

# IT490: Systems Integration

Fall 2023

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**Instructor: Dipesh Patel**

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**Class:** R 06:00 PM to 08:50 PM GITC 3600

**Office Location:** TBA

**Office Hours:** R 09:00 AM to 12:00 PM  
(via Zoom)

## ***Course Description:***

The course will introduce the major design, implementation & distributed deployment issues regarding system integration, Network Operating Systems (NOS), cross platform database integration, e-commerce and e-business applications implementation, cross-servers & multiple locations e-sessions migration and the related communications security.

## ***Number of Credit Hours:***

3

## ***Prerequisite or Co-requisite:***

CS113, IS331 and IT340

## ***Materials Required:***

Textbook:

This course does not have a specific book requirement.

Software:

- A Network Router
- Oracle VM VirtualBox (<http://www.virtualbox.org>)
- Latest Ubuntu LTS image (<https://ubuntu.com>)
- Github Account (<https://github.com>)
- Trello Account (<https://trello.com/en-US>)
- Seed Project: ([Project Sample / Start Files](#))

Storage:

- Some place to store files like Flash Drive, OneDrive, Google Drive, Box, etc.

## ***Course Objectives:***

This course will be an intensive project based course designed to leverage the breadth of your background in Information Technologies. You will work in a group, on an extensive project throughout the semester. This class will give you ample opportunity to refresh your understanding of the core information technology skills of system administration, network administration, database administration, software engineering, graphic design, and full stack web development. Furthermore, this class will give you the opportunity to become a domain expert in one or more of these areas for your team.

## ***Course Requirements:***

This course is a hands-on experience with least amount of guidance. This is not a tradition format of lecture method course.

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## ***Exams:***

There are two exams. I will notify you of the exam date at least one week before the exam is given. If you are not in class that day, it is your responsibility to find out when the exam will be given. If you miss the exam, your grade for that exam will be zero. **Makeup examinations are provided only under exceptional circumstances and the student has to notify me before the exam begins either by e-mail or in person that they will miss the exam.**

## ***Homework / Project Assignments:***

Details of the homework assignments will be handed out or posted on Canvas. Assignments are to be submitted via Canvas. Homework assignments are to be completed individually by you. You may work in groups to complete the assignment, but each student must submit their own file. If you are having trouble with an assignment, please feel free to contact me or ask any student in the class. **Do not copy an assignment from another student and submit it as your own. If detected, you will get a zero for the assignment and reported to the Dean's office.** Every assignment must be completed and submitted via Canvas.

## ***Class Attendance:***

Class attendance will be taken. However, it is your responsibility to find out about any lecture material, homework assignments and exams discussed in class. Attendance is highly correlated with good performance in the class, so attendance will be taken at each meeting.

Absences may be excused for athletics, religious holidays, illness, military obligation or family emergencies if you contact me before the missed class.

## ***Communication:***

The best communication method to reach me is via email. Once you get in contact with me, I will acknowledge or respond to your inquiry within 48 hours. Please refrain from sending multiple emails of same case via different account Canvas and GMail.

In the subject line, please add:

**IT490: Subject**

where

**Subject** is what is your inquiry about

## ***Late Assignment:***

Approved assignments that are turned in late, will be subject to penalty as follows:

- Homework - 10% reduction of the grade
- Lab - 10% reduction of the grade
- Project - 10% reduction of the grade
- Quiz / Exam - 20% reduction of the grade

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## **Performance Evaluation:**

The course grade would depend upon your performance on assignments and exams. The following is an allocation of weights:

| <u>Evaluation</u>                       |      | <u>Grading</u> |                     |
|---|------|----------------|---------------------|
| Attendance / Discussion / Participation | 5%   | A              | A(90-100)           |
| Milestones (~5)                         | 10%  | B              | B+(85-89), B(80-84) |
| Project Proposal                        | 5%   | C              | C+(75-79), C(70-74) |
| Documentation / Change Log              | 10%  | D              | D (60-69)           |
| Midterm Milestone                       | 25%  | F              | 59 or less          |
| Final Milestone                         | 25%  |                |                     |
| Written Exams (Midterm and Final)       | 20%  |                |                     |
| Total                                   | 100% |                |                     |

## **Tentative Class Schedule:**

| <b>Week</b>  | <b>Lecture</b>  | <b>Activities / Dues</b> |
|--------------|---|--------------------------|
| 1            | Introduction to the Course  |                          |
| 2            | Milestone - Communication Layer Demonstration   |                          |
| 3            | Project Proposals Due / Meetings Begin  |                          |
| 4            | Milestone - Centralized Logging Functional  |                          |
| 5            |   |                          |
| 6            | Milestone - User Authentication Functional  |                          |
| 7            |   |                          |
| 8            | Midterm Exam  | <b>Midterm Exam</b>      |
| 9            | Midterm Milestone Due   |                          |
| 10           |   |                          |
| 11           | Milestone - 3 Tiered Cluster Due  |                          |
| 12           |   |                          |
| 13           | Milestone - Deployment System Functional  |                          |
| 14           |   |                          |
| 15           | Final Project Presentations<br>System Documentation                                   | <b>Project</b>           |
| 16           | Final Exam  | <b>Final Exam</b>        |
| <b>Note:</b> | Chapters to cover on the indicated dates may vary according to each individual class. |                          |

## **Course Topics:**

- Software as a Service
- Project Management
- ETL
- Messaging Layers
- Server-Side Development
- Change Management
- Disaster Recovery

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## **Professional Conduct:**

This course is about learning to work in a professional team environment as well as the technical aspects. You are all expected to behave in such a manner both in and out of the classroom. You are expected to treat each other with respect and to refrain from any sort of personal misconduct. If there is conflict within a team, troubleshooting the issue is as much a responsibility of the team as any other deliverable. Any amount of disrespect or harassment will not be tolerated. See the [NJIT Code of Student Conduct](#) for further guidelines.

## **NJIT Protocols & Resources:**

- [Academic Honesty and Integrity](#): It is very important that you understand New Jersey Institute of Technology University's policy on academic honesty and integrity. The link above provides you with resources to understand what academic standards and plagiarism are and to learn how to take a course responsively and honestly to avoid plagiarism.  
If you have any questions about the code of Academic Integrity, please contact the Dean of Students Office at [dos@njit.edu](mailto:dos@njit.edu).
- [Student Rights and Responsibilities](#): Find out more about your rights to access the university's resources as well as your related responsibilities.
- The NJIT Library can be accessed here: <https://library.njit.edu/>
- Commitment to Accessibility: Students with disabilities or special circumstances should contact your instructor as soon as possible to ensure that your needs are met in the course. Reasonable accommodations are available for students with a documented disability. If you have a disability and may need accommodations to fully participate in this class, please contact the [Office of Accessibility Resources and Services](#).

## **Technical Support:**

- To get help troubleshooting problems using Canvas, click on the "Help" in the global navigation on the left side of Canvas. This provides links to chat, email or phone support.
- You may call the [IST Service Desk](#) directly at 973-596-2900 or 877-889-7685 or via email at [ServiceDesk@njit.edu](mailto:ServiceDesk@njit.edu).
- The [Canvas Guides](#) provide many answers to common questions related to Canvas.
- Minimum Computer Requirements:
  - [What are the basic computer specifications for Canvas?](#)
  - [Which browsers does Canvas support?](#)
- Additional Requirements (Some courses may also require the following tools):
  - [LockDown Browser System Requirements](#) (Used for some quizzes)