q4
Y1	5CTA0 - Statistical signal processing ⓘ	5LIV0 - Video health monitoring ⓘ	5LSM0 - Convolutional neural networks for computer vision ⓘ	5LSF0 - Applications of information theory ⓘ
	2DME20 - Non-linear optimization ⓘ	5LSH0 - Computer vision and 3D image processing ⓘ	5SSC0 - Adaptive array signal processsing ⓘ	5LSL0 - Machine learning for signal processing ⓘ
	5CPA0 - Numerical methods in electrical engineering ⓘ	5LSB0 - Monitoring of respiration and circulation ⓘ	Course is in wrong quartile 5SSD0 - Bayesian machine learning and information processing ⓘ	
		5CKB0 - Tutoring and coaching ⓘ	5CKF0 - Research set-up ⓘ	
Y2				

Search

Quartile:

Timeslot:

▸ FREE ELECTIVE
▸ CORE COURSE
▸ PROFESSIONAL DEVELOPMENT
▸ SPECIALIZATION
▸ OTHER COURSES

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Master Marketplace (2) – Planning courses

- If you have planned all your courses, you can generate a study program as an Excel file with all the courses filled in

- Use the button 'Download Filled Approval Form' to download the Excel file

BUT

- You can also fill in the Excel file yourself (use the template Excel **Approval study package master EE** in Downloads): https://educationguide.tue.nl/programs/graduate-school/masters-programs/electrical-engineering/curriculum/)

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Master Marketplace (2) – Planning courses

Register For Specialization Path

| Course Planner | Download Filled Approval Form | ← Download Excel file here |

Student: ⑦

Cohort: ⑦
2020

Origin: ⑦ *
Other institute

Institute (if not TU/e): ⑦

Specialization Path: ⑦ *

Save

Fields marked with * are required.

Feedback

By Kolibri Solut

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MMP Excel file

	A	B	C
1	Approval form of the study package EE master program		
2		Personal information	Remarks
3	Student name:		
4	Student ID:		
5	TU/e email address:		
6	Date of master subscription:	2019	
7	Prior education:	BSc EE TU/e	
8		General information	Remarks
9	Submission date:		
10	Professional skills Personal Development Plan discussed with mentor (Yes/No):		
11	Code of Scientific Conduct signed (Yes/No)*:		
12	Have you followed the Health and safety training? (Yes/No):		
13	* Send a digital copy to CSA.EE@tue.nl		
14		TU/e contacts	Remarks
15	Mention your preference for a research group in which you will follow the specialization courses and graduation project		
16	Research group:	SPS	
17	Name mentor:		
18		Master program	
19		Special Master's track	Remarks
20	Connected World Technologies (CWT) (Yes/No)		
21	Care & Cure (C&C) (Yes/No)		
22	Artificial Intelligence for Engineering Systems (AIES) (Yes/No)		
23		Core courses	Remarks
24	Code - Course name		
25	5CTA0 - Statistical signal processing	5.0 EC	Y1Q1
26	2DME20 - Non-linear optimization	5.0 EC	Y1Q1
27	5CPA0 - Numerical methods in electrical engineering	5.0 EC	Y1Q1
28	Total	15 EC	
29		Professional Development Program	
30		Professional skills	Remarks
31	Code - Course name		
32	5CKB0 - Tutoring and coaching	2.5 EC	Y1Q2
33	5CKF0 - Research set-up	2.5 EC	Y1Q3
34	Total	5 EC	
35		Specialization courses	Remarks
36	Code - Course name		
37	5SSC0 - Adaptive array signal processsing	5.0 EC	Y1Q3
38	5SSD0 - Bayesian machine learning and information processing	5.0 EC	Y1Q3
39	Total	10 EC	
40		Elective courses	Remarks
41	Code - Course name		
42	5LSM0 - Convolutional neural networks for computer vision	5.0 EC	Y1Q3
43	5LSL0 - Machine learning for signal processing	5.0 EC	Y1Q4
44	5LSF0 - Applications of information theory	5.0 EC	Y1Q4
45	5LSB0 - Monitoring of respiration and circulation	5.0 EC	Y1Q2
46	5LSH0 - Computer vision and 3D image processing	5.0 EC	Y1Q2
47	5LIV0 - Video health monitoring	5.0 EC	Y1Q2
48	Total	30 EC	
49		Internship	Remarks
50	Code - Course name		
51	5iO15 - Internship 15 ects	15.0 EC	
52			
53	Total	15 EC	
54		Graduation project	Remarks
55	5G045 - Graduation project 45 ects	45.0 EC	
56	Total	45 EC	
57		Additional courses (optiona	Remarks
58	Code - Course name		
59			
60			
61			
62	TOTAL MASTER STUDY PROGRAM	120 EC	

