



## Pre-Master Kick-off 2024

**Hbo bachelors, university bachelors and HBO-TOP students**

**2 September 2024**

Harald van den Meerendonk, Academic advisor pre-Master's and Master's 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



# Contents

- Introduction TU/e, Electrical Engineering
- Programs for hbo and university Bachelors
- Study Progress Requirement
- HBO-TOP, Special situations
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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.

# 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

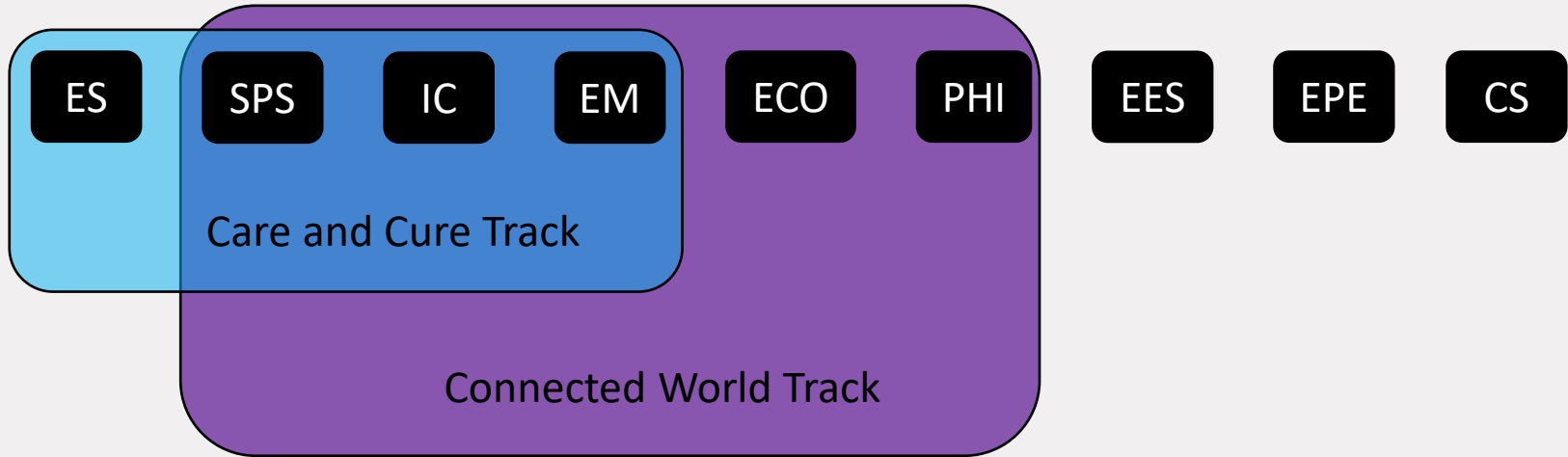


Flux building

Study spaces for  
students in Flux



# Master Electrical Engineering



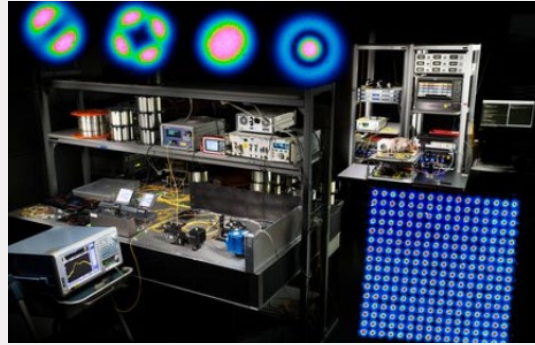


# Nine research groups (1)



## Control Systems (CS)

- Dynamic modelling and model-based control of complex dynamic systems
- 9 Labs



## Electro-optical communication (ECO)

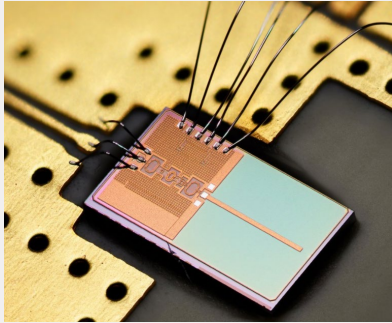
- High-capacity optical transmission
- Optical networks
- Terahertz photonics



