

Module name	Software Engineering Basics
Module number	Eul-ET-C-SwEgG, Eul-BMT-C-SwEgG, Eul-MT-C-SwEgG, Eul-RES-C-SwEgG
Lecturer in charge	Prof. Dr.-Ing. Dr. h. c. Frank H.P. Fitzek frank.fitzek@tu-dresden.de
Objectives	After completing the module, students have competencies and practical skills in dealing with various programming languages and programming environments.
Contents	The module focuses on the structure and programming of computers with Python and assembler. This includes information representation, basic Boolean circuits, computer architecture, algorithms and their complexity analysis, i.e. Big O notation.
Modes of teaching and learning	2 hours per week lectures, 1 hour per week exercises, 1 hour per week practical lab course and self-study.
Prerequisites	Knowledge of mathematics at basic A-level is required.
Usability	The module is a compulsory module in the basic studies of the degree programmes Electrical Engineering, Biomedical Engineering, Mechatronics and Renewable Energy Systems. It creates the prerequisites for the modules that list that module in the "Prerequisites" field.
Requirements for the award of credit points	The credit points are awarded when the module assessment is passed. The module assessment consists of a written exam of 120 minutes and a complex assignment of 60 hours.
Credit points and grades	5 credit points can be earned by the module. The module grade is the weighted mean of the grades of the assessments. The written exam is weighted by 1/3 and the complex assignment 2/3.
Frequency	The module is offered every winter semester.
Workload	The total effort is 150 hours.
Duration	The module takes one semester.