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Master Marketplace (2) – Planning courses

- You can use this Excel for the mentor meeting (see Mentoring)

- Check and fill in the other sections of the Excel

- If you want to follow a track (C&C or CWT), denote this in the Excel as well. Check the requirements on the education guide

- Use Osiris Case (request approval study program) to send the Excel to the Examination Committee for official approval.

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Master Marketplace (2) – Planning courses

- Approval by the Examination Committee also means your study program in Osiris will be updated -> you can check your own study progress

- You must finish the courses listed in your approved study program, but you can always change your study program if you want to take other courses

- If you want to change your study program, you can update the Excel you sent earlier (or use the Master Marketplace to make the changes and download the Excel)

- Use Osiris Case (request approval study program) to send the updated Excel to the Examination Committee

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Master Marketplace (3) – Overview of projects

Master Marketplace (3) – Overview of projects

Mentoring

Mentor

- All first year master students are "assigned" a mentor based on their preferred research group

- A mentor is a scientific member from Electrical Engineering and belongs to the research group where you want to do the graduation project.

- A mentor guides you from the start of the master until the beginning of the internship

- Only as of Monday **2 September**, you can contact your mentor to make an appointment. Do this <u>before</u> **28 September 2024**. The actual meeting can be held later but before **12 October 2024** (because of the registration deadline for courses Q2 on 13 October 2024)

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Mentoring

Student mentor

- All first year master students who are <u>new to TU/e</u> are also "assigned" a student mentor

- Goal: to support you in feeling at home at TU/e, getting familiar with the program, meeting your fellow students, learning more on TU/e educational systems, campus life

- A student mentor is a master student who is already familiar with TU/e and campus life

- Your student mentor will invite you for your first mentor meeting

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Mentoring – Who is who?

Research group	Mentor
CS	Siep Weiland / Paul van den Hof / Tijs Donkers / Mircea Lazar
ECO	Oded Raz
EES	Nikos Paterakis
EM	Bas de Hon
EPE	Naila Nasibulina
ES	Marc Geilen
IC	Eugenio Cantatore
PhI	Erwin Bente
SPS	Sveta Zinger / Alex Alvarado

via secretary of CS!

https://educationguide.tue.nl/programs/graduate-school/masters-programs/electrical-engineering/mentoring/

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Mentoring

<u>Before</u> you plan a meeting

1. Write your Personal Development Plan (PDP) on how to (further) develop your professional skills

2. Sign the TU/e Code of Scientific Conduct as part of Scientific Integrity

3. Setup your study program including all core courses, specialization electives and free electives for discussion with the mentor

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Mentoring – Personal Development Plan

1. Write your Personal Development Plan

- Write your own Personal Development Plan (PDP) containing:
  - Choices within the curriculum, like courses, internship and graduation
  - Professional skills in academic writing, presenting and teamwork you want to improve
  - Other (academic) skills you want to develop
  - See: https://educationguide.tue.nl/programs/graduate-school/coaching-and-professional-skills/

- Use your PDP to discuss in the mentor meeting

- You can find a template of a PDP on the online education guide (Downloads): https://educationguide.tue.nl/programs/graduate-school/masters-programs/electrical-engineering/mentoring/

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Mentoring – Scientific Integrity

2. Scientific Integrity

- Read the webpage on scientific integrity, see
https://www.tue.nl/en/our-university/about-the-university/integrity/scientific-integrity/

- Sign the Code of Scientific Conduct: a declaration of how to carry out your academic research regarding scientific integrity. For a link, see
https://educationguide.tue.nl/programs/graduate-school/masters-programs/electrical-engineering/mentoring/

