3. Design and Development of Curriculum for Add on/ certificate/ Diploma Courses

S.No	Name of Faculty	Name of Addon Course
1	Ms.S.Anusuya	SCI LAB
2	Mr.M.Ashokkumar	Drone Modeling
3	Ms.Priyadarshini	Iot Using Arduino
4	Mr.S.R.Mohan	Introduction to Multibody Dynamics
5	Mrs.Archana	LabVIEW
6	Mr.C.Venkatesh	Simulation of Electric Vehicle
7	Mrs.N.Suresh	Fundamentals of MATLAB
8	Mrs.K.Anupreyaa	AUTOCAD
9	Mr.K.K.Vinothkumar	3D Modeling using CATIA
10	Mrs.T.Sumana	Advanced Python and Introduction to Machine Learning

PRINCIPAL
Mohamed Sathak A.J. College of Engineering
No.34, Rajiv Gandhi Salai (OMR)
Sipcot - IT Highway Egattur,
Chenai - 603103.

SCI LAB

From

Dr.M.Shivakumar

Head/ECE

Department of Electronics and Communication Engineering

Mohamed Sathak AJ College of Engineering College,

Siruseri (IT Park), Chennai- 603103.

To

The Principal,

Mohamed Sathak AJ College of Engineering College,

Siruseri (IT Park), Chennai- 603103.

Respected sir,

Sub:

Sub: Permission for conducting ADD on course – reg.

  With reference to the above cited subject, we have proposed to conduct ADD on courses for the students of ECE department in the Academic Year 2022-2023 (Odd Semester) under Technology Centre. The selected courses are useful to the students for learning the emerging technical fields.

  Kindly provide the permission for the same.

Year/Sem	Title	Duration
IIECE	SCI Lab	30 Hrs

Thanking you

Place: Chennai

Date:

Your's faithfully

(Dr.M.SIVAKUMAR)
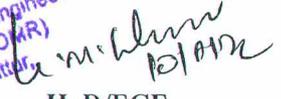
DEPARTMENT OF ECE

Date:10/8/2022

Ref:01/MSAJCE/ECE/ODD/2022-2023

CIRCULAR

We the department of Electronics and communication Engineering, planned to conduct the Add on/Value added course for the below mentioned students for this Academic Year 2022-2023. (Odd sem).

Year/Sem	Title	Duration	Course Coordinator
II ECE	SCI LAB	30 Hrs	Ms.S.Anusuya AP/ECE

Venue: Computer Lab II (Room No: 202)

PRINCIPAL
Mohamed Sathak A.J. College of Engineering
No.34, Rajiv Gandhi Salai (OMR)
Sipcot - IT Highway Egattur,
Chennai - 603103.

HoD/ECE
(Dr. M.Sivakumar)

Copy To:

Department of ECE.

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Notice Board

MOHAMED SATHAK A J COLLEGE OF ENGINEERING, Chennai - 603103

TIMETABLE

Academic year	2022-2023	Department	ECE
Semester	III	Lab Name	SCI LAB
Lab In-charge	Mrs.S.Anusuya AP/ECE	Lab Assistant	
Location of the lab	204 -DSP LAB		

Period/ Day	1 8.00-8.45 AM	2 8.45-09.30 AM	3 09.30-10.15 AM	10.15-10.30 AM	4 10.30-11.15 AM	5 11.15-12.00 PM	6 12.00-12.45 PM	12.45-1.30 PM	7 1.30-2.30 PM	8 2.30-3.30 PM
MON										
TUE				TEA BREAK				LUNCH BREAK		
WED									SCI LAB	
THU										
FRI										
SAT										

THEORY& LABORATORY DETAILS:

S.No	Subject Code	Name of the Subject	Name of the Faculty	Dept	No. of Hours per Week
1		SCI LAB	Mrs.S.Anusuya AP/ECE	ECE	2

Timetable Coordinator
(Name & Sign)

[JAYANTHI E]

Lab In-Charge
(Name & Sign)

[S.Priyadharshini]
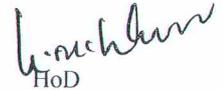
HoD
(Name & Sign)

[DR.M.SIVAKUMAR]

MOHAMED SATHAK A J COLLEGE OF ENGINEERING, Chennai - 603103

COE - COURSE CONTENT

Department of ECE

Class :II ECE   Academic Year: 2022 - 2023

Name of the Course	SCI lab	Name of the handling Faculty	S.Anusuya

Course Objective

1) To expose student and gain knowledge about Sci Lab

2) To program and construct applications using Sci Lab

Course Outcome

CO1	Understand basic concepts(instructions) of Sci lab
CO2	write and execute application(Signals and systems, Electonic circuits etc) based program using Scilab

Lesson Plan

Sl. No.	Topic	Periods Required	Mode of Teaching
1	Introduction about Sci Lab	2	PPT
2	Study of basic Scilab Commands	2	LAB
3	Relational and bitwise operations	2	LAB
4	Control Structures (If-Else, If-elseif –else, Select)	2	LAB
5	Control Structures (If-Else, If-elseif –else, Select)	2	LAB
6	Graphics- 2D plots	2	LAB
7	Signal generation (fourier Series)	2	LAB
8	Signals operations (Time scaling)9	2	LAB
9	I and V calculation of self bias circuits	2	LAB
10	Circuits applications- KCL	2	LAB
11	Control system application 1	3	LAB
12	Control system application 2	3	LAB
13	Assignment program-Any application	2	LAB
14	Assesment 1	2	LAB

Quiz / Mini Projects / Model Develpoed if any

Assignment - program execution (Application based)

Reference Material

1	LAB MANUAL

Website / URL References

1	https://www.youtube.com/watch?v=bHVOPECO8-o
2	https://www.scilab.org/tutorials

Sign. of Course Coordinator

Sign. of HoD
with date

Head-TC

PRINCIPAL
Mohamed Sathak A.J. College of Engineering
No.34, Rajiv Gandhi Salai (OMR)
Sipcot - IT Highway Egattur,
Chenai - 603103.

MOHAMED SATHAK A.J. COLLEGE OF ENGINEERING, Chennai - 603103

VAC - STUDENTS NAME LIST

Department of ……ECE………

Academic Year: 2022-2023

Name of the Value Added Course : SCI LAB				
Yr / Sem :II/III		Faculty In-charge : Ms.P.Anusuya ,AP/ECE		
Location : ONLINE	Duration :45 Hrs			
Sl.No	Name of the Student	Register No.	Status of Qualifying	Sign of Student
1	ABDUL BAASIT.A	311821106001	YES	AbdulBasit
2	ABINAYA V	311821106002	YES	Abinaya
3	ANISH KUMAR K	311821106003	YES	Anish Kumar
4	ARIHARAN	311821106004	YES	Arhavan
5	ASMA FATHIMA F T	311821106005	YES	Fathima
6	BHAVANI H	311821106006	YES	Bhavani
7	CHITHRA S	311821106007	YES	Chithra
8	DHINESH C	311821106008	YES	Dinesh
9	GAJENDIRAN R	311821106009	YES	Gajendiran
10	GOPI K	311821106010	YES	Gopi
11	HAARISTHAMEEM ANSARI	311821106011	YES	Ansari
12	HALITH UMAR R	311821106012	YES	Halith Umar
13	HUMAIRA NUSRATH	311821106013	YES	Halith Umar
14	JAYASUDHAN J	311821106014	YES	Jaya Sudhan
15	KISHORE D	311821106015	YES	Kishoe
16	MAHESWARAN R	311821106016	YES	Mahesh
17	MAJITHUL HIKKUM	311821106017	YES	Mahesh kumar
18	MOHAMED FARAJKHAN R	311821106018	YES	Yahya
19	MOHAMED YAHYA N I	311821106019	YES	Farajkhan
20	MOHAMMED AATHIF M	311821106020	YES	Aathif
21	MOHAMMED IBRAHIM	311821106021	YES	Ibrahim
22	NANDHINI A	311821106023	YES	Nandhini A
23	NANDHINI K	311821106024	YES	Nandhini K
24	PAVITHRA S	311821106025	YES	pavithra
25	PUSHPA P	311821106026	YES	Pushpa
26	SAFIA FARHEEN Z R	311821106027	YES	Safia
27	SANJAY V	311821106028	YES	Sanjay
28	SIBY C	311821106030	YES	Siby
29	SOWNDHARYA G	311821106031	YES	Sowdh
30	SUHAIL K	311821106032	YES	Suhail
31	SURYA T	311821106033	YES	Surya.T.
32	SUVAN KUMAR R	311821106034	YES	Suvan Kumar
33	SYED AFRID I	311821106035	YES	Syed Afrid
34	VENKATESH S	311821106036	YES	Venkatesh
35	SAHULHAMEED T		YES	Sahul
36	DHINESH K N		YES	Dinesh
37	KARTHIKEYAN S		YES	Karthi

Head Training

Signature of HoD with date

(Pro.M.Siraseu)

MOHAMED SATHAK A.J. COLLEGE OF ENGINEERING

(Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai)

Department of ECE

II YEAR ECE SCI LAB ATTENDANCE SHEET

S.NO	REG NO	NAME OF THE STUDENT	YEAR	10.08.2022	17.08.2022	24.08.2022	07.09.2022	21.09.2022	28.09.2023	05.10.2022	12.10.2022	19.10.2022	26.10.2022	02.11.2022	09.11.2022
1	311821106001	ABDUL BAASIT.A	II	Baasit	Baasit	Baasit	Baasit	Baasit	Baasit	Baasit	Baasit	Baasit	Baasit	Baasit	Baasit
2	311821106002	ABINAYA V	II	Abinaya	Abinaya	Abinaya	Abinaya	Abinaya	Abiraya	Abinaya	Abinaya	Abinaya	Abinaya	Abinaya	Abinaya
3	311821106003	ANISH KUMAR K	II												
4	311821106004	ARIHARAN	II	Arihar	Arihar	Arihar		Arihar	Arihar	Arihar	AB	Arihar	Arihar	Arihar	Arihar
5	311821106005	ASMA FATHIMA F T	II					AB	AB	AB					AB
6	311821106006	BHAVANI H	II	Bavani	Bavani	Bavani	Bavani	Bavani	Bavani	Bavani	Bavani	Bavani	Bavani	Bavani	Bavani
7	311821106007	CHITHRA S	II	Chithra	Chithra	Chithra	Chithra	Chithra	Chithra	Chithra	Chithra	Chithra	Chithra	Chithra	
8	311821106008	DHINESH C	II												Dinesh
9	311821106009	GAJENDIRAN R	II												AB
10	311821106010	GOPI K	II												
11	311821106011	HAARISTHAMEEM ANSARI	II												
12	311821106012	HALITH UMAR R	II												
13	311821106013	HUMAIRA NUSRATH	II												
14	311821106014	JAYASUDHAN J	II												
15	311821106015	KISHORE D	II												
16	311821106016	MAHESWARAN R	II	AB	Mahes	Mahes	Mahes	Mahes	AB	Mahes	Mahes	Mahes	Mahes		
17	311821106017	MAJITHUL HIKKUM	II												
18	311821106018	MOHAMED FARAJKHAN R	II	faraj	faraj	AB		faraj	faraj	AB	faraj	faraj	faraj		
19	311821106019	MOHAMED YAHYA N I	II	AB	AB	AB				AB			AB		
20	311821106020	MOHAMMED AATHIF M	II												
21	311821106021	MOHAMMED IBRAHIM	II							AB				AB	
22	311821106023	NANDHINI A	II	AB					AB						
23	311821106024	NANDHINI V	II	K.Nan	K.Nan	K.Nan	K.Nan	K.Nan	K.Nan	K.Nan	K.Nan	K.Nan	K.Nan	K.Nan	K.Nan
24	311821106025	PAVITHRA L	II												
25	311821106026	PUSHPA C	II												
26	311821106027	SAFIA FARHEEN	II												
27	311821106028	SANJAY V	II												
28	311821106030	SIBY C	II												

Udemy

CERTIFICATE OF COMPLETION

SCILAB: The Open Source Alternative of MATLAB

Instructors Dr. Sourabh Sahu

Halith umar

Date Oct. 13, 2022
Length 4.5 total hours

PRINCIPAL
Mohamed Sathak A.J. College of Engineering
No.34, Rajiv Gandhi Salai (OMR)
Sipcot IIT Highway Egattur,
Chennai - 603103.

Udemy

CERTIFICATE OF COMPLETION

SCILAB: The Open Source Alternative of MATLAB

Instructors Dr. Sourabh Sahu

Dineshkn

Date Dec. 13, 2022

Length 4.5 total hours

PRINCIPAL
Mohamed Sathak A.J. College of Engineering
No.34, Rajiv Gandhi Salai (OMR)
Sipcot - IT Highway Egattur,
Chenai - 603103.

Udemy

CERTIFICATE OF COMPLETION

SCILAB: The Open Source Alternative of MATLAB

Instructors Dr. Sourabh Sahu

Saffia Farheen Z.R

Date Dec. 14, 2022

Length 4.5 total hours

PRINCIPAL
College of Engineering
Mohamed Sathak A.J. College of Engineering (OMR)
No.34, Rajiv Gandhi Salai, Egattur,
Sipcot - IT Highway
Chenai - 603103.

ûdemy

CERTIFICATE OF COMPLETION

SCILAB: The Open Source Alternative of MATLAB

Instructors Dr. Sourabh Sahu

Dhinesh.C

Date Dec. 13, 2022

Length 4.5 total hours

PRINCIPAL
Mohamed Sathak A.J. College of Engineering (OMR)
No.34, Rajiv Gandhi Salai,
Sipcot - IT Highway Egattur,
Chenai - 603103.

Udemy

CERTIFICATE OF COMPLETION

SCILAB: The Open Source Alternative of MATLAB

Instructors Dr. Sourabh Sahu

Sanjay

Date Dec. 13, 2022

Length 4.5 total hours

PRINCIPAL
Mohamed Sathak A.J. College of Engineering
No.34, Rajiv Gandhi Salai (OMR)
Sipcot - IT Highway Egattur,
Chenai - 603103.

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

UAV/DRONE MODELLING

(Students)

ACADEMIC YEAR :2022-2023

PRINCIPAL
Mohamed Sathak A.J. College of Engineering
No.34, Rajiv Gandhi Salai (OMR)
Sipcot - IT Highway Egattur,
Chenai - 603103.

09.08.2022

MSAJCE

From

Dr.M.Sivakumar
Head/ECE
Mohamed Sathak A.J College of Engineering
Chennai.

To

The Principal
Mohamed Sathak A.J College of Engineering
Chennai.

Respected Sir,

Sub – Permission for conducting ADD on Course – Reg.

With reference to the above cited subject, we have proposed to conduct ADD on courses for the students of ECE department in the Academic Year 2022-2023 (Odd Semester) under UAV/Drone Technology Centre. The selected courses are useful to the students for learning the emerging technical fields.

Kindly provide the permission for the same.

Year/Sem	Course Name	Duration
III / V	UAV/Drone Modelling	30 Hrs

Thanking You

PRINCIPAL
Mohamed Sathak A.J. College of Engineering
No.34, Rajiv Gandhi Salai (OMR)
Sipcot - IT Highway Egattur,
Chenai - 603103.

