



Tawfik AI-Tutoring Framework

Professor User Manual

Course Creation, AI Co-Professor & Publishing Guide

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1. Introduction

Welcome to the Professor side of the Tawfik AI-Tutoring Framework. This application lets you create, organise, and publish engineering courses that students access through the Student Workspace.

Your key tool is the AI Co-Professor Agent — an autonomous AI assistant that can discuss pedagogy, plan course structure, create nodes in the database, generate PDF lecture notes, and compile semantic summaries of your entire course. It understands your full curriculum and acts as an intelligent collaborator.

Version 3 adds three major capabilities: the Import Wizard (automated course ingestion from Google Drive, URLs, and local files), node reordering (move any item up or down in its parent), and node reparenting (move any item to a new parent with a single dialog).

This manual covers every feature of the Creator Interface, starting from the login portal, through course authoring and Import Wizard usage, finishing with publishing and course sharing.

2. The Login Portal

Professor and student access share a single portal (StudentMain.py / the installed executable). Use the Role Toggle to switch between Student and Professor modes before signing in.

2.1 Signing In as a Professor

1. Launch the application.
2. Click Professor in the role toggle at the top of the login card. The tagline changes to "Course authoring & management portal".
3. Confirm Sign In tab is active.
4. Enter your professor username and password.
5. Click Sign In.

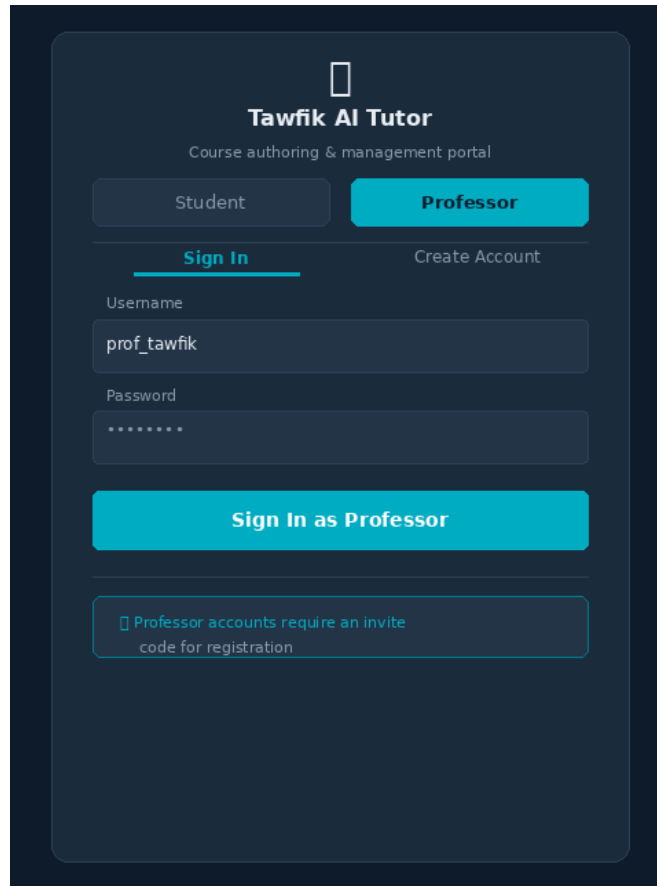




Figure 1: Login portal — Professor role selected (teal highlight)

 If your account is not cached locally, the system automatically checks the cloud and stores your credentials for future logins.

2.2 Registering a New Professor Account

Professor accounts are a controlled group — registration requires an invite code issued by the system administrator.

6. Select Professor in the role toggle.
7. Click the Create Account tab.
8. Enter a username, password, and email address.
9. Enter the invite code in the Invite Code field.
10. Click Register. Your account is created immediately — no email verification step.

 Keep your invite code confidential. Without it, no new professor accounts can be created.

