TU/e EINDHOVEN UNIVERSITY OF TECHNOLOGY

Education guide
Major Electrical Engineering
2021–2022

Adopted by the Faculty Board of the Department of Electrical Engineering on Sep. 29, 2021.

Contents

This education guide provides valuable information about the major Electrical Engineering bachelor's degree program. This document is part of the student statute. The student statute contains the mutual rights and obligations of TU/e and its students. According to law TU/e is obliged to have a student statute and to provide this to its students. The student statute consists of two parts: an **institutional section** (which applies to the entire TU/e) and a program section (which varies from program to program). This education guide, derived from the online education guide, is the major Electrical Engineering bachelor's degree program section of the TU/e student statute.

This education guide contains information about the structure and organization of the major Electrical Engineering bachelor's degree program as well as all kinds of practical study information.

In addition to the information provided here, students are strongly urged to consult the online education guide. Contrary to this education guide, **the online education guide** is updated regularly during the academic year. And contrary to this education guide, the online education guide is also updated when needed with information, procedures and regulations concerning the corona-crisis (COVID-19 crisis) during the academic year of 2021-2022.

Additionally, all students are added to the CANVAS page **5EE-INFO-STUDENT**. This is the communication channel for all students of the educational programs of the Department of Electrical Engineering. Via announcements you receive important information, messages and updates about our education. To make sure you don't miss any announcements, it's important that you turn on the notifications for the announcements and that you make sure you subscribe to one or more of the sub channels to receive the information that is applicable to you.

1. Major Electrical Engineering

You have chosen to study Electrical Engineering within the TU/e Bachelor College.

Half of the three-year bachelor's program is devoted to your major Electrical Engineering (EE), a study that will prepare you for a job as an engineer in electrical engineering.

The other half of the program consists of basic courses and elective courses:
- All first-year TU/e students follow several basic courses which are the same for every study program.
- In your first year you already choose several elective courses. You shape your own study program right from the beginning.

The study program also contains non-engineering courses because engineers are concerned with more than engineering alone.

Aim
This study aims to bring you up to the level of engineering-science Bachelor as an electrical engineer. To this end the following objectives are central to the study:

- To give the student a broad knowledge base to enable him/her to accommodate to the subfields of the subject;
- To provide the student with skills to optimize cooperation in a multidisciplinary team;

- To prepare the Bachelor student properly for an engineering-science Master in Electrical Engineering.

Focus

The study of Electrical Engineering focuses on the applications of electricity and magnetism, which include renewable energy systems, telecommunication, robotics, medical equipment and computers. Electrical Engineering has been the fastest growing field in engineering over the past fifty years, having an enormous impact on society. Just think of the tumultuous rise of computers, the introduction of mobile telephony and key medical innovations, like the MRI scanner. The field embraces both analog and digital systems in which hardware and software are equally important.

Subfields

More specifically, Electrical Engineering comprises the following subfields:

- Energy technology;
- Electronics;
- Photonics or opto-electronics;
- Electronic systems;
- Control engineering;
- Electromechanics and power electronics;
- Telecommunication;
- Signal processing;
- Electromagnetism.

Themes

Within our own Electrical Engineering department, the research focuses on three themes:
- Connected world;
- Care and cure;
- Smart and sustainable society.

During your study you will explore each of these themes, either in projects or in your Bachelor's Final Project.

2. Curriculum

An overview of the complete curriculum for the Bachelor Electrical Engineering (majors EE & AT) for the academic year of 2021-2022 can be found here.

An overview of the alterations in the curriculum for the Bachelor Electrical Engineering (majors EE & AT) for the academic year of 2021-2022 can be found here. This overview also includes the alterations in the Master curriculum EE.

The Bachelor's phase lasts three years and is completed with a Bachelor's final project (BEP). Each year is worth 60 credits, with each credit equivalent to 28 hours of study. A year is therefore 1680 hours of study, or 42 weeks of 40 hours.

The 1st year is designed to give the student insight into the contents of the rest of the study, subsequent studies and professional practice. It comprises basic courses (including Data analytics, Calculus, and Applied natural sciences) and various electrical engineering courses. There is also plenty of scope for Design Based Learning (DBL). Our department offers interesting DBL projects in

the first year (e.g. 5XFA0 DBL Rock-your-Baby and 5XIB0 DBL Venus exploration) in which you will learn to solve electrical engineering problems through working in project teams.

In the 2nd and 3rd years you will explore Electrical Engineering in more depth and will have more time for elective courses.

USE = Course related to User Society and Enterprise
BEP = Bachelor's final project; minimum 10 credits, expandable to 15 credits
Colors: blue = major course, pink = elective, orange = basic courses

Structure of the 3-year bachelor program for a student with a major in Electrical Engineering
The additional USE courses (15 ec) are part of the electives. Several labs and projects are integrated in the courses.

Electrical Engineering

	Quarter 1	Quarter 2	Quarter 3	Quarter 4
Year 1	Calculus 2 (2WBB0)	Applied natural sciences (3NBB0)	Data analytics for engineers (2IAB0)	USE (0SAB0)
	Circuits (5ECA0)	Signals I (5ESE0)	Electronic circuits I (5ECB0)	Systems (5ESB0)
	Computation I (5EIA0)	Elective	Mathematics I (2DE20)	Elective
Year 2	Engineering design (4WBB0)	Electromechanics (5EWA0)	Computation II (5EIB0)	Mathematics II (5EMA0)
	Electromagnetics I (5EPA0)	Electrical power systems (5EWB0)	Intro telecommunications (5ETA0)	Electromagnetics II (5EPB0)
	Elective / USE	Electronic circuits II (5ECC0)	Elective / USE	Elective / USE
Year 3	Signals II (5ESC0)	Communication theory (5ETB0)	BEP (5XEC0)	BEP (5XEC0)
	Control systems (5ESD0)	Elective / USE	Elective / USE	BEP extension (5XED0)*
	Elective / USE	Elective / USE	Elective / USE	Elective / USE

*It is possible to extend the Bachelor's final project (BEP) to 15 ECTS (credits) by choosing the BEP Extension (5XED0)

Safety training
A mandatory 5EE01 Safety and health, 1st year instruction training takes place online during Q1. The training consists of an online video. You will gain practical information about the TU/e campus and buildings, and learn how to avoid hazards and risks, and how to act in case of emergency. It's important to watch the video carefully, not only for your own safety during your studies, but also for the safety of your fellow students and the EE staff. The training is mandatory for all new students.

