Why Choose HOTT?

Your Source for Quality and Value

First-rate materials. Expert instructors. Well-structured, challenging hands on exercises. These are the critical elements of a truly effective training program – and the key reasons why Hands On Technology Transfer (HOTT) should be your source for software skills training.

HOTT is dedicated to providing programming professionals like you with the skills and knowledge necessary to enhance competency and productivity. Whether you are moving into a new technology or advancing your current skill set, HOTT will provide you with an unparalleled learning environment.

Perspective

Task-Oriented, Cross-Platform Training

As an independent, dedicated training organization, HOTT offers a practical, realistic and unbiased view of competing technologies and products that you won't get at training centers authorized by a particular software vendor. Our courses emphasize task-oriented, not product-oriented training – training that integrates technologies the way your business does. Because our instructors have cross-platform knowledge and experience, you'll get the full picture – not just how to use a particular tool, but the issues involved in using multiple tools in today's open environments, including practical design, architecture, and coding issues. You'll understand technology well enough to create good designs before you code – and be prepared to design for a client/server, cross-platform or multi-tier environment. HOTT prepares you to become a more knowledgeable, efficient, effective, and valuable employee, as well as a more educated technology consumer.

Convenience

Self-Paced, On-Demand Training Courses

On-demand training allows you to complete courses from any device (PC, phone or tablet) at your own pace. The courses combine video, hands-on lab exercises and one-on-one mentoring to learn as your schedule allows.

"This is my second HOTT class. The instructors, materials, and experience are excellent. Best training I've had in both cases. Highly recommend this company"

- B.G., Vulcan Materials Company

Quality

Skilled Instructors Who Are Professionals in Their Fields

In addition to being seasoned professional trainers, our instructors also have many years of training and industry experience working in their respective fields. Practiced developers, software engineers, and system administrators, they understand the challenges you face in your job and have first-hand knowledge of the skills you need to succeed.

Extensive national and international teaching experience has prepared our instructors to manage a variety of group dynamics and relate to foreign students, ensuring all participants' full involvement and success.

▸▸Substance

Exceptional Curriculum and Courseware

We continually refine and upgrade our courseware to reflect new product features and industry requirements. Equally important, we've built our curriculum to reflect the needs of our students as they have communicated them to us. As a result, you don't just learn what we think you should learn, you learn what other professionals like you have identified as necessary to their jobs.

You'll find HOTT labs exceptionally challenging. Their objective is to provide an in-depth, hands on experience that replicates real work experience and trains you to deal with the complexities of real scenarios. With an average class size of under 12 students, you're assured full attention from the instructor.

Course materials, including student and lab guides and your lab software, are yours to keep. Certain courses also include a complimentary industry textbook, which provides additional supporting information and reference material.

▸▸Selection

Dozens of Classes to Choose From

HOTT's extensive offerings include introductory and advanced courses in .NET, Java, SQL Server, UNIX/Linux, Web Programming, and more. Because we focus on advanced programming skills, you'll find a greater selection of advanced courses at HOTT than at most other training centers. An even greater array of highly focused courses are available for delivery at your site.
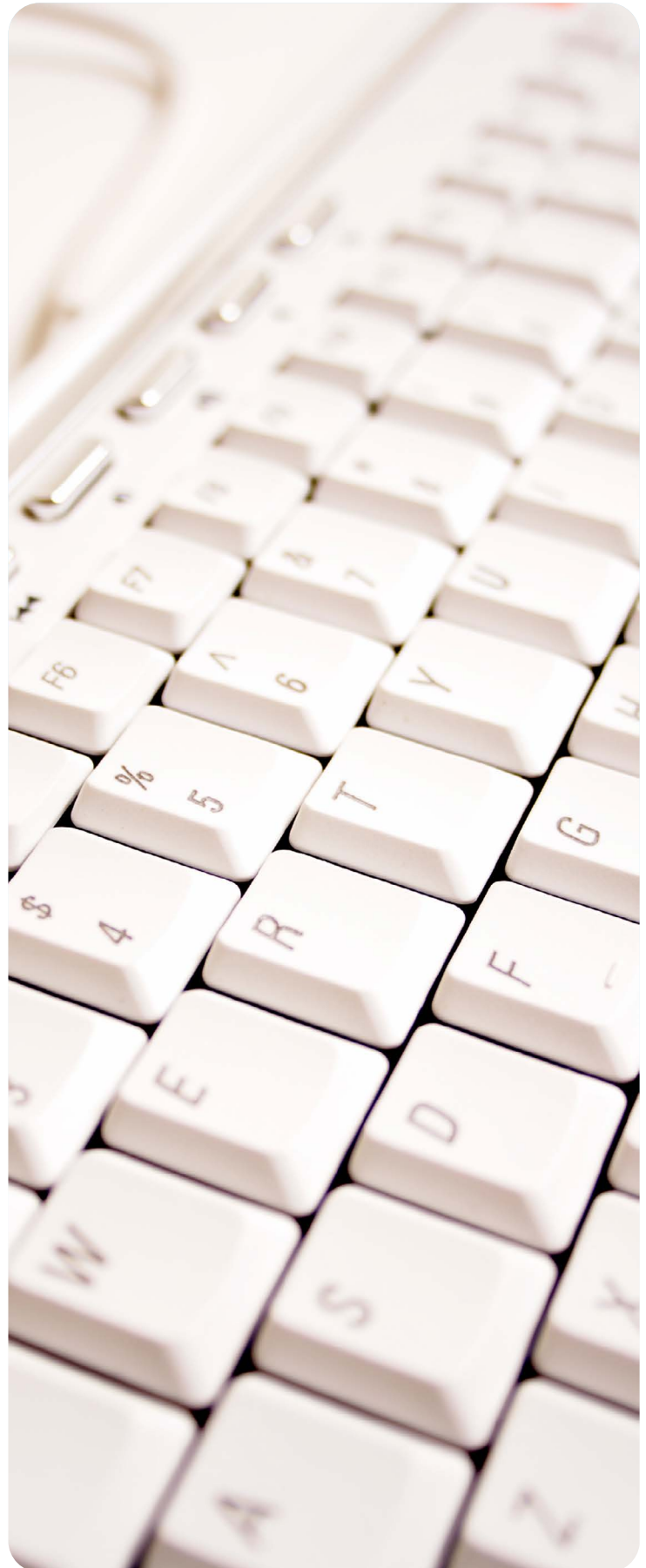
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"I thought the training was well organized and structured with lots of labs/activities. The labs really helped explain the logic from the lectures. I thoroughly enjoyed the training and wouldn't hesitate to attend more."

- C.D., NCH UK LTD

"The hands on approach is great. I was able to experiment with ideas to see how things work in addition to the lab work. I would definitely take a class from HOTT again."

- B.G., Giant Eagle

Unbeatable Guarantees

At Hands On Technology Transfer (HOTT) we provide you a suite of unbeatable success guarantees that other companies don't dare to offer. HOTT presents the best quality and value available today. Our customer service policies and guarantees assure that you get quality training when you want it, and at the lowest total cost available from any source. We want you to get the architectural insight and accelerated learning path that you came for. Every time. If you're not totally satisfied for any reason, simply withdraw before the second day of any class. Notify the instructor and return all course materials and you will receive a 100% refund. But the guarantees don't stop there.

Our instructors are dedicated technology experts whose focus is helping you achieve your learning goals. HOTT's requirements for instructor performance are so stringent that only 2% of professional instructors currently teaching for competitors can even be considered for an interview when they submit their resume to us. And less than half of those pass our screening and are ever offered a position with HOTT. Because of this high standard of excellence, and the support we provide in the form of excellent materials, robust hands on exercises, and internal processes that remove risk of failure, we can offer the following ironclad guarantees:

- ▶ HOTT guarantees small class sizes.
- ▶ HOTT guarantees quality instructors.
- ▶ HOTT guarantees competence.
- ▶ HOTT guarantees that training from HOTT will be more cost-effective than training from any other source.
- ▶ HOTT guarantees that students in open-enrollment classes are protected against cancellations and will be able to receive desired training at the cost they expect and in the time frame they have planned.
- ▶ HOTT guarantees overall quality with a 100% money-back guarantee. If you're not totally satisfied for any reason, simply withdraw before the beginning of the second day (or before completing 4 modules of an on-demand training presentation). Return all course materials and receive a 100% refund.

Training Delivery Options

HOTT offers live, instructor-led IT training courses. Regardless of how you attend training, our courses are designed to spend at least 50% of class-time working with comprehensive hands on exercises.

Classroom

Attend training face-to-face in a classroom-based setting. We offer more than 16 locations across the United Kingdom. For clients traveling to a course location, HOTT offers cost effective Travel Packages.

Remote Attendance

HOTT offers a remote attendance option for students who are not located near a training location and are unable to travel. Remote access students attend the same live training delivery as students in the classroom and perform hands on exercises using the same equipment at their location. HOTT will ship course materials including a PC and audio/video equipment to your home or office. Two-way video and audio communication allows participation as close to "being there" as possible.

On-Demand Training

This training option allows you to complete courses from any device (PC, phone or tablet) at your own pace. The courses combine video, hands-on lab exercises and one-on-one mentoring to learn as your schedule allows.

On Site

If you're scheduling training for more than 5 or 6 people at your facility, you should consider on site training. This focused, cost-effective training option can save you 25-30% or more compared to individual tuition prices. Training at your facility allows us to zero in on your specific requirements and, since we own our courseware, there is no extra charge for curriculum adjustments. On site training is available worldwide.

On-Demand Training

Train on your own schedule and at your own pace with _personal facilitation_

On-demand training allows you to complete courses from any device (PC, phone or tablet) at your own pace. The courses combine video, hands-on lab exercises and one-on-one mentoring to learn as your schedule allows.

▶ Students receive electronic copies of the same course materials as our live courses, which include a student guide and lab guide.

▶ Students view carefully edited course videos - perfected for on-demand viewing - which can be viewed as often as needed on a smart phone, tablet or computer.

▶ Students perform the same hands-on lab exercises used in the classroom via remote control access to a dedicated lab machine. This allows direct assistance during lab work.

▶ An instructor will be assigned to monitor progress and answer any questions throughout the training process.

Every course in our catalog is available on-demand for $1,975 per course.

Contact us at 1-978-250-4299 for more information about our on-demand training.

"I have recommended HOTT to several co-workers. The course was excellent. This must be the first course I have ever taken where the instructor's lessons matched exactly with the training material. You guys did a great job."

- J.H

"Thanks for the training, I learned a lot and will be using it in my current job in the future. I liked the on demand approach. I was able to replay portions of the course and also spend more time on the labs. Thanks so much!"

- J.D

Remote Attendance Training

Remote attendees participate in a live class and benefit from the interactions between other students and the instructor, such as real-time questions and answers, and have the opportunity to actively participate as well.

▶ HOTT will ship course materials including a PC and audio/video equipment to your home or office.

▶ Two-way video and audio communication allows participation as close to "being there" as possible.

▶ Remote attendees benefit from the interactions between other students and the instructor, such as real-time questions and answers, and have the opportunity to actively participate as well.

▶ Via remote viewing and control software, the instructor can monitor your lab work and respond to any issues during the exercises.

The combination of physical courseware and robust lab exercises, multiple video feeds from the classroom, and the ability of the instructor to see and react to remote students during class all combine together to allow for a satisfying and effective remote attendance experience for students. Remote students are able to stay focused and interested on the subject matter, because they are able to easily and quickly communicate with the instructor and other students, and get real-time assistance from each other and the instructor during hands-on lab exercises.

If you are interested in receiving dates for this option, please contact us at 1-978-250-4299.

"I was very skeptical of remote classes and feel that online classes have very little value. I thought this would be like an online class, but the remote experience was much better than an online class. "

- L.P., Beckman Coulter

Onsite Training

Bring Our Courses to Your Facility

On site training is a cost-effective solution for teams of more than 5 or 6 students. Training at your facility allows us to zero-in on your specific learning requirements and, since we own our courseware, there is no extra charge for curriculum adjustments.

Your Schedule - Our Training

We will work with you to get your company's training when and where you need it. You will work with our Client Relations Manager and our Training Director to coordinate a convenient and flexible timetable. We can provide our training to you with just a few weeks advance notice. Sometimes even sooner!

Personalized Touch

Once we schedule an instructor to teach at your facility, they will contact you approximately 10 days before the first day of training to discuss your specific training needs. Our curriculum can be tailored to suit your specific learning goals.

More Than One Classroom of Students

If you have a large group to train – many classrooms of students – we can work with you to arrange a convenient training schedule that will quickly and conveniently train your entire team.

We understand that everyone may not be able to attend training at one specific time and one specific location. You do not need to train your entire staff at once to save. You can arrange for your team to attend any of our public classes. No IT training company offers courses in more cities.

HOTT offers unparalleled convenience and flexibility that avoids pulling all of your critical personnel out of production at the same time.

Minimize Your Incidental Expenses

You tell us where you need your training. We will bring our curriculum to your classroom. Our quoted price is all-inclusive: instructor travel, student guides, textbooks are included.

Free On Site Training Proposal

To receive a free on site course proposal, please visit: www.traininghott.ca/Onsite-Contact.php If you need immediate assistance, please call us at 1-978-250-4299.

WEB SERVICES

HIBERNATE

JDBC

UML

OOA+D

SPRING

Java Programming

Java EE

JavaServer Pages

ENTERPRISE JAVA BEANS

Object Oriented Analysis & Design with UML

Duration: 4 days | **Price:** CDN$2,775

Students Will Learn:

▶ Extracting a system's requirements using a use-case driven approach

▶ Leveraging the experience of experts by applying analysis and design patterns

▶ Defining a set of extensible, reusable software classes (a class library) for the problem domain

▶ Building interaction diagrams

▶ Defining a set of candidate classes that suitably model a problem domain

▶ Establishing metrics, peer reviews and heuristics to improve the quality of the object models

▶ Effectively documenting all phases of the software process using UML

▶ Applying an iterative and incremental approach to construction of software systems and components

Course Description: This OOA&D training course presents the key concepts and methodologies required to perform quality object-oriented software engineering, with particular attention to practical techniques such as use-case and CRC analysis, UML diagramming, and patterns. Students practice applying object oriented analysis during the course to improve software designs and to see how software objects can be altered to build software systems that are more robust and less expensive. Students use several methods for analyzing software systems, finding and refining useful classes and relationships between objects. Care is taken not to focus on any one language so that all students can participate in the design exercises without relying on specific programming skills. The course emphasizes the most practical analysis and design methods, including the application of use case analysis, CRC analysis, problem domain analysis, activity diagramming, interaction diagramming, and class diagramming.

The Unified Modeling Language (UML) is presented in detail and is used in the exercises and case studies. Practical aspects of project management and implementation are presented from the perspective of experienced object system designers. Special emphasis is given to the use of object patterns in developing software systems. The students apply their skills in labs that are mini design sessions, during which the instructor helps the students identify and overcome common obstacles that occur during group sessions.

Course Prerequisites: Knowledge of structured programming concepts.

For a complete detailed course description, visit:

http://www.traininghott.ca/Courses/Object-Oriented-Analysis-Design-Hands-On-Training-Course-Class-Seminar-OOAD-OO.htm

Learning to Program with Java™

Duration: 5 days | Price: CDN$3,275

Students Will Learn:

- ▶ Fundamental elements of programming
- ▶ Interactive Development Environment (IDE) concepts
- ▶ Classes, objects and methods
- ▶ Declaring and instantiating a Java object
- ▶ Using conditional and looping constructs

- ▶ Declaring and instantiating arrays
- ▶ Using and creating interfaces
- ▶ Defining classes using inheritance Exception handling
- ▶ Formatting output with class `Formatter`
- ▶ Using strings, characters and regular expressions

Course Description: This hands on Java Programming course provides an introduction to programming using the Java language. Students are introduced to the application development cycle, structure of programs, and specific language syntax. The course introduces important algorithmic constructs, string and character manipulation, dynamic memory allocation, standard I/O, and fundamental object-oriented programming concepts. The course explains the use of inheritance and polymorphism early on so the students can practice extensively in the hands on labs. Structured programming techniques and error handling are emphasized. The course includes the processing of command line arguments and environment variables so students will be able to write flexible, user-friendly programs. Comprehensive hands on exercises are integrated throughout to reinforce learning and develop real competency.

This class is intended for non-programmers. Students who already understand fundamental structured programming and object-oriented techniques should attend the Java Programming course instead of this more introductory course.

Course Prerequisites: Familiarity with computers.

For a complete detailed course description, visit:

http://www.traininghott.ca/Courses/Learning-Java-Programming-Classes.htm

Java™ Programming

Duration: 5 days | **Price:** CDN$3,275

Students Will Learn:

- The advantages of using the Java platform
- How to code, compile and run standalone object-oriented Java programs
- Designing and writing Java classes suitable for a given application domain
- Writing robust Java software that gracefully handles run-time problems
- Coding Java programs using correct syntax and block structure
- Using Java to read from and write to files Manipulating files and directories in a platform-neutral way
- Writing multithreaded software
- Writing Java client/server software using TCP/IP networking
- Accessing and updating relational databases from Java software
- Writing and running servlets and JSPs
- Creating graphical user interfaces for Java software
- Writing web-based applications in Java
- How to download, install and use the tools in the Java Development Kit

Course Description: This hands on course introduces experienced programmers to Java™ technology and Java programming techniques. The Java platform provides an object-oriented, portable and robust framework for application development. Included are core language concepts including fundamental data types, flow control, and standard function libraries. The course emphasizes object oriented programming and modular design to support distributed development environments. Included are the design of classes and objects, inheritance and polymorphism, and the details about creating programs for use on a distributed network, with emphasis on JSP, Servlets, and JDBC.The course also includes coverage of the Java Collections API, fundamental I/O, exceptions, and exception handling. Students are introduced to GUI programming using the Swing library as an example of a GUI API.

The course is designed to leverage the participants' existing programming skills and to highlight the new and extended features of the Java programming framework as compared to other common languages. Comprehensive hands on exercises are integrated throughout to reinforce learning and develop real competency. Students who do not already possess fundamental programming skills should attend the Learning to Program with Java course rather than this course.

Course Prerequisites: Basic programming skills in a structured language. Knowledge and experience with Object-Oriented Design (OOD) is helpful, but not required

For a complete detailed course description, visit:

http://www.traininghott.ca/Courses/Learning-Java-Programming-Classes.htm

"This class was all I hoped for and more! I didn't expect to learn as much as I did in such a short period of time. Leaving this class I am confident that my future experiences with the Java programming language will be productive and effective."

- K.B., Marshall University

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Effectively Using Java™ Packages And Features

Duration: 5 days | **Price:** CDN$3,275

Students Will Learn:

- ▶ Using Reflection and Introspection with Java Classes (`java.lang.reflect package`)
- ▶ Writing Type Safe and Reliable Code with the Enhanced Capabilities of Java 5
- ▶ Using the Java Collections Framework (`java.util package`)

- ▶ Processing Databases Using JDBC (`java.sql package`)
- ▶ Creating, Controlling, and Synchronizing Threads
- ▶ Creating and Using Inner and Nested Classes
- ▶ Using Networking Related Classes (`java.net package`)

Course Description: This intermediate level course is intended for programmers who already have a fundamental understanding of Java programming and some experience writing code. It provides additional insights and details regarding some of the more advanced and useful capabilities contained in the Java programming language and its associated packages. Topics include reflection and JavaBeans, Java 5 type safety enhancements, the Java Collections Framework, Java Database Connectivity (JDBC), multithreading, inner classes, and networking.

Course Prerequisites: Familiarity with and experience using Java. Completion of either the **Learning to Program with Java** or **Java Programming** course, or equivalent Java programming experience.

For a complete detailed course description, visit:

http://www.traininghott.ca/Courses/Java-Packages-Training-Course.htm

"Excellent training class. And even better, excellent instructor! The instructor did a great job covering the required material. He used real world examples to explain concepts and to hold my attention."

– A.Y., Citizens Property Insurance

Introduction to Web Application Development Using JEE, Spring/Hibernate, Web Services and AJAX

Duration: 5 days | **Price:** CDN$3,275

Students Will Learn:

- Java Web application architecture
- Developing servlets and JSPs
- Consuming Web services
- Creating and deploying SOAP based and RESTful Web services
- Using JavaBeans in Web Applications
- Accessing databases with JDBC
- Importing and Utilizing JNDI Packages
- Utilizing the Spring dependency injection framework
- Managing database operations by using the Hibernate framework
- Building Web applications by using the Spring MVC framework
- Managing database transactions with Spring and Hibernate
- Effectively integrating Spring and Hibernate
- Integrating, testing and debugging AJAX functionality

Course Description: This course provides students hands on experience with cutting edge Java Enterprise (Java EE) technologies, creating dynamic web and enterprise applications that utilize several Java frameworks and technologies including JSP's and Servlets, Java Persistence API (JPA), JNDI, JDBC, AJAX, Web Services, Spring and Hibernate. The goal is to enable students to exploit the Java EE platform and accompanying frameworks to facilitate the development of distributed, web-enabled applications.

