The expert in anything was once a beginner.

How to ease your next semesters…

Semester Structure (Regular batch)

Semester 01	Semester 02
SE3040 - Application Frameworks	SE3050 - User Experience Engineering
SE3020 - Distributed Systems	SE 3060 - Database Systems
SE3030 - Software Architecture	SE3070 - Case Studies in Software Engineering
SE3010 - Software Engineering Process and Quality Management	SE3080 - Software Project Management

Semester Structure (June batch)

Semester 01	Semester 02
SE3050 – User Experience Engineering	SE3040 – Application Frameworks
SE 3060 – Database Systems	SE3020 – Distributed Systems
SE3070 – Case Studies in Software Engineering	SE3030 – Software Architecture
SE3080 – Software Project Management	SE3010 – Software Engineering Process and Quality Management

SE3040 - Application Frameworks

- Learn about some JavaScript technologies.

- Technical Blog (6 articles - one per bi-weekly)

- Mid-Term examination

- 1 React project
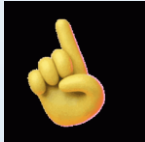 **Conference Management System.**

- Final Examination (4hrs)

How to get ready?

- Start grabbing basics of course content. (mainly on **JavaScript**, **React** and **NodeJS**)

- After learning some basics, watch crash-courses on YouTube.

- Take a look at some past-papers as early as possible.

- **DON'T** wait until lectures start.

  – For React, try to learn,

    – **How React works?**

    – **Class components** vs **Functional Components**

    – **React Hooks** (useState, useEffect, etc...)

    – **Context API** and **Redux**

REDUX VS CONTEXT API

Most importantly….learn JavaScript **JS**

- Without JavaScript knowledge, no point of learning React, NodeJS, etc…

- Try to learn,

  - JavaScript syntaxes (**var**, **let** and **const**)

  - **_proto_** of an object

  - **Map**, **filter**, **reduce** methods

  - **Higher Order Functions**

  - **Callbacks**, **Promises** and **Async-Await**

IT'S VERY IMPORTANT

– For NodeJS, try to learn,

    – **How NodeJS event-loop works?**

    – **Writing REST APIs**

    – **Configuring NodeJS for MongoDB CRUD operations.**

– For MongoDB, try to learn,

    – **What are NoSQL databases?**

    – **How to perform CRUD operations. (learn about "Mongoose")**

How NodeJS event-loop works?

Huh!...
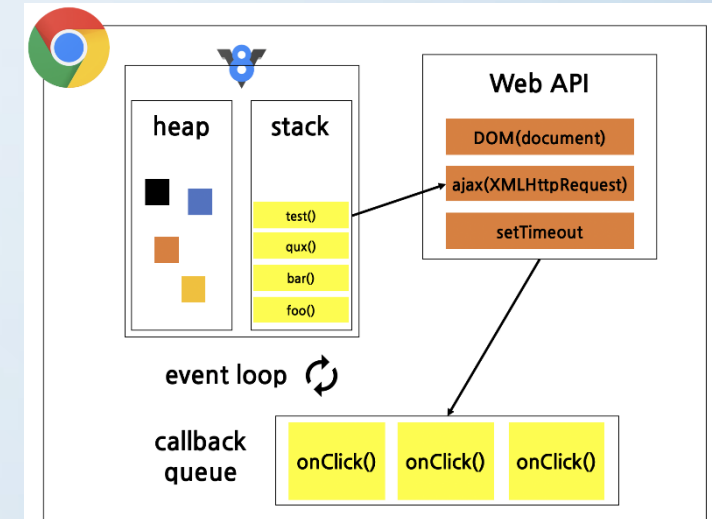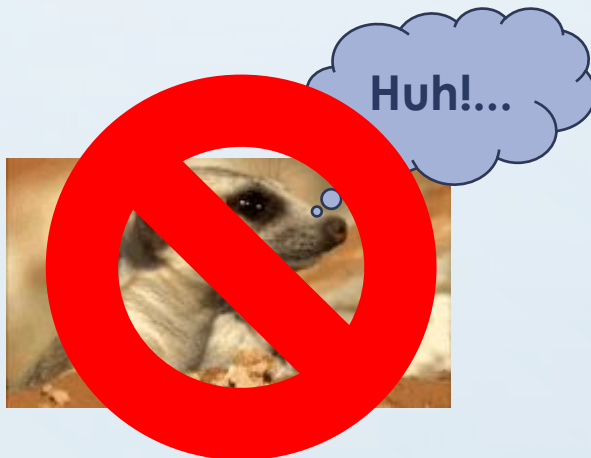
YEAH, THAT ONE!

