

## TypeScript

**Duration: 2 Days**    **Course Code: TS**    **Delivery Method: Company Event**

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### Overview:

#### TypeScript Course Overview

TypeScript is a static type checker for JavaScript. Where JavaScript code is prone to failures at runtime, TypeScript flags errors at compile time. Angular applications are written in TypeScript by default, and TypeScript is supported by both React and Vue.

This course deals with all of the core TypeScript features including type inference, explicit typing, primitive types, object types, union types, aliases, interfaces, literal types, narrowing, function types, extending types, generics, type manipulation, and classes.

Exercises and examples are used throughout the course to give practical hands-on experience with the techniques covered.

#### Company Events

These events can be delivered exclusively for your company at our locations or yours, specifically for your delegates and your needs. The Company Events can be tailored or standard course deliveries.

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### Target Audience:

#### Who will the Course Benefit?

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### Objectives:

#### ■ Course Objectives

- This course aims to enable the delegate to build web applications using TypeScript. That is, the delegate ought to be able to write using TypeScript, that which they previously wrote using JavaScript, and in so doing produce code which is better and more robust.
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### Prerequisites:

- Delegates attending this course should be familiar with/able to write JavaScript code up to and including features detailed in ES6. This can be achieved via attendance on our JavaScript Developer course.
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### Follow-on-Courses:

#### Further Learning

- Developing Node.js Web Applications
  - Angular Development
  - React
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## Content:

### TypeScript Training Course Course Contents - DAY 1

#### Course Introduction

- Administration and Course Materials
- Course Structure and Agenda
- Delegate and Trainer Introductions

#### Session 1: INTRODUCTION

- TypeScript vs. JavaScript
- Installing TypeScript
- Static type checks
- Non-exception failures
- Compiling TypeScript to JavaScript
- Explicit types
- Strictness flags

#### Session 2: TYPES

- Primitive types
- Array types
- Variable and function type annotations
- Object types
- Union types
- Aliases
- Interfaces
- Assertions
- Literal types
- null and undefined types
- Other types

#### Session 3: NARROWING

- What is narrowing?
- Type guards
- Truthiness
- Equality
- Membership
- instanceof
- Assignments
- Control flow analysis
- Type predicates

#### Session 4: FUNCTIONS

- Function type expressions
- Call signatures
- Construct signatures
- Generic functions
- Generic constraints
- Optional parameters
- Optional parameters in callbacks
- Overloading
- Using this in functions
- Rest parameters and arguments (spread)
- Parameter destructuring
- void return type TypeScript Training Course Course Contents - DAY 2

#### Session 5: MORE ABOUT OBJECT TYPES

- Optional property modifier
- Readonly property modifier
- Index signatures
- Extending types
- Intersecting types
- Aliases or interfaces?
- Generic object types
- Array types
- Tuple types

#### Session 6: TYPE MANIPULATION

- What is type manipulation?
- Generics
- keyof
- typeof
- Indexed access types
- Conditional types
- Mapped types
- Utility types

#### Session 7: CLASSES

- Class members
- Fields
- Constructors
- Methods
- Getters and setters
- Class heritage
- extends
- implements
- Member visibility
- Static members
- Generic classes
- Handling this
- Arrow functions
- Parameter properties
- Class expressions
- Abstract classes and members
- Relationships between classes

#### Session 8: BEST PRACTICES

- General types
- Generics
- The any type
- Callback types
- Function overloads
- Others

## Further Information:

For More information, or to book your course, please call us on 0800/84.009

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[www.globalknowledge.com/en-be/](http://www.globalknowledge.com/en-be/)