



# MLOps Certification Course Curriculum

Become a Production-ready MLOps Engineer through Hands-on practical training, Real-world projects and Industry-oriented workflows used in modern AI and Machine Learning environments

**MLOps Course - 70+ Hours  
Comprehensive Master Course**

**Pre-requisite Courses  
DevOps (60 Hours) - FREE  
Python (30 Hours) - FREE**

**Live & Self-Paced  
Weekday & Weekend**

**4+ Production-grade  
Projects**

**All Classes are Recorded  
For Future Revision**

**12+ Years Industry Experience  
In Training**

## **DURATION**

3 Months

## **TRAINER**

12+ Years Experienced  
Professional Coaches

## **MODE**

Live & Classroom  
Weekend / Weekday

## **COURSE ADVISOR CONTACT**

+91 7026 595959

## Final Outcome

By the end of this course, students will be able to confidently work on real-world MLOps workflows.

Students will learn how to:

- Build reproducible ML pipelines with proper experiment tracking, version control, and workflow automation.
- Use industry-relevant MLOps tools such as MLflow, DVC, DagsHub, Airflow, Kubeflow, Grafana, Prometheus, AWS SageMaker, VertexAI, Docker, Kubernetes, feature stores.. Etc.
- Package machine learning models as APIs and deploy them in production-like environments.
- Create CI/CD pipelines for ML projects using GitHub Actions or Jenkins.
- Automate model training, testing, packaging, deployment, and rollback processes.
- Monitor deployed models for performance, prediction quality, data drift, and model degradation.
- Understand how DevOps practices are adapted for machine learning systems.
- Work on 4+ end-to-end portfolio projects covering training, tracking, versioning, deployment, monitoring, and automation.

By completing this program, students will be prepared to handle practical MLOps responsibilities expected in modern AI/ML teams and showcase production-ready projects in interviews.

## Course Structure

### Phase 1

DevOps Foundations (Pre-requisite)  
(FREE - Self-paced - 60 Hours)

### Phase 2

Python for MLOps (Pre-requisite)  
(FREE - Self-paced - 30 Hours)

### Phase 3

AI & ML Fundamentals  
(Live, Instructor-led - 5 Hours)

### Phase 4

MLOps Tools & Pipelines  
(Live, Instructor-led - 50 Hours)

### Phase 5

Monitoring, Observability & Governance  
(Live, Instructor-led - 5 Hours)

### Phase 6

Capstone Projects & Interview Prep  
(Live, Instructor-led - 10 Hours)

## Typical MLOps Workflow

Data Collection → Data Processing → Model Training → Experiment Tracking →  
Model Versioning → Model Deployment → Monitoring → Retraining

## Phase 1 — DevOps Foundations (60 Hours) (Self-paced) - FREE Course

**Objective:** Ensure familiarity with DevOps concepts that underpin MLOps. DevOps is Pre-requisite for MLOps.

### Topics

- Linux essentials
- Git commands, GitHub, branching strategies
- Docker: images, containers, multi-stage builds, and best practices
- Kubernetes basics: pods, deployments, services, and namespaces
- CI basics: GitHub Actions / Jenkins pipelines for unit tests and builds
- Cloud basics: provisioning compute/storage (AWS/GCP/Azure overview)

**Hands-on:** Containerize & deploy Jinglegurus e-commerce microservice application

## Phase 2 — Python for MLOps (30 Hours) (Self-paced) - FREE Course

**Objective:** Bring everyone to a strong, practical level in Python and data tooling used in MLOps.

### Topics

- Python core: functions, OOP, modules, virtual environments, packaging
- Data stack: NumPy, Pandas, data cleaning, EDA, visualization (matplotlib/seaborn)
- ML starter: scikit-learn pipelines, model persistency (joblib), reproducibility
- Environments: conda/venv, pip, dependency management

**Hands-on:** Build a data preprocessing pipeline and scikit-learn model; package code as a module with unit tests.

## Phase 3 — AI & ML Fundamentals (5 Hours)

### (Live, Instructor-led)

**Objective:** Cover the ML model development lifecycle and key concepts MLOps engineers must understand.

#### Topics

- Intro to AI, ML, Deep Learning, LLMs & Agentic AI
- ML model lifecycle
- Supervised/unsupervised learning, evaluation metrics, cross-validation
- Feature engineering, feature stores (why they matter)

