**Day 1: Design Patterns**

* Introduction to Design Patterns
* Creational Patterns
* Singleton, Factory, Builder
* Structural Patterns
* Adapter, Decorator, Composite
* Exercise: Implement creational and structural design patterns

**Day 2: XML Basics**

* Introduction to XML
* XML Syntax and Structure
* XML Elements and Attributes
* Creating XML Documents
* Validating XML with DTD and XSD
* Exercise: Create and validate simple XML documents

**Day 3: Jenkins Fundamentals**

* Introduction to Continuous Integration (CI)
* Setting Up Jenkins
* Creating Jenkins Jobs
* Jenkins Plugins and Configuration
* Building and Testing with Jenkins
* Exercise: Configure and run Jenkins jobs

**Day 4: TeamCity Introduction**

* Overview of TeamCity
* Installation and Setup
* Building and Running Builds
* Integrating Version Control with TeamCity
* Exercise: Set up and configure builds in TeamCity

**Day 5: BitBucket and Version Control**

* Introduction to Version Control
* Setting Up BitBucket
* Git Basics
* Git Workflows (Branching, Merging, Pull Requests)
* Collaborative Development with BitBucket
* Exercise: Collaborative Git workflows with BitBucket

**Day 6: MongoDB Basics**

* Introduction to NoSQL Databases
* Installing MongoDB
* MongoDB Data Model (Documents, Collections)
* CRUD Operations in MongoDB
* Querying Data
* Exercise: Perform CRUD operations and queries in MongoDB

**Day 7: MongoDB Additional Topics**

* Indexing in MongoDB
* Aggregation Framework
* Transactions and Atomicity
* Data Modeling in MongoDB
* Scaling and Replication
* Exercise: MongoDB queries and data modeling

**Day 8: Cassandra Basics**

* Introduction to Apache Cassandra
* Data Modeling in Cassandra
* Cassandra Query Language (CQL)
* Exercise: Create and query data in Cassandra

**Day 9: Additional Cassandra Topics**

* Tuning and Optimization
* Cassandra Security
* Managing Failures and Replication
* Exercise: Advanced Cassandra data modeling and optimization

**Day 10: Continuous Integration and Final Project**

* Integrating Jenkins/TeamCity with Version Control and Testing
* Final Project: Students work on practical projects incorporating Jenkins/TeamCity, Version Control, and MongoDB/Cassandra concepts.