
CAPSTONE PROJECT

SYLLABUS AND CURRICULUM OPTIMIZER

Presented By:

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Department : CSE

OUTLINE

- Problem Statement
- Technology used
- Wow factor
- End users
- Result
- Conclusion
- Git-hub Link
- Future scope
- IBM Certifications

PROBLEM STATEMENT

Many faculty members struggle to design or update course syllabi that are aligned with academic goals, industry trends, and accreditation standards. The Syllabus and Curriculum Design Optimizer solves this by using AI to analyze existing syllabi, suggest improvements, and recommend topics, assessments, and teaching methods. For example, if a faculty uploads a Computer Science syllabus lacking industry-relevant skills, the tool may suggest adding modules on AI ethics, data handling, or cloud computing, along with suitable resources and assessment strategies. This ensures curriculum quality, saves time, and supports better learning outcomes across programs.

TECHNOLOGY USED

IBM cloud lite services

Natural Language Processing (NLP)

Retrieval Augmented Generation (RAG)

IBM Granite model

IBM CLOUD SERVICES USED

- IBM Cloud Watsonx AI Studio
- IBM Cloud Watsonx AI runtime
- IBM Cloud Agent Lab
- IBM Granite foundation model

WOW FACTORS

Smart, Personalized Guidance

Gives tailored study plans and advice based on user queries in real time.

Bridges Academia with Industry

- Recommends tools, platforms, and strategies aligned with real-world job roles.

Trusted, Multisource Support

- Combines insights from platforms like Reddit, LinkedIn, and Quora for comprehensive help.

END USERS

- Academic Researchers
- Research Institutions and Universities
- Industry R&D Teams
- Educators

RESULTS

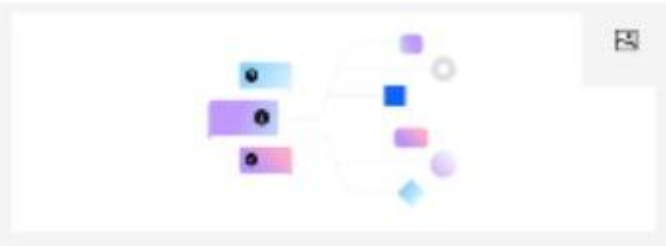
IBM watsonx Upgrade ? Abhijeet Kumar's Account Dallas AK

Projects / Syllabus and Curriculum Design Optimizer / Agent Lab

Share feedback Unsaved New agent + Deploy


Build


A1 Model: granite-3.3-8b-instruct



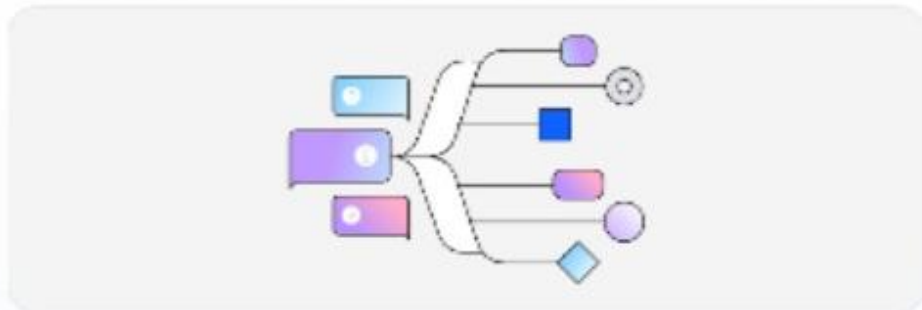
Quick start questions

Add up to 4 quick start questions that your users can select. +

How can I improve my existing syllabus? 

What instructional strategies fit my subject? 

Agent preview



Sample questions

How can I improve my existing syllabus? →

What instructional strategies fit my subject? →

Type something...

RESULTS

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Projects / Syllabus and Curriculum Design Optimizer / Agent Lab

Share feedback Unsaved New agent + Deploy

Build

AI Model: granite-3-3-8b-instruct

Analyze existing syllabi and suggest improvements aligned with learning outcomes

Recommend topics, instructional strategies, assessments, and learning resources

Knowledge

Tools

Add a tool Create custom tool

Added tools (5)

Google search
Retrieve information from the internet with the Google search engine.