2.3 The Professor Selection Screen

After a successful login, a Professor Selection Screen appears before the Creator Interface launches. This screen lets you confirm or set the Courses Workspace Folder — the parent directory on your computer that contains all your course sub-folders.

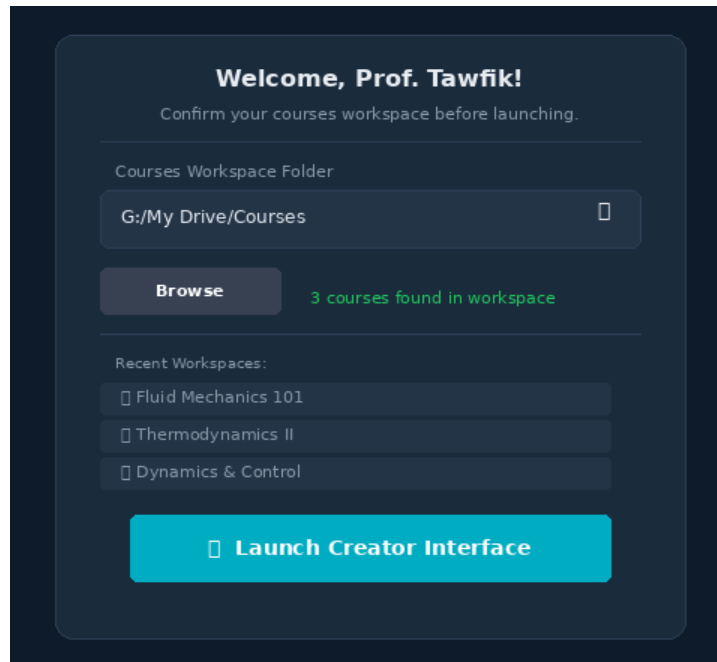



Figure 2: Professor Selection Screen — confirm your workspace before launching

11. If the workspace path shown is correct, click Launch Creator Interface.
12. If you need to change it, click Browse and select the correct parent folder.
13. Click Launch Creator Interface.

 The workspace path is saved to your profile automatically. On your next login it will already be filled in.

3. The Creator Interface

The Creator Interface consists of three panels. Your professor username and workspace folder name are displayed in the title bar.

