ITS
Institut
Teknologi
Sepuluh Nopember

Computer Aided Design

DESCRIPTION OF COURSE UNIT

Program Studi Sarjana (S1) Desain Produk

Bachelor of Industrial Design (BOID)

2018-2023

Gedung Desain Produk ITS Jl. Despro No.1 Kampus ITS Sukolilo Surabaya. 60111
Hotline Call official : +623115931147 email : despro@its.ac.id

Description of Course Unit
according to the ECTS User's Guide 2015

Course unit title	Computer Aided Design
Course unit code	DP184412
Type of course unit	Compulsory
Level of course unit	First cycle Bachelor
Year of study when the course unit is delivered	2nd year
Semester/trimester when the course unit is delivered	4st semester
Number of ECTS credits allocated	6,4 ECTS Credits
Name of lecturer	Ari Dwi Krisbianto, S.T., M.Ds.
Learning outcomes of the course unit	1) Students can implement drawing organization using layer and color destination methods. 2) Students can create detailed and complete attributes for drawings. 3) Students can use basic commands for quick drawing
Mode of delivery	face-to-face
Prerequisites and co-requisites	-
Course content	This course delves into the deepening of knowledge and skills that must be possessed by a Product Designer. The purpose of this course is to implement spatial understanding in students, to read and create drawings for ready-toproduce products, provide insights into the role of technical drawings in the design process, and introduce rapid prototyping. The course also train students to produce digital working drawings using digital plotting methods. 1) Drawing organization using layer and color destination methods, as well as detailed and complete drawing attributes. 2) Basic commands for quick drawing. 3) Methods in object selection and object snap facilities in the drawing process. 4) Coordinates and unit measures as reference for drawing sheets. 5) Philosophy and interface of AutoCAD.

Recommended or required reading and other learning resources/tools	• AutoCAD 2009, Autodesk Inc, copyright 2009 • AutoCAD 2008, Autodesk Inc, copyright 2008
Planned learning activities and teaching methods	Case Method; Team Based Learning
Language of instruction	Indonesia
Assessment methods and criteria	Assignment, Project, Midterm Evaluation and Final Evaluation

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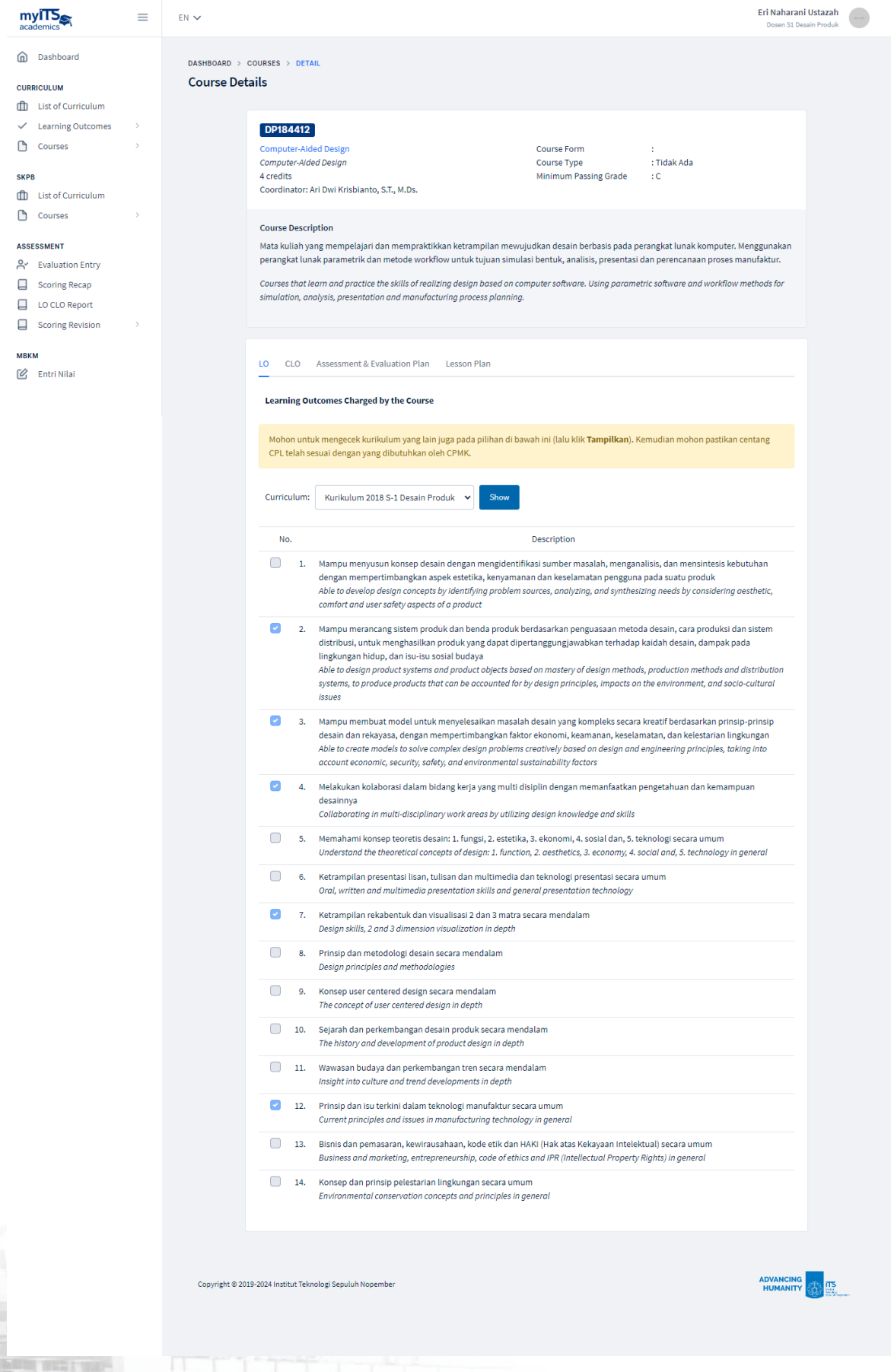