2.1 Basic Courses

Each TU/e bachelor student takes a number of basic courses. These basic courses provide the foundation for the 'Eindhoven Engineer' and develop your transversal knowledge. This is the knowledge you need to do major courses and electives both in and outside your department.

The basic courses include Calculus, Applied natural sciences, Data analytics for engineers, Engineering Design, and USE (User, Society & Enterprise) basis: Ethics and history of technology. There are different variants of the basic courses for different degree programs.

The basic subject matrix provides an overview of preferred basic courses per major. For Electrical Engineering these are the basic courses:

2WBB0 - Calculus variant 2
3NBB0 - Applied natural sciences
2IAB0 - Data analytics for engineers
0SAB0 - USE basis: Ethics and history of technology
4WBB0 - Engineering Design

Changing Majors
When you change your major during your bachelor's program contact your academic advisor to discuss which basic courses and electives you can use in your new program and which new/extra courses you have to do in order to complete the new bachelor's program successfully.

2.2 Electives and Coherent Packages

The elective part of your bachelor's program consists of 15 credits of USE components and 45 credits of electives. It allows you to match your studies even more closely to your (developing) interests and capabilities as you progress through the program.

Depending on your ambitions, interests and capabilities you could, for example, decide to deepen your knowledge of your major, explore the boundaries between a number of disciplines, study a combination of two majors (possibly for a double diploma), take on the challenge of an Honors program or obtain a second-level teaching qualification for pre-university education.

You can choose coherent packages or separate elective courses. In principle, any course in the Bachelor College can be chosen as an elective, including major courses from other programs. However, courses that overlap with major courses of EE cannot be chosen as an elective. An overview of these courses can be found here. You may take more than one USE (User, Society and Enterprise) learning trajectory, in this case the second USE trajectory will be marked as a coherent package of 15 credits.

In your choice of electives, you will need to consider the necessary prior knowledge required for the electives and the timeslots. The OSIRIS course catalogue and TU/e PlanApp provide useful guidance. Discuss your options with your student mentor (when you are a 1st year student) or your teacher coach (when you are a 2nd or 3rd year student). Also, visit the annual Check Your Match event, to help you with choosing your electives and to gather information on the electives that suit your interest.

Please note:

- Each EE student must complete at least two DBL projects during the Bachelor's program with at least one project of course level 2 or 3. These DBL projects can also be projects offered by other departments*.
    - *Due to COVID-19, students from generation 2017, 2018, 2019 and 2020 only have to complete one DBL project during the Bachelor's program, regardless the level of the DBL. This DBL project can also be a project, offered by another department.
- Each EE student must complete at least five courses belonging to two coherent packages.
- Each EE student must complete at least three USE courses in year 2 & 3.

Tip: *Use the electives in your first year to discover your personal interests. Most of the coherent packages start in the second year, on some of the packages we advise to start in the first year to make sure you finish your Bachelor in 3 years.*

Tip: *Would you like to do a Master after you finished your Bachelor? We advise you to also check this website (in Dutch). If your major doesn't give direct admission to the Masters' program, you could take homologation courses as free electives. Contact* the *academic advisor of the Master's program for more information.*

Coherent packages
The department of Electrical Engineering offers the following coherent packages:

- Introduction in electrical engineering
- Introduction in automotive
- Connected world
- Care and cure
- Neuro engineering
- Smart and sustainable society
- System design and analysis
- Electric and hybrid vehicles
- Intelligent vehicles
- Nano-science and technology
- Machine learning and information processing for communications

You are free to choose coherent packages from other departments.

Please note:

- The major course Electromechanics (5EWA0) is compulsory prior knowledge for the course 5XWF0 (which is part of both introductory packages for EE and AT).
- The package 'System Design and Analysis' is only valid as a coherent package for EE and AT students.
- If both packages 'Care and Cure' and 'Neuro engineering' are chosen, this combination is worth 25 credits in coherent packages in the elective space.
- If the package 'Intelligent Vehicles' is chosen within the major EE, this package only contains the two courses 5XSJ0 and 5XSK0.

- Within the package 'Machine learning & information processing for communications' Fundamentals of machine learning (5XSL0) is overlapping with Data Mining & machine learning (2IIG0). Students are not allowed to choose both courses.

Elective courses

The separate courses belonging to the abovementioned coherent packages can also be chosen as separate electives. An additional separate elective is:

- 5XED0 Extension Bachelor final project

In principle, any course in the Bachelor College can be chosen as an elective, including major courses from other programs. However, courses that overlap with major courses of EE cannot be chosen as an elective. An overview of these courses can be found here.

USE

The department of Electrical Engineering offers the following USE track:
- Internet of things

2.3 Bachelor Final Project

You finish your Bachelor with the Bachelor final project (BEP). The BEP is scheduled over two consecutive quarters. Optimally, you start your BEP in Q3 of your third year. However, with explicit permission from your academic advisor, you can also start your BEP in Q1.