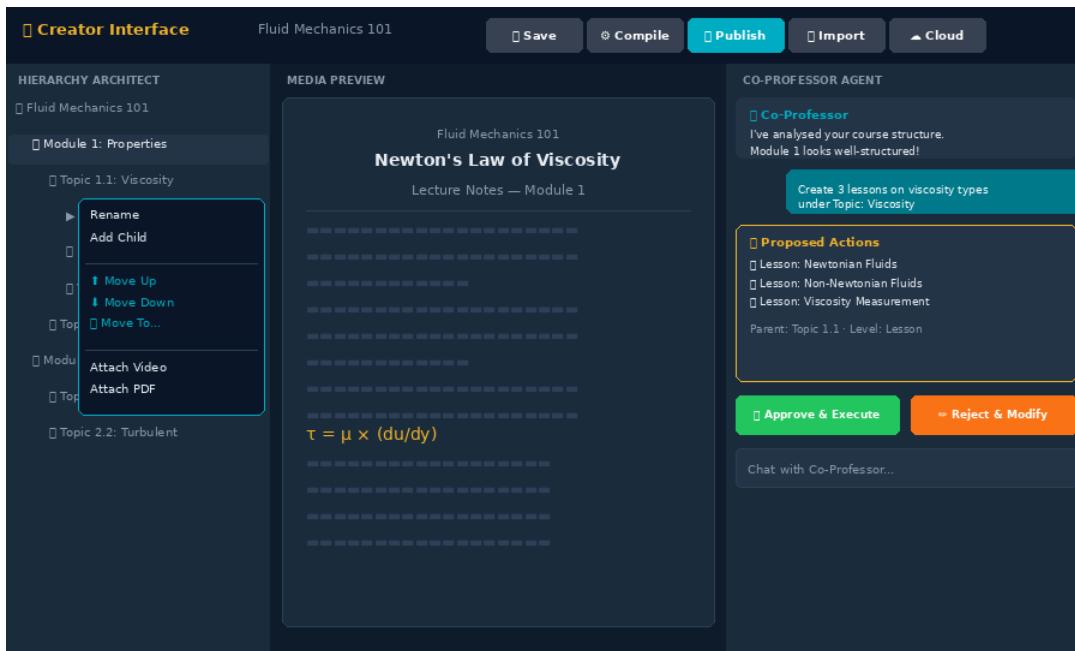


Figure 3: The three-panel Creator Interface — Hierarchy Architect (left), Media Preview (centre), Co-Professor Agent (right)

Panel 1 — Hierarchy Architect (Left): Build and organise your course structure as a tree — Course, Modules, Topics, and Lessons. Attach videos, PDFs, and supplementary materials. Save and publish from here.

Panel 2 — Media Preview (Centre): Click any asset (video, PDF, image, YouTube link, Google Doc, or Office document) in the tree to preview it instantly without leaving the interface.

Panel 3 — Co-Professor Agent (Right): Your AI collaborator. Chat about course design, ask it to create structure, generate notes, or compile semantic summaries. It proposes actions for your approval before executing them.



Toggle any panel on/off with the eye buttons in the toolbar to focus on what you need.

4. Building Course Structure

Courses follow a strict four-level hierarchy: Course → Module → Topic → Lesson. Lessons are the leaf nodes where content (videos, PDFs, supplements) is attached.

4.1 Creating a New Course

14. Right-click on empty space in the Hierarchy Architect tree.
15. Select Create New Course from the context menu.
16. Enter the course name (e.g., "Fluid Mechanics 101").

17. The course appears as a top-level item in the tree.

4.2 Adding Modules, Topics, and Lessons


18. Click on the parent item where you want to add a child.

19. Click Add Sub-Item, or right-click and select Add Child.

20. The system automatically determines the correct level (Module under Course, Topic under Module, Lesson under Topic).

21. Enter the name and press OK.

Double-click any item to rename it in place.

 Lessons are leaf nodes — you cannot add children to a Lesson. Content is attached to Lessons via the right-click menu.

4.3 Attaching Content to Lessons

Right-click any Lesson to see all attachment options:

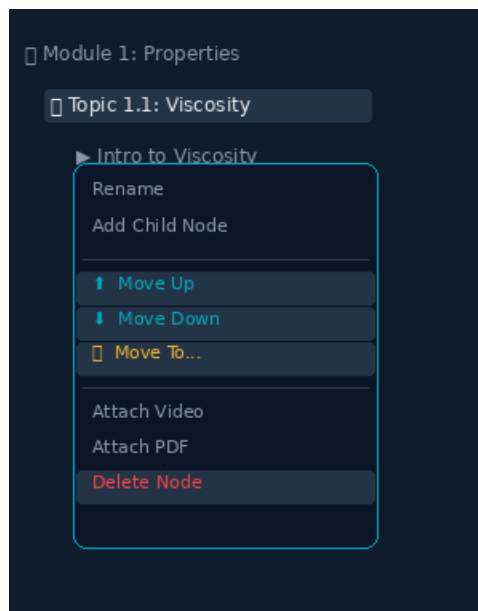


Figure 4: Right-click context menu — showing reorder and reparent options (highlighted in teal)

- Attach Video — select a local video file (MP4, MKV, AVI) as the main lesson video.
- Set YouTube as Main Video — paste a YouTube URL.
- Attach PDF — select a PDF file as the main lecture notes.
- Add Supplement — attach additional PDFs, videos, or images.

- Add YouTube Video — add a YouTube URL as a supplementary video.

After attaching, sub-items appear under the Lesson in the tree with type icons. Click any asset to preview it in the Media Preview panel.