## Electrical Energy Systems (EES)

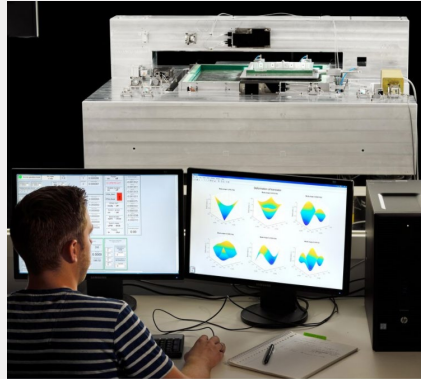
- Power grid technologies
- Intelligent power grids

# Nine research groups (2)



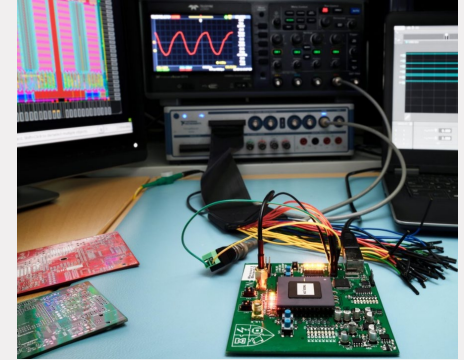
## Electromagnetics (EM)

- Integrated Antenna Systems
- EM for Care & Cure
- Multi-physics modelling and computation
- EM Metrology
- EM Radio Science



## Electromechanics and Power Electronics (EPE)

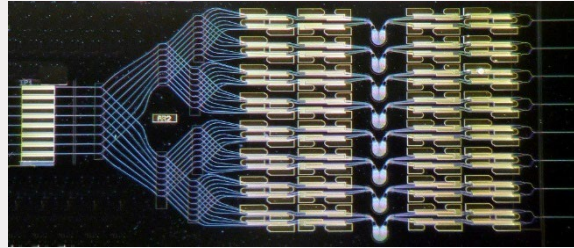
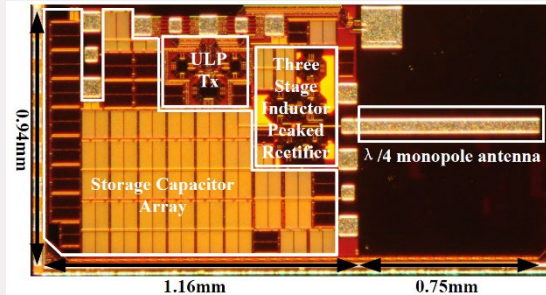
- High-performance motion technology
- High-efficiency energy conversion
- Electromechanics Lab
- Power Electronics Lab



## Electronic Systems (ES)

- Model-driven engineering
- Smart electronic systems
- Digital nano-electronics

# Nine research groups (3)



## Integrated Circuits (IC)

- RF transceivers
- Wideband data converters
- Emerging technologies
- Resource efficient electronics
- MRI Hardware development

## Photonic Integration (PhI)

Integrated photonic circuits for

- Communication
- Sensing

Focus on indium phosphide technology

## Signal Processing Systems (SPS)

- Bayesian Intelligent Autonomous Systems
- Biomedical Diagnostics
- ICT
- Lighting and IoT

# Pre-Master's programs and students

- Hbo graduates follow the pre-Master's program for hbo Bachelors (a standard program).
- University graduates (from TU/e and other) follow the pre-Master's program for university bachelors
- HBO-TOP students follow (parts of) the pre-Master's program for hbo Bachelors for the minor or Excellence program (Fontys only). Fontys decides on which courses for Excellence
- Both pre-Master's programs consist of 30 EC deficiency courses from the Bachelor of Electrical Engineering. Hbo bachelors have 15 EC extra deficiency courses in their Master's program, so-called homologation courses

