

## API Test Cases: Class Management Module

### Introduction

This document provides the API test cases for the Class Management module, based on the logic defined in `class_route.py`. These tests are designed to verify the complete CRUD (Create, Read, Update, Delete) functionality for class 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 classes linked to their courses.
- **Manager Features:** Covers read-only access for all classes.
- **Teacher Features:** Covers read-only access for a teacher's assigned classes.

### Testing Environment

- **Tool:** Postman
- **Base URL:** `http://127.0.0.1:5000`
- **Prerequisites:**
  - The application is running, and the database is seeded with the provided `seed.sql` data.
  - A valid JWT for a Learning Advisor (e.g., EM006, who manages course C002) 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 Class

- **Feature ID:** CLS-001
- **Endpoint:** POST /class/learningadvisor/add
- **Description:** Verifies a Learning Advisor's ability to create a new class for a course they manage.

Test Case ID	Description	Test Steps	Expected Result
CLS-001-TC-001	Successful Class Creation	<ol style="list-style-type: none"><li>1. Set method to POST.</li><li>2. Set URL to {{baseUrl}}/class/learningadvisor/add.</li><li>3. Set Authorization header to Bearer {{laToken}}.</li><li>4. Set Body to raw JSON with valid data for a new class under course C002.</li><li>5. Send request.</li></ol>	<b>ER:</b> Status code is <b>201 Created</b> . The response body contains the new class object. A StudentAttendance record is created for every student enrolled in the course. The room's status becomes "Occupied".
CLS-001-TC-002	Attempt to Add Class to Unmanaged Course	<ol style="list-style-type: none"><li>1. Set method to POST.</li><li>2. Set URL to {{baseUrl}}/class/learningadvisor/add.</li><li>3. Set Authorization header to Bearer {{laToken}}.</li></ol>	<b>ER:</b> Status code is <b>404 Not Found</b> . The response body contains the message: "Course not found".

		<ol style="list-style-type: none"> <li>4. Set Body to raw JSON with data for a class under course C001 (managed by a different LA).</li> <li>5. Send request.</li> </ol>	
<b>CLS-001-TC-003</b>	Attempt to Add Class with Unavailable Teacher	<ol style="list-style-type: none"> <li>1. Set method to POST.</li> <li>2. Set URL to {{baseUrl}}/class/learningadvisor/add.</li> <li>3. Set Authorization header to Bearer {{laToken}}.</li> <li>4. Set Body to raw JSON with teacher_id as EM003 (Unavailable).</li> <li>5. Send request.</li> </ol>	<b>ER:</b> Status code is <b>409 Conflict</b> . The response body contains the message: "Teacher is unavailable".
<b>CLS-001-TC-004</b>	Attempt to Add Class in Occupied Room.	<ol style="list-style-type: none"> <li>1. (Requires setup) Add a class to occupy room R001.</li> <li>2. Set method to POST.</li> <li>3. Set URL to {{baseUrl}}/class/learningadvisor/add.</li> <li>4. Set Authorization header to Bearer {{laToken}}.</li> <li>5. Set Body to raw JSON with room_id as R001.</li> <li>6. Send request.</li> </ol>	<b>ER:</b> Status code is <b>409 Conflict</b> . The response body contains a message like: "Room is in Occupied".
<b>CLS-001-TC-005</b>	Attempt to Add Class on Invalid Weekday	<ol style="list-style-type: none"> <li>1. Set method to POST.</li> <li>2. Set URL to {{baseUrl}}/class/learningadvisor/add.</li> <li>3. Set Authorization header to Bearer {{laToken}}.</li> </ol>	<b>ER:</b> Status code is <b>400 Bad Request</b> . The response body contains the message: "Weekday not in course's schedule".

		4. Set Body to raw JSON with a class_date that falls on a Friday (course C002 is on Wed-Thu). 5. Send request.	
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- **Results**

Test Case ID	Result	Status	Notes
CLS-001-TC-001	<ul style="list-style-type: none"> <li>• <b>500 Internal Server Error</b></li> <li>• "error": "Entity namespace for \"course\" has no property \"course_id\"",</li> <li>• "message": "Unexpected error occurred"</li> </ul>	FAILED	SEE CLS-BUG-001
CLS-001-TC-002	Similar to ER	PASSED	N/A
CLS-001-TC-003	Similar to ER	PASSED	N/A
CLS-001-TC-004	Similar to ER	PASSED	N/A
CLS-001-TC-005	Similar to ER	PASSED	N/A

## Manager Features

### Feature: Get Classes

- **Feature ID:** CLS-002
- **Endpoint:** GET /class/manager/
- **Description:** Verifies a Manager's ability to retrieve class information.

Test Case ID	Description	Test Steps	Expected Result
CLS-002-TC-001	Get All Classes in a Course	<ol style="list-style-type: none"> <li>1. Set method to GET.</li> <li>2. Set URL to {{baseUrl}}/class/manager/?course_id=C001&amp;course_date=2025-07-04.</li> <li>3. Set Authorization header to Bearer {{managerToken}}.</li> <li>4. Send request.</li> </ol>	<b>ER:</b> Status code is <b>200 OK</b> . The response body is a JSON array containing all classes associated with the specified course.
CLS-002-TC-002	Unauthorised Access (Attempt by Teacher)	<ol style="list-style-type: none"> <li>1. Set method to GET.</li> <li>2. Set URL to {{baseUrl}}/class/manager/?course_id=C001&amp;course_date=2025-07-04.</li> <li>3. Set Authorization header to Bearer {{teacherToken}}.</li> <li>4. Send request.</li> </ol>	<b>ER:</b> Status code is <b>403 Forbidden</b> . The response body contains an access denied message.

- **Results**

Test Case ID	Result	Status	Notes
CLS-002-TC-001	<ul style="list-style-type: none"> <li>• <b>403 Forbidden</b></li> <li>• "message": "Access denied for Manager"</li> </ul>	FAILED	See CLS-BUG-002
CLS-002-TC-002	Similar to ER	PASSED	N/A

- **Teacher Features**
- **Feature: Get Assigned Classes**
  - **Feature ID:** CLS-003
  - **Endpoint:** GET /class/teacher/
  - **Description:** Verifies a Teacher's ability to retrieve their own schedule.

Test Case ID	Description	Test Steps	Expected Result
<b>CLS-003-TC-001</b>	Successful Retrieval of Assigned Classes	1. Set method to GET. 2. Set URL to {{baseUrl}}/class/teacher/. 3. Set Authorization header to Bearer {{teacherToken}} (for employee EM001). 4. Send request.	<b>ER:</b> Status code is <b>200 OK</b> . The response body is a JSON array containing only the classes assigned to teacher EM001.
<b>CLS-003-TC-002</b>	Unauthorised Access (Attempt by Manager)	1. Set method to GET. 2. Set URL to {{baseUrl}}/class/teacher/. 3. Set Authorization header to Bearer {{managerToken}}. 4. Send request.	<b>ER:</b> Status code is <b>403 Forbidden</b> . The response body contains an access denied message.

- **Results**

Test Case ID	Result	Status	Notes
<b>CLS-003-TC-001</b>	Similar to ER	PASSED	N/A

CLS-003-TC-002	Similar to ER	PASSED	N/A
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