ELECTIVES AND COACHING

Elective courses

Each Bachelor's program includes electives to match the program to your interests. These allow you to change the emphasis in your program. You can gain more in-depth knowledge in your own specialization or broaden your knowledge by following courses in a different specialization to develop your overall competence in Sustainable Innovation. In addition to the electives offered by the department, electives may also be taken at other TU/e departments. You will select the electives that best match your learning goals.

Intensive coaching

You're not on your own while you're studying at TU/e, experienced coaches help you right through your program with personal advice. That starts from day one, when together with your coach you decide on the right courses to choose in the elective part of your program. That means you define your own study program, to match your own interests and ambitions. And if you discover in your first year that you'd prefer to do a different program, your coach will help you find a way to change during the year.

In addition to support from your personal coach, you will be advised by your student counselor and students in later years – they act as mentors to your first-year group, and will help you to make a good start on your studies.

No rights may be derived from this publication.

WANT TO KNOW MORE ABOUT SUSTAINABLE INNOVATION?

Study information Sustainable Innovation
e-mail: si.studyinformation@tue.nl
website: tue.nl/bachelorprograms/si

Information days
tue.nl/informationdays

Stay informed about studying at TU/e:
start.tue.nl

First-year courses in the Sustainable Innovation core program

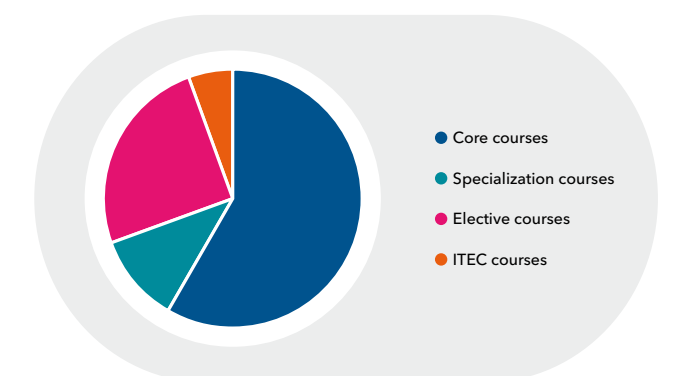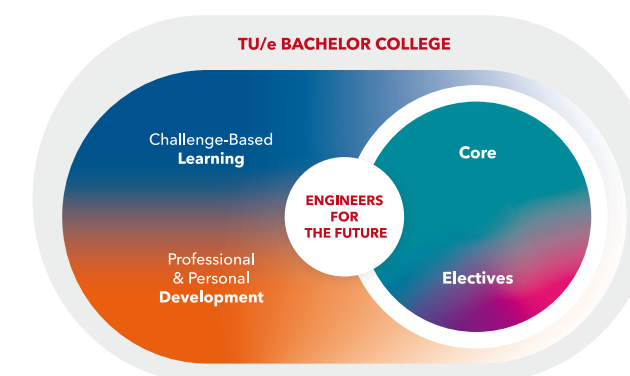**TU/e**
EINDHOVEN UNIVERSITY OF TECHNOLOGY

tue.nl/bachelorprograms/si

TU/e BACHELOR COLLEGE

Eindhoven University of Technology (TU/e) combines its bachelor education in the Bachelor College. As a student of the TU/e Bachelor College, you have the freedom to define your study program based on your own interests and ambitions. A large part of your Bachelor's program is made up of your core program, in which you choose the specialized field that you want to work in later as an engineer. This forms the basis of your study program.

Core courses Sustainable Innovation

If you choose Sustainable Innovation you'll combine courses in technology and social sciences. The technology courses are about Sustainable Energy or Urban Planning and Mobility. On average you'll spend 30% of your time on technology subjects, 50% on social sciences subjects and 20% on research methods. The language of communication of this program will be English.
Your core courses include courses such as mathematics. You'll gain professional skills like presenting, academic writing, teamworking and organization. These courses will give you the sound basis that you'll need as an engineer.

TU/e BACHELOR COLLEGE

Challenge-Based Learning

Core

ENGINEERS FOR THE FUTURE

Professional & Personal Development

Electives

- Core courses
- Specialization courses
- Elective courses
- ITEC courses

Challenge based learning and ITEC (Impact of Technology)

In your bachelor program 33% of the courses will have a challenged based format, i.e. working with real-life cases, developing solutions for clients and working on interdisciplinary challenges. Moreover, inclusive courses available to every BSc student, which center on the Impact of Technology, demonstrate that technology consistently operates within a wider framework. Eindhoven engineers develop technology for users, to contribute to solving relevant societal problems and create economic feasible opportunities.