- Send a digital signed copy to EE.CSA@tue.nl, put your 7-digit studentID (something like 19XXXXX or 20XXXXX) in the subject

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Mentoring – Preliminary study program

3. Setup your study program

- Use the education guide for more information about the curriculum, master tracks and available core, specialization and elective courses, see the education guide

- Use the Master Marketplace or download a template Excel file from the education guide to fill in your study program

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Mentoring – Meeting

With your mentor, you

- Discuss your Personal Development Plan on how to (further) develop your professional skills

- Discuss your study program.
  The mentor only **advises** on your choice of specialized electives and free electives, the Examination Committee approves

- Discuss options for international experience

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Canvas information channel

Communication

- Important information for <u>all</u> students is communicated via announcements on our Canvas information channel 5INFO-24/25

- You are <u>automatically</u> subscribed in the first week of the first quarter

- Important information on the master EE will be communicated via this channel

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Broadening - International Experience

- Particularly for Dutch students: it is advised to choose at least 15 EC of international experience by following abroad:
    - Courses
    - Internship
    - Graduation project

- Check the International Experience page on the education guide for more information:

https://educationguide.tue.nl/programs/graduate-school/masters-programs/electrical-engineering/international-experience/

- Join the Q&A on International Experience in the lunchbreak of **13 November 2024** (invitation follows)

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Broadening – Internal double diploma

Joint Master's degree program

- 165 EC ≤ #credits ≤ 195 EC

- Two diplomas with only a minimum of 45 EC extra

- Combined graduation project 60 EC

- Meet the criteria of both Examination Committees

- https://educationguide.tue.nl/programs/internal-double-diploma/

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Broadening – Honors program

Honors program

- For motivated students who want additional challenges, upgrade their personal and professional development, build a professional network

- 20 EC 'on top of' Master's degree program

- Focus on Personal Leadership (5 EC)

  - *"This is the best course that I had in university because it helped me to base my decisions, in everything that I do, on love instead of fear"* **– Honors student**

- Focus on Professional Development (15 EC)

  - challenging activities, (external) internships, (external) projects

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Broadening – Honors program

Honors program

- Information session on
  Date: **Monday 9 September 2024**
  Time: **12:35h till 13:25h**
  Location: **Matrix 1.340**

- More information about the Honors program can be found here:
  https://educationguide.tue.nl/programs/honors-academy/master-students

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Broadening – MasterPlus Optics & Photonics

- The TU/e has leading research activities in optics & photonics

- The Brainport industry needs more physicists and engineers with a background in optics and photonics

➡️ Together, we are starting a new national initiative, the MasterPlus Optics&Photonics

A "Plus" on top of your Master in Electrical Engineering:
- Specialization path ECO or PhI, with **optics/photonics electives**
- Relocation grant (2 k€) for incoming international students
- A paid **industrial internships** within a company of the ecosystem
- **1-week camp on optics/photonics careers** and entrepreneurship
- **Scientific & social activities**
- Dedicated **optics/photonics job fair**

More info: https://www.mpop-programme.com/ + information session 19 September

OPTICS NETHERLANDS · PhotonDelta · ASML · Signify · SMART PHOTONICS · EFFECT PHOTONICS · TU/e

IND Study Progress Check with residence permit for study

- Students with a **residence permit for study** have to pass at least 50% of the maximum number of credits per academic year to retain their residence permit

- For students following the SENSE program, the progress check is based on the credits obtained in this academic year at TU/e

- A study progress check takes place in September of the **next** academic year based on the results obtained in **this** academic year

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IND Study Progress Check with residence permit for study

- But: a **preliminary** check will also be carried out in this academic year in February/March to see if you are on track

- The academic advisor also checks your study progress regularly (e.g. after Q1)

- In case of study problems, personal circumstances or insufficient study progress, contact your academic advisor in time

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Registration for courses and exams

Courses

- Register for courses via OSIRIS in time. Check the deadlines (education guide and ESA emails) and AKR/ACR (Administrative Costs Regulation) procedure!

- Course registration also includes exam registration (only if you are officially enrolled as master student)

- You can register for maximum 20 EC per quarter

- You have to register separately for resit exams!

