# Preparing for Professional Machine Learning Engineer

**Category:** AI, Data & Analytics | **Vendor:** Google Cloud

**Duration:** 8.00 hours (1 days) **6.5 CPD Hours** **Rating:** ⭐ 4.6 (5,878 reviews)

## Course Information

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| **Delivery Format:** | Instructor Led - Online |
| **Certification:** | Google Cloud Certified: Professional Machine Learning Engineer |
| **Related Exam:** | PMLE |

## Course Overview

This course helps learners create a study plan for the PMLE (Professional Machine Learning Engineer) certification exam. Learners explore the breadth and scope of the domains covered in the exam. Learners assess their exam readiness and create their individual study plan.

## About This Course

This course helps learners create a study plan for the PMLE (Professional Machine Learning Engineer) certification exam. Learners explore the breadth and scope of the domains covered in the exam. Learners assess their exam readiness and create their individual study plan.

## Who Should Attend

- Data scientists and machine learning engineers, or anyone seeking an ML certification on Google Cloud

## Learning Outcomes

**Upon successful completion of this course, participants will be able to:**

- List the domains covered on the Professional Machine Learning Engineer (PMLE) certification exam.
- Identify gaps in your knowledge and skills for each domain.
- Identify resources and learning assets available to develop your knowledge and skills.
- Create a study plan to prepare for the PMLE certification exam.

## Detailed Course Outline

Module 0 - Introduction

Topics

- Course agenda
- Module agenda
- The value of Google PMLE certification
- The role of an PMLE
- About the Cymbal Retail (fictional company used in the course)
- Resources to support your certification journey
- Creating a study plan

Objectives

- Explain the value of the Google PMLE certification
- Describe the role of a Professional Machine Learning Engineer

- Explain what Cymbal Retail is, and how the company will be used throughout the course.
- Identify resources to support your certification journey

Module 1 - Architecting low-code AI solutions

Topics

- Ira needs to understand customer segments using BigQuery and a clustering model.
- Sasha needs to predict customer value using AutoML Cymbal Retail’s customer dataset.
- Taylor needs to build a conversational AI assistant for customers using Vertex AI Agent Builder and retrieval-augmented generation (RAG)
- Diagnostic questions
- Review and study planning

Objectives

- Identify your level of knowledge in developing and implementing BigQuery ML and AutoML machine learning solutions.
- Determine the skills needed to select appropriate ML APIs, prepare data effectively, and build custom models using AutoML.

Activities

- Lecture
- Diagnostic questions
- Quiz

Module 2 - Collaborating within and across teams to manage data and models

Topics

- Use Google Cloud's products and Cymbal Retail's rich data to design a model to predict which high-value customers are likely to stop purchasing (also known as customer churn).
- Answer diagnostic questions.
- Review the information and plan your study.

Objectives

- Identify your level of knowledge in exploring, preprocessing, and managing organization-wide data.
- Identify your level of knowledge in addressing privacy implications and leveraging tools like Vertex AI Feature Store.
- Determine the skills needed to prototype models using Jupyter notebooks on Google Cloud.
- Determine the skills needed to select appropriate backends, implement security best practices, and integrate with code repositories.

Activities

- Lecture
- Diagnostic questions
- Quiz

Module 3 - Scaling prototypes into ML models

Topics

- Use Google Cloud's products and Cymbal Retail's rich data to build and scale customer churn prototype into a production-ready model
- Answer diagnostic questions.
- Review the information and plan your study.

Objectives

- Identify your level of knowledge in scaling ML prototypes into production-ready models
- Identify your level of knowledge in selecting appropriate ML frameworks, model architectures, and modeling techniques based on interpretability requirements.
- Determine the skills needed to train models effectively, including organizing and ingesting training data on Google Cloud.
- Determine the skill needed to utilize distributed training techniques, perform hyperparameter tuning, and troubleshoot training failures.

Activities

- Lecture
- Diagnostic questions
- Quiz

Module 4 - Serving ML models

Topics

- Use Google Cloud's products and Cymbal Retail's rich data to deploy a customer churn model and use it in production for inference.
- Answer diagnostic questions.
- Review the information and plan your study

Objectives

- Identify the level of knowledge needed to effectively serve models in production.
- Identify the level of knowledge needed to select between batch and online inference, utilize various serving frameworks, organize a model registry, and conduct A/B testing for model optimization.
- Determine the skills needed to scale online model serving, including leveraging Vertex AI Feature Store.
- Determine the skills needed to manage public and private endpoints, choose appropriate hardware, optimize serving backends for throughput, and fine-tune models for optimal performance in production.