Yours Sincerely

Dr.M.Sivakumar

HOD/ECE

Place: Siruseri

Date: 09.08.2022

DEPARTMENT OF ECE

Date:10/8/2022

Ref:01/MSAJCE/ECE/ODD/2022-2023

CIRCULAR

We the department of Electronics and communication Engineering, planned to conduct the Add on/Value added course for the below mentioned students for this Academic Year 2022-2023. (Odd sem).

Year/Sem	Title	Duration	Course Coordinator
III ECE	UAV/Drone Modelling	30 Hrs	Mr.M.Asohk Kumar

Venue:UAV/Drone Lab (Room No: 114)

PRINCIPAL
Mohamed Sathak A.J. College of Engineering
No.34, Rajiv Gandhi Salai (OMR)
Sipcot - IT Highway Egattur,
Chenai - 603103.
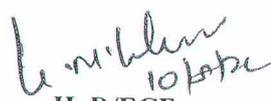
HoD/ECE

Copy To:

Department of ECE.

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ELECTRONICS AND COMMUNICATION ENGINEERING

III YEAR (2022-2023)

UAV/ DRONE MODELLING

Sl.No	Register No.	Name of the Student
1	311820106001	ABINAYA
2	311820106002	ABITHA. B
3	311820106003	AFLAL AHMED
4	311820106004	AHAMED SYED SAMAR
5	311820106005	AMUDESHWARAN. S
6	311820106006	BASHARATHULLA
7	311820106007	CAROL PERSY. N
8	311820106008	JANANI. E
9	311820106009	JASEEM MOHAMED. P
10	311820106011	KISHORE. S
11	311820106013	MATHIVANAN. R
12	311820106014	MOHAMED MUKSHITH
13	311820106015	MUTHU AKMAL
14	311820106016	NIRMAL. K
15	311820106017	POOSATHISH KUMAR
16	311820106018	SAFRIN. S
17	311820106020	SATHISH KUMAR. V
18	311820106021	SHAHRUKH FAKRUDEEN. K
19	311820106022	SHAIK ABDULLAH
20	311820106023	SUBASH
21	311820106025	THANVEER SHERIFF. A
22	311820106026	VAMSI KRISHNA G.V
23	311820106301	BALA KRISHNAN.S
24	311820106302	FOUZIA JABEEN S P
25	311820106303	GIRISH .R
26	311820106304	HARIHARAN.S
27	311820106305	KAMALI.D
28	311820106306	MOHAMED NAYEEM B
29	311820106307	NARESH .M
30	311820106701	KAINRAJ
31	311820106702	KISHORE. S

PRINCIPAL
Mohamed Sathak A.J. College of Engineering
No.34, Rajiv Gandhi Salai (OMR)
Sipcot - IT Highway Egattur,
Chenai - 603103.

Syllabus

UAV SYSTEMS & APPLICATION SENSORS

OBJECTIVE: To enhance the student's knowledge in Advanced concepts of UAV/UAS systems.

UNIT I UAV/UAS -SYSTEMS (Theory)

What is UAV/UAS, UAV Integrated System, UAV Signals and controls, Ground Control Systems, UAV Launching Systems, Image Processing & GIS, Remote Sensing

UNIT II CONTROLS AND CALIBRATION (Theory + Practical)

Stealth Properties, Principal Stealth Technology, Increase Thrust Techniques, Controls & control Mixing, Motor Calibration, ESC Calibration, Signal Binding & Resetting

UNIT III UAV TESTINGS (Theory + Practical)

CG Balancing, Roll Balancing, Weight Checking, Propeller Balancing, Battery Maintenance and Checking, Gimbal Testing, Vibration Testing, Range Testing, Controls Testing & Trim

UNIT IV BASIC SENSORS (Theory + 3 Sensors Practical)

Flight Controllers, Sensor Boards, Relay - Controls – (Servo, Motor, SMD/Lights/RGB Sensor, Buzzer, Etc,..), Weather Monitoring - (Temperature, Humidity)

UNIT V UAV APPLICATION SENSORS (Theory + 4 Sensors Practical)

Inspection – (Ultra sonic Sensor, Flame Sensor, Smoke Sensor, Light Sensor, Hart Beat Sensor, Lesser Sensor), Stability-(Gyro Sensor, Obstacle, Touch sensor, Linear hall, GPS)

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Chenai - 603103.

MOHAMED SATHAK A J COLLEGE OF ENGINEERING, Chennai - 603103

UAV DRONE MODELLING - TIMETABLE

Department of ECE

Name of the Faculty with designation: M.ASHOKKUMAR, AP/ECE

Period/Day	1	2	3	10.30-	4	5	6	1.00-1.30	7	8
	8.15-9.00 AM	9.00-9.45 AM	09.45-10.30 AM	10.30-10.45 AM	10.45-11.30 AM	11.30-12.15 PM	12.15-1.00 PM	1.00-1.30 PM	1.30-2.30 PM	2.30-3.30 PM
MON				TEA BREAK				LUNCH BREAK		
TUE										
WED										
THU									DRONE	
FRI										
SAT										

Sl. No	Branch/Year/Sem	Subject Code	Subject Name	No. of Hours
1	ECE/III/V	COE	UAV /DRONE MODELLING	2

*Kindly sign with date

Timetable Coordinator
(Name & Sign)

HoD
(Name & Sign)

Format No.: TLP 08   Rev.No.: 01   Rev.Date: 04.01.21

MOHAMED SATHAK A.J. COLLEGE OF ENGINEERING, Chennai - 603103
VAC - STUDENTS NAME LIST
Department of ECE

Academic Year: 2022-2023

Name of the Value Added Course : UAV/Drone Modelling				
Yr / Sem : III/V		Faculty In-charge :	Mr.M.Ashokkumar,AP/ECE	
Location : Room No.114 - Drone Lab		Duration :	30 Hrs	
Sl.No	Name of the Student	Register No.	Status of Qualifying	Sign of Student
1	ABINAYA K	311820106001	Yes	
2	ABITHA B	311820106002	Yes	
3	AFLAL AHAMED M	311820106003	Yes	
4	AHMAD SYED SEMAR	311820106004	Yes	
5	AMUDESHWARAN S	311820106005	Yes	
6	BASHARATHULLA A	311820106006	Yes	
7	CAROL PERSY N	311820106007	Yes	
8	JANANI E	311820106009	Yes	
9	JASEEM MOHAMED P	311820106010	Yes	
10	KISHORE S	311820106011	Yes	
11	MADHIVANAN R.	311820106013	Yes	
12	MOHAMED MUKSHITH N	311820106014	Yes	
13	MUTHU AKMAL M	311820106015	Yes	
14	NIRMAL K	311820106016	Yes	
15	POOSATHISHKUMAR M	311820106017	Yes	
16	SAFRIN S	311820106018	Yes	
17	SATHESH KUMAR V	311820106020	Yes	
18	SHAHRUKH FAKRUDEEN K	311820106021	Yes	
19	SHAIK ABDULLA A	311820106022	Yes	
20	SUBHASH B	311820106023	Yes	
21	THANVEER SHERIFF	311820106025	Yes	
22	VAMSI KRISHNA K	311820106026	Yes	
23	BALA KRISHNAN.S	311820106301	Yes	
24	FOUZIA JABEEN S P	311820106302	Yes	
25	GIRISH .R	311820106303	Yes	
26	HARIHARAN.S	311820106304	Yes	
27	KAMALI.D	311820106305	Yes	
28	MOHAMED NAYEEM B	311820106306	Yes	
29	NARESHKUMAR .M	311820106307	Yes	
30	KAVINRAJ S	311820106701	Yes	
31	KISHORE S	311820106702	Yes	

Head-Training

[Dr.m.sivakumar]
Signature of HoD with date

Format No.: TLP 20   Rev.No.: 01   Rev.Date: 04.01.21

ATTENDANCE

Roll No.	Register No.	Name	Month August/sept /Oct												
			Date	4	18	D1	98	29	6	6	13	20	20	27
			Period		7,8	7,8	7,8	7,8	8	7	8	7	8	7
1	311521104001	ARUNAYA K		a	/	/	/	/	/	/	/	/	/	/
2	02	ARITHA B		/	/	0	a	0	a	/	/	/	/	/
3	02	AFFAL AHAMED M		a	a	/	a	/	a	a	a	/	a	/
4	04	AHMED SYED SINAB		/	a	/	/	/	/	/	/	/	a	/
5	05	AMUDESHWARAN S		/	/	/	/	/	/	/	/	/	/	/
6	06	BAKHARAI HULLA A		a	/	/	/	/	/	/	/	/	/	/
7	07	CAROL PERSY N		a	/	/	/	/	/	/	/	/	/	/
8	09	JANANI E		/	/	/	/	/	a	/	/	/	a	/
9	10	JASSIM MUHAMED P		a	a	a	/	a	a	a	a	a	a	/
10		KISHORE S		/	a	a	/	/	/	/	/	/	/	/
11		MADHIVANAN R		/	/	/	/	/	/	/	/	/	/	/
12		MOHAMED MUSTHTH N		/	a	/	/	a	a	/	a	a	/	/
13	15	MUTHU AKMAL M		a	a	a	a	/	a	a	/	a	a	/
14	16	NIRMAL K		a	/	/	/	/	/	/	/	/	/	/
15	17	PROSATISH KUMAR M		/	/	/	/	/	/	/	/	/	/	/
16	18	SAFRIN S		/	a	/	/	/	/	/	/	/	/	/
17	20	SATHESH KUMAR V		a	/	/	a	/	/	/	/	/	/	/
18	21	SHAHRUKH FAKRUDEEN K		a	/	/	/	/	/	/	/	/	/	/
19	22	SHAIK ABDULLA A		a	a	/	a	/	a	a	/	a	a	/
20	23	SURHASH B		a	a	/	a	/	/	/	/	/	/	/
21	25	THANVEER SHERIFF		a	a	/	a	a	/	/	/	/	/	/
22	26	VAMSI KRISHNA K		a	0	0	0	/	/	/	/	/	/	/
23	302	FOWZIA TABEEN SP		a	0	/	/	/	a	/	/	/	/	/
24	303	GIRISH R		/	/	/	/	/	a	/	/	/	/	/
25	304	HARIHARAN S		a	a	/	a	/	a	a	/	/	a	/
26	305	KAMALI D		/	/	/	/	a	a	/	/	/	/	/
27	306	MOHAMED NAYEEM B		a	a	/	/	/	/	/	/	/	/	/
28	307	NARESH KUMAR M		a	a	a	/	/	/	/	/	/	/	/
29	308	BALA KRISHNAN S		a	a	/	/	/	a	/	/	/	/	/
		No. of Absentees		14	12	8	9	6	9	6	4	3	7	1
		Initial of the Faculty												

MOHAMED SATHAK A J COLLEGE OF ENGINEERING, Chennai - 603103

VALUE ADDED COURSE - COURSE CONTENT

Department of ECE

Class : III Year /V Sem   Academic Year: 2022-2023

Name of the Value Added Course	Drone Modelling	Name of the handling Faculty	Mr.M.Ashokkumar

Course Objective
To Enhance the students knowledge in advance concepts of UAV/UAS systems

Course Outcome
Enhancing students' knowledge in advanced UAV/UAS system concepts, aiming to equip them with comprehensive skills and understanding in this specialized field.

Lesson Plan for VAC

Sl. No.	Topic	T / R* Book	Periods Required	Mode of Teaching
1	What is UAV/UAS, UAV Integrated System	T1,R1	1	PPT
2	UAV Signals and controls	T1,R1	1	PPT
3	Ground Control Systems	T1,R1	1	PPT
4	UAV Launching Systems	T1,R1	1	PPT
5	Image Processing & GIS, Remote Sensing	T1,R1	1	PPT
6	Stealth Properties, Principal Stealth Technology	T2,R3	1	PPT/Hands -On
7	Increase Thrust Techniques	T2,R3	1	PPT/Hands -On
8	Controls & control Mixing	T2,R3	1	PPT/Hands -On
9	Motor Calibration	T2,R3	1	PPT/Hands -On
10	ESC Calibration	T2,R3	1	PPT/Hands -On
11	Signal Binding & Resetting	T2,R3	1	PPT/Hands -On
12	CG Balancing, Roll Balancing	R1,R2	1	PPT/Hands -On
13	Weight Checking	R1,R2	1	PPT/Hands -On
14	Propeller Balancing	R1,R2	1	PPT/Hands -On
15	Battery Maintenance and Checking	R1,R2	1	PPT/Hands -On
16	Gimbal Testing, Vibration Testing	R1,R2	1	PPT/Hands -On
17	Range Testing, Controls Testing & Trim	R1,R2	1	PPT/Hands -On
18	Flight Controllers	R2,R3	1	PPT/Hands -On
19	Sensor Boards	R2,R3	1	PPT/Hands -On
20	Relay - Controls – (Servo, Motor, SMD/Lights/RGB Sensor, Buzzer)	R2,R3	1	PPT/Hands -On
21	Weather Monitoring - (Temperature, Humidity)	R2,R3	1	PPT/Hands -On

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

UAV/DRONE MODELLING

STUDENT CERTIFICATION DETAILS

S.NO	COURSE NAME	YEAR	NO OF STUDENTS CERTIFIED
1	DRONE MODELLING	III	31

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Chenai - 603103.
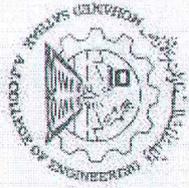
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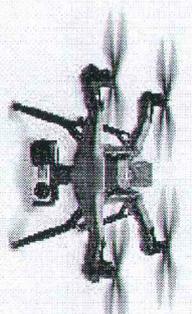
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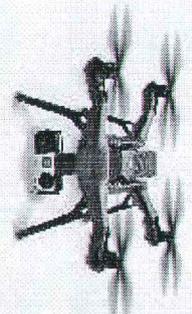
This is to certify that Mr. / Ms. **ABINAYA K III ECE** student of

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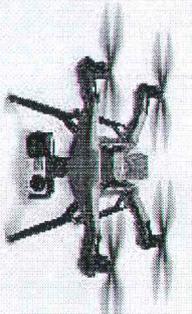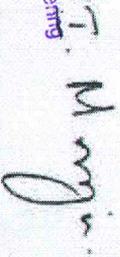
Mr.M.Ashokkumar
Course Co - ordinator

Dr. I. Manju
Head of Technology

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No.34, Old Mahabalipuram Road (OMR),
Sipcot - IT Highway, Egattur,
Chennai - 603103.

Dr. K.S. Srinivasan
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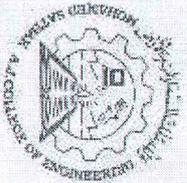Siruseri IT Park, OMR, Chennai – 603103.