Starting criteria

You may start your BEP if you have obtained at least 120 credits, including

- all of the compulsory study components of the 1st year of the Bachelor's program
- and two elective study components (courses).

Register in OSIRIS

Each BEP is 10 credits, this corresponds with 280 hours of work. You may choose to extend your BEP with 5 credits, an additional 140 hours. Register for the BEP EE (10 credits, 5XEC0) and, if applicable, for the BEP extension (5 credits, 5XED0) in OSIRIS.

If you choose the BEP extension, then this part must be described separately in the project description and in the final paper (see below).

Please note, you must register for 5XEC0 and, if applicable, 5XED0, even if you do an ISBEP (see below).

BEP in Q1 & Q2

In extraordinary cases and under strict conditions the BEP may be carried out during Q1 and Q2. This is only possible with permission of the academic advisor. Make an appointment with the academic advisor to discuss this in due time. In Q1 and Q2 you have four options:

- Arrange your own project, a so-called private proposal (see below).
- Choose a remaining project from the BEP Marketplace.
- Join a BEP at a TU/e student team;
- Join a BEP at the TU/e Innovation Space, a so called ISBEP.

Make sure to contact the responsible lecturer of the BEP EE, dr.ir. M.J.R.A. (Maarten) van Rossum, to discuss and plan your options.

BEP in Q3 & Q4

The regular BEP takes place in Q3 and Q4 of the 3rd year. Please read the checklist BEP EE/AT to see which actions are required for you to start a BEP in Q3. You have four options:

- Choose one of the available projects within the department of EE (see below);
- Arrange your own project, a so-called private proposal (see below);
- Join a BEP at a TU/e student team;
- Join a BEP at the TU/e Innovation Space, a so called ISBEP.

Make sure to contact the responsible lecturer of the BEP EE, dr.ir. M.J.R.A. (Maarten) van Rossum, if you have any questions.

BEP in Q3 & Q4: BEP projects within the department of EE

The BEP Marketplace is a digital platform where you can find all available BEP projects within EE. Through this platform you submit your top five preferences for projects. An automated ranking system will distribute all projects among the students. Two main criteria are used for ranking a student when multiple students have chosen the same project: 1. generation (youngest generation gets highest priority), and 2. number of gained credits within your study program after Q1 (if generation is the same, highest credit gets highest priority). 2a. Extracurricular credits (in case criterion 1 and 2 give the same ranking).

Note: Make sure that your examination program is approved by the Examination Committee EE when you enroll in the BEP. This ensures that the correct number of credits is available in the BEP Marketplace.

BEP projects within the EE department correspond with one of the four EE tracks and are carried out within one of the nine EE research groups. BEP projects within the EE department are connected to ongoing research activities.

The four tracks are:

- Automotive Technology
  The modern car is an intelligent, super high-tech system. The number of electrical components and systems is rising, especially with the transition to hybrid and electric powertrains and growing autonomous driving capabilities. In addition to the traditional mechanical engineering, the emphasis in automotive technology lies increasingly on disciplines like electronics and software.
- Smart & Sustainable Society
  Smart and sustainable society aims at designing, realizing and validating technologies to create electrical networks and electro physical devices for transporting and manipulating electrical energy in a flexible, controlled and sustainable way regarding efficiency of costs, power and materials. The focus lies on intelligent power networks, smart actuators and the reduction of pollution and waste.
- Connected World
  Communication technologies must provide ample telecommunication capacity, both wireless and wired, at affordable costs for the end users, yielding a traffic-jam free communication world. Other communication technologies are more localized and are only carrying traffic

over short distances. Connected world focusses on the applications, devices and infrastructure needed for the communication technologies of the future.

- Care & Cure
  Care & Cure is concerned with the medical side of electrical engineering. Its goal is to help the patient to stay away from the hospital by improving the quality of novel medical technologies and enabling the patient to manage his/her health, in the process lowering the costs of medical healthcare. For medical technology to support this trend, it should operate reliably in more ambulatory settings, and provide a more continuous and autonomous indication of patient condition, preferably in a wireless fashion.

BEP in Q1 & Q2 and in Q3 & Q4: own project

It is possible to arrange your own project (within or outside the university) under a few strict conditions:

- If you want to do your BEP in industry, you need to arrange the contacts yourself. You also need to find a responsible supervisor from the EE department yourself. He or she can be any EE assistant, associate or full professor, or anyone explicitly appointed by the Examination Committee EE. Lastly, you need to set up a suitable project description together with your supervisor(s) who will submit this so called 'private proposal' to the BEP Marketplace, where it will be labeled as 'private', linked to you.

- If you want to do your BEP in a specific group with a specific supervisor, you need to find a responsible supervisor from the EE department yourself, come up with your own idea for a project and set up a suitable project description together with your supervisor. Your supervisor can be any EE assistant, associate or full professor, or anyone explicitly appointed by the Examination Committee. He or she will submit this so called 'private proposal' to the BEP Marketplace, where it will be labeled as 'private', linked to you.

Students with a private proposal are excluded from the projects database in the BEP Marketplace.

If you would like to arrange your own project, start with your orientation and arrangements as soon as possible. Private proposals for the BEP in Q3/4 must be submitted in the BEP Marketplace before the kick-off session in week 6 of Q2.

Assessment

The BEP is completed with a final paper and a presentation/discussion with a panel. The final grade, including the professional skills, will be determined after the concluding panel session.

The final grade is a weighted average of the grades of five categories: 1. Specialization, 2. Research and design skills, 3. Execution, 4. Report, 5. Presentation and defense. More information can be found in the assessment form BEP EE and grading guidelines.

