**Camunda 8 Course Content Outline**

**Total Duration**: 10 Days  
**Hours per Day**: 4 Hours  
**Total**: 40 Hours

**Prerequisites**

Before starting the course, participants should have the following prerequisites:

1. **Basic Understanding of BPM & Workflow Automation**: Familiarity with business process fundamentals.
2. **Knowledge of BPMN**: Understanding BPMN notations is recommended.
3. **Familiarity with Programming**: Basic programming skills in languages relevant to the lab sessions (e.g., JavaScript, Python, .NET).
4. **Basic Understanding of Cloud Concepts**: Familiarity with cloud deployments and microservice architecture.

**Lab Setup**

Participants need to prepare their local environment before the course. The following steps outline the necessary setup:

1. **Tools Installation**:
   * **Camunda 8**: Install Camunda Cloud or set up a self-managed instance.
   * **Java Development Kit (JDK)**: version 11 or later.
   * **Node.js**: Install the latest LTS version.
   * **Python**: Latest version for integration labs.
   * **.NET SDK**: For C# related labs.
   * **Postman**: For API testing.
   * **Git**: Version control for code samples.
   * **IDEs**: Visual Studio Code, Eclipse, or IntelliJ IDEA for coding.
2. **Access Credentials**: Create accounts and access credentials for any needed integrations (e.g., Keycloak, Azure Active Directory).
3. **Kubernetes Tools**: Install kubectl for Kubernetes deployments if relevant.

**Course Schedule**

**Day 1: Introduction to Camunda 8**

* **Hour 1**: Introduction to BPM and Workflow Automation
  + Overview of BPM and its importance in organizations.
  + Process Modeling with BPMN 2.0
  + Process Automation with BPMN 2.0
  + Patterns and Best Practices
  + Components Overview
* **Hour 2**: What's New in Camunda 8 vs. Camunda 7
  + Differences in architectural design, features, and capabilities.
* **Hour 3**: Ideal Use Cases of Camunda
  + Discuss when to choose Camunda for workflows.
* **Hour 4**: Limitations of Camunda
  + Situations where Camunda may not be the best fit.

**Day 2: Camunda 7 to 8 Upgrade**

* **Hour 1**: Preparing for the Upgrade
  + Understanding differences between Camunda 7 and 8.
* **Hour 2**: Upgrade Process Overview
  + Steps for upgrading from Camunda 7 to 8.
* **Hour 3**: Migration of BPMN and DMN
  + Handling migration challenges and strategies.
* **Hour 4**: Hands-On Lab
  + Practice upgrading a simple Camunda 7 process to Camunda 8.

**Day 3: Performance Tuning and Troubleshooting**

* **Hour 1**: Performance Tuning in Camunda 8
  + Techniques for optimizing process performance.
* **Hour 2**: Debugging Techniques
  + Common issues and debugging strategies.
* **Hour 3**: Troubleshooting Workflow Issues
  + Hands-on exercise on resolving common problems.
* **Hour 4**: Q&A and Practical Troubleshooting Session
  + Interactive session to identify and resolve issues.

**Day 4: Kubernetes Deployment**

* **Hour 1**: Overview of Kubernetes and Deployment Options
  + Differences between SaaS and self-managed deployments.
* **Hour 2**: Setting Up Camunda on Kubernetes
  + Step-by-step guide for deploying Camunda on Kubernetes.
* **Hour 3**: Hands-On Lab
  + Introduction into Decision Model & Notation, and Decision Tables
  + Expressions with FEEL
  + Hit Policies and Decision Design
  + Decision Execution and Decision Engines
  + DMN in the context of BPMN
  + Complex Decisions with Decision Requirements Diagrams
  + Decision Flows
  + Deploying a sample Camunda BPMN in Kubernetes.
* **Hour 4**: Best Practices for Managing Kubernetes Deployments
  + Tips for maintaining performance and scalability.

**Day 5: Working with Tasks and Subprocesses**

* **Hour 1**: Types of Tasks in Camunda
  + Overview and use cases of user tasks, service tasks, and more.
* **Hour 2**: Subprocesses, Concurrency, and Parallel Execution
  + Explanation and examples.
* **Hour 3**: Hands-On Lab
  + Create a BPMN model utilizing subprocesses and parallel execution.
* **Hour 4**: Review and Discussion of Lab Results
  + Discuss the outcomes of the lab exercises.

**Day 6: Embedding Camunda in Applications**

* **Hour 1**: Embedding Camunda in Java Applications
  + How to expose BPMN/DMN models to end users.
* **Hour 2**: Integrating UI with Camunda
  + Implementing custom UIs for BPMN and DMN models.
* **Hour 3**: Keycloak and Active Directory Integration
  + Setting up SSO using Keycloak and Azure Active Directory.
* **Hour 4**: Hands-On Lab
  + Implementing integration of Camunda within a sample application.

**Day 7: Integrating Camunda with Different Technologies**

* **Hour 1**: Overview of Connector Capabilities in Camunda 8
  + Understanding built-in connectors.
* **Hour 2**: Integrating NodeJS, ReactJS with Camunda
  + Practical examples of using REST API with NodeJS and React.
* **Hour 3**: Implementing Python and .NET Integrations
  + Hands-on examples of calling Camunda from Python and .NET.
* **Hour 4**: Exercise: Create a REST API Interaction with Camunda
  + Workshop on building a simple application with various integrations.

**Day 8: Workflow Execution and API Interactions**

* **Hour 1**: Executing Workflows and Tasks Through REST APIs
  + How to start and manage instances via Postman.
* **Hour 2**: API Testing and Practical Examples
  + Hands-on with Postman for workflow execution.
* **Hour 3**: BPMN Elements in Camunda 8
  + Detailed explanation of BPMN elements and their usage.
* **Hour 4**: Hands-On Lab
  + Exploring various BPMN elements in practice.

**Day 9: Advanced BPMN Concepts and Microservices**

* **Hour 1**: Understanding Different Gates, Events, and Task Types
  + Deep dive into gateways, events, and their practical applications.
* **Hour 2**: Orchestrating Cross-Product Processes
  + Use cases for using Camunda as an orchestration tool.
* **Hour 3**: Implementing Microservices Saga Pattern
  + Discussion of design and implementation with Camunda.
* **Hour 4**: Hands-On Lab
  + Create a cross-service communication BPMN model.

**Day 10: Deployment and Future Directions**

* **Hour 1**: Deploying BPMNs and DMNs via CI/CD Pipelines
  + Best practices for deployment automation.
* **Hour 2**: Overview of AI Capabilities in Camunda
  + Exploring future possibilities and AI integration.
* **Hour 3**: Course Review and Key Takeaways
  + Recap of essential concepts covered during the course.
* **Hour 4**: Open Q&A and Next Steps
  + Discussion of further learning opportunities and resources.

**Conclusion**

This 10-day course will equip participants with the necessary skills and knowledge to leverage Camunda 8 effectively, covering everything from foundational concepts to advanced integrations. The hands-on labs ensure practical experience, making attendees confident in deploying and managing Camunda-based solutions post-course. Adjustments can be made based on the audience's expertise and organizational requirements.