CSE201: Advanced Programming Project: University ERP

Test Plan & Summary

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Group 27

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Environment for checks

Sample Accounts:

Username	Password
stu1	temp123
stu2	abcdefg1
inst1	temp123
inst2	temp12345
admin1	temp123

Acceptance Tests

Login & Roles

Test ID	Action	Test Data	Expected Result	Pass/ Fail
L1	First-time login	Username: stu2 Password: temp123	Change password screen opens& user logs in with new password	✅
L2	Log in with the wrong password	Username: stu2 Password: wrong	Inline Error: "incorrect username or password. 4 attempts remaining"	✅
L3	>5 failed login attempts	Username: stu2 Password: enter wrong 5 times	Inline Error: "Your account has been locked for 1 minute due to too many failed attempts"	✅

L4	User tries to login while account is locked	Username: stu2 Password: correct password set during change password	Inline Error: "Your account is locked. Try again later."	✅
L5	Correct login credentials	Username: stu2 Password: correct password set during change password	Student dashboard opens	✅
L6	After successful login, the dashboard matches the role	Username: inst1 Password: temp123	Instructor dashboard opens	✅

Student

Test ID	Action	Expected Result	Pass /Fail
S1	View Registration (course catalogue)	See all current courses (that the student is registered in) and other courses (catalogue of courses available for registration with code/title/credits/capacity /instructor)	✅
S2	Student registers for a course from "other courses" when seats are free.	Add course confirmation popup, then success popup, course removed from 'other courses' and shows up under "registered courses" and the "my courses" page	✅

S3	Try to register in a full section	Action blocked with "Section full."	✅
S4	View all registered courses in "My Courses" page	See all the registered courses and grades in each component of the section.	✅
S5	Student downloads grades transcript	Popup to select file to export into; student gets a PDF of courses and grades in all sections	✅
S6	Student drops a course before deadline	Course successfully dropped → no longer shows up in "My Courses".	✅
S7	Student opens the timetable view	See all the registered courses in a neat timetable view according to the timing of the schedule of the section.	✅

Instructor

Test ID	Action	Expected Result	Pass /Fail
I1	View "My Sections"	Instructor can only see the sections they're assigned to.	✅
I2	Click on a section card from "My Sections"	Can see list of all students enrolled in the course and section statistical summary of grades	✅

I3	Manually grade students - Enter scores (quiz/midterm/end-sem/...)	Instructor can see all the components as columns in the student list and give each student grades manually in each component.	✅
I4	Compute final grade using the rule in the report	shows final values (final grades) for all students in list view	✅
I5	Instructor imports CSV file for grades ("Import CSV" button)	Popup to select a file to import grades from.	✅
I6	Instructor imports CSV with wrong format/not enough values/too many values	Error message: CSV grading failed (reason)	✅
I7	Export CSV	Instructor can export grade summary for the section as a CSV file after grading manually.	✅
I8	Save changes	All grades changed by instructor reflect in the database; refreshing the page shows student list with updated grades.	✅
I9	Open "Manage Components"	Can see all the sections assigned to the instructor	✅
I10	Click on a section card from "Manage Components"	See all the components for the section	✅
I11	Remove a component	Component is removed from view	✅
I12	Add a component	Textboxes pop up to prompt values for component name and weightage	✅

Test ID	Action	Expected Result	Pass /Fail
I13	Save Changes	All added & deleted components reflect in both UI and database.	✅

Admin

Test ID	Action	Expected Result	Pass /Fail
A1	Open "Manage Users"	See list of all users (one table for students and one table for instructors), with their details and login activities and checkboxes to mark for deletion.	✅
A2	Mark some users for deletion and press "Save changes"	Confirmation pop-up with summary of pending changes; confirmation leads to changes reflecting in UI and database.	✅
A3	Add a student/instructor	Popup to enter details of the user; saving changes saves user login credentials to Auth DB and details to ERP DB	✅
A4	Export/import	Exports/imports list of users. Import reflects in UI and database.	✅
A5	Click on "Manage Courses"	See all the colour-coded courses in the course catalogue on the left side and edit panel on right side	✅
A6	Add Course	Popup for course details; confirmation after adding; added course reflects in database and UI.	✅
A7	Click on a course card from course catalogue in "Manage Courses"	Course details (and sections) available for editing on the edit panel	✅