# Program (premaster+master) for hbo Bachelors

|             |                             | EC        |  |
|-------------|-----------------------------|-----------|--|
| First year  | Pre-Master's program        | 30        |  |
| Second year | <b>Homologation courses</b> | <b>15</b> | ←  |
| (Year 1)    | Core courses                | 15        | differences from<br>standard Master's<br>program for TU/e<br>bachelors |
|             | Specialization courses      | 10        |  |
|             | Professional Development    | 5         |  |
|             | <b>Elective courses</b>     | <b>20</b> |  |
| Third year  | <b>Internship</b>           | <b>10</b> | ←  |
| (Year 2)    | Graduation project          | 45        |  |

# Pre-Master's program for hbo Bachelors

| Code                  | Name  | EC | Quarter |
|-----------------------|---|----|---------|
| <a href="#">2WBB0</a> | Calculus variant 2 ( <i>timeslot B, code: BEI/BAU</i> ) | 5  | 1       |
| <a href="#">5ECE0</a> | Electronic Circuits 2                                   | 5  | 1       |
| <a href="#">5EZA0</a> | Math 1  | 5  | 2       |
| <a href="#">5LIU0</a> | Linear systems, signals & control                       | 5  | 2       |
| <a href="#">5EIC0</a> | Computer Architecture                                   | 5  | 3       |
| <a href="#">5EZB0</a> | Math 2  | 5  | 4       |



# Pre-Master's program for hbo Bachelors

- Still remaining 3 of 11 deficiency courses (EE) for 15 EC
- To be resolved in the Master's program for hbo Bachelors, Homologation part

| Code                  | Name               | EC | Quarter |
|-----------------------|--------------------|----|---------|
| <a href="#">5EPF0</a> | Electromagnetics I | 5  | 1       |
| <a href="#">5ESH0</a> | Control systems    | 5  | 4       |
| <a href="#">5ESG0</a> | Signal processing  | 5  | 4       |

# Program (premaster+master) for university Bachelors

|             | Pre-Master's program            | EC |
|-------------|---------------------------------|----|
| First year  | Pre-Master's program individual | 30 |
| Second year | Core courses                    | 15 |
| (Year 1)    | Specialization courses          | 10 |
|             | Professional Development        | 5  |
|             | Elective courses                | 30 |
| Third year  | Internship                      | 15 |
| (Year 2)    | Graduation project              | 45 |

# Pre-Master's program for university Bachelors

| Code                  | Name                              | EC | Quarter |
|-----------------------|-----------------------------------|----|---------|
| <a href="#">5EPFO</a> | Electromagnetics I                | 5  | 1       |
| <a href="#">5XCA0</a> | Fundamentals of electronics       | 5  | 2       |
| <a href="#">5LIU0</a> | Linear systems, signals & control | 5  | 2       |
| <a href="#">5EIC0</a> | Computer architecture             | 5  | 3       |
| <a href="#">5ETCO</a> | Communication I                   | 5  | 4       |
| 5XX0*                 | Free deficiency course            | 5  | X       |

\* See the [education guide](#) for a list of allowed courses

# Pre-Master's program for hbo Bachelors

More information in the education guide

- Pre-Master's program:  
<https://educationguide.tue.nl/programs/pre-master-programs/electrical-engineering>
- Master's program:  
<https://educationguide.tue.nl/programs/graduate-school/masters-programs/electrical-engineering>