The Bachelor's program Sustainable Innovation has the following structure:

	Quarter 1	Quarter 2	Quarter 3	Quarter 4
Year 1				
	Calculus	Sustainable Technology in Society: Introduction	Industrial Ecology	Managing Sustainable Technology
	Sustainable Development in Global Context	Statistics for SI	Global Sustainability & Innovation	Economic Policy
	Economics of Innovation: Introduction	Physics for Engineers	Technical Course	ITEC Engineering Ethics
Year 2				
	Methodology for IE Research	Assessment to Support Decision Making	Managing Sustainable Technology OGO	Global Sustainability in Long Term Perspective
	Technical Course	Technical Course	Evaluating Economic Policy: Social Cost Benefit Analysis	Multi CBL
	Elective	Elective	Elective	Technical Course
Year 3				
	Sustainable Technology in Society: Advanced	Sustainable Innovation: Integration Project	Bachelor Final Project	Bachelor Final Project
	Economics of Innovation: Advanced	Elective	Impact of Technology: Engineering for Society	Elective
	Elective	Elective	Elective	Elective

A lot has to be considered for a successful energy transition

SI-student

Is it really sustainable?

Is this technically possible?

What does this mean for the future?

Where do the materials come from?

What are the alternatives?

How did we used to do this?

Can everybody participate?

Have the consequences been considered?

tue.nl/bachelorprograms/si

LEARNING LINES OF SUSTAINABLE INNOVATION

In the first two years of your Sustainable Innovation program, you'll follow technology courses together with social sciences courses such as economics, transition studies and social studies of science and technology. The obligatory technology courses are in the technical tracks Sustainable Energy or Urban Planning and Mobility. At the start of your study program, you can choose which specialization you prefer. The Sustainable Innovation core consists of five learning lines.

Sustainable Development in a Global Context

This learning line introduces sustainable development, globalization, and the interrelationship between ecological, economical and social aspects. In this learning line you will learn about what sustainable development means for rich and for poor countries. In a challenged based setting you'll work on a range of case studies that help you to understand the complexity and future challenges of sustainable development. This includes for example debating the problem of green-washing in the context of sustainability or negotiating in a role-playing game about global climate change.

Economics of Innovation

This learning line focuses on economic theories relating to innovation. Important aspects covered include the creation, protection, and distribution of innovations. You'll learn to apply economic theories to issues in the field of innovation policy and innovation management.

Sustainable Technology in Society

This learning line focuses on the interrelationships between technology and society, and the challenges these present for sustainable innovation. You'll study and analyze a range of cases using the most important theories from this multidisciplinary specialization.

Research Methods and Sustainability Assessment Tools

This learning line focusses on various scientific research methods. It includes statistical analysis and qualitative research methods. You learn how to formulate a research question, which forms of research you can use to answer it, and how to process and interpret the results of a simple research project. You also develop the skills needed to carry out research yourself. This learning line also presents and trains the application of various sustainability assessment skills. You'll learn about the pros and cons of aspects like life-cycle analysis, ecological footprint and input-output analysis. And also, you will learn to argue with specialists in the field about these concepts.

The technology courses

Part of the Sustainable Innovation core is one learning line in technology courses. As we explained earlier, you can choose to follow the learning line in Sustainable Energy (SE) or Urban Planning and Mobility (UPM).

Specialization courses

Sustainable Energy

This learning line specializes issues of heat, flow and thermodynamics. You will follow courses taught by the Mechanical Engineering department. This learning line helps in understanding the fundamentals and technical possibilities of heat systems and combustion engines, applied in homes, district heating, hydrogen networks and engines.

Urban Planning and Mobility

This learning line addresses the spatial issues in sustainable innovations in the built environment. The introduction of sustainable innovations challenges spatial choices of urban planning. These courses introduce concepts of spatial planning and mobility. Courses focus on the modelling of spatial and planning aspects of the urban environment, transportation, facilities, economy, recreation and tourism, and quality of life. This learning line is taught by the Built Environment department.