 <b>STEM PRASETIYA MULYA</b> <small>SCIENCE, TECHNOLOGY, ENGINEERING, MATHEMATICS</small> <small>Entrepreneurial Engineers</small>	<b>SISTEM PENJAMINAN MUTU INTERNAL</b>	Nomor :
	RENCANA PEMBELAJARAN SEMESTER (RPS)	Revisi : 0
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## LECTURING UNIT FOR ESEU1216 – Software Design and Construction

### Semester II, Class of 2022, Academic Year 2022/2023

Course Term : March 2023 – July 2023

Faculty : Sesaria Kikitamara, M.Sc

Email address : sesaria.tamara@pmbs.ac.id

Class : Software Engineering

Credits : 3 credits


### COURSE DESCRIPTION

This course aims to introduce students to the software design especially UI/UX design and software engineering process, its tools, skills, and techniques, particularly modelling. For UI/UX design, it will cover UI/UX fundamentals and dive deep into how to design correctly so that at the end of the course the student will be able to design software products such as mobile or web application. While on the software engineering process, the focus will be on a principled, object-oriented process from requirements modelling and analysis through design, with rolling case study and coursework examples developing the knowledge and skills.

### LEARNING OBJECTIVES (LO)

After completing this course, students are expected to be able to:

1. Understand the principle, value and importance of UI/UX design
2. Demonstrate wireframing and prototyping mobile application using Figma
3. Conduct simple usability testing for design
4. Demonstrate simple user research for designing web application

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5. Use modelling tools such as UML and Activity Diagram

### RELATION WITH “CAPAIAN PEMBELAJARAN LULUSAN (CPL) PROGRAM STUDI”

1. CP P (P1): Mampu menerapkan pemikiran logis, kritis, sistematis, dan inovatif dalam konteks pengembangan atau implementasi ilmu pengetahuan dan teknologi yang memperhatikan dan menerapkan nilai
2. CP P (P2): Mampu menunjukkan kinerja mandiri, bermutu, dan terukur.
3. CP KU (KU1) : Mampu bekerja dalam tim (team work) dengan berbagai kalangan sesuai dengan profesinya untuk memecahkan berbagai permasalahan secara holistik, baik pada aras lokal, aras nasional, maupun aras global
4. CP KU (KU3) : Memiliki kemampuan AMICA – Analytical thinking, Maturity, Interpersonal relationship, Communication and Achievement, yang baik
5. CP KK (KK2) : Memahami dan mengaplikasikan teori, model, dan teknik yang sesuai sebagai dasar identifikasi dan analisa permasalahan, perancangan, pengembangan, implementasi, verifikasi, dan dokumentasi piranti lunak.

### Bahan Kajian

1. BK15 : UI/UX Fundamental
2. BK22 : Design Thinking


### COURSE DELIVERY

1. Online Course Delivery (OCD)
2. Homework (HW) & Quiz (Q)

### REFERENCES

Due to the nature of this course, there is no specific references.

### COURSE EVALUATION

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1. Mid-Term Report : 30 %
2. Final-Term Report : 30 %
3. Teaching Assessment : 40 %  
 Consists of Homework (HW), Quiz (Q), and Participation (P)


## SUPPORTING MEDIA


1. A PC desktop and laptop that supports online learnings
2. Internet connection

## COURSE OUTLINES

Week	General Topic	LO	Week's Learning Objective	Chapter Reference	Course Delivery	Course Evaluation	Supporting Media
			<i>By the end of each week's session, student will be able to:</i>				
(1) Xx March 2022	Intro to Design	1	1. Understand the goal of design for usability 2. Understand the perspective level of design 3. Understand the need for design during software development 4. Demonstrate user story, user flow, and user scenario		OCD	P	1,2
(2) Xx March 2022	Gestaalt Principle	1	1. Understand Gesstalt principle 2. Able to differentiate which Gestaalt principle is applied 3. Analyze Gestaalt principle on a visual design		OCD, HW	P, HW, Q	1,2

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(3) Xx March 2022	Wireframing	2	<ol style="list-style-type: none"> <li>1. Understand the need for wireframing</li> <li>2. Create hand drawn wireframes</li> <li>3. Create wireframes on a computer</li> <li>4. Iterate through ideas, visually</li> <li>5. Use wireframes to validate (or invalidate) assumptions and ideas</li> </ol>		OCD, HW	P, HW, Q	1, 2
(4) Xx March 2022	Hierarchy of Information	2	<ol style="list-style-type: none"> <li>1. Understanding key principle of visual hierarchy</li> <li>2. Apply the principle for ui design</li> </ol>		OCD, HW	P, HW, Q	1, 2
(5) Xx Apr 2022	Design System	1,2	<ol style="list-style-type: none"> <li>1. Apply Color System, Typography System, Layout/Grids and a lot more</li> <li>2. Demonstrate ability to create design system for a better workflow</li> </ol>		OCD, HW	P, HW	1, 2
(6) Xx Apr 2022	Project Presentation						
(7) Xx Apr 2022	UI/UX Design for mobile	1,2	<ol style="list-style-type: none"> <li>1. Understand the basics of UI/UX mobile application design</li> <li>2. Gain an insight into current mobile UI/UX design trends and developments</li> <li>3. Develop key skills to plan, manage and develop mobile usability</li> </ol>		OCD, HW	P, HW	1, 2

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(8)	<b>MIDTERM EXAM</b>						
tbd							
(9) Xx May 2022	Usability Test- ing for UI/UX Design	3	1. Understanding what usability testing is 2. Understand How to conduct effective usability testing 3. Carry out a usability test smoothly and effectively				
(10) Xx May 2022	User Research	4	1. Understand What qualitative user research is and why you should do it 2. Understand How to fit user research into your own design process 3. Plan user research projects that are valid and ethically sound 4. Conduct a user interview, perform a contextual inquiry and make user observations		OCD, HW	P, HW	1, 2
(11) Xx May 2022	User centered design tech- nique	4	1. Understand research methods to gain a better understanding of your target-audience. 2. Understand design strategies for user-centered problem solving		OCD, HW	P, HW	1, 2
(12) Xx May 2022	Software mod- elling	5	1. Apply appropriate software engineering techniques and tools from a suitable requirements model 2. Apply an appropriate software engineering process and tools to the task of structuring, modelling and validating requirements for a software product		OCD, HW	P, HW	1, 2

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(13) Xx June 2022	UML Use case	5	<ol style="list-style-type: none"> <li>1. Apply appropriate software engineering techniques and tools from a suitable requirements model</li> <li>2. Apply an appropriate software engineering process and tools to the task of structuring, modelling and validating requirements for a software product</li> </ol>		OCD, HW	P, HW	1, 2
(14) Xx June 2022	Activity Diagram	5	<ol style="list-style-type: none"> <li>1. Apply appropriate software engineering techniques and tools from a suitable requirements model</li> <li>2. Apply an appropriate software engineering process and tools to the task of structuring, modelling and validating requirements for a software product</li> </ol>		OCD, HW	P, HW	1, 2
(15) Xx June 2022	Project Presentation				OCD, HW	P, HW	1, 2
(16) tbd	<b>Final Term Exam</b>						

10 March 2023

Prepared by



(Sesaria Kikitamara, M.Sc)  
Faculty Member

Approved by



(Permata Nur Miftahur Rizky, Phd)  
Head of Department