Students will architectural design issues as well as specific coding models for a variety of Java EE components. By working with several Java frameworks in hands on labs, students will build applications that incorporate many of the patterns commonly used in these and other Java frameworks. Upon completion of the course, students should be able to learn and effectively utilize frameworks appropriate for their application environment.

Starting with Java Server Pages and Servlets, the course then introduces some of the most widely used frameworks to provide concrete illustrations of the services available. Since coding and deployment files are standardized by the Java EE specifications, students may readily apply the skills learned in this class to write code for any compliant server, including Apache Tomcat, JBoss, WebSphere, Oracle, WebLogic and many others.

Students will learn how to utilize ANT, a flexible and powerful XML-based build utility, to compile, deploy and execute stand-alone and enterprise Java applications. They will also use ANT to execute standalone client applications that communicate with Java EE applications. Comprehensive hands on exercises are integrated throughout to reinforce learning and develop real competency.

Course Prerequisites: Java SE 5+ programming experience and an understanding of object-oriented design principles. Fundamental knowledge of XML, HTML, and JavaScript is helpful but not required. HOTT's course **Java Programming** or equivalent knowledge provides a solid foundation.

For a complete detailed course description, visit:

http://www.traininghott.ca/Courses/Spring-Hibernate-AJAX-Training-Course.htm

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Web Application Development Using Spring, Hibernate and JPA

Duration: 5 Days | **Price:** CDN$3,275

Students Will Learn:

- The core principles of Spring and of Dependency Injection (DI)/Inversion of Control
- Using the Spring core module and DI to configure and wire application objects (Beans) together
- Using the different types of metadata (XML, @ Component, and @Configuration)
- The complete capabilities of the core module
- Using the ORM (Object-Relational Mapping) module to integrate Spring with technologies such as Hibernate or JPA
- Spring's transaction support
- Integration of Spring with Java EE Web applications
- The features and benefits of Hibernate
- How to architect applications using the Hibernate framework
- Structuring code using Hibernate protocols
- Using Hibernate Mapping to map persistent objects to the database
- Working with collections and associations
- Using Hibernate's versioning support
- Mapping inheritance hierarchies using Hibernate
- Working with Hibernate Queries, HQL, and Criteria
- Hibernate transaction support
- The relationship between Hibernate and the Java Persistence API (JPA)
- How to architect and code using JPA2
- Exploiting AJAX integration
- Exploiting Web services

Course Description: This course provides a comprehensive introduction to JPA (the Java Persistence API), the Spring and Hibernate open source frameworks as well as Web Services and AJAX. Suitable for both Spring3/Hibernate3 and Spring4/Hibernate4, the course includes coverage of the core Spring and Hibernate capabilities, as well as the integration capabilities provided by Spring.

This Spring/Hibernate course introduces techniques for using the many new and powerful capabilities that Spring4 supports. It includes complete coverage of the three main configuration styles (@Configuration, @ Component, XML), and guidelines for their usage. It also covers more advanced capabilities such as support for JDBC and persistence frameworks like Hibernate, Spring declarative transactions, and Spring integration with JEE Web technologies.

The course covers all important capabilities of the Hibernate open source object/relational persistence and query service for Java. Coverage includes developing persistent classes in Java, as well as using associations/relationships, inheritance, polymorphism, composition and collections. It also covers fundamentals of JPA (the Java Persistence API) including JPA Annotations and JPQL (Java Persistence Query Language).

Comprehensive hands on exercises are integrated throughout to reinforce learning and develop real competency. Attendees build working Spring/Hibernate applications utilizing the Eclipse IDE, providing a knowledge foundation applicable to all major development environments.

Course Prerequisites: Java SE programming experience and an understanding of object-oriented design principles. Fundamental knowledge of XML, HTML, and JavaScript is helpful but not required. HOTT's course Java Programming or equivalent knowledge provides a solid foundation.

For a complete detailed course description, visit:

https://www.traininghott.ca/Courses/Spring-Hibernate-Programming-Course.htm

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Introduction to Spring 5, Spring Boot and Spring REST

Duration: 5 Days | **Price:** CDN$3,275

Students Will Learn:

- Understanding the core principles of Spring, and of Dependency Injection (DI) / Inversion of Control
- Using the Spring Core module and DI to configure and wire application objects (beans) together
- Knowing the different types of metadata (XML, annotations/@Component, and Java Configuration/@Configuration), and how and when to use them
- Understanding and using the complete capabilities of the Core module, such as lifecycle events, bean scopes, and the Spring API
- Using Spring Boot to simplify dependency management and configuration
- Understanding and using Boot's auto-configuration
- Customizing Boot's behavior with properties and in other ways
- Working with the ORM (Object-Relational Mapping) module to integrate Spring with technologies such as JPA
- Using Spring Data to automatically generate JPA-based repository classes
- Understanding and using Spring's transaction support, including the easy-to-use Java annotation support
- Understanding REST, and using Spring REST to build RESTful services
- Using Ajax-based front ends with Spring REST
- Using RestTemplate to create Java REST clients

Course Description: Spring 5 provides an evolutionary advance of Spring's powerful capabilities. This course introduces the many Spring Core capabilities, as well as providing guidelines on when and how to use them. It also goes into considerable depth on Spring Boot for dependency management and auto-configuration, as well as Spring REST for creating RESTful resources.

This course has been completely revised to utilize Spring Boot's easy configuration and auto-configuration wherever possible. "Classic" Spring configuration (usually more verbose and complicated) is optionally covered in abbreviated form.

The course starts with in-depth coverage of Spring's Core module to reduce coupling and increase the flexibility, ease of maintenance, and testing of your applications. It goes on to cover many of the most important capabilities of Spring, including easing configuration with Spring Boot, integrating JPA persistence layers with Spring and Spring Data, and using Spring's declarative transaction capabilities.

The course includes a solid introduction to Spring REST, and coverage of building RESTful resources. It also covers many of the details of Spring Boot, including how to create Boot-based POMs (maven) for simplified dependency management, customizing Boot behavior, and understanding/managing Boot's auto-configuration.

Comprehensive hands on exercises are integrated throughout the course to reinforce learning and develop real competency. This course will enable students to build working Spring applications with Java and will give students an understanding of the important concepts and technology in a very short time.

Course Prerequisites: Java SE programming experience and an understanding of object-oriented design principles. Fundamental knowledge of XML is helpful but not required. HOTT's course Java Programming or equivalent knowledge provides a solid foundation.

For a complete detailed course description, visit:

https://www.traininghott.ca/Courses/Spring-5-Spring-Boot-Rest-Training-Course.htm

Introduction to Spring 5, Spring MVC and Spring REST

Duration: 5 days | **Price:** CDN$3,275

Students Will Learn:

- Understanding the core principles of Spring, and of Dependency Injection (DI) / Inversion of Control
- Using the Spring Core module and DI to configure and wire application objects (beans) together
- Knowing the different types of metadata (XML, annotations/@Component, and Java Configuration/@Configuration), and how and when to use them
- Understanding and using the complete capabilities of the Core module, such as lifecycle events, bean scopes, and the Spring API
- Using Spring Boot to simplify dependency management and configuration
- Working with the ORM (Object-Relational Mapping) module to integrate Spring with technologies such as Hibernate or JPA
- Using Spring Data to automatically generate JPA-based repository classes
- Understanding and using Spring's transaction support, including the easy-to-use Java annotation support, as well as the tx/aop XML configuration elements
- Integrating Spring with Java EE Web applications
- Building Web applications with Spring MVC, including configuration using Java config and Servlet 3 capabilities
- Understanding and using the core capabilities of Spring's Reactive programming support

Course Description: Spring 5 provides an evolutionary advance of Spring's powerful capabilities. This course introduces these capabilities, as well as providing guidelines on when and how to use them. It includes coverage of the three main configuration styles: Java-based (@Configuration), annotation-based (@Component), and the traditional XML-based configuration that may still play an important role in existing and new projects.

The course starts with in-depth coverage of Spring's Core module to reduce coupling and increase the flexibility, ease of maintenance, and testing of your applications. It goes on to cover many of the most important capabilities of Spring, including easing configuration with Spring Boot, integrating Hibernate and JPA persistence layers with Spring and Spring Data, and using Spring's declarative transaction capabilities.

The course includes integration of Spring with Java EE Web applications, a solid introduction to Spring MVC, and coverage of building RESTful resources with Spring MVC. It also provides an overview of Springs reactive programming model for repositories and Web resources.

This course is hands on with labs to reinforce all the important concepts. It will enable you to build working Spring applications and give you an understanding of the important concepts and technology in a very short time.

The standard platform does all labs with the Eclipse IDE and the lab instructions include detailed directions for setting up and using it. The course can be made available for all major development environments, including IBM RAD and IntelliJ.

Course Prerequisites: Java SE programming experience and an understanding of object-oriented design principles. Fundamental knowledge of XML is helpful but not required. HOTT's course **Java Programming** or equivalent knowledge provides a solid foundation.

For a complete detailed course description, visit:

https://www.traininghott.ca/Courses/Spring-MVC-5-Spring-Rest-Training-Course.htm

Introduction to the Spring 5 Framework

Duration: 3 Days | **Price:** CDN$2,275

Students Will Learn:

- ▶ Understanding the core principles of Spring, and of Dependency Injection (DI) / Inversion of Control
- ▶ Using the Spring Core module and DI to configure and wire application objects (beans) together
- ▶ Knowing the different types of metadata (XML, annotations/@Component, and Java Configuration/@Configuration), and how and when to use them
- ▶ Understanding and using the complete capabilities of the Core module, such as lifecycle events, bean scopes, and the Spring API
- ▶ Using Spring Boot to simplify dependency management and configuration
- ▶ Working with the ORM (Object-Relational Mapping) module to integrate Spring with technologies such as Hibernate or JPA
- ▶ Using Spring Data to automatically generate JPA-based repository classes
- ▶ Understanding and using Spring's transaction support, including the easy-to-use Java annotation support, as well as the tx/aop XML configuration elements

Course Description: Spring 5 provides an evolutionary advance of Spring's powerful capabilities. This course introduces these capabilities, as well as providing guidelines on when and how to use them. It includes coverage of the three main configuration styles: Java-based (@Configuration), annotation-based (@ Component), and the traditional XML-based configuration that may still play an important role in existing and new projects.

The course starts with in-depth coverage of Spring's Core module to reduce coupling and increase the flexibility, ease of maintenance, and testing of your applications. It goes on to cover many of the most important capabilities of Spring, including easing configuration with Spring Boot, integrating Hibernate and JPA persistence layers with Spring and Spring Data, and using Spring's declarative transaction capabilities. It also covers integration of Spring with Java EE Web applications.

This course is hands on with labs to reinforce all the important concepts. It will enable you to build working Spring applications and give you an understanding of the important concepts and technology in a very short time.

The standard platform does all labs with the Eclipse IDE and the lab instructions include detailed directions for setting up and using it. The course can be made available for all major development environments, including IBM RAD and IntelliJ.

Course Prerequisites: Java SE programming experience and an understanding of object-oriented design principles. Fundamental knowledge of XML is helpful but not required. HOTT's course **Java Programming** or equivalent knowledge provides a solid foundation.

For a complete detailed course description, visit:

https://www.traininghott.ca/Courses/Introduction-Spring-5-Training-Course.htm

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Introduction to Spring Boot 2

Duration: 3 Days | **Price:** CDN$2,275

Students Will Learn:

- ▶ Overview of Spring Core (focus on @Configuration) and Maven/Gradle
- ▶ When to use Spring Boot
- ▶ Using Spring Boot starters and start.spring.io to easily create new applications
- ▶ Understanding and using Spring Boot's auto-configuration
- ▶ Customizing your application configuration
- ▶ Understanding and using Spring Boot's Spring Data / Spring Data JPA capabilities
- ▶ Understanding and using Spring Boot's Web capabilities
- ▶ Using embedded servlet containers
- ▶ Using Spring Boot Data REST
- ▶ Using Spring Security with Spring Boot
- ▶ Understanding and using Spring Boot's Actuator
- ▶ Using Actuator endpoints to monitor and manage applications
- ▶ Working with Spring DevTools
- ▶ Spring CLI

Course Description: As the Spring framework has grown, creating and configuring Spring applications has become more and more complex. Spring Boot takes an "opinionated" view of an application (via intelligent defaults) that minimizes configuration and boilerplate Spring code. Spring Boot makes it easier to use Spring's many frameworks, and adds advanced capabilities such as health monitoring. This course introduces Spring Boot from the ground up, including overviews of building blocks such as Maven. It covers the key features and capabilities of Spring Boot, and teaches experienced Spring developers the skills they need to use Spring Boot productively. This course covers Spring Boot 2 and Spring 5 - the current releases of these frameworks.

The standard platform does all labs with the Eclipse IDE, and the lab instructions include detailed directions for setting up and using it. The course can be made available for all major development environments, including IBM RAD and IntelliJ.

Course Prerequisites: Java SE programming experience and an understanding of object-oriented design principles. The course **Java Programming** or equivalent knowledge provides a solid foundation.

For a complete detailed course description, visit:

https://www.traininghott.ca/Courses/Spring-Boot-Training-Course.htm

1-978-250-4299 | www.traininghott.ca

POWER BI

Analyzing and Presenting Data with Power BI

Duration: 3 Days | **Price:** CDN$2,275

Students Will Learn:

- ▶ The fundamentals and evolution of business analysis processes and tools
- ▶ The roles, tasks and tools involved in self-service business analysis
- ▶ How to connect to and import data from numerous diverse sources into the Power BI Desktop and service
- ▶ When to directly query data sources and when to import data
- ▶ How to shape, transform, and combine data from diverse sources to create useful reports
- ▶ Using the Power Query Editor
- ▶ Which visualizations are best suited for various types of analysis
- ▶ How to create, organize and format visualizations that evoke insight and deliver optimal impact
- ▶ How to use and develop data models and related tools to combine datasets for analysis
- ▶ How to modify relationships, cardinality, and cross filter direction to maximize the efficacy of analysis
- ▶ Publishing to the Power BI service
- ▶ Create and manipulating dashboards, reports and apps in the Power BI service
- ▶ Refreshing datasets, reports and dashboards in the Power BI Desktop and service
- ▶ Sharing reports, dashboards, workbooks and datasets in the Power BI service
- ▶ Creating hierarchical drilldown reports
- ▶ Collaborating in the Power BI service
- ▶ The basics of DAX (Data Analysis Expressions)
- ▶ The utility of the Power BI REST API and the R, M and Python languages with regard to the Power BI suite of tools

Course Description: This course provides a robust and in-depth introduction to Microsoft's *Power BI* suite of products. Students will learn to use the Power BI Desktop and Power BI online service to import, analyze, and visualize business data, and to share business intelligence. Topics include an exploration of the evolution of relational databases, data warehouse and business intelligence; importing and combining data from diverse data sources; shaping and transforming data; modeling data; developing useful and insightful visualizations; creating and sharing reports and dashboards in the Power BI service; collaborating in the Power BI service; and an introduction to Data Analysis Expressions (DAX).

Students wanting in-depth coverage of DAX and Power Query M in addition to Power BI training should attend the **Analyzing Data with Power BI, DAX, and Power Query M** course rather than this course.

Course Prerequisites: Before attending this Microsoft Power BI training course, students must have:

- ▶ High degree of computer literacy
- ▶ Experience with office applications
- ▶ Familiarity with spreadsheet functionality
- ▶ An understating of fundamental business analysis issues such as revenue, profitability, financial accounting, and reporting
- ▶ Basic familiarity with relational databases and data warehousing is helpful but not required

For a complete detailed course description, visit:

https://www.traininghott.ca/Courses/Power-BI-Training-Course.htm

Analyzing Data with Power BI, DAX, and Power Query M

Duration: 5 Days | **Price:** CDN$3,275

Students Will Learn:

- ▶ The fundamentals and evolution of business analysis processes and tools
- ▶ The roles, tasks and tools involved in self-service business analysis
- ▶ How to connect to and import data from numerous diverse sources into the Power BI Desktop and service
- ▶ When to directly query data sources and when to import data
- ▶ How to shape, transform, and combine data from diverse sources to create useful reports
- ▶ Using the Power Query Editor
- ▶ Which visualizations are best suited for various types of analysis
- ▶ How to create, organize and format visualizations that evoke insight and deliver optimal impact
- ▶ How to use and develop data models and related tools to combine datasets for analysis
- ▶ How to modify relationships, cardinality, and cross filter direction to maximize the efficacy of analysis
- ▶ Publishing to the Power BI service

- ▶ Create and manipulating dashboards, reports and apps in the Power BI service
- ▶ Refreshing datasets, reports and dashboards in the Power BI Desktop and service
- ▶ Sharing reports, dashboards, workbooks and datasets in the Power BI service
- ▶ Creating hierarchical drilldown reports
- ▶ Collaborating in the Power BI service
- ▶ Using DAX to add new Calculations to an existing data model
- ▶ Simulating a Star data Schema from an OLTP source with DAX
- ▶ Fixing Data Granularity issues with DAX Calculations
- ▶ Providing Row Level security using Row Filters in DAX
- ▶ Performing Transformations while loading data with Power Query and M
- ▶ Using M language to write more powerful queries than the standard Power Query user interface allows

Course Description: This Power BI Dax course provides a robust and in-depth introduction to Microsoft's Power BI suite of products and gives students a solid understanding of data analysis with Power BI, DAX, and Power Query M. Students will learn to use the Power BI Desktop and Power BI online service to import, analyze, and visualize business data, and to share business intelligence. In addition, students will learn beginner and intermediate techniques for adding calculations to their Power BI Data models using DAX, as well as how to use the Power Query M language to write advanced queries in order to populate a data model from external data sources.

Students who want Power BI training but do not need detailed coverage of DAX and Power Query M should instead attend the shorter **Analyzing and Presenting Data with Power BI** course rather than this course.

Course Prerequisites: Before attending this Microsoft Power BI training course, students must have:

- ▶ High degree of computer literacy
- ▶ Experience with office applications
- ▶ Familiarity with spreadsheet functionality
- ▶ An understating of fundamental business analysis issues such as revenue, profitability, financial accounting, and reporting
- ▶ Basic familiarity with relational databases and data warehousing is helpful but not required

For a complete detailed course description, visit:

https://www.traininghott.ca/Courses/Power-BI-Dax-Power-Query-M-Course.htm

Website Development with HTML5, CSS and Bootstrap

Duration: 5 days | **Price:** CDN$3,275

Students Will Learn:

- ▶ Creating a valid HTML document
- ▶ Using various tags to markup text
- ▶ Creating and using CSS to format the appearance of an HTML document
- ▶ Using HTML5 semantic elements to define the structure of a page
- ▶ Changing the appearance of elements in a document with type, id, class and attribute selectors
- ▶ Creating CSS3 effects such as drop shadows, text shadows and using custom fonts
- ▶ Creating ordered, unordered and description lists
- ▶ Displaying images on a Web page
- ▶ Creating hyperlinks using text or images
- ▶ Using the a tag to create anchors in a page

- ▶ Creating animations using transitions, transforms and animations
- ▶ Defining a CSS3 grid layout
- ▶ Displaying information using an HTML table
- ▶ Including forms in an HTML document
- ▶ Validating forms using HTML5 features
- ▶ Adding video and audio to a Web page
- ▶ Building a Web page using the Bootstrap grid system
- ▶ Using Bootstrap to style links, buttons and form controls
- ▶ Adding components to a page such as dropdowns, thumbnails, alerts and glyphicons

Course Description: This hands on course provides a thorough introduction into the creation of a Website using HTML, CSS and Bootstrap. The course starts with thorough coverage of HTML and Cascading Style Sheets (CSS) and progresses to using the Bootstrap framework to create mobile-friendly websites.

Topics include use of HTML5 semantic tags, block-level and inline elements, creating links, ordered and unordered lists, creation of tables and forms. Students will learn to attach CSS to a page using several different techniques, CSS selectors and pseudo-classes, CSS box model, and a variety of CSS properties.

Students will learn how to create a Bootstrap page utilizing the grid system, implement commonly used components (such as dropdowns and navigation bars), use Bootstraps CSS classes to format page elements and use Bootstrap's plugins to add tabs, modals and accordions to a page.

Comprehensive hands on exercises are integrated throughout to reinforce learning and develop real competency.

Course Prerequisites: Basic personal computer skills and basic Internet knowledge.

