



Indra Ganesan

COLLEGE OF ENGINEERING

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai
Accredited by NAAC with 'B+' Grade, 2(f) & 12B Status Institution by UGC

IG Valley, Madurai Main Road, Manikandam, Tiruchirappalli - 620012

NAAC DOCUMENTS

QUALITY INDICATOR FRAME WORK

CRITERION – 1

CURRICULAR ASPECTS

SUBMITTED BY

IQAC

INTERNAL QUALITY ASSURANCE CELL

INDRA GANESAN COLLEGE OF ENGINEERING





DEPARTMENT OF MECHANICAL ENGINEERING

ACADEMIC YEAR 2020-21 EVEN / ODD SEMESTER

1.2 Academic Flexibility (30)

1.2.1 Number of Certificate/Value added courses offered and online courses of MOOCs,SWAYAM, NPTEL etc. (where the students of the institution have enrolled and successfully completed during the last five years)

AND

1.2.2 Percentage of students enrolled in Certificate/ Value added courses and also completed online courses of MOOCs, SWAYAM, NPTEL etc. as against the total number of students during the last five years

VAC Title:	Master CAM				
Resource Person:	Mr.Balaji &Mr.Jayakumar Trainer CADD center Trichy				
Date of conduct from:	07.12.2020	To:	11.12.2020	Duration:	30 Hours
Organized Department:	MECHANICAL ENGINEERING				
Participant Year:	Mech IV Year	Semester:	ODD	No. of Students Registered:	37
Venue:	http://meet.google.com/zcon-djnn-mdt				

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Madurai Main Road (NH-45B), Manikandam, Tiruchirapalli- 620 012
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Department of Mechanical Engineering

Academic Year 2020-2021 -ODD Semester

Date: 02.12.2020

DEPARTMENT CIRCULAR

Department of Mechanical Engineering of IGCE association with "CADD Centre, Trichy" is going to organize Value Added Course for all II and III, IV year students on "Mater CAM" from 07.12.2020 to 11.12.2020. Certificates will be issued to the eligible participants at the end of the Course

Resource Person Details	<ol style="list-style-type: none">1. Mr. Balaji Trainer CADD centre Trichy2. Mr. Jaya kumar Trainer CADD centre Trichy
Venue	online mode https://meet.google.com/zcm-djnn-mdt


HOD/MECH


PRINCIPAL

Cc:

- Principal office
- IQAC Coordinator
- Class In charges - II, III & IV Year
- Class Rooms - II, III & IV Year
- Office File
- Notice Board


Dr. G. Balakrishnan, M.E., Ph.D.,
Principal
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Value Added Course

"Master CAM"

SYLLABUS

S.NO	TOPIC COVERED	DURATION (in hours)	DATE
1	Introduction to MASTERCAM	3	07.12.2020
2	Basic concepts of CAM (cutters, machines job setup, etc)	3	07.12.2020
3	Creating 2D drawings tool paths	3	08.12.2020
4	Creating 2D tool paths	3	08.12.2020
5	Creating 3D models (Solid)	3	09.12.2020
6	Creating 3D models (Surface)	3	09.12.2020
7	Creating 3D models tool paths	3	10.12.2020
8	Transforming tool paths	3	10.12.2020
9	Converting Solid to Surface, Surface to Solid,	3	11.12.2020
10	Boolean operations	3	11.12.2020
11	Test	1	11.12.2020
Total Hours (Excluding Assessment)		30	


VAC Coordinator


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HoD/MECH



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Value Added Course

"Master CAM"

STUDENTS PARTICIPATION LIST

Dr. G. Balakrishnan, M.E., Ph.D.,
Principal
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012.

S.No.	Reg.No	Student's Name	Year/ Branch
1	811217114001	S.Abdul Yasin	IV/MECH
2	811217114002	R.Ajithkumar	IV/MECH
3	811217114003	S.Anandha Kumar	IV/MECH
4	811217114004	M.Ananth	IV/MECH
5	811217114005	R.Chellaiah	IV/MECH
6	811217114006	C.Devarajan	IV/MECH
7	811217114007	S.Dhamotharan	IV/MECH
8	811217114008	A.Dhanussh	IV/MECH
9	811217114009	C.Dharanidharan	IV/MECH
10	811217114010	N.Dharman	IV/MECH
11	811217114013	M.Hariharasudhan	IV/MECH
12	811217114014	A.Jawagar	IV/MECH
13	811217114015	Karthick S	IV/MECH
14	811217114016	D.Madhan	IV/MECH
15	811217114018	M.Mohammed Faizal	IV/MECH
16	811217114019	S.Mohanraj	IV/MECH
17	811217114020	R.Munishwaran	IV/MECH
18	811217114021	P.Murugan	IV/MECH
19	811217114022	P.Ponnar	IV/MECH
20	811217114023	M.Prakash	IV/MECH
21	811217114025	M.Rajamuni	IV/MECH
22	811217114026	La.Ramanathan	IV/MECH