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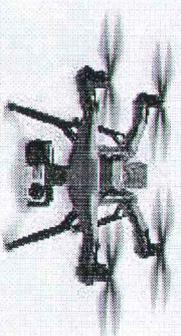
Mr.M.Ashokkumar
Course Co - ordinator

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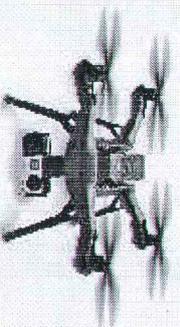
Dr. I. Manju

Dr. K.S. Srinivasan
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Course Co - ordinator

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Egattur, Chennai - 603103.
Head - Technology Centre & Industry Relations

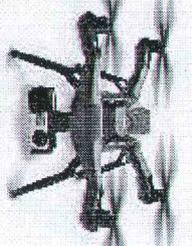**Dr. I. Manju**
Head - Technology Centre & Industry Relations

Dr. K.S. Srinivasan
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Course Co - ordinator

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Siporsori, Chennai - 13.
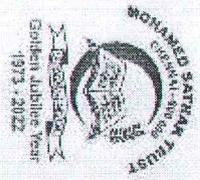**Head of** Technology Centre & Industry Relations

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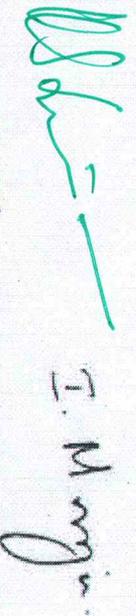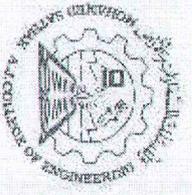Siruseri IT Park, OMR, Chennai - 603 103.

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Mr.M.Ashokkumar
Course Co - ordinator

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This is to certify that Mr. / Ms. **BASHARATHULLA A III ECE** student of Mohamed Sathak A J College of Engineering, Chennai has successfully completed the training program on **"UAV/Drone Modelling"** from 10th August 2022 to 29th October 2022. Conducted by UAV/Drone Technology Center, Department of Electronics and Communication Engineering.
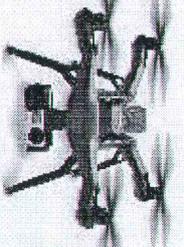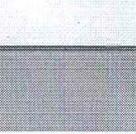
Mr.M.Ashokkumar,
Course Co - ordinator

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This is to certify that Mr. / Ms. __CAROL PERSY N   III ECE__ student of Mohamed Sathak A J College of Engineering, Chennai has successfully completed the training program on **"UAV/Drone Modelling"** from 10th August 2022 to 29th October 2022. Conducted by UAV/Drone Technology Center, Department of Electronics and Communication Engineering.

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This is to certify that Mr. / Ms. __JANANI E   III ECE__ student of Mohamed Sathak A J College of Engineering, Chennai has successfully completed the training program on **"UAV/Drone Modelling"** from 10th August 2022 to 29th October 2022. Conducted by UAV/Drone Technology Center, Department of Electronics and Communication Engineering.

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Course Co - ordinator

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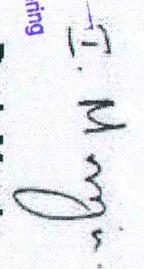
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This is to certify that Mr. / Ms. **JASEEM MOHAMED P III ECE** student of

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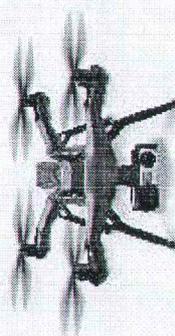**Head of Technology Centre & Industry Relations**
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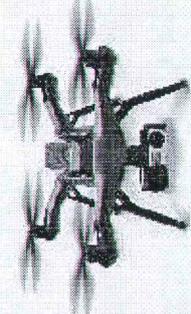
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I. Manju
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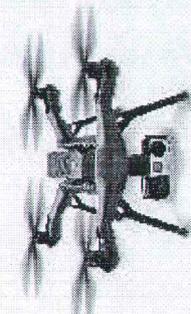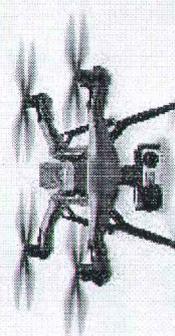Head, Technology Centre & Industry Relations

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Dr. I. Manju
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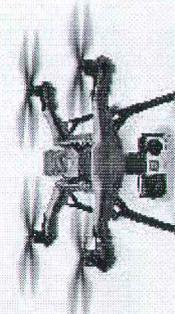No.34, Head Technology Centre & Industry Relations
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This is to certify that Mr. / Ms. **MUTHU AKMAL M   III ECE** student of

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Course Co - ordinator

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Mr.M.Ashokkumar
Course Co-ordinator

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Dr. I. Manju
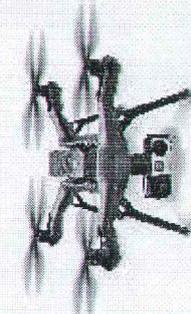Head - Technology Centre & Industry Relations

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Course Co - ordinator

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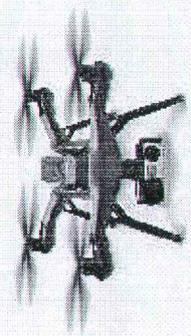
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SAFRIN S III ECE

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Course Co - ordinator

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This is to certify that Mr. / Ms. **SATHESH KUMAR V III ECE** student of Mohamed Sathak A J College of Engineering, Chennai has successfully completed the training program on **"UAV/Drone Modelling"** from 10th August 2022 to 29th October 2022. Conducted by UAV/Drone Technology Center, Department of Electronics and Communication Engineering.

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Course Co - ordinator

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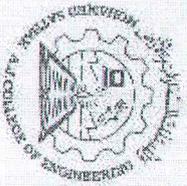Department of Electronics and Communication Engineering.

Mr.M.Ashokkumar
Course Co - ordinator

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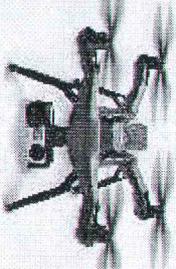Chennai - 603103.

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Head - Technology Centre & Industry Relations

Dr. K.S. Srinivasan
Principal

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Siruseri IT Park, OMR, Chennai - 603103.

Certificate of Completion

This is to certify that Mr. / Ms. **SHAIK ABDULLA A   III ECE**   student of

Mohamed Sathak A J College of Engineering, Chennai has successfully

completed the training program on **"UAV/Drone Modelling"** from 10th August

2022 to 29th October 2022. Conducted by UAV/Drone Technology Center,

Department of Electronics and Communication Engineering.

Mr.M.Ashokkumar
Course Co - ordinator

PRINCIPAL
Mohamed Sathak A.J. College of Engineering
No.34, Rajiv Gandhi Salai (OMR)
Sipcot - IT Highway Egattur,
Chennai - 603103. .

Dr. I. Manju
Head - Technology Centre & Industry Relations

Dr. K.S. Srinivasan
Principal

MOHAMED SATHAK
A.J. COLLEGE OF ENGINEERING
Siruseri IT Park, OMR, Chennai - 603103.

Certificate of Completion

This is to certify that Mr. / Ms. __SUBHASH B   III ECE__ student of Mohamed Sathak A J College of Engineering, Chennai has successfully completed the training program on **"UAV/Drone Modelling"** from 10th August 2022 to 29th October 2022. Conducted by UAV/Drone Technology Center, Department of Electronics and Communication Engineering.

Mr.M.Ashokkumar
Course Co - ordinator

PRINCIPAL
Mohamed Sathak A.J. College of Engineering
No.34, Rajiv Gandhi Salai (OMR)
Sipcot. IT Highway Egattur,
Chennai 603103.

Dr. I. Manju
Head - Technology Centre & Industry Relations

Dr. K.S. Srinivasan
Principal

MOHAMED SATHAK
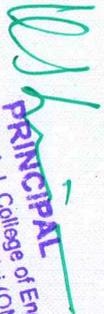## A.J. COLLEGE OF ENGINEERING
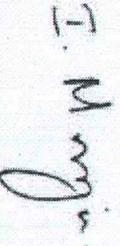Siruseri IT Park, OMR, Chennai - 603103.

Certificate of Completion

This is to certify that Mr. / Ms. **THANVEER SHERIFF   III ECE**   student of Mohamed Sathak A J College of Engineering, Chennai has successfully completed the training program on **"UAV/Drone Modelling"** from 10th August 2022 to 29th October 2022. Conducted by UAV/Drone Technology Center, Department of Electronics and Communication Engineering.

Mr.M.Ashokkumar
Course Co-ordinator

PRINCIPAL
Mohamed Sathak A.J. College of Engineering,
No.34, Rajiv Gandhi Salai (OMR)
Sipcot, IT Highway Egattur,
Chenai - 603103.
Dr. I. Manju
Head - Technology Centre & Industry Relations

Dr. K.S. Srinivasan
Principal

MOHAMED SATHAK
A.J. COLLEGE OF ENGINEERING
Siruseri IT Park, OMR, Chennai - 603103.

Golden Jubilee Year
1973 - 2022

Certificate of Completion

This is to certify that Mr. / Ms. __VAMSI KRISHNA K III ECE__ student of

Mohamed Sathak A J College of Engineering, Chennai has successfully

completed the training program on **"UAV/Drone Modelling"** from 10th August

2022 to 29th October 2022. Conducted by UAV/Drone Technology Center,

Department of Electronics and Communication Engineering.

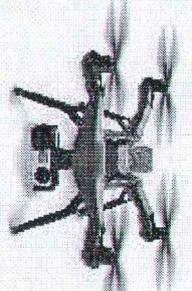**Mr.M.Ashokkumar**
Course Co - ordinator

PRINCIPAL
Mohamed Sathak A.J. College of Engineering
No.34, Rajiv Gandhi Salai (OMR)
Sipcot - IT Highway Egattur,
Chenai - 603103.

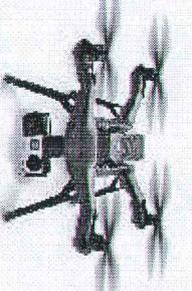**Dr. I. Manju**
Head - Technology Centre & Industry Relations

Dr. K.S. Srinivasan
Principal

MOHAMED SATHAK
A.J. COLLEGE OF ENGINEERING
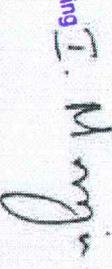Siruseri IT Park, OMR, Chennai - 603103.

Certificate of Completion

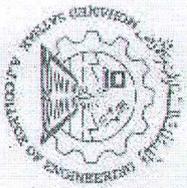This is to certify that Mr. / Ms. **BALA KRISHNAN S III ECE** student of Mohamed Sathak A J College of Engineering, Chennai has successfully completed the training program on **"UAV/Drone Modelling"** from 10th August 2022 to 29th October 2022. Conducted by UAV/Drone Technology Center, Department of Electronics and Communication Engineering.

Mr.M.Ashokkumar
Course Co - ordinator

PRINCIPAL
Mohamed Sathak A.J. College of Engineering
No.34 Rajiv Gandhi Salai (OMR)
Old Mahabalipuram Highway Egattur,
Dr. I. Manju
Head - Technology Centre & Industry Relations

Dr. K.S. Srinivasan
Principal

MOHAMED SATHAK
A.J. COLLEGE OF ENGINEERING
Siruseri IT Park, OMR, Chennai - 603103.

Certificate of Completion

This is to certify that Mr. / Ms. **FOUZIA JABEEN S P III ECE** student of Mohamed Sathak A J College of Engineering, Chennai has successfully completed the training program on **"UAV/Drone Modelling"** from 10th August 2022 to 29th October 2022. Conducted by UAV/Drone Technology Center, Department of Electronics and Communication Engineering.

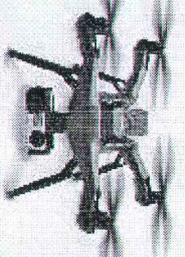**Mr.M.Ashokkumar**
Course Co - ordinator

PRINCIPAL
Mohamed Sathak A.J. College of Engineering,
No 34, Rajiv Gandhi Salai (OMR)
Siruseri IT Highway Egattur,
Chennai - 603103.

Dr. I. Manju
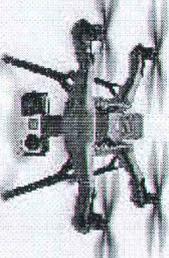Head - Technology Centre & Industry Relations

Dr. K.S. Srinivasan
Principal

MOHAMED SATHAK
A.J. COLLEGE OF ENGINEERING

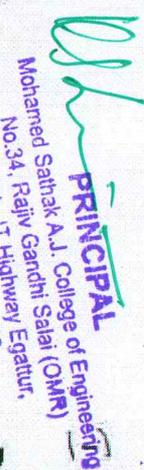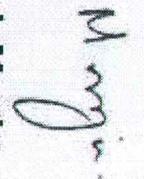Siruseri IT Park, OMR, Chennai - 603103.
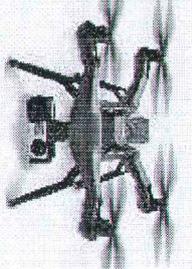
Certificate of Completion

This is to certify that Mr. / Ms.

GIRISH R III ECE

student of

Mohamed Sathak A J College of Engineering, Chennai has successfully completed the training program on **"UAV/Drone Modelling"** from 10th August 2022 to 29th October 2022. Conducted by UAV/Drone Technology Center, Department of Electronics and Communication Engineering.

Mr.M.Ashokkumar
Course Co - ordinator

PRINCIPAL
Mohamed Sathak A.J. College of Engineering
No. 34, Rajiv Gandhi Salai (OMR)
Siruseri, IT Highway Egattur, OMR
Chennai - 603103.

Dr. I. Manju
Head-Technology Centre & Industry Relations

Dr. K.S. Srinivasan
Principal

MOHAMED SATHAK

A.J. COLLEGE OF ENGINEERING

Siruseri IT Park, OMR, Chennai - 603103.

Golden Jubilee Year 1973-2022

Certificate of Completion

This is to certify that Mr. / Ms. **HARIHARAN S   III ECE**   student of

Mohamed Sathak A J College of Engineering, Chennai has successfully

completed the training program on **"UAV/Drone Modelling"** from 10th August

2022 to 29th October 2022. Conducted by UAV/Drone Technology Center,

Department of Electronics and Communication Engineering.

Mr.M.Ashokkumar
Course Co - ordinator

PRINCIPAL
Mohamed Sathak A.J. College of Engineering
Mohamed Sathak Salai (OMR)
Dr. I. Manju
Head Technology Centre & Industry Relations
SP Main IT Highway Chennai - 603 103.

Dr. K.S. Srinivasan
Principal

MOHAMED SATHAK

A.J. COLLEGE OF ENGINEERING

Siruseri IT Park, OMR, Chennai - 603103.

Certificate of Completion

This is to certify that Mr. / Ms. **KAMALI D III ECE** student of Mohamed Sathak A J College of Engineering, Chennai has successfully completed the training program on **"UAV/Drone Modelling"** from 10th August 2022 to 29th October 2022. Conducted by UAV/Drone Technology Center, Department of Electronics and Communication Engineering.

Mr.M.Ashokkumar
Course Co - ordinator

PRINCIPAL
Mohamed Sathak A.J. College of Engineering
No 34, Rajiv Gandhi Salai (OMR)
Sipcot - II, Highway Egattur,
Chennai - 603103.

