Week 1: Course Introduction

CSI403 Full Stack Development

Semester 1/2569

Agenda

1. Course Overview
2. Assessment
3. TaskFlow System
4. Technology Stack
5. Schedule
6. Next Week

Course Information

Item	Detail
Course Code	CSI403
Course Name	Full Stack Development
Credits	3 (2-3-5)
Semester	1/2569
Duration	15 weeks

Important Notes

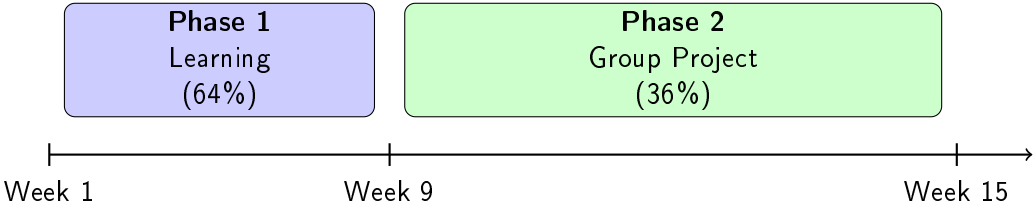
No Midterm Exam!

No Final Exam!

Assessment is based on:

8 Labs (64%) + Group Project (36%)

Two-Phase Learning Model



Phase 1: Learning (Week 2-9)

Build TaskFlow System Together

- Learn by building a real application
- 8 weekly labs (8% each)
- Guided step-by-step instructions
- Individual work

Total: 64% of course grade

Phase 2: Group Project (Week 10-15)

Apply What You Learned

- Form teams of 3-4 students
- Choose your own project idea
- Use all technologies from Phase 1
- Present and defend your work

Total: 36% of course grade

Phase 1 Assessment (64%)

Lab	Topic	Weight
Lab 1	Git + Python + Setup	8%
Lab 2	FastAPI CRUD	8%
Lab 3	Database Integration	8%
Lab 4	Frontend Basics	8%
Lab 5	Jinja2 Templates	8%
Lab 6	Docker + Compose	8%
Lab 7	Testing + Jenkins CI	8%
Lab 8	Jenkins CD	8%
	Total	**64%**

Phase 2 Assessment (36%)

Week	Deliverable	Weight
10	G1: Project Proposal	5%
11	G2: System Design	5%
12	Checkpoint Demo	8%
15	Final Project	12%
15	Oral Defense	4%
15	Peer Evaluation	2%
	Total	**36%**

Late Submission Policy

On Time	1 Day Late	2 Days Late	3+ Days
100%	-10%	-20%	0%

- Deadline: Every Sunday 23:59
- Maximum 3 days late submission
- After 3 days = 0 points

Task Management System

A web application for managing tasks and to-do items

Similar to: Todoist, Microsoft To-Do, Trello

TaskFlow Features

User Management:

- User Registration
- Login / Logout
- Password Hashing
- Session Management

Task Management:

- Create / Read / Update / Delete
- Status: Pending, In Progress, Done
- Priority: Low, Medium, High
- Categories

TaskFlow Features (continued)

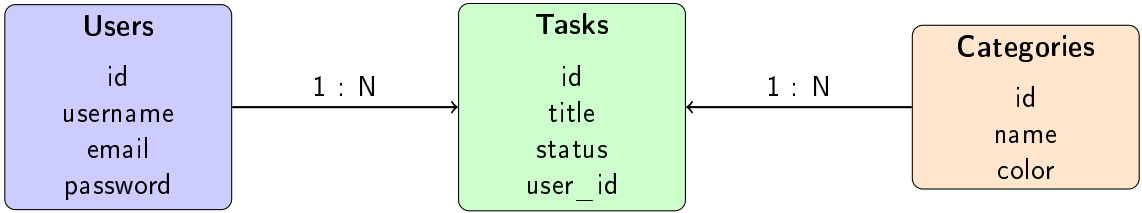
Dashboard:

- Task Statistics
- Recent Tasks
- Filter by Status
- Search Tasks

DevOps:

- Docker Containers
- Docker Compose
- Automated Testing
- CI/CD Pipeline

Database Schema



Technology Stack Overview

Frontend: HTML, CSS, JavaScript, Bootstrap 5

Backend: Python, FastAPI, Jinja2

Database: Microsoft SQL Server

DevOps: Docker, Jenkins, Git

Frontend Technologies

HTML5

- Structure
- Semantic tags
- Forms

CSS3

- Styling
- Flexbox
- Responsive

Bootstrap 5

- Components
- Grid System
- Utilities

Backend Technologies

Python 3.11+

- Modern syntax
- Type hints
- Async support

FastAPI

- REST API
- Auto docs
- Validation

SQLAlchemy

- ORM
- Migrations
- Relationships

DevOps Technologies

Docker

- Containers
- Images
- Compose

Jenkins

- CI/CD
- Pipelines
- Automation

Git/GitHub

- Version control
- Branching
- Pull requests

Phase 1 Schedule (Week 1-9)

Week	Topic	Lab
1	Course Introduction	-
2	Git + Python + Setup	Lab 1 (8%)
3	FastAPI CRUD	Lab 2 (8%)
4	FastAPI + Database	Lab 3 (8%)
5	Frontend (HTML/CSS/JS)	Lab 4 (8%)
6	Jinja2 + Integration	Lab 5 (8%)
7	Docker + Compose	Lab 6 (8%)
8	Testing + Jenkins CI	Lab 7 (8%)
9	Jenkins CD	Lab 8 (8%)

Phase 2 Schedule (Week 10-15)

Week	Activity	Deliverable
10	Team Formation	G1: Proposal (5%)
11	System Design	G2: Design (5%)
12	Sprint 1	Checkpoint (8%)
13	Sprint 2	-
14	Sprint 3	-
15	Final Presentation	Final (18%)

Software to Install

Please install before Week 2:

1. **Python 3.11+** - python.org
2. **Git** - git-scm.com
3. **VS Code** - code.visualstudio.com
4. **Docker Desktop** - docker.com

Also create a **GitHub account** at github.com

VS Code Extensions

Recommended extensions:

- Python (Microsoft)
- Pylance
- Docker
- GitLens
- Thunder Client (API testing)
- Prettier (code formatting)

Week 2 Preview

Lab 1: Git + Python + Project Setup (8%)

What you will learn:

- Git workflow (clone, add, commit, push)
- Python virtual environments
- Project structure
- FastAPI hello world

Deadline: Sunday 23:59

Questions?

Welcome to CSI403!

See you next week!