

## Modern C++ Course (C++11/14/17) – Agenda

Attached the agenda for the 4-days Modern C++ course.

Subject's order can be changed during the course.

Day 1	Day 2	Day 3	Day 4
<ul style="list-style-type: none"> <li>• Intro to Modern C++</li> <li>• auto</li> <li>• decltype</li> <li>• nullptr</li> <li>• non-member begin and end</li> <li>• range-based for loops</li> <li>• Uniform initialization</li> <li>• std::initializer_list</li> <li>• Constructor delegation</li> <li>• Aggregate member initialization</li> <li>• defaulted and deleted member functions</li> <li>• Tuples and structural binding</li> <li>• template aliases</li> <li>• override and final</li> </ul>	<ul style="list-style-type: none"> <li>• R-value reference</li> <li>• Universal references (r-values and templates)</li> <li>• Move semantics (move constructor and move assignment operator)</li> <li>• std::move and std::forward</li> <li>• Perfect forwarding</li> <li>• Copy elision guarantee</li> <li>• Smart pointers</li> <li>• Strongly typed enums</li> <li>• Literals and Raw strings</li> <li>• static_assert</li> <li>• std::string_view</li> <li>• Unordered containers</li> <li>• Parallel STL</li> </ul>	<ul style="list-style-type: none"> <li>• Meta-programming recap</li> <li>• Type traits</li> <li>• constexpr</li> <li>• if-constexpr</li> <li>• std::enable_if</li> <li>• std::conditional</li> <li>• std::optional</li> <li>• std::function</li> <li>• Lambda expressions</li> <li>• Templated Lambda expressions</li> <li>• std::bind</li> <li>• Variadic templates</li> <li>• Fold expressions</li> <li>• Alignment issues</li> <li>• Exceptions recap</li> <li>• noexcept and exceptions improvements</li> <li>• Attributes</li> </ul>	<ul style="list-style-type: none"> <li>• C++ Consistency Model</li> <li>• std::thread overview</li> <li>• std::async</li> <li>• std::mutex, std::lock_guard</li> <li>• std::lunch</li> <li>• std::promise</li> <li>• Test case: writing a modern C++ thread pool</li> <li>• C++17 new order of evaluation rules</li> <li>• If &amp; switch with initialization</li> <li>• Inline variables</li> <li>• FileSystem library</li> </ul>