Some Resources

- For React Basics,

  - ❖ ([React 16: The Complete Course (incl. React Router 4 & Redux) | Udemy](#))

  - ❖ YouTube channels that I referred,

    - **Academind – YouTube**

      (https://www.youtube.com/watch?v=Dorf8i6lCuk) – 3hrs

    - **traversy media – YouTube**

      (https://www.youtube.com/watch?v=w7ejDZ8SWv8) – 2hrs

  - ❖ React Documentation ([Getting Started – React (reactjs.org)](#))

- For NodeJS Basics,

  ❖ ([NodeJS - The Complete Guide (MVC, REST APIs, GraphQL, Deno) | Udemy](#))

  ❖ YouTube channels that I referred,

    – **How Event-loop works?**

      (https://www.youtube.com/watch?v=8aGhZQkoFbQ) – 30mins

    – **traversy media – YouTube**

      (https://www.youtube.com/watch?v=fBNz5xF-Kx4) – 2hrs

  ❖ NodeJS Documentation ([Documentation | Node.js (nodejs.org)](#))

- For JavaScript Basics,

  ❖ https://www.youtube.com/watch?v=PoRJizFvM7s – JS Async Await

  ❖ https://www.youtube.com/watch?v=W6NZfCO5SIk – JS Crash course

  ❖ [Clever Programmer - YouTube](#)

SE3020 - Distributed Systems

- Concepts and applications of Distributed Computing.

- Two assignments

  - Assignment 01 – **Writing a review paper (like a research paper)**

  - Assignment 02 – **Developing a shopping platform using any *JavaScript framework* and *WSO2 Enterprise Integrator***

- Lab Exercises

- Final Examination

How to get ready?

- For Assignment 01,

  ❖ Be familiar with **MS Word features** (Adding References, etc…)

  ❖ Use **Google Scholar** for gathering more information.

  ❖ See some sample review papers (in IEEE format) on the internet.

  ❖ Should write a 6–8-page review paper. You have **a lot** to write.

  ❖ **NO** Coding stuff.
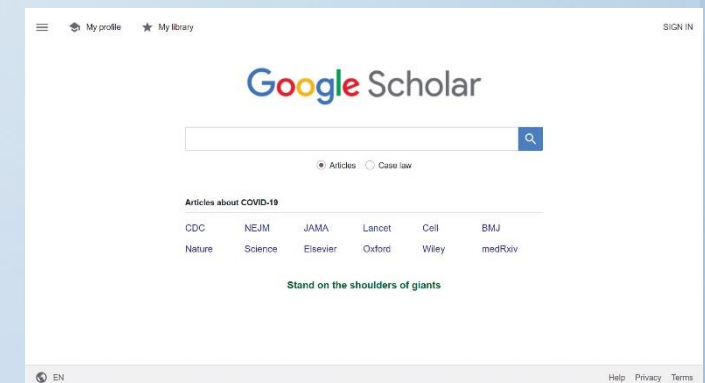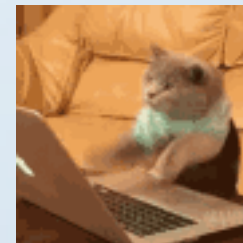
- For Assignment 02,

  ❖ Be familiar with **any JavaScript framework**(React or Angular or Vue or etc.….)

