Contacts:

Module Coordinator (MC)

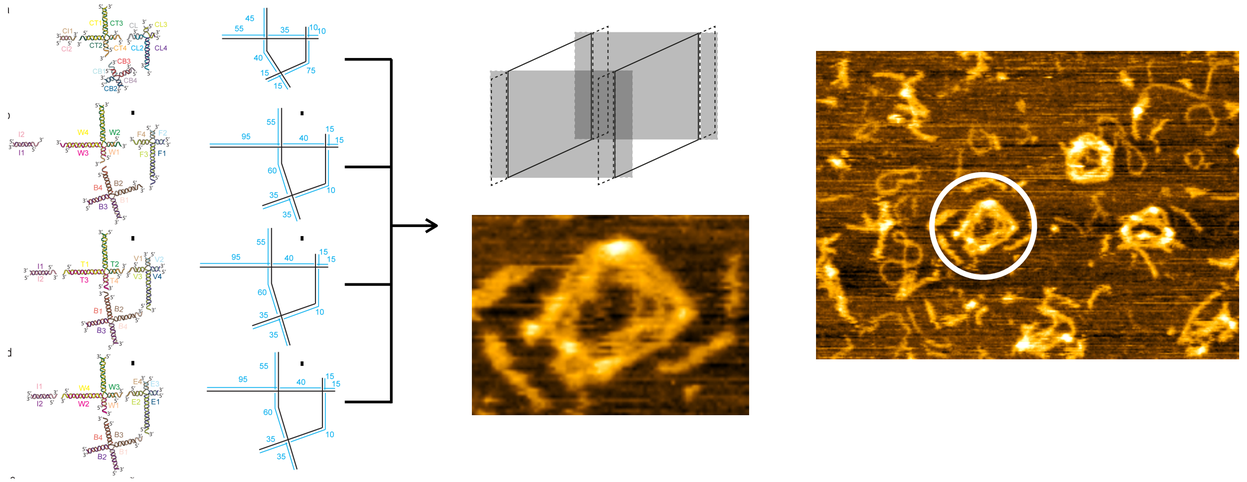
Dr. Effirul Ramlan | effirul.ramlan@universityofgalway.ie

Week 01 to Week 12 (09:00 to 20:00 — I'll try my best to reply immediately)

Professional Background:

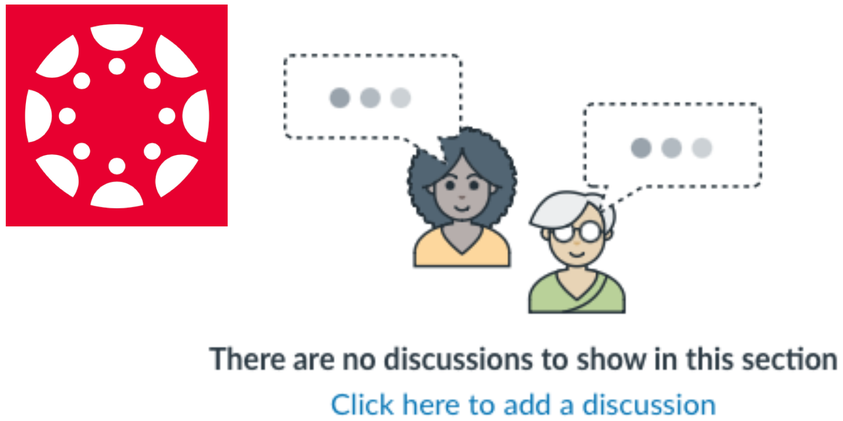
- Software Development Engineer @ IBM
- System Programmer @ Motorola

What I am doing now?



Contacts:

- We have a group on Discord (**CT417**) where everyone is welcome to discuss just about anything on the module.
- If you have any issues (yes, **ANY**) regarding the weekly topics, assignments, exams, emulators, tools, system configs, etc, **DO JOIN IN!**
- MC and TAs are normally around monitoring the happenings in the group.



- You can use the “Discussion” section on Canvas
- You can post any new topic, but make sure that you check previous posted topics — It’s better to join an ongoing discussion rather than asking the same question again
- You can also use the “Chat” option
- A bit more OFFICIAL then discord, but whatever works for you

Schedule:

Two x 1 hour of slots:

Wed 10:00 - 11:00 — Theories and Concepts
Wed 13:00 - 12:00 — Tutorials or Practical or Demo

Materials will be uploaded weekly on Canvas, normally in the form of lecture slides **[S]**, and lecture notes **[N]**. There will be additional materials (e.g., links to videos, additional references and supplementary reading) provided each week.

- **Announcements**
- **Syllabus**
- **Modules**
- **Assignments**
- **Discussions**
- **Chat**

Module Outline:

Planned topics (subject to change)

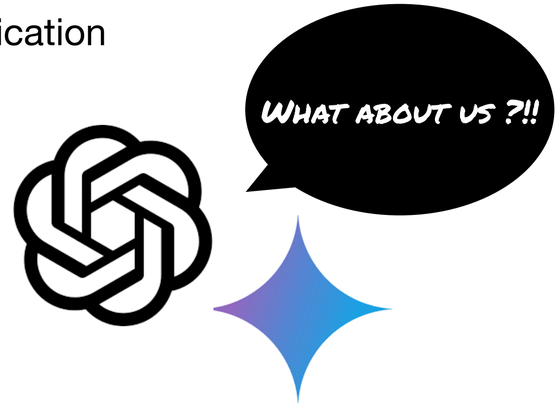
WK01	Module Overview and Introduction to Git & Version Control
WK02	DevOps Part 1 – Introduction to Spring Boot and CI/CD Pipelines
WK03	DevOps Part 2 – Docker for Containerisation
WK04	DevSecOps Part 1 – Static Code Analysis for Security
WK05	DevSecOps Part 2 – Dynamic Application Security Testing
WK06	Software Architecture – Microservices and API-First Design
WK07	Automated Testing – Unit Testing with JUnit
WK08	Software Quality Assurance – Code Coverage and Quality
WK09	Software Reliability and Monitoring
WK10	Design Patterns Part 1 – Basic Patterns (Singleton, Factory)
WK11	Design Patterns Part 2 – Advanced Patterns (Adapter, Decorator)