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S.No.	Reg.No	Student's Name	Year/ Branch
23	811217114027	G.Sairam	IV/MECH
24	811217114028	R.Sankaralingam	IV/MECH
25	811217114030	M.Selvakumar	IV/MECH
26	811217114031	A.Shameer	IV/MECH
27	811217114032	D.Sivakumar	IV/MECH
28	811217114033	A.Sriram	IV/MECH
29	811217114034	S.Thirumurugan	IV/MECH
30	811217114035	A.Vengatesh	IV/MECH
31	811217114036	M.Venkatesh	IV/MECH
32	811217114037	P.Vinayagamoorthy	IV/MECH
33	811217114038	B.Vinothraja	IV/MECH
34	811217114039	D.Yugesh	IV/MECH
35	811217114301	K.Arun	IV/MECH
36	811217114302	K.Santhosh Kumar	IV/MECH
37	811217114303	R.Thirumoorthi	IV/MECH


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S.No.	Reg.No	Student's Name	Year/ Branch	DATE: 07.12.20		DATE: 08.12.20		DATE: 09.12.20		DATE: 10.12.20		DATE: 11.12.20		NO OF SESSIONS ATTENDED	SIGNATURE OF THE STUDENT
				FN	AN	FN	AN	FN	AN	FN	AN	FN	AN		
18	811217114021	P.Murugan	IV/MECH	/	/	/	/	/	/	/	/	/	/	10	Online Mode
19	811217114022	P.Ponnar	IV/MECH	/	/	/	/	/	/	/	/	/	/	10	
20	811217114023	M.Prakash	IV/MECH	/	/	/	/	/	/	/	/	/	/	10	
21	811217114025	M.Rajamuni	IV/MECH	/	/	/	/	/	/	/	/	/	/	9	
22	811217114026	La.Ramanathan	IV/MECH	/	/	/	/	/	/	/	a	/	/	9	
23	811217114027	G.Sairam	IV/MECH	/	/	/	/	/	/	/	/	/	/	10	
24	811217114028	R.Sankaralingam	IV/MECH	/	/	/	/	/	/	/	/	/	/	10	
25	811217114030	M.Selvakumar	IV/MECH	/	/	/	/	/	/	/	/	/	/	10	
26	811217114031	A.Shameer	IV/MECH	/	/	/	/	/	/	/	/	/	/	10	
27	811217114032	D.Sivakumar	IV/MECH	/	/	/	/	/	/	/	/	/	/	10	
28	811217114033	A.Sriram	IV/MECH	/	/	/	/	a	a	/	/	/	/	8	
29	811217114034	S.Thirumurugan	IV/MECH	/	/	/	/	/	/	/	/	/	/	10	
30	811217114035	A.Vengatesh	IV/MECH	/	/	/	/	/	/	/	/	/	/	10	
31	811217114036	M.Venkatesh	IV/MECH	/	/	/	/	/	/	/	/	/	/	10	
32	811217114037	P.Vinayagamorthy	IV/MECH	/	/	/	/	/	/	a	/	/	/	9	
33	811217114038	B.Vinothraja	IV/MECH	/	/	/	/	/	/	/	/	/	/	10	
34	811217114039	D.Yugesh	IV/MECH	/	/	/	/	/	/	/	/	/	/	10	
35	811217114301	K.Arun	IV/MECH	/	/	/	/	/	/	/	/	/	/	10	
36	811217114302	K.Santhosh Kumar	IV/MECH	/	/	/	/	/	/	/	/	/	/	10	
37	811217114303	R.Thirumoorthi	IV/MECH	/	/	/	/	/	/	/	/	/	/	10	


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 HOD/MECH



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Name of the Student :

Year/Sem:

AU Register Number:

Value Added Course

“Master CAM”

MCQ QUESTIONS (25X4 = 100 Marks)