4.4 Opening an Existing Course


22. Click Open Workspace and browse to the course folder on your computer.
23. The system reads the course database and rebuilds the tree.

Your recent workspaces are listed at the bottom of the Hierarchy Architect. Double-click any entry to quickly reopen it.

4.5 Reordering Nodes (NEW in v3)

You can change the order of any sibling nodes — modules within a course, topics within a module, or lessons within a topic — using the context menu.

24. Right-click on the node you want to move.
25. Select  Move Up to swap it with the node above, or  Move Down to swap with the node below.
26. The tree refreshes immediately, showing the new order.
27. Click Save Authoring State to persist the change.

 Reordering uses a stable sort_order value in the database — it will not affect lesson content, student progress, or AI summaries.

4.6 Moving Nodes to a New Parent (NEW in v3)

The Move To feature lets you reparent any node — relocating it under a different parent node in the hierarchy. This is useful when restructuring a course without losing any attached content.

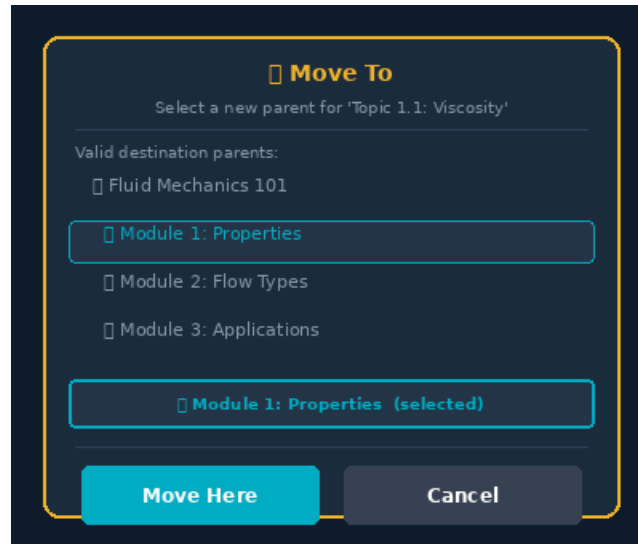




Figure 5: Move To dialog — select a compatible new parent for the node

28. Right-click on the node you want to relocate.
29. Select  Move To... from the context menu.
30. The Move To dialog opens, showing all valid parent nodes.
31. Select the destination parent. The system only shows compatible levels — a Topic can only move under a Module.
32. Click Move Here.
33. The tree refreshes with the node in its new location.
34. Click Save Authoring State to persist the change.

 Valid parents are filtered by hierarchy level. A Lesson can only move under a Topic; a Topic can only move under a Module; a Module can only move under a Course.

5. Using the AI Co-Professor Agent

The Co-Professor Agent is your most powerful tool for course creation. It is an autonomous AI that understands your entire course structure, can discuss pedagogy and content design, and can take direct actions on your course database with your approval.

5.1 Conversational Mode (Default)

By default, the Co-Professor is a knowledgeable conversational partner. You can ask it anything about your course:

- "What topics should I cover for fluid dynamics?" — Discusses curriculum design.
- "How should I structure Module 2?" — Suggests pedagogical approaches.


- "Review my current course outline" — Analyses your structure and suggests improvements.

The agent remembers the full conversation history, so you can have natural multi-turn discussions.

5.2 Creating Course Structure with the Agent

When you explicitly ask the agent to create nodes, it proposes a structured plan for your approval.

35. Type a request such as: "Create 3 lessons on viscosity types under Topic: Viscosity"
36. The agent generates a JSON action plan and displays it in the Action Panel below the chat.
37. Review the proposed nodes — names, levels, and parent assignment.
38. Click Approve & Execute to create them in the database, or Reject & Modify to ask for changes.

 The agent only proposes structural actions when you explicitly ask. Normal conversation never triggers database changes.


