Advanced C++ 20 Programming (Modern C++) (TTCP2175)

Category: Software Development & Programming | **Vendor:** Trivera Tech

Duration: 24.00 hours (3 days) **19.5 CPD Hours** **Rating:** ⭐ 4.6 (5,878 reviews)

Course Information

Delivery Format: Instructor Led - Online

Course Overview

Advanced C++ 20 Programming / Modern C++®is a three-day hands-on course designed to provide you with skills required to write faster, robust C++ code, enhancing your ability to create performance-critical applications ranging from system software, game development, to real-time systems and AI programming.

About This Course

Geared for experienced C++ developers, Advanced C++ 20 Programming is a three-day hands-on course designed to provide you with skills required to write faster, robust C++ code, enhancing your ability to create performance-critical applications ranging from system software, game development, to real-time systems and AI programming.

Working in a lab-focused learning environment guided by our experienced Instructor, you'll explore a broad spectrum of Ëœnextlevel' topics such as SOLID design principles, operator overloading, functional programming, and template usage, all aimed at refining your programming craft. The hands-on work will mirror real-world scenarios, including implementing design patterns and managing threads and tasks. You'll also discover the realms of multi-threading and asynchronous programming, invaluable skills for creating efficient, high-performance applications. These advanced skills have significant application in industries such as finance for high-frequency trading systems, in gaming for building high-performance game engines, or in tech companies for building large scale distributed systems.

By the end of this unique and intensive course, you will be well-equipped to tackle complex coding challenges, contribute

more effectively to your team's projects, and deliver high-quality, efficient applications that meet modern business demands.

Who Should Attend

This is an intermediate and beyond level development course designed for developers with prior C++ programming experience.

Prerequisites & Entry Requirements

General Prerequisites:

Students without prior C++ programming background should take the pre-requisite training.

Learning Outcomes

Upon successful completion of this course, participants will be able to:

Working in a hands-on learning environment, guided by our expert team you'll learn to: - Become a Pro at SOLID Design: You'll delve into SOLID design principles, mastering how to write clean, maintainable code. By the end, you'll be able to identify and avoid design smells, enhancing the overall quality of your projects. - Master the Art of Factory Implementation: Get hands-on with factories in C++. We'll guide you through the basics and options, including Singleton, to help you understand the critical role of factories in object-oriented design. - Up Your Game with Operator Overloading: You'll learn about operator overloading and its applications. By understanding how to enhance the readability and flexibility of your code, you'll streamline your programming tasks. - Unlock the Power of Templates: We'll dive into the intriguing world of templates, exploring variance, concepts, and the 'auto' keyword. You'll get to implement covariant and contravariant templates, broadening your C++ expertise. - Ace Multithreading and Asynchronous Programming: We'll explore the realms of multithreading and asynchronous programming, equipping you with the tools to create efficient, high-performance applications. You'll get to practice with mutexes, semaphores, atomics, and coroutines, gaining invaluable experience for your future projects.

Detailed Course Outline

C++ Quick Review

Modern C++ - an introduction to new features in C++ 11-20

SOLID Design

Design Smells

Project Overview

Single Responsibility

Open/Close

Liskov's Substitution

Interface Segregation

Dependency Inversion

Implementing a Factory in C++

Factory Basics

Options

Singleton

A C++ Object Factory

Operator Overloading

Commonly Overloaded operators

Conversions

Constructor Conversions

Implicit vs Explicit

Templates

Understanding variance

Implementing covariant templates

Implementing contravariant templates

auto

Functional Programming

Lambda Expressions

Functors

Structural Patterns

Adapter

Bridge

Composite

Decorator

RAII and Proxy Pattern €œ Smart Pointers

Strategies for Smart Pointers & Raw Pointers

Other patterns

Behavioral Patterns

Solving common design smells with behavioral patterns

Template Method €œ issues initializing C++ objects

State Pattern

Strategy Pattern

Command Pattern

Other behavioral Patterns

Threads, Tasks, Async

All about threads

Mutex

Semaphores

Latch & barrier

atomics

All about Tasks

Coroutines (async)

Additional Course Details

Nexus Humans Advanced C++ 20 Programming (Modern C++) (TTCP2175) training program is a workshop that presents an invigorating mix of sessions, lessons, and masterclasses meticulously crafted to propel your learning expedition forward.

This immersive bootcamp-style experience boasts interactive lectures, hands-on labs, and collaborative hackathons, all strategically designed to fortify fundamental concepts.

Guided by seasoned coaches, each session offers priceless insights and practical skills crucial for honing your expertise. Whether you're stepping into the realm of professional skills or a seasoned professional, this comprehensive course ensures you're equipped with the knowledge and prowess necessary for success.

While we feel this is the best course for the Advanced C++ 20 Programming (Modern C++) (TTCP2175) course and one of our Top 10 we encourage you to read the course outline to make sure it is the right content for you.

Additionally, private sessions, closed classes or dedicated events are available both live online and at our training centres in Dublin and London, as well as at your offices anywhere in the UK, Ireland or across EMEA.

Frequently Asked Questions

Q: What delivery options are available for Advanced C++ 20 Programming (Modern C++) (TTCP2175)?

We offer multiple delivery formats:

- Live Instructor-Led Classroom Online (Virtual/Live Online)
- Traditional Instructor-Led Classroom Training (ILT)
- On-site delivery at your offices anywhere in United Kingdom
- Private dedicated courses customized for your team

Q: How many CPD hours does this course provide?

The 3-day Advanced C++ 20 Programming (Modern C++) (TTCP2175) course provides up to 19.5 CPD hours of structured learning. CPD certificates can be provided upon request.

Q: What is the duration of the Advanced C++ 20 Programming (Modern C++) (TTCP2175) training?

The training takes place over 3 day(s), with each day lasting approximately 24.00 hours including breaks for lunch and refreshments.

Q: Do you provide corporate training for Advanced C++ 20 Programming (Modern C++) (TTCP2175)?

Yes, we provide corporate training, dedicated training, and closed classes for Advanced C++ 20 Programming (Modern C++) (TTCP2175). Training can take place anywhere in United Kingdom including London, Manchester, Birmingham, Edinburgh, or live online allowing teams from across United Kingdom or internationally to attend.

Q: What related terms do people search for?

Popular related searches include: Java

Q: Why choose Nexus Human for Advanced C++ 20 Programming (Modern C++) (TTCP2175)?

Nexus Human is recognized as one of the leading training providers. Our trainers have won multiple awards including:

- Small Firms Best Trainer Award
- National Training Partner of the Year (Ireland) - Multiple Years
- Global Top 30 Instructor Awards (2012, 2019, 2021)
- Tech Excellence Award Nominations
- Learning Performance Institute (LPI) External Training Provider Sponsor 2024

Q: Are there any discount codes available?

Yes! Use discount code **PENPAL5** when booking your Advanced C++ 20 Programming (Modern C++) (TTCP2175) training. Please note that only one discount code can be used per booking and cannot be combined with other special offers.

Nexus Human

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