  ❖ Be familiar with **how WSO2 EI (Enterprise Integrator) works.**

  ❖ Try to be familiar with the **documentation** provided by WSO2 because it is hard to find video tutorials. (almost no..☹)

  ❖ Spring-boot is relatively **easier** than NodeJS so if you like, try that out as your Backend.

  ❖ **100%** Coding.

Some Resources

- For Writing the review paper (assignment 01),

  - ❖ [How to write a review paper? Learn from the Scratch. Know about benefits of a review. - Bing video](#)

  - ❖ [IEEE Reference in MS Word - Bing video](#)

- For Developing shopping platform (assignment 02),

  - ❖ [ReactJS + Spring Boot CRUD Full Stack Application - YouTube](#)

 - ❖ [Overview - WSO2 Enterprise Integrator Documentation](#)

SE3030 – Software Architecture

- Learn about different types of Software Architectural Patterns.

- Two assignments

    - Assignment 01 – **Implementing a scenario using OSGi framework.**

    - Assignment 02 – *Presentation based on a case study about a Software system with its Architecture style and Key Quality Attributes.*

- Final Examination

How to get ready?

- For Assignment 01,

  ❖ Recap the knowledge on **Java with Eclipse IDE.**

  ❖ Give fullest attention to the **lab sessions. (mainly on the OSGi lab session).**

  ❖ Recruit group members with **active collaboration**.

  ❖ **100%** Coding.
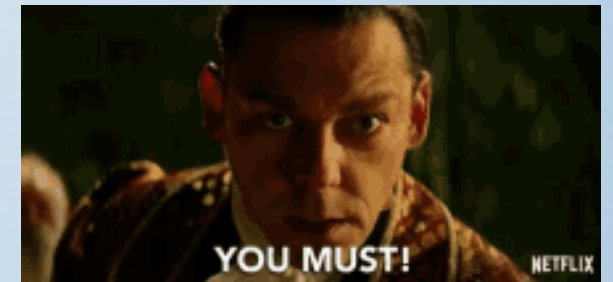
- For Assignment 02,

  ❖ Give fullest attention to the **lectures**. (because all the information can be gained only from lectures)

  ❖ Do a small research on **Architectural styles used by other tech companies** (like Facebook, Google, etc...).

  ❖ You may have a **VIVA**, so get ready to it.

  ❖ **NO** coding.

Some Resources

I GOT ASSETS

- For Assignment 01 (OSGi assignment),

  ❖ **lab sessions** are the only resource I used. So, give your fullest attention to those.

  ❖ If you aren't familiar with Java,

    ❖ Java OOPs Concepts | Object Oriented Programming | Java Tutorial For Beginners | Edureka - YouTube

    ❖ Object-oriented Programming in 7 minutes | Mosh - YouTube

- For Assignment 02 (Presentation),

  - ❖ [What is Software Architecture? (Monolithic vs. Layered vs. Microservice) - YouTube](#)

  - ❖ Concentrate to the **lectures until the end.** (because **last few lectures** will contribute to more than 50% for your entire assignment).
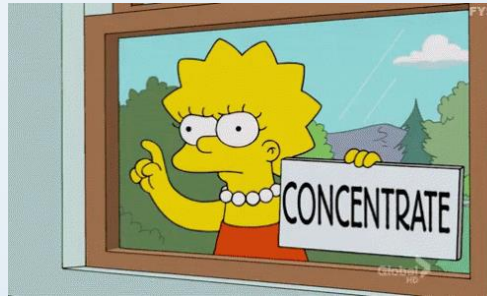
- [(PDF DOWNLOAD) Head First Design Patterns (d-pdf.com)](#)

- [Design Patterns in Object Oriented Programming – YouTube](#) – playlist explains every pattern in above book **with examples**

SE3010 – Software Engineering Process and Quality Management

- Learn about Software Testing, Software Metrics and Software Quality & Testing Tools.