- After registration, you always receive a confirmation email. Check and keep these emails. If not received, contact ESA!

- See the online education guide for more information: https://educationguide.tue.nl/practical-info/student-administration/enrolling-courses-and-examinations/enrollment-courses-and-examinations-graduate-school

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Registration for courses and exams

Not officially a master student yet?

- You can register for master courses but **NOT** for master exams

- After officially enrolled as a master student, do not forget to register for the master exams from Q1 before the deadline for Q2

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Safety and health

For all **new** students to TU/e: instruction on safety and health

- Practical information about the buildings and learn how to avoid hazards and risks

- How to act in case of an emergency

- How to prevent physical complaints caused by computer work

- Instruction is mandatory for all new students

- You will be informed later by email what you need to do

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Online education guide Electrical Engineering

All information presented here can be found on the online education guide:

- Curriculum: courses, internship, graduation project, Master's tracks

- Coaching and Professional Skills, Mentoring

- Regulations: Program and Examination Regulations (PER/OER)

- Examination Committee and Program Committee

- Forms: all forms used within the Master's program

- Quality Assurance, A to Z

https://educationguide.tue.nl/programs/graduate-school/masters-programs/electrical-engineering/

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Academic advisor

Academic advisor advises and helps you

- To improve your study progress

- With practical questions about the Master's program

- With study-related questions and problems

- With study skills

- With your planning

- In case of personal circumstances

- But: you also have a responsibility
  https://educationguide.tue.nl/guidance-and-development/student-responsibilities

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Academic advisor

Academic advisor may refer to

- Study choice advisor: problems related to doubts about study choice

- Student counsellor: study grants, financial support, functional impairment or chronic illness, top-level sports

- Study management advisor: improve study progress and study output

- Student psychologist: depression, anxiety, autism, ADHD, stress, assertiveness, personal circumstances

- Confidential counsellor: conflicts between student(s), teacher(s), staff, supervisors, or in case of undesirable or unwelcome behaviour

- https://educationguide.tue.nl/guidance-and-development/who-to-contact

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Study+ - Studying at TU/e with extra support

What support does TU/e offer?
What are my responsibilities?
Where do I go for help?

To find out go to Canvas:
Study+: Studying with Extra Support

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Academic advisor

Academic advisor works according to privacy (GDPR /AVG) regulations

- Meetings and correspondence are always STRICTLY CONFIDENTIAL. Notes are being made and stored in your digital file to keep track of your situation. Personal information will NEVER be shared with lecturers and other staff unless there is an acute danger for you and/or others.
https://educationguide.tue.nl/guidance-and-development/who-to-contact

- Part of the GDPR/AVG is that you send emails using your **TU/e mail address**, not your personal email address

- Study progress check after Q1, just to check how you are doing after the first quarter

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Academic advisor

Last but not least

- New external students who are assigned a student mentor will receive an email soon

- Let me know if you experience problems in your study (e.g. study delay, planning issues or management of your studies)

- Let me know if you run into personal problems that may influence your studies: the sooner I know, the better I can help you

- "I rather see you studying with **pleasure** than with distinction"

DO NOT BE AFRAID OR ASHAMED TO TALK TO ME ☺

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Academic advisor

But …

- In case you do not want to discuss your problems with me,

- you can also talk to one of our **student** Confidentional Peer Supporters

- 24 students are officially trained

- https://educationguide.tue.nl/guidance-and-development/who-to-contact/confidential-contact-persons-peer-listeners

