SYLLABUS CURRICULUM

COURSE	**Course Name : Design And Product Development**
	Course Code : TM184770
	Credit : 3 sks
	Semester : Optional

COURSE DESCRIPTION

Provides knowledge of methods and ways of designing and developing products from aspects of quality, manufacture, assembly, and production costs, as well as ergonomic aspects.

LEARNING OUTCOMES

LO8	Able to implement mathematics, science and engineering principles to solve engineering problems in mechanical systems.
LO9	Able to find the source of engineering problems in mechanical system through research that includes identification, formulation, analysis, data interpretation based on engineering principles.
LO10	Able to formulate the solution of engineering problem in mechanical system by considering economy, safety, environment and energy conservation.
LO11	Able to design mechanical system and the necessary components through analytical approach based on science and technology by considering technical standard and reliability.

COURSE LEARNING OUTCOMES

The students are able to understand the design process and able to develop the product, from the aspect of design, ergonomics, manufacture, assembly, and arrange the product design development and analyze the forces and stresses that occur at the time the product is used, plan the manufacture process and the engine is used, and analyze product assembly method.

MAIN SUBJECT

The focus of this course are as follows:
- Design process : cognitive, persuasive, and deductive design process
- Product function : structure function, main function, additional function for a product
- Concept development : list of needs, making process and concept selection
- Component design : embodiment, economical component design, manufacture design and assembly
- Product ergonomic : RULA method, the benefit and the application in design and product development

- Product development : development concept of product function, quality function deployment

PREREQUISITES

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REFERENCE

1. Batan, I Made Londen, Desain Produk Ediisi 1, Guna Widya, 2012, Surabaya
2. Bralla, James G., Design for Manufacturability Handbook, Mc Graw-Hill, 1999.
3. Mc-Atamney, Lynn and Corlett, E Nigel; RULA: a survey method for investigation of work-related upper limb disorders, Institute for Occupational Ergonomics, University of Nothingham.
4. Otto, Kevin N. and Wood, Kristin L., Product Design – Techniques in Reverse Engineering and New Product Development, Printice Hall, 2000.
5. Urlich, Karl T.; Eppinger, Steven D., Product Design and Development. Mc Graw-Hill, Inc., 2000.
6. Boothroyd, Geoffrey; Peter, Dewhurst and Winston, Knight, Product Design For Manufacture and Assembly, 2nd ed, 2002.