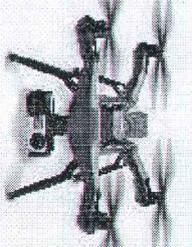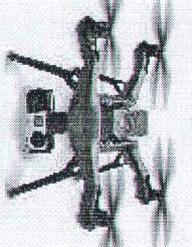**Dr. I. Manju**
Head - Technology Centre & Industry Relations

Dr. K.S. Srinivasan
Principal

Golden Jubilee Year
1973 - 2022

MOHAMED SATHAK
A.J. COLLEGE OF ENGINEERING

Siruseri IT Park, OMR, Chennai - 603103.

Certificate of Completion

This is to certify that Mr. / Ms. **MOHAMED NAYEEM B   III ECE** student of Mohamed Sathak A J College of Engineering, Chennai has successfully completed the training program on **"UAV/Drone Modelling"** from 10th August 2022 to 29th October 2022. Conducted by UAV/Drone Technology Center, Department of Electronics and Communication Engineering.
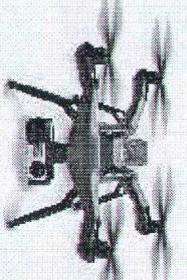
Mr.M.Ashokkumar
Course Co - ordinator

PRINCIPAL
Mohamed Sathak A.J. College of Engineering
No 34, Rajiv Gandhi Salai (OMR)
Sipcot, IT Highway Egattur,
Head - Technology Centre & Industry Relations

Dr. I. Manju
Head - Technology Centre & Industry Relations

Dr. K.S. Srinivasan
Principal

MOHAMED SATHAK
A.J. COLLEGE OF ENGINEERING
Siruseri IT Park, OMR, Chennai - 603103.

Certificate of Completion

This is to certify that Mr. / Ms. **NARESHKUMAR M   III ECE**   student of

Mohamed Sathak A J College of Engineering, Chennai has successfully

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Mr.M.Ashokkumar
Course Co - ordinator

PRINCIPAL
Mohamed Sathak A.J. College of Engineering
No 34 Rajiv Gandhi Salai (OMR)
Head of technology Centre & Industry Relations

Dr. I. Manju

Dr.K.S. Srinivasan
Principal

MOHAMED SATHAK
A.J. COLLEGE OF ENGINEERING

Siruseri IT Park, OMR, Chennai - 603103.
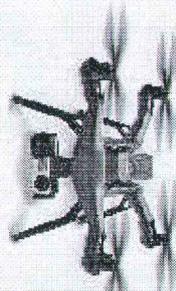
Certificate of Completion

This is to certify that Mr. / Ms. _____ KISHORE R   III ECE _____ student of

Mohamed Sathak A J College of Engineering, Chennai has successfully

completed the training program on **"UAV/Drone Modelling"** from 10th August

2022 to 29th October 2022. Conducted by UAV/Drone Technology Center,

Department of Electronics and Communication Engineering.

Mr.M.Ashokkumar
Mohamed Sathak A.J. College of Engineering
Course Co - ordinator

PRINCIPAL
Mohamed Sathak A.J. College of Engineering
H. H. Raja Pandi Salai (OMR)
Head Technology Centre & Industry Relations
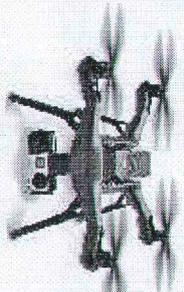
Dr. I. Manju

Dr. K.S. Srinivasan
Principal

MOHAMED SATHAK
A.J. COLLEGE OF ENGINEERING

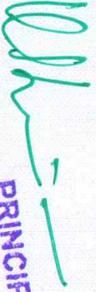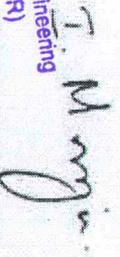Siruseri IT Park, OMR, Chennai - 603103.

Certificate of Completion

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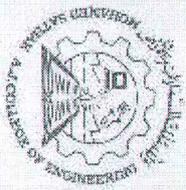
KAVINRAJ   III ECE

student of

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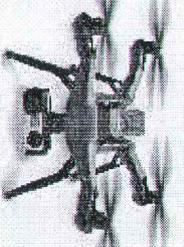
Mr.M.Ashokkumar
Course Co - ordinator

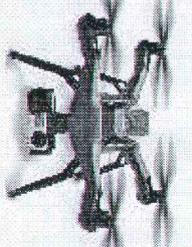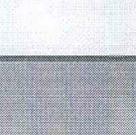**Dr. I. Manju**
PRINCIPAL
Head of the Technology Centre & Industry Relations

Dr. K.S. Srinivasan
Principal

IOT USING ARDUINO
ACADEMIC YEAR
2022-2023

APPLICATION FOR CONDUCTING VALUE ADDED COURSES

1. Name of the Department: B.E ELECTRONICS &COMMUNICATION ENGINEERING (REGULATIONS 2017)

2. UG programme   :   B.E

3. Details of the Value Added Courses:

a. Name of the Value Added Courses: IOT USING ARDUINO(Course Code IVA067)

b. Type of Value Added Courses   :   (Lab integrated theory)

c. Short Description   :   Enclosure 1 enclosed

d. Syllabus including Reference   :   Enclosure 2 enclosed - YES

4. Target audience:

Semester (indicate if more than one)   :   VIIth Semester only

     Others

5. Details of Faculty handling the course:

a. Name of the Faculty handling the Value Added Course   :   Mr.S.Piriyadharshini

b. Details including designation and expertise   :   Enclosure 3 enclosed - YES

c. Contact details

         Email ID   :   ece.priyadharshini@msajce-edu.in

         Phone No   :   9489019459

6. **Tentative Time Table** including dates of internal assessments   :   Enclosure 4 enclosed - YES

7. Number of students opting for the course   :   22

8. Department Consultative Committee - Minutes   :   Enclosure 5 enclosed - YES

9. Name and Designation of the Coordinator   Mr.M.Kamarajan, Assistant Professor. Department of ECE Mohamed Sathak A J College of Engg.

Head of the Department
(With date & seal)
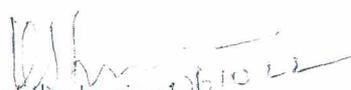
Head of the Institution
(With date & seal)

Director, Academic Courses   Additional Controller of Examinations

B.E ELECTRONICS AND COMMUNICATION ENGINEERING (REGULATIONS 2017)

VALUE ADDED COURSE

DEPARTMENT CONSULTATIVE COMMITTEE – MINUTES OF THE MEETING

Date: 07/09/22

As per the Regulations 2017, a department consultative committee is constituted to offer value added course for the 7th semester, B.EElectronics and communicationengineering students pursuing their studies at Mohamed Sathak A J College of Engineering (MSAJCE), Siruseri, Chennai. The following members were present for the meeting held on 06/08/2022 at Department of B.E Electronics and Communication Engineering, MSAJCE.

S.No.	Name & Designation	Member of Bodies	Signature
1.	Dr.I.Manju, Head of the Technology Center & Professor, MSAJCE	Monitor the progress of the course	
2.	Dr .M.Sivakumar, Associate Professor/ECE,MSAJCE	Senior Faculty Member	
3.	Mr.M.Kamarajan /ECE,MSAJCE	Coordinator	
4.	Mr.S.Piriyadharshini/ECE,MASJCE	Faculty handling the course	
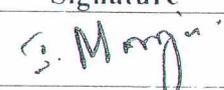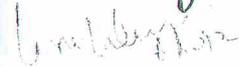
The consultative committee has decided to offer IOT USING ARDUINO for the students since it is essential for them to acquire knowledge and work in core Industry. The committee recommends Mrs.S.Piriyadharshini, Assistant Professor handle the course and train the students in IOT USING ARDUINO. The curriculum & syllabus, internal assessment pattern and awarding of grades are discussed and passed on the meeting for approval. The consultative committee constituted for value added course has recommended to conduct the course as lab integrated theory and approved the same.
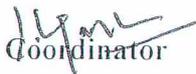
Coordinator

Committee Chairperson
(Dr. M. Sivakumar)
(Senior Faculty Member)
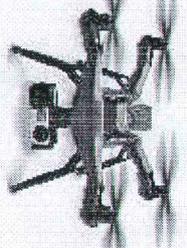
PRINCIPAL
Mohamed Sathak A.J. College of Engineering
No.34, Rajiv Gandhi Salai (OMR)
Sipcot - IT Highway Egattur,
Chenai - 603103.

HoD/ ECE
(Dr. M. Sivakumar)

From

    The Head of Department

    Department of ECE

    Mohamed Sathak A.J College of Engineering

    Chennai.

To

    The Principal

    Mohamed Sathak A.J College of Engineering

    Chennai.

Respected Sir,

    Sub – Value added course registration – Reg.

    We have selected the **IVA067 IOT Using Arduino** as a value added course for this Odd semester for IV Year students of the (AY 2022–2023). So I kindly request you to approve the same to update in the Anna University web portal.

Thanking You

Yours Sincerely

Mr.M.Kamarajan

Coordinator

(Dr.M.Sivakumar)

HOD/ECE
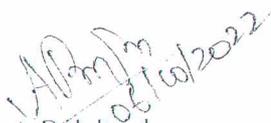
Dr.A.Balakrishnan

Academic/Head
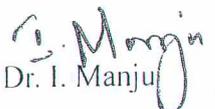
Dr. I. Manju

Technology Centre Head

Dr. K.S. Srinivasan

Principal

MOHAMED SATHAK A.J. COLLEGE OF ENGINEERING
(Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai)

DEPARTMENT OF ECE

Date:10/8/2022

Ref:01/MSAJCE/ECE/ODD/2022-2023

CIRCULAR

We the department of Electronics and communication Engineering, planned to conduct the Add on/Value added course for the below mentioned students for this Academic Year 2022-2023. (Odd sem).

Year/Sem	Title	Duration	Course Coordinator
IV ECE	IoT Using Arduino	45 Hrs	Ms.S.Piriyadharshini AP/ECE

Venue: UAV/Drone Lab (Room No: 114)

HoD/ECE
(DINOY SIVAKUMAR)

Copy To:

Department of ECE.

IQAC

Notice Board

PRINCIPAL
Mohamed Sathak A.J. College of Engineering
No.34, Rajiv Gandhi Salai (OMR)
Sipcot - IT Highway Egattur,
Chenai - 603103.

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Value Added Course

VII Semester 2022-2023 (ODD Semester)

Course Curriculum

Sl.NO	Course Code	Course Title	Category	Contact Periods	L	T	P	C
1.	IVAO67	IOT using ARDUINO	Value Added	10 days	1	0	0	2
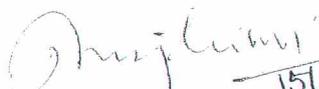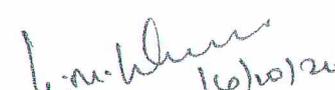
COURSE CORDINATOR
15/9/22

HOD/ECE
16/10/20

Semester -6	Value Added Course on	L	T	P	C
	IOT USING ARDUINO	1	0	2	2

Objectives:

* To expose student and gain knowledge about Arduino technology with IOT
* To Program and construct applications using Arduino using a number of different sensors and IOT

Unit – I Introduction to Arduino

Embedded processing portfolio, Architecture and hardware organization of Arduino, Configuring GPIO and Clock systems, Real time applications using GPIO configuration, LCD interfacing, Technical explanation ADC, Configuring ADC, Real time applications using Sensors

Unit – II Interfacing with Zigbee

Bluetooth Interfacing, Android mobile based device control ,GSM interfacing and send SMS, Real time Application Development with GSM ,Zigbee Interfacing, Data transmission using zigbee, Real time applications interfacing with sensors and Zigbee

Unit – III Real Time applications

DC Motor Interfacing, H-bridge concept and design and ultrasonic interfacing, Clockwise and anticlockwise control, Real time applications interfacing with robotic vehicle model, Real time applications interfacing with sensors and Robot

Unit – IV Li-Fi with Ardino

Introduction, Li-Fi based Data communication, Interfacing Li-Fi with Arduino, Application Development with Li-Fi.

Unit – V IOT –Configuration & Integration

Introduction to IoT & Scope of IoT, Web page creation, Data transmission from sensors, Configuration webpage ,Sensor data monitoring , Wireless Interfacing, Android mobile based device control, GSM interfacing and send SMS, Real time Application Development with GSM, Zigbee Interfacing Data transmission using zigbee, Real time applications interfacing with robotic vehicle.

Outcomes:

The students will be outfitted with hands on knowledge in IOT using ARDUINO. .

Upon completion of the program, the students will be able to

C01	Understand features of the Arduino
C02	Application development-Integrate With Zigbee
C03	Study and execute real time applications
C04	Application development -Li-Fi with Ardino
C05	Execute coding to gather and process data on the Arduino via the cloud.

Total Hours: 45

DEPARTMENT OF B.E ELECTRONICS AND COMMUNICATION ENGINEERING
(REGULATIONS 2017)

VALUE ADDED COURSE

IOT USING ARDUNIO

TIMETABLE

The value-added course can be conducted in theregular academic days covering 45 hours to earn 2 credits by the students.

Week	Hrs Wednesday (1.45 to 3.45) and Thursday (1.45 to 3.45)	Topic	Assessment
Week 1	5 Hrs	Unit I	-
Week 2	5 Hrs	Unit I	-
Week 3	5 Hrs	Unit II	
Week 4	5 Hrs	Unit II	-
Week 5	5 Hrs	Unit III	Assessment Test – I
Week 6	5 Hrs	Unit III	-
Week 7	5 Hrs	Unit IV	-
Week 8	5 Hrs	Unit IV	Assessment Test – II
Week 9	5 Hrs	Unit V	-
Week 10	3Hrs	Unit V	Model Exam
Week 10	2 Hrs	Project	Project Review

ASSESSMENT I& II -PATTERN

Test Duration: 1 Hour

QUESTION PAPER PATTERN:

Part A (20*1 = 20 Marks) Objective Type Questions

Part B (5*8 = 40 Marks) Descriptive Type Questions

Part C (2*20 = 40 Marks) Design, Drawing & Programming

PRINCIPAL
Mohamed Sathak A.J. College of Engineering
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Sipcot - IT Highway Egattur,
Chenai - 603103.

