COURSE	Name	: System Design and Integration
	Code	: EE184722
	Credits	: 3
	Semester	: VII

Description of Course

This course discusses the design of a system by considering several aspects, evaluating a design result from several aspects, comparing several design results, determining the best design of all, and integrating the designs chosen in the form of uniform technological architecture. Next, implementing the technology architecture into the form of technology products that fulfill the needs.

Learning Outcomes

Knowledge

(P03) Mastering the concepts and principles of design procedure in power systems, control systems, multimedia telecommunications, or electronics.

(P04) Mastering the concepts, principles, and procedures which considers economical, social, and environment aspects in power systems, control systems, multimedia telecommunications, or electronics.

Specific Skill

(KK03) Able to describe system design for problem solving in power systems, control systems, multimedia telecommunications, or electronics by concerning technical standards, performace aspect, reliability, ease of application, and assurance of sustainability.

(KK04) Able to implement alternative solutions of engineering problems in power systems, control systems, multimedia telecommunications, or electronics by concerning in factors of economy, public health and safety, culture, social, and environment.

(KK05) Able to utilize analytical and engineering design tools based on appropriate information and computation technology to perform engineering activities in power systems, control systems, multimedia telecommunications, or electronics.

General Skill

(KU05) Able to take decisions appropriately in the context of problem solving in the area of expertise based on the results of information and data analysis.

(KU09) Able to document, store, secure and recover data to ensure validity and prevent plagiarism.

Attitude

(S05) Appreciating the diversity of cultures, point of view, religion and belief as well as opinion or the original findings of others.

Course Learning Outcomes

Knowledge

Mastering of the concept and methodology of system design and integration.

Specific Skill

Able to integrate the design result of a system by combining technology, application, data and communication into a functional work structure with uniform technological architecture form.

General Skill

Able to make decisions appropriately in the context of problem solving in the area of expertise, based on the results of information and data analysis.

Attitude

Contributing to improving the quality of life of society, nation, state, and civilization based on Pancasila.

Main Subjects

1. System Design Methodology
2. System Requirement Study
3. Conceptual Design
4. Functional Design
5. Detailed Design
6. System Testing
7. Decision Support System Design
8. System Integration
9. System Integration Components
10. System Implementation

Reference(s)

[1] Wasson, Charles S. System Analysis, Design, and Development: Concepts, Principles, and Practices. John Wiley & Sons, New Jersey, 2006
[2] Blanchard, B.S., W.J. Fabrycky. Systems Engineering and Analysis. 2nd edition, Prentice-Hall, New Jersey, 1992..
[3] Juric, Matjaz B., Ramesh Loganathan, Poornachandra Sarang, & Frank Jennings. SOA Approach to Integration. Packt Publishing, Birmingham, 2007
[4] Ruh, William A., Francis X. Maginnis, & William J. Brown. Enterprise Application Integration. John Wiley & Sons, Inc., 2001
[5] Myerson, Judith M. Enterprise Systems Integration. CRC Press Company, 2002.
[6] Miller, Thomas E., Daryle W. Berger. Totally Integrated Enterprises. Raytheon Professional Services LLC, 2001.

Prerequisite(s)

Passing 110 credits