Every student must sign the TU/e Code of Conduct for BEP as well.

Professional skills

The BEP includes one level 2 and six level 3 Professional Skills:

- Working together 3
- Presentation skills 3
- Writing skills 3, including workshops in Academic writing in English

- Reflection 3
- Planning and organizing 2 & 3
- Information skills 3, including a workshop in Information skills

You pass the professional skills once you:

- complete the BEP with a final grade of 6.0 or higher
- and all level 3 professional skills have been assessed with a PA or GO.

2.4 Professional Skills

The professional skills (5 credits) are embedded in the courses of your major and are, without doubt, just as important for your development as an engineer. The credits are distributed over various courses in the major (see overview below). The skills are:

- written communication;
- presenting;
- cooperating;
- reflecting;
- planning and organizing;
- finding and processing (scientific) information.

The number of hours that a student devotes to professional skills is equal to five credits (approximately 140 hours). This is spread over the three years of the Bachelor's program.

Assessment of the professional skills
As a student you will receive feedback on all your professional skills at least three times during your Bachelor's program.

The five credits for professional skills are not awarded separately. These are an integral part of the various major study components covering the relevant skills.

The assessment for professional skills is expressed in the designations Good (GO), Sufficient (PA), Failed (FL) or Done (DN) or in tenths, on a scale of 0 to 10. In the latter case this assessment counts toward the final grade of the study component in which the relevant professional skill is embedded. In both cases the assessment is accompanied by individual feedback. The professional skills of level 3 are integrated in the Bachelor's Final Project (BEP) assessment. You have passed the professional skills once the BEP is completed with a final grade of 6.0 or higher and your level 3 skills have all been assessed with a PA or GO.

The administration of the professional skills takes place on a dedicated Canvas page, accessible by all students. Here you can track your progress and feedback for all professional skills in your study program.

Professional skills major Electrical Engineering
The table below describes the embedding of the professional skills within the major Electrical Engineering.

Professional skills related to the major EE

PRV-major curriculum PRV1	EE 2021-2022
PRV11 Working together 1	DBL RYB Y1/Q2 / DBL Venus - Y1/Q4
PRV21 Presenting Skills 1	DBL RYB Y1/Q2 / DBL Venus - Y1/Q4
PRV31 Writing 1	Signal processing basics Y1/Q2
PRV41 Reflecting 1	Circuits (Labs) Y1/Q1
PRV51 Planning & organizing 1	Choice of electives and USE learning trajectory Y1/Q4
PRV61 Information 1	Systems Y1/Q4
PRV2	EE 2021-2022
PRV12 Working together 2	Electrical Power Systems Y2/Q2 DBL Wireless Charging Y2/Q4
PRV22 Presenting Skills 2	DBL Wireless Charging J2/Q4
PRV32 Writing 2	Electromechanics Y2/Q2
PRV42 Reflecting 2	Electrical Power Systems Y2/Q2
PRV52 Planning & organizing 2	Bachelor's final project Y3/Q3+Q4
PRV62 Information 2	DBL Wireless Charging J2/Q4
PRV3	EE 2021-2022
PRV13 Working together 3	Bachelor's final project
PRV23 Presenting 3	Bachelor's final project
PRV33 Writing 3	Bachelor's final project
PRV43 Reflecting 3	Bachelor's final project
PRV53 Planning & Organizing 3	Bachelor's final project
PRV63 Information 3	Bachelor's final project

NOTE:
- A number of professional skills is embedded in DBL projects in the elective space. When a student misses a specific skill due to other choices, the student needs to make sure to be on the right level before entering the BEP. A possible gap can be fixed by taking supplementary professionalization training courses at ESA.
- Students who attend one or several DBL projects (5XFA0, 5XIA0, 5XIB0, 5XSC0, 5XWF0) will always have to take part in the embedded professional skills, regardless of the fact if the respective professional skills have already been completed in another course.

2.5 MyFuture Activities

MyFuture Activities are career orientated activities that a student can attend. These range from lunch lectures and case contests to company visits and are aimed at giving students a clear overview of where they can work and what they can do when they are finished with their studies.

MyFuture Activities are a mandatory component within the Bachelor's degree program for students who started the program on or after September 1, 2020. This component consists of activities approved by the Education Board, to which so-called values are attached. Students must minimally choose a total value of seven points in approved elective activities. No credits are attached to the MyFuture Activities.

MyFuture Activities do not apply to students of generation 2019-2020 and older.

MyFuture Activities kick-off with the first-year excursion, which is valued as 2 MyFuture Activities, also called the Career Day. The remaining five can be obtained by participating in MyFuture Activities of the student's own choice. These can all be found on myfuture.tue.nl. Students can check their progress on www.aattendance.nl. Different career activities yield different values of MyFuture Activities. These values range from 1 to 3, with a higher value given to activities that either take longer, are more detailed or both.

2.6 Studium Generale Activities

Studium Generale activities are an integral part of all TU/e bachelor's programs. Attending at least 5 Studium Generale activities is a mandatory part of your USE learning trajectory. The Studium Generale activities do not include any exams, but you can only complete your USE learning trajectory, and therefore your bachelor's program, if you have attended at least 5 Studium Generale activities.

For more information on the Studium Generale activities, to see the program/agenda and to keep track of your attended Studium Generale activities, please visit this website.

2.7 Notebook regulations

All students at TU/e are required to have a notebook during their studies at TU/e. The TU/e expects active participation of all students. The use of a notebook for educational purposes (including examination and assessment) is part of this. TU/e offers a notebook program in which part of the purchase and maintenance costs are subsidized.

Students who do not wish to participate in this program, can use a private notebook that meets certain minimum requirements on hardware, software and assessment.