5.3 Generating PDF Lecture Notes

The Co-Professor can draft complete lecture notes and save them as PDF files attached to lessons.

39. Type: "Generate notes for Lesson: Introduction to Viscosity covering Newton's law of viscosity, kinematic viscosity, and temperature effects"
40. The agent proposes a note-generation plan in the Action Panel.
41. Click Approve & Execute.
42. The agent drafts content using AI, creates a PDF, saves it in the course folder, and links it to the lesson.

Generated notes appear in the generated_notes/ subfolder of your course and are automatically linked as the lesson's PDF.

5.4 Compiling Semantic Summaries

 Always Compile before Publishing. Without compilation, the student AI Tutor only has access to individual lesson notes — not the full course context.

The Compile process scans all PDFs, extracts text, and generates AI-powered semantic summaries for every node in the course hierarchy.

43. Click the Compile button (or type /compile in the chat).
44. The agent scans all lessons, reads all PDFs, and extracts content.
45. It performs bottom-up summarisation: Lessons → Topics → Modules → Course.
46. Results are saved to course_ai_context.json.

Smart Caching: the system remembers previous compilations. If a lesson's content has not changed, its summary is reused without calling the AI again. Only modified content is reprocessed.

5.5 Import Wizard 📁 (NEW in v3)

The Import Wizard is a powerful course ingestion tool that can automatically build course structure and import content from multiple sources in one guided process.

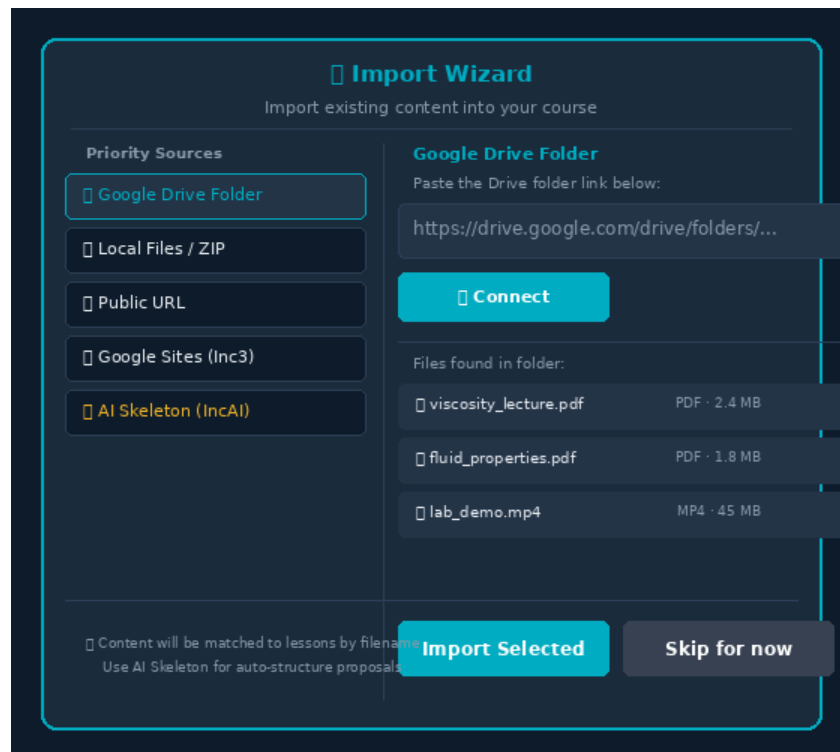


Figure 6: Import Wizard — choose your content source from the left panel

47. Click the 📁 Import Wizard button in the toolbar.
48. The wizard opens with a source selector on the left.
49. Choose your import source (see below) and follow the steps for that source.

50. Review the proposed mapping in the right panel.

51. Click Import to create nodes and link files.

Source: Google Drive Folder

Import all content from a Google Drive folder, including sub-folders which map to the course hierarchy.