Continuous Assessment:

Total Marks = 40%

You will work in pairs on a software project, with **THREE** key submissions across the 12 weeks. Each deliverable will align with the topics covered in the course up to that point, allowing for continuous progress assessment.

🎸 **AS-01**:	🚨 **AS-02**:	📦 **AS-03**:
Setup musicFinder and Configure CI/CD Pipeline (Week 4)	Testing, Security, and Expanded Application (Week 8)	Refactoring and Application Deployment (Week 12)



** Plagiarism will not be tolerated (as usual, and unfortunately given 0 marks for all parties involved). Details are available here: https://www.nuigalway.ie/plagiarism/

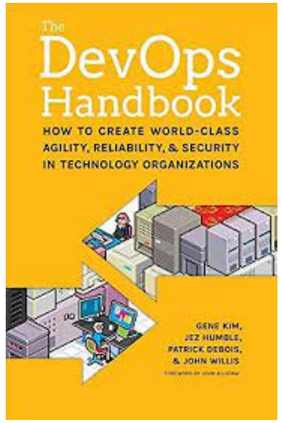
Final Exam = 60%

Typical exam paper (2 hours) covering materials from week 1 to 12 - nothing out of the ordinary (**you can be sure of that**).

Relevant past papers are available here (search for CT417):
https://regexam.nuigalway.ie/regexam/paper_index_search_main_menu.asp#

Reading Materials:

These are NOT required but useful for your journey

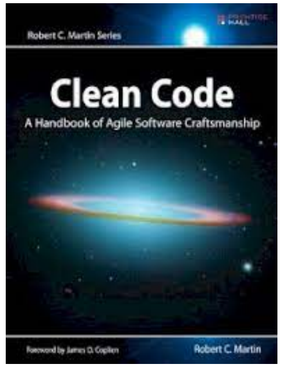


Gene Kim, Jez Humble et. al,

The DevOps Handbook: How to Create World-Class Agility, Reliability, & Security in Technology Organisations

(2nd Edition)

THE BOOK FOCUSES ON MODERN SOFTWARE ENGINEERING PRACTICES (USING DEVOPS) AND HOW TO APPLY THEM IN IT ORGANISATION



Robert C. Martin

Clean Code: A Handbook of Agile Software Craftsmanship

(1st Edition)

THE GO-TO REFERENCE IF YOU WANT TO PURSUE A CAREER AS A SOFTWARE ENGINEER (AND A GOOD ONE AT THAT)

Reading Materials:

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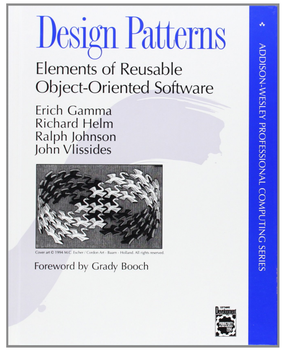
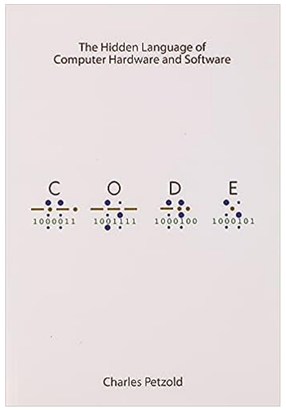


Erich Gamma, et al.

Design Patterns: Elements of Reusable Object-Oriented Software

(1st Edition)

OLDIE BUT GOODIE AND A LITTLE AHEAD OF ITS TIME — THE MOST INFLUENTIAL FOR OBJECT-ORIENTED PROGRAMMING



Charles Petzold

Code: The Hidden Language of Computer Hardware and Software

(2nd Edition)

DESCRIBING HOW COMPUTER WORKS WITH SOFTWARE AND HARDWARE, YOU PROBABLY KNOW HOW-THIS-WORKS, BUT IT IS A GOOD REFRESHER

Reading Materials:

These are NOT required but useful for your journey

IF YOU HAVE TIME TO KILL AND TIRED OF THE SAME SOCIAL MEDIA CONTENT, MAYBE A YOUTUBE CHANNEL ON SOFTWARE ENGINEERING MIGHT HELP 😀

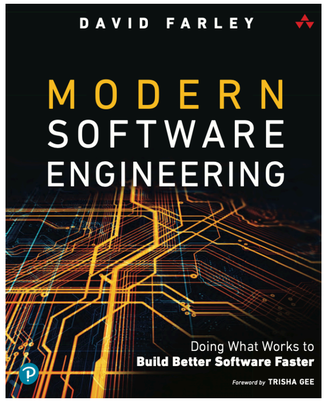
Dave Farley

Continuous Delivery

https://www.youtube.com/c/ContinuousDelivery

https://www.davefarley.net/?p=352

YOU CAN TRY HIS BLOG AS WELL



Gene Kim, Jez Humble et. al,

Modern Software Engineering: Doing What Works to Build Better Software Faster

(1st Edition)

OR HIS BOOK