3. OSIRIS and PlanApp

At the beginning of your Bachelor's program, a program of examinations will be created for you in OSIRIS, and the compulsory courses for your program will be entered.

In the first year of the degree program you must add the two elective components in the first year by October 17, 2021, by means of the PlanApp, thus incorporating this component into your program of examinations.

In the first year of the degree program, no later than May 18, 2022 you must add your preliminary choice of electives and USE learning trajectory by means of the PlanApp, in which you must take account of the fact that your program of examinations must meet the conditions of Article 3.4, paragraph 7. You must also justify your choice regarding your plans and ambitions and with an eye to the engineer's field of professional practice.

4. Approval of examination program

Before you can receive your diploma, the Examination Committee EE will assess your examination program for coherence, depth, and overlap. To this end, you use the PlanApp to submit your personal examination program for assessment once you have compiled your complete examination program and earned 90 credits. If you are not sure whether your personal examination program will

meet the requirements, you may always request the Examination Committee EE to assess it for you earlier.

After it has been approved by the Examination Committee EE, your personal examination program will be "frozen" in OSIRIS. You will still be able to change the planning of your courses, but you will no longer be able to change the composition of the examination program. If you decide to reconsider the choices you have previously made, you must submit the program to the Examination Committee EE once again.

IMPORTANT: The approval or disapproval of your examination program occurs separately from registering for and taking courses.

Please note!

- When you choose at least 25 credits in 2 coherent elective packages you don't have to substantiate your choice. The Examination Committee EE cannot withhold approval of the examination program if it meets the requirements, see OER, Art. 3.4.8.
- Each Electrical Engineering student must choose at least two DBL projects during the Bachelor's program with at least one project of course level 2 or 3. These DBL projects can also be projects offered by other Departments.*
  - *Due to COVID-19, students from generation 2017, 2018, 2019 and 2020 only have to complete one DBL project during the Bachelor's program, regardless the level of the DBL. This DBL project can also be a project offered by another department.
- Some courses overlap with courses of your own major, which means you are not allowed to choose them. Check the overview of the excluded courses for the major Electrical Engineering to find out more.

5. Coaching and mentoring

As a first-year student you will be assigned a student mentor by the Department. The student mentor helps you with the practical matters that you have to deal with related to your studies. For example, where you can buy books, what is the best way to study, and how to find your way in student life. The student mentor also helps you in making choices concerning your elective courses, starting with the electives in Q2 and Q4 in your first year.

Throughout the 2nd and 3rd year of your Bachelor's program you will be assigned a teacher coach with whom you meet two/three times per academic year. The nature of the meetings with the teacher coach is mainly reflective, which means that your coach encourages you to think about your career path and professional skills and provides you with specific feedback on these reflections. The teacher coach also shares his or her expertise in the field of electrical engineering and shares his/her career path and experiences. This will provide you with helpful insights inside and outside the university that you can use for your own personal and professional development.

6. Academic advisor

If you have questions regarding your study progress, you can consult the academic advisor for bachelor students of the major Electrical Engineering. Usually, guidance by the academic advisor is one-time only. But if you wish you can also arrange multiple appointments over a longer period of time to tackle multiple problems.

The academic advisor can help you with:

- study delay
- (personal) problems impeding with your study progress
- a referral to a student counsellor, -psychologist, or other expert or institution
- making the right choices regarding specific course combinations, the weight of the course contents, and your study program
- requesting exemptions and arranging admission exams

The academic advisor for bachelor students of the major Electrical Engineering is Kim Schellekens-Nicolaije.

You can make an appointment with the academic advisor here.

7. Honors program

The TU/e Honors Academy offers a varied choice of excellence tracks for Bachelor students (and Master students). The overall goal is to prepare you for personal leadership as well as scientific, societal and/or industrial leadership in a society that is affected exponentially by changes and developments.

8. Examination Schedules

Examination schedules for all courses can be found in My Timetable.

9. Graduation deadlines

In order to graduate and finish your Bachelor's program you need to subscribe yourself for an Examination Committee EE meeting. In OSIRIS you can easily arrange this by clicking on **Progress** and then **Qualification request**. Registration always refers to the first upcoming session of the Examination Committee. See below.

Propaedeutic certificate (generation 2017 and younger)
For students of generation 2017 and younger a propaedeutic certificate is available when you have successfully completed the first year. If you would like to receive this certificate (it's not obligatory), contact the CSA EE for further details. Only students who have finished their propaedeutical phase in one year, will be invited to a ceremony.

Below you find the dates of the examination committee meetings. For the propaedeutical certificate no registration is needed is OSIRIS.

P-certificate meeting	(only P in one year)
25 Aug. 2021	11 Nov. 2021, 19.00-21.00h
31 Aug. 2022	to be announced

Bachelor graduation deadlines (all students)
Below you find the dates of the Examination Committee EE meetings. Please keep in mind the closing dates for subscribing to the meeting in OSIRIS. You are not present at the meeting: you will be informed about the outcome afterwards within a few days. At the time you subscribe for a meeting

you might still expect to receive some credits. However, 10 working days prior to the Examination Committee EE meeting all credits should be successfully registered in OSIRIS. If not all credits are registered 10 working days prior to the Examination Committee EE meeting, you move on to the first subsequent Examination Committee EE meeting.

When you have graduated for the Bachelor's degree, you will receive an invitation for Momentum. This ceremony is held once a year.

