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 major, 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.

Major Sustainable Innovation
Half of the three-year Bachelor's program is made up by your major, which forms the basis of your study program. If you choose the Sustainable Innovation major you'll combine courses in technology and social sciences. The technology courses are in Sustainable Energy or Sustainability in the built environment. On average you'll spend a third of your time on technology subjects, a third on social sciences subjects and a third on research methods and practical assignments. The language of communication of this major is English.

Free electives
A quarter of the Bachelor's program consists of elective courses that you can choose yourself. These allow you to change the emphasis in your program. You can opt to broaden your knowledge by following courses in a different specialization, or alternatively you can gain more in-depth knowledge in your own specialization.

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Information days
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Walk a day with a student
www.tue.nl/meeloopdag (English flag)

www.tue.nl/sustainableinnovation

Free electives
As well as the Sustainable Innovation courses, the Bachelor's program includes electives to match the program to your own interests. You can choose to broaden your knowledge by following courses in another field, or you can choose to gain extra in-depth knowledge within Sustainable Innovation. For example you can choose electives in the following areas:

- Smart buildings and Cities
- Innovation Management
- Psychology & Technology
- Energy
- Ontwerpen van Energiesystemen (in Dutch)
- Building Physics: Building and Environment

Note: If you do not speak Dutch your choice of elective courses will be limited. Not all courses are given in English.

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 major, your coach will help you find a way to change during the year.

As well as a personal coach, you'll receive support from 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.

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**Compulsory basic courses**

As well as your major you’ll follow a number of basic courses such as mathematics and natural sciences. You’ll also learn technological design, and you’ll gain professional skills like teamworking and organization. These courses will give you the sound basis that you’ll need as an engineer.

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

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**Economics of Innovation:**

Introduction

This course 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:**

Introduction

This course 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**

In this course you learn about scientific research and the method used in empirical research. 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.

**Industrial Ecology**

What is the relationship between mass trends, everyday life and the economy? That’s the central question in the Industrial Ecology course, which takes a cradle-to-grave approach to studying mass trends. You’ll learn about the pros and cons of aspects like life-cycle analysis, ecological footprint and input-output analysis. And you’ll also learn to argue with specialists in the field about these concepts.

**Electives - USE**

Finally you choose USE (User, Society and Enterprise) courses. These will give you the sound basis that you’ll need as an engineer.

The technology courses that you follow are in Sustainable Energy or Sustainability in the built environment. In the first year you follow one course from your chosen technology specialization in quartile 3.

**Technology course for the Sustainable Energy specialization**

The technology course for the Sustainable Energy specialization is OGO (Design-Based Learning) Propeller, given by the Mechanical Engineering department. In this OGO course you’ll work in small groups on design projects such as the design of rotating filters and the analysis of a mechanically vibrating system. This is the first of four compulsory technology courses.

**Technology course for the Sustainability in the built environment specialization**

The technology course for the Sustainability in the built environment specialization is Designing based on building physics and materials, given by the Built Environment department. This covers the properties and qualities of building materials, as well as which materials are suitable for which applications. This is the first of four compulsory technology courses, in which you gain essential knowledge and competences for the analysis and design of innovation in sustainable building.

**Year 3**

- **Electives USE**
- **Economics of Innovation:** Advanced
- **Bachelor’s Thesis**
- **Research Methods**
- **Technology course**
- **Electives USE**
- **Industrial Ecology**
- **Electives USE**
- **Bachelor’s Thesis**

**First-year courses in the Sustainable Innovation major**

In the first year of your Sustainable Innovation major you’ll follow technology courses together with social sciences courses such as economics and sociology. The obligatory technology courses are in Sustainable Energy or Sustainability in the built environment. At the start of your major you can choose which specialization you prefer. You’ll find a list of the first-year courses in the Sustainable Innovation major below.

**Sustainable Development in a Global Context**

This introductory course provides you with knowledge about sustainable development, globalization, and the interrelationship between ecological and social aspects. During the lectures you will learn about sustainable development on rich and poor countries. In tutorials 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 a documentary about the (un)sustainability of the food system and negotiating in a role-playing game about global climate change.