# CourseGPT: An AI-Powered Course Authoring Platform

# Introduction

CourseGPT is an intelligent authoring tool designed to help educators and content creators efficiently create, organize, and enhance educational content. This innovative platform leverages AI to transform the course creation process by providing AI-assisted content generation, structured templates, and intuitive organization tools.

# Problem Statement

Today’s educational content creators face several key challenges:

- Creating consistent, high-quality course materials is time-consuming.

- Maintaining structural coherence across lessons can be difficult, especially in large or evolving courses.

- Designing engaging activities and assessments requires specialized pedagogical expertise.

- Scaling content production without compromising educational effectiveness is challenging.

# Project Objectives

CourseGPT aims to revolutionize educational content creation by:

1. Streamlining the authoring workflow through intelligent, reusable templates.

2. Implementing AI-assisted generation of lessons, assessments, and learning materials.

3. Providing tools for logical organization, grouping, and sequencing of course modules.

4. Offering an intuitive editing interface that allows educators to review, refine, and personalize AI-generated content.

# Core Features

Lesson Generator:

- Input Interface: Educators can input topic or concept information via a simple, guided form.

- AI-Powered Lesson Creation: Automatically generates titles, descriptions, learning outcomes, key concepts, activities, and optionally, assessments.

- Example Flow: Input 'Introduction to Machine Learning' → AI generates title, outcomes, and activities.

Module Organization System:

- Grouping Tools: Drag-and-drop interface to group lessons into modules.

- Intelligent Sequencing: AI suggests module order based on relationships.

- Metadata Management: Tracks prerequisites, completion time, difficulty level, objectives.

Interactive Content Editor:

- Editing Interface: Clean, intuitive editing interface.

- Section-Specific Regeneration: Regenerate only parts of the lesson.

- Educational Formatting Tools: Templates for objectives, summaries, activities.

# Technical Approach

- Frontend: React.js or Next.js.

- Backend & API Integration: Node.js, integrated with OpenAI API.

- Database: PostgreSQL or MongoDB.

- AI Layer: Uses AI models for text generation, sequencing, recommendations.

- UI/UX Design: Accessibility, simplicity, consistency.

- Security: Authentication, authorization, secure data storage.

# Example User Workflow

1. Input → Educator provides topic and optional notes.

2. AI Generation → Lesson content is automatically generated.

3. Edit → Educator refines content using the editor.

4. Organize → Lessons are grouped into modules; AI suggests sequence.

5. Publish → Finalized courses can be exported or published.

# Review Criteria Mapping

- Lesson Quality: Generates well-structured lessons from minimal input.

- Workflow Completeness: Supports end-to-end content creation flow.

- Attention to Detail: Section editing, sequencing, metadata improve usability.

# Summary

CourseGPT will empower educators to:

- Produce high-quality content faster.

- Maintain consistency across lessons.

- Create engaging and pedagogically sound materials.

- Scale course offerings efficiently.

This platform has the potential to transform how educational content is developed, making it more accessible, scalable, and effective.