AWARD OF GRADES:

Letter Grade	Grade Points	Marks Range
O	10	91-100
A+	9	81-90
A	8	71-80
B+	7	61-70
B	6	50-60

IoT Using ARDUINO

IV YEAR ECE- NAME LIST

S.NO	REGISTER NO	NAME OF THE STUDENTS	SIGNATURE
1	311819106001	AHAMED ALI. H	
2	311819106002	AKSHAYA.K	
3	311819106003	ASHWINI. A	
4	311819106004	ASSIFA.A	
5	311819106005	AVULA SUNEEL	
6	311819106006	BHEULAH .G.L	
7	311819106007	CHEMUDUGUNTA AJAY KUMAR	
8	311819106008	HASHIM ASLAM	
9	311819106009	JAHANGEER NADIR KHAN. P	
10	311819106010	MOHAMED ABDULLAH M	
11	311819106011	MOHAMED SALAUDEEN. R	
12	311819106012	MOHAMMED ASIF. A	
13	311819106013	MOHAMMED TAHEER	
14	311819106014	MOHSIN KHAN. M	
15	311819106015	PATTAPU PRATHYUSHA	
16	311819106016	POTU GANGA MANOJ KUMAR	
17	311819106017	RESMA .G	
18	311819106018	RIZWAN AHAMED. M	
19	311819106022	SYED AAKHIB MOHAMED I	
20	311819106301	S.NAVINASH	
21	311819106302	S.A.SAHAZATHSUFIYAN	
22	311819106303	S.SALMAN	
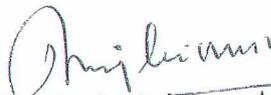
Faculty Incharge 14/10/22

PRINCIPAL
Mohamed Sathak A.J. College of Engineering
No.34, Rajiv Gandhi Salai (OMR)
Sipcot - IT Highway Egattur,
Chenai 603103.
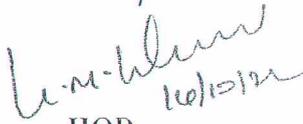
HOD

MOHAMED SATHAK A J COLLEGE OF ENGINEERING, Chennai - 603103

TIMETABLE

Academic year	2022-2023	Department	ECE
Semester	VII	Lab Name	VAC-IoT Using Arduino
Lab In-charge	Mrs.S.PIRIYADHARSHINI AP/ECE	Lab Assistant	
Location of the lab	Embedded and IoT Lab		

Period /Day	1 8.00-8.45 AM	2 8.45-09.30 AM	3 09.30-10.15 AM	10.15-10.30 AM	4 10.30-11.15 AM	5 11.15-12.00 PM	6 12.00-12.45 PM	12.45-1.30 PM	7 1.30-2.30 PM	8 2.30-3.30 PM
MON				T E A B R E A K				L U N C H B R E A K		
TUE									VAC(B)	
WED									VAC(A)	
THU									VAC	
FRI										
SAT										

THEORY& LABORATORY DETAILS:

S.No	Subject Code	Name of the Subject	Name of the Faculty	Dept	No. of Hours per Week
1	IVA067	VAC-IoT Using Arduino	Mrs.S.PIRIYADHARSHINI AP/ECE	ECE	6

Timetable Coordinator
(Name & Sign)
(JAYANTH I.E)

Lab In-Charge
(Name & Sign)
[S SonaDevi]

HoD
(Name & Sign)
(ᗷᗷᗩM.SWᗩᗰᑌ)

PRINCIPAL
Mohamed Sathak A.J. College of Engineering
No 24, Rajiv Gandhi Salai (OMR)
IT Highway, Eyattur,
Chennai - 603103.

MOHAMED SATHAK A J COLLEGE OF ENGINEERING, Chennai - 603103

VALUE ADDED COURSE - COURSE CONTENT

Department of ECE

Class :IV ECE

Academic Year: 2022 TO 2023

Name of the Value Added Course	IVA067- IoT using Arduino	Name of the handling Faculty	S Piriyadharshini

Course Objective

1) To expose student and gain knowledge about Arduino Technology wit IOT

2) To program and construct applications using Arduino using a number of different sensors and IOT

Course Outcome

CO1	Understand features of Arduino Platform
CO2	Application Development - Integerate with Zigbee
CO3	Study and execute real time applications
CO4	Application Development - LiFi with Arduino
CO5	Execute coding to gether and process dataon the Ardunio via the cloud

Lesson Plan for VAC

Sl. No.	Topic	T / R* Book	Periods Required	Mode of Teaching
	UNIT 1 - Introduction to Arduino			
1	Embedded processing portfolio	T /R	1	PPT
2	Architecture and hardware organization of Arduino	T /R	1	PPT
3	Configuring GPIO and Clock Systems	T /R	1	PPT
4	Real Time Applications using GPIO configuration	T /R	1	PPT
5	LCD Interfacing	T /R	1	PPT
6	Technical explanation ADC	T /R	1	PPT
7	Configuring ADC	T /R	1	PPT
8	Real time applications using sensors	T /R	1	PPT
	UNIT II - Interfacing with Zigbee			
9	Bluetooth Interfacing	T /R	1	PPT
12	Android mobile based device control	T /R	1	PPT
13	GSM Interfacing and send SMS	T /R	1	PPT
14	Real time Application Development with GSM	T /R	1	PPT
15	Zigbee Interfacing	T /R	1	PPT
16	Data transmission using zigbee	T /R	1	PPT
17	Real time application interfacing with sensors and Zigbee	T /R	2	PPT
18				
19	**UNIT III - Real Time Applications**			
20	DC Motor Interfacing	T /R	2	PPT/TOOL
21	H Bridge Concept and design and ultrasonic interfacing	T /R	1	PPT/TOOL
22	Clockwise and Anticlockwise control	T /R	1	PPT/TOOL
23	Real time Application interfacing with Robotic vehicle model	T /R	1	PPT/TOOL
24	Real time applications interfacing with sensors and Robot	T /R	1	PPT/TOOL

PRINCIPAL
Mohamed Sathak A.J. College of Engineering
Rajiv Gandhi Salai

26	**UNIT IV - Li-Fi with Arduino**	T /R	2	PPT
27	Introduction	T /R	2	PPT
28	Li-Fi based data communication	T /R	2	PPT
29	Interfacing Li Fi with Arduino	T /R	2	PPT
30	Application development with LiFi			
31				
32	**UNIT V - IOT- Configuration & Integration**	T /R	2	PPT
33	Introduction to IOT and Scope of IOT	T /R	1	PPT
34	Webpage Creation	T /R	1	PPT
35	Data Transmission from Sensors	T /R	1	PPT
36	Configuration Webpage,Sensor data monitoring	T /R	1	PPT
37	Wireless Interfacing,Android mobile based device control	T /R	1	PPT
38	GSM Interfacing and send SMS	T /R	1	PPT
39	Real time application Development with GSM	T /R	1	PPT
40	Zigbee Interfacing data transmission using Zigbee	T /R	1	PPT
41	Real time applications interfacing with Robotic vehicle	T /R	2	PPT
42	Assesment 1		2	PPT
43	Project Review		2	PPT

Quiz / Mini Projects / Model Develpoed if any
Mini projects

Text / Reference Books
1 Building Internet of Things with the Arduino by Charalampos Doukas (Author)Createspace Independent Pub (19 March 2012)

Website / URL References
1 https://create.arduino.cc/projecthub/projects/tags/iot
2 https://iotdesignpro.com/iot-arduino-projects
3 https://www.tinkercad.com/

Sign of Course Coordinator 10/8/22

Sign of HoD with date

(Dr. M.Siroskumar)

I. Manju

Head-TC

[Dr. I Manju]

PRINCIPAL
Mohamed Sathak A.J. College of Engineering
No.34, Rajiv Gandhi Salai (OMR)
Spect IT Highway E.gattur,
Chenai - 603103.

IoT Using ARDUINO

IV YEAR ECE- ASSESMENT 1 MARKS

S.NO	REGISTER NO	NAME OF THE STUDENTS	AASESMENT 1 (Marks:50)
1	311819106001	AHAMED ALI. H	50
2	311819106002	AKSHAYA.K	46.
3	311819106003	ASHWINI. A	50
4	311819106004	ASSIFA.A	48
5	311819106005	AVULA SUNEEL	50.
6	311819106006	BHEULAH .G.L	44.
7	311819106007	CHEMUDUGUNTA AJAY KUMAR	48
8	311819106008	HASHIM ASLAM	48
9	311819106009	JAHANGEER NADIR KHAN. P	44
10	311819106010	MOHAMED ABDULLAH M	46
11	311819106011	MOHAMED SALAUDEEN. R	48
12	311819106012	MOHAMMED ASIF. A	46
13	311819106013	MOHAMMED TAHEER	AB
14	311819106014	MOHSIN KHAN. M	16
15	311819106015	PATTAPU PRATHYUSHA	46.
16	311819106016	POTU GANGA MANOJ KUMAR	46
17	311819106017	RESMA .G	48
18	311819106018	RIZWAN AHAMED. M	48
19	311819106022	SYED AAKHIB MOHAMED I	AB.
20	311819106301	S.NAVINASH	48
21	311819106302	S.A.SAHAZATHSUFIYAN	AB.
22	311819106303	S.SALMAN	50.

Faculty Incharge 13/10/22

PRINCIPAL
Mohamed Sathak A.J. College of Engineering
Rajiv Gandhi Salai (---)

HOD 14/10/22
(Dr. M. SIVAKUMAR).

IoT Using ARDUINO

IV YEAR ECE

S.NO	REGISTER NO	NAME OF THE STUDENTS	ASSIGNMENT 1
1	311819106001	AHAMED ALI. H	9
2	311819106002	AKSHAYA.K	9
3	311819106003	ASHWINI. A	9
4	311819106004	ASSIFA.A	8
5	311819106005	AVULA SUNEEL	7
6	311819106006	BHEULAH .G.L	10
7	311819106007	CHEMUDUGUNTA AJAY KUMAR	AB
8	311819106008	HASHIM ASLAM	9
9	311819106009	JAHANGEER NADIR KHAN. P	9
10	311819106010	MOHAMED ABDULLAH M	8
11	311819106011	MOHAMED SALAUDEEN. R	
12	311819106012	MOHAMMED ASIF. A	7
13	311819106013	MOHAMMED TAHEER	AB
14	311819106014	MOHSIN KHAN. M	9
15	311819106015	PATTAPU PRATHYUSHA	9
16	311819106016	POTU GANGA MANOJ KUMAR	8
17	311819106017	RESMA .G	10
18	311819106018	RIZWAN AHAMED. M	9
19	311819106022	SYED AAKHIB MOHAMED I	9
20	311819106301	S.NAVINASH	8
21	311819106302	S.A.SAHAZATHSUFIYAN	AB
22	311819106303	S.SALMAN	AB

Faculty Incharge
28/9/22

PRINCIPAL
Mohamed Sathak A.J. College of Engineering

HOD 14/10/12
(Dr. M. Sivakumar).

MINI PROJECT NAME LIST

Batch-1 → plant communicator
1. Assifa · A
2. Akshaya · K
3. Pattapu parathyusha

Batch-2 → Rainwater detection using IOT
1. Bheulah · G · L
2. Rebhma · G
3. Ashwini · A

Batch-3 → Antisleep alarm function for drivers.
1. Ahamed Ali · H
2. Rizwan ahamed · M
3. Abdulla
4. Salaudeen

Batch-4 → ESP32 door status monitor with telegram notification
1. Avula Suheel
2. Manoj kumar
3. Hasim Aslam
4. Ajay kumar

Babch-5
1. Asif
2. Sufiyan
3. Thaheer
4. Akib

Mohamed Sathak A J College of Engineering

WEB PORTAL - VAC

Academic year 2022-2023   Form 3 : Webportal Entry Sheet.

IV YEAR - ECE

S. No	Reg No	Name of the Students	ATT (20)	ATT (25)	MARK (100)	MARK (100)
1	311819106001	AHAMED ALI. H	18	25	100	97
2	311819106002	AKSHAYA.K	20	25	92	100
3	311819106003	ASHWINI. A	19	24	100	96
4	311819106004	ASSIFA.A	20	25	96	100
5	311819106005	AVULA SUNEEL	20	25	100	100
6	311819106006	BHEULAH .G.L .	20	25	88	100
7	311819106007	CHEMUDUGUNTA AJAY KUMAR	18	25	96	96
8	311819106008	HASHIM ASLAM	20	25	96	97
9	311819106009	JAHANGEER NADIR KHAN. P	20	25	88	97
10	311819106010	MOHAMED ABDULLAH M	19	24	92	96
11	311819106011	MOHAMED SALAUDEEN. R	19	24	96	96
12	311819106012	MOHAMMED ASIF. A	20	25	92	96
13	311819106013	MOHAMMED TAHEER	18	25	80	95
14	311819106014	MOHSIN KHAN. M	19	24	85	95
15	311819106015	PATTAPU PRATHYUSHA	20	25	92	100
16	311819106016	POTU GANGA MANOJ KUMAR	20	25	92	100
17	311819106017	RESMA .G	20	25	96	98
18	311819106018	RIZWAN AHAMED. M	19	24	96	96
19	311819106022	SYED AAKHIB MOHAMED I	19	24	85	96
20	311819106301	NAVANISH S	19	24	90	95
21	311819106302	SAHATH SUFIYAN S A	19	24	80	96
22	311819106303	SALMAN S		25	95	100
		SUBJECT FACULTY NAME		S. Priyadharshiw		
		SUBJECT FACULTY SIGN.				

PRINCIPAL
Mohamed Sathak A.J. College of Engineering
No.34, Rajiv Gandhi Salai (OMR)
Sipcot - IT Highway Egattun
Chenai - 603103.

CLASS COORDINATOR
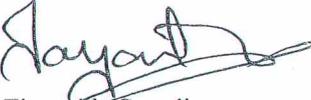
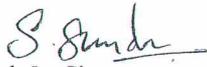# MOHAMED SATHAK A.J. COLLEGE OF ENGINEERING, Chennai - 603103

VAC - STUDENTS NAME LIST

Department of ......ECE.........

Academic Year:2022-2023

Name of the Value Added Course : IOT Using ARDUINO (ANNA UNIVERSITY APPROVED)				
Yr / Sem :IV/VII		Faculty In-charge : Ms.S.Piriyadharshini ,AP/ECE		
Location : Embedded and IOT Lab	Duration :45 Hrs			
Sl.No	Name of the Student	Register No.	Status of Qualifying	Sign of Student
1	AHAMED ALI. H	311819106001	YES	
2	AKSHAYA.K	311819106002	YES	
3	ASHWINI. A	311819106003	YES	
4	ASSIFA.A	311819106004	YES	
5	AVULA SUNEEL	311819106005	YES	
6	BHEULAH .G.L	311819106006	YES	
7	CHEMUDUGUNTA AJAY KUM	311819106007	YES	
8	HASHIM ASLAM	311819106008	YES	
9	JAHANGEER NADIR KHAN. P	311819106009	YES	
10	MOHAMED ABDULLAH M	311819106010	YES	
11	MOHAMED SALAUDEEN. R	311819106011	YES	
12	MOHAMMED ASIF. A	311819106012	YES	
13	MOHAMMED TAHEER	311819106013	YES	
14	MOHSIN KHAN. M	311819106014	YES	
15	PATTAPU PRATHYUSHA	311819106015	YES	
16	POTU GANGA MANOJ KUMAR	311819106016	YES	
17	RESMA .G	311819106017	YES	
18	RIZWAN AHAMED. M	311819106018	YES	
19	SYED AAKHIB MOHAMED I	311819106022	YES	
20	NAVANISH S	311819106301	YES	
21	SAHATH SUFIYAN S A	311819106302	YES	
22	SALMAN S	311819106303	YES	

Head-Training

Signature of HoD with date

ANNA UNIVERSITY :: CHENNAI - 600025.
OFFICE OF THE CONTROLLER OF EXAMINATIONS
Provisional Results of Nov. / Dec. Examination,2022.

