MODULE INTRODUCTION

CS3213 FSE

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BASIC INFORMATION

- New module (course) offered first time January 2022.

- Planned to be offered once a year

- Title: Foundations of Software Engineering

- Course code: CS3213

- Pre-requisite: CS2103 Software Engineering

CONTENTS

- Focus on foundations.

- Foundation guided hands-on work through course project.

- Alternative SE project module.

- Course project will involve code which will be actually deployed to help other students in first year.

No specific overlap with existing SE courses

CS3219 (patterns), CS4211 (formal), CS4218 (testing), …

BASIC STRUCTURE (TENTATIVE)

- Foundations: 55%, Project: 45%

- Assessment scheme:
  - Midterm: 15%
  - Final exam: 40%
  - Project: 45%
    - Tentative plan: Assignment sheets: 12, Intermediate assessment: 6, Final report and presentation: 12, Final code: 15

- **Week by week schedule in**
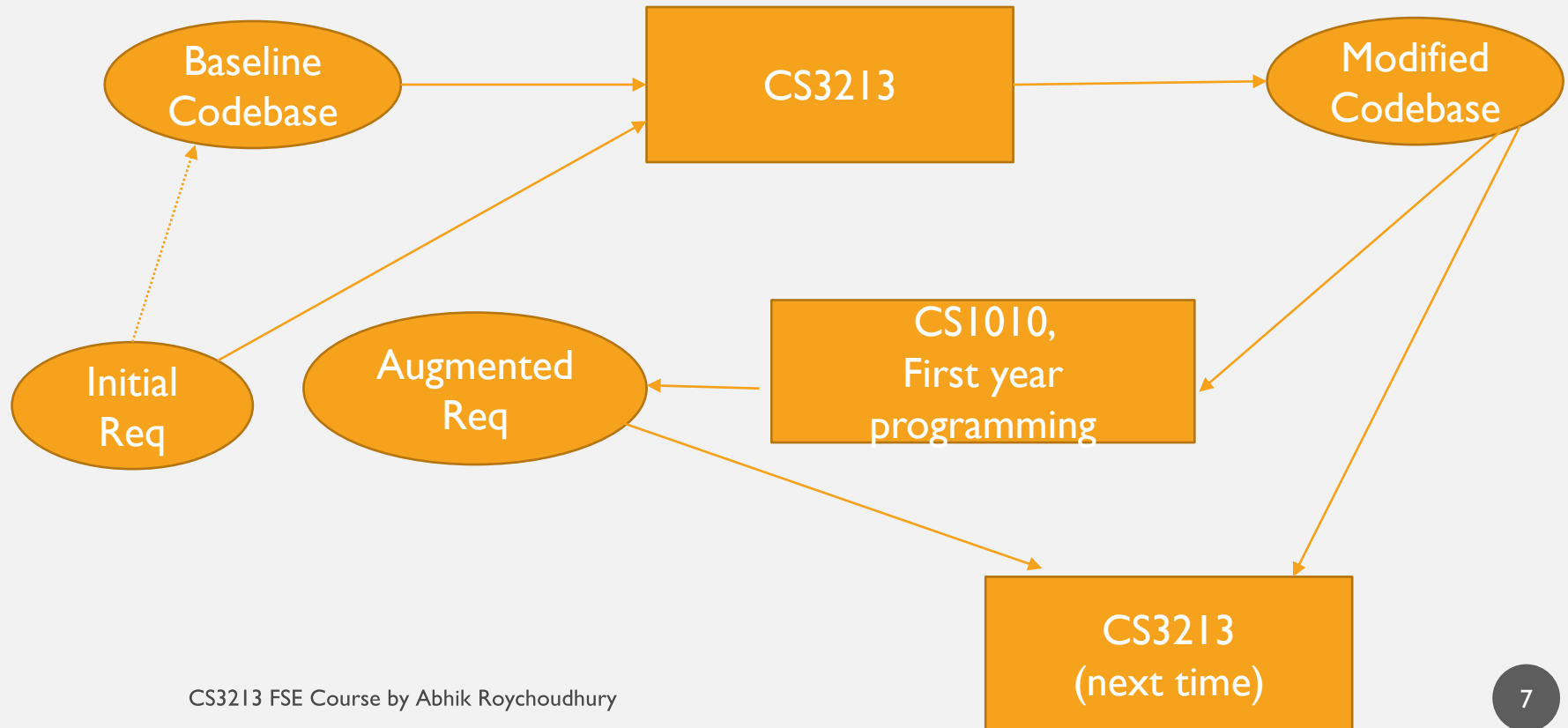 - **Luminus → Module Overview**

TOPICS

- Requirements, UML, Statecharts

  - *Requirements and Modeling*

- **Discussion on Course Project – foundations**

- Static Analysis, Test suite estimation, Test generation

  - *Testing and analysis*

- Performance, Security of software

  - *Extra-functional aspects*

COURSE PROJECT

- **Intelligent tutoring system**

  - Parser …

  - Analyzer ..

  - Feedback module

  - Repair generation

  - …

- Purpose: the system will provide feedback to struggling first year students.

VISION

Baseline Codebase → CS3213 → Modified Codebase

Initial Req

Augmented Req ← CS1010, First year programming

CS3213 (next time)

TEAM

Abhik
Wed 1-3

Yannic
Wed 3-4
Thu 10-11

Liu Yu
Thu 11-12

Kishore
Thu12-1

Guo Ai
Thu 1-2

Zhiyu
Thu 2-3

Jon
Thu 3-5

LONG-RUNNING SE PROJECT
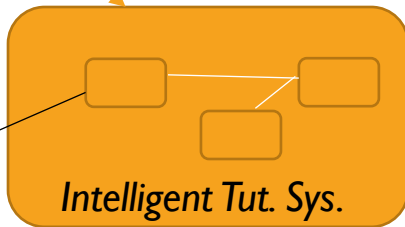
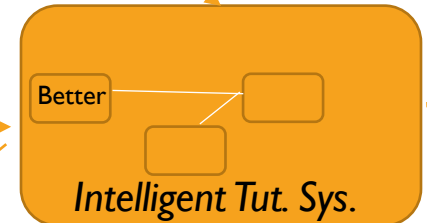Bootstrap: Baseline Codebase (2021)

Long running SE project - Manager

CS3213 (Jan22)

Intelligent Tut. Sys.

Oversee evolution

Better

Intelligent Tut. Sys.

Project Group
focusing on a
module
(CS3213 = short-running SE project)

Deploy

CS3213 (Jan 2023)

Requirements

Provide feedback
To students for
programming

Students in CS1010, ...

SUPPLEMENTARY READING

O'REILLY®
Software Engineering at Google
Lessons Learned from Programming Over Time
Curated by Titus Winters, Tom Manshreck & Hyrum Wright

https://abseil.io/resources/swe_at_google.2.pdf

This is for a general feel. It is *free* reading.

Readings for each week are in Luminus → Module Overview → Week 1, …