1. Batch model production lines are most suited to which one of the following production situations:
 - a. Job shop
 - b. Mass production
 - c. Medium production
 - d. All of the above
2. Flexible manufacturing systems and cells are generally applied in which one of the following areas:
 - a High-variety, low-volume production
 - b. low variety
 - c. low volume
 - d. mass production
3. When the flow of materials is variable
 - a. layout by process is most suitable
 - b layout by product is most suitable
 - c. layout by fixed position is most suitable
 - d. line balancing is most suitable
4. What type of process would a paper mill be most likely to use?
 - a. Continuous flow
 - b. Project
 - c. Job shop
 - d. Flow shop
5. What are the two basic types of production systems?
 - a. Automated and manual
 - b. Intermittent and non intermittent process
 - c. Normal and continuous process
 - d. Continuous process and batch

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Indra Ganesan College of Engineering
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6. All of the following are current trends in manufacturing, except:
- a. global competition
 - b. worker involvement
 - c. total quality management
 - d. linear work flow
7. Productivity increases when
- a. inputs increase while outputs remain the same
 - b. inputs decrease while outputs remain the same
 - c. outputs decrease while inputs remain the same
 - d. inputs and outputs increase proportionately
8. Quality in design and production includes:
- a. service after sale
 - b. performance
 - c. customer expectations
 - d. all of the above
9. CIM stands for
- a. Computer integrated machine.
 - b. Central integrated machine
 - c. Computer integrated manufacturing
 - d. Central integrated manufacturing
10. Which item best describes a CAM technology?
- a. Numerical control
 - b. Documentation
 - c. Drafting
 - d. Geometric modelling
11. Automation leads to
- a. Increase in productivity.
 - b. Shorter lead time
 - c. Unemployment.
 - d. All of the above
12. Break even analysis consist of
- a. Fixed cost
 - b. Variable cost
 - c. Fixed and variable cost
 - d. None of the above
13. MLT stands for
- a. Manufacturing lead time
 - b. Mean lead time
 - c. Minimum lead time
 - d. None of the above

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14. . NC contouring is an example of
- a. Continuous path positioning
 - b. Point-to-point positioning
 - c. Absolute positioning
 - d. Incremental positioning
15. The axes of turning machine are:
- a. Z and X-axes
 - b. X and Y-axes
 - c. Z and Y-axes
 - d. X, Y and Z-axes
16. The heart of a computer is:
- a. CPU
 - b. ALU
 - c. Monitor
 - d. Keyboard
17. MCU stands for
- a. Machine control unit.
 - b. Machine center unit
 - c. Mechanical control unit
 - d. Mechanical center unit
18. The lost motion in CNC machine tool is on account of
- a. Backlash in gearing
 - b. Wind-up of drive shafts
 - c. Deflection of machine tool members
 - d. All the above
19. On turning lathes the machine zero point is generally at the:
- a. Head stock of lathe spindle nose face
 - b. Dead center of tail stock
 - c. Tool point mounted on tool post
 - d. none of the above
20. . CAE and CAM are linked through:
- a. A common database and communication system
 - b. NC tape programming and automated design
 - c. Assembly automation and tool production
 - d. Parts production and testing
21. Process layout is employed for
- a. Batch production
 - b. Continuous production
 - c. Effective utilization of machines
 - d. All of the above


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22. for a product layout the material handling equipment
- a. Have full flexibility
 - b. Employ conveyor belts trucks etc.
 - c. Be a general purpose type
 - d. Be designed as special purpose for a particular application.
23. Product layout is employed for
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VAC Coordinator


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Value Added Course

“Master CAM”

ANSWER KEY

1	c	6	b	11	d	16	a	21	a
2	a	7	b	12	c	17	a	22	d
3	a	8	d	13	a	18	a	23	b
4	a	9	c	14	a	19	b	24	b
5	b	10	a	15	a	20	a	25	b

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Name of the Student : C. S. Maniathan

Year/Sem: IV - mech

AU Register Number: 811217114009

Value Added Course

“Master CAM”

MCO QUESTIONS (25X4 = 100 Marks)

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Department of Mechanical Engineering

Academic Year 2020-2021 – Odd Semester

VALUE ADDED COURSE ASSESEMENT SHEET

“Master CAM”

