PROFILE OF GRADUATES COMPUTER SCIENCE AND ENGINEERING (BACHELOR)

We distinguish between general learning outcomes (applicable to all TU/e bachelor programs) and specific learning outcomes of the Computer Science and Engineering program.

DOMAIN-SPECIFIC LEARNING OUTCOMES

Graduates of the TU/e bachelor program Computer Science and Engineering:

…have basic knowledge and skills in computer science and engineering:
b1. familiarity with basic concepts related to computer science, in particular the subdomains: Theory and Algorithms, Software Development, Information Systems, System Architecture and Networks, Data Mining and Web Technology;
b2. the skill to prove theorems with respect to these basic concepts;
b3. a thorough technical and scientific understanding of software and software systems;
b4. the ability to rapidly deduce the essence of such systems, to acquaint oneself with those systems and to judge their merits.

…are competent in Software design:
s1. the ability to develop programs or software systems in an effective and structured manner, whereby those systems will perform the tasks expected of them accurately and efficiently;
s2. the ability to analyze any software system in terms of its behavioral aspects;
s3. further to this analysis, the ability to adapt and improve the system where necessary;
s4. the ability to document all findings and activities for future reference.

… have general academic skills:
g1. the ability to acquire further knowledge in the field of computer science and to do so independently;
g2. an awareness of the position and importance of computer science within society, an awareness of the rapid changes – both positive and negative – which information technology can bring about and the ability to reflect on such changes;
g3. the ability to work effectively within a team;
g4. the ability to impart information, ideas and solutions to either fellow specialists or a lay public;
g5. the ability to plan and organize one's own work, as well as a software development project.

GENERAL LEARNING OUTCOMES

All TU/e Bachelor of Science graduates:

- are qualified to a degree level within the domain of engineering science and technology;
- are competent in the relevant domain-specific discipline(s) to the level of a Bachelor of Science, as specified in the second paragraph;
- are able to conduct research and design under supervision;
- are aware of the significance of other disciplines;
- take a scientific approach to non-complex problems and ideas, based on current knowledge;
- possess intellectual skills that enable them to reflect critically, reason and form opinions under supervision;
- are good at communicating the results of their learning, thinking, acts and decision-making processes;
- can plan and implement their activities;
- are aware of the temporal and societal contexts of science and technology (comprehension and analysis);
- in addition to a recognizable domain-specific profile, possess a sufficiently broad basis to be able to work or collaborate in an interdisciplinary and multidisciplinary context. Here, multidisciplinary means focusing on other relevant disciplines needed to solve the design or research problem in question.

Department of Mathematics and Computer Science