B-examination meeting	Deadline to subscribe for EC meeting	Deadline all credits registered	Momentum
25 Aug. 2021	28 Jul. 2021	11 Aug. 2021	16 Oct. 2021
29 Sep. 2021	1 Sep. 2021	15 Sep. 2021	Sep. 2022
27 Oct. 2021	29 Sep. 2021	13 Oct. 2021	Sep. 2022
24 Nov. 2021	27 Oct. 2021	10 Nov. 2021	Sep. 2022
22 Dec. 2021	24 Nov. 2021	8 Dec. 2021	Sep. 2022
26 Jan. 2022	29 Dec. 2021	12 Jan. 2022	Sep. 2022
23 Feb. 2022	26 Jan. 2022	9 Feb. 2022	Sep. 2022
30 Mar. 2022	2 Mar. 2022	16 Mar. 2022	Sep. 2022
20 Apr. 2022	23 Mar. 2022	6 Apr. 2022	Sep. 2022
25 May 2022	27 Apr. 2022	11 May 2022	Sep. 2022
29 Jun. 2022	1 Jun. 2022	15 Jun. 2022	Sep. 2022
No meeting in July			
31 Aug. 2022	3 Aug. 2022	17 Aug. 2022	Sep. 2022

Access Master's program
More information on what to do if you want to enroll into a Master's program after completing the Bachelor's program can be found here.

10. Examination Committee EE

The Examination Committee is the authority to safeguard the standard of the degree program, including matters such as the appointment of examiners, testing and fraud, and all other aspects that are necessary to ensure that students who are awarded a degree have attained the outcomes of the relevant programs. All regulations can be found in the Regulations of the Examination Committee (RE) of the EE department.

The tasks of the Examination Committee EE include the approval of elective programs, granting exemptions and the approval of study programs.

Visit the website of the Examination Committee of the Electrical Engineering department for more information.

Student requests
The Examination Committee EE works with a digital form for handling student requests instead of via email. Requests submitted in any other way are not accepted. Do you want to submit a request to the Examination Committee EE? Go to the portal of the Examination Committees and click on the Examination Committee EE to submit a request.

If you want to submit a request for an internal double diploma, please follow this procedure. Do not submit requests for an internal double diploma via the portal.

Appeal

You may lodge an appeal against the decision made by the Examination Committee EE or the examiners. Your appeal should be submitted to the relevant department via this website.

Contact
Examination.Committee.EE@tue.nl

Downloads
TU/e Fraud policy
TU/e Exam framework
TU/e Central Examination Regulations
Assessment policy EE
OER BSc EE 2021-2022
Regulations of the Examination Committee EE 2021-2022

11. Program Committee EE

The Program Committee EE (PC-EE) is an important body in which students and lecturers discuss the quality of the Bachelor's and Master's program within the department of Electrical Engineering and the way in which these programs are organized. The PC-EE consists of an equal number of student members and staff members, and is assisted by several student and staff advisors.

The task of the PC-EE is to guard and enhance the quality of the educational programs offered within the department of Electrical Engineering.

In this context, the PC-EE issues solicited and unsolicited advice on the design of the curricula, quality assurance, student evaluations and policymaking to the program director, the departmental board, and teaching staff.

Furthermore, the PC-EE has the right of consent and the right of advice regarding program specific sections of the Education and Examination Regulations (OER), the task to assess the implementation of these regulations annually, and the task to advice on these regulations.

Lastly, the PC-EE has the right of consent regarding the quality assurance plan of the department.

The PC-EE actively contributes to educational innovation and enhancement within and outside its own department. Four members have been appointed representatives to the TU/e Joint Program Committee.

PC-EE meetings take place once every month. Visit the website of the PC-EE of the department of Electrical Engineering for more information.

Downloads
Rules of procedure PC-EE
Quality assurance at the Department of Electrical Engineering

12. Regulations

IMPORTANT UPDATE ADDENDA OER
Due to the measures taken against the corona virus, there have been several changes in education and examination. This applies to the academic years of 2019-2020 and 2020-2021, and for the

academic year of 2021-2022. Several decisions have been made to allow for these adjustments. On the basis of these decisions, a number of regulations have been or will be (temporarily) amended. Addenda to the arrangements have been made for this. Addenda to the regulations have been made for this. You can find the addenda [here](#).

12.1 OER & RE

IMPORTANT UPDATE ADDENDA OER
Due to the measures taken against the corona virus, there have been several changes in education and examination. This applies to the academic years of 2019-2020 and 2020-2021, and for the academic year of 2021-2022. Several decisions have been made to allow for these adjustments. On the basis of these decisions, a number of regulations have been or will be (temporarily) amended. Addenda to the arrangements have been made for this. Addenda to the regulations have been made for this. You can find the addenda [here](#).

OER & RE

The [Program and Examination Regulations (**OER**)](#) for a program contains clear and sufficient information about the program, making it the basic document for both students and teachers.

Subjects covered by the OER include:

- the content of the program and the associated final examinations, the number and sequence of other examinations and the times when these can be taken
- the type of examination (oral, written or other types of examination)
- the period of validity of successfully completed examination components
- the right of inspection and evaluation.

The Higher Education and Research Act (Wet op het hoger onderwijs en wetenschappelijk onderzoek) draws a distinction between the OER and the [Regulations of the Examination Committee (RE)](#). Subjects regulated by the Regulations of the Examination Committee include:

- compilation Examination Committee
- procedures Examination Committee
- tasks Examination Committee
- rules relating to quality assurance of testing and exams
- rules relating to measures taken in the event of fraud by examinees
- rules and guidelines relating to testing and exams
- compensation regulations
- graduation regulations

12.2 Bachelor's before Master's rule

The Bachelor´s before Master´s rule means that you may only start a Master's program when you have completed your Bachelor's program. HBO and WO pre-Master students must complete their pre-Master's program before they may start their Master's program. More information on the Bachelor's before Master's rule can be found [here](#).

