A. Program Teknologi Informasi *Full Stack Developer (FSD)*

Overview

The Full Stack Developer course is a comprehensive discipline designed to provide individuals with the broad skill set and knowledge required to excel in front-end and back-end web development. It entails applying engineering ideas and processes across the software development spectrum, from web design to testing and continuous maintenance. This course prepares students for a successful career as full-stack developers.

Mastering full-stack development's primary goal is to equip students with a well-rounded education in programming, software design, testing, and project management, successfully preparing them for a career in online development. Fundamental programming concepts, object-oriented programming, web development, database fundamentals, SQL proficiency, software engineering principles, web application creation, software testing and quality assurance, software development methodologies, and hands-on project work.

Exit Profile of FSD Curriculum

After completing all modules, the students should be able to:

- Design and develop software applications using programming languages.
- Understand and apply software engineering principles and methodologies to software development projects.
- Create and manage databases.
- Develop software using object-oriented programming principles.
- Apply software testing and quality assurance techniques to ensure the functionality and reliability of software applications.
- Work effectively as part of a software development team, collaborating with others to design, develop, and deliver software projects on time and within budget.
- Use software development tools and technologies, including integrated development environments (IDEs), version control systems, and bug tracking tools.
- Communicate effectively with stakeholders, including clients and team members, about software development projects.
- Continuously learn and adapt to new technologies and industry trends to stay up-to-date with the rapidly changing software industry.

Curriculum Contents

Semester 1	
Modules	**Credits**
Introduction to Information Technology	3
Introduction to Information Technology Project	1
Algorithm and Data Structure	3
Algorithm and Data Structure Project	1
Relational Database Design	2
Tools and Technique for Analyzing Data*	3
Implementing Database Design on MySQL Server	3
Implementing Database Design on MySQL Server Project	1
Information Systems Architecture and Technology	2
Operating System	2
Total Credits	**21**

*) Khusus Program Kerja Sama CCIT – PNJ Prodi TI, Modul Tools and Technique for Analyzing Data (termasuk Project) di semester 1 dipertukarkan dengan Modul Software Engineering di semester 2

Semester 2	
Modules	**Credits**
NoSQL - MongoDB Fundamentals	3
NoSQL - MongoDB Fundamentals Project	1
Introduction to Web Programming	3
Introduction to Web Programming Project	1
Object Oriented Programming	3
Object Oriented Programming Project	1
Software Engineering*	3
Management Information System	2
Leadership and Communication Skills	2
Total Credits	**19**

*) Khusus Program Kerja Sama CCIT – PNJ Prodi TI, Modul Tools and Technique for Analyzing Data (termasuk Project) di semester 1 dipertukarkan dengan Modul Software Engineering di semester 2

Semester 3	
Modules	**Credits**
Human Computer Interaction	3
Human Computer Interaction Project	1
Web Application	3
Web Application Project	1
Distributed System	3
Distributed System Project	1
Project Management using DevOps	2
Project Management using DevOps Project	1
Collaborative Development using Repository System	2
Security Concept	2
System Analysis and Design	2
Total Credits	**20**

Semester 4	
Modules	**Credits**
Developing Enterprises Information System using Framework	3
Developing Enterprises Information System using Framework Project	1
Mobile Programming	3
Mobile Programming Project	1
Software Quality Assurance	3
Software Quality Assurance Project	1
Writing Methodology	1
Capstone Project	4
Professional Ethics	2
Total Credits	**19**