

Learning Management System - Class Documentation

1. Student Class

Represents a student in the LMS system. Includes personal details and academic status.

Fields & Validations:

❖ - id

- ✓ Must not be empty
- ✓ Must contain only numbers
- ✓ Length between 1 and 10 characters

❖ - firstName

- ✓ Must not be empty
- ✓ Letters only (no spaces)
- ✓ Max 15 characters

❖ - lastName

- ✓ Must not be empty
- ✓ Letters only (no spaces)
- ✓ Max 15 characters

❖ - age

- ✓ Must not be null
- ✓ Minimum value: 18

❖ - email

- ✓ Must not be empty
- ✓ Must be a valid email format

• - GPA

- ✓ Must be between 0 and 5

❖ - status

- ✓ Must not be empty
- ✓ Only values allowed: under-graduated, graduated

2. Course Class

Defines a course including details like title, description, instructor, and schedule.

Fields & Validations:

❖ - id

- ✓ Must not be empty
- ✓ Letters and/or numbers only, no spaces
- ✓ Length between 1 and 10 characters

❖ - title

- ✓ Must not be empty
- ✓ Max 30 characters

❖ - description

- ✓ Must not be empty
- ✓ Max 100 characters

❖ - instructorId

- ✓ Must not be empty
- ✓ Must be numeric or 'none'

❖ - startDate

- ✓ Must not be null
- ✓ Format: yyyy-MM-dd

❖ - endDate

- ✓ Must not be null
- ✓ Must be in the present or future
- ✓ Format: yyyy-MM-dd

❖ - capacity

- ✓ Minimum value: 10

3. Enrollment Class

Represents the enrollment of a student in a course, including semester and grade info.

Fields & Validations:

❖ - **id**

- ✓ Must not be empty
- - **studentId**
 - ✓ Must not be empty
 - ✓ Numeric only

❖ - **courseId**

- ✓ Must not be empty
- ✓ Letters and/or numbers only, no spaces

❖ - **semester**

- ✓ Must not be empty
- ✓ Only values: fall, spring, summer

❖ - **status**

- ✓ Must not be empty
- ✓ Only values: active, completed, dropped

❖ - **totalPoints**

- ✓ Min: 0
- ✓ Max: 100

Instructor Class

This class represents an instructor in the Learning Management System. It includes identification, personal details, professional status, and department assignment.

Checklist Validation

Attribute	Constraints	Description
id	<ul style="list-style-type: none">- NotEmpty- Pattern: numeric only- Size: 1 to 10	Unique identifier for instructor
firstName	<ul style="list-style-type: none">- NotEmpty- Pattern: letters only- Max length: 15	Instructor's first name
lastName	<ul style="list-style-type: none">- NotEmpty- Pattern: letters only- Max length: 15	Instructor's last name
email	<ul style="list-style-type: none">- NotEmpty- Must be valid email format	Email used for communication
status	<ul style="list-style-type: none">- NotEmpty- Values: 'on-leave' or 'active'	Current employment status
hireDate	<ul style="list-style-type: none">- NotNull- JsonFormat: yyyy-MM-dd	Date of hire
department	<ul style="list-style-type: none">- NotEmpty- Max size: 20	Instructor's academic department