For a complete detailed course description, visit:

http://www.traininghott.ca/Courses/HTML-Bootstrap-Training-Course.htm

JavaScript Programming

Duration: 5 days | **Price:** CDN$2,775

Students Will Learn:

- Creating and using variables
- Working with primitive data types
- Creating custom objects
- Using event handlers to handle user-triggered events
- Defining and invoking functions
- Using conditional constructs and loops
- Debugging JavaScript code
- Using arrow functions
- Including JavaScript in a Web page
- Using the Document Object Model (DOM) to access the HTML elements on the page dynamically
- Using JavaScript objects effectively, including the window object and the navigator object
- Performing pattern matching with regular expressions
- Validating a form
- Using Geolocation and Web Storage JavaScript APIs
- Working with JSON objects
- Using Ajax to make asynchronous calls to a Web server

Course Description: JavaScript is a scripting language that is commonly used to create and control dynamic Website content along with its use in the Node.js runtime. This hands on JavaScript training course provides the fundamental knowledge necessary to design and develop dynamic Web pages using JavaScript and to be able to grasp JavaScript libraries and frameworks such as jQuery, React and Angular. Students will learn the syntax of the JavaScript language and how to use JavaScript in a Web browser.

Topics include ways to declare variables, use of intrinsic JavaScript objects such as Math, Date and Array, declaring and calling functions, defining custom objects, error handling, working with arrow functions, and using conditional logic. Students will learn how to include JavaScript in a Web page and how to use browser-based APIs such as the Document Object Model (DOM), Geolocation and Web Storage. Upon completion students will be able to utilize event handling, form validation, JSON and Ajax.

Comprehensive hands on exercises are integrated throughout to reinforce learning and develop real competency.

Course Prerequisites: Basic computer skills and knowledge of HTML fundamentals including use of Cascading Style Sheets is recommended, but not required. The **Website Development with HTML5, CSS and Bootstrap** course provides a thorough introduction into the creation of a Website using HTML and CSS.

For a complete detailed course description, visit:

http://www.traininghott.ca/Courses/JavaScript-Programming-Training-Course.htm

"The instructor was great and the rule of three helped me understand the material. You can't beat: Talk about it. See it. Do it."

- E.K., Intersec Design

jQuery Programming

Duration: 3 days | **Price:** CDN$2,275

Students Will Learn:

- Referencing jQuery in a Page
- Selecting page elements using jQuery selectors
- Selecting DOM elements using standard DOM methods
- Creating and using jQuery plugins
- Registering events in jQuery
- Setting CSS properties of page elements
- Making Ajax requests using the `$.ajax` function
- Changing the display style of an element using various effect methods

Course Description: jQuery simplifies client-side scripting via a series of open-source libraries that provide frameworks for enhanced functionality. This hands-on course covers the jQuery library, DOM manipulation, performing Ajax requests, and an overview of the UI library. Students will also learn how to use the jQuery function to return a wrapped set of elements, use utility functions to work with arrays and strings, modify the appearance of elements using a number of predefined effects as well as how to implement existing plugins.

Comprehensive hands on exercises are integrated throughout to reinforce learning and develop real competency. Students who are not familiar with HTML5 and CSS3 should instead register for the course, **Developing Rich Internet Applications Using HTML5, CSS3 and jQuery**.

Course Prerequisites: Knowledge of HTML5, CSS3 and JavaScript. Attendees with little experience in HTML5/CSS3 should take the 5-day **Developing Rich Internet Applications Using HTML5, CSS3 and jQuery course instead**.

For a complete detailed course description, visit:

http://www.traininghott.ca/Courses/jQuery-Programming-Course.htm

Developing Mobile Websites with Responsive Web Design and jQuery Mobile

Duration: 5 days | **Price:** CDN$3,275

Students Will Learn:

▶ Designing and building a responsive Website
▶ Setting the viewport of a Website
▶ Writing CSS3 media queries
▶ Scaling images and media
▶ Creating responsive navigation and layouts
▶ Using both CSS and jQuery to create tables that are responsive
▶ Creating a jQuery Mobile page
▶ Configuring fixed and full-screen toolbars
▶ Configuring a custom theme using Themeroller for jQuery Mobile

▶ Configuring jQuery Mobile using the mobileinit event and the `$.mobile` object
▶ Using layout grids to format page content
▶ Using the Panel widget to display a panel on a page
▶ Creating collapsible content blocks using the Collapsible and Collapsibleset widgets
▶ Building a responsive form using jQuery Mobile widgets
▶ Providing filter capability to a page using the Filterable widget

Course Description: This hands-on course conveys the fundamental skills necessary to design and build responsive web sites for mobile devices such as phones and tablets. Attendees will use responsive web design (RWD) techniques such as CSS3 media queries and flexible layouts to build mobile-compatible web sites. Students will learn how to test mobile websites using emulators and simulators.

The course also provides an extensive introduction into using the jQuery Mobile Framework for building mobile-specific web sites. Students will learn how to use jQuery Mobile widgets to create forms, lists, toolbars and collapsible blocks. Students will also learn how to integrate SOA with a mobile web site including working with RSS feeds, Google Maps integration and implementing server-side data access.

Attendees will use ThemeRoller for jQuery Mobile to download existing or custom theme swatches to format the appearance of a web site. Additional topics include responding to user events, configuring jQuery Mobile defaults and using page transitions. Comprehensive hands on exercises are integrated throughout to reinforce learning and develop real competency.

Course Prerequisites: Prior knowledge of HTML, CSS, JavaScript and jQuery equivalent to attending the **Web Site Development With HTML/JavaScript** and **Developing Rich Internet Applications Using HTML5, CSS3 and jQuery** courses.

For a complete detailed course description, visit:

http://www.traininghott.ca/Courses/jQuery-Mobile-Responsive-Web-Design-Training-Course.htm

Developing Web Applications Using Angular

Duration: 5 days | **Price:** CDN$3,275

Students Will Learn:

- Using TypeScript and ECMA6 to create components
- Using directives and components to define UI elements, routes and screens
- Working effectively with component lifecycle events
- Injecting dependencies to lessen coupling and increase testability
- Unit testing Angular applications with Karma and Jasmin
- Using property binding to link DOM elements with model data
- Building Single Page Applications using Angular
- Integrating forms with Angular
- Organizing code using modules
- Communicating with RESTful Web services

Course Description: This hands on programming course provides a thorough introduction to the Angular JavaScript Framework including coverage of versions 2 through 5. Attendees will learn the fundamental skills necessary to build Web Applications using Angular and the MVVM (Model-View-ViewModel) design pattern. Topics include using TypeScript and ECMAScript 6 to create components, using directives and components to define UI elements, routes and screens, applying dependency injection, designing views/templates, routing, data binding and pipes, applying directives, as well as form integration and validation. Students will also use the Angular services to communicate with RESTful web services and provide CRUD database operations.

Comprehensive hands on exercises are integrated throughout to reinforce learning and develop real competency.

This course introduces Angular versions 2 through 5.

Course Prerequisites: Knowledge of HTML, CSS and JavaScript equivalent to attending the **Web Site Development with HTML5/JavaScript** course. Knowledge of jQuery is helpful, but not required.

For a complete detailed course description, visit:

http://www.traininghott.ca/Courses/AngularJS2-Programming-Course.htm

ReactJS Web Application Development

Duration: 4 Days | **Price:** CDN$2,775

Students Will Learn:

- ▶ Rendering React Components
- ▶ Styling Components with CSS and Bootstrap
- ▶ Using Create React App
- ▶ Fetching External Data with Fetch API
- ▶ Leveraging JSX for UI Design
- ▶ Creating Functional and Class-based Components
- ▶ Working with Forms

- ▶ Using React Hooks
- ▶ Single Page Applications with React Router
- ▶ Validating Props with PropTypes
- ▶ Using Lifecycle Methods
- ▶ Maintaining Component and Global State
- ▶ Registering Event Handlers
- ▶ Animating React Components

Course Description: React (a.k.a. ReactJS or React.js) is a JavaScript library for developing user interfaces. This hands-on React JS training course introduces students to the React JavaScript library and covers essentials such as using Create React App, defining components, writing and styling JSX elements, passing props, using state and registering event handlers. Students will also learn how to use React Hooks, the Context API, Lifecycle Methods and how to implement global state using the Redux JavaScript library.

Comprehensive hands on exercises are integrated throughout to reinforce learning React JS and develop real competency.

Course Prerequisites: Knowledge of HTML5, CSS, and JavaScript equivalent to attending the **Website Development with HTML5, CSS and Bootstrap** and **JavaScript Programming** courses.

For a complete detailed course description, visit:

https://www.traininghott.ca/Courses/React-Programming-Course.htm

Node.js Application Development

Duration: 4 days | **Price:** CDN$2,775

Students Will Learn:

- ▶ Installation and configuration of Node.js
- ▶ Using npm to install and manage modules
- ▶ Working with the V8 Engine
- ▶ Building HTTP servers and HTTP clients
- ▶ Synchronous and asynchronous design patterns
- ▶ Building Node.js applications
- ▶ Storing application data in NoSQL databases
- ▶ Working with Web application frameworks such as Express
- ▶ Testing and Debugging Node.js applications
- ▶ Using Node.js core modules
- ▶ Using the Node.js event system and event emitters
- ▶ Interacting with the file system using buffers and streams
- ▶ Using Node.js networking API's to build internetworked applications
- ▶ Creating and consuming RESTful Web services

Course Description: This hands on Node.js course will teach front end designers and server side developers how to rapidly create, maintain, and deploy Node.js applications. This course includes thorough coverage of the Node.js architecture, the V8 engine and the Node Ecosystem. The course takes a practical approach to creating and organizing Node.js applications using functions and modules as part of the Node.js organizational structure. This course will provide attendees with a comprehensive understanding of Node.js core modules and how to procure and install packages using npm. Attendees will learn to identify and correct problems through unit testing and exception handling.

Attendees will learn how to use Node.js to create Command Line Interface applications for system administration and process management, use Node.js networking modules to communicate with TCP/IP clients and servers such as HTTP servers, and create / consume REST (Representational State Transfer) data services. Attendees will learn how to leverage frameworks such as Express to rapidly build Web Applications. Attendees will learn how to use Node.js to connect to NoSQL databases such as MongoDB to store, retrieve, and manipulate data (i.e., achieve data persistence).

Comprehensive hands on exercises are integrated throughout to reinforce learning and develop real competency.

Course Prerequisites: Knowledge of JavaScript equivalent to attending the **JavaScript Programming** course. Attendees should also have familiarity with a Windows, Linux, or OS X command line interface as well as a basic understanding of network protocols such as HTTP.

For a complete detailed course description, visit:

http://www.traininghott.ca/Courses/Node-JS-Training-Course.htm

Perl Scripting

Duration: 4 days | **Price:** CDN$2,775

Students Will Learn:

- ▶ Writing Perl scripts
- ▶ Using Perl to read from and write to files
- ▶ Using arrays, hashes and scalars to create robust Perl programs
- ▶ Using arithmetic, assignment, comparison and logical operators in Perl
- ▶ Writing clear and concise regular expressions
- ▶ Creating subroutines to promote cleaner code
- ▶ Controlling Perl program flow using conditional constructs and loops
- ▶ Creating hard and anonymous references
- ▶ Manipulating lists
- ▶ Debugging Perl scripts for optimum performance
- ▶ Writing Perl scripts that process script arguments
- ▶ Implementing pattern matching in Perl scripts using regular expressions
- ▶ Writing Perl Programs that access a Relational Database

Course Description: This hands-on Perl Programming course presents a thorough introduction to the Perl scripting language emphasizing the rapid development of portable and modular Perl programs and scripts. Students are introduced to all major language elements including built-in data types, powerful operators, flow control and robust built-in functions. The course also covers the use of command line processing, file and directory I/O to create flexible and user friendly programs. Attendees will also be introduced to object-oriented programming in Perl as well as how to use pattern matching with Regular Expressions and string handling functions to manipulate files and data. Students will learn to create reusable code using subroutines, modules, and Perl's object-oriented architecture to deploy business logic across many programs and scripts to enhance maintainability and scalability.

Students will also learn to use the DBI Perl module to write programs that provide a consistent database interface independent of the actual database being used. Comprehensive hands on exercises will be completed throughout the course to reinforce key concepts and practice debugging techniques. Students are shown how to extend Perl's basic functionality with packages and loadable modules.

Course Prerequisites: Prior scripting experience or knowledge of fundamental programming concepts.

For a complete detailed course description, visit:

http://www.traininghott.ca/Courses/Perl-Scripting-Classes.htm

"I loved the class. It was thorough and very informative and a good combination of lecture, examples, and hands-on. I would definitely use HOTT again!"

- S.K., Time Warner

PHP Programming

Duration: 5 days | **Price:** CDN$3,275

Students Will Learn:

- ▶ Creating and modifying PHP pages
- ▶ Working with variables and data types
- ▶ Using `if/elseif/else` statements to control processing conditionally
- ▶ Creating programs that include for, while, and do loops to process statements repeatedly
- ▶ Employing the **break**, **continue**, and **exit** statements to modify default loop behaviors
- ▶ Using and writing functions, including many new PHP7 features such as type declarations, REST parameters and argument unpacking
- ▶ Using PHP **#include**
- ▶ Creating arrays
- ▶ Manipulating strings in PHP using built-in functions

- ▶ Maintaining state using cookies, session variables, hidden form fields and query strings
- ▶ Using PHP to manipulate files
- ▶ Identifying and handling the three main types of errors that can occur when programming with PHP
- ▶ The fundamental techniques necessary to create a shopping cart solution
- ▶ Introduction to OOP (Object Oriented Programming) in PHP
- ▶ Using an object-oriented API to access SQL to **SELECT**, **INSERT**, **UPDATE** and **DELETE** data from tables
- ▶ Using the **phpMyAdmin** utility to administer the MySQL database

Course Description: This hands on PHP Programming course provides the knowledge necessary to design and develop dynamic, database-driven Web pages using PHP 7. PHP is a language written for the Web, quick to learn, easy to deploy and provides substantial functionality required for e-commerce. This course introduces the PHP framework and syntax and covers in depth the most important techniques used to build dynamic Web sites. Students learn how to connect to any modern database, and perform hands on practice with a MySQL database to create database-driven HTML forms and reports.

E-commerce skills including user authentication, data validation, dynamic data updates, and shopping cart implementation are covered in detail. Course elements include implementing RESTful servers for newer more data driven sites. Students also learn how to configure PHP and the Apache Web Server.

Comprehensive hands on exercises are integrated throughout to reinforce learning and develop real competency.

Course Prerequisites: Basic computer skills and knowledge of HTML fundamentals equivalent to attending the **Website Development with HTML5, CSS and Bootstrap** course. Prior programming experience is helpful but not required.

For a complete detailed course description, visit:

http://www.traininghott.ca/Courses/PHP-Programming-Training-Course.htm

GUI PROGRAMMING

UNIT TESTING

COLLECTIONS

EXPRESSIONS FUNCTIONS

PYTHON PROGRAMMING

ARRAYS

I/O HANDLING

PYTHON STANDARD LIBRARY

Python Programming

Duration: 4 days | **Price:** CDN$2,775

Students Will Learn:

▶ Working with Python's built-in objects
▶ Reading and writing files
▶ Creating variables and objects in Python
▶ Communicating with databases
▶ Creating structured data with lists, tuples, sets and dictionaries

▶ Performing conversion operations on numbers
▶ Using conditional constructs to control flow of execution
▶ Writing clear and concise regular expressions
▶ Organizing code with functions and classes
▶ Creating object-oriented Python programs

Course Description: This hands on Python programming course shows how to rapidly develop and maintain effective Python programs. The course includes thorough coverage of Python syntax, built in data types and control constructs. The course takes a practical approach to creating and organizing Python programs using functions, packages, modules and classes as part of Python's object-oriented paradigm. Attendees will use regular expressions to rapidly process data captured from users and from the file system.

Attendees will learn how to use Python to create scripts that manipulate data, automate tasks, perform error handling and store and retrieve data by using relational databases. Students will be able to create Python scripts that assist with system administration.

Comprehensive hands on exercises are integrated throughout to reinforce learning and develop real competency.

Course Prerequisites: Prior scripting experience or knowledge of fundamental programming concepts.

For a complete detailed course description, visit:

http://www.traininghott.ca/Courses/Python-Programming-Course.htm

.NET PROGRAMMING

C#

ASP.NET MVC

WINDOWS FORMS

ASP.NET MVC CORE

WPF

WCF

WF

VB.NET

ASP.NET WEB FORMS

Learning to Program with C#

Duration: 5 days | **Price:** CDN$3,275

Students Will Learn:

- Using Visual Studio to create C# applications
- Working with the .NET data types
- Creating variables with the proper scope and using operators to build complex expressions
- Using control structures such as `if`, `while` and `for`
- Using procedures to build complex applications
- Designing and using classes
- Using arrays and .NET collections
- Throwing and trapping exceptions using the C# `try` and `catch` statements
- Using ADO.NET to access databases
- Working with files and directories

Course Description: This hands on C# programming course provides an introduction to programming using the C# language. Students are introduced to the application development cycle, structure of programs, and specific language syntax. The course also contains "Thinking Like a Programmer" sections that provide students insight on how to develop common algorithms. The course covers console and file I/O, string and character manipulation, managing data using collections and fundamental object-oriented programming concepts. Error handling techniques are also emphasized. The course also introduces how to access databases using ADO.NET and illustrates how to build user interfaces using Windows Forms. Comprehensive hands on exercises are integrated throughout to reinforce learning and develop real competency.

Course Prerequisites: Familiarity with computers.

For a complete detailed course description, visit:

http://www.traininghott.ca/Courses/Learning-C-Sharp-Programming-Classes.htm

"I really enjoyed the course. The instructor did a great job at answering my questions and applying the material to real world situations. If future training is needed I will definitely contact HOTT."

- L.K., McLennan Community College

Learning to Program with VB.NET

Duration: 5 days | **Price:** CDN$3,275

Students Will Learn:

- ▶ Using Visual Studio to create VB.NET applications
- ▶ Working with the .NET data types
- ▶ Creating variables with the proper scope and using operators to build complex expressions
- ▶ Using control structures such as `If`, `Do While` and `For`
- ▶ Using procedures to build complex applications
- ▶ Designing and using classes
- ▶ Using arrays and .NET collections
- ▶ Throwing and trapping exceptions using the VB.NET `Try` and `Catch` statements
- ▶ Using ADO.NET classes to access databases

Course Description: This hands on VB.NET programming course provides an introduction to programming using the VB.NET language. Students are introduced to the application development cycle, structure of programs, and specific language syntax. The course also contains "Thinking Like a Programmer" sections that provide students insight on how to develop common algorithms. The course covers console and file I/O, string and character manipulation, managing data using collections and fundamental object-oriented programming concepts. Error handling techniques are also emphasized. The course also introduces how to access databases using ADO.NET and illustrates how to build user interfaces using Windows Forms. Comprehensive hands on exercises are integrated throughout to reinforce learning and develop real competency.

Course Prerequisites: Familiarity with computers.

For a complete detailed course description, visit:

http://www.traininghott.ca/Courses/Learning-VB-NET-Programming.htm

"The training exceeded my expectations. The instructor was very knowledgeable. I plan to use HOTT from here on out for my training needs."

- S.S., CACI

ASP.NET Web Forms Programming Using C#

Duration: 5 days | **Price:** CDN$3,275

Students Will Learn:

- Using Visual Studio to create C# applications
- Working with .NET data types
- Creating variables with the proper scope
- Designing and using classes
- Using control structures
- Using procedures to build complex applications
- Throwing and trapping exceptions
- Using single and multi-dimensional arrays
- Working with .NET collections
- Using LINQ to make queries
- Defining and implementing interfaces
- Working with enumerations
- Creating ASP.NET Web Form applications
- Working with CSS in Web Forms
- Using Web server controls to interact with users and display data
- Creating event handlers to respond to control events
- Validating input using ASP.NET validation controls
- Reusing design with master pages and user controls
- Managing state in a Web Forms application
- Using ADO.NET to interact with databases
- Using DataSets to read/write XML data
- Using Data Binding to display complex data on Web Pages
- Using ASP.NET AJAX in Web Forms applications
- Deploying an ASP.NET Web application

Course Description: This course provides students with hands on experience using Visual Studio to create dynamic Web sites with ASP.NET Web Forms and the .NET Framework using C#. The class provides a thorough introduction to the C# programming language, including coverage of the essentials of the C# programming language, built in data types, operators, control structures, classes and methods, collections and exception handling. Students then learn how to leverage the power of the .NET Framework to build Web user interfaces. Students will learn use the power of ASP.NET Web server controls combined with HTML5 to design Web pages. They will use ASP.NET Validation controls to provide both client-side and server-side data validation for user input. Students will learn how to use master pages to enforce a consistent look and feel across a set of Web pages, as well as how to use user controls to reuse smaller pieces of HTML across multiple pages.