DuckDuckGo search

Agent preview

AK You: 12:45 PM
How can I improve my existing syllabus?

Syllabus and Curriculum Design Optimizer 12:45 PM
Hi, I am Syllabus Optimizer, your syllabus design assistant. How can I help you today?

To improve your existing syllabus, consider the following steps:

1. **Review Learning Outcomes:** Ensure that your syllabus clearly states the learning outcomes for the course. These outcomes should align with the course objectives and be communicated to students at the beginning.

2. **Align with Institutional Goals:** Check if your syllabus aligns with your institution's mission statement and goals. This ensures consistency across all courses and programs.

Type something...

RESULTS

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[Share feedback](#) [Unsaved](#) [New agent +](#) [Deploy](#)

Agent preview

AK You: 01:08 PM

I have 7 days to prepare for Python interview in Delloite,how to prepare

Syllabus and Curriculum Design Optimizer 01:08 PM

To prepare for a Python interview at Deloitte in 7 days, you can start by reviewing the basics of Python programming, such as data types, variables, control structures, functions, and object-oriented programming concepts. You can also practice solving problems on platforms like LeetCode, HackerRank, or CodeWars to improve your coding skills.

Additionally, you can review the following topics:

- Data structures: lists, tuples, dictionaries, sets
- File input/output
- Exception handling
- Modules and packages

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Agent preview

It's also important to practice answering behavioral questions, such as "Why do you want to work at Deloitte?" or "Can you tell me about a time when you overcame a difficult challenge?"

You can also use online resources like Reddit, LinkedIn, and Quora to learn more about the interview process and what to expect. Some popular resources include:

- Reddit: r/learnpython, r/python, r/deloitte
- LinkedIn: Deloitte's official page, Python programming groups
- Quora: Deloitte interview questions, Python programming questions

Remember to get plenty of rest, eat well, and stay hydrated during your preparation period. Good luck with your interview!

► **How did I get this answer?**

Type something...

RESULTS

Deployed AI Agent

IBM watsonx

Upgrade

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Dallas





AK

Deployment spaces /

Syllabus and Curriculum Optimizer


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 Syllabus and Curriculum Design Optimizer	Online	 Deployed	Syllabus and Curriculum Design Optimizer	Ai service	<div>wx-agent</div> 	42 seconds ago Abhijeet Kumar (You)	

RESULTS

Deployed AI Agent



Upgrade ? 🔔

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Syllabus and Curriculum Design Optimizer

✔ Deployed Online

API reference

Test

Evaluations

Preview

Endpoints for inferencing ⓘ

Private endpoint

`https://us-south.ml.cloud.ibm.com/ml/v4/deployments/5889f3c4-1a5b-40f6-b5bb`

`https://us-south.ml.cloud.ibm.com/ml/v4/deployments/5889f3c4-1a5b-40f6-b5bb`

Public endpoint

`https://us-south.ml.cloud.ibm.com/ml/v4/deployments/5889f3c4-1a5b-40f6-b5bb`

`https://us-south.ml.cloud.ibm.com/ml/v4/deployments/5889f3c4-1a5b-40f6-b5bb`

Bearer <token> ⓘ

IAM

[Learn more](#) about the 2021-05-01 version query parameter

About this deployment

Name

Syllabus and Curriculum Design Optimizer

Description

To create efficient, relevant curricula using data and automation for better learning outcomes.

Deployment Details

Deployment ID: 5889f3c4-1a5b-40...

Serving name: No serving name.