- Paste your Google Drive folder link in the URL field.
- Click Connect to fetch the file list.
- Review the file-to-lesson mapping, then click Import.

Source: Local Files / ZIP Archive

Import from files on your computer — individual files, a folder, or a ZIP archive.

- Click Browse and select files, a folder, or a ZIP.
- The wizard scans the selected files and proposes structure.
- Review and click Import.

Source: Public URL

Import content from a publicly accessible web page.

- Paste the URL and click Fetch.
- A content preview appears with proposed structure.
- Review and click Import.

Source: AI Skeleton

Let the AI Co-Professor analyse imported content and propose an intelligent course structure.



Figure 7: AI Skeleton — review the proposed course structure before approving

- After importing any source, select AI Skeleton to trigger AI analysis.
- The AI proposes a full hierarchy in the Action Panel.
- Click Approve & Execute to build it, or Reject & Modify to request changes.

6. Cloud Course Browser

The Creator Interface includes a Cloud Course Browser that lets you download any published course to your local workspace — including courses shared by other professors.

6.1 Opening the Browser

52. Click the Cloud Courses button in the toolbar.
53. The browser fetches the latest course registry from Google Drive.
54. All published courses appear in the list.

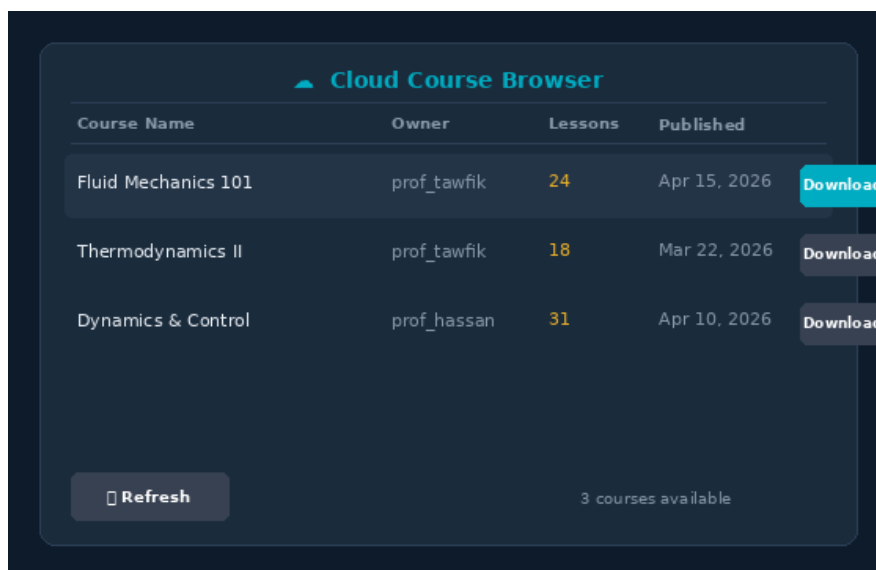


Figure 8: Cloud Course Browser — browse and download published courses

6.2 Downloading a Course

55. Click on a course row to select it.
56. Click Download to Workspace.
57. The course is downloaded to your workspace folder. A progress dialog shows status.
58. Once downloaded, the course appears in your Hierarchy Architect on the next Open Workspace.

💡 If a course is already downloaded, you can re-download to get the latest version published by the owner.

7. Sharing Courses with Other Professors

You can share any course you own with other registered professors. Shared courses appear in their Cloud Course Browser.

7.1 Opening the Share Dialog

59. In the Hierarchy Architect, right-click on a top-level Course node.
60. Select Share Course... from the context menu.
61. The Share Course dialog opens, showing all current shares.