Students explore the complexities of state management in ASP.NET Web Forms and how to use session and view state objects to manage state between HTTP requests. Students spend time exploring how to use ADO. NET to interact with databases by running SQL queries and executing stored procedures. They will also learn how to read/write XML files using DataSets and DataTables. Students learn how ASP.NET Web Forms data binding to easily display data in list controls, the GridView control and the DetailsView control.

Microsoft provides support for Ajax-enabled Web Forms applications using the ASP.NET AJAX Framework. Students will learn how to use some of the server-side features to make asynchronous postbacks from the browser, perform partial page updates using the UpdatePanel, use CSS to dim a page during postback and use the Timer fetch data from the server asynchronously. Other topics include: using a Web.config file to control application configuration; working with the query string; working with cookies; reading and writing files; and deploying ASP.NET web applications. Comprehensive labs provide the students with extensive experience creating and deploying dynamic ASP.NET Web Form applications.

Course Prerequisites: Knowledge of fundamental HTML syntax is helpful, but not required. Prior experience with a scripting or programming language is required.

For a complete detailed course description, visit:

http://www.treinghott.ca/Courses/ASP-NET-Web-Forms-Programming-Course-Using-C-Sharp.htm

ASP.NET Web Forms Programming Using Visual Basic.NET

Duration: 5 days | **Price:** CDN$3,275

Students Will Learn:

- Using Visual Studio to create VB.NET applications
- Working with .NET data types
- Creating variables with the proper scope
- Designing and using classes
- Using control structures
- Using procedures to build complex applications
- Throwing and trapping exceptions
- Using single and multi-dimensional arrays
- Working with .NET collections
- Using LINQ to make queries
- Defining and implementing interfaces
- Working with enumerations
- Creating ASP.NET Web Form applications
- Working with CSS in Web Forms
- Using Web server controls to interact with users and display data
- Creating event handlers to respond to control events
- Validating input using ASP.NET validation controls
- Reusing design with master pages and user controls
- Managing state in a Web Forms application
- Using ADO.NET to interact with databases
- Using DataSets to read/write XML data
- Using Data Binding to display complex data on Web Pages
- Using ASP.NET AJAX in Web Forms applications
- Deploying an ASP.NET Web application

Course Description: This course provides students with hands on experience using Visual Studio to create dynamic Web sites with ASP.NET Web Forms and the .NET Framework using VB.NET. The class provides a thorough introduction to the VB.NET programming language, including coverage of the essentials of the VB.NET programming language, built in data types, operators, control structures, classes and methods, collections and exception handling. Students then learn how to leverage the power of the .NET Framework to build Web user interfaces. Students will learn use the power of ASP.NET Web server controls combined with HTML5 to design Web pages. They will use ASP.NET Validation controls to provide both client-side and server-side data validation for user input. Students will learn how to use master pages to enforce a consistent look and feel across a set of Web pages, as well as how to use user controls to reuse smaller pieces of HTML across multiple pages.

Students explore the complexities of state management in ASP.NET Web Forms and how to use session and view state objects to manage state between HTTP requests. Students spend time exploring how to use ADO.NET to interact with databases by running SQL queries and executing stored procedures. They will also learn how to read/write XML files using DataSets and DataTables. Students learn how ASP.NET Web Forms data binding to easily display data in list controls, the GridView control and the DetailsView control.

Microsoft provides support for Ajax-enabled Web Forms applications using the ASP.NET AJAX Framework. Students will learn how to use some of the server-side features to make asynchronous postbacks from the browser, perform partial page updates using the UpdatePanel, use CSS to dim a page during postback and use the Timer fetch data from the server asynchronously. Other topics include: using a Web.config file to control application configuration; working with the query string; working with cookies; reading and writing files; and deploying ASP.NET web applications. Comprehensive labs provide the students with extensive experience creating and deploying dynamic ASP.NET Web Form applications.

Course Prerequisites: Knowledge of fundamental HTML syntax is helpful, but not required. Prior experience with a scripting or programming language is required.

For a complete detailed course description, visit:

http://www.traininghott.ca/Courses/ASP-NET-Web-Forms-Course-Using-VB-NET.htm

ASP.NET Web Forms Programming for Experienced C# Programmers

Duration: 3 days | **Price:** CDN$2,275

Students Will Learn:

- ▶ Creating ASP.NET Web Form applications
- ▶ Working with CSS in Web Forms
- ▶ Using Web server controls to interact with users and display data
- ▶ Creating event handlers to respond to control events
- ▶ Validating input using ASP.NET validation controls
- ▶ Reusing design with master pages and user controls
- ▶ Managing state in a Web Forms application
- ▶ Using ADO.NET to interact with databases
- ▶ Using DataSets to read/write XML data
- ▶ Using Data Binding to display complex data on Web Pages
- ▶ Using ASP.NET AJAX in Web Forms applications
- ▶ Deploying an ASP.NET Web application

Course Description: This course provides students with hands on experience using Visual Studio to create dynamic web sites with the ASP.NET Framework using C#. Students learn how to leverage the power of the .NET Framework to build web user interfaces. Students will learn how to build ASP.NET Web Form applications and work with a variety of ASP.NET controls, including validation controls and user controls. Students explore why state management is difficult within web sites and learn many different ASP.NET techniques for managing state, including application, session and view state objects.

Students also learn how to use ADO.NET to interact with databases and XML files. Students learn how ASP.NET uses data binding to display data in controls such as the GridView and ListView.

Other topics include: using a Web.config file to control application configuration; using master pages to provide a consistent look and feel to a web site; working with cookies; reading and writing files; and deploying ASP.NET applications. Comprehensive labs provide the students with extensive experience creating and deploying dynamic ASP.NET Web Form sites.

Course Prerequisites: Knowledge of fundamental HTML syntax is helpful, but not required. Prior experience with C# is required.

For a complete detailed course description, visit:

http://www.traininghott.ca/Courses/ASP-NET-Web-Forms-Training-Using-C-Sharp.htm

ASP.NET Web Forms Programming for Experienced VB.NET Programmers

Duration: 3 days | **Price:** CDN$2,275

Students Will Learn:

- ▶ Creating ASP.NET Web Form applications
- ▶ Working with CSS in Web Forms
- ▶ Using Web server controls to interact with users and display data
- ▶ Creating event handlers to respond to control events
- ▶ Validating input using ASP.NET validation controls
- ▶ Reusing design with master pages and user controls
- ▶ Managing state in a Web Forms application
- ▶ Using ADO.NET to interact with databases
- ▶ Using DataSets to read/write XML data
- ▶ Using Data Binding to display complex data on Web Pages
- ▶ Using ASP.NET AJAX in Web Forms applications
- ▶ Deploying an ASP.NET Web application

Course Description: This course provides students with hands on experience using Visual Studio to create dynamic ASP.NET Web Forms applications using VB.NET. Students will learn use the power of ASP.NET Web server controls combined with HTML5 to design web pages. They will use ASP.NET Validation controls to provide both client-side and server-side data validation for user input. Students will learn how to use master pages to enforce a consistent look and feel across a set of Web pages, as well as how to use user controls to reuse smaller pieces of HTML across multiple pages.

Students explore the complexities of state management in ASP.NET Web Forms and how to use session and view state objects to manage state between HTTP requests. Students spend time exploring how to use ADO. NET to interact with databases by running SQL queries and executing stored procedures. They will also learn how to read/write XML files using DataSets and DataTables. Students learn how ASP.NET Web Forms data binding to easily display data in list controls, the GridView control and the DetailsView control.

Microsoft provides support for Ajax-enabled Web Forms applications using the ASP.NET AJAX Framework. Students will learn how to use some of the server-side features to make asynchronous postbacks from the browser, perform partial page updates using the UpdatePanel, use CSS to dim a page during postback and use the Timer fetch data from the server asynchronously.

Other topics include: using a Web.config file to control application configuration; working with the query string; working with cookies; reading and writing files; and deploying ASP.NET web applications. Comprehensive labs provide the students with extensive experience creating and deploying dynamic ASP.NET Web Form applications.

Course Prerequisites: Knowledge of fundamental HTML syntax is helpful, but not required. Prior experience with VB.NET is required.

For a complete detailed course description, visit:

http://www.traininghott.ca/Courses/ASP-NET-Web-Forms-Class-Using-Visual-Basic-NET.htm

ASP.NET MVC Programming Using C#

Duration: 5 days | **Price:** CDN$3,275

Students Will Learn:

- ▶ Using Visual Studio to create C# applications
- ▶ Working with .NET data types
- ▶ Creating variables with the proper scope
- ▶ Designing and using classes
- ▶ Using control structures
- ▶ Using procedures to build complex applications
- ▶ Throwing and trapping exceptions
- ▶ Using single and multi-dimensional arrays
- ▶ Working with .NET collections
- ▶ Using LINQ to make queries
- ▶ Defining and implementing interfaces
- ▶ Working with enumerations

- ▶ Architecture of ASP.NET MVC web applications
- ▶ Using Visual Studio to create Internet and Intranet applications
- ▶ Creating controllers containing action methods to process HTTP requests
- ▶ Using the ASPX and Razor view engines to design views to render responses to HTTP requests
- ▶ Creating data models by hand, by using typed datasets, and by using the Entity Framework
- ▶ Creating and debugging ASP.NET MVC routines
- ▶ Using MS Test and NUnit to create and run tests for ASP.NET MVC applications
- ▶ Securing and deploying ASP.NET MVC web applications

Course Description: This course provides students with hands on experience using Visual Studio to create dynamic web applications using the ASP.NET MVC 5 Framework and C#. The class provides a thorough introduction to the C# programming language, including coverage of the essentials of the C# programming language, built in data types, operators, control structures, classes and methods, collections and exception handling.

Students learn how to leverage the power of the Model-View-Controller design pattern with the ASP.NET MVC Framework to separate the layers of a web application. Students will use the ASMX and Razor view engines to design a user interface. Students will learn how to build models to manage an application's data layer using both the Entity Framework and LINQ to SQL. And students will learn how to build controllers containing action methods to manage communication between views and models.

Other topics include data scaffolding; URL routing; implementing security; using MVC and Web Forms in the same application, unit testing; and deploying ASP.NET MVC applications. Comprehensive labs provide the students with experience creating, debugging, testing and deploying dynamic ASP.NET MVC applications.

Course Prerequisites: Knowledge of fundamental HTML syntax is helpful, but not required. Prior experience with a scripting or programming language is required.

For a complete detailed course description, visit:

http://www.traininghott.ca/Courses/MVC-Programming-Courses-Using-C-Sharp.htm

ASP.NET MVC Programming Using VB.NET

Duration: 5 days | **Price:** CDN$3,275

Students Will Learn:

- ▶ Using Visual Studio to create VB.NET applications
- ▶ Working with .NET data types
- ▶ Creating variables with the proper scope
- ▶ Designing and using classes
- ▶ Using control structures
- ▶ Using procedures to build complex applications
- ▶ Throwing and trapping exceptions
- ▶ Using single and multi-dimensional arrays
- ▶ Working with .NET collections
- ▶ Using LINQ to make queries
- ▶ Defining and implementing interfaces
- ▶ Working with enumerations

- ▶ Architecture of ASP.NET MVC web applications
- ▶ Using Visual Studio to create Internet and Intranet applications
- ▶ Creating controllers containing action methods to process HTTP requests
- ▶ Using the ASPX and Razor view engines to design views to render responses to HTTP requests
- ▶ Creating data models by hand, by using typed datasets, and by using the Entity Framework
- ▶ Creating and debugging ASP.NET MVC routines
- ▶ Using MS Test and NUnit to create and run tests for ASP.NET MVC applications
- ▶ Securing and deploying ASP.NET MVC web applications

Course Description: This course provides students with hands on experience using Visual Studio to create dynamic web applications using the ASP.NET MVC 5Framework and VB.NET. The class provides a thorough introduction to the VB.NET programming language, including coverage of the essentials of the VB.NET programming language, built in data types, operators, control structures, classes and methods, collections and exception handling.

Students learn how to leverage the power of the Model-View-Controller design pattern with the ASP.NET MVC Framework to separate the layers of a web application. Students will use the ASMX and Razor view engines to design a user interface. Students will learn how to build models to manage an application's data layer using both the Entity Framework and LINQ to SQL. And students will learn how to build controllers containing action methods to manage communication between views and models.

Other topics include data scaffolding; URL routing; implementing security; using MVC and Web Forms in the same application, unit testing; and deploying ASP.NET MVC applications. Comprehensive labs provide the students with experience creating, debugging, testing and deploying dynamic ASP.NET MVC applications.

Course Prerequisites: Knowledge of fundamental HTML syntax is helpful, but not required. Prior experience with a scripting or programming language is required.

For a complete detailed course description, visit:

http://www.traininghott.ca/Courses/ASP-NET-MVC-Programming-Courses-Using-VB-NET.htm

ASP.NET MVC Programming for Experienced C# Programmers

Duration: 3 days | **Price:** CDN$2,275

Students Will Learn:

- ▶ Architecture of ASP.NET MVC web applications
- ▶ Using Visual Studio to create Internet and Intranet applications
- ▶ Creating controllers containing action methods to process HTTP requests
- ▶ Using the ASPX and Razor view engines to design views to render responses to HTTP requests
- ▶ Creating data models by hand, by using typed datasets, and by using the Entity Framework
- ▶ Creating and debugging ASP.NET MVC routines
- ▶ Using MS Test and NUnit to create and run tests for ASP.NET MVC applications
- ▶ Securing and deploying ASP.NET MVC web applications

Course Description: This course provides students with hands on experience using Visual Studio to create dynamic web applications using the ASP.NET MVC 5 Framework and C#. Students should already have a working knowledge of C#.

This course teaches students how to leverage the power of the Model-View-Controller design pattern with the ASP.NET MVC Framework to separate the layers of a web application. Students will use the ASMX and Razor view engines to design a user interface. Students will learn how to build models to manage an application's data layer using both the Entity Framework and LINQ to SQL. Students will also learn how to build controllers containing action methods to manage communication between views and models.

Other topics include data scaffolding; URL routing; implementing security; using MVC and Web Forms in the same application, unit testing; and deploying ASP.NET MVC applications. Comprehensive labs provide the students with experience creating, debugging, testing and deploying dynamic ASP.NET MVC applications.

Course Prerequisites: Knowledge of fundamental HTML syntax is helpful, but not required. Prior experience with C# is required.

For a complete detailed course description, visit:

http://www.traininghott.ca/Courses/MVC-Training-Courses-Using-C-Sharp.htm

"Good class. Labs were very helpful to work through mistakes to learn how to code up what we had just learned."

- P.K., Kodak

ASP.NET MVC Programming for Experienced VB.NET Programmers

Duration: 3 days | **Price:** CDN$2,275

Students Will Learn:

- ► Architecture of ASP.NET MVC web applications
- ► Using Visual Studio to create Internet and Intranet applications
- ► Creating controllers containing action methods to process HTTP requests
- ► Using the ASPX and Razor view engines to design views to render responses to HTTP requests
- ► Creating data models by hand, by using typed datasets, and by using the Entity Framework
- ► Creating and debugging ASP.NET MVC routines
- ► Using MS Test and NUnit to create and run tests for ASP.NET MVC applications
- ► Securing and deploying ASP.NET MVC web applications

Course Description: This course provides students with hands on experience using Visual Studio to create dynamic web applications using the ASP.NET MVC 5 Framework and VB.NET. Students should already have a working knowledge of VB.NET.

This course teaches students how to leverage the power of the Model-View-Controller design pattern with the ASP.NET MVC Framework to separate the layers of a web application. Students will use the ASMX and Razor view engines to design a user interface. Students will learn how to build models to manage an application's data layer using both the Entity Framework and LINQ to SQL. Students will also learn how to build controllers containing action methods to manage communication between views and models.

Other topics include data scaffolding; URL routing; implementing security; using MVC and Web Forms in the same application, unit testing; and deploying ASP.NET MVC applications. Comprehensive labs provide the students with experience creating, debugging, testing and deploying dynamic ASP.NET MVC applications.

Course Prerequisites: Knowledge of fundamental HTML syntax is helpful, but not required. Prior experience with VB.NET is required.

For a complete detailed course description, visit:

http://www.traininghott.ca/Courses/ASP-NET-MVC-Training-Courses-Using-VB-NET.htm

Introduction to ASP.NET Core MVC

Duration: 4 days | **Price:** CDN$2,775

Students Will Learn:

▶ Gaining a thorough understanding of the philosophy and architecture of .NET Core

▶ Understanding packages, metapackages and frameworks

▶ Acquiring a working knowledge of the .NET programming model

▶ Implementing multi-threading effectively in .NET applications

▶ Gaining a thorough understanding of the philosophy and architecture of Web applications

using ASP.NET Core MVC

▶ Gaining a practical understanding of .NET Core

▶ Acquiring a working knowledge of Web application development using ASP.NET Core MVC 6 and Visual Studio 2015

▶ Persisting data with XML Serialization and ADO.NET with SQL Server 2014

▶ Creating HTTP services using ASP.NET Core Web API

Course Description: This course is designed to provide an introduction to .NET Core for programmers who already know the C# language. The course focuses on core portions of the .NET Framework that are common across many application areas. It starts with an introduction to the architecture and key concepts of .NET. The course then discusses class libraries, packages, metapackages and frameworks. Coverage includes working with delegates and events, I/O and serialization, memory management, processes and threads as well as threading and an introduction to the Task Parallel Library (TPL).

This course also provides a practical hands-on introduction to developing Web applications using ASP.NET Core MVC 6 and C#. This Web development framework from Microsoft emphasizes separation of concerns in the architecture and testability of applications. This course covers the fundamentals of the Model-View-Controller design pattern and its implementation in ASP.NET Core MVC. After presenting the fundamentals of the technology with several examples, the main components of Model, Controller and View are covered in detail. The discussion of the Model incorporates Microsoft technologies for persisting data, including XML Serialization and ADO.NET with SQL Server 2014. The routing mechanism of ASP.NET MVC is covered. The course includes an introduction to ASP.NET Web API.

Comprehensive hands on exercises are integrated throughout to reinforce learning and develop real competency.

Course Prerequisites: C# programming experience.

For a complete detailed course description, visit:

http://www.traininghott.ca/Courses/ASP-NET-Core-MVC-Training-Course.htm

Windows Forms Programming Using C#

Duration: 5 days | **Price:** CDN$3,275

Students Will Learn:

- ▶ Using Visual Studio to create C# applications
- ▶ Working with .NET data types
- ▶ Creating variables with the proper scope
- ▶ Designing and using classes
- ▶ Using control structures
- ▶ Using procedures to build complex applications
- ▶ Throwing and trapping exceptions
- ▶ Using single and multi-dimensional arrays
- ▶ Working with .NET collections
- ▶ Using LINQ to make queries
- ▶ Defining and implementing interfaces
- ▶ Working with enumerations
- ▶ Creating and deploying desktop-based applications
- ▶ Using control properties and methods to modify the appearance and behavior of controls
- ▶ Writing event handlers
- ▶ Using list-based controls such as ListBoxes and ComboBoxes on forms
- ▶ Using image controls such as ImageList and PictureBox on forms
- ▶ Accessing and displaying data using ADO.NET
- ▶ Binding data to controls on a Windows Form
- ▶ Using modal and modeless dialogs to interact with users
- ▶ Using the background worker to perform an asynchronous operation
- ▶ Implementing a simple host for a WCF service
- ▶ Reading and writing data from files and streams

Course Description: This course provides students with hands on experience using Visual Studio to create desktop applications using Windows Forms and the .NET Framework using C#. The course provides a thorough introduction to the C# programming language, including coverage of the essentials of the C# programming language, built in data types, operators, control structures, classes and methods, collections and exception handling.

Students then learn how to leverage the power of the .NET Framework to build desktop applications. Students learn how to build Windows Forms applications and use with a variety of controls to create sophisticated user interfaces. Students also learn how to use the BackgroundWorker to perform asynchronous operations.

Students also learn how to use ADO.NET to interact with databases and XML files. Students learn how Windows Forms uses data binding to display data in controls such as the DataGridView and Chart. Students also learn how to build and interact with simple WCF SOAP Web Services.

Other topics include: debugging techniques; using a .config file to control application configuration; building menus, toolbars and status bars; reading and writing files; interacting with the file system; and deploying desktop applications.

Comprehensive labs provide the students with extensive experience creating and deploying Windows Forms-based desktop applications.

Course Prerequisites: Prior programming experience is required.