S.No.	Reg.No	Student's Name	Year/ Branch	Attendance Details		VAC-MCQ TEST		OVERALL MARK(100) (50% of A + 50% of B)
				No. of Hours Attended	Attendance Mark(100) (A)	No of Correct Answers	MCQ Mark(100) (B)	
1	811217114001	S.Abdul Yasin	IV/MECH	30	100	20	80	90
2	811217114002	R.Ajithkumar	IV/MECH	30	100	18	72	86
3	811217114003	S.Anandha Kumar	IV/MECH	27	90	20	80	85
4	811217114004	M.Ananth	IV/MECH	30	100	20	80	90
5	811217114005	R.Chellaiah	IV/MECH	24	80	20	80	80
6	811217114006	C.Devarajan	IV/MECH	30	100	22	88	94
7	811217114007	S.Dhamotharan	IV/MECH	30	100	20	80	90
8	811217114008	A.Dhanussh	IV/MECH	30	100	22	88	94
9	811217114009	C.Dharanidharan	IV/MECH	30	100	20	80	90
10	811217114010	N.Dharman	IV/MECH	30	100	19	76	88
11	811217114013	M.Harithasudhan	IV/MECH	30	100	19	76	88
12	811217114014	A.Jawagar	IV/MECH	30	100	20	80	90
13	811217114015	Karthick S	IV/MECH	27	90	19	76	83
14	811217114016	D.Madhan	IV/MECH	30	100	19	76	88



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S.No.	Reg.No	Student's Name	Year/ Branch	Attendance Details		VAC-MCQ TEST		OVERALL MARK(100) (50% of A + 50% of B)
				No. of Hours Attended	Attendance Mark(100) (A)	No of Correct Answers	MCQ Mark(100) (B)	
15	811217114018	M.Mohammed Faizal	IV/MECH	30	100	22	88	94
16	811217114019	S.Mohanraj	IV/MECH	24	80	18	72	76
17	811217114020	R.Munishwaran	IV/MECH	30	100	19	76	88
18	811217114021	P.Murugan	IV/MECH	30	100	18	72	86
19	811217114022	P.Ponnar	IV/MECH	30	100	22	88	94
20	811217114023	M.Prakash	IV/MECH	30	100	22	88	94
21	811217114025	M.Rajamuni	IV/MECH	30	100	20	80	90
22	811217114026	La.Ramanathan	IV/MECH	27	90	18	72	81
23	811217114027	G.Sairam	IV/MECH	27	90	19	76	83
24	811217114028	R.Sankaralingam	IV/MECH	30	100	20	80	90
25	811217114030	M.Selvakumar	IV/MECH	30	100	20	80	90
26	811217114031	A.Shameer	IV/MECH	30	100	22	88	94
27	811217114032	D.Sivakumar	IV/MECH	30	100	20	80	90
28	811217114033	A.Sriram	IV/MECH	30	100	22	88	94
29	811217114034	S.Thirumurugan	IV/MECH	24	80	20	80	80
30	811217114035	A.Vengatesh	IV/MECH	30	100	19	76	88
31	811217114036	M.Venkatesh	IV/MECH	30	100	20	80	90
32	811217114037	P.Vinayagamoorthy	IV/MECH	30	100	20	80	90
33	811217114038	B.Vinothraja	IV/MECH	27	90	20	80	85
34	811217114039	D.Yugesh	IV/MECH	30	100	20	80	90
35	811217114301	K.Arun	IV/MECH	24	80	22	88	84
36	811217114302	K.Santhosh Kumar	IV/MECH	30	100	20	80	90
37	811217114303	R.Thirumoorthi	IV/MECH	30	100	18	72	86

VAC Coordinator

HOD MECH



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Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

Report on Value Added Course

Title:	Master CAM				
Resource Person:	Mr. Jayakumar, Mr. Balaji, Trainer, CADD centre, Trichy				
Date of conduct from :	07.12.2020	To:	11.12.2020	Duration:	30 Hours
Organized Department :	MECHANICAL ENGINEERING				
Participant Year:	4	No. of Students Registered :	37		
Venue:	Online mode - https://meet.google.com/zcm-djnn-mdt				

Outcome of Value Added Course (VAC): At the end of the Course, Students can able to

- Know to explain the MASTERCAM 2D drawings & 3D models.
- Know how to create 2D & 3D tool paths.
- Students are expected to learn the special operations like hole milling, slot milling and helical milling tool paths.
- Know to recall Assembling with Extrude, Revolve, Fillet, Chamfer, Sweep, Thicken, Ruled
They receive required training on Animating Assemblies, Surface modeling tools.

Assessment Process

- Students, who are securing more than 70% on total score and secured more than 75% in attendance is eligible to receive the certificate for the VAC course conducted
- Total Score = $(0.5 * \text{Attendance in VAC out of 100 percentage} + 0.5 * \text{Test mark in VAC out of 100 marks})$


VAC Coordinator


HoD MECH


Principal

Dr. G. Balakrishnan, M.E., Ph.D.,
Principal
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012.



