

Advanced Programming in C++

Organization

- ▶ 2/2 Z/Zk
- ▶ Lecture
 - ▶ mixture of lecturers
- ▶ Tutorials
 - ▶ [CZE] Once in two weeks
 - ▶ [ENG] As needed
 - ▶ Three of them dedicated for homework assignments

- ▶ 3 major homework assignments
 - ▶ Deadlines ~15 days after assignment
 - ▶ Up to 10 points per assignment
 - ▶ Late submission: -1 point per day
 - ▶ Checked for plagiarism
 - ▶ Assignments may prohibit some features
 - e.g., using `shared_ptr` or having a single "giant" lock
 - ▶ There will be simple code review to detect the prohibited features
 - violations will cause total loss of points for the assignment
 - if corrected within 7 days, 5 points will be awarded
- ▶ Credit
 - ▶ at least 5 points from **each** assignment, and
 - ▶ at least 20 points in total

▶ Exam

- ▶ Credit required before exam
- ▶ Written part in a lab
 - Conditions similar to the exam of NPRG041 Programming in C++
 - `cppreference.com`, limited on-premise AI
- ▶ If the written part is sufficient to determine the grade, it will be awarded
 - Excellent or mediocre solutions
- ▶ For the remaining students, oral part follows the written part
 - The same day or later; T.B.A.
 - Discussion of the solution submitted in the written part
 - Discussion of the solutions of home assignments
 - Any other related or unrelated questions on C++

▶C++11/14/17/20/23/26

- en.cppreference.com/w/cpp
- **Scott Meyers: Effective Modern C++ (C++11/C++14)**
 - O'Reilly 2014
 - Methodology of programming
- **Scott Meyers: Overview of the New C++ (C++11)**
 - Collected slides
 - Motivation behind C++11 explained
- **Bjarne Stroustrup: The C++ Programming Language - [4th Edition](#)**
 - Addison-Wesley 2013
 - Complete C++11 textbook
- **David Vandevoorde, Nicolai M. Josuttis, Douglas Gregor: C++ Templates: The Complete Guide ([2nd Edition](#))**
 - Addison-Wesley 2017 (832 pages)
- **Anthony Williams: C++ Concurrency in Action: Practical Multithreading**
 - Manning Publications 2012 (528 pages)
- <http://stackoverflow.com/questions/388242/the-definitive-c-book-guide-and-list>

- ▶ Best practices – before C++11 = outdated but may be worth reading
 - Andrei Alexandrescu, Herb Sutter:
C++ Coding Standards (2005)
 - Scott Meyers:
Effective C++ (1998)
More Effective C++ (1996)
Effective STL (2001)
 - Herb Sutter:
Exceptional C++ (2000)
More Exceptional C++ (2002)
Exceptional C++ Style (2004)
 - Nicolai M. Josuttis:
Object-Oriented Programming in C++ (2002)