## Study Progress Requirement

**The pre-Master's program  
must be completed  
within one academic year  
(max. 2 semesters)**

**(for TU/e premaster students only)**

# Study Progress Requirement

- If you complete the program within one academic year, you can continue with the master
- If you do not complete the program in one academic year, you cannot continue in the master, and you are not allowed to enroll in the pre-Master's program again for a period of three years
- After 1 March, you receive a pre-recommendation from the Examination Committee based on your results so far
- After Q4 or interim period (Q4 re-sits), you receive a binding study progress decision from the Examination Committee



# Study Progress Requirement

- Pre-recommendation (positive/negative): a warning when there is insufficient study progress
- Study progress decision:
  - **Positive:** you completed the program, you can continue in the master
  - **Negative:** you did not complete the program, you are not allowed to continue in the (pre-)master
- In case you do not have sufficient study progress, experience study difficulties or there are special (personal) circumstances, let me know to discuss alternatives

# Study Progress Requirement

## No pre-recommendation/study progress decision ...

- ... when you de-enroll from the pre-Master's program before **1 March** and are not re-enrolled for another pre-Master's program at TU/e: you can re-enroll in the pre-Master's program next year
- If you de-enroll and re-enroll next year, the credits obtained will not be lost
- However: de-enrollment only to continue the program next year is not always the best option

# Study Progress Requirement

Do you still have ONE exam open in August after the resits (interim period)?

- Send a request to the Examination Committee for one additional exam to complete your program
- See the OER/PER 2024-2025 of the master EE, appendix 2, article 4, paragraph 6

<https://educationguide.tue.nl/programs/pre-master-programs/electrical-engineering/examination-committee-ee>

# HBO-TOP

- Hbo students doing their minor at TU/e follow the pre-Master's program for hbo Bachelors.
- Duration of the minor at hbo (Q1 + Q2) < duration TU/e pre-Master's program (Q1-Q4).
- Some schools require the pre-Master's program to be completed within one year as well
- Hbo students from Fontys following the Excellence program take only one course from the pre-Master's program per quarter, as arranged with their Fontys coordinator

# HBO-TOP

- HBO-TOP students who have completed all courses from the pre-Master's program, can continue in the master directly after graduation from hbo.
- HBO-TOP students who have completed parts of the pre-Master's program, become TU/e premaster students after graduation from hbo. They continue with the remaining courses from the pre-Master's program. After completion of the pre-Master's program, they can continue in the master.
- No Study Progress Requirement from TU/e for HBO-TOP students
- After completing your study at hbo, you have to enroll for either the premaster or the master at TU/e before **1 May**, depending on completing the program or not

# Special situations: Exemptions

- Students from Shanghai Maritime University (SMU) may get exemptions for 3 Mathematics courses (2WBB0 Calculus variant 2, 5EZA0 Math 1 and 5EZB0 Math 2) based on the results of Linear Algebra and Advanced Mathematics (A) I & II obtained at SMU
- Students from hbo who did some courses in the bachelor EE at TU/e may get exemptions from the pre-Master's courses they already completed during their bachelor
- Students from TU Delft or UT Enschede who completed (some or all) pre-Master courses at TUD or UT may get exemptions for the pre-Master's courses from TU/e
- The Examination Committee officially decides on exemptions
- You send a request to the Examination Committee if you can get exempted for these courses. Include your transcripts of records, and the contents and learning objectives of the courses



# Special situations: Following master courses

For:

- Students who already finished courses from the pre-Master's program from previous year(s) because of their re-enrollment in the pre-Master or following the HBO-TOP program
- Students who are granted exemptions by the Examination Committee on courses from the pre-Master's program
- Students who finished the courses from Q1 and Q2 in their current pre-Master's program

# Special situations: Following master courses

When:

- In case you already completed 15 credits (or more) of premaster courses or are granted exemptions, you can follow 15 credits (maximum) of master courses
- See the OER/PER 2024-2025 of the master EE, appendix 2, article 2, paragraph 6  
<https://educationguide.tue.nl/programs/pre-master-programs/electrical-engineering/examination-committee-ee>
- You have to ask the Examination Committee if you can take master courses and exams as a premaster student
- Advice: take the homologation courses as master courses first