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Sample Photo of Value Added Course

Title:	Master CAM			
Resource Person:	1. Mr. Jayakumar 2. Mr. Balaji Trainer CADD centre Trichy			
Date of conduct from :	07.12.2020	To:	11.12.2020	Duration: 30 Hours
Organized Department :	MECHANICAL ENGINEERING			
Participant Year:	4	No. of Students Registered :	37	
Venue:	Online mode - https://meet.google.com/zcm-djnn-mdt			

Sample Photo


VAC Coordinator


H&D MECH


Principal

Dr. G. Balakrishnan, M.Tech, Ph.D.
Principal
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620

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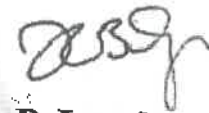
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CERTIFICATE OF PARTICIPATION

This is to certify that Mr.S.Mohan Raj of IV Year MECH has successfully completed the value added course on Master CAM organized by Department of Mechanical Engineering and IQAC of our institution in association with CADD centre from 07 December 2020 to 11 December 2020 (5 days) during the Academic year 2020-2021.



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Principal
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
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This is to certify that Mr.K.Arjun of IV Year MECH has successfully completed the value added course on Master CAM organized by Department of Mechanical Engineering and IQAC of our institution in association with CADD centre from 07 December 2020 to 11 December 2020 (5 days) during the Academic year 2020-2021.

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This is to certify that Mr. R. Sankarlingam of IV Year MECY has successfully completed the value added course on Master CAM organized by Department of Mechanical Engineering and IQAC of our institution in association with CADD centre from 07 December 2020 to 11 December 2020 (5 days) during the Academic year 2020-2021.

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This is to certify that Mr.M. Vengatesh of IV Year MECH has successfully completed the value added course on Master CAM organized by Department of Mechanical Engineering and IQAC of our institution in association with CADD centre from 07 December 2020 to 11 December 2020 (5 days) during the Academic year 2020-2021.

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Principal

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This is to certify that Mr. B. Vinoth Raja of 1st Year MECH has successfully completed the value added course on Master CAM organized by Department of Mechanical Engineering and IQAC of our institution in association with CADD centre from 07 December 2020 to 11 December 2020 (5 days) during the Academic year 2020-2021.

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This is to certify that Mr.M.Prakash of IV Year MECH has successfully completed the value added course on Master CAM organized by Department of Mechanical Engineering and IQAC of our institution in association with CADD centre from 07 December 2020 to 11 December 2020 (5 days) during the Academic year 2020-2021.

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This is to certify that Mr. R. Thirumoothi of IV Year MECH has successfully completed the value added course on Master CAM organized by Department of Mechanical Engineering and IQAC of our institution in association with CADD centre from 07 December 2020 to 11 December 2020 (5 days) during the Academic year 2020-2021.

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This is to certify that Mr.R.Ajithkumar of IV Year MECH has successfully completed the value added course on Master CAM organized by Department of Mechanical Engineering and IQAC of our institution in association with CADD centre from 07 December 2020 to 11 December 2020 (5 days) during the Academic year 2020-2021.


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Principal
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Manikandam, Trichy-620 012.


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This is to certify that Mr.M.Ananthi of IV Year MECH has successfully completed the value added course on Master CAM organized by Department of Mechanical Engineering and IQAC of our institution in association with CADD centre from 07 December 2020 to 11 December 2020 (5 days) during the Academic year 2020-2021.

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Principal
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This is to certify that Mr.M.Rajamuni of IV Year MECH has successfully completed the value added course on Master CAM organized by Department of Mechanical Engineering and IQAC of our institution in association with CADD centre from 07 December 2020 to 11 December 2020 (5 days) during the Academic year 2020-2021.

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Principal
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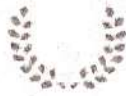
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This is to certify that Mr.A.Shameer of IV Year MECH has successfully completed the value added course on Master CAM organized by Department of Mechanical Engineering and IQAC of our institution in association with CADD centre from 07 December 2020 to 11 December 2020 (5 days) during the Academic year 2020-2021.


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Principal
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This is to certify that Mr.A.Sriram of IV Year MECH has successfully completed the value added course on Master CAM organized by Department of Mechanical Engineering and IQAC of our institution in association with CADD centre from 07 December 2020 to 11 December 2020 (5 days) during the Academic year 2020-2021.

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Principal
Indra Ganesan College of Engineering
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This is to certify that Mr.D.Yugesh of IV Year MECH has successfully completed the value added course on Master CAM organized by Department of Mechanical Engineering and IQAC of our institution in association with CADD centre from 07 December 2020 to 11 December 2020 (5 days) during the Academic year 2020-2021.


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Principal
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620.012.


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