Course Syllabus: AI Product Manager

Course Title: AI Product Management: From Strategy to Shipment

Target Audience: This course is for experienced product managers, product owners, and business leaders who want to specialize in the unique challenges of building and launching AI-powered products. A strong understanding of the product development lifecycle and business strategy is essential. No coding experience is required, but a technical curiosity is a must.

Course Level: Advanced.

Duration: 10 Weeks

Course Description: This curriculum is a deep dive into the specialized discipline of AI Product Management. It is designed to equip you with the skills to lead the development of AI products, from ideation to post-launch. You will learn how to identify viable AI use cases, manage the unique risks of machine learning projects, and navigate the complex ethical and technical landscape. The course focuses on the intersection of product strategy, data science, and user experience to build AI products that deliver measurable business value and meet user needs.

Learning Objectives

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

- Identify high-impact opportunities to apply AI and machine learning to solve real-world problems.
- Develop a product strategy and roadmap tailored for AI-driven products.
- Translate business needs into clear, actionable requirements for data science and engineering teams.
- Understand the machine learning development lifecycle and its key stages, including data collection, model training, and deployment.
- Mitigate ethical risks and biases in AI systems and design for fairness and transparency.
- Define and track success metrics for AI products, balancing business value with model performance.
- Lead cross-functional teams, including data scientists, engineers, and designers, to ship successful AI products.

Course Structure: A Step-by-Step Learning Path

Part 1: Foundations of AI & Strategy (Weeks 1-3)

This section provides a non-coding overview of AI concepts and focuses on the strategic thinking required to build an AI product vision.

Week 1: AI for Product Managers

- The AI landscape: distinguishing between AI, Machine Learning, and Generative AI.
- Understanding the core mechanics of models: how they learn and the difference between deterministic and probabilistic systems.
- The role of the AI Product Manager: bridging business needs with technical possibilities.
- **Case Study Analysis:** Deconstruct a successful AI product and identify its core components.

Week 2: AI Product Strategy & Discovery

- How to identify a good problem for AI vs. a traditional software solution.
- The "AI-first" mindset: thinking about data and learning from the beginning.
- Conducting market research and competitive analysis for AI products.
- **Hands-on Project:** Create a product vision and business case for a new AI-powered feature.

Week 3: The ML Development Lifecycle

- The stages of an ML project: ideation, data collection, model building, and deployment.
- The importance of data: understanding data quality, data labeling, and its impact on model performance.
- Key technical concepts: model evaluation metrics (precision, recall, accuracy) and their business implications.
- **Hands-on Activity:** Analyze a sample dataset and define data requirements for a hypothetical model.

Part 2: Execution & Product Development (Weeks 4-7)

This section focuses on the practical aspects of managing an AI product from a strategic perspective.

Week 4: AI-Native UX Design

- Designing user experiences for non-deterministic systems.
- Building trust and transparency in AI products.
- The importance of feedback loops and continuous learning for the model.
- **Hands-on Project:** Design a user interface for an AI feature and define the user's journey, including a plan for managing user expectations.

Week 5: Prioritization & Roadmapping

- Unique challenges of roadmapping for AI: dealing with model uncertainty and research phases.
- Techniques for prioritizing AI features based on feasibility, data availability, and business impact.
- Writing effective product requirements documents (PRDs) for AI projects.
- **Hands-on Project:** Create an AI-specific product roadmap for the next 6-12 months.

Week 6: MLOps & Deployment

- Understanding MLOps: the intersection of ML, DevOps, and data engineering.
- Key stages: model deployment, monitoring, and maintenance.
- The role of the PM in monitoring production systems for model drift and data quality issues.
- **Hands-on Activity:** Define the monitoring metrics and a deployment strategy for an AI model.

Week 7: Generative AI for PMs

- A deep dive into Generative AI models and their applications.
- Prompt engineering for product managers: using AI to automate tasks like competitive analysis, user research, and report generation.
- The strategic role of Generative AI in creating new product categories.
- **Hands-on Project:** Use a generative AI tool to create a user persona and competitive analysis report for your product idea.

Part 3: Advanced Topics & Leadership (Weeks 8-10)

This final section covers the critical leadership, ethical, and career skills needed to excel as an AI Product Manager.

Week 8: Ethics and Responsible AI

- The ethical landscape: bias, fairness, transparency, and accountability.
- Identifying and mitigating bias in data and algorithms.
- Designing products with privacy and data security in mind.
- **Hands-on Activity:** Conduct an ethical risk assessment for an AI product.

Week 9: AI Monetization & Business Value

- How to measure the business impact of an AI product.
- Defining success metrics that go beyond model accuracy.
- Monetization strategies for AI products: value-based pricing, subscription models, and API access.
- **Hands-on Project:** Develop a monetization model and a set of key performance indicators (KPIs) for your AI product.

Week 10: Final Capstone Project & Career Skills

- **Capstone Project:** Present a comprehensive product strategy for an AI product, including the product vision, roadmap, ethical considerations, and monetization strategy.
- Building a professional portfolio and resume tailored for AI Product Manager roles.
- Interview preparation: common questions and how to demonstrate AI fluency.

Assignments & Grading

- **Weekly Hands-on Labs & Activities:** 20%
- **Intermediate Projects (Weeks 2, 5, 7):** 30%
- **Final Capstone Project:** 40%
- **Peer Review & Class Participation:** 10%