Activities

- Lecture
- Diagnostic questions
- Quiz

Module 5 - Automating and orchestrating ML pipelines

Topics

- Use Google Cloud’s products to orchestrate the entire machine learning pipeline for seamless execution and continuous improvement with customer churn.
- Answer diagnostic questions.
- Review the information and plan your study.

Objectives

- Identify the level of knowledge needed to develop and maintain end-to-end ML pipelines.
- Identify the level of knowledge needed to validate data and model, consistent preprocessing, hosting options, component identification, parameterization, triggering mechanisms, compute needs, orchestration strategies.
- Determine the skills needed to automate model retraining, including establishing retraining policies.
- Determine the skills needed to implement CI/CD model deployment, and track and audit metadata (model artifacts, versions, data lineage).

Activities

- Lecture
- Diagnostic questions
- Quiz

Module 6 - Monitoring ML Solutions

Topics

- Use Google Cloud’s products to ensure the customer churn model remains robust, reliable, and

aligned with Google’s Responsible AI principles.

- Answer diagnostic questions.
- Review the information and plan your study.

Objectives

- Identify the level of knowledge needed to assess and mitigate risks in ML solutions.
- Identify the level of knowledge needed to build secure ML systems, align with responsible AI practices, evaluate solution readiness, and utilize model explainability on Vertex AI.
- Determine the skills needed to monitor, test, and troubleshoot ML solutions.
- Determine the skills needed to establish continuous evaluation metrics, monitor for training-serving skew and feature drift, compare model performance against baselines, and investigate common training and serving errors.

Activities

- Lecture
- Diagnostic questions
- Quiz

Module 7 - Your next steps

Topics

- A sample study plan for the exam
- How to register for the exam

Objectives

- Review a sample study plan for the exam

- Learn how to register for the exam

Activities

- Create your study plan for the exam

- Identify a date to take the exam based upon your plan

- Register for the exam, Introduction, Architecting low-code AI solutions, Collaborating within and across teams to manage data and models, Scaling prototypes into ML models, Serving ML models, Automating and orchestrating ML pipelines, Monitoring ML Solutions

## 📚 Certification Path

Google Cloud Certified: Professional Machine Learning Engineer

Exam: PMLE

**Skills You Will Learn:**

- List the domains covered on the Professional Machine Learning Engineer (PMLE) certification exam.<br>- Identify gaps in your knowledge and skills for each domain.<br>- Identify resources and learning assets available to develop your knowledge and skills.<br>- Create a study plan to prepare for the PMLE certification exam.

# Frequently Asked Questions

### Q: What delivery options are available for Preparing for Professional Machine Learning Engineer?

We offer multiple delivery formats:

- Live Instructor-Led Classroom Online (Virtual/Live Online)
- Traditional Instructor-Led Classroom Training (ILT)
- On-site delivery at your offices anywhere in United Kingdom
- Private dedicated courses customized for your team

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### Q: What certification does this course prepare me for?

The Preparing for Professional Machine Learning Engineer course helps prepare you for the Google Cloud Certified: Professional Machine Learning Engineer certification path.

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### Q: Which exam does this course prepare me for?

This course prepares you for the PMLE official exam. You can take this exam at any exam center across United Kingdom including London, Manchester, Birmingham, Edinburgh, or live online wherever you are located.

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### Q: How many CPD hours does this course provide?

The 1-day Preparing for Professional Machine Learning Engineer course provides up to 6.5 CPD hours of structured learning. CPD certificates can be provided upon request.

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### Q: What is the duration of the Preparing for Professional Machine Learning Engineer training?

The training takes place over 1 day(s), with each day lasting approximately 8.00 hours including breaks for lunch and refreshments.

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### Q: Do you provide corporate training for Preparing for Professional Machine Learning Engineer?

Yes, we provide corporate training, dedicated training, and closed classes for Preparing for Professional Machine Learning Engineer. Training can take place anywhere in United Kingdom including London, Manchester, Birmingham, Edinburgh, or live online allowing teams from across United Kingdom or internationally to attend.

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### Q: What related terms do people search for?

Popular related searches include: Preparing for Professional Machine Learning Engineer, AI & Data Science, PPMLE, Google Cloud, vILT

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### Q: Why choose Nexus Human for Preparing for Professional Machine Learning Engineer?

Nexus Human is recognized as one of the leading training providers. Our trainers have won multiple awards including:

- Small Firms Best Trainer Award
- National Training Partner of the Year (Ireland) - Multiple Years
- Global Top 30 Instructor Awards (2012, 2019, 2021)
- Tech Excellence Award Nominations
- Learning Performance Institute (LPI) External Training Provider Sponsor 2024

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### Q: Are there any discount codes available?

Yes! Use discount code **PENPAL5** when booking your Preparing for Professional Machine Learning Engineer training. Please note that only one discount code can be used per booking and cannot be combined with other special offers.


## Nexus Human

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