Software specification: runtime-24.1-py3.11 ⚙️

Hardware specification: Extra extra small: 1 CPU and 2 GB RAM

Copies: 1

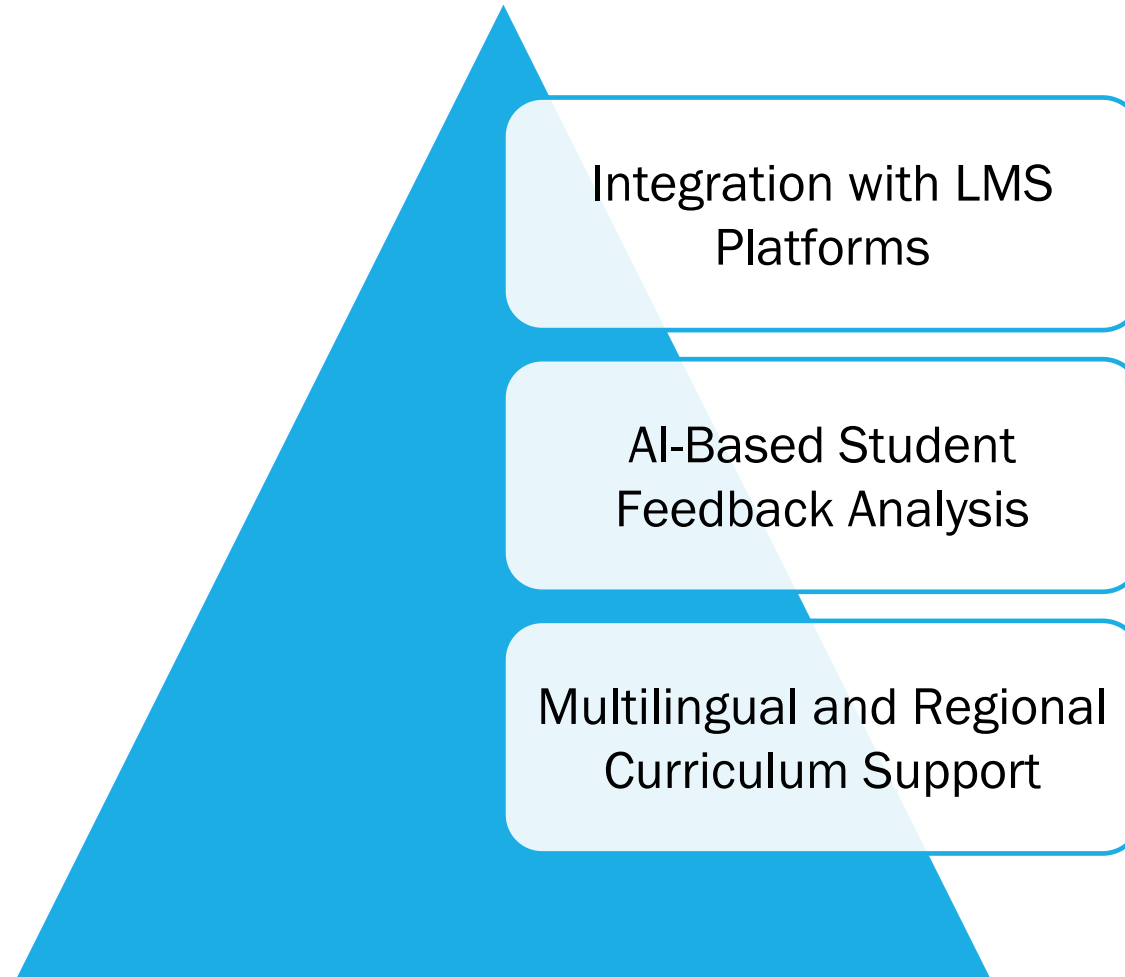
Tags

edunet
foundation

CONCLUSION

- Enhances Curriculum Quality – The tool ensures syllabi are up-to-date, outcome-based, and aligned with academic and industry standards.
- Saves Time for Educators – Automates repetitive tasks like formatting, outcome mapping, and content suggestions.
- Promotes Innovation in Education – Encourages data-driven, personalized, and modern curriculum development across academic disciplines.

