

REQUISITION LETTER

From,

Head of the Department,
Automobile Engineering,
J.K.K Munirajah College of Technology,
T.N.Palayam.

To,

The Principal,
J.K.K Munirajah college of Technology,
T.N.Palayam.

Respected Sir,

Sub: Seeking permission for conducting a Certificate Program-reg

We have planned to conduct a certificate Program for II, III and IV year B.E-
Automobile Engineering students on "Automotive Digital Design" from 20.11.2023 to
25.11.2023 by program coordinator Mr.V.P.Arul Murugan, M.E., AP/AUTO. So, I request
you to kindly provide permission to conduct the certificate Program.

Thanking You,

Place: T.N.Palayam

Date: 03.11.2023

Yours Truly,



Permitted
[Signature]
3/11/23

[Signature]
PRINCIPAL
JKK MUNIRAJAH COLLEGE
OF TECHNOLOGY
T.N. PALAYAM (Po)-638 506,
GOBI (TK), ERODE (Dt).



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JKKMCT/CIRCULAR/NOV-23

06.11.2023

CIRCULAR

The Department of Automobile Engineering is planning to organize a Certificate Program on **"AUTOMOTIVE DIGITAL DESIGN"** for the benefit of the students from **20.11.2023 (Monday)** TO **25.11.2023 (Saturday)**. Students those who are willing to attend the course can enroll their names to their class in-charges respectively on or before 09.11.2023.



6/11/23
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Copy To

All the HODs and Staff Members,

All the students,

Notice Boards & File Copy


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PROGRAM SYLLABUS

Program Name : AUTOMOTIVE DIGITAL DESIGN

Program Code : 23AEADDCP01

Program Coordinator Name: Mr.V.P.ARUL MURUGAN,M.E

Total Hours: 36hrs

CHAPTER I-INTRODUCTION TO AUTOMOTIVE DESIGN


- Overview of automotive design history and evolution.
- Core principles of vehicle design: aesthetics, functionality, and engineering.
- Understanding trends and innovations in the automotive industry.
- Careers in automotive design.

CHAPTER II- FUNDAMENTALS OF AUTOMOTIVE SKETCHING

- Introduction to automotive sketching tools and techniques.
- Perspective drawing and dynamic angles.
- Capturing proportions and key design features.
- Developing quick ideation skills through thumbnails.

CHAPTER III -CONCEPT DESIGN AND IDEATION

- Creating mood boards and defining design themes.
- Concept ideation processes for automotive projects.
- Translating ideas into preliminary sketches.
- Understanding client briefs and target markets.


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CHAPTER IV- BASICS OF DIGITAL MODELING

- Introduction to CAD and 3D modeling software.
- Navigating the 3D workspace and understanding toolsets.
- Creating basic forms and shapes in digital environments.
- Comparing different modeling techniques (e.g., NURBS, polygonal).

CHAPTER V- MATERIALS AND TEXTURES

- Sculpting complex automotive shapes.
- Designing key components like grilles, headlights, and wheels.
- Aerodynamics and functional design considerations.
- Techniques for surface continuity and refinement.

Prepared By:

Name : V.P.ARUL MURUGAN, M.E

Designation: AP/AUTO

PROGRAM COORDINATOR

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DEPARTMENT OF AUTOMOBILE ENGINEERING

PROGRAM SCHEDULE

AUTOMOTIVE DIGITAL DESIGN

Schedule Period : 20.11.2023 TO 25.11.2023

Dates/ Duration	09:30 AM to 11:30 AM (02.00 hr)		11.45 AM to 1.15 PM (01.30 hr)		2:00 PM to 4.20 PM (02.30hr)
20.11.2023	Key design principles	BREAK	Overview of the automotive industry and market trends.	LUNCH	Basics of sketching techniques for automotive design.
21.11.2023	Perspective drawing and dynamic styling.		Hand-drawn vs. digital sketching workflows.		Overview of CAD and 3D modeling software
22.11.2023	Setting up and navigating a 3D workspace.		Creating basic shapes and surfaces.		Surface modeling techniques.
23.11.2023	Creating complex geometries and automotive forms.		Ensuring manufacturability in designs.		Introduction to rendering software
24.11.2023	Applying textures, materials, and lighting to 3D models.		Realistic rendering for presentation and portfolios.		Exploring VR and AR tools for immersive design experiences.
25.11.2023	Creating virtual prototypes and interactive presentations.		Sculpting details like grilles, lights, and mirrors.		Communicating with engineering and production teams.


