Information Technology - Internet-based System Automation (ISA) Curriculum

Designed and delivered by **CEP-CCIT FTUI** started on new academic year of 2024

Overview

Industry 4.0 and IoT are the hottest technologies today. Many countries, scientists, and professionals look for any technology to be the best standard which would achieve automation in everything. It makes everyone race to upgrade their skills to master this technology since it could transform any kind of business and industry into a new kind of method.This technology would be a new jump for the internet which will change how people interact with each other, not only people with others but also between machines. Thus, those who do not upgrade their skills in the latest technology will have no role in future business.

Exit Profile of ISA Curriculum

After completing all modules, the students should be able to:
• Find the solution to enable automation in an environment based on an IoT platform.
• Design and implement an automatic system using sensors and a controller and database, and enable the data to beaccessed by a web-based application or mobile applications.
• Understand how the IoT (Internet of Things) helps the Industry 4.0 transformation

Target Students

The course is designed for students who desire to work as an IoT developer or an automated system developer, but this could be applied for a student who wants to be a web developer.

Prerequisites

Students should be able to interact in an English and Indonesian classroom environment.

Entry Profile

• Student at least having a high school graduate certificate.
• Student should already comfortable using the any OS smartphone, internet, Microsoft Windows / Linux Operating System PC.
• Knowledge of basic programming as well as basic networking would be an advantage.

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Certificate No: 50200176 QM15

Curriculum Contents

Semester 1

Code	Modules	Credits
IIT-24	Introduction to Information Technology	3
IIT/P-24	Introduction to Information Technology Project	1
ADS-24	Algorithm and Data Structure	3
ADS/P-24	Algorithm and Data Structure Project	1
RDD-24	Relational Database Design	2
TAD-24	Tools and Technique for Analyzing Data	3
IDD-24	Implementing Database Design on MySQL	3
IDD/P-24	Implementing Database Design on MySQL Project	1
IST-24	Information Systems Architecture and Technology	2
ISAS-OPS-24	Operating System	2
	Total Credits	**21**

Semester 2

Code	Modules	Credits
OOP-ISA-24	Object Oriented Programming	2
BEP-ISA-24	Backend Programming	2
BOP/P-ISA-24	Backend & OOP Programming Project	1
CNE-ISA-24	Computer Network	2
CNE-P-24	Computer Network Design Project	1
ANOS-ISA-24	Administering Network Operating System	3
LSC-ISA-24	Linux Server Configuration	3
LSC/P-ISA-24	Linux Server Configuration Project	1
ECS-ISA-24	Electronic Circuit and Sensors	3
ECS/P-ISA-24	Electronic Circuit and Sensors Project	1
ISAS-SEN-24	Software Engineering	2
LCS	Leadership and Communication Skills	1
	Total Credits	**22**

Semester 3

Code	Modules	Credits
IOT-ISA-24	Introduction to IoT (Connecting Things)	1
ITC-ISA-24	Internet of Things Circuit (Security)	4
BDA-ISA-24	Big Data and Analytics	4
ES-ISA-24	Embedded system	4
ITF-ISA-24	IoT Framework and Platforms	2
WM-24	Writing Methodology	1
ISAS-MIS-24 (ISA)	Management Information System	1
IP-ISA-24	IoT Project I	2
	Total Credits	**19**

Semester 4

Code	Modules	Credits
ISAS-SCO-24 (ISA)	Security Concept	1
PJV-ISA-24	Programming in Java	3
PJV/P-ISA-24	Programming in Java Project	1
MAP-ISA-24	Mobile Application on Android Platform	3
MAP/P-ISA-24	Mobile Application on Android Platform Project	1
PRE-24	Professional Ethics	2
IS-ISA-24	Integration System	4
WAP-ISA-24	Web Application	3
DIS-ISA-24	Developing Enterprises Information System using Framework	3
DIS/P-ISA-24	Developing Enterprises Information System using Framework Project	1
	Total Credits	**22**
Total Credit in 2 Years		**84**

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