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Student guidance @ TU/e

Student guidance for master's students
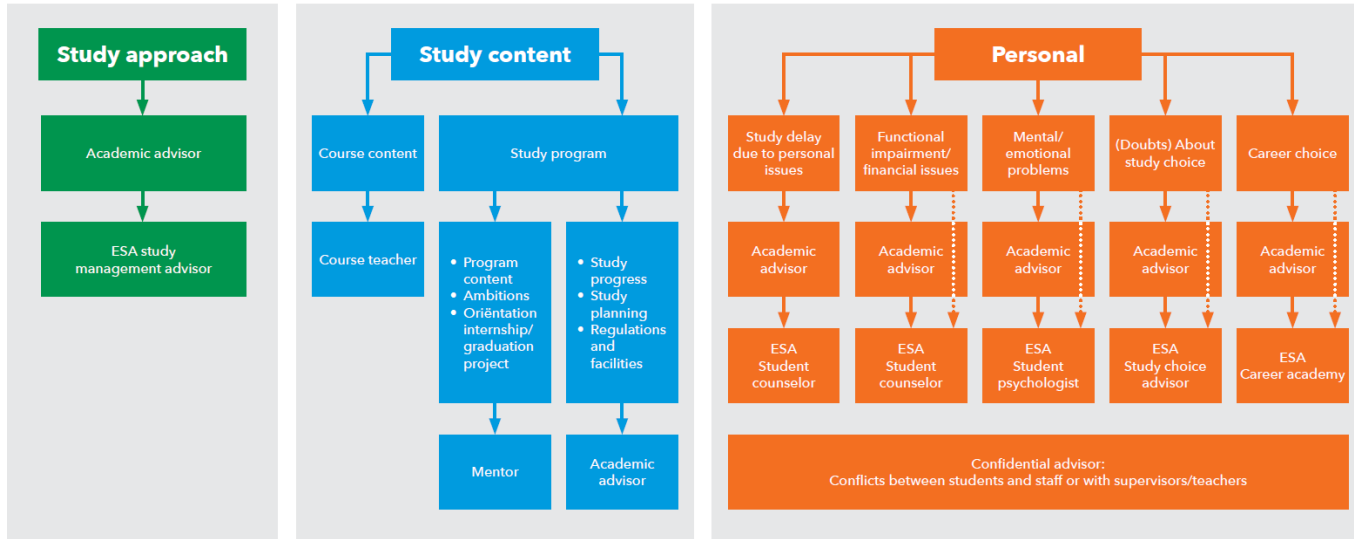
Academic advisor

If you have any questions, come and visit me in Flux 0.122, make an appointment or send me an email:

EE.Academic.Advisor.MEE@tue.nl

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Join us! Be part of the TU/e community

Everyone is welcome here
Inclusiveness is important

Please make every effort to include all
Speak English

Nationality, gender, religion, race, sexual orientation, appearance:
We are all one!

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Join us! Be part of the TU/e community

Join Thor (EE Study Association)
Join COSMOS (International Student Association)

Be active in your mentor group

go to Student Sports Center

Join one of the many
Student Associations

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Master's program of Electrical Engineering

Department Introduction Master Kick-Off 2024   **28 August 2024**

Elmine Meyer, Program Leader Electrical Engineering
Harald van den Meerendonk, Academic Advisor Electrical Engineering

Master's program of Electrical Engineering

		# EC
	Core courses	15
	Specialization electives	10
Year 1: 60 EC	Free electives	30
	Professional development	5
Year 2: 60 EC	Internship	15
	Graduation project	45

Note: Internship in year 1 or summer is also possible

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Core courses master EE

- Choose three (or more ☺) core courses from set of eight in Q1

Code	Core course
2DME10	Discrete mathematics
2DME20	Non-linear optimization
2DME30	Complex analysis
5CCA0	Semiconductor physics and materials
5CHA0	Classical and modern physics
5CPA0	Numerical methods in Electrical Engineering
5CSA0	Modeling dynamics
5CTA0	Statistical signal processing

- Choosing more core courses is allowed: add them as Electives

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Core courses master EE

- Research groups require specific core courses

	2DME30	2DME10	2DME20	5CCA0	5CTA0	5CHA0	5CPA0	5CSA0
	Complex analysis	Discrete mathematics	Non-linear optimization	Semi-conductor physics and materials	Statistical signal processing	Classical and modern physics	Numerical methods in EE	Modelling dynamics
CS	X		X		X		X	●
ECO	X			●	●	X/●	X/●	X
PHI	X			●	X	●	X	X
EES-1*		X	X		X			X
EES-2*				X		X	X	
EPE-1	X		X			●	●	●
EPE-2		X	X	●	X	●	X	●
EM**	X		X	X		X	●	
ES		●	X	X	X		X	X
IC-1				●	●		●	
IC-2				●	●		●	
SPS***		X	●		●		X	

● = Must have

X = Nice to have

*EES-1 & EES-2: students are allowed to deviate from the indicated courses

**EM: choose 2 out of 4, where it is recommended to choose 2DME20 & 2DME30 if you want to pursue a specialization in modelling techniques

***SPS: students of the ICT lab choose 2DME10 as the 3rd course. Students of all other labs choose 5CPA0 as the 3rd course.