For a complete detailed course description, visit:

http://www.traininghott.ca/Courses/Windows-Forms-Training-Course-Using-C-Sharp.htm

Windows Forms Programming Using VB.NET

Duration: 5 days | **Price:** CDN$3,275

Students Will Learn:

- Using Visual Studio to create VB.NET applications
- Working with .NET data types
- Creating variables with the proper scope
- Designing and using classes
- Using control structures
- Using procedures to build complex applications
- Throwing and trapping exceptions
- Using single and multi-dimensional arrays
- Working with .NET collections
- Using LINQ to make queries
- Defining and implementing interfaces
- Working with enumerations
- Creating and deploying desktop-based applications
- Using control properties and methods to modify the appearance and behavior of controls
- Writing event handlers
- Using list-based controls such as ListBoxes and ComboBoxes on forms
- Using image controls such as ImageList and PictureBox on forms
- Accessing and displaying data using ADO.NET
- Binding data to controls on a Windows Form
- Using modal and modeless dialogs to interact with users
- Using the background worker to perform an asynchronous operation
- Implementing a simple host for a WCF service

Course Description: This course provides students with hands on experience using Visual Studio to create desktop applications using Windows Forms and the .NET Framework using VB.NET. The course provides a thorough introduction to the VB.NET programming language, including coverage of the essentials of the VB.NET programming language, built in data types, operators, control structures, classes and methods, collections and exception handling.

Students then learn how to leverage the power of the .NET Framework to build desktop applications. Students learn how to build Windows Forms applications and use with a variety of controls to create sophisticated user interfaces. Students also learn how to use the BackgroundWorker to perform asynchronous operations.

Students also learn how to use ADO.NET to interact with databases and XML files. Students learn how Windows Forms uses data binding to display data in controls such as the DataGridView and Chart. Students also learn how to build and interact with simple WCF SOAP Web Services.

Other topics include: debugging techniques; using a .config file to control application configuration; building menus, toolbars and status bars; reading and writing files; interacting with the file system; and deploying desktop applications.

Comprehensive labs provide the students with extensive experience creating and deploying Windows Forms-based desktop applications.

Course Prerequisites: Prior programming experience is required.

For a complete detailed course description, visit:

http://www.traininghott.ca/Courses/Windows-Forms-Programming-Class.htm

Windows Forms Programming for Experienced C# Programmers

Duration: 3 days | **Price:** CDN$2,275

Students Will Learn:

- Creating and deploying desktop-based applications
- Using control properties and methods to modify the appearance and behavior of controls
- Writing event handlers
- Using list-based controls such as ListBoxes and ComboBoxes on forms
- Using image controls such as ImageList and PictureBox on forms
- Accessing and displaying data using ADO.NET
- Binding data to controls on a Windows Form
- Using modal and modeless dialogs to interact with users
- Using the background worker to perform an asynchronous operation
- Implementing a simple host for a WCF service

Course Description: This course provides students with hands on experience using Visual Studio to create desktop applications using Windows Forms and the .NET Framework using C#. Students should already have a working knowledge of C#.

This course teaches students how to leverage the power of the .NET Framework to build desktop applications. Students learn how to build Windows Forms applications and use with a variety of controls to create sophisticated user interfaces. Students also learn how to use the BackgroundWorker to perform asynchronous operations.

Students also learn how to use ADO.NET to interact with databases and XML files. Students learn how Windows Forms uses data binding to display data in controls such as the DataGridView and Chart. Students also learn how to build and interact with simple WCF SOAP Web Services.

Other topics include: debugging techniques; using a .config file to control application configuration; building menus, toolbars and status bars; reading and writing files; interacting with the file system; and deploying desktop applications.

Comprehensive labs provide the students with extensive experience creating and deploying Windows Forms-based desktop applications.

Course Prerequisites: Prior experience with C# is required.

For a complete detailed course description, visit:

http://www.traininghott.ca/Courses/C-Sharp-Windows-Forms-Training-Course.htm

"Very informative and useful. Exactly the training I was looking for. Instructor was very easy to understand and very personable; easy to ask questions and approach. Training manual was very useful."

- M.M., RTP Company

Windows Forms Programming for Experienced VB.NET Programmers

Duration: 3 days | **Price:** CDN$2,275

Students Will Learn:

- ▶ Creating and deploying desktop-based applications
- ▶ Using control properties and methods to modify the appearance and behavior of controls
- ▶ Writing event handlers
- ▶ Using list-based controls such as ListBoxes and ComboBoxes on forms
- ▶ Using image controls such as ImageList and PictureBox on forms
- ▶ Accessing and displaying data using ADO.NET
- ▶ Binding data to controls on a Windows Form
- ▶ Using modal and modeless dialogs to interact with users
- ▶ Using the background worker to perform an asynchronous operation

Course Description: This course provides students with hands on experience using Visual Studio to create desktop applications using Windows Forms and the .NET Framework using VB.NET. Students should already have a working knowledge of VB.NET.

This course teaches students how to leverage the power of the .NET Framework to build desktop applications. Students learn how to build Windows Forms applications and use with a variety of controls to create sophisticated user interfaces. Students also learn how to use the BackgroundWorker to perform asynchronous operations.

Students also learn how to use ADO.NET to interact with databases and XML files. Students learn how Windows Forms uses data binding to display data in controls such as the DataGridView and Chart. Students also learn how to build and interact with simple WCF SOAP Web Services.

Other topics include: debugging techniques; using a .config file to control application configuration; building menus, toolbars and status bars; reading and writing files; interacting with the file system; and deploying desktop applications.

Comprehensive labs provide the students with extensive experience creating and deploying Windows Forms-based desktop applications.

Course Prerequisites: Prior experience with VB.NET is required.

For a complete detailed course description, visit:

http://www.traininghott.ca/Courses/Visual-Basic-NET-Windows-Forms-Training-Course.htm

"Excellent class! Thank you! I will look towards HOTT the next time I need training."

- S.A., PSI Group Inc.

Windows Presentation Foundation Programming Using C#

Duration: 5 days | **Price:** CDN$3,275

Students Will Learn:

- Using Visual Studio to create C# applications
- Working with .NET data types
- Creating variables with the proper scope
- Designing and using classes
- Using control structures
- Using procedures to build complex applications
- Throwing and trapping exceptions
- Using single and multi-dimensional arrays
- Working with .NET collections
- Using LINQ to make queries
- Defining and implementing interfaces
- Working with enumerations
- Creating and deploying a WPF application
- Working with XAML
- Writing XAML markup to create controls, define property values and setup events
- Using the WPF layout controls to build user interfaces
- Writing event handlers
- Using predefined dialogs
- Creating and using custom dialogs
- Using brushes, shapes and animations within WPF user interfaces
- Using audio files, video files and still images
- Using WPF data binding to quickly build applications

Course Description: This course provides students with hands on experience using Visual Studio to create Windows Presentation Foundation (WPF) applications using C#. The class provides a thorough introduction to the C# programming language, including coverage of the essentials of the C# programming language, built in data types, operators, control structures, classes and methods, collections and exception handling.

Students then learn how to leverage the power of the .NET Framework to build WPF applications. Students learn the basics of XAML and how to use it to describe the appearance and behavior of WPF user interfaces. Students also learn how to use XAML resources to manage styles, triggers and control templates.

Students learn how use a variety of WPF controls to interact with users and manage data in multi-form applications. Students explore how to leverage the power of XAML data binding. Students also learn the basics of working with audio and images, as well as performing simple animations.

Other topics include: debugging techniques; building menus, toolbars and status bars; using the ribbon control; reading and writing files; and deploying WPF applications. Comprehensive labs and exercises provide the students with extensive experience creating and debugging WPF applications.

Course Prerequisites: Knowledge of fundamental XML syntax is helpful, but not required. Prior experience with a scripting or programming language is required.

For a complete detailed course description, visit:

http://www.traininghott.ca/Courses/Windows-Presentation-Foundation-Training-Course-Using-C-Sharp.htm

Windows Presentation Foundation Programming Using VB.NET

Duration: 5 days | **Price:** CDN$3,275

Students Will Learn:

- ▶ Using Visual Studio to create VB.NET applications
- ▶ Working with .NET data types
- ▶ Creating variables with the proper scope
- ▶ Designing and using classes
- ▶ Using control structures
- ▶ Using procedures to build complex applications
- ▶ Throwing and trapping exceptions
- ▶ Using single and multi-dimensional arrays
- ▶ Working with .NET collections
- ▶ Using LINQ to make queries
- ▶ Defining and implementing interfaces
- ▶ Working with enumerations

- ▶ Creating and deploying a WPF application
- ▶ Working with XAML
- ▶ Writing XAML markup to create controls, define property values and setup events
- ▶ Using the WPF layout controls to build user interfaces
- ▶ Writing event handlers
- ▶ Using predefined dialogs
- ▶ Creating and using custom dialogs
- ▶ Using brushes, shapes and animations within WPF user interfaces
- ▶ Using audio files, video files and still images
- ▶ Using WPF data binding to quickly build applications

Course Description: This course provides students with hands on experience using Visual Studio to create Windows Presentation Foundation (WPF) applications using VB.NET. The class provides a thorough introduction to the C# programming language, including coverage of the essentials of the VB.NET programming language, built in data types, operators, control structures, classes and methods, collections and exception handling.

Students then learn how to leverage the power of the .NET Framework to build WPF applications. Students learn the basics of XAML and how to use it to describe the appearance and behavior of WPF user interfaces. Students also learn how to use XAML resources to manage styles, triggers and control templates.

Students learn how use a variety of WPF controls to interact with users and manage data in multi-form applications. Students explore how to leverage the power of XAML data binding. Students also learn the basics of working with audio and images, as well as performing simple animations.

Other topics include: debugging techniques; building menus, toolbars and status bars; using the ribbon control; reading and writing files; and deploying WPF applications. Comprehensive labs and exercises provide the students with extensive experience creating and debugging WPF applications.

Course Prerequisites: Knowledge of fundamental XML syntax is helpful, but not required. Prior experience with a scripting or programming language is required.

For a complete detailed course description, visit:

http://www.traininghott.ca/Courses/WPF-Training-Course-Using-VB-NET.htm

Windows Presentation Foundation Programming for Experienced C# Programmers

Duration: 3 days | **Price:** CDN$2,275

Students Will Learn:

- Creating and deploying a WPF application
- Working with XAML
- Writing XAML markup to create controls, define property values and setup events
- Using the WPF layout controls to build user interfaces
- Writing event handlers
- Using predefined dialogs
- Creating and using custom dialogs
- Using brushes, shapes and animations within WPF user interfaces
- Using audio files, video files and still images
- Using WPF data binding to quickly build applications

Course Description: This course provides students with hands on experience using Visual Studio to create Windows Presentation Foundation (WPF) applications using C#. Students should already have a working knowledge of C#.

This course teaches students how to leverage the power of the .NET Framework to build WPF applications. Students learn the basics of XAML and how to use it to describe the appearance and behavior of WPF user interfaces. Students also learn how to use XAML resources to manage styles, triggers and control templates.

Students learn how use with a variety of WPF controls to interact with users and manage data in multi-form applications. Students explore how to leverage the power of XAML data binding to build Students also learn the basics of working with audio and images, as well as performing simple animations.

Other topics include: building menus, toolbars and status bars; using the ribbon control; reading and writing files; and deploying WPF applications. Comprehensive labs and exercises provide the students with extensive experience creating and debugging WPF applications.

Course Prerequisites: Knowledge of fundamental XML syntax is helpful, but not required. Prior experience with C# is required.

For a complete detailed course description, visit:

http://www.traininghott.ca/Courses/Windows-Presentation-Foundation-Programming-Course.htm

"Instructor was well prepared and engaging. Explained and presented material very well. Excellent use of real world examples at times."

- M.L., Bryan Texas Utilities

Windows Presentation Foundation Programming for Experienced VB.NET Programmers

Duration: 3 days | **Price:** CDN$2,275

Students Will Learn:

- Creating and deploying a WPF application
- Working with XAML
- Writing XAML markup to create controls, define property values and setup events
- Using the WPF layout controls to build user interfaces
- Writing event handlers
- Using predefined dialogs
- Creating and using custom dialogs
- Using brushes, shapes and animations within WPF user interfaces
- Using audio files, video files and still images
- Using WPF data binding to quickly build applications

Course Description: This course provides students with hands on experience using Visual Studio to create Windows Presentation Foundation (WPF) applications using VB.NET. Students should already have a working knowledge of VB.NET.

This course teaches students how to leverage the power of the .NET Framework to build WPF applications. Students learn the basics of XAML and how to use it to describe the appearance and behavior of WPF user interfaces. Students also learn how to use XAML resources to manage styles, triggers and control templates.

Students learn how use with a variety of WPF controls to interact with users and manage data in multi-form applications. Students explore how to leverage the power of XAML data binding to build Students also learn the basics of working with audio and images, as well as performing simple animations.

Other topics include: building menus, toolbars and status bars; using the ribbon control; reading and writing files; and deploying WPF applications. Comprehensive labs and exercises provide the students with extensive experience creating and debugging WPF applications.

Course Prerequisites: Knowledge of fundamental XML syntax is helpful, but not required. Prior experience with VB.NET is required.

For a complete detailed course description, visit:

http://www.traininghott.ca/Courses/Windows-Communication-Foundation-Training-Courses.htm

"Excellent class. Very clear presentation of the material by the instructor. Hands on exercises were very helpful and provided true understanding of the material. Very satisfied, will look to take further classes with HOTT."

- F.D.,Paladin Labs

Windows Presentation Foundation Programming Using .NET Core

Duration: 3 days | **Price:** CDN$2,275

Students Will Learn:

- ▶ Creating a WPF application
- ▶ Working with XAML
- ▶ Writing XAML markup to create controls, define property values and setup events
- ▶ Using the WPF layout controls to create user interfaces
- ▶ Enhancing the UIs with the addition of menus, toolbars and status bars
- ▶ Creating and using dialog boxes
- ▶ Routing Events
- ▶ Utilizing resources in WPF applications

Course Description: This course introduces Windows Presentation Foundation (WPF), the .NET technology from Microsoft for building rich Windows applications. WPF includes an XML-based markup language for defining program elements, called Extensible Application Markup Language (XAML). WPF applications can be created using only code or a combination of code and XAML pages. This course covers the essentials of WPF, providing an orientation to this technology and a firm foundation for creating applications in the context of the .NET Core framework. The course utilizes Visual Studio, the C# language, and the latest versions of .NET Core. Comprehensive hands on exercises are integrated throughout the course to reinforce learning and develop real competency.

Windows Presentation Foundation can have a steep learning curve. This course approaches the subject in a practical manner, introducing the student to the fundamentals of creating Windows applications using the features of WPF. It includes coverage of traditional concepts such as controls and also newer concepts such as XAML, flexible layout, logical resources, dependency properties, routed events, and the loosely-coupled command architecture of WPF.

This course is designed to run on .NET Core, an open source and modular implementation of the .NET Framework. As of .NET Core 3.0, it is now very complete and represents the future direction of .NET software from Microsoft, although the classical .NET Frameworks will also continue to be supported.

Course Prerequisites: Previous C# programming experience is required. Knowledge of fundamental XML syntax is helpful, but not required.

For a complete detailed course description, visit:

http://www.traininghott.ca/Courses/NET-Core-Windows-Presentation-Foundation-Course.htm

WCF Programming Using C#

Duration: 5 days | **Price:** CDN$3,275

Students Will Learn:

- ▶ Using Visual Studio to create C# applications
- ▶ Working with .NET data types
- ▶ Creating variables with the proper scope and using operators to build complex expressions
- ▶ Designing and using classes
- ▶ Using control structures such as `if`, `while` and `for`
- ▶ Using procedures to build complex applications
- ▶ Throwing and trapping exceptions using the `try` and `catch` statements
- ▶ Using single and multi-dimensional arrays
- ▶ Working with .NET collections
- ▶ Using LINQ to make queries
- ▶ Defining and implementing interfaces
- ▶ Working with enumerations
- ▶ Service-oriented architecture
- ▶ Web Services implementation
- ▶ Binding options
- ▶ Defining service contracts
- ▶ Defining data contracts
- ▶ WCF security options
- ▶ Hosting WCF services
- ▶ Choosing WCF bindings
- ▶ Managing service instances
- ▶ Fault handling
- ▶ WCF routing control

Course Description: This course provides students with hands on experience using Visual Studio to create service-oriented applications using Windows Communication Foundation (WCF) and C#. This class provides a thorough introduction to the C# programming language, including coverage of the essentials of the C# programming language, built in data types, operators, control structures, classes and methods. Students then learn how to leverage the power of the .NET Framework to build Web Service applications that interoperate with consumer applications including other platforms and technologies.

Students will learn how to configure addresses, bindings, and service and data contracts as well as how to use various techniques for developing endpoints to allow communication between consumer applications and the web services provider.

The course includes coverage of instance management, fault handling, and security. Students will learn how to use the WCF Routing Service for load balancing, content-based routing, and protocol bridging.

Comprehensive labs and exercises provide the students with experience creating both content server and consumer applications.

Course Prerequisites: Prior experience with a scripting or programming language is required.

For a complete detailed course description, visit:

http://www.traininghott.ca/Courses/WCF-Programming-Courses-Using-C-Sharp.htm

WCF Programming for Experienced C# Programmers

Duration: 3 days | **Price:** CDN$2,275

Students Will Learn:

- ▶ Service-oriented architecture
- ▶ Web Services implementation
- ▶ Binding options
- ▶ Defining service contracts
- ▶ Defining data contracts
- ▶ WCF security options

- ▶ Hosting WCF services
- ▶ Choosing WCF bindings
- ▶ Managing service instances
- ▶ Fault handling
- ▶ WCF routing control

Course Description: This course provides students with hands on experience using Visual Studio to create service-oriented applications using Windows Communication Foundation (WCF) and C#. Students learn how to leverage the power of the .NET Framework to build Web Service applications that interoperate with consumer applications including other platforms and technologies. Students will learn how to configure addresses, bindings, and service and data contracts as well as how to use various techniques for developing endpoints to allow communication between consumer applications and the web services provider.

The course includes coverage of instance management, fault handling, and security. Students will learn how to use the WCF Routing Service for load balancing, content-based routing, and protocol bridging.

Comprehensive labs and exercises provide the students with experience creating both content server and consumer applications.

Course Prerequisites: Prior experience with C# is required.

For a complete detailed course description, visit:

http://www.traininghott.ca/Courses/WCF-Training-Courses.htm

Advanced .NET Framework Programming Using C#

Duration: 5 days | **Price:** CDN$3,275

Students Will Learn:

- ▶ Designing object-oriented applications that use class hierarchies
- ▶ Implementing user-defined classes
- ▶ Implementing .NET interfaces and custom interfaces
- ▶ Working with strings and StringBuilders to efficiently process string data
- ▶ Using .NET collections to manage data
- ▶ Using delegates for late binding, using callback behavior and responding to events
- ▶ Working with data using ADO.NET and XML

- ▶ Using LINQ and PLINQ to make queries
- ▶ Creating multithreaded applications
- ▶ Building and applying attributes to code elements
- ▶ Using reflection effectively to query metadata and perform dynamic object creation
- ▶ Building and using private and shared assemblies
- ▶ Using the Parallel Task Library
- ▶ How to fire custom events
- ▶ How to build WCF services and consume them from client applications

Course Description: This hands-on course examines how to utilize advanced features of C# and the .NET Framework in order to build sophisticated, scalable, high-performing applications. The course includes coverage of features available in .NET 2.0 through .NET 4.5. The course begins by reviewing .NET's Common Type System, and then examines nullable types, inferred types and dynamic data. Advanced object-oriented programming topics include auto-implemented properties, inheritance, abstract classes, sealed classes, and generics, as well as how to implement many of the .NET interfaces in order to take advantage of .NET functionality.

Students learn how to use synchronous and asynchronous delegates to call methods using late binding, as well as how to use delegates to define and fire custom events and manage callbacks. The course shows how to build multithreaded applications and synchronize access to shared resources, including the Thread and ThreadPool classes as well as .NET 4.0's Task class and the Parallel Task Library. Coverage of the new .NET 4.5 Async and Await features is included. Students learn how to work with data in .NET's collections, as well as how to create and use custom generic methods and collections. Database topics include how to use ADO. NET to manipulate data in databases and how advanced ADO.NET features provide support for transaction management, connection pooling, and the management of disconnected DataSets. Coverage includes how to work with XML documents and make XPath queries.

The course includes the use of LINQ to make queries of data, regardless of its location. Coverage includes using LINQ to Objects, LINQ to SQL, LINQ to DataSets and LINQ to XML, as well as how PLINQ can be used to make efficient queries on large sets of data located in memory.

Students learn about .NET's support for n-tiered application development, including encapsulating functionality in private and shared assemblies. Students also explore how to create and consume WCF services to build distributed systems. The course includes coverage of attributes and reflection, and how to leverage attributes and reflection to design creative, robust solutions to common design problems.

Comprehensive labs provide students with extensive experience coding with Visual Studio to practice with the topics presented throughout the course.

Course Prerequisites: C# programming experience.

