High-Level Program Design

Modern Engineer Accelerator

GENERAL ASSEMBLY

Scale Engineering Capabilities

Modern Engineer Accelerator

Instructor-Led | Onsite or Remote | ~35 Hours

Overview:

Build strong foundations in the key components of modern software engineering. This program builds on coding knowledge to equip participants with knowledge and experience in the next-generation tools and concepts required to build and deploy applications.

Prerequisites:

Working knowledge of software development fundamentals, including Javascript, Node.js, and basic Command Line

Business Outcomes:.

- Build engineering capacity within your tech team.
- Accelerate your digital transformation and cloud strategic initiatives
- Transform talent into job-ready software engineers.
- Solve real engineering problems

~35 Hours of Modern Engineering Training

Cloud Infrastructure	Containerisation	Microservices	Continuous Integration	Test Driven Development
Dive into **twelve-factor design** and learn the benefits of adopting a cloud-based infrastructure.	**Use Docker and Kubernetes containers** and understand how they fit into modern development workflows.	Explain the benefits of microservice architecture and **build scalable microservice applications.**	**Automate testing** and deployments by using continuous integration pipelines in Jenkins	**Increase test coverage** for your code to build and maintain confidence with unit and integration tests.

Why Modern Engineering Accelerator?

- **Validated tools and approaches** for modern engineering techniques, developed in partnership with top organizations.
- **Built with subject matter experts** with experience in software development, devops, cloud and cybersecurity
- 40 hours of expert-led, hands-on learning, including:
    - **Projects and assignments** that mimic real-world tasks and workflows.
    - **Case studies and examples** that demonstrate how businesses use the concepts.
    - **Regular feedback and touchpoints** with instructors and peers to ensure students meeting learning goals.

Learner Personas for Modern Engineer Accelerator

This product is specifically designed for the following audience:

- **Early to mid level developers** and other **technical professionals** who need to broaden their knowledge of modern engineering practices
- **Tenured software engineers/managers** who are out of touch with modern practices
- **Technical Graduates** who are onboarding to a new role within the company

Anatomy of a Modern Engineer Accelerator

Unit	Summary	What's Covered
Unit 1: Command Line Interface with Linux & Bash	Practice working with command line and reinforce Unix Shell fundamentals	• Summarize a basic file system structure, including absolute and relative paths • Navigate and modify files / directories via the Terminal window • UNIX permissions system
Unit 2: Distributed Version Control with Git & GitHub	Work with both local and remote Git repositories and with features that enable team collaboration like branching and resolving merge conflicts.	• Explain essential git commands like init, add, commit, push, pull & clone • Distinguish between local and remote repositories • Create, copy, and delete repositories locally, or on GitHub • Fork and clone remote repositories
Unit 3: Cloud Infrastructure	Understand the benefits of adopting a cloud-based infrastructure and the different models of delivering cloud services.	• Cloud infrastructure concepts and benefits • Distinguishing between cloud service models • 12 factor application design

Anatomy of a Modern Engineer Accelerator

Unit	Summary	What's Covered
Unit 4: Containers with Docker and Kubernetes	Use containers and understand how they fit into modern development workflows.	• How Docker works. • How Kubernetes works. • Deploying applications using Docker and Kubernetes
Unit 5: Microservices Architecture	Explain the benefits of microservice architecture and build scalable microservice applications.	• Microservice vs. monolith architecture. • Designing good microservices. • Splitting a monolith into microservices • Running microservices on Docker

Anatomy of a Modern Engineer Accelerator

Unit	Summary	What's Covered
Unit 6: Continuous Integration with Jenkins	Automate your testing and deployments by using continuous integration pipelines in Jenkins.	• Continuous integration and delivery basics. • Integration testing. • Building Jenkins pipelines.
Unit 7: Agile and Extreme Programming	Use Agile and XP workflows to manage development workflows more efficiently.	• DevOps introduction. • Agile principles and methods. • User stories and acceptance criteria. • Extreme programming principles.
Unit 8: Test Driven Development	Increase test coverage for your code to build and maintain confidence with unit and integration tests.	• Test driven development principles. • Types of application testing. • Introduction to Jest

Tools Used in the Course

Tools/Tech Covered:

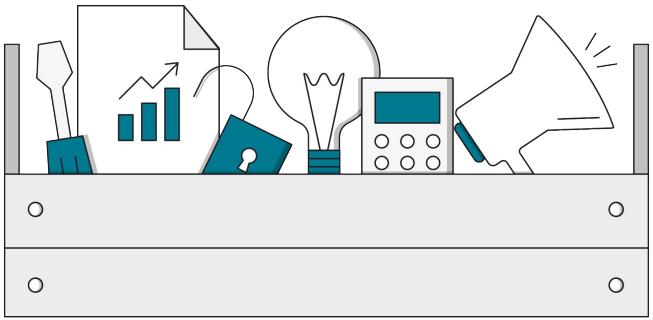
- OS: Linux
- Javascript
- Node.Js
- Git
- VS Code
- Docker
- Kubernetes
- Jenkins
- Jest
- Cloud Demo / 'Lab' with AWS

Available on Request:

- Azure
- Google Cloud
- Terraform

Tools Used for the Classroom

- Slack for communication
- Github for course materials
- Zoom for class sessions (if remote)

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