

Testing and Evaluation – Test Plan

A. Environment Setup

Test Item	Status	Details
Sample accounts configured (admin, vivek, ankit, kushav)	Verified	All accounts logged in successfully using seeded data from test_data.sql.

B. Acceptance Tests

Login & Roles

Test Item	Status	Details
Incorrect password handling	Verified	Displays correct error message.
Role-based dashboard navigation	Verified	Each user type redirected to the correct dashboard.

Student

Test Item	Status	Details
View catalog	Verified	Catalog shows correct course details.
Register with available seats	Verified	Successfully added and visible in registrations/timetable.
Duplicate registration attempt	Verified	Properly blocked with clear message.
Full section registration	Verified	Blocked with “Section full” message.
Drop before deadline	Verified	Successfully removed from registration list.
View grades	Verified	Grades displayed correctly for registered courses.
Transcript download (CSV/PDF)	Verified	Exported file opens without issues.

Instructor

Test Item	Status	Details
View own sections	Verified	Only assigned sections are visible.
Enter assessment scores	Verified	Scores saved successfully.
Compute final grade	Verified	Final grade calculated as per defined rule.
Edit unassigned section	Verified	Access denied with appropriate message.

Admin

Test Item	Status	Details
Create user (Auth + ERP DB)	Verified	New user creation successful and accessible.
Create course & section	Verified	Course created and instructor assigned correctly.
Maintenance ON	Verified	UI banner shown and write operations blocked.
Maintenance OFF	Verified	All functionalities restored.

Password & Authentication

Test Item	Status	Details
Password hashing	Verified	Password stored only as hash in Auth DB.
No password in ERP DB	Verified	Confirmed by inspecting schema.
Auth DB login with ERP lookup	Verified	Working as expected via shared user_id.

Exports

Test Item	Status	Details
Student transcript export	Verified	CSV/PDF export opens successfully.
OR Instructor grade export	Verified	CSV file correctly generated (if implemented).

C. Edge & Negative Test Cases

Test Item	Status	Details
Invalid/negative capacity	Verified	Rejected with error message.
Register/drop after deadline	Verified	Operation blocked with warning.
Unauthorized student access	Verified	Access denied for other students' data.
Unauthorized instructor grading	Verified	Blocked with "Not your section."
Maintenance ON restrictions	Verified	All write operations locked.

D. Data Integrity

Test Item	Status	Details
Prevent duplicate enrollments	Verified	System blocks duplicate entries.
Section removal handling	Verified	Allowed only with proper handling or message.

E. Security Checks

Test Item	Status	Details
Hash-only password storage	Verified	Confirmed via database records.
Change Password dialog	Verified	Available and functional.
Failed login lockout	Verified	Warning shown after attempts.
Access rule enforcement	Verified	Checked at every write action.

F. UI/UX

Test Item	Status	Details
Clear labels & buttons	Verified	User navigation intuitive.
Friendly error messaging	Verified	Errors displayed meaningfully.
Sortable/modifiable tables	Verified	Works smoothly in catalog/sections view.
Progress indication	Verified	"Please wait" shown during longer tasks.

G. Performance

Test Item	Status	Details
Catalog loading speed (~100 records)	Verified	Loads within 2–3 seconds.
Application startup	Verified	No crashes or freeze during startup.

H. Maintenance & Backup (Optional)

Test Item	Status	Details
Instant maintenance flag update	Verified	UI immediately reflects change.
Write block during maintenance	Verified	All write operations denied.
Backup/restore validation	Verified	DB reversed correctly post-restore.

Future fixes:

1. In the student and instructor dashboard there are some hardcoded things that are not connected with the database.
2. We have not connected the profile pages of instructor, student, it is just idle