For a complete detailed course description, visit:

http://www.traininghott.ca/Courses/NET-Framework-C-Sharp-Programming-Course.htm

Advanced .NET Framework Programming Using VB.NET

Duration: 5 days | **Price:** CDN$3,275

Students Will Learn:

- ▶ Designing object-oriented applications that use class hierarchies
- ▶ Implementing user-defined classes
- ▶ Implementing .NET interfaces and custom interfaces
- ▶ Working with strings and StringBuilders to efficiently process string data
- ▶ Using .NET collections to manage data
- ▶ Using delegates for late binding, using callback behavior and responding to events
- ▶ Working with data using ADO.NET and XML
- ▶ Using LINQ and PLINQ to make queries
- ▶ Creating multithreaded applications
- ▶ Building and applying attributes to code elements
- ▶ Using reflection effectively to query metadata and perform dynamic object creation
- ▶ Building and using private and shared assemblies
- ▶ Using the Parallel Task Library
- ▶ How to fire custom events
- ▶ How to build WCF services and consume them from client applications

Course Description: This hands-on course examines how to utilize advanced features of VB.NET and the .NET Framework in order to build sophisticated, scalable, high-performing applications. The course includes coverage of features available in .NET 2.0 through .NET 4.5. The course begins by reviewing .NET's Common Type System, and then examines nullable types, inferred types and dynamic data. Advanced object-oriented programming topics include auto-implemented properties, inheritance, abstract classes, sealed classes, and generics, as well as how to implement many of the .NET interfaces in order to take advantage of .NET functionality.

Students learn how to use synchronous and asynchronous delegates to call methods using late binding, as well as how to use delegates to define and fire custom events and manage callbacks. The course shows how to build multithreaded applications and synchronize access to shared resources, including the Thread and ThreadPool classes as well as .NET 4.0's Task class and the Parallel Task Library. Coverage of the new .NET 4.5 Async and Await features is included. Students learn how to work with data in .NET's collections, as well as how to create and use custom generic methods and collections. Database topics include how to use ADO. NET to manipulate data in databases and how advanced ADO.NET features provide support for transaction management, connection pooling, and the management of disconnected DataSets. Coverage includes how to work with XML documents and make XPath queries.

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Students learn about .NET's support for n-tiered application development, including encapsulating functionality in private and shared assemblies. Students also explore how to create and consume WCF services to build distributed systems. The course includes coverage of attributes and reflection, and how to leverage attributes and reflection to design creative, robust solutions to common design problems.

Comprehensive labs provide students with extensive experience coding with Visual Studio to practice with the topics presented throughout the course.

Course Prerequisites: VB.NET programming experience.

For a complete detailed course description, visit:

http://www.traininghott.ca/Courses/NET-Framework-VB-NET-Training-Course.htm

1-978-250-4299 | www.traininghott.ca

Advanced MVC: Building Web Applications Using the ASP.NET Web API with C#

Duration: 5 days | **Price:** CDN$3,275

Students Will Learn:

- ▶ Building Responsive Applications Using Bootstrap
- ▶ Using jQuery to Provide Dynamic Behavior
- ▶ Using Ajax to Build Interactive MVC Applications
- ▶ Improving MVC Views Using jQuery UI
- ▶ Implementing Custom Routing Working with the Entity Framework
- ▶ Creating a Service Layer Using Web API
- ▶ Consuming Web API Services Using MVC
- ▶ Building Single Page Applications with ASP.NET MVC, Web API and AngularJS
- ▶ Working with NuGet

Course Description: This course provides students with the skills needed to create sophisticated web applications using advanced features of ASP.NET MVC, the Entity Framework, Web API, and the popular JavaScript libraries jQuery, jQuery UI, Bootstrap and AngularJS. Students will build several ASP.NET MVC web applications using Visual Studio during the week to reinforce the skills they learn.

The course begins with an overview of ASP.NET MVC for experienced programmers and then covers the fundamentals of responsive website design. Students then learn how to use Bootstrap with MVC to make a web site responsive on devices from large desktop displays to small mobile devices.

Students will learn how to integrate jQuery into an MVC application to provide dynamic, client-side behavior. They will then learn how to use jQuery's Ajax features to build more interactive MVC applications. Students will also learn how to use jQuery UI widgets to provide a more sophisticated user interface for their MVC views.

The course covers use of the Entity Framework to provide a data access layer for an MVC application. The Database First strategy is briefly examined before thorough coverage of the more configurable Code First strategy. Students will also learn how to use the Web API to build APIs that expose services and data via HTTP. These APIs can be used by a diverse set of clients including browsers, desktop applications and mobile devices.

The course includes coverage of Single-Page Applications. In these types of applications, the entire page is loaded in the browser after the initial request. All other interactions with the server utilize Ajax requests to update the page. The service layer is implemented with the Web API.

Additional topics include: using HTML helpers to design views; creating both inline and custom HTML helpers to encapsulate view markup; using convention-based and attribute routing to support custom routes; and use of the NuGet packages with MVC applications.

Course Prerequisites: Prior experience building ASP.NET MVC web sites. Students who are not familiar with the ASP.NET MVC or C# should take the **ASP.NET MVC Programming Using C#** course instead.

For a complete detailed course description, visit:

http://www.traininghott.ca/Courses/MVC-Web-API-Training-Course.htm

Advanced MVC: Building Web Applications Using the ASP.NET Web API with VB.NET

Duration: 5 days | **Price:** CDN$3,275

Students Will Learn:

- ▶ Building Responsive Applications Using Bootstrap
- ▶ Using jQuery to Provide Dynamic Behavior
- ▶ Using Ajax to Build Interactive MVC Applications
- ▶ Improving MVC Views Using jQuery UI
- ▶ Implementing Custom Routing Working with the Entity Framework
- ▶ Creating a Service Layer Using Web API
- ▶ Consuming Web API Services Using MVC
- ▶ Building Single Page Applications with ASP.NET MVC, Web API and AngularJS
- ▶ Working with NuGet

Course Description: This course provides students with the skills needed to create sophisticated web applications using advanced features of ASP.NET MVC, the Entity Framework, Web API, and the popular JavaScript libraries jQuery, jQuery UI, Bootstrap and AngularJS. Students will build several ASP.NET MVC web applications using Visual Studio during the week to reinforce the skills they learn.

The course begins with an overview of ASP.NET MVC for experienced programmers and then covers the fundamentals of responsive website design. Students then learn how to use Bootstrap with MVC to make a web site responsive on devices from large desktop displays to small mobile devices.

Students will learn how to integrate jQuery into an MVC application to provide dynamic, client-side behavior. They will then learn how to use jQuery's Ajax features to build more interactive MVC applications. Students will also learn how to use jQuery UI widgets to provide a more sophisticated user interface for their MVC views.

The course covers use of the Entity Framework to provide a data access layer for an MVC application. The Database First strategy is briefly examined before thorough coverage of the more configurable Code First strategy. Students will also learn how to use the Web API to build APIs that expose services and data via HTTP. These APIs can be used by a diverse set of clients including browsers, desktop applications and mobile devices.

The course includes coverage of Single-Page Applications. In these types of applications, the entire page is loaded in the browser after the initial request. All other interactions with the server utilize Ajax requests to update the page. The service layer is implemented with the Web API.

Additional topics include: using HTML helpers to design views; creating both inline and custom HTML helpers to encapsulate view markup; using convention-based and attribute routing to support custom routes; and use of the NuGet packages with MVC applications.

Course Prerequisites: Prior experience building ASP.NET MVC web sites. Students who are not familiar with the ASP.NET MVC or VB.NET should take the **ASP.NET MVC Programming Using VB.NET** course instead.

For a complete detailed course description, visit:

http://www.traininghott.ca/Courses/MVC-Web-Applications-Programming-Course.htm

SharePoint 2016 Power User

Duration: 3 days | **Price:** CDN$2,275

Students Will Learn:

- ▶ Creating and configuring Web applications, site collections and sites
- ▶ Adding lists and libraries to sites for information sharing and collaboration
- ▶ Creating and managing SharePoint pages and web parts
- ▶ Configuring site collection and site navigation settings
- ▶ Creating and configuring SharePoint site content parameters
- ▶ Using views to customize SharePoint site browsing
- ▶ Managing user access to site collections, sites, lists and libraries
- ▶ Using workflows to automate business rules
- ▶ Configuring Microsoft Office documents for co-authoring
- ▶ Configuring Tags & Notes and My Sites to promote a richer experience for end-users
- ▶ Using Business Connectivity Services to display database tables as SharePoint web content

Course Description: This introductory hands-on course thoroughly covers out-of-the-box features of SharePoint and how to customize these features to make the most of your SharePoint environment. The course begins with an overview of SharePoint system architecture, then moves on to creating SharePoint Web applications, site collections and sites. From there, students will add Web pages to sites and create navigation solutions for users to easily locate data. Students learn how to create new sites from scratch, as well as with built-in templates. Included are team sites, wikis, blogs, Web databases and meeting workspaces. Pages and Web parts are then added to sites to provide greater flexibility to the way SharePoint is presented to users.

Included are techniques for using lists to promote information sharing, creating surveys, managing tasks and projects, as well as sharing calendars. Document and file management is also covered, including content approval, managing major and minor file versions and document checkout & check-in.

Students will learn how to use built-in workflows, as well as how to display database records on SharePoint sites using Business Connectivity Services (BCS).

Comprehensive hands on exercises illustrate the concepts and techniques presented, and provide practice creating common SharePoint components.

Course Prerequisites: Familiarity with Windows Server 2012 R2 or Windows 8.1 operating system environment. Basic understanding of NTFS file and folder structure and network access.

For a complete detailed course description, visit:

http://www.traininghott.ca/Courses/SharePoint-Power-User-Training-Course.htm

Test Driven Development (TDD), and Refactoring Legacy Code Using C#

Duration: 4 days | **Price:** CDN$2,775

Students Will Learn:

- Unit testing using NUnit and Visual Studio
- Testing code that interacts with databases
- Creating tests from use cases and/or Agile methodology
- Using mocks, fakes, and stubs
- Automating tests, builds and check-ins using a continuous integration server
- Refactoring existing code to improve clarity, readability and maintainability
- Identifying patterns useful in TDD including the SOLID principles
- Identifying and eliminating dependencies that make code difficult to maintain and extend
- Tracking code coverage and analyzing other code metrics to improve code maintainability
- Using the seam model to identify appropriate places in the code to make changes safely
- Identifying and correcting various types of code smells
- Using effect sketches and pinch points to identify optimal places for tests Using feature sketches to identify opportunistic refactoring

Course Description: This course provides students with hands on experience learning Test Driven Development (TDD) using NUnit and Microsoft's Visual Studio. Students will build unit tests using mocks, fakes, stubs and drivers, and address issues working with databases and other systems. Student will create tests and code that will be more likely to meet and exceed requirements. Code that receives "test coverage" will not break existing systems, because tests are passed before code is checked in.

Students will spend time working with the issues involved in refactoring legacy code, safely cutting into an already deployed system. Students will work on looking for, or creating "seams" to more safely improve code or add features, and work on identifying "code smells" that need attention in a productive system.

Finally, students will explore dependency issues as well as techniques to better understand and improve complex systems.

Students will also examine TDD and refactoring legacy code in other languages like Java to gain a broader view of options and issues working in a multi-language shop. Comprehensive labs using C# provide facilitated hands on practice crucial to developing competence and confidence with the new skills being learned

Course Prerequisites: C# programming experience and an understanding of object-oriented design principles. HOTT's **Learning to Program with C#** course or equivalent knowledge provides a solid foundation.

For a complete detailed course description, visit:

http://www.traininghott.ca/Courses/Refactoring-Legacy-Code-C-Sharp-Course.htm

Test Driven Development (TDD), and Refactoring Legacy Code Using Java

Duration: 4 days | **Price:** CDN$2,775

Students Will Learn:

- Unit testing using JUnit
- Testing code that interacts with databases
- Creating tests from use cases and/or Agile methodology
- Using mocks, fakes, and stubs
- Automating tests, builds and check-ins using a continuous integration server
- Refactoring existing code to improve clarity, readability and maintainability
- Identifying patterns useful in TDD including the SOLID principles
- Identifying and eliminating dependencies that make code difficult to maintain and extend
- Tracking code coverage and analyzing other code metrics to improve code maintainability
- Using the seam model to identify appropriate places in the code to make changes safely
- Identifying and correcting various types of code smells
- Using effect sketches and pinch points to identify optimal places for tests Using feature sketches to identify opportunistic refactoring

Course Description: This course provides students with hands on experience learning Test Driven Development (TDD) using JUnit. Students will build unit tests using mocks, fakes, stubs and drivers, and address issues working with databases and other systems. Student will create tests and code that will be more likely to meet and exceed requirements. Code that receives "test coverage" will not break existing systems, because tests are passed before code is checked in.

Students will spend time working with the issues involved in refactoring legacy code, safely cutting into an already deployed system. Students will work on looking for, or creating "seams" to more safely improve code or add features, and work on identifying "code smells" that need attention in a productive system.

Finally, students will explore dependency issues as well as techniques to better understand and improve complex systems.

Students will also examine TDD and refactoring legacy code in other languages like C# to gain a broader view of options and issues working in a multi-language shop. Comprehensive labs using Java provide facilitated hands on practice crucial to developing competence and confidence with the new skills being learned.

Course Prerequisites: Java SE 5+ programming experience and an understanding of object-oriented design principles. HOTT's **Java Programming** course or equivalent knowledge provides a solid foundation.

For a complete detailed course description, visit:

http://www.traininghott.ca/Courses/Refactoring-Legacy-Code-Java-Training-Course.htm

SQL Programming

Business Intelligence

Transact-SQL

Administration

Integration Services

Reporting Services

RDB

SQL Server

Analysis Services

SQL Programming

Duration: 3 days | **Price:** CDN$2,275

Students Will Learn:

- Design normalized table structures for relational databases
- Create databases and tables
- Using primary and foreign keys
- Writing SQL queries
- Using inner and outer joins
- Using set operators (**UNION**, **INTERSECT**, **EXCEPT**)
- Using DML for **SELECT**, **INSERT**, **UPDATE**, **DELETE**
- Using subqueries
- Using triggers and stored procedures
- Using aggregate functions to return totals and subtotals

Course Description: This SQL programming course teaches students relational database fundamentals and SQL programming skills. Topics covered include relational database architecture, database design techniques, and simple and complex query skills. This class is intended for analysts, developers, designers, administrators, and managers new to the SQL programming language. Upon completion, participants will understand SQL functions, join techniques, database objects and constraints, and will be able to write useful SELECT, INSERT, UPDATE and DELETE statements. Comprehensive hands on exercises are integrated throughout to reinforce learning and develop real competency.

Course Prerequisites: General computer knowledge. Familiarity with relational database concepts is helpful but not required.

For a complete detailed course description, visit:

http://www.traininghott.ca/Courses/SQL-Programming-Training-Course.htm

"The instructor was extremely knowledgeable, experienced, helpful, energetic, and enthusiastic about helping me become better with SQL and answering questions to real life situations."

- L.D., Flagler County Sheriff

"This course was exactly what I needed to learn SQL. I will definitely refer to HOTT in the future for my instructional needs."

- J.P., Hayes Management Consulting

Microsoft Transact-SQL Programming

Duration: 5 days | **Price:** CDN$3,275

Students Will Learn:

- Design normalized table structures for relational databases
- Create databases and tables
- Using primary and foreign keys
- Writing SQL queries
- Using inner and outer joins
- Using set operators (**UNION**, **INTERSECT**, **EXCEPT**)
- Using DML for **SELECT**, **INSERT**, **UPDATE**, **DELETE**
- Using subqueries
- Using triggers and stored procedures
- Using aggregate functions to return totals and subtotals
- Programming features of T-SQL
- Common table expressions
- T-SQL specific data types and functions
- T-SQL cursors

Course Description: This Transact-SQL programming course teaches students relational database fundamentals and SQL programming skills in the Microsoft SQL Server environment. Topics covered include relational database architecture, database design techniques, and simple and complex query skills. The course also covers Microsoft-specific T-SQL programming constructs, predefined data types including XML, creation and use of stored procedures and user-defined functions, use of cursors, updateable views, and transaction locking.

This class is intended for analysts, developers, designers, administrators, and managers new to the SQL programming language. Upon completion, participants will understand SQL functions, join techniques, database objects and constraints, and will be able to write useful stored procedures and views as well as complex queries and updates. Comprehensive hands on exercises are integrated throughout to reinforce learning and develop real competency.

Course Prerequisites: General computer knowledge. Familiarity with relational database concepts is helpful but not required.

For a complete detailed course description, visit:

http://www.traininghott.ca/Courses/Transact-SQL-Programming-Courses.htm

"Out of all the places I called, HOTT was the friendliest and the MOST helpful. Everyone I talked to or dealt with added to my pleasant experiences, helped walk me through the process, answered my questions and were very accommodating. Instructor was great and very knowledgeable."

- N.V., MedImpact Healthcare Systems

Relational Database Design Concepts

Duration: 3 days | **Price:** CDN$2,275

Students Will Learn:

▶ Design normalized table structures for relational databases
▶ Create databases and tables
▶ Using primary and foreign keys
▶ building a logical data model
▶ Implementing the data model with DDL
▶ Creating, modifying and dropping database objects
▶ Writing SQL Queries
▶ Using inner and outer joins

Course Description: This relational database design class develops relational database design skills and techniques. Practical methodologies such as E-R diagrams and normalization forms are emphasized. Attention is placed on designing for data integrity and efficiency at the same time. During hands on lab sessions students are required to design multiple database models from business requirements and specifications. Through hands on experience using SQL programming code to create, populate and manage relational tables, students will experience the necessity of proper design methods and gain an in depth understanding of the link between design, creation, and utilization. The impact of alternative designs on maintainability and database performance is emphasized.

Course Prerequisites: General computer knowledge. Familiarity with relational database concepts is helpful but not required.

For a complete detailed course description, visit:

http://www.traininghott.ca/Courses/Relational-Database-Design-Concepts-Hands-On-Training-Course-Class-Seminar-Keys.htm

"Fantastic instructor – obviously well-versed and has a lot of real-world experience. Was able to help me apply the course material to needs at my job. Excellent instructor, excellent class."

- J.N., Mary T. Inc

Microsoft SQL Server 2016 Administration

Duration: 5 days | **Price:** CDN$3,275

Students Will Learn:

- Authenticating and authorizing users
- Assigning server and database roles
- Authorizing users to access resources
- Protecting data with encryption and auditing
- Recovery models and backup strategies
- Backing up SQL Server databases
- Restoring SQL Server databases
- Automating database management
- Configuring security for the SQL Server agent
- Managing alerts and notifications
- Managing SQL Server using PowerShell
- Tracing access to SQL Server
- Monitoring a SQL Server infrastructure
- Troubleshooting a SQL Server infrastructure

Course Description: This five-day instructor-led course provides students who administer and maintain SQL Server 2016 databases with the knowledge and skills to administer a SQL Server database infrastructure.

The primary audience for this course is individuals who administer and maintain SQL Server databases. These individuals perform database administration and maintenance as their primary area of responsibility, or work in environments where databases play a key role in their primary job.

Course Prerequisites: Familiarity with database concepts, Windows desktop navigation and Transact-SQL. Attendance at HOTT's **Microsoft Transact-SQL Programming** course is highly recommended although not required.

For a complete detailed course description, visit:

http://www.traininghott.ca/Courses/SQL-Server-2016-Training-Course.htm

Microsoft SQL Server 2017 Administration

Duration: 5 days | **Price:** CDN$3,275

Students Will Learn:
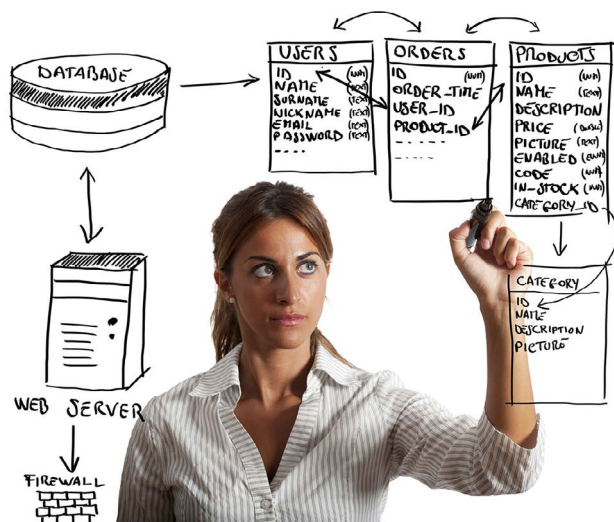
▶ Installing and configuring SQL Server 2017
▶ Authenticating and authorizing users
▶ Assigning server and database roles
▶ Authorizing users to access resources
▶ Protecting data with encryption and auditing
▶ Recovery models and backup strategies
▶ Backing up SQL Server databases
▶ Restoring SQL Server databases

▶ Automating database management
▶ Configuring security for the SQL Server agent
▶ Managing alerts and notifications
▶ Tracing access to SQL Server
▶ Monitoring a SQL Server infrastructure
▶ Troubleshooting a SQL Server infrastructure
▶ Importing and exporting data
▶ Creating a high availability solution

Course Description: This hands-on course provides students with the knowledge and skills to administer a SQL Server 2017 database infrastructure. You will learn how to install, configure, manage, secure, automate, monitor, and optimize SQL Server 2017. You will also learn how to create, manage, back up, and restore individual databases, transfer and replicate data, configure for high availability, and plan disaster recovery.

