



UNIVERSITAS GADJAH MADA

Faculty of Mathematics and Natural Sciences

Department of Computer Science and Electronics

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Doctoral Programme of Computer Science

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Module name : **SOFTWARE ENGINEERING**

Module level, if applicable : **DOCTORAL**

Code, if applicable :

Semester(s) in which the module is taught : 1 (Odd)

Person responsible for the module : Dr. Azhari, MT

Lecturer(s) : Dr. Azhari, MT

Language : Indonesia

Relation to curriculum : Doctorate; elective; 1st or 3rd semester.

Credit points : 3

Type of teaching, contact hours : Doctorate: lectures for < 5 students. Contact hours are lecture hours.

Workload : 1. Lectures: 3 x 50 = 150 minutes per week.
2. Private study, Assignment: 3 x 50 = 150 minutes per week

Requirements according to the examination regulations : There is no exam, but a student must have attended at least 75% of the lectures to be eligible for grading

Recommended prerequisite :-

Module objectives/ intended learning outcomes : After completing this module, a student is expected to:

CO1: Be able to explain the class / category of software together with examples, based on a certain number of criteria such as goal, domain complexity, attribute, platform, etc.

CO2: Be able to demonstrate understanding and implementation of theories, models, and several current methods as the basis of cycle or stage of development process of a software together with examples of existing implementations.

CO3: Be able to construct a system specification or a proposal of software development based on a method of software development either structured, agile or hybrid for some case studies.

	<p>CO4: Be able to analysis, review, and evaluation to software development tools.</p> <p>CO5: Be able to work either as individual or team to do research or develop tools in some parts of software development stages.</p> <p>CO6: Be able to write scientific paper from theory, model, method and its applications based on research point of view and software development.</p>
Content	<p>:</p> <ol style="list-style-type: none"> 1. Overview of SE industry and Business 2. Approach to Software Engineering Dev 3. SRS for SE Dev 4. Software Design & Modelling 5. Software tool generator and Algorithm 6. Modern Approach of Software Engineering Dev 7. Software Project Management to support SE Dev 8. SE Testing and QA 9. Project 1 Dev SE in the distributed Environment 10. Project 2 Dev SE in the multi Company distributed Environment 11. Writing paper for publication
Study and examination requirements and forms of examination	: project based, paper based
Media employed	: Class room, slide, discussion, project based
Reading List	<ol style="list-style-type: none"> 1. Roger S. Pressman, Bruce Maxim, 2019, Software Engineering: A Practitioner's Approach 8th Edition 2. Ian Sommerville, 2015, Software Engineering 10th Edition

The Mapping of COs to PLOs

COs	PLOs							
	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8
CO1								
CO2								
CO3								
CO4								
CO5								
CO6								

The PLO of DP-CS

PLO	Knowledge Area	PLO Description
PLO1	[Values and principles]	A graduate should be devoted to God Almighty, uphold the humanity values, internalize academic values and ethics, responsible in working around expertise independently.
Managerial Capability		
PLO2	[Professional attitudes]	A graduate should have good interpersonal skills; able to work together within the organization, both as a leader and a member; able to be the initiator; able to manage and delegate tasks; and have a sense of responsibility for their own work as well as take responsibility for the achievement of the organization's work.
PLO3	[Communication skills]	A graduate should be able to communicate effectively and efficiently with stakeholders from various backgrounds; use English well; and able to write and present scientific papers correctly and well.
PLO4	[Life-long learning]	A graduate should be up to date with the state-of-the-art especially in computer science field, able to take parts in the development of computer science field that is engaged in and relate it to other fields throughout life.
Working Capability		
PLO5	[Problem-solving and Scientific skills]	A graduate should be able to analyse science and technology problems in the computer science field, develop alternative solutions through intra disciplinary, interdisciplinary, and trans disciplinary approaches to produce innovative, original, and tested works.
PLO6	[Ability to formulate and do research]	A graduate should be able to formulate research problems through critical, exploratory, and innovative studies both independently and in groups of computer science field that is engaged in and present research results in a scientific paper at regional or international level.
Mastering Knowledge		
PLO7	[Fundamental knowledge]	A graduate should be able to develop knowledge in the field of computer science that is engaged, which includes abstraction, complexity, evolution and philosophy of changes or developments in the field of science.
PLO8	[Applied knowledge]	A graduate should be able to develop theoretical, philosophical, and applied concepts in the field of computer science that is engaged in, and to represent them in a structured and systematic manner.