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Course Details

DP184412

Computer-Aided Design
Computer-Aided Design
4 credits
Coordinator: Ari Dwi Krisbianto, S.T., M.Ds.

Course Form :
Course Type : Tidak Ada
Minimum Passing Grade : C

Course Description

Mata kuliah yang mempelajari dan mempraktikkan ketrampilan mewujudkan desain berbasis pada perangkat lunak komputer. Menggunakan perangkat lunak parametrik dan metode workflow untuk tujuan simulasi bentuk, analisis, presentasi dan perencanaan proses manufaktur.

Courses that learn and practice the skills of realizing design based on computer software. Using parametric software and workflow methods for simulation, analysis, presentation and manufacturing process planning.

LO | CLO | Assessment & Evaluation Plan | Lesson Plan

Course Learning Outcomes

Mohon untuk mengecek kurikulum yang lain juga pada pilihan di bawah ini (lalu klik **Tampilkan**). Kemudian mohon pastikan centang CPL telah sesuai dengan yang dibutuhkan oleh CPMK.

Curriculum: Kurikulum 2018 S-1 Desain Produk | Show

Code	Description of CLO	Mapping of CLO to LO					Weight of CLO
		LO 2	LO 3	LO 4	LO 7	LO 12	
CLO-1	Mahasiswa mampu mengetahui dan memutuskan untuk menggunakan alat desain dengan bantuan komputer yang tepat untuk aplikasi studi dan perancangan selanjutnya serta mendapat gambaran secara profesional berdasarkan sistem operasi yang kompatibel, fitur unik dan faktor ekonomi *Students are able to know and decide to use appropriate computer-aided design tools for further study and design applications and get a professional overview based on compatible operating systems, unique features and economic factors*	☑	☑	☑	☑	☐	40%
CLO-2	Mahasiswa mampu memahami antar muka aplikasi. *Students are able to understand the application interface.*	☑	☐	☐	☐	☐	5%
CLO-3	Mahasiswa mampu membuat bentuk geometris dari gambar acuan *Students are able to create geometrical representation from reference images*	☐	☑	☐	☑	☐	15%
CLO-4	Mahasiswa mampu menentukan ukuran, toleransi dan pecah komponen pasangan. *Able to determine the size, tolerance, paired components and assembling.*	☐	☑	☐	☐	☐	15%
CLO-5	Mahasiswa mampu menyediakan informasi komponen dan perakitan dengan pendekatan logika geometri dan faktor teknis. *Students are able to provide component and assembly information with a geometrical logic approach and technical factors.*	☐	☑	☐	☑	☐	15%
CLO-6	Mahasiswa mampu menggunakan aplikasi-aplikasi pendukung terkini untuk pengukuran dan pembacaan bentuk lebih presisi. *Students are able to use the latest supporting applications for more precise measurement and reading of shapes .*	☐	☐	☐	☐	☑	10%
	Total Weight	**18%**	**36%**	**9%**	**27%**	**9%**	**100%**