Comprehensive hands on exercises are integrated throughout to reinforce learning and develop real competency.

For a complete detailed course description, visit:

https://www.traininghott.ca/Courses/SQL-Server-2017-Administration-Training-Course.htm

SQL Server 2016 Reporting Services

Duration: 3 days | **Price:** CDN$2,275

Students Will Learn:

- ▶ Installing and configuring SQL Server Reporting Services
- ▶ Designing reports using SQL Server Data Tools (SSDT)
- ▶ Creating multi-dimensional, two-dimensional and tabular data sources and sets
- ▶ Using the Tablix object to display information in Tables, Matrix (pivot tables) and free form Lists
- ▶ Using visualization objects to create Charts, Spark Lines, Data Bars and Tree Maps
- ▶ Adding images, page headers and footers and report metadata

- ▶ Including report parameterization enabling filtering by users
- ▶ Configuring report interactivity, including drill-downs, report maps and book marks
- ▶ Linking to parameterized child reports via hyperlinks or sub-reports
- ▶ Creating calculated fields and custom report formatting
- ▶ Deploying reports to the new Reporting Services Web Portal
- ▶ Configuring report snapshots, caches and subscriptions

Course Description: SQL Server Reporting Services 2016 contains significant new functionality and improvements over its predecessors including the new Reporting Services web portal, support for mobile reports and dashboards, an new HTML 5 rendering engine, and exiting new report design enhancements.

The three day course includes an overview of the SQL Server business intelligence architecture focusing the role of Reporting services. All reports are developed utilizing SQL Server Data Tools (SSDT), however the new 2016 Report Designer is also introduced. Students will complete hands-on exercises creating a number of reports including table-based, cross tabular and forms based designs. Reports utilizing the newly designed charts, gauges, KPIs, spark lines, data bars and tree maps will be built. Exercises will incorporate the use of report parameters and features such as drill down, interactive sorting, hyperlinks, book marks and report maps.

Consuming data from relational, multi-dimensional and the new tabular data sources will be incorporated into report designs. Students will become familiar with report deployment to the new Reporting Service Web Portal (replaced Report Manager) and learn how to use portal the management tools to configure report caches, snapshots and subscriptions. Instruction and practice in designing report security to insure protection of enterprise data will be provided.

The student will gain experience with the new Report Services web portal, which enables publishing content other than paginated reports, such as Excel, Power BI and build in KPIs directly from a shared data set. Finally the student will apply custom branding of the web portal.

Course Prerequisites: Familiarity with database concepts, Windows desktop navigation and software installation techniques. Attendance at HOTT's **SQL Programming** course or **Microsoft Transact-SQL Programming** course is highly recommended although not required.

For a complete detailed course description, visit:

http://www.traininghott.ca/Courses/SQL-Server-SSRS-2016-Training-Course.htm

SQL Server 2016 Business Intelligence Application Development (SSRS, SSIS, SSAS)

Duration: 5 days | **Price:** CDN$3,275

Students Will Learn:

- Installing and configuring SQL Server Reporting Services
- Designing reports using SQL Server Data Tools (SSDT)
- Creating multi-dimensional, two-dimensional and tabular data sources and sets
- Using the Tablix object to display information in Tables, Matrix (pivot tables) and free form Lists
- Using visualization objects to create Charts, Spark Lines, Data Bars and Tree Maps
- Configuring report interactivity, including drill-downs, report maps and book marks
- Linking to parameterized child reports via hyperlinks or sub-reports
- Deploying reports to the new Reporting Services Web Portal
- Configuring report snapshots, caches and subscriptions
- Securing reports and data sources
- Creating SSIS and SSAS projects using SQL Server Data Tools

Course Description: SQL Server Reporting Services 2016 contains significant new functionality and improvements over its predecessors including the new Reporting Services web portal, support for mobile reports and dashboards, an new HTML 5 rendering engine, and exiting new report design enhancements. Three of the five days are reserved for SSRS.

All reports are developed utilizing SQL Server Data Tools (SSDT), however the new 2016 Report Designer is also introduced. Students will complete hands-on exercises creating a number of reports including table-based, cross tabular and forms based designs. Reports utilizing the newly designed charts, gauges, KPIs, spark lines, data bars and tree maps will be built. Exercises will incorporate the use of report parameters and features such as drill down, interactive sorting, hyperlinks, book marks and report maps.

Consuming data from relational, multi-dimensional and the new tabular data sources will be incorporated into report designs. Students will become familiar with report deployment to the new Reporting Service Web Portal (replaced Report Manager) and learn how to use portal the management tools to configure report caches, snapshots and subscriptions. Instruction and practice in designing report security to insure protection of enterprise data will be provided. The student will gain experience with the new Report Services web portal, which enables publishing content other than paginated reports, such as Excel, Power BI and build in KPIs directly from a shared data set. Finally the student will apply custom branding of the web portal.

One day is reserved for SQL Server Integration Services (SSIS). Students will learn the basics of creating SSIS packages using SQL Server Data Tools to create Extract Transform and Load solutions used to populate data warehouses and marts. In the final day, based on a populated data warehouse they have created, students will then learn how to develop an SQL Server Analysis Services (SSAS) multidimensional (cube) model using the languages Multidimensional Expressions (MDX). Cubes will be customized to include Key Performance Indicators (KPIs), Calculated Members, Named Sets, Navigational Hierarchies, and Perspectives. Also, a brief introduction to the SSAS Tabular module will be provided.

Course Prerequisites: Familiarity with database concepts, Windows desktop navigation and software installation techniques. Attendance at HOTT's **SQL Programming** course or **Microsoft Transact-SQL Programming** course is highly recommended although not required.

For a complete detailed course description, visit:

http://www.traininghott.ca/Courses/SQL-Business-Intelligence-2016-Training-Course.htm

SQL Server 2016 Business Intelligence: Integration Services and Analysis Services

Duration: 5 days | **Price:** CDN$3,275

Students Will Learn:

- Structure and function of a data warehouse or data mart
- Data warehouse design to support enterprise reporting
- The role of SSIS within the business intelligence framework
- Developing SSIS Extract Transform Load (ETL) processes to populate data warehouses
- Becoming familiar with all SSIS Control Flow tasks
- Deploying SSIS projects to SSIS Catalogs
- Configuring SSIS Environments, runtime variables and parameters
- BI semantic Model
- Learning Multidimensional Expressions (MDX)
- Developing SSAS Multidimensional models
- Learning Data Analysis Expressions (DAX)
- Developing SSAS Tabular models
- Deploying and securing Multidimensional and Tabular models
- Implementing SSAS Data Mining models for predictive analysis
- Consuming the BI Semantic Model in reports and dashboards

Course Description: SQL Server 2016 provides a rich environment for business intelligence development. The focus of this five day course is to familiarize developers with the use of SQL Server Engine, SQL Server Integration Services (SSIS) and SQL Server Analysis Services (SSAS) to create and populate data warehouses through ETL processing and build Multidimensional and Tabular models to use and reporting data sources.

Students will learn how to design and build data warehouses and marts using SQL Server Management Studio. In a series of exercises, students develop SSIS packages designed to maintain a data warehouse using the Data Flow control flow task. Also demonstrated are other control flow tasks that can interact with an NTFS file system, FTP server, execute Win32 processes, send emails, and run .NET scripts.

Based on the populated data warehouse they have created, students will then learn how to develop both Multidimensional and Tabular SSAS models using the languages Multidimensional Expressions (MDX) and Data Analysis Expressions (DAX). Cubes will be customized to include Key Performance Indicators (KPIs), Calculated Members, Named Sets, Navigational Hierarchies, and Perspectives.

Students who are also interested in Reporting Services (SSRS) should consider the 3-day **SQL Server 2016 Reporting Services** course in addition to this course. An 8-day training pass is available for $3,590.

Course Prerequisites: Familiarity with database concepts, Windows desktop navigation and software installation techniques. Attendance at HOTT's **SQL Programming** course or Microsoft Transact-SQL Programming course is highly recommended although not required.

For a complete detailed course description, visit:

http://www.traininghott.ca/Courses/SQL-Integration-Analysis-Services-2016-Training-Course.htm

SQL Server 2017 Reporting Services

Duration: 3 days | **Price:** CDN$2,275

Students Will Learn:

- ▶ Installing and configuring SQL Server Reporting Services
- ▶ Designing reports using SQL Server Data Tools (SSDT)
- ▶ Creating multi-dimensional, two-dimensional and tabular data sources and sets
- ▶ Using the Tablix object to display information in Tables, Matrix (pivot tables) and free form Lists
- ▶ Using visualization objects to create Charts, Spark Lines, Data Bars and Tree Maps
- ▶ Adding images, page headers and footers and report metadata

- ▶ Including report parameterization enabling filtering by users
- ▶ Configuring report interactivity, including drill-downs, report maps and book marks
- ▶ Linking to parameterized child reports via hyperlinks or sub-reports
- ▶ Creating calculated fields and custom report formatting
- ▶ Deploying reports to the Reporting Services Web Portal
- ▶ Configuring report snapshots, caches and subscriptions

Course Description: This course introduces Microsoft's SQL Server Reporting Services 2017 (SSRS) utility. All reports are developed utilizing SQL Server Data Tools (SSDT), however Report Designer is also introduced. Students will complete hands-on exercises creating a number of reports including table-based, cross tabular and forms based designs. Reports utilizing charts, gauges, KPIs, spark lines, data bars and tree maps will be built. Exercises will incorporate the use of report parameters and features such as drill down, interactive sorting, hyperlinks, book marks and report maps.

Consuming data from relational, multi-dimensional and tabular data sources will be incorporated into report designs. Students will become familiar with report deployment to the new Reporting Service Web Portal and learn how to use portal the management tools to configure report caches, snapshots and subscriptions. Instruction and practice in designing report security to insure protection of enterprise data will be provided.

The student will gain experience with the new Report Services Web portal, which enables publishing content other than paginated reports, such as Excel and Power BI. Students will also learn how to include KPIs (Key Performance Indicators) directly from a shared data set.

Course Prerequisites: Familiarity with database concepts, Windows desktop navigation and software installation techniques. Attendance at HOTT's **SQL Programming** course or **Microsoft Transact-SQL Programming** course is highly recommended although not required.

For a complete detailed course description, visit:

https://www.traininghott.ca/Courses/SQL-Server-2017-Reporting-Services-Training.htm

SQL Server 2017 Business Intelligence Application Development (SSRS, SSIS, SSAS)

Duration: 5 days | **Price:** CDN$3,275

Students Will Learn:

- Installing and configuring SQL Server Reporting Services
- Designing reports using SQL Server Data Tools (SSDT)
- Creating multi-dimensional, two-dimensional and tabular data sources and sets
- Using the Tablix object to display information in Tables, Matrix (pivot tables) and free form Lists
- Using visualization objects to create Charts, Spark Lines, Data Bars and Tree Maps
- Adding images, page headers and footers and report metadata
- Including report parameterization enabling filtering by users
- Configuring report interactivity, including drill-downs, report maps and book marks
- Linking to parameterized child reports via hyperlinks or sub-reports
- Creating calculated fields and custom report formatting
- Deploying reports to the Reporting Services Web Portal

Course Description: This hands-on course introduces the SQL Server 2017 Business Intelligence Suite, including Reporting Services (SSRS), Integration Services (SSIS) and Analysis Services (SSAS). Students will complete hands-on exercises creating a number of reports including table-based, cross tabular and forms based designs. Reports utilizing charts, gauges, KPIs, spark lines, data bars and tree maps will be built. Exercises will incorporate the use of report parameters and features such as drill down, interactive sorting, hyperlinks, book marks and report maps.

Consuming data from relational, multi-dimensional and tabular data sources will be incorporated into report designs. Students will become familiar with report deployment to the Reporting Service Web Portal and learn how to use portal the management tools to configure report caches, snapshots and subscriptions. Instruction and practice in designing report security to insure protection of enterprise data will be provided.

Students will gain experience with the Report Services Web portal, which enables publishing content other than paginated reports, such as Excel and Power BI. Students will also learn how to include KPIs (Key Performance Indicators) directly from a shared data set.

One day is reserved for SQL Server Integration Services (SSIS). Students will learn the basics of creating SSIS packages using SQL Server Data Tools to create Extract Transform and Load solutions used to populate data warehouses and marts.

In the final day, based on a populated data warehouse they have created, students will then learn how to develop an SQL Server Analysis Services (SSAS) multidimensional (cube) model using Multidimensional Expressions (MDX) syntax. Cubes will be customized to include Key Performance Indicators (KPIs), Calculated Members, Named Sets, Navigational Hierarchies, and Perspectives. Also, a brief introduction to the SSAS Tabular module will be provided.

Course Prerequisites: Familiarity with database concepts, Windows desktop navigation and software installation techniques. Attendance at HOTT's **SQL Programming** course or **Microsoft Transact-SQL Programming** course is highly recommended although not required.

For a complete detailed course description, visit:

https://www.traininghott.ca/Courses/SQL-Business-Intelligence-2017-Training-Course.htm

SQL Server 2017 Business Intelligence: Integration Services and Analysis Services

Duration: 5 days | **Price:** CDN$3,275

Students Will Learn:

- Structure and function of a data warehouse or data mart
- Data warehouse design to support enterprise reporting
- The role of SSIS within the business intelligence framework
- Developing SSIS Extract Transform Load (ETL) processes to populate data warehouses
- Functionality of all SSIS Control Flow tasks
- Deploying SSIS projects to SSIS Catalogs
- Configuring SSIS environments, runtime variables and parameters
- BI Semantic Model
- Multidimensional Expressions (MDX) syntax
- Developing SSAS Multidimensional models
- Data Analysis Expressions (DAX)
- Developing SSAS Tabular models
- Deploying and securing Multidimensional and Tabular models
- Implementing SSAS Data Mining models for predictive analysis
- Consuming the BI Semantic Model in reports and dashboards

Course Description: SQL Server 2017 provides a rich environment for business intelligence development. The focus of this course is to familiarize developers with the use of SQL Server Engine, SQL Server Integration Services (SSIS) and SQL Server Analysis Services (SSAS) to create and populate data warehouses through ETL processing and build Multidimensional and Tabular models to use and reporting data sources.

Students will learn how to design and build data warehouses and marts using SQL Server Management Studio. In a series of exercises, students develop SSIS packages designed to maintain a data warehouse using the Data Flow control flow task. Also demonstrated are other control flow tasks that can interact with an NTFS file system, FTP server, execute Win32 processes, send emails, and run .NET scripts.

Based on the populated data warehouse they have created, students will then learn how to develop both Multidimensional and Tabular SSAS models using the languages Multidimensional Expressions (MDX) and Data Analysis Expressions (DAX). Cubes will be customized to include Key Performance Indicators (KPIs), Calculated Members, Named Sets, Navigational Hierarchies, and Perspectives.

Course Prerequisites: Familiarity with database concepts, Windows desktop navigation and software installation techniques. Attendance at HOTT's **SQL Programming** course or **Microsoft Transact-SQL Programming** course is highly recommended although not required.

For a complete detailed course description, visit:

https://www.traininghott.ca/Courses/SQL-Integration-Analysis-Services-2017-Training-Course.htm

SQL Server 2019 Reporting Services

Duration: 3 Days | **Price:** CDN$2,275

Students Will Learn:

- ▶ Installing and configuring SQL Server Reporting Services
- ▶ Designing reports using SQL Server Data Tools (SSDT)
- ▶ Creating multi-dimensional, two-dimensional and tabular data sources and sets
- ▶ Using the Tablix object to display information in Tables, Matrix (pivot tables) and free form Lists
- ▶ Using visualization objects to create Charts, Spark Lines, Data Bars and Tree Maps
- ▶ Adding images, page headers and footers and report metadata
- ▶ Including report parameterization enabling filtering by users

- ▶ Configuring report interactivity, including drill-downs, report maps and book marks
- ▶ Linking to parameterized child reports via hyperlinks or sub-reports
- ▶ Creating calculated fields and custom report formatting
- ▶ Deploying reports to the Reporting Services Web Portal
- ▶ Configuring report snapshots, caches and subscriptions
- ▶ Securing reports and data sources

Course Description: This course introduces Microsoft's SQL Server Reporting Services 2019 (SSRS) utility. All reports are developed utilizing SQL Server Data Tools (SSDT), however Report Designer is also introduced. Students will complete hands-on exercises creating a number of reports including table-based, cross tabular and forms based designs. Reports utilizing charts, gauges, KPIs, spark lines, data bars and tree maps will be built. Exercises will incorporate the use of report parameters and features such as drill down, interactive sorting, hyperlinks, book marks and report maps.

Consuming data from relational, multi-dimensional and tabular data sources will be incorporated into report designs. Students will become familiar with report deployment to the new Reporting Service Web Portal and learn how to use portal the management tools to configure report caches, snapshots and subscriptions. Instruction and practice in designing report security to insure protection of enterprise data will be provided.

The student will gain experience with the new Report Services Web portal, which enables publishing content other than paginated reports, such as Excel and Power BI. Students will also learn how to include KPIs (Key Performance Indicators) directly from a shared data set.

Course Prerequisites: Familiarity with database concepts, Windows desktop navigation and software installation techniques. Attendance at HOTT's **SQL Programming** course or **Microsoft Transact-SQL Programming** course is highly recommended although not required.

For a complete detailed course description, visit:

https://www.traininghott.ca/Courses/SQL-Server-2019-Reporting-Services-Training-Course.htm

SQL Server 2019 Business Intelligence Application Development (SSRS, SSIS, SSAS)

Duration: 5 Days | **Price:** CDN$3,275

Students Will Learn:

- Installing and configuring SQL Server Reporting Services
- Designing reports using SQL Server Data Tools (SSDT)
- Creating multi-dimensional, two-dimensional and tabular data sources and sets
- Using the Tablix object to display information in Tables, Matrix (pivot tables) and free form Lists
- Using visualization objects to create Charts, Spark Lines, Data Bars and Tree Maps
- Adding images, page headers and footers and report metadata
- Including report parameterization enabling filtering by users
- Configuring report interactivity, including drill-downs, report maps and book marks
- Linking to parameterized child reports via hyperlinks or sub-reports
- Creating calculated fields and custom report formatting
- Deploying reports to the Reporting Services Web Portal

Course Description: This hands-on SQL Server 2019 course introduces the Business Intelligence Suite, including Reporting Services (SSRS), Integration Services (SSIS) and Analysis Services (SSAS). Students will complete hands-on exercises creating a number of reports including table-based, cross tabular and forms based designs. Reports utilizing charts, gauges, KPIs, spark lines, data bars and tree maps will be built. Exercises will incorporate the use of report parameters and features such as drill down, interactive sorting, hyperlinks, book marks and report maps.

Consuming data from relational, multi-dimensional and tabular data sources will be incorporated into report designs. Students will become familiar with report deployment to the Reporting Service Web Portal and learn how to use portal the management tools to configure report caches, snapshots and subscriptions. Instruction and practice in designing report security to insure protection of enterprise data will be provided.

Students will gain experience with the Report Services Web portal, which enables publishing content other than paginated reports, such as Excel and Power BI. Students will also learn how to include KPIs (Key Performance Indicators) directly from a shared data set.

One day is reserved for SQL Server Integration Services (SSIS). Students will learn the basics of creating SSIS packages using SQL Server Data Tools to create Extract Transform and Load solutions used to populate data warehouses and marts.

In the final day, based on a populated data warehouse they have created, students will then learn how to develop an SQL Server Analysis Services (SSAS) multidimensional (cube) model using Multidimensional Expressions (MDX) syntax. Cubes will be customized to include Key Performance Indicators (KPIs), Calculated Members, Named Sets, Navigational Hierarchies, and Perspectives. Also, a brief introduction to the SSAS Tabular module will be provided.

Course Prerequisites: Familiarity with database concepts, Windows desktop navigation and software installation techniques. Attendance at HOTT's **SQL Programming** course or **Microsoft Transact-SQL Programming** course is highly recommended although not required.

