CSE- 410

Software Development

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Course Synopsis

Students have to develop on **real life oriented projects** that means **solve a complex engineering problem** in this course. For development purposes,

modern technologies are preferred, including frontend frameworks (React.js, Angular, Vue.js, etc.), backend platforms (Node.js, ASP.NET Core, Django, etc.), full-stack solutions (Next.js, Laravel, Ruby on Rails, etc.), and a variety of database systems (MySQL, PostgreSQL, MongoDB, Oracle, etc.). Open Source projects are also preferred as Open source code is typically created through a collaborative effort in which programmers improve upon the code and share the changes within the community. Moreover, documentation is a major concern for the project to ensure the Software Quality Assurance (SQA). Hence at the end of semester **students submit their projects including the documentation**.

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Project Groups

Maximum
2 or 3

members

3

Assessment

Assessment Type % weight Project Evaluation (Assessment) 70%

❖ Continuous Evaluation in Lab 30% ❖ Presentation 20% ❖ Viva 20%

Report (Doc + Video) and CEP Mapping 30% **Total 100%**

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CO-PO

CO No.
CO Statements:

Upon successful
completion of the course,

students should be able to:
Corresponding POs

CO1 Apply the S/W Engineering knowledge to provide a working solution on a real world problem

CO2 Identify, formulate, and analyze a real world problem based on requirement analysis.

CO3 Design/Develop a working solution on a real world problem using s/w designing tools.

CO4 Use modern development tools which are popular among s/w developers.

CO5 Identify societal, health, safety, legal and cultural issues related to the project.

1-Engineering Knowledge 2-Problem Analysis

3-Design/ development of solutions

5-Modern Tool Usage 6-The Engineer and Society

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CO-PO

CO No.

CO Statements:

Upon successful completion of the course, students should be able to:

CO6 Practice professional ethics and

work
on
the

CO8 Communicate effectively through presentation and
write effective reports and documentations

project.
CO9 Apply project management principlesusing Version

Control System, and produce cost value analysis. CO10 Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of requirement changes and introduction of modern development tools

12-Lifelong learning

10-Communication

11-Project Management and Finance

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Assessment Type	% weight	CO1	CO2	CO3	CO4	CO5	CO6	CO7	CO8	CO9	CO10
Presentation followed Viva Report and CO8 CO9 CO10	40%								10	15	15
CEP Mapping	30%	5	5	3	5	2	5	5			
Continuous Project Evaluation (Assessment)	30%	5	10	5	5	5					
Total	100%	5	15	15	5	18	5	5	17	10	5

Final Year Project

Final Year

First Year
Courses
First Year

Final Year
Courses

Third Year

According to **Washington Accord**

- Knowledge Profile (K)
  - Level of Problem Solving(P)

  - Attributes(A)

Complex Engineering Problems How to Demonstrate through Projects?

Complex Engineering Problem Solving (P)

Complex Engineering Activities (A)

Complex Engineering Problems

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Complex Engineering Problems

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Project Idea

This are not complex engineering problem (CEP), try to make it into CEP

1. https://nevonprojects.com/year projects-for-computer-engineering/ 2. https://1000projects.org/

Complex Engineering Problem

⚠️

Complex Engineering Problem

Design a simple Bangla Speech Recognition system.

Such a system can be incorporated with a wheelchair to make it voice controlled and

thus enables a physically handicapped person to move freely without the help of a constant care- giver. Moreover, the ability to give commands in Bangla will make the system more user- friendly in the context of Bangladesh.

The system should be speaker-independent, i.e. it is required that the Bangla speech recognition system should work satisfactorily irrespective of sex, age-group, or dialect of the speaker.

Students are required to explore different methodologies to investigate the problem through design of experiment and data analysis and select or develop an optimal methodology for design of the system.

Complex Engineering Problem

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1.

Project Title
2. Project Member's

3. Motivation

4. Problem Definition

5. Objective, Solution & Project Outputs

6. Impact on Society

7. Critical challenges

8. Conflicting requirement **(Optional)**

9. How P and K s are addressed through the project and mapping

10. Project Management (Time-table) and Cost analysis

Thanks to All

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