**Hands-on:** Train/evaluate regression & classification models; use MLflow for experiment tracking locally.

## Phase 4 — Core MLOps Tools & Pipelines (50 Hours)

### (Live, Instructor-led)

**Objective:** Learn and integrate key MLOps tools to build repeatable, deployable pipelines.

#### Topics & Tools

- MLflow — experiment tracking, model registry, packaging
- DVC & DagsHub — data and model versioning, reproducible pipelines
- Feature store concepts (Feast overview)
- Workflow orchestration: Airflow and Kubeflow Pipelines
- Model serving: batch vs online, REST/gRPC, FastAPI/Flask
- K8s deployments for model serving (KServe)
- CI/CD for ML: GitOps, GitHub Actions/Jenkins + automated model promotion
- Cloud deployment patterns (AWS SageMaker / GCP Vertex AI Pipelines)
- Prometheus & Grafana - Monitoring and observability for ML systems

## Phase 4 — Hands-on Projects

- JingleKart AI E-Commerce Platform ( Similar To Flipkart )
- EstateIQ Real Estate Prediction System ( Similar to Zillow )
- CreditWise Fraud Detection ( Similar to PayPal / American Express Risk Systems )
- One Trending Project ( Based on current market trends )

## Phase 5 — Monitoring, Observability & Governance (5 Hours) (Live, Instructor-led)

**Objective:** Production concerns — monitoring, drift detection, and governance.

### Topics

- Metrics and logging for ML (Prometheus, Grafana)
- Model monitoring: performance tracking, data drift, concept drift
- Model governance: lineage, reproducibility, compliance basics (audit trails)

**Hands-on:** Instrument a model service with Prometheus + Grafana; build a simple data-drift detector with alerting mock.

## Phase 6 — Capstone Projects & Interview Prep (10 Hours) (Live, Instructor-led)

**Objective:** Consolidate learning through real-world projects and interview preparation.

### Capstone Options

- Project:1 - JingleKart AI E-Commerce Platform ( Similar To Flipkart )
- Project:2 - EstateIQ Real Estate Prediction System ( Similar to Zillow )
- Project:3 - CreditWise Fraud Detection ( Similar to PayPal / American Express Risk Systems )
- Project:4 - Trending Project ( Based on current market trends )

### Deliverables

- Project code on GitHub with README and deployment instructions
- Interview kit: Q&A, whiteboard exercises, walkthrough scripts

## Assessment, Certification & Career Support

- Certificate of completion
- Weekly quizzes and hands-on assignments after each phase
- Mid-course project review and end-course capstone evaluation by instructors
- Career support: resume review, mock interviews, and job-referral guidance

## Industry MLOps Toolchain Covered

Standardized stack supporting the full MLOps lifecycle — development, tracking, versioning, deployment, monitoring, and continuous delivery.

Category	Tool	Description
Programming	Python 3.9+	Core ML language; venv/conda for reproducibility
Version Control	Git & GitHub Actions	Version control + CI/CD for ML pipelines
Containerization	Docker	Portable ML environments for consistent deployment
Orchestration	Kubernetes	Scale containerized ML workloads in production
Experiment Tracking	MLflow	Experiments, hyperparameters, model registry
Data & Model Versioning	DVC & DagsHub	Data and Model versioning, Reproducible Pipelines

Category	Tool	Description
Workflow Orchestration	Apache Airflow	Schedule and monitor ML pipelines (DAGs)
MLOps Platform	Kubeflow	K8s-native ML development, orchestration, deployment
Model Serving	FastAPI	Serve ML models as high-performance REST APIs
Prototyping UI	Streamlit	Interactive dashboards and ML demo web apps
Monitoring	Prometheus	Time-series metrics collection
Visualization	Grafana	Dashboards for ML and infrastructure metrics
Cloud (AWS)	SageMaker	Build, train, tune, deploy ML on AWS
Cloud (GCP)	Vertex AI	Unified AI platform on Google Cloud

These tools collectively support the entire MLOps lifecycle — from development, tracking, and versioning to deployment, monitoring, and continuous delivery.

## Enroll in the MLOps Master Course

Production-ready training with real-world projects, mentor support, and career assistance.

### Trainer

12+ Years Experienced  
Professional Coaches

### Contact - Course Advisor

+91 7026 595959

### Website

<https://www.jingleaiacademy.com>

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