Inst.Code/Name : 3118 - MOHAMMED SATHAK A.J.COLLEGE OF ENGINEERING   Semester No. : 07   DATE OF PUBLICATION :DD-MM-YYYY

Branch : 106-B.E. Electronics and Communication Engineering

Reg. Number	Stud. Name	EC8701 Grade	EC8702 Grade	EC8711 Grade	EC8751 Grade	EC8761 Grade	EC8791 Grade	HX8001 Grade	IVA067 Grade	OMF751 Grade
311819106001	AHAMED ALI H	B	U	B+	U	B+	U	O	O	U
311819106002	AKSHAYA K	A	B+	A	A	A+	B+	O	O	B+
311819106003	ASHWINI A	B+	A	A	B+	A	B+	O	O	B+
311819106004	ASSIFA A	A	A+	A	A+	O	A+	O	O	B+
311819106005	AVULA SUNEEL	B	B+	A+	B	A	B	O	O	B
311819106006	BHEULAH G L	A	A+	A	A+	A+	A+	O	O	A+
311819106007	CHEMUDUGUNTA AJAY KUMAR	B	B	B+	B	A	B	A+		B+
311819106008	HASHIM ASLAM T	B+	B+	A	B+	O	B+	O	O	B+
311819106009	JAHANGEER NADIR KHAN P	B+	B+	B+	B+	A	B+	O	O	B+
311819106010	MOHAMED ABDULLAH M	A	A	A	B	A	A	O	O	B+
311819106011	MOHAMED SALAHUDEEN R	B	B	B+	B	B+	B	O	O	B
311819106012	MOHAMMED ASIF A	B+	B	A	B	B+	U	A+	O	B
311819106013	MOHAMMED TAHEER R	U	U	B+	U	B+	U	A+	A+	B
311819106014	MOHSIN KHAN M	B	U	B+	U	B	U	A+	A+	B
311819106015	PATTAPU PRATHYUSHA	A	A	A+	B	O	B+	O	O	U
311819106016	PORUGARGA MANOJ KUMAR	A	A	O	B+	O	B	O	O	B+
311819106017	RESMA...	A	A	A	A	A+	B+	O	O	B+
311819106018	RIZWAN... M	B	U	B+	B	B	B	O	O	B+
311819106022	...HB HAMMED	U	U	B+	U	B	B	A+	A+	B+
311819106301	MANOJ...	U	UA	A	U	A	UA	A+	O	UA
311819106302	SATHATH SUFFIYAN S A	A	B	B+	B	B	B+	O	A+	B+
311819106303	SALMAN...	B	U	A	U	A+	B	O	O	U

PRINCIPAL
Mohamed Sathak A.J.College of Engineering
No.34, Rajiv Gandhi Salai (OMR)
Highway, Egattur,
Chennai- 603103.

W - Withdrawal   I - Inadequate Attendance
WH1 - Withheld for Suspected Malpractice   WH(others) - Withheld for want of Clarification,approval,etc.

W - 14-03-2023

Anna University - COE

Roll No.	Register No.	Name
	311 8 1 9 10	
1.	6001	Assifa.A
2.	6002	Akshaya.K
3.	6015	Pratayih Prathyusha
4.	6017	Rishma.H
5.	6003	Ashwini.H
6.	6006	Bismillah.G
7.	6001	Ahmed Ali.H
8.	6018	Rizwan Ahamed.H
9.	6010	Mohamed Abuthakir.M
10.	6011	Mohamed Salaudeen.R
11.	6005	Avula Suneel
12.	6016	Potu Ranga Manoj Kumar
13.	6008	Hashim Aslam
14.	6007	Chemudugunta Sivakumar
15.	6012	Mohammad Arif.A
16.	6302	Shaharzath Sulivan.S.A
17.	6013	Mohammad Jafer
18.	6002	Syed Nakhib.I
19.	6009	Jahangeer Nadir Khan.P
20.	6303	Vikalendu.S
21.	6301	Navinash.S
22.	6014	Mohsin Khan.M

Month: August / October / November

No. of Absentees

Initial of the Faculty

PRINCIPAL
Mohamed Sathak A.J. College of Engineering
A, Rajiv Gandhi Salai (OMR)
Erattur.

1.3.2

From
                                                                    Date: 08-08-2022

Dr. Prasath S

Associate Professor and Head,

Department of Mechanical Engineering,

Mohamed Sathak AJ College of Engineering,

Siruseri (IT Park), Chennai -603 103.

To

The Principal   Permitted

Mohamed Sathak AJ College of Engineering,

Siruseri (IT Park), Chennai -603 103.

Respected Sir,

    Sub: Permission for conducting Value Added course-reg.

    With reference to the above cited subject, we have to conduct Add on/ Value Added Course
for the students of Mechanical department in the academic year 2022-23(Odd Sem) through
Offline. The selected course is offered for IV-year Mechanical students in Anna University Web
portal and useful to the students for learning the emerging technical fields. Kindly grant me the
permission.

S. No	Title of the course	Year/Branch	Durations
1.	MVA022-Introduction to Multibody dynamics	IV/Mech	30 Hrs

Thanking You

                                                                    Yours faithfully

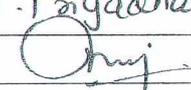   8\8\22

PRINCIPAL
Mohamed Sathak A.J. College of Engineering
No.34, Rajiv Gandhi Salai (OMR)
Sipcot IT Highway Egattur,
Chennai - 603103.

MOHAMED SATHAK A J COLLEGE OF ENGINEERING

Chennai-603103

DEPARTMENT OF MECHANICAL ENGINEERING

Ref: MSAJCE/MECH/CIR/02   **Date: 10-08-2022**

CIRCULAR

We the department of Mechanical Engineering, planned to conduct the Value-added course for the below mentioned students in the academic year of 2022-23. Kindly follow the below schedule to complete the course successfully.

S.No	Title of the Course	Year/Branch	Course Co-ordinator
1	MVA022-Introduction to Multibody dynamics	IV/Mech	Mr. Mohan S R

Head of the Department

Head of the Department
Department of Mechinical Engineering
Mohamed Sathak A.J.College of Engineering
Egattur, Chennai - 603 103.

Copy to

Principal Office

Class Coordinator

Dept File

PRINCIPAL
Mohamed Sathak A.J. College of Engineering
No.34, Rajiv Gandhi Salai (OMR)
Sipcot - IT Highway Egattur,
Chenai - 603103.

CENTRE FOR ACADEMIC COURSES
ANNA UNIVERSITY
CHENNAI – 600 025

Dr. S. HOSIMIN THILAGAR
DIRECTOR
Letter No.387/AU/VA/CAC/2021

22.03.2021

To
The Controller of Examinations
Anna University
Chennai - 25.

Sir/Madam,

　　Sub: A.U. - CAC - Affiliated Institutions - Value Added Course - Reg.
　　Ref : Letter No.MSAJCE/PO/021/2020-21, dated 09.02.2021.
　　　　　　　　　　　******

With reference to the letter cited, the following Value Added Course offered by Mohammed Sathak A.J. College of Engineering, Chennai, Affiliated Institutions is allotted the Course Code as detailed below.

SL. No.	Code Allotted	Title	Credits			
			L	T	P	C
1.	MVA022	Introduction to Multi Body Dynamics	2	0	0	2

This is for your kind information and necessary action at your end.

Yours faithfully.

DIRECTOR

Copy to:
1. The Chairperson, Faculty of Mechanical Engineering, A.U., Ch -25.
2. The Principal, Mohamed Sathak A.J. College of Engineering, No:34, Rajiv Gandhi Road(OMR), IT Highway, Inside SIPCOT IT Park, Siruseri, Chennai – 603 103.
3. The Stock File – CAC.

Dr. Manju – Head TC

250321

PRINCIPAL
Mohamed Sathak A.J. College of Engineering
No 34, Rajiv Gandhi Salai (OMR)
Sipcot, IT Highway Egattur,
Chennai - 603103.

AFFILIATED INSTITUTIONS
FACULTY OF MECHANICAL ENGINEERING
LIST OF VALUE ADDED COURSES

SL. NO.	CODE ALLOTTED	TITLE	CREDITS
1.	MVA001	Small Unmanned Aerial Vehicle (sUAV) - Drone	2 credit
2.	MVA002	3D Printing	2 credit
3.	MVA003	Elements of Automation and Process Control	1 credit
4.	MVA004	Geometric Dimensioning and Tolerancing	2 credit
5.	MVA005	Smart Materials and Structures	2 credit
6.	MVA006	Green Energy Technologies and Management	2 credit
7.	MVA007	Automation Suite for Smart Systems	2 credit
8.	MVA008	Internet of Things Applications in Mechanical Engineering	1 credit
9.	MVA009	Surface Coating Technology	2 credit
10.	MVA010	Energy Resources and Management	2 0 0 2
11.	MVA011	Modeling for Design Engineers	2 0 0 2
12.	MVA012	Basic Concept of HVAC Designing and Drafting	2 0 0 2
13.	MVA013	Robotics Process Automation	2 0 0 2
14.	MVA014	Welding and Inspection Techniques	2 0 0 2
15.	MVA015	Modern Trends in Refrigeration and Air Conditioning	2 0 0 2
16.	MVA016	Finite Element Meshing Techniques	2 0 0 2
17.	MVA017	Nanoscience and Technology	2 0 0 2
18.	MVA018	Plant Design Management System	2 0 0 2
19.	MVA019	Technology for Energy Storage	2 0 0 2
20.	MVA020	Modeling Practice for Automotive Assemblies	2 0 0 2
21.	MVA021	Modeling and Machining Practice for CNC Machines	2 0 0 2
22.	MVA022	Introduction to Multi Body Dynamics	2 0 0 2
23.	MVA023	IoT and Augmented Reality Applications in Mechanical Engineering	1 0 2 2

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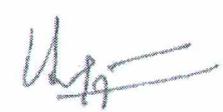
DIRECTOR
CENTRE FOR ACADEMIC COURSES

HOD/MECH
Head of the Department
DEPARTMENT OF MECHANICAL
Mohamed Sathak A.J.College of Engineering
Siruseri IT Park, Chennai - 603 103

B.E MECHANICAL ENGINEERING (REGULATIONS 2017)

VALUE ADDED COURSE

MVA022 INTRODUCTION TO MULTI BODY DYNAMICS

L	T	P	C
2	0	0	2

OBJECTIVES:

- To present the basic theoretical knowledge of the Foundations of Multibody Dynamics
- To apply the knowledge of the applications to machine and structural dynamics.
- To analyze the static and dynamic behavior of the multibody dynamics.
- To derive the motion equation of the bodies.
- To gain the concept of motion mechanics related to applications of MBD.

Unit I : Introduction   6

The method of constraints for planar kinematic analysis. Revolute, prismatic, gear and cam pairs are considered together with other 2 degrees-of-freedom types of constraints.

Unit II : Basic principles for analysis of multi-body systems   6

The automatic assembly of the systems of equations for position, velocity and acceleration analysis. Iterative solution of systems of nonlinear equations. Geometry of masses. The principle of virtual work and Lagrange's equations.

Unit III : Dynamics of Planar Systems   6

Dynamics of planar systems. Systematic computation and assembly of mass matrix. Computation of planar generalized forces for external forces and for actuator-spring-damper element. Simple applications of inverse and forward dynamic analysis. Numerical integration of first-order initial value problems. The method of Baumgarte for the solution of mixed differential-algebraic equations of motion. The use of coordinates partitioning, QR and SVD decomposition for the orthogonalization of constraints.

Unit IV : Kinematics of rigid bodies in space   6

Reference frames for the location of a body in space. Euler angles and Euler parameters. The formula of Rodrigues. Screw motion in space. Velocity, acceleration and angular velocity. Relationship between the angular velocity vector and the time derivatives of Euler parameters.

Unit V : Kinematic analysis of spatial systems   6

Basic kinematic constraints. Joint definition frames. The constraints required for the description in space of common kinematic pairs (revolute, prismatic, cylindrical, spherical). Equations of motion of constrained spatial systems.

TOTAL: 30 HOURS

OUTCOMES:

Upon completion of the course,

1. Write programs to solve constrained differential equations for analyzing multi-body systems.
2. Simulate and analyze all types of static behaviors of the multi-body systems including the kineto- static analysis.
3. Simulate and analyze all types of dynamic behaviors of the multi-body systems including the kineto-static analysis.
4. To derive equations of motion for interconnected bodies in multi-body systems with three-dimensional motion.
5. To Implement and analyze methods of formulating equations of motion for interconnected bodies.

TEXT BOOKS:

1. De Jalo n, J.C., Bayo, E., "Kinematic and Dynamic Simulation of Multibody Systems", Springer- Verlag, 1994.
2. Shabana, A.A., "Computational Dynamics", John Wiley and Sons, 1994
3. Kane, T.R, Levinson, D.A., "Dynamics: Theory and Applications", McGraw-Hill Book Co., 1985.

REFERENCES:

1. Rajiv Rampalli, Gabriele Ferrarotti and Michael Hoffmann, "Why Do Multi-Body System Simulation?", NAFEMS Publications, 2012.
2. Donald T. Greenwood, "Principles of Dynamics", 2nd edition, Prentice Hall, 1988.
3. Nikravesh, P.E., Computer Aided Analysis of Mechanical Systems, Prentice-Hall Inc., Englewood Cliffs, NJ, 1988

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Egattur,

MOHAMED SATHAK A J COLLEGE OF ENGINEERING
B.E./B.Tech. DEGREE EXAMINATIONS, NOV./DEC.-2022
Regulation – 2017
Seventh Semester – B.E Mechanical Engineering
Assessment - I
MVA022 Introduction to Multi Body Dynamics
(Value Added Course)

Marks : 100

Time : 3 Hrs

Answer All Questions

Part A (20×1=20 marks)

1. If we place some coins over the paper strip and pull it with a jerk, then coins don't fall off because of

   A. friction
   B. inertia
   C. resistance
   D. force

2. As weight is a force so it is a

   A. scalar quantity
   B. fixed quantity
   C. variable quantity
   D. vector quantity

3. The ratio of the force of limiting friction to normal reaction is

   A. zero
   B. constant
   C. greater than 1
   D. less than 2

4. The force that produces an acceleration of 1 ms^{-2} in a body of the mass of 1 kg is called
   A. slow newton
   B. zero newton
   C. one newton
   D. two newtons

5. When a net force act on a body, it produces acceleration in the body in the direction of the net force which is directly proportional to the net force acting on the body and inversely proportional to its mass. This statement is called

   A. newton's 2nd law of motion
   B. newton's 1st law of motion

1

C. newton's 3rd law of motion

D. law of momentum

6. Mass of a body (m) into acceleration (a) is equal to

A. inertia

B. displacement

C. momentum

D. force

7. Scalar quantities are completely described by their

A. unit

B. area

C. direction

D. magnitude

8. Radial distance between the pitch circle and the top of the tooth is known as

A. Pitch

B. Addendum

C. base circle

D. none of the mentioned

9. The circle from which an involute curve is generated is known as

A. Pitch

B. Addendum

C. base circle

D. none of the mentioned

10. Length of the arc of the pitch circle between the centers or other corresponding points of adjacent teeth is known as

A. Pitch

B. circular pitch

C. base circle

D. none of the mentioned

11. The angle between a tooth profile and a radial line at its pitch point is known as

A. pressure angle

B. dedendum angle

C. spiral angle

D. none of the mentioned

2

12. The total number of instantaneous centers for a mechanism consisting of n links are

    A. n/2
    B. n
    C. n-1
    D. n(n-1)/2

13. Which of the following property of the instantaneous center is correct?

    A. A rigid link rotates instantaneously relative to another link at the instantaneous centre for the configuration of the mechanism considered.
    B. The two rigid links have no linear velocity relative to each other at the instantaneous centre.
    C. The velocity of the instantaneous centre relative to any third link is same whether the instantaneous centre is regarded as a point on the first link or on the second rigid link.
    D. all of the mentioned

14. The instantaneous centers which vary with the configuration of mechanism, are called

    A. permanent instantaneous centers
    B. fixed instantaneous centers
    C. neither fixed nor permanent instantaneous centers
    D. none of the mentioned

15. When two links are connected by a pin joint, their instantaneous centre lies

    A. on their point of contact
    B. at the centre of curvature
    C. at the centre of circle
    D. at the pin joint

16. A slider moving on a fixed link having constant radius of curvature will have its instantaneous centre at the center of the circle.