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DEPARTMENT OF AUTOMOBILE ENGINEERING

RESOURCE PERSON PROFILE

Title of the Program	AUTOMOTIVE DIGITAL DESIGN
Duration and Timing of the Program	20.11.2023 TO 25.11.2023
Name of the Resource Person	Mr.V.P.ARUL MUGUGAN,M.E,
Photo Image of the Resource Person	
E-mail	arulmuruganvp@jkkmct.edu.in
Mobile No:	9789444882
Designation	AP/AUTO
Official Address	Department of Auto, JKKMCT, T.N.Palayam-638506, Erode (Dt)
Educational Qualification	B.E(Automobile Engineering), M.E(CAD/CAM)
Experience	9 years of Teaching Experience as Assistant Professor
Field of Interest	Engineering Design


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DEPARTMENT OF AUTOMOBILE ENGINEERING

ACADEMIC YEAR: 2023-2024

CERTIFICATE PROGRAM – AUTOMOTIVE DIGITAL DESIGN

STUDENT WILLING LIST

S.NO	REGISTER NUMBER	STUDENT NAME	STUDENT SIGNATURE
1	731220102001	B.DHANALAKSHMANAN	B. Dhan
2	731221102001	P.KAVIN	P. Kav
3	731221102002	B.RAJKUMAR	B. Rajkumar
4	731222102002	V.PRADEEP KUMAR	V. Pradeep
5	731222102003	K.PRAJEESH	K. Prajeesh
6	731222102005	P.SOORAJ	P. Sooraj


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DEPARTMENT OF AUTOMOBILE ENGINEERING

ACADEMIC YEAR: 2023-24

CERTIFICATE PROGRAM ON AUTOMOTIVE DIGITAL DESIGN-ATTENDANCE SHEET

Schedule Period : 20.11.2023 TO 25.11.2023

SI. NO	NAME OF THE PARTICIPANT	ATTENDANCE OF THE PARTICIPANTS											
		20-11-23		21-11-23		22-11-23		23-11-23		24-11-23		25-11-23	
		FN	AN	FN	AN	FN	AN	FN	AN	FN	AN	FN	AN
IV YEAR													
1	B.BHANALAKSHMANAN	/	a	/	/	/	/	/	/	/	/	/	/
III YEAR													
2	P.KAVIN	/	/	/	/	/	/	/	/	/	a	/	/
3	B.RAJKUMAR	/	/	/	a	/	/	/	/	/	/	/	/
II YEAR													
4	V.PRADEEP KUMAR	/	/	/	/	/	/	/	/	a	/	/	/
5	K.PRAJEESH	/	/	/	/	/	/	/	/	/	/	a	/
6	P.SOORAJ	/	/	a	/	/	/	a	/	/	/	a	/
Total Number Of Present		6	5	5	5	6	6	5	6	5	5	4	6
Total Number Of Absent		-	1	1	1	-	-	1	-	1	1	2	-
Signature Of Program Coordinator		[Handwritten Signatures]											
Signature Of Hod		[Handwritten Signatures]											


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DEPARTMENT OF AUTOMOBILE ENGINEERING

ASSESSMENT ON AUTOMOTIVE DIGITAL DESIGN

ANSWER ALL QUESTIONS (15*2= 30 MARKS)

Question No. 01

What is the primary purpose of aerodynamics in automotive design?

- (A) To improve the aesthetic appeal of the vehicle
- (B) To enhance fuel efficiency and performance
- (C) To reduce vehicle weight
- (D) To ensure better visibility for the driver

Question No. 02

Which of the following is a key factor in automotive ergonomics?

- (A) Fuel efficiency
- (B) Driver and passenger comfort
- (C) Engine displacement
- (D) Tread design of tires

Question No. 03

What is the first step in creating an automotive sketch?

- (A) Applying color to the design
- (B) Drawing the basic proportions and perspective
- (C) Adding intricate details like lights and grilles
- (D) Creating 3D models in CAD software

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Question No. 04

Which tool is commonly used for digital automotive sketching?