# Special situations: Following master courses

- You have to pay for extra courses on top of your pre-Master's program. Contact ESA ([ESA@tue.nl](mailto:ESA@tue.nl)) for paying for courses.
- You only have to pay for the remaining courses of your pre-Master's program!
- You can send a request to the Examination Committee via Osiris Case. For more information, see: <https://educationguide.tue.nl/programs/graduate-school/masters-programs/electrical-engineering/examination-committee-ee>

# Canvas information channel

## Communication

- Important information for all students is communicated via announcements on our Canvas information channel 5INFO-24/25
- You are automatically subscribed to the channel
- Important information on the premaster EE will be communicated via this channel

# Mentoring

## Student mentor

- All first-year premaster and HBO-TOP students who are new to TU/e are “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

# Transitional arrangements

For students who already completed courses or still need to complete courses from the previous pre-Master's program

- Re-enrolling premaster students from 2023-2024 with not all courses finished
- Re-enrolling HBO-TOP students with not all courses finished
- Master students with some homologation courses already finished
  
- TO BE DECIDED ...

# 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 **each** academic year to retain their residence permit
- A study progress check takes place in September of the **next** academic year based on the results obtained in **this** academic year
- But: a **preliminary** check will also be carried out in this academic year in February/March to see if you are on track
- Completing the pre-Master's program means meeting the IND progress requirement as well
- In case of study problems, personal circumstances or insufficient study progress, contact your academic advisor in time

# Registration for courses

- All courses from the pre-Master's program are Bachelor courses
- Rules of the Bachelor College apply according to the OER/PER Bachelor
- 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
- Register separately for resits (also for bachelor courses)



# Registration for courses

- After registration, check and keep confirmation emails. If not received, contact ESA ([ESA@tue.nl](mailto:ESA@tue.nl))!
- See the online education guide for more information:  
<https://educationguide.tue.nl/practical-info/student-administration/enrolling-courses-and-examinations/enrolling-courses-and-examinations-bachelor-college/?L=2>
- Automatically registered for the courses from the first quarter
- Automatically registered for 2WBB0 in timeslot B, registration done by CSA MCS because of the huge number of students

# 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

# Online education guide Electrical Engineering

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

- Curriculum: pre-Master's programs, Master's program (for hbo graduates)
- Regulations: Program and Examination Regulations (PER/OER) from both Bachelor and Master
- Examination Committee and Program Committee
- Quality Assurance

<https://educationguide.tue.nl/programs/pre-master-programs/electrical-engineering>

# 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>

# 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>

# 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](#)

Source: [Sensibilisation aux différents types de handicaps - Halte Pouce : Accompagner le Handicap au Quotidien \(halte-pouce.fr\)](#)