For a complete detailed course description, visit:

https://www.traininghott.ca/Courses/SQL-Server-2019-SSRS-SSIS-SSAS-Training-Course.htm

SQL Server 2019 Business Intelligence: Integration Services and Analysis Services

Duration: 5 Days | **Price:** CDN$3,275

Students Will Learn:

- Structure and function of a data warehouse or data mart
- Data warehouse design to support enterprise reporting
- The role of SSIS within the business intelligence framework
- Developing SSIS Extract Transform Load (ETL) processes to populate data warehouses
- Functionality of all SSIS Control Flow tasks
- Deploying SSIS projects to SSIS Catalogs
- Configuring SSIS environments, runtime variables and parameters
- BI Semantic Model
- Multidimensional Expressions (MDX) syntax
- Developing SSAS Multidimensional models
- Data Analysis Expressions (DAX)
- Developing SSAS Tabular models
- Deploying and securing Multidimensional and Tabular models
- Implementing SSAS Data Mining models for predictive analysis
- Consuming the BI Semantic Model in reports and dashboards

Course Description: SQL Server 2019 provides a rich environment for business intelligence development. The focus of this SQL Server 2019 training course is to familiarize developers with the use of SQL Server Engine, SQL Server Integration Services (SSIS) and SQL Server Analysis Services (SSAS) to create and populate data warehouses through ETL processing. During class, students will build Multidimensional and Tabular models to use as reporting data sources.

Students will learn how to design and build data warehouses and marts using SQL Server Management Studio. In a series of exercises, students develop SSIS packages designed to maintain a data warehouse using the Data Flow control flow task. Also demonstrated are other control flow tasks that can interact with an NTFS file system, FTP server, execute Win32 processes, send emails, and run .NET scripts.

Based on the populated data warehouse they have created, students will then learn how to develop both Multidimensional and Tabular SSAS models using the languages Multidimensional Expressions (MDX) and Data Analysis Expressions (DAX). Cubes will be customized to include Key Performance Indicators (KPIs), Calculated Members, Named Sets, Navigational Hierarchies, and Perspectives.

Course Prerequisites: Familiarity with database concepts, Windows desktop navigation and software installation techniques. Attendance at HOTT's **SQL Programming** course or **Microsoft Transact-SQL Programming** course is highly recommended although not required.

For a complete detailed course description, visit:

https://www.traininghott.ca/Courses/SQL-Server-2019-Integration-Analysis-Services-Training-Course.htm

Apache Web Server
LINUX
SAMBA
UNIX
Networking
Bash
Shell Programming
Korn
X Windows

UNIX/Linux Fundamentals and Shell Scripting

Duration: 5 days | **Price:** CDN$3,275

Students Will Learn:

- Navigating the file system
- Controlling file access
- File and directory naming rules and conventions
- Manipulating files and links
- Controlling the Terminal
- Working with `vi`
- Monitoring and controlling processes
- Using command line editing
- Command substitution, quoting and escaping
- Using backup commands
- Submitting and controlling print jobs
- Communicating over the network
- Using `telnet` commands

- Remote access with password authentication
- Working with secure shells
- Using GNOME and KDE GUI environments
- How to write and run shell scripts
- Using conditional constructs
- Manipulating strings
- Command-line processing
- Using regular expressions
- String processing utilities: `sed`, `grep` and `awk`
- Counting words, lines and characters
- Working with compression utilities
- Writing functions
- Using the `ksh` and `bash` commands

Course Description: This hands on course provides training on standard UNIX/Linux commands and utilities used for day to day tasks including file manipulation, program execution and control, and effective use of the shell and desktop environments. The course presents the concepts necessary to understand the way UNIX works as well as the system's most commonly used commands. Data manipulation utilities and shell syntax for synthesizing command pipelines are emphasized.

Bourne shell, Bash shell and Korn shell programming techniques are introduced so students will be able to read and modify existing shell scripts as well as create their own. Desktop environments are also introduced from a user's perspective, including common window managers, Open Office utilities and an introduction to configuration tools. Comprehensive hands on exercises are integrated throughout to reinforce learning and develop real competency.

Course Prerequisites: None

For a complete detailed course description, visit:

http://www.traininghott.ca/Courses/UNIX-Linux-Training-Course.htm

"This was an exceptionally good class. The labs were very helpful in learning the material. The instructor was clear and although I've worked on UNIX systems for years, this really helped me glue some stuff together."

- J.D., Naval Surface Warfare

Korn Shell and Bash Shell Programming

Duration: 3 days | **Price:** CDN$2,275

Students Will Learn:

- How to write and run shell scripts
- Using conditional constructs
- Manipulating strings
- Command-line processing
- Using regular expressions
- String processing utilities: `sed`, `grep` and `awk`
- Counting words, lines and characters
- Working with compression utilities
- Writing functions
- Using the `ksh` and `bash` commands
- Working with UNIX I/O streams

Course Description: This hands on Korn and Bash Shell scripting course provides a comprehensive introduction to writing Korn and Bash shell scripts. Besides covering fundamental syntax for program flow control, variable assignment and substitution, I/O control, and mathematical expressions, it emphasizes the powerful features of these shells, including built-in string operators, variable typesetting/conversion, functions, and coprocess communication and control. The creative use of standard UNIX and Linux utilities within scripts to solve problems is stressed throughout.

The course is designed for the administrators and programmers who are developing, testing, or integrating software on UNIX or Linux, as well as for advanced UNIX or Linux users. Both the commonalities and differences between the Korn and Bash shells are examined, and students will have the opportunity to learn from examples coded in both shells. Comprehensive hands on exercises are integrated throughout to reinforce learning and develop real competency.

Course Prerequisites: Familiarity with UNIX file system and commands

For a complete detailed course description, visit:

http://www.traininghott.ca/Courses/Korn-Bash-Shell-Programming-Training-Course.htm

"The instructor was incredible. He clearly explained command concepts and their practical use. One of the best courses I have attended!"

- D.J., Bereskin & Parr LLP

Linux System Administration

Duration: 5 days | **Price:** CDN$3,275

Students Will Learn:

- Installing a Linux operating system and configuring peripherals
- Performing and modifying startup and shutdown processes
- Setting up and maintaining basic networking
- Populating the system with users and groups
- Setting specific file permissions on directories and regular files
- Performing maintenance on file systems
- Managing running processes
- Automating daily tasks
- Performing backups and restoration of files
- Troubleshooting system problems
- Analyzing and taking measures to increase system performance
- Working with the X Windows interface
- Configuring networked file systems
- Deploying a working Web server configuration
- Sharing files with a Windows SMB protocol
- Configuring DHCP services
- Configuring DNS services
- Implementing security measures

Course Description: This hands on Linux administration course teaches students how to install, configure and maintain a Linux system in a networked environment. Students will not only learn to perform basic administrative tasks such as adding and managing users, creating and maintaining file systems, developing and implementing a security policy, and performing software installation and package management, but will also learn to perform Linux network-related tasks, including installing and supporting SSH, NFS, Samba, DNS, DHCP, and the Apache Web server. Comprehensive hands on exercises are integrated throughout to reinforce learning and develop real competency.

The course includes comprehensive hands on practice installing and configuring Linux systems including CentOS 6. Labs include adding and deleting users, backing up and restoring the system, adding/deleting software, automating the scheduling of tasks, creating file systems, managing remote access, and installing and tuning Samba and Apache, as well as working with modern system logging utilities such as rsyslog. Class participants will also discuss common security issues, and be introduced to several tools, such as PAM modules, that can help secure the operating environment. Upon completion of this course, students will be prepared to competently maintain a Linux system in a networked business environment.

Course Prerequisites: Students should be experienced UNIX or Linux users. Knowledge of the Linux file system and commands equivalent to attendance in the **UNIX/Linux Fundamentals** course is required.

For a complete detailed course description, visit:

http://www.traininghott.ca/Courses/Linux-System-Administration-Training-Course.htm

"The instructor has extensive knowledge of Linux and course materials and presented it very well. I have recommended this Linux course to a colleague who is planning to take this course in the near future. I have attended many training courses and feel this was the best course I have taken."

- C.N., NEI

POLYMORPHISM

OPERATORS

EXPRESSIONS

ANSI C

C++ PROGRAMMING

INHERITANCE

STANDARD TEMPLATE LIBRARY

C RUNTIME LIBRARY

C Programming

Duration: 5 days | **Price:** CDN$3,275

Students Will Learn:

- Components of a C program
- Using the C preprocessor
- Using standard runtime libraries
- Using `make` to build programs
- Working with debugger utilities
- Using data types, storage classes and scope
- Using `typedef` to make code more readable and portable
- Using operators and expressions
- Working with conditional and looping constructs
- Initializing a pointer
- Accessing the value addressed by a pointer

- Returning the value of a function
- Declaring argument data types
- ANSI function prototype syntax
- Declaring and initializing arrays and multidimensional arrays
- Using Strings and character manipulation
- Declaring and instancing a structure
- Defining a union
- Accessing command line arguments and environment variables
- C runtime library standard I/O functions

Course Description: This hands on C programming course provides a comprehensive introduction to the ANSI C language, emphasizing portability and structured design. Students are introduced to all major language elements including fundamental data types, flow control, and standard function libraries. Thorough treatment is given to the topics of string and character manipulation, dynamic memory allocation, standard I/O, macro definition, and the C runtime library. The course explains the use of aggregate structures, unions, and pointers early on so the students can practice extensively in the hands on labs.

Structured programming constructs and varargs functions are also covered. Emphasis is given to the processing of command line arguments and environment variables so students will be able to write flexible, user-friendly programs. The course also includes coverage of portability tips drawn from experienced programmers working in production environments. Comprehensive hands on exercises are integrated throughout to reinforce learning and develop real competency.

Course Prerequisites: Understanding of fundamental programming concepts.

For a complete detailed course description, visit:

http://www.traininghott.ca/Courses/C-Programming-Training-Course.htm

"The course exceeded my expectations. I expected to get a kick start on the road to learning C. Instead I felt I now have a solid ground of the fundamentals and I'm ready to dive in with both feet."

- D.H., Simon Friser University

C++ Programming for C Programmers

Duration: 4 days | **Price:** CDN$2,775

Students Will Learn:

- ▶ Writing procedural programs using C++
- ▶ Using private, public and protected keywords to control access to class members
- ▶ Defining a class in C++
- ▶ Writing constructors and destructors
- ▶ Writing classes with const and static class members
- ▶ Overloading operators
- ▶ Implementing polymorphic methods in programs
- ▶ Writing programs using file I/O and string streams
- ▶ Using manipulators and stream flags to format output

- ▶ Using the `keyword` template to write generic functions and classes
- ▶ Writing programs that use generic classes and functions
- ▶ Writing programs that use algorithms and containers of the Standard Library
- ▶ Using algorithms and containers of the Standard Library to manipulate string data
- ▶ Using `try()` blocks to trap exceptions
- ▶ Using `catch()` blocks to handle exceptions
- ▶ Defining exceptions and using throw to trigger them

Course Description: This hands on C++ training course presents a thorough introduction to object-oriented programming in C++ for experienced C programmers. The central concepts of C++ syntax and style are taught in the context of using object-oriented methods to achieve reusability, adaptability and reliability. Emphasis is placed on the features of C++ that support abstract data types, inheritance, and polymorphism. Students will learn to apply the process of data abstraction and class design.

Practical aspects of C++ programming including efficiency, performance, testing, and reliability considerations are stressed throughout. Comprehensive hands on exercises are integrated throughout to reinforce learning and develop real competency.

Course Prerequisites: Prior programming experience with C.

For a complete detailed course description, visit:

http://www.traininghott.ca/Courses/C++-Training-Course.htm

```
#INCLUDE <IOSTREAM>
USING NAMESPACE STD;
INT MAIN()
{
    COUT << "LINE 1" << '\N' << "LINE 2" << ENDL;
    COUT << "LINE 3";
    COUT << "STILL LINE 3!" << ENDL;

    RETURN 0;
}
```

"The class and course contents were very well organized and presented. Excellent instructor. One of the best I've had. Overall, I really enjoyed the class and feel like I have a much better understanding of C++ and object oriented programming."

- D.P., Dupont

C++ Programming for Non-C Programmers

Duration: 5 days | **Price:** CDN$3,275

Students Will Learn:

- Defining variables and building expressions using the variety of data types available in C/C++
- Using the control structures available in C/C++
- Defining functions with/without parameters and call those functions
- Using pointer syntax and understand the purpose of pointers
- Writing procedural programs using C++
- Using private, public and protected keywords to control access to class members
- Defining a class in C++
- Writing constructors and destructors
- Writing classes with const and static class members
- Overloading operators
- Implementing polymorphic methods in programs
- Writing programs using file I/O and string streams
- Using manipulators and stream flags to format output
- Using the `keyword` template to write generic functions and classes
- Writing programs that use generic classes and functions
- Writing programs that use algorithms and containers of the Standard Library
- Using algorithms and containers of the Standard Library to manipulate string data
- Using `try()` blocks to trap exceptions
- Using `catch()` blocks to handle exceptions
- Defining exceptions and using throw to trigger them

Course Description: This hands on C++ programming course provides an accelerated introduction to the most essential syntactical components of the C and C++ languages on the first day, prior to four days of focus on object-oriented programming with C++. The course begins by introducing the built in data types, fundamental control constructs, and rich expression operator repertoire common to both C and C+.

The remainder of the course teaches object-oriented programming using features of C++, congruent with the C++ for C Programmers course. Comprehensive hands on exercises are integrated throughout to reinforce learning and develop real competency.

Course Prerequisites: Prior programming experience, though not necessarily in C or C++. Some prior knowledge of basic C syntax is helpful but not required.

For a complete detailed course description, visit:

http://www.traininghott.ca/Courses/C++-Programming-Training-Course.htm

"I was very happy with the course. I learned what I wanted to about C++ and the exercises helped reinforce my learning. The instructor was very helpful and having a knowledgeable person to ask questions to was an invaluable resource."

- J.M., Agilent Technologies

CRITICAL THINKING

Critical Thinking for the 21st Century

Duration: 28 Hours | **Price:** CDN$1975

Students Will Learn:

- The importance of critical thinking skills for 21st century workers
- How to identify and analyze credible facts and evidence to reach sound conclusions
- How to identify and differentiate between sound thinking, magical thinking, pseudoscience, skepticism, and cynicism
- To analyze and create graphical and tabular visualizations
- The basics of memory and information retrieval, how the way the brain functions affects our thinking, and why it is so difficult and unusual for people to change their minds when confronted by new evidence
- The many types of propaganda encountered in virtually all communications, and how to filter through it to find actual useful information
- The role of journalism, the importance of accuracy, the omnipresence of bias, and ways to identify reliable news sources
- Techniques for gathering reliable information; the importance of expertise
- The many cultural and behavioral biases that lead to poor decision-making by even the most exceptional and brilliant minds
- Basic statistical terminology and how to analyze statistical information, including distribution, deviation, correlation, causation and the law of large numbers
- The nature of logic and argument, premises and conclusions, deductive and inductive arguments, validity and soundness, strong and weak arguments, and formal and informal fallacies
- How to make a decision, including the Franklin analysis, cost-benefit analyses, weighted decision analysis, expected value analysis and multi-criteria decision analysis

Course Description: *Critical Thinking* is the process of performing analysis that is objective, logical, logically consistent, fair, and informed by evidence, in order to form a judgment, make a decision, or determine the truth. *Critical Thinking for the 21st Century* teaches students to think critically in their personal and professional lives.

The Critical Thinking training course teaches practical skills and provides practical experience to individuals who need to develop competence and/or refine expertise in the thought processes necessary for success in the 21st century service- and information-based economy.

The Critical Thinking skills course teaches and provides practice in making logical arguments, as well as assessing, weighing and analyzing evidence. We discuss the ways in which brain biology affects memory and decision-making, how emotions often muddle our thinking, whether or not we are aware of these emotions, and how to work around these challenges. We examine how techniques of persuasion and propaganda affect our thinking, often more than we know, and what we can do to counteract such effects. We address the problem of obtaining accurate, reliable and unbiased information from the news media and other sources of information, and we explore the subject of understanding and presenting visual information.

Each Critical Thinking training course module is self-contained, so, while students are generally best served if they complete the entire course, students and enterprises may opt to eschew any material that is judged to be unnecessary or irrelevant to them.

Course Prerequisites: A high school education, GED, or equivalent experience. Familiarity with basic computer functions (sending and receiving email, using a web browser, running apps, downloading apps) is helpful but not required.

For a complete detailed course description, visit:

https://www.traininghott.ca/Courses/Critical-Thinking-Training-Course.htm

ADO

DEBUGGING

ITERATION

VISUAL STUDIO

LOGIC

SUBROUTINES

Visual Basic 6

DIALOGS

MENUS

Introduction to Visual Basic 6.0

Duration: 5 days | **Price:** CDN$3,275

Students Will Learn:

▶ Using Visual Basic's form designer to create user interfaces

▶ Writing Visual Basic code in modules and classes

▶ Creating dialogs, menus, windows and use Windows common dialogs

▶ Creating SDI and MDI applications

▶ Developing modular, reusable Visual Basic code and forms

▶ Reading and writing files, output to printers and use the Windows Registry

▶ Connecting to databases to insert, delete and edit records

▶ Testing and debug Visual Basic programs

▶ Using exception-handling techniques to develop fault-tolerant, reliable programs

Course Description: This hands on Visual Basic training course provides a thorough introduction to the use of Visual Basic 6. The main goal of the course is to enable the participant to create business applications with Visual Basic that utilize multi-tier application design strategy for maintainability and reusability. The hands on exercises are focused on solving commonly encountered business problems. The course introduces the Visual Basic Integrated Development Environment (IDE) and its wealth of development tools. Students will learn to build effective user interfaces with Visual Basic controls, forms, and other GUI components. The Visual Basic language is covered in detail.

Students will learn the use of the debugging and testing tools available in Visual Studio. Database access is introduced, using Visual Basic's ADO Control and data-aware components like the Data Grid and Data Environment Designer. The course includes an introduction to object-oriented programming techniques, and using the Packaging and Deployment tool to deliver completed applications to end users.

This course provides thorough coverage of the use of Visual Basic 6.0 using Visual Studio 98. Students requiring coverage of Visual Basic.NET using Visual Studio 2005 and later, should attend either the **Learning to Program with VB.NET** or **Windows Forms Programming Using Visual Basic.NET** course instead.

Course Prerequisites: Basic computer skills and familiarity with Microsoft Windows.

For a complete detailed course description, visit:

http://www.traininghott.ca/Courses/Visual-Basic-6-Programming-Course.htm

COST ESTIMATION

PROJECT DELIVERABLES

PROJECT SCOPE

ANALYZING RISK

PROJECT LIFE CYCLE

PROJECT MANAGEMENT

QUALITY ASSURANCE

PROJECT PHASES

Project Management

Duration: 4 days | **Price:** CDN$2,275

Students Will Learn:

- ▶ Defining the core concepts of Project Management
- ▶ Identifying and managing key stakeholders affected by a project
- ▶ Developing a project management plan
- ▶ Creating baselines for project management, and monitoring progress
- ▶ Breaking down the work involved to accomplish the goals of a project
- ▶ Realistically estimating the time and cost to complete a project
- ▶ Developing a project schedule
- ▶ Planning for quality of the project
- ▶ Planning corrective or proactive actions when a process is not within control
- ▶ Considering and using appropriate communications to stakeholders
- ▶ Using techniques to identify and plan for risks
- ▶ Planning and conducting the procurement process
- ▶ Closing projects and ensuring that lessons learned are documented
- ▶ Using computer software to track projects and generate reports
- ▶ Generating visual tools and charts
- ▶ Microsoft Project fundamentals

Course Description: Successfully managing a project requires effective planning and management using best practices in each phase of the project's life cycle. This course emphasizes practical approaches to effective project management consistent with the Project Management Body of Knowledge (PMBOK)®. The course thoroughly analyzes techniques for dealing with stakeholders throughout the project, managing scope, time, cost, resources, milestones, quality and risk.

Exercises provide practice creating baseline documents, forecasting staff requirements, managing communications, modularizing work assignments, sequencing activities, implementing quality assurance, managing risk, controlling scope, planning procurement and controlling costs.

Students will utilize hands on software as a practical introduction to tools available to assist with creating a project plan, setting up time lines and deliverables, enumerating and characterizing stakeholders, tracking costs, monitoring resources and managing the impact of changes to the plan. Participants are encouraged to discuss how the concepts and skills can be applied to project work in their application domain. The course includes sample PMP test questions and several hours of preparation for exams.

This class helps towards earning the required project management education hours needed for PMI® certifications such as Project Management Professional (PMP)® and Certified Associate in Project Management (CAPM)® as well as earning PDU's required for maintaining certification. Please visit the official PMI website for details on certification and PDU requirements.

Course Prerequisites: This course is designed for project managers, team members, and senior managers looking to acquire a firm grasp of specific steps in the project management process.

For a complete detailed course description, visit:

http://www.traininghott.ca/Courses/Project-Management-Training-Course.htm

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