

API Test Cases: Course Management Module

Introduction

This document provides the API test cases for the Course Management module, based on the logic defined in `course_route.py`. These tests are designed to verify the complete CRUD (Create, Read, Update, Delete) functionality for course records, with permissions segregated by user roles.

The test cases are divided into role-specific features:

- **Learning Advisor Features:** Covers all actions a Learning Advisor can perform on courses they are responsible for.
- **Manager Features:** Covers read-only access for all courses in the system.

Testing Environment

- **Tool:** Postman
- **Base URL:** `http://127.0.0.1:5000`
- **Prerequisites:**
 - The application is running, and the database is seeded.
 - A valid JWT for a Learning Advisor (e.g., EM005) is stored as `{{laToken}}`.
 - A valid JWT for a Manager (e.g., EM007) is stored as `{{managerToken}}`.
 - A valid JWT for a Teacher (e.g., EM001) is stored as `{{teacherToken}}`.

Learning Advisor Features

Feature: Add Course

- **Feature ID:** CRS-001
- **Endpoint:** `POST /course/learningadvisor/add`
- **Description:** Verifies a Learning Advisor's ability to create new courses.

Test Case ID	Description	Test Steps	Expected Result
CRS-001-TC-001	Successful Course Creation	<ol style="list-style-type: none"> 1. Set method to POST. 2. Set URL to {{baseUrl}}/course/learningadvisor/add. 3. Set Authorization header to Bearer {{laToken}}. 4. Set Body to raw JSON with valid and unique data for a new course. 5. Send request. 	ER: Status code is 201 Created . The response body contains the new course object.
CRS-001-TC-002	Attempt to Add Course with Invalid Name	<ol style="list-style-type: none"> 1. Set method to POST. 2. Set URL to {{baseUrl}}/course/learningadvisor/add. 3. Set Authorization header to Bearer {{laToken}}. 4. Set Body to raw JSON with a name that is not in the predefined list (e.g., "Advanced Rocket Science"). 5. Send request 	ER: Status code is 400 Bad Request . The response body contains the message: "Invalid course name".
CRS-001-TC-003	Attempt to Add Course with Invalid Schedule Format	<ol style="list-style-type: none"> 1. Set method to POST. 2. Set URL to {{baseUrl}}/course/learningadvisor/add. 3. Set Authorization header to Bearer {{laToken}}. 4. Set Body to raw JSON with an invalid schedule (e.g., "Mon-Fri, 9-5"). 5. Send request. 	ER: Status code is 400 Bad Request . The response body contains the message: "Invalid schedule format".

CRS-001-TC-004	Attempt to Add with Duplicate Primary Key	<ol style="list-style-type: none"> 1. (Requires setup) Add a course with a specific name and created_date. 2. Set method to POST. 3. Set URL to {{baseUrl}}/course/learningadvisor/add. 4. Set Authorization header to Bearer {{laToken}}. 5. Set Body to raw JSON with the same name and created_date as the existing course. 6. Send request. 	ER: Status code is 400 Bad Request . The response body contains a "Violate database constraint" message.
CRS-001-TC-005	Unauthorized Access (Attempt by Teacher)	<ol style="list-style-type: none"> 1. Set method to POST. 2. Set URL to {{baseUrl}}/course/learningadvisor/add. 3. Set Authorization header to Bearer {{teacherToken}}. 4. Set Body to raw JSON with valid data. 5. Send request. 	ER: Status code is 403 Forbidden . The response body contains an access denied message.

- **Results**

Test Case ID	Result	Status	Notes
CRS-001-TC-001	Similar to ER	PASSED	N/A
CRS-001-TC-002	Similar to ER	PASSED	N/A

CRS-001-TC-003	Similar to ER	PASSED	N/A
CRS-001-TC-004	Similar to ER	PASSED	N/A
CRS-001-TC-005	Similar to ER	PASSED	N/A

Feature: Manage Own Courses (Read, Update, Delete)

- **Feature ID:** CRS-002
- **Endpoints:** /course/learningadvisor/, /search, /update, /delete
- **Description:** Verifies a Learning Advisor can manage the courses they are assigned to.