    A. True
    B. False

17. When the two elements of a pair have _____ when in motion, it is said to a lower pair.

    A. line or point contact
    B. surface contact
    C. permit relative motion
    D. none of the mentioned

3

18. The two elements of a pair are said to form a higher pair, when they

    A. have a surface contact when in motion
    B. have a line or point contact when in motion
    C. are kept in contact by the action of external forces, when in motion
    D. permit relative motion

19. The given figure is a velocity time diagram for which of the follower motion?
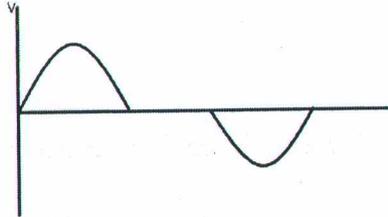
    A. Simple harmonic
    B. Uniform acceleration
    C. Uniform velocity
    D. Uniform retardation

20. To transmit power from one rotating shaft to another whose axes are neither parallel nor intersecting, use

    A. spur gear
    B. spiral gear
    C. bevel gear
    D. worm gear

Answer All Questions

Part B (5×8=40 marks)

21. Draw the Displacement, Velocity and Acceleration Diagrams when the follower moves with Simple Harmonic Motion and derive the expression for the maximum velocity during lift and the return stroke.

22. Derive the expression for velocity and acceleration of the slider of a simple slider crank mechanism.

23. Derive the expression for the minimum teeth required in a spur gear to avoid interference.

24. Derive the one-dimensional Euler Lagrange equation.

25. Derive the mass matrix for a prismatic finite element bar.

4

Answer All Questions

Part C (2×20=40 marks)

26. Draw the assembly of spur gears;

        Driven gear teeth:120 and dia 12 in.

        Driving gear teeth: 40 and dia 4 in.

        Pitch angle: 20

        Thickness: 1.5 in.

        speed: 150 rpm

27. Trace the path for the following link mechanism.
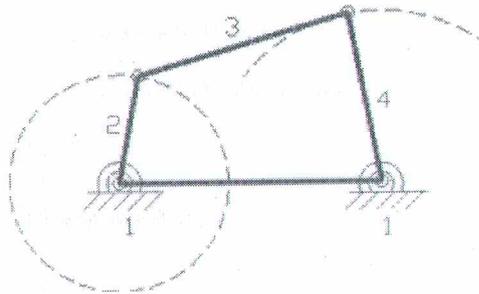
L1 = 800 mm

L2 = 200 mm

L3 = 480 mm

L4 = 560 mm

5

MOHAMED SATHAK A J COLLEGE OF ENGINEERING
B.E./B.Tech. DEGREE EXAMINATIONS, NOV./DEC.-2022
Regulation – 2017
Seventh Semester – B.E Mechanical Engineering
Assessment - II
MVA022 Introduction to Multi Body Dynamics
(Value Added Course)

Marks : 100   Time   : 3 Hrs

Answer All Questions

Part A (20×1=20 marks)

1. The two elements of a pair are said to form a _____ when they permit relative motion between them.

   a) open pair
   b) kinematic pair
   c) higher pair
   d) lower pair

2. A combination of kinematic pairs, joined in such a way that the relative motion between the links is completely constrained, is called a

   a) structure
   b) mechanism
   c) kinematic chain
   d) inversion

3. The relation between number of pairs(p) forming a kinematic chain and the number of links(l) is

   a) $l = 2p - 2$
   b) $l = 2p - 3$
   c) $l = 2p - 4$
   d) $l = 2p - 5$

4. The relation between number of links(l) and number of joints(j) in a kinematic chain is

   a) $l = 1/2 \ (j+2)$
   b) $l = 2/3 \ (j+2)$
   c) $l = 3/4 \ (j+2)$
   d) $l = j+4$

5. The relation $l = 2/3(j+2)$ apply to kinematic chains in which lower pairs are used. This may be used to kinematic chains in which higher pairs are used, but each higher pair may be taken as equivalent to

a) one lower pair and two additional links
b) two lower pairs and one additional link
c) two lower pairs and two additional links
d) all of the mentioned

6. The acceleration of a particle at any instant moving along a circular path in a direction tangential to that instant, is known

a) tangential component
b) normal component
c) parallel component
d) none of the mentioned

7. The size of a cam depends upon

a) base circle
b) pitch circle
c) prime circle
d) pitch curve

8. The cam follower generally used in automobile engines is

a) knife edge follower
b) flat faced follower
c) spherical faced follower
d) roller follower

9. A radial follower is one

a) that reciprocates in the guides
b) that oscillates
c) in which the follower translates along an axis passing through the cam centre of rotation.
d) none of the mentioned

10. Offset is provided to a cam follower mechanism to

a) minimize the side thrust
b) accelerate
c) avoid jerk
d) none of the mentioned

11. The given figure is a velocity time diagram for which of the follower motion?
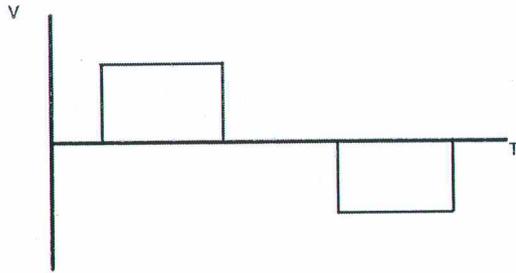
a) Simple harmonic
b) Uniform acceleration
c) Uniform velocity
d) Uniform retardation

12. If a follower is undergoing simple harmonic motion, then at what value of angle of ascent the acceleration is maximum?

a) 0
b) 30
c) 45
d) 60

13. If all the masses are in one plane, then what is the maximum no. of masses which can be placed in the same plane?

a) 3
b) 4
c) 6
d) No limitation

14. If the rotation speed of the shaft increases then the balancing mass must also increase.

a) True
b) False

15. The type of pair formed by two elements which are so connected that one is constrained to turn or revolve about a fixed axis of another element is known as

a) turning pair
b) rolling pair
c) sliding pair
d) spherical pair

16. Which of the following is a lower pair

a) ball and socket i

8

b) piston and cylinder

c) cam and follower

d) (a) and (b) above

17. The example of spherical pair is

a) bolt and nut

b) lead screw of a lathe

c) ball and socket joint

d) ball bearing and roller bearing

18. If there are L number of links in a mechanism then number of possible inversions is equal to

a) L + 1

b) L – 1

c) L

d) L + 2

19. Rectangular bar in a rectangular hole is the following type of Pair

a) completely constrained motion

b) partially constrained motion

c) incompletely constrained motion

d) freely constrained motion

20. When a ship travels in a sea, which of the effect is more dangerous

a) steering

b) pitching

c) rolling

d) all of the above

Answer All Questions

Part B (5×8=40 marks)

21. Explain the Baumgarte method for the solution of mixed differential algebraic equations of motion.

22. Explain the Euler parameters when the rigid body in space.

23. Explain the kinematic following pairs a) revolute b) prismatic c) cylindrical d) spherical

24. Explain Screw motion in space.

25. Explain the applications of inverse and forward dynamic analysis.

Answer All Questions

Part C (2×20=40 marks)

26. Draw the assembly of spur gears;

        Driven gear teeth:40 and dia 10cm.

        Driving gear teeth: 40 and dia 10cm.

        Pitch angle: 20

        Thickness: 2cm.

        speed: 55 rpm

27. Draw the cam follower mechanism in multibody dynamic software.
    (Use suitable dimensions)

10

VALUE ADDED COURSE - COURSE CONTENT

Department of Mechanical Engineering

Class : IV Year/ VII Semester			Academic Year: 2022-23	

Name of the Value Added Course	MVA022 Introduction to Multibody Dynamics	Name of the handling Faculty	Mr. Mohan S R

Course Objective

The Students will acquire to
- To present the basic theoretical knowledge of the Foundations of Multi body dynamics
- To apply the knowledge of the applications to machine and structural dynamics.
- To analyze the static and dynamic behaviour of the multi body dynamics.
- To derive the motion equation of the bodies.
- To gain the concept of motion mechanics related to applications of MBD.

Course Outcome

Upon completion of the course,

1. Write programs to solve constrained differential equations for systems analyzing multi-body
2. Simulate and analyze all types of static behaviours of the multi-body systems including the kineto- static analysis.
3. Simulate and analyze all types of dynamic behaviours of the multi-body systems including the kineto-static analysis.
4. To derive equations of motion for interconnected bodies in multi-body systems with three-dimensional motion.
5. To Implement and analyze methods of formulating equations of motion for Inter-connected bodies.

Lesson Plan for VAC				

Sl. No.	Topic	T / R* Book	Periods Required	Mode of Teaching
1	The method of constraints for planar kinematic analysis	T	1	PPT & BB
2	Revolute, prismatic, gear and cam pairs are considered together with other 2 DOF	T	2	PPT & BB
3	Introduction to Basic principles for analysis of multi-body systems	T	1	PPT & BB
4	The automatic assembly of the systems of equations for position	T	2	PPT & BB
5	The principle of virtual work and Lagrange's equations	T	1	PPT & BB
6	Introduction to Dynamics of Planar Systems	T	1	PPT & BB
7	Systematic computation and assembly of mass matrix	T	2	PPT & BB
8	Computation of planar generalized forces for external forces and for actuator-spring-damper element	T	1	PPT & BB
9	Simple applications of inverse and forward dynamic analysis	T	2	PPT & BB
10	Numerical integration of first-order initial value problems	T	1	PPT & BB

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11	The method of Baumgarte for the solution of mixed differential-algebraic equations of motion	T	2	PPT & BB
12	The use of coordinates partitioning, QR and SVD decomposition for the orthogonalization of constraints	T	2	PPT & BB
13	Reference frames for the location of a body in space	T	1	PPT & BB
14	Euler angles and Euler parameters	T	2	PPT & BB
15	Kinematic analysis of spatial systems	T	2	PPT & BB
16	Equations of motion of constrained spatial systems	T	2	PPT & BB
17	Exercise	T	5	PPT & BB

Quiz / Mini Projects / Model Develpoed if any
NIL

Text / Reference Books	
1	De Jalo n, J.C., Bayo, E.,"Kinematic and Dynamic Simulation of Multibody Systems", Springer- Verlag,1994.
2	Kane, T.R, Levinson, D.A., "Dynamics: Theory and Applications", McGraw-Hill Book Co., 1985.

Website / URL References	
1	https://www.youtube.com/watch?v=1Tyxgv7RUdk

Sign. of Course Coordinator

Mohan. S.R.

Sign. of HoD with date

Head of the Department
DEPARTMENT OF MECHANICAL
Mohamed Sathak A.J.College of Engineering
Siruseri IT Park, Chennai - 603 103

Head-TC

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No.34, Rajiv Gandhi Salai (OMR)
Sipcot - IT Highway Egattur,
Chenai - 603103.

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Anna University - Value Added Course
MVA022 Introduction to Multibody Dynamics

NAME LIST

S.No	Reg.No	Student Name	Signature
1	311819114001	AAYATHUL MUFARAK. A	
2	311819114002	ABDULLAH B	
3	311819114003	ATEF JAMALUDEEN N	
4	311819114004	BALAJI J	
5	311819114005	GOKUL M	
6	311819114006	GUNAL. S	
7	311819114007	HELAL AHAMED M	
8	311819114008	JAHETH SALMAN. B	
9	311819114009	KABIR MOHAMED. A	
10	311819114010	LAXSHAN M	
11	311819114011	MOHAMED ARSATH M	
12	311819114013	MOHAMED SHAJITH. M	
13	311819114014	MOHAMED TOWFIC A	
14	311819114015	MOHAMMED IRFAAN P	
15	311819114016	MOHAMMED ISMAIL M	
16	311819114017	MOHAMMED KURSHITH ALI. M	
17	311819114018	MUSHARRAF ALI. S	
18	311819114019	NAJUBUDEEN K	
19	311819114020	SHEIK HUSSAIN. A	
20	311819114021	UMAR MUBARAK M	

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Mohamed Sathak A.J. College of Engineering
Rajiv Gandhi Salai (OMR)
IT Highway, Egattur,
Chenai - 603103.

21	311819114301	ARSATH A	A. Arsath
22	311819114303	P MANIKANDAN	
23	311819114304	MOHAMMED AASHIK M	
24	311819114305	RAMKUMAR.C	
25	311819114306	SALAUDEEN BADUSHA	S. Salau
26	311819114307	SANJAY KUMAR.C	—
27	311819114308	SYED SUFFIYAN	
28	311819114309	UMASHANKAR. V	V.
29	311819114310	VIJAYA SARATHI. V	V. Vijaysarath
30	311819114311	SARATHKUMAR.N	
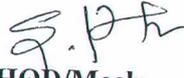
Coordinator

HOD/Mech
Head of the Department
DEPART   OF MECHANICAL
Mohamed S   of Engineering
Sirusen   Chennai - 603 103

MOHAMED SATHAK A J COLLEGE OF ENGINEERING
Anna University - Value Added Course
MVA022 Introduction to Multibody Dynamics
Assessment Test -1
Attendance Register

Date: 29/09/2022

S.No	Reg.No	Student Name	Signature
1	311819114001	AAYATHUL MUFARAK. A	
2	311819114002	ABDULLAH B	
3	311819114003	ATEF JAMALUDEEN N	
4	311819114004	BALAJI J	
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27	311819114308	SYED SUFFIYAN	
28	311819114309	UMASHANKAR. V	
29	311819114310	VIJAYA SARATHI. V	
30	311819114311	SARATHKUMAR.N	

Coordinator (Mohan. SP)

HOD/Mech
Head of the Department
DEPARTMENT OF MECHANICAL
Mohamed Sathak A.J.College of Engineering
Siruseri IT Park, Chennai - 603 103

PRINCIPAL
Mohamed Sathak A.J. College of Engineering
No.34, Rajiv Gandhi Sala
Sipcot - IT Highway
Chenai - 603 103.

