POLITEKNIK MALAYSIA
Muadzam Shah

JABATAN/ *DEPARTMENT OF MECHANICAL ENG.*
RANGKA KURSUS/ *COURSE OUTLINE/SSG*

1.	NAME OF COURSE	PRODUCT DESIGN *Version: 06062024_1_Effective: Session_I_2024/2025*
	COURSE CODE	DJD20092
2.	SYNOPSIS	Product Design covers the history of product design and philosophy behind the design and manufacture. Students will learn the early design stages from basic design sketching artwork and prepare the model making by using the relevant materials and suitable tools in the workshop. Ultimately, students are required t present the economic impact in design development based on their product.
3.	CREDIT VALUE	2
4.	PREREQUISITE/ CO-REQUISITE (IF ANY)	None
5.	COURSE LEARNING OUTCOMES (CLO): Upon completion of this course, students should be able to:	
	CLO1	Capture the history of product design and philosophy behind the design and manufactured products. (C3, PLO1)
	CLO2	Display the basic element knowledge and principles of design in the artwork & model making. (P4, PLO5)
	CLO3	Describe the economic and environment impact on design development. (A3, PLO9)

PROGRAMME LEARNING OUTCOMES (PLO):

PLO 1: apply knowledge of applied mathematics, applied science, engineering fundamentals and an engineering specialization as specified in DK1 to DK4 respectively to wide practical procedures and practices in the area of mechanical engineering (product design).

PLO 5: apply appropriate techniques, resources, and engineering and IT tools to well-defined engineering problems, with an awareness of the limitations (DK2 and DK6).

PLO 9: communicate effectively and inclusively on well-defined engineering activities with the engineering community and with society at large, by being able to comprehend the work of others, document their own work, and give and receive clear instructions.

6. ASSESSMENT METHOD:

The course assessment is carried out only ONE section:

i. Coursework Assessment (CA) – 100%

Coursework is continuous assessment that measures knowledge, practical skills and generic skills.

Assessment	Quantity	Percentage (%)
Test	1	20%
Presentation	1	15%
Practical Work	1	25%
Practical Product	2	40%

7. TEACHING SCHEDULE:

Topic No.	Topic/Content	Recommended Contact Hours	Assessment Method	Week
1.0	TOPIC 1: INTRODUCTION TO PRODUCT DESIGN A. The purpose and function of product design B. The basic terminology of product design in context of mechanical engineering C. The purpose of design in relation to mechanical product D. The job specification of a product designer E. The different between industrial design, engineering design and product design. F. The professional ethics applied in product design	10 hours Lecture	Test	W1 – W3
2.0	TOPIC 2: THE PURPOSE OF ECONOMIC AND ENVIRONMENT IMPACT IN DESIGN DEVELOPMENT A. The issues of design B. The Design for Environment C. The Design Stages & Degrees of Freedom D. The End of Life Strategies	10 hours Lecture	Presentation	W3 –W5
3.0	TOPIC 3: VISUAL AND TECHNICAL ILLUSTRATION A. The fundamental of sketching and rendering B. The materials and tools for sketching and rendering C. The basic sketching skills D. The sketching elements E. The Thumbnail Sketch, Concept Sketch, Detail Sketch and Final Design	18 hours Practical	Practical Product 1	W6 – 9
4.0	TOPIC 4: GRAPHICAL RENDERING A. The color category B. The color tone C. The color planning, rendering technique and finishing product D. Presentation format and rendering product	8 hours Practical	Practical Product 2	W10 – W11
5.0	TOPIC 5: MODEL MAKING A. The processes and tools of model making B. The joining technique for assembly model C. The physical model base on design	12 hours Practical	Practical Work	W12 – W14

8. REFERENCES

Main :

Gogulasanti K. G., Aiman A. J., Syaiful H. R. (2021). Product Design 1 Basic Sketching Volume 1. Politeknik Muadzam Shah.

Additional :

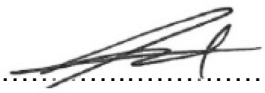
Jack Pratt. (2023). *Model Making: Technical Skills Using Everyday Objects*. Crowood Press.

Raymond Francis Yates (2022). *Model Making: Including Workshop Practice, Design and Construction of Models, a Practical Treatise for the Amateur and Professional Mechanic*. Creative Media Partners, LLC.

Prof. Madya Dr. Shahriman Zainal Abidin (2020). *Panduan Asas Pemikiran Reka Bentuk Produk.* UiTM Press.

Koos Eissen, Steur Roselien (2019). *Sketching the Basics*. Laurence King Publishing.

Prepared by:



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(MUHAMMAD AIMAN BIN ABU JOHAN)

Date : 10/01/2025

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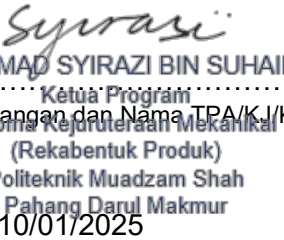

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(Tandatangan dan Nama TPA/KJ/KPro/KK)

Date : 10/01/2025