# 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

# 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”

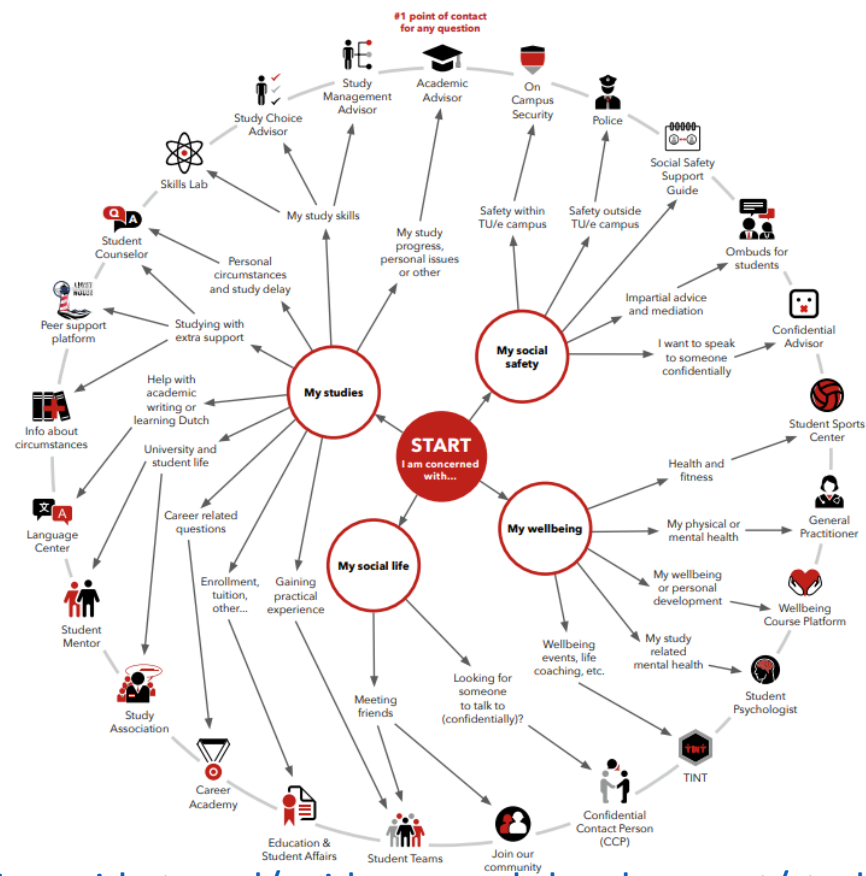
**DO NOT BE AFRAID OR ASHAMED TO TALK TO ME 😊**



# Academic advisor

But ...

- In case you do not want to discuss your problems with me,
- you can also talk to one of our **student** Confidential Contact Persons (peer listeners)
- 24 students are officially trained as confidential contact persons
- <https://educationguide.tue.nl/guidance-and-development/who-to-contact/confidential-contact-persons-peer-listeners>



<https://educationguide.tue.nl/guidance-and-development/student-wellbeing>

# 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](mailto:EE.Academic.Advisor.MEE@tue.nl)**



# 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!***

# 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](#)





StudentBody

Pre-Master Kick Off 2024

Contact: [SB@tue.nl](mailto:SB@tue.nl) | [Studentbody.nl](http://Studentbody.nl)

## The StudentBody

- The educational feedback body of the Department of Electrical Engineering
- By students, for students

## What do we do?

### ○ Year Councils

- Bachelor: first year, second year, third year councils
- Master: master council
- Premaster: premaster council

### ○ Panel of Education

- BBQ
- Dinner with the Dean
- Best Teacher Awards
- Contact us with educational problems



## Year councils and panel of education

- Year Councils with Commissioner of Education
- Panel of Education with Commissioner of Education, Program Directors, Quality Assurance Officer and student-member of Department Council
- Setup unique within TU/e
- Short feedback loop
- Problems can be fixed quickly

# Quarterly meetings in the academic year 2024-2025

| Q1W1  | Q2W1  | Q3W1  | Q4W1  |
|---|---|---|---|
| Kick-off<br>everything you need<br>to know about the<br>pre-Master's<br>program | Follow-up 1<br>evaluation,<br>pre-recommendation,<br>preparing for Q3 | Follow-up 2<br>evaluation,<br>preparing for the<br>master | Follow-up 3<br>evaluation, binding<br>study<br>recommendation,<br>preparing for the<br>master |
| 2 September 2024  | November 2024   | February 2025   | April 2025  |

Keep an eye on Canvas for more information on the Q&A sessions.

# Practicalities

## Premaster councils

- two or three premaster councils each quarter
- opportunity to inform us about the positives/negatives of each premaster course
- invitation will be send via Outlook (as meeting request) to not forget the meeting
- This presentation will be shared on the education guide:  
<https://educationguide.tue.nl/programs/pre-master-programs/electrical-engineering>

# Questions

Any questions?