

# Test Plan

## High Speed Rail

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## Overview

We plan on completing all testing that is outlined in this document through the built in rails test functionality. That way we can create test suites in hopes to “red, green, refactor”. Not only will these tests reveal errors in our code, but they will improve the efficiency and logic of our code. The test suites will also help ensure that our project is stable as we continue to develop it.

## Model Testing

- Check for required attributes
  - Make sure that all fields are properly validated
  - Also test for exceptions, such as editing user info without changing the password
- Check for correct attribute formats
  - Emails should validate only with emails
  - Date should only validate in the proper format
  - Passwords should only validate with correct parameters
- Test that any custom methods create objects with correct parameters
  - Test course meeting days
  - Test user course schedules

## Controller Testing

- Ensure that each action is correctly fetching, creating, updating, or deleting records
  - Must pay close attention to forms with custom methods such as users and courses
- Make sure that every required action is being authenticated
- If required, test that flash messages are being created
- Ensure that each action redirects correctly
  - Must pay close attention to the multiple redirections after submitting forms

## Integration Testing

- Test the overall flow of an action
  - Create tests to walk through each use case
- Starting from the home page, try to create question without logging in, get redirected to login screen with flash message indicating the need to sign in
- Make sure the UI is properly filtered so that users only see what they have permission to access
  - As a student, ensure that you can only create questions and answers
  - As a Faculty, ensure that you can create topics as well as questions and answers

- As a registrar, ensure that you can only create users and courses
  - As an administrator, ensure that all actions that you have permission for are displayed
- In general, test that the view reacts correctly to the currently logged in user
  - Make sure that buttons only appear for who has permission to use them