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Specialization courses

- Choose 10 EC of specialization courses from your preferred research group in Q2 and Q3

Path	Code	Course	Quarter
CS	5SMC0	Control Principles for Engineered Systems	2
	5SMB0	System Identification	3
ECO	5SHA0	Photonic Integrated Devices	2
	5STA0	Optical Fibre Communications Technology	3
EES-1	5SED0	Electrical energy systems in transition	2
	5SEE0	Planning and Operation of Electrical Power Systems	2
	5SEF0	Smart grids, ICT and electricity markets	3
EES-2	5SVA0	High Voltage Technology	2
	5SVB0	Electromagnetic Compatability	3

5SED0 and 5SEE0 have 2,5 credits!

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Specialization courses

- Some research groups have two specialization paths

Path	Code	Course	Quarter
EM	5SPB0	Microwave Engineering and Antennas	2
	5SPD0	Electromagnetic Modeling Techniques	3
EPE-1	5SWA0	Rotary Permanent Magnet Machines	2
	5SWB0	Advanced Power Electronics	3
EPE-2	5SWC0	Linear and Planar Motors for High-Precision Systems	2
	5SWB0	Advanced Power Electronics	3
ES	5SIA0	Embedded Computer Architecture	2
	5SIB0	Electronic Design Automation	3

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Specialization courses

Path	Code	Course	Quarter
IC-1	5SFA0	Data Converters 1: Fundamentals	2
	5SFD0	Data Converters 2: Design	3
IC-2	5SFB0	RF Transceivers 1: Fundamentals	2
	5SFE0	RF Transceivers 2: Design	3
PhI	5SHA0	Photonic Integrated Devices	2
	5SHC0	Microfabrication Technology	3
SPS	5SSD0	Bayesian Machine Learning and Information Processing	2
	5SSC0	Adaptive Array Signal Processing	3

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Elective courses

- Choose a total of at least 30 EC of elective courses. Core courses and specialization electives are also valid electives

- Choose from about 70 EE master courses, other TU/e master courses, or master courses from other universities (always to be approved by Examination Committee). Level 3 (Advanced) bachelor courses from EE are allowed for homologation purposes

- Electives can be found on the education guide (PDF): https://educationguide.tue.nl/programs/graduate-school/masters-programs/electrical-engineering/curriculum/elective-courses/

- Mentor gives advice on specialized and free electives

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Professional Development

Main targets

- Formulating a research question and conducting literature review (for every master student)

- Career Development
  - Gaining insight in your own wishes regarding future jobs and companies and use sources to orientate yourself efficiently on the job market

- Improving skills of academic writing and presenting scientific information:
  - using feedback moments at the end of the internship and halfway through the graduation project

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Professional Development

Main targets

Code	Course	Quarter
5CKF0	Research set-up	1 or 3
5CKG0	Career Development	2, 3 or 4

https://educationguide.tue.nl/programs/graduate-school/masters-programs/electrical-engineering/curriculum/professional-development/?L=2

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Internship

- Research project of 15 EC (course **5I015 Internship 15 ects)**, for hbo graduates 10 EC (**5I010 Internship 10 ects**)

- Possibility to extend with 5 EC (course **5I005 Extension internship** instead of an elective course), not for hbo graduates

- Advised to choose internship abroad to obtain international experience. Hbo graduates do the internship within a research group

- Always under the responsibility of an EE staff member

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Internship

- Before you start, register for the internship (and extension) via Osiris and webform (education guide).

- No registration deadline for internship course code: register when you are about to start

- Assessment is done by internship assessment form

- Advice on extra training via SkillsLab or courses based on results of Reporting and Presenting

- Check the **Study guide Internship EE** for detailed information: https://educationguide.tue.nl/programs/graduate-school/masters-programs/electrical-engineering/curriculum/internship

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Graduation project

- Graduation project of 45 EC (32 weeks, course code: **5G045 Graduation project 45 ects**)

- Project contributes to the research of the supervising research group

- Can be done inside and outside the department of EE

- Always under the responsibility of an EE staff member

- Allowed to start when you have completed <u>all</u> components (core, specialisation, professional development, 20 EC of electives, internship) of your study program except for at most two electives (10 EC).