FUTURE SCOPE



IBM CERTIFICATIONS

In recognition of the commitment to achieve
professional excellence



Abhijeet Kumar

Has successfully satisfied the requirements for:

Getting Started with Artificial Intelligence

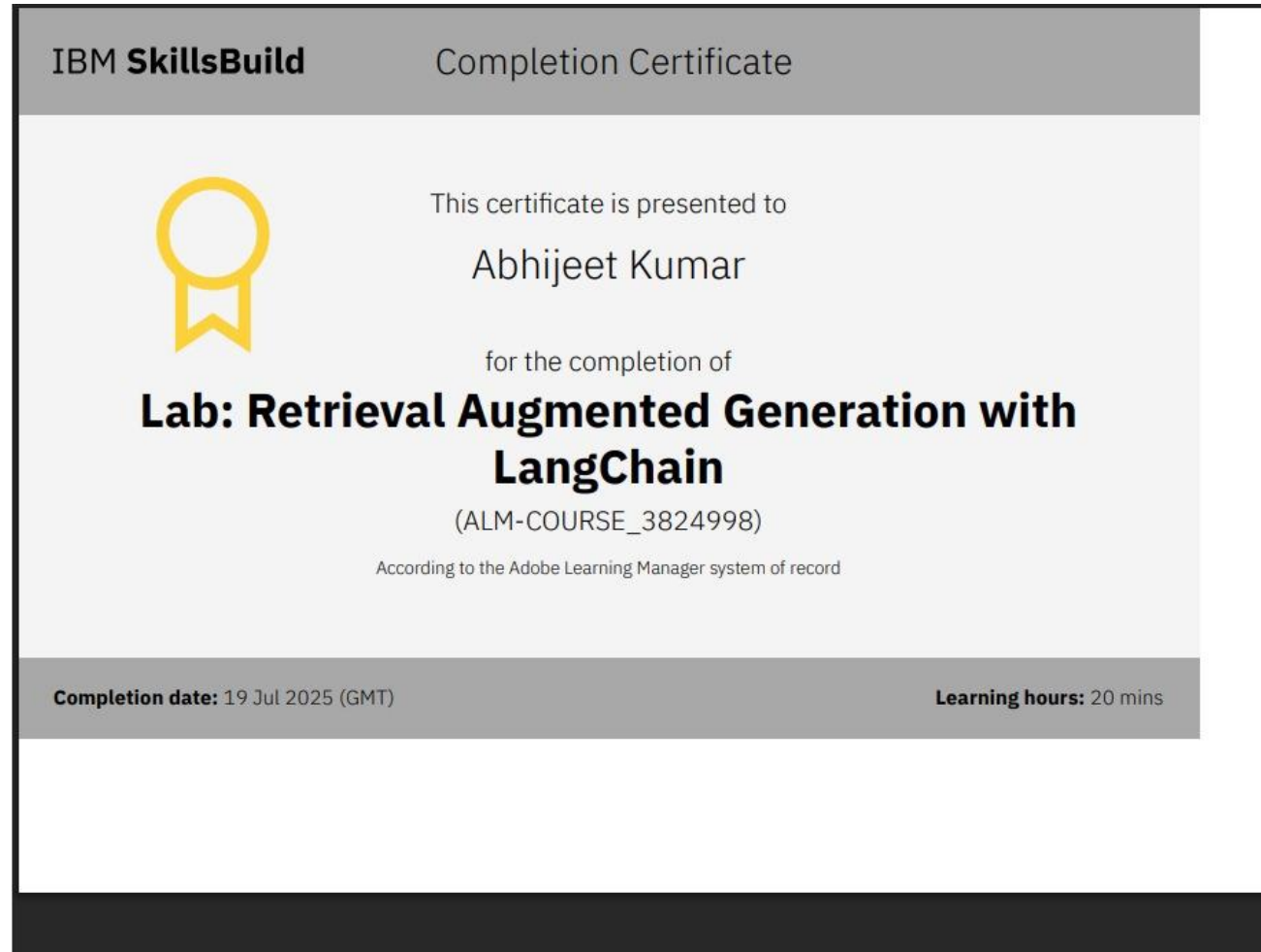


Issued on: Jul 17, 2025
Issued by: IBM SkillsBuild

Verify: <https://www.credly.com/badges/783088d4-a4d5-4c33-8477-3fb90ed69f33>



RAG



GITHUB LINK

- Link - <https://github.com/AbhijeetKumar-1706/Syllabus-and-Curriculum-Optimizer.git>



THANK YOU