12.3 Binding recommendation for continuation of studies

TU/e applies the binding recommendation on the continuation of studies (BSA) for all Bachelor's programs, which is based on the credits of the first year (propaedeutic phase). You will receive a binding recommendation at the end of the first year. More information on the binding recommendation for continuation of studies can be found here.

13. Quality Assurance

Providing high quality education is of utmost importance to the department of Electrical Engineering. To maintain the quality, it is essential that every educational component is subject to structural and recurrent evaluation.

Course evaluations

The most common method of evaluation is by conducting surveys. Courses and projects are evaluated with digital surveys in EvaSys on a yearly basis. The results of the surveys enable us to collect the thoughts and opinions of students and give them the opportunity to provide feedback on their education. Educational components that are new will be evaluated for 3 consecutive years using surveys until they reach a sufficient level (see quality assurance plan for the criteria). Components that have reached a sufficient level are evaluated once every 3 years (1-year evaluation, 2 years no evaluation). The results of the surveys are evaluated by several stakeholders, such as the program committee, examination committee, quality assurance officer, the responsible lecturer/teacher, chairmen of research groups and the departmental board. If the course scores insufficient, an improvement plan will be conducted together with the responsible lecturer/teacher for the next round. The following year these components are monitored based on the evaluation and the improvement plan. After this the cycle of quality assurance starts again.

The educational program as a whole is also subject to yearly evaluations, organized on a central level by TU/e or other interested external parties (VNSU).

Additional Quality Assurance evaluation methods

In addition to the surveys, the department makes use of other more direct methods of evaluation for educational components. Student meetings are organized for bachelor and master students (year councils) on a regular basis. This way students can provide direct feedback on their educational program to the staff.

Compared to surveys, where evaluations take place at the end of the educational component, these types of evaluation methods are powerful tools for intermediate evaluations. For an overview of our evaluation instruments, see the quality assurance plan.

Quality Assurance officer

A quality assurance (QA) officer is appointed by the department to maintain all the processes related to quality assurance and ensures that all responsible parties receive the information necessary to perform their duties. For example, the departmental QA officer maintains a record of course evaluations and determines which courses require evaluation, which policy should be used and communicates with the central QA officer of ESA on practicalities regarding EvaSys surveys. In

addition to this, the QA officer attends meetings with other departmental QA officers to discuss general matters and developments related to quality assurance.

Accreditation

Based on the framework of accreditation developed by the Dutch-Flemish Accreditation Organization (Dutch abbreviation: NVAO) all educational programs are subject to periodic evaluation by a visiting panel. Accreditation is a formal decision that the educational program complies to the quality demands formulated by the NVAO and that the graduation diploma is recognized as valid by the government. Accreditation lasts for 6 years and the current accreditation decision for the educational programs of Electrical Engineering lasts until **27th of April 2023.**

Download
Quality assurance at the Department of EE

14. Access Master's program

More information on what to do if you want to enroll into a Master's program after completing the Bachelor's program can be found here.

The certificate BSc Electrical Engineering TU/e provides direct access to various Master's programs:
- Master Electrical Engineering (TU/e)
- Master Embedded Systems (TU/e)
- Master Sustainable Energy Technology (TU/e)
- Master Systems and Control (TU/e)
- Master Automotive Technology (TU/e)
- Master Nuclear Fusion (TU/e)

15. Contact

Departmental Board
prof.dr.ir. A.B. Smolders, dean
prof.dr.ing A.J.M Pemen, vice-dean research
prof.dr. M. Matters-Kammerer, vice-dean education
drs. J.C. van Wevelingen, managing director

Program director
prof.dr. M. Matters-Kammerer

Manager Education and Student Affairs EE
dr.ir. R.R. Trieling

Center for Student Administration EE (CSA EE)
Flux 0.124/0.125
T 040 247 4883 / 2806
E CSA.EE@tue.nl

Office hours: Monday - Friday 12:00 - 14:00hrs

Every first working day of each new quarter (Sep. 6, Nov. 15, Feb. 7, Apr. 25) CSA EE will also be open from 08.30 till 09.30hrs.

Contact person online education guide EE
[C.R. van Kesteren MA](#)

16. A-Z

A

Absent during an exam or obligatory practicum - When you are not able to attend due to special circumstances, you need to report this within 24 hours to the Examination Committee EE.

Academic advisor - [Academic advisor major EE](#).

Academic calendar – The academic calendar for the academic year can be found [here](#).

C

Canvas - [Canvas](#) is the online learning environment. In Canvas you'll find course information, practice tests, assignments, slides and more per course. You use Canvas during your education period and to prepare for exams. For any questions and comments, please contact the helpdesk by mailing [ESA@tue.nl](#) or calling +31 (0)40 247 4747.

Center for Student Administration EE (CSA EE) - Opening hours from Monday till Friday from 12.00 till 14.00hrs, location Flux 0.124/0.125. Every first working day of each quarter (Sep. 6, Nov. 15, Feb. 7, Apr. 25) CSA EE will also be open from 08.30 till 09.30hrs. Outside opening hours you can email [CSA.EE@tue.nl](#). Forms can be put in the postbox CSA near the reception desk of Flux.

Change Electives – You can use the [PlanApp](#) to add or change coherent elective packages, separate electives and a USE learning trajectory in OSIRIS. You can do this at any point during your studies. If you are not sure whether your personal examination program will meet the requirements, you may always request the Examination Committee EE to assess it for you earlier. When you have obtained 90 credits or more you should [submit your examination program to the Examination Committee EE for approval](#). After it has been approved by the Examination Committee EE, your personal examination program will be "frozen" in OSIRIS: you will still be able to change the planning of your courses, but you will no longer be able to change the composition of the examination program. If you should decide to reconsider the choices you have previously made, you will have to submit the program to the [Examination Committee EE](#) once again.