- (A) Adobe Photoshop
- (B) KeyShot
- (C) Autodesk Maya
- (D) SolidWorks

Question No. 05

What does CAD stand for in the context of automotive design?

- (A) Computer-Aided Drawing
- (B) Computer-Aided Design
- (C) Conceptual Automotive Development
- (D) Creative Automotive Design

Question No. 06


Which of the following is NOT a common 3D modeling software for automotive design?

- (A) Autodesk Alias
- (B) Rhino
- (C) Blender
- (D) Microsoft Excel

Question No. 07

What is a key advantage of using NURBS modeling for automotive design?

- (A) Faster rendering of designs
- (B) High precision in creating curved surfaces
- (C) Easier to create animations
- (D) Requires no technical expertise


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Question No. 08

What is the term for ensuring smooth transitions between surfaces in a model?

- (A) Edge looping
- (B) Mesh mapping
- (C) Surface continuity
- (D) UV unwrapping

Question No. 09

Which rendering software is often used for photorealistic automotive visualizations?

- (A) KeyShot
- (B) Microsoft PowerPoint
- (C) Adobe Illustrator
- (D) Google SketchUp

Question No. 10


What is the main purpose of rendering in automotive design?

- (A) To finalize the design for production
- (B) To create a physical prototype
- (C) To visualize and present the design with realistic effects
- (D) To calculate vehicle weight

Question No. 11

Which of the following is a key benefit of using VR in automotive design?

- (A) Reduces the need for physical prototypes
- (B) Simplifies sketching processes
- (C) Eliminates the need for rendering software
- (D) Automates the manufacturing process


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Question No. 12

Which platform is widely used for creating VR experiences in automotive design?

- (A) Unreal Engine
- (B) Microsoft Word
- (C) Adobe Acrobat
- (D) Excel

Question No. 13

What is the primary focus of automotive design?

- (A) Increasing engine horsepower
- (B) Balancing aesthetics, functionality, and performance
- (C) Reducing manufacturing costs
- (D) Simplifying vehicle maintenance

Question No. 14

In digital modeling, what does the term 'polygonal modeling' refer to?

- (A) Creating 2D sketches of automotive parts
- (B) Modeling using flat surfaces (polygons) to define a shape
- (C) Designing models using NURBS for smooth curves
- (D) Applying materials to 3D objects

Question No. 15

Which aspect of digital modeling helps ensure a design is ready for manufacturing?

- (A) Adding textures and colors
- (B) Maintaining surface continuity and accuracy
- (C) Using complex animations
- (D) Creating only conceptual shapes


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DEPARTMENT OF AUTOMOBILE ENGINEERING

CERTIFICATE PROGRAM – AUTOMOTIVE DIGITAL DESIGN

STUDENT MARK LIST

S.NO	REGISTER NO	STUDENT NAME	STUDENT MARK
1.	731220102001	B.DHANALAKSHMANAN	80
2.	731221102001	P.KAVIN	90
3.	731221102002	B.RAJKUMAR	75
4.	731222102002	V.PRADEEP KUMAR	85
5.	731222102003	K.PRAJEESH	90
6.	731222102005	P.SOORAJ	80


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DEPARTMENT OF AUTOMOBILE ENGINEERING

SUMMARY/OUTCOME REPORT

Name of the Certificate Program : **AUTOMOTIVE DIGITAL DESIGN**
Program Code : 23AEADDCP01
Name of the Program Coordinator : Mr.V.P.ARUL MURUGAN.,M.E,

I hereby affirm that the entire Program contents in the Certificate Program **"AUTOMOTIVE DIGITAL DESIGN"** listed in the Certificate Program Syllabus have been actually Learned by the students as the part of the prescribed co-curricular activities through Certificate Program by NAAC and NBA.

I confirmed that the Certificate Program title as **AUTOMOTIVE DIGITAL DESIGN** was done by me in the beginning of this semester and Program delivery with attendance of the students were recorded.

I confirmed that all registered students for this Certificate Program were actively attended and Learned well throughout the duration of this Program. And all students were successfully completed and eligible to receive the participation certificate.

Outcome: Students shall be able to gain the knowledge in

- Learn concepts and tools required for designing modern vehicles using digital design software and techniques.

Name : **Mr.V.P.ARUL MURUGAN**

Designation : **AP/AUTO**

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