Test Case ID	Description	Test Steps	Expected Result
CRS-002-TC-001	Get All Assigned Courses	<ol style="list-style-type: none"> 1. Set method to GET. 2. Set URL to {{baseUrl}}/course/learningadvisor/. 3. Set Authorization header to Bearer {{laToken}}. 4. Send request. 	ER: Status code is 200 OK . The response body is a JSON array containing only the courses assigned to the logged-in Learning Advisor.
CRS-002-	Search for an	<ol style="list-style-type: none"> 1. Set method to GET. 	ER: Status code is 200 OK . The

TC-002	Assigned Course	<p>2. Set URL to {{baseUrl}}/course/learningadvisor/search?id=C001&course_date=2025-07-04.</p> <p>3. Set Authorization header to a token for the correct LA (EM002).</p> <p>4. Send request.</p>	response body contains the details for course C001.
CRS-002-TC-003	Attempt to Search for Unassigned Course	<p>1. Set method to GET.2. Set URL to {{baseUrl}}/course/learningadvisor/search?id=C001&course_date=2025-07-04.</p> <p>3. Set Authorization header to Bearer {{laToken}} (for EM005, who does not manage C001).</p> <p>4. Send request.</p>	ER: Status code is 404 Not Found . The response body contains the message: "Course not found".
CRS-002-TC-004	Successful Update	<p>1. Set method to PUT.2. Set URL to {{baseUrl}}/course/learningadvisor/update?id=C002&course_date=2025-07-04.</p> <p>3. Set Authorization header to a token for the correct LA (EM004).</p> <p>4. Set Body to raw JSON: { "fee": 35000000 }</p> <p>5. Send request.</p>	ER: Status code is 200 OK . The response contains the message: "Course updated successfully".
CRS-002-TC-005	Successful Deletion	<p>1. (Requires setup) Create a new, unlinked course.</p> <p>2. Set method to DELETE.</p> <p>3. Set URL to {{baseUrl}}/course/learningadvisor/</p>	ER: Status code is 200 OK . The response contains the message:

		delete?id= <new_course_id>&course_date = <new_course_date>. 4. Set Authorization header to the creator's laToken.5. Send request.	"Course deleted successfully".
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- **Results**

Test Case ID	Result	Status	Notes
CRS-002-TC-001	Similar to ER	PASSED	N/A
CRS-002-TC-002	<ul style="list-style-type: none"> • 500 Internal Server Error • { <pre> "message": "Unexpected error occurred" }</pre> 	FAILED	See CRS-BUG-001
CRS-002-TC-003	<ul style="list-style-type: none"> • 500 Internal Server Error • { <pre> "message": "Unexpected error occurred" }</pre> 	FAILED	See CRS-BUG-001
CRS-002-TC-004	<ul style="list-style-type: none"> • 500 Internal Server Error • { <pre> "message": "Unexpected error occurred" }</pre> 	FAILED	See CRS-BUG-001

CRS-002-TC-005	<ul style="list-style-type: none"> • 500 Internal Server Error • "error": "Entity namespace for \"course\" has no property \"course_id\", \"message\": \"Unexpected error occurred\"" 	FAILED	See CRS-BUG-001

Manager Features

Feature: View All Courses

- **Feature ID:** CRS-003
- **Endpoints:** GET /course/manager/, GET /course/manager/search
- **Description:** Verifies a Manager can retrieve all course data from the system.

Test Case ID	Description	Test Steps	Expected Result
CRS-003-TC-001	Get All Courses	1. Set method to GET. 2. Set URL to {{baseUrl}}/course/manager/. 3. Set Authorization header to Bearer {{managerToken}}.	ER: Status code is 200 OK . The response body is a JSON array

		4. Send request.	containing all courses in the system.
CRS-003-TC-002	Search for Any Course	1. Set method to GET. 2. Set URL to {{baseUrl}}/course/manager/search?id=C001&course_date=2025-07-04. 3. Set Authorization header to Bearer {{managerToken}}. 4. Send request.	ER: Status code is 200 OK . The response body contains the details for course C001, regardless of who the LA is.
CRS-003-TC-003	Search for Non-existent Course	1. Set method to GET. 2. Set URL to {{baseUrl}}/course/manager/search?id=C999&course_date=2025-01-01. 3. Set Authorization header to Bearer {{managerToken}}. 4. Send request.	ER: Status code is 404 Not Found . The response body contains the message: "Course not found".

- **Results**

Test Case ID	Result	Status	Notes
CRS-003-TC-001	Similar to ER	PASSED	N/A

CRS-003-TC-002	<ul style="list-style-type: none"> • 500 Internal Server Error • { <div>"message": "Unexpected error occurred"</div> } 	FAILED	See CRS-BUG-001
CRS-003-TC-003	<ul style="list-style-type: none"> • 500 Internal Server Error • { <div>"message": "Unexpected error occurred"</div> } 	FAILED	See CRS-BUG-001