Complaints – When you have a complaint, suggestions for improvements of courses, education exam methods or exams, please contact the [StudentBody](#). In case of complaints about, for example a decision of the Examination Committee EE or an examiner, admission to the Master Program or a binding recommendation the continuation of studies (BSA), you can appeal to the [Examination Appeals Board](#).

E

Examination committee – The [Examination Committee EE](#) is, among other things, responsible for the quality of the exams and final examinations.

H

Honors program – In the [TU/e Honors Academy](#) various Honors Tracks have been launched, addressing major societal and scientific questions and challenges

I

Innovation Space - [TU/e Innovation Space](#) hosts exciting interdisciplinary TU/e courses and projects that (can) have a societal impact. These courses help companies and researchers to solve real-world challenges and allow you to unleash your talents to build innovative solutions. Besides this, TU/e Innovation Space also offers a unique chance for students to join the [Innovation Space BEP (ISBEP)](#), where students work with students from other departments and on real world challenges. If you want to learn in an innovative way, take up a challenge and realize a prototype, follow one of the courses or projects in TU/e innovation Space and become part of a vibrant community.

Illness during an exam- When you are not able to attend an exam due to illness, you need to report this within 24 hours to the Examination Committee EE.

IEEE - The Institute of Electrical and Electronics Engineers, Inc. is an international organization by and for academic engineers in the field of electrical engineering. Worldwide, there are more than 330.000 members. IEEE SBE is the student branch at TU/e. It is the most active branch of IEEE in Europe. Every year, they organize a wide range of activities. With this, the Student Branch Eindhoven prepares students socially, culturally and professionally for their future. More information on IEEE SBE, its activities and memberships can be found on the [IEEE student branch website](#).

M

Master - More information on what to do if you want to enroll into the master after completing the bachelor can be found [here](#).

My Timetable - [My Timetable](#) generates your personal schedule, which can be used by students and lecturers. It's possible to synchronize with all regular agenda-applications, so you can use your own preferred system to view your schedule. The schedule in My Timetable is adjustable to your own needs, and schedules of individual courses can be viewed. The tutorial can be found [here](#). For questions, please contact the [ESA Helpdesk](#).

MyTU/e – [MyTU/e](#) provides an easy-to-use, personalized and effective system for you to manage everything you need to make a success of your learning and working at TU/e. This cloud-based system provides you with everything you need in one place and with notifications to keep you updated. MyTU/e will be your go-to app for your learning, education and working experience.

N

Notebook regulations - More information on the Tue notebook regulations can be found [here](#).

O

OSIRIS - Go to [MyTU/e](#) to log into OSIRIS, the student information system that records all student data, from enrollment right through to graduation. Lecturers use OSIRIS to enter grades and check their groups and course information. Students use OSIRIS to view their grades, register for courses and examinations, and to keep track of their progress. For questions about OSIRIS please contact the

ESA helpdesk at +31 (0)40 247 4747 or per email. You can also contact the CSA EE in Flux 0.124/0.125 during opening hours.

OSIRIS course catalogue – In the OSIRIS course catalogue you can browse through all the courses that are on offer at the TU/e and for each course a detailed description can be found including contents, learning goals, assessment methods, instructional methods, material, pre-knowledge, etc.

P

PlanApp - Use the PlanApp to plot your personal study plan. The PlanApp has been integrated in OSIRIS, the system knows the compulsory part of your study program. This gives you a starting point: your basic courses and major courses have already been entered. Now it's up to you to fill your study plan with USE-courses, electives and elective packages. In OSIRIS course catalogue you will find detailed descriptions of all these courses. Contact the ESA Helpdesk for questions.

Platform – Make sure to keep up to date with important messages, updates and information about the EE education via the Canvas student communication platform 5EE-INFO-STUDENT, the communication channel for students of the Department of EE.

Program committee - A Program committee is an advisory and consultative body at degree program level, instituted by law. The Program committee of Electrical Engineering covers the bachelor and master programs. The Program committee consists of an equal representation of both lecturers and students.

Q

Quality assurance - Providing high quality education is of utmost importance to the department of Electrical Engineering. Therefore, it has set up a quality assurance program and a quality assurance officer. You can read all about this here.

R

Registering for a course - To participate in courses and examinations you need to be registered for the course. New first-year students are automatically registered for the courses in the first quarter, but you must do this yourself starting from the second quarter. This is possible up to 20 working days before the start of the new quarter. Check all the deadlines in the academic calendar. If you are not registered for the course, you will not be able to take it (or the examinations associated with it). The deadlines for enrollment can be found here.

The course registration is done via OSIRIS. It is important to know that you can also enroll in courses that are not in your examination program. For more information, see approval of examination program.

S

Student statute – As a student you have rights and obligations. You can read about this here.

Student body - The Student Body ([SB](#)) is the center of education participation at the department of Electrical Engineering. SB is run by three students of the department. Any student who has suggestions, complaints, or questions about the education can contact the SB.

[Student teams](#) – TU/e is a breeding ground for young engineers who address societal challenges by carrying out projects. Projects in which education, innovation and entrepreneurship are combined with surprising outcomes. TU/e counts several student teams which address challenges in the fields of energy, health and smart mobility.

T

[Thor](#) - The study association Thor focusses on the enrichment of the study, career and leisure of the students of Electrical Engineering and Automotive Technology at TU/e. In order to achieve this goal, many activities and drinks are organized for and by students. Thor has many committees you can join and even has its own pub on the 6th floor of Flux, FLUX 6.152, that is open every weekday.