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LO | CLO | Assessment & Evaluation Plan | Lesson Plan

Assessment & Evaluation Plan

No.	Evaluation Plan	CLO-1	CLO-2	CLO-3	CLO-4	CLO-5	CLO-6	Total Weight
1	Tugas benchmarking aplikasi/software *Assignment: Software benchmarking* Kognitif - Tugas | *Cognitive - Assignment*	5%	0%	0%	0%	0%	0%	5%
2	Primitif dan ekstrusi *Primitive and extrude* Studi Kasus | *Case Method*	10%	1%	0%	0%	0%	0%	11%
3	Proses surface *Surfacing process* Studi Kasus | *Case Method*	5%	1%	0%	10%	0%	0%	16%
4	Fitur khusus: Surface flattening *Special feature: Surface flattening* Studi Kasus | *Case Method*	5%	1%	5%	0%	0%	0%	11%
5	Reverse Engineering: Pengukuran langsung *Reverse engineering: Direct measuring* Studi Kasus | *Case Method*	5%	1%	0%	0%	5%	0%	11%
6	Reverse engineering: Fotogrametri *Reverse engineering: Photogrammetry* Studi Kasus | *Case Method*	0%	0%	0%	0%	5%	5%	10%
7	Video animasi produk *Product animation* Hasil proyek | *Team-based Project*	10%	1%	10%	5%	5%	5%	36%
	TOTAL *Target*	**40%** *40%*	**5%** *5%*	**15%** *15%*	**15%** *15%*	**15%** *15%*	**10%** *10%*	**100%** *100%*

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LO CLO Assessment & Evaluation Plan Lesson Plan

Lesson Plan

Weeknum	Course Material	Learning Method
1	Introduksi: Membangun motivasi, pandangan dan wawasan *Introduction: Building motivation, views and insights*	Non SCL
2	Persiapan gambar (setting) Dimensi, 2D (unit, grid, snaps…), add cut out holes, 3D (basic solid construction), operasi boolean *Drawing preparation (settings) Dimensions (unit, grid, snaps…), 2D(create lines, rad, part contours…), add cut out holes, 3D (basic solid construction), boolean operation*	Metode SCL lainnya
3	Organisasi gambar. Olah bentuk primitif (primitive forms) dan transformasi gambar 2D menjadi 3D *Drawing organization. Primitive exploration and transform 2D shape into 3D*	Case method
4	Lines, surface exploration and reverse *Lines, surface exploration and reverse*	Case method
5	Solid geometry and transform *Solid geometry and transform*	Case method
6	Analisis geometri *Geometry analyzes*	Case method
7	Geometri surface *Surface geometry*	Case method
8	Fitur khusus (flatten surface, orient, flow along curve-surface…) *Special features (flatten surface, orient, flow along curve-surface…)*	Case method
9	Logika geometri, proses assembling, detail *Geometry logics, assembling process, details*	Case method
10	Aplikasi untuk render , render tools (preview, light, material properties, drafting…) *Render engines, render tools (preview, light, material properties, drafting…)*	Team-based project
11	Gambar operasional dan urai. Reverse engineering melalui pengukuran nyata *Operational drawing and explode. Reverse engineering by real measurements*	Case method
12	Reverse modeling (photogrammetry) *Reverse modeling (photogrammetry)*	Case method
13	Animations, environments, supporting properties/parts *Animations, environments, supporting properties/parts*	Team-based project
14	Render animation settings *Render animation settings*	Team-based project
15	Telaah ulang dari ideasi menuju persiapan manufaktur *From sketch to production*	Team-based project
16	Animasi untuk proses operasional dan presentasi *Animations for operational processes and presentations*	Team-based project
	Bahasa Indonesia English	Choose method

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