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Graduation project

- Before you start, register for the graduation project via Osiris and webform (education guide).

- No registration deadline for graduation project course code: register when you are about to start

- Examination Committee is very strict on the duration of the graduation project!

- Half way through the graduation project -> evaluation/feedback moment with presentation

- Based on feedback, extra training on writing or presenting may be necessary

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Graduation project

- At the end of the graduation: final presentation (defense) and graduation paper

- Assessment is done by graduation committee

- Check the **Study guide Graduation project EE** for detailed information: https://educationguide.tue.nl/programs/graduate-school/masters-programs/electrical-engineering/curriculum/graduation-project/

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English language skills

SFC640, SFC630, SFC600

- Good language skills in writing and presenting/speaking areessential in the master and beyond

- You can follow extra courses:
  - SFC640 Academic writing in English (can be used as a master elective)
  - SFC630 Pre-academic writing in English
  - SFC600 English Placement Test (entrance test for SFC630/SFC640)
  - SkillsLab: https://skillslab.tue.nl
  - Academic Writing Skills and English Language Toolbox, see: https://educationguide.tue.nl/career-skills/language-courses-and-academic-writing-skills

- Good language skills are also part of the assessment of internship and graduation

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Master's tracks

Two tracks within the Master's program of Electrical Engineering

- Care & Cure (C&C):
  https://educationguide.tue.nl/programs/graduate-school/masters-programs/electrical-engineering/master-track-care-cure
- Connected World Technologies (CWT)
  https://educationguide.tue.nl/programs/graduate-school/masters-programs/electrical-engineering/master-track-connected-world-technologies

Obtain certificate as proof of further specialization

But: choosing a track is not mandatory

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Master's track Connected World Technologies

Requirements for certificate CWT

- Research groups involved: ECO, PhI, EM, IC, SPS

- Two specialization electives from one of the research groups (main specialization), and

- Two additional specialization electives from the remaining research groups (other specialization), and

- Graduation project is in the field of CWT

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Master's track Connected World Technologies

		# EC
Year 1: 60 EC	Core courses	15
	Specialization electives (ECO/PhI/EM/IC/SPS)	10
	Specialization electives (other specialization)	10
	Free electives	20
	Professional development	5
Year 2: 60 EC	Internship	15
	Graduation project (CWT-area)	45

https://educationguide.tue.nl/programs/graduate-school/masters-programs/electrical-engineering/master-track-connected-world-technologies

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Master's track Care and Cure

Requirements for certificate C&C

- Research groups involved: ES, EM, IC, SPS

- Two specialization electives from one of the research groups, and

- Mandatory course 5LSN0 Technology for Care and Cure, and

- Three electives from the C&C course list, and

- Graduation project is in the field of C&C

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Master's track Care and Cure

		# EC
Year 1: 60 EC	Core courses	15
	Specialization electives (ES, EM, IC, SPS)	10
	5LSN0 Technology for Care and Cure	5
	Three electives from the C&C course list	15
	Free electives	10
	Professional development	5
Year 2: 60 EC	Internship	15
	Graduation project (CWT-area)	45

https://educationguide.tue.nl/programs/graduate-school/masters-programs/electrical-engineering/master-track-care-and-cure

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Master's tracks

What to you need to do?

- If you choose a track(s), indicate this on the **Approval study package Master EE** Excel

- BUT: it is not mandatory to choose a track!

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Q&A

Two Q&A's:

- International Experience **13 November 2024**

- Internship and graduation project **5 February 2025**

Keep an eye on the Canvas channel 5INFO-24/25 for more information on the Q&A sessions.

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Finally

- This presentation will be shared on the education guide

- Next: For everyone who registered for the Master Kick-off 2024
    Tour de Flux: follow the students with the red/blue signs

- Be back at 12:00h for Lunch in the Auditorium (Senaatszaal)

- Questions?

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