

Faculty	4 - Electrical Engineering and Computer Science
Course Title	C++
Number of ECTS credits	6 ECTS
Hours per week (SWS)	2 lecture + 2 laboratory + 1 supplementary exercise
Semester	Bachelor / Summer Term
Course objective	This course teaches C++ from scratch up to C++20 and its modern programming features. In addition, Qt as a modern C++ GUI toolkit is taught.
Prerequisites	<ul style="list-style-type: none"> • Even though this course will start teaching C++ from scratch knowledge about object-oriented programming should be present • Very basic knowledge about Linux is a plus since the IDE will run on Ubuntu in a virtual machine
Recommended reading	See specific announcements
Teaching methods	Lecture, lab work (practical exercises), project-oriented development, team work
Assessment methods	<ul style="list-style-type: none"> • There will be three individual C++ lab exercises which make up 30% of the final mark • 70% of the mark result out of the concept, design and object-oriented realization of a C++ project. This part is team work. • A presentation of the project including programming-related questions is part of the assessment
Language of instruction	English
Name of lecturer	Prof. Dr. Philipp Last
Email	philipp.last@hs-bremen.de
Link	
Course content	<ul style="list-style-type: none"> • This course starts by teaching C++ basics. C++ exercises accompany the lectures. • After starting with basic C++ modern C++ will be taught. This includes all extensions from C++11, C++14, C++17 up to C++20. • Within this context the main differences between C++ and Java will be presented and discussed. • Standard Template Library (STL) • GUI development with Qt (cross-platform toolkit) will be taught. • Finally, students organize themselves in groups and realize individual C++ projects. The topic of the application can be chosen by the group.