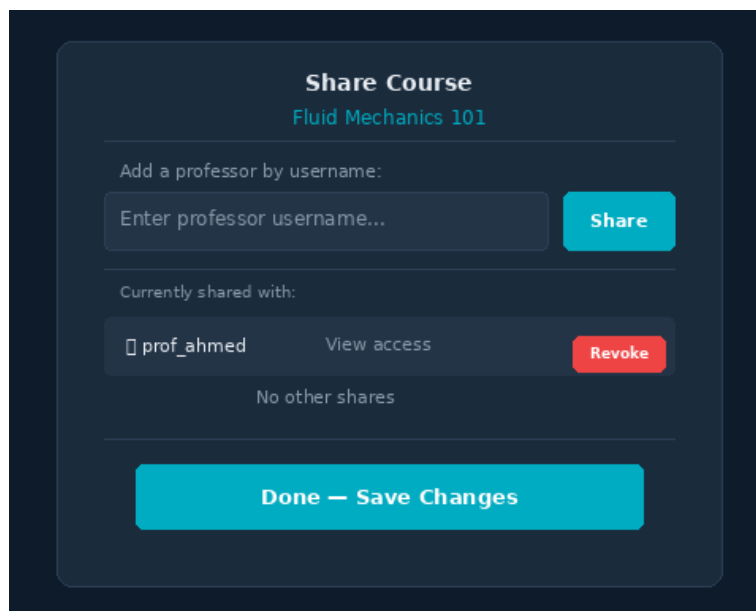


Figure 9: Share Course dialog — add or revoke access by professor username

7.2 Adding a Share

62. Type the username of the professor you want to share with.
63. Click Share.
64. The professor appears in the shared list at View access level.
65. Click Done — Save Changes to apply.

💡 Share only works with registered professor accounts. Student accounts cannot receive shared courses.

7.3 Revoking a Share

66. Click Revoke next to the professor whose access you want to remove.
67. Click Done — Save Changes.


8. Saving, Publishing & Cloud Sync

8.1 Saving Your Work

68. Click Save Authoring State (indigo button) at the bottom of the Hierarchy Architect.
69. If no workspace folder is set, you will be prompted to select one.
70. The entire course tree is saved to a SQLite database (course_structure.db) in your workspace folder.

You can save at any time. The database is rebuilt from the current tree on every save.

8.2 Publishing to the Cloud

71. Click  Publish & Sync to Cloud (teal button).
72. The system saves your authoring state automatically first.
73. A progress dialog opens with a live log.

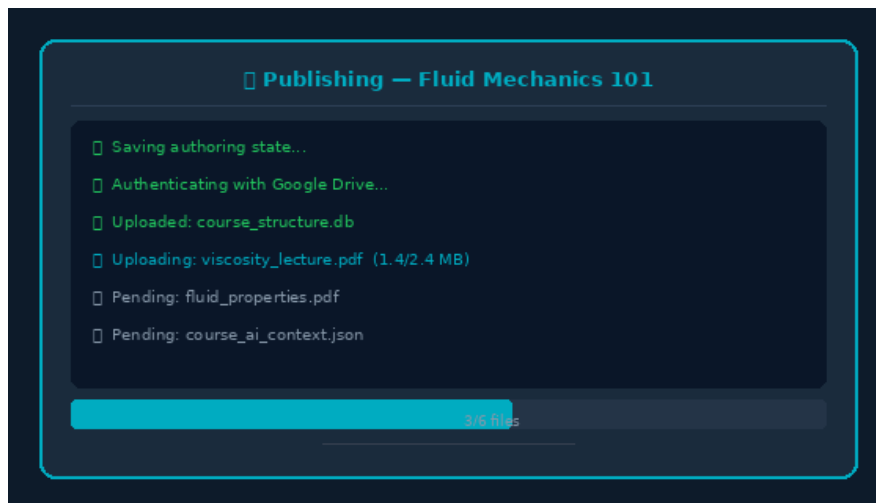



Figure 10: Publishing progress dialog with live upload log


74. The system authenticates with Google Drive and uploads all course files.
75. A live log shows every file being synced. Wait for the confirmation message.
76. Click Close when finished.