- Two assignments

    - Assignment 01 – **Presentation on Test management tool or Bug tracking tool.**

    - Assignment 02 – ***Introduce a new complexity metric.***

- Lab Test

- Final Examination

How to get ready?

- For Assignment 01,

  ❖ Research on some existing **Test management Tools and Bug Tracking tools.**

  ❖ Know how they work and how to work.

  ❖ Recruit group members with **active collaboration.**

  ❖ **NO** coding.
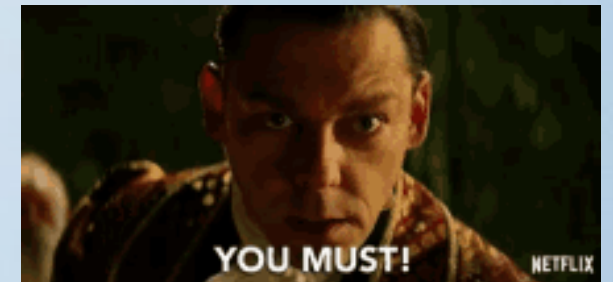
- For Assignment 02,

  ❖ Research on some complexity metrics

  ❖ Concentrate on the **lectures and lab sessions until the end.**

  ❖ Try out examples of calculating complexity metrics.

  Yep…there are Maths to do….
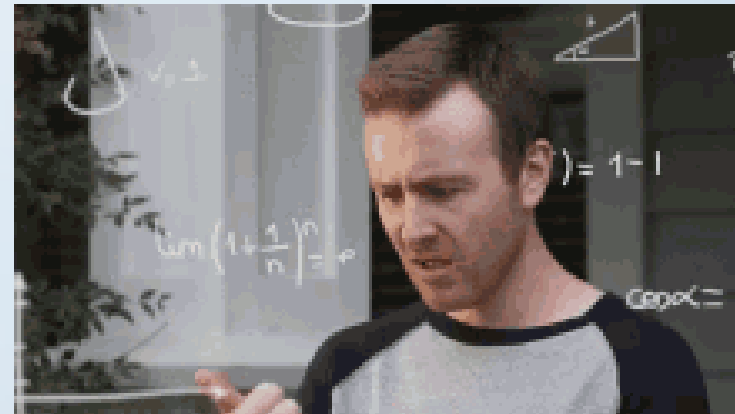
Semester 02

SE3050 – User Experience Engineering

- Learn about User Interface designing and User Experience.

- One mini project – **Redesigning an existing UI of an app**

- Technologies and Tools that we will learn,
  - **Flutter**
  - **React Native**

- Some resources I found,
  - Flutter Crash Course for Beginners 2021 - Build a Flutter App with Google's Flutter & Dart – YouTube – 5hrs
  - React Native Tutorial for Beginners - Crash Course 2020 - YouTube– 5hrs

SE 3060 - Database Systems

- Learn about some deep concepts in Database systems.

- **NO** projects and assignments.

- But this might be the **hardest** module in the semester.

SE3070 - Case Studies in Software Engineering

- Learn about case studies in Software Engineering.

- Get ready to draw some **diagrams** again.
  (like in 2nd Year)

- Final Examination.

SE3080 - Software Project Management

- Learn about concepts in software project management.

- **BIG** project to be done. (Developing an application) – Web/Desktop Application

- Can use **Java or any technology**.

- **100% coding**

BONUS Tips

- If you are a **VS Code** fan, try these extensions to make your work easier.

Simple React Snippets burkeholland.simple-react-snippets
Burke Holland 1,003,094 ★★★★★ Repository v1.2.3
Dead simple React snippets you will actually use
Disable Uninstall This extension is enabled globally.

Prettier - Code formatter esbenp.prettier-vscode
Prettier 13,354,919 ★★★★☆ Repository License v8.0.1
Code formatter using prettier
Disable Uninstall This extension is enabled globally.