A8	Edit details of course/section of the course & save	Updated course details reflect in DB and UI	✅
A9	Add a Section and assign instructor	Successfully adds → reflects in UI and database	✅
A10	Click on a section from "Sections" part of edit panel	List of enrolled students in the section available for view	✅
A11	Add Student into section	Prompt to enter student ID of the student to add; valid student ID → adds student to selected section of selected course	✅
A12	Select a student and click "Remove student" button (remove a student from a section)	Confirmation to remove; removes the student from section and shows success popup.	✅
A13	Delete Section/Course	Confirmation message if students are enrolled in Section/Course → Deletes section/course and changes reflect in database and UI	✅
A14	Click on "Maintenance & Backup" in the sidebar menu	Shows maintenance toggle and options for exporting users for backup	✅
A15	Toggle Maintenance ON	→ banner shows; student/instructor can view but cannot change (register/drop, grades blocked with message).	✅
A16	Toggle Maintenance OFF	Normal behaviour returns.	✅

Password & Auth separation

Test ID	Action	Expected Result	Pass /Fail
P1	Auth DB and ERP DB check	All passwords are hashed and stored in Auth DB and not ERP DB	✅
P2	Login logic check	Login uses Auth DB, then loads student/instructor profile from ERP DB via the shared user ID.	✅

Edge & negative tests

Test ID	Expected Result	Pass/ Fail
E1	Values like capacity, credits, year etc are valid positive integers.	✅
E2	Registering for a section after add/drop deadline is blocked with message	✅
E3	Student cannot view or change another student's data.	✅
E4	Instructor cannot grade students from another instructor's section.	✅
E5	With Maintenance ON, student/instructor changes are blocked everywhere (not only on one screen).	✅

Data integrity checks

Test ID	Action	Expected Result	Pass/Fail
D1	Duplicate keys check	No repeated students, users, enrollments, sections etc.	✅
D2	Deleting a section	Either blocked when students are enrolled or clearly explained/documented.	✅

UI/UX checks

Test ID	Expected Result	Pass/Fail
U1	Buttons and labels are clear; errors are friendly.	✅
U2	Tables for lists; sorting users; allowing for searches on table views	✅

Performance Sanity

Test ID	Expected Result	Pass/Fail

G1	Catalog list of ~100 courses opens quickly (a few seconds or less).	✅
G2	App starts without long hangs or crashes.	✅

Backup & Restore

Test ID	Action	Expected Result	Pass /Fail
B1	Backup	Trigger backup, change a row	✅
B2	Restore	Restore, and see the changed row revert.	✅

Testing Summary

Known Issues:

These tests were not fully validated or did not behave correctly:

- **Values like capacity, credits, year etc are valid positive integers** - this constraint is given in the backend directly, so there is no error message in the frontend, the data just defaults to 0/ does not save unless positive.
- **Deleting a section** when students exist (D2) - Does not block action, but warns the admin that students are enrolled in the section.
- **Loading indicator for long operations** (U3) - We did not have any long operations so we did not implement a loading indicator.
- 3–4 minor low-impact UI behaviour cases - Admin side panel glitching, inconsistency, etc.

Area	Status
Core functionality	**Passed**
Role-based access	**Passed**
Student workflows	**Passed**
Instructor workflows	**Passed**
Admin workflows	**Mostly passed** (backup)
Edge cases	**Mostly passed**
Data integrity	**Mostly passed**
UI polish	**Partially complete**
Performance	**Passed**