 Always Compile your course before Publishing to ensure the student AI Tutor has the latest semantic context.

9. Media Preview





The centre panel provides instant preview of any asset in your course. Version 3 adds support for Google Docs and Office document formats:

- Local video (MP4, MKV, AVI) — embedded media player.
- YouTube links — embedded YouTube player.
- PDF files — embedded PDF viewer.
- Images — displayed directly.
- Google Docs / Slides / Sheets — embedded Google Docs viewer.
- Office documents (DOCX, PPTX, XLSX) — converted to HTML preview.
- ODT / ODP / ODS — converted to HTML preview.

 NEW in v3: Google Docs and Office documents are now previewed directly in the panel without any conversion step on your part.

10. Recommended Workflow

Here is the recommended end-to-end workflow for creating and publishing a course:

Step	Action	Description
1	Log in	Select Professor role, sign in, confirm workspace folder.
2	Plan	Discuss course goals with the Co-Professor Agent.
3	Create / Import	Build hierarchy manually OR use the Import Wizard () to ingest existing materials.
4	Refine Structure	Reorder and reparent nodes using   and  Move To.
5	Attach Content	Add videos, PDFs, YouTube links, and supplements.
6	Generate Notes	Ask the Co-Professor to draft lecture notes for lessons without PDFs.
7	Preview	Click through the tree and verify all content in the Media Preview.
8	Save	Click Save Authoring State to persist your work.
9	Compile	Click Compile to generate AI semantic summaries from all PDFs.
10	Publish	Click Publish & Sync to Cloud to make the course available to students.
11	Share	Right-click the Course node and share with colleagues if needed.

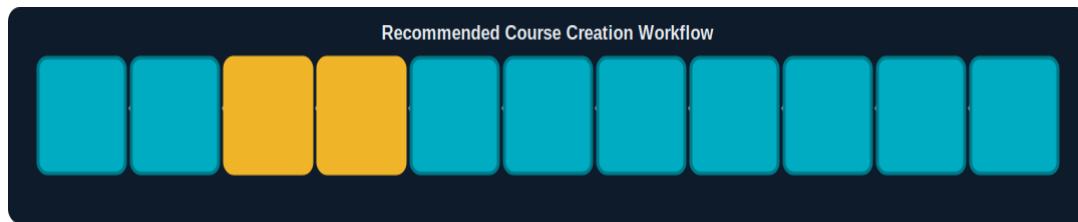



Figure 11: Recommended course creation workflow — steps 3 and 4 are new in v3

 You can iterate on any step at any time. Save frequently, and always Compile before your final Publish.

11. Troubleshooting & FAQ

Q: The Import Wizard fails to connect to Google Drive.

A: Ensure you have granted the application permission to access your Google Drive in your Google Account settings. The app requests read-only access to the folder you specify.

Q: Can I undo a Move To operation?

A: Use Move To again to relocate the node back to its original parent. Changes are only permanent after clicking Save Authoring State.

Q: The Import Wizard imported files but did not create lessons.

A: Files are matched to lessons by filename similarity. Use the AI Skeleton to let the AI propose the lesson structure automatically.

Q: The AI Co-Professor seems to forget my course structure.

A: The agent reads the current database on each message. If you have made changes, save first and let the agent know — it will re-read the structure.

Q: Compiling is slow.

A: Compilation speed depends on the number of PDFs and the AI API response time. Smart caching means only changed content is reprocessed — the more you compile incrementally, the faster subsequent compiles become.

Q: A student says they cannot see my latest content.

A: Ensure you clicked Publish & Sync after your last changes. The student app syncs with the cloud when they open the course.

Q: Can I use the web app instead of the desktop app?

A: Yes! Visit tutor.academyofknowledge.org for the browser-based Creator Interface — same features, no installation required. Your courses and account are fully shared between the two apps.