Material Icon Theme pkief.material-icon-theme
Philipp Kief 8,032,589 ★★★★★ Repository License v4.7.0
Material Design Icons for Visual Studio Code
Set File Icon Theme Disable Uninstall This extension is enabled globally.

Thunder Client rangav.vscode-thunder-client
Ranga Vadhineni 161,003 ★★★★★ Repository License
Rest API Client for VS Code, GUI based Http Client
Disable Uninstall This extension is enabled globally.

Better Comments aaron-bond.better-comments
Aaron Bond 1,848,867 ★★★★★ Repository License v2.1.0
Improve your code commenting by annotating with alert, informational, TODOs, and more!
Disable Uninstall This extension is enabled globally.

Draw.io Integration hediet.vscode-drawio
Henning Dieterichs 350,843 ★★★★★ Repository v1.5.0
This unofficial extension integrates Draw.io into VS Code.
Disable Uninstall This extension is enabled globally.

Auto Rename Tag formulahendry.auto-rename-tag
Jun Han 5,771,824 ★★★★☆ Repository v0.1.6
Auto rename paired HTML/XML tag
Disable Uninstall This extension is enabled globally.

Flutter dart-code.flutter
Dart Code 2,916,884 ★★★★★ Repository License v3.23.0
Flutter support and debugger for Visual Studio Code.
Disable Uninstall This extension is enabled globally.

Dart dart-code.dart-code
Dart Code 3,097,501 ★★★★★ Repository License v3.23.1
Dart language support and debugger for Visual Studio Code.
Disable Uninstall This extension is enabled globally.

Error Help gihansiriwardhana.error-help
Gihan Siriwardhana 108 ★★★★☆ Repository v0.0.5
Search help for your errors and warnings
Disable Uninstall This extension is enabled globally.

PROGRAMMING IS ALL ABOUT THESE
BY- @codes.learning

LOGIC

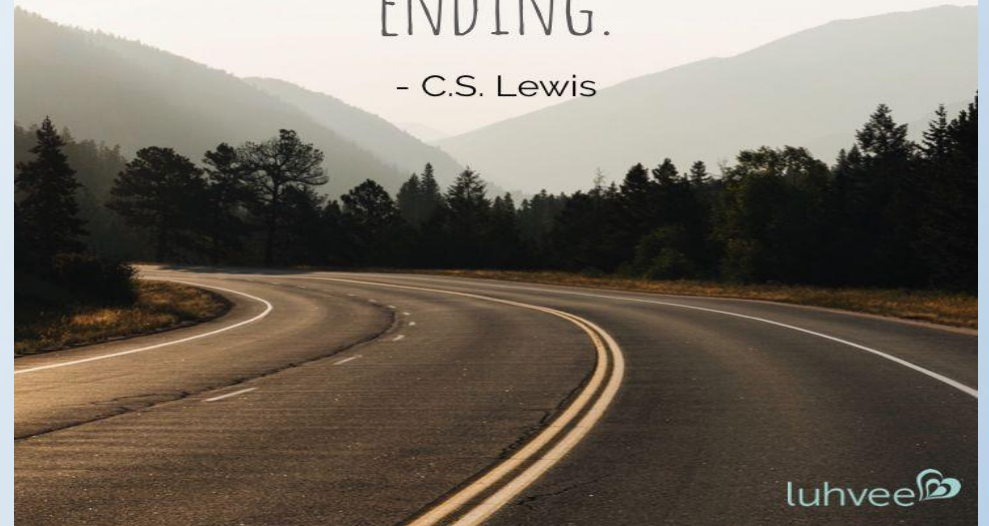SYNTAX

PATIENCE

FAITH IN YOURSELF

THINK

RESPECT YOUR EFFORTS

You can't go back and change the beginning, but you can start where you are and change the ending.

– C.S. Lewis

luhvee