MOHAMED SATHAK A J COLLEGE OF ENGINEERING

Anna University - Value Added Course
MVA022 Introduction to Multibody Dynamics
Assessment Test -2
Attendance Register

Date: 09|11|2022

S.No	Reg.No	Student Name	Signature
1	311819114001	AAYATHUL MUFARAK. A	
2	311819114002	ABDULLAH B	
3	311819114003	ATEF JAMALUDEEN N	
4	311819114004	BALAJI J	
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Coordinator

HOD/Mech

Head of the Department
DEPARTMENT OF MECHANICAL
Mohamed   ege of Engineering
Siruseri Park, Chennai - 603 103

PRINCIPAL
Mohamed Sathak A.J College of Engineering
No.34, Rajiv
Siport

MOHAMED SATHAK A.J. COLLEGE OF ENGINEERING, Chennai - 603103

VAC - STUDENTS NAME LIST

Department of Mechanical Engineering

Academic Year: 2022-23

Name of the Value Added Course : MVA022 - Introduction to Multibody Dynamics				
Yr / Sem : IV/VII		Faculty In-charge :	Mr.Mohan S R	
Location : Altair Lab		Duration :	30 Hrs	
Sl.No	Name of the Student	Register No.	Status of Qualifying	Sign of Student
1	AAYATHUL MUFARAK. A	311819114001	PASS	
2	ABDULLAH B	311819114002	PASS	
3	ATEF JAMALUDEEN N	311819114003	PASS	
4	BALAJI J	311819114004	PASS	
5	GOKUL M	311819114005	PASS	
6	GUNAL. S	311819114006	PASS	
7	HELAL AHAMED M	311819114007	PASS	
8	JAHETH SALMAN. B	311819114008	PASS	
9	KABIR MOHAMED. A	311819114009	PASS	
10	LAXSHAN M	311819114010	PASS	
11	MOHAMED ARSATH M	311819114011	PASS	
12	MOHAMED SHAJITH. M	311819114013	PASS	
13	MOHAMED TOWFIC A	311819114014	PASS	
14	MOHAMMED IRFAAN P	311819114015	PASS	
15	MOHAMMED ISMAIL M	311819114016	PASS	
16	MOHAMMED KURSHITH ALI. M	311819114017	PASS	
17	MUSHARRAF ALI. S	311819114018	PASS	
18	NAJUBUDEEN K	311819114019	PASS	
19	SHEIK HUSSAIN. A	311819114020	PASS	
20	UMAR MUBARAK M	311819114021	PASS	
21	ARSATH A	311819114301	PASS	
22	P MANIKANDAN	311819114303	PASS	

PRINCIPAL
Mohamed Sathak A.J. College of Engineering
No.54, Rajiv Gandhi Salai (OMR)
Sipcot - IT Highway Egattur,
Chennai - 603103.

23	MOHAMMED AASHIK M	311819114304	PASS	
24	RAMKUMAR.C	311819114305	PASS	
25	SALAUDEEN BADUSHA	311819114306	PASS	
26	SANJAY KUMAR.C	311819114307	FAIL	
27	SYED SUFFIYAN	311819114308	PASS	
28	UMASHANKAR. V	311819114309	PASS	
29	VIJAYA SARATHI. V	311819114310	PASS	
30	SARATHKUMAR.N	311819114311	PASS	
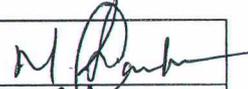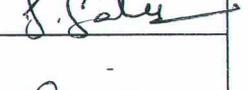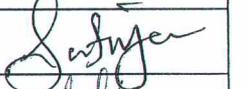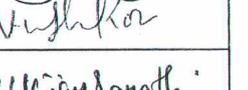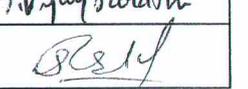
Mohan.C-R
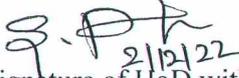
Head-Training

Signature of HoD with date
Head of the Department
DEPARTMENT OF MECHANICAL
Mohamed Sathak A.J.College of Engineering
Siruseri IT Park, Chennai - 603 103

Format No.: TLP 20

Rev.No.: 01

Rev.Date: 04.01.21

PRINCIPAL
Mohamed Sathak A.J. College of Engineering
No.34, Rajiv Gandhi Salai (OMR)
Sipcot - IT Highway Egattur,
Chenai - 603103.

ANNA UNIVERSITY, CHENNAI – 600 025

B.E. DEGREE EXAMINATIONS
CONSOLIDATED STATEMENT OF GRADES

Folio No. AU17065339

Field	Value
NAME OF THE CANDIDATE	ATEF JAMALUDEEN
COLLEGE OF STUDY	MOHAMMED SATHAK A.J.COLLEGE OF ENGINEERING
PROGRAMME & BRANCH	B.E. Mechanical Engineering
REGISTER NO.	311819114003
REGULATIONS	2017 (CBCS)
DATE OF BIRTH	29-JAN-2002
GENDER	MALE
MEDIUM OF INSTRUCTION	English
MONTH & YEAR OF LAST APPEARANCE	April 2023

SEM	COURSE CODE	COURSE TITLE	C	LG	GP	MONTH & YEAR OF PASSING
01	CY8151	Engineering Chemistry	3	A	8	DEC 2019
01	GE8151	Problem Solving and Python Programming	3	B+	7	DEC 2019
01	GE8152	Engineering Graphics	4	A+	9	DEC 2019
01	HS8151	Communicative English	4	A	8	DEC 2019
01	MA8151	Engineering Mathematics - I	4	A	8	DEC 2019
01	PH8151	Engineering Physics	3	B+	7	DEC 2019
01	BS8161	Physics and Chemistry Laboratory	2	O	10	DEC 2019
01	GE8161	Problem Solving and Python Programming Laboratory	2	O	10	DEC 2019
02	BE8253	Basic Electrical, Electronics and Instrumentation Engineering	3	O	10	DEC 2019
02	GE8291	Environmental Science and Engineering	3	O	10	APR 2020
02	GE8292	Engineering Mechanics	4	O	10	APR 2020
02	HS8251	Technical English	4	O	10	APR 2020
02	MA8251	Engineering Mathematics - II	4	O	10	APR 2020
02	PH8251	Materials Science	3	O	10	APR 2020
02	BE8261	Basic Electrical, Electronics and Instrumentation Engineering Laboratory	2	O	10	APR 2020
02	GE8261	Engineering Practices Laboratory	2	O	10	APR 2020
03	CE8394	Fluid Mechanics and Machinery	4	B	6	NOV 2020
03	EE8353	Electrical Drives and Controls	3	A	8	NOV 2020
03	MA8353	Transforms and Partial Differential Equations	4	A	8	NOV 2020
03	ME8351	Manufacturing Technology - I	4	A	8	NOV 2020
03	ME8391	Engineering Thermodynamics	3	A+	9	NOV 2020
03	EE8361	Electrical Engineering Laboratory	2	A+	9	APR 2021
03	ME8361	Manufacturing Technology Laboratory - I	2	O	10	APR 2021
03	ME8381	Computer Aided Machine Drawing	2	O	10	APR 2021
03	HS8381	Interpersonal Skills/Listening and Speaking	1	O	10	NOV 2020
04	CE8395	Strength of Materials for Mechanical Engineers	3	A+	9	APR 2021
04	MA8452	Statistics and Numerical Methods	4	A+	9	APR 2021
04	ME8451	Manufacturing Technology - II	4	A+	9	APR 2021
04	ME8491	Engineering Metallurgy	3	A	8	APR 2021
04	ME8492	Kinematics of Machinery	3	A	8	APR 2021
04	ME8493	Thermal Engineering - I	3	A	8	APR 2021
04	CE8381	Strength of Materials and Fluid Mechanics and Machinery Laboratory	2	O	10	APR 2021
04	HS8461	Advanced Reading and Writing	1	O	10	APR 2021
04	ME8462	Manufacturing Technology Laboratory - II	2	O	10	APR 2021
05	ME8501	Metrology and Measurements	3	A	8	NOV 2021
05	ME8593	Design of Machine Elements	3	A+	9	NOV 2021
05	ME8594	Dynamics of Machines	4	O	10	NOV 2021
05	ME8595	Thermal Engineering - II	3	A	8	NOV 2021
05	ORO551	Renewable Energy Sources	3	A	8	NOV 2021
05	ME8511	Kinematics and Dynamics Laboratory	2	O	10	NOV 2021
05	ME8512	Thermal Engineering Laboratory	2	O	10	NOV 2021
05	ME8513	Metrology and Measurements Laboratory	2	O	10	NOV 2021
06	ME8651	Design of Transmission Systems	3	B+	7	APR 2022
06	ME8691	Computer Aided Design and Manufacturing	3	B+	7	APR 2022
06	ME8692	Finite Element Analysis	3	B+	7	APR 2022
06	ME8693	Heat and Mass Transfer	4	A	8	APR 2022
06	ME8694	Hydraulics and Pneumatics	3	A	8	APR 2022
06	IE8693	Production Planning and Control	3	B+	7	APR 2022
06	HS8581	Professional Communication	1	O	10	APR 2022
06	ME8091	Automobile Engineering	3	B+	7	APR 2022
06	ME8681	CAD/CAM Laboratory	2	O	10	APR 2022
06	ME8682	Design and Fabrication Project	2	O	10	APR 2022
07	ME8791	Mechatronics	3	A	8	NOV 2022
07	ME8792	Power Plant Engineering	3	A	8	NOV 2022
07	ME8793	Process Planning and Cost Estimation	3	B+	7	NOV 2022
07	ME8073	Unconventional Machining Processes	3	A	8	NOV 2022
07	MG8591	Principles of Management	3	A+	9	NOV 2022
07	ME8097	Non Destructive Testing and Evaluation	3	B+	7	NOV 2022
07	OMF751	Lean Six Sigma	3	A+	9	NOV 2022
07	ME8711	Simulation and Analysis Laboratory	2	O	10	NOV 2022
07	ME8781	Mechatronics Laboratory	2	O	10	NOV 2022
07	SB8011**	Basics of Industry 4.0	1	O	10	NOV 2022
07	ME8712	Technical Seminar	1	O	10	NOV 2022
08	ME8811	Project Work	10	O	10	APR 2023

Value Added Course(s), and these courses are not considered for CGPA Calculation

SEM	COURSE CODE	COURSE TITLE	C	LG	GP	MONTH & YEAR OF PASSING
07	MVA022	Introduction to Multi Body Dynamics	2	A+	9	NOV 2022

*** End of Statement ***

Cumulative Grade Point Average : 8.73

Classification : FIRST CLASS WITH DISTINCTION

** The Grade Point Secured is not included for the calculation of CGPA as per the Regulations.

$$CGPA = \frac{\sum_{i=1}^{n} C_i \, GP_i}{\sum_{i=1}^{n} C_i}$$

where GP_i – is the point corresponding to the grade obtained for each course
C_i – is the credits assigned to the course
n – is number of all courses successfully cleared during all the semesters

[Grade Classification R-2017]

Range of Marks	91-100	81-90	71-80	61-70	50-60	<50
Letter Grade	O	A+	A	B+	B	U
Grade Point	10	9	8	7	6	0

LG - Letter Grade, GP - Grade Point

Grade Classification R-2008 / R-2013

Range of Marks	91-100	81-90	71-80	61-70	57-60	50-56	<50
Letter Grade	O	A+	A	B	C	D	U
Grade Point	10	9	8	7	6	5	0

SIGNATURE OF THE STUDENT

PRINCIPAL
Mohamed Sathak A.J College of Engineering
No.34, Rajiv Gandhi Salai (OMR),
Siruseri IT Highway Egattur,
Chennai - 603 103.

CONTROLLER OF EXAMINATIONS

ANNA UNIVERSITY, CHENNAI – 600 025

B.E. DEGREE EXAMINATIONS

CONSOLIDATED STATEMENT OF GRADES

NAME OF THE CANDIDATE	RAM KUMAR C
COLLEGE OF STUDY	MOHAMMED SATHAK A.J.COLLEGE OF ENGINEERING
PROGRAMME & BRANCH	B.E. Mechanical Engineering
REGISTER NO.	311819114305
GENDER	MALE
MONTH & YEAR OF LAST APPEARANCE	April 2023
Folio No.	AUI7093474
	R0370801404425C
REGULATIONS	2017 (CBCS)
DATE OF BIRTH	29-JUL-2001
MEDIUM OF INSTRUCTION	English

SEM	COURSE CODE	COURSE TITLE	C	LG	GP	MONTH & YEAR OF PASSING
03	CE8394	Fluid Mechanics and Machinery	4	B+	7	NOV 2020
03	EE8353	Electrical Drives and Controls	3	A	8	NOV 2020
03	MA8353	Transforms and Partial Differential Equations	4	B	6	NOV 2020
03	ME8351	Manufacturing Technology -I	3	B+	7	NOV 2020
03	ME8391	Engineering Thermodynamics	4	B+	7	NOV 2020
03	EE8361	Electrical Engineering Laboratory	2	O	10	APR 2021
03	ME8361	Manufacturing Technology Laboratory - I	2	A+	9	APR 2021
03	ME8381	Computer Aided Machine Drawing	2	A+	9	NOV 2020
03	HS8381	Interpersonal Skills/Listening and Speaking	1	O	10	APR 2021
04	CE8395	Strength of Materials for Mechanical Engineers	3	B+	7	APR 2021
04	MA8452	Statistics and Numerical Methods	4	A+	9	NOV 2021
04	ME8451	Manufacturing Technology - II	3	B+	7	APR 2021
04	ME8491	Engineering Metallurgy	3	A	8	APR 2021
04	ME8492	Kinematics of Machinery	3	B	6	APR 2021
04	ME8493	Thermal Engineering - I	3	B+	7	APR 2021
04	CE8381	Strength of Materials and Fluid Mechanics and Machinery Laboratory	2	A+	9	APR 2021
04	HS8461	Advanced Reading and Writing	1	A	8	APR 2021
04	ME8462	Manufacturing Technology Laboratory - II	2	A+	9	APR 2021
05	ME8501	Metrology and Measurements	3	B+	7	NOV 2021
05	ME8593	Design of Machine Elements	3	A+	9	NOV 2021
05	ME8594	Dynamics of Machines	4	A+	9	NOV 2021
05	ME8595	Thermal Engineering - II	3	B	6	NOV 2021
05	ORO551	Renewable Energy Sources	3	B+	7	NOV 2021
05	ME8511	Kinematics and Dynamics Laboratory	2	A+	9	NOV 2021
05	ME8512	Thermal Engineering Laboratory - I	2	A+	9	NOV 2021
05	ME8513	Metrology and Measurements Laboratory	2	A+	9	NOV 2021
06	ME8651	Design of Transmission Systems	3	B	6	APR 2022
06	ME8691	Computer Aided Design and Manufacturing	3	B	6	APR 2022
06	ME8692	Finite Element Analysis	3	B	6	APR 2022
06	ME8693	Heat and Mass Transfer	4	B	6	APR 2022
06	ME8694	Hydraulics and Pneumatics	3	B	6	APR 2022
06	ME8091	Automobile Engineering	3	B	6	APR 2022
06	HS8581	Professional Communication	1	A+	9	APR 2022
06	ME8681	CAD/CAM Laboratory	2	A+	9	APR 2022
06	ME8682	Design and Fabrication Project	2	B+	7	APR 2022
07	ME8791	Mechatronics	3	B	6	NOV 2022
07	ME8792	Power Plant Engineering	3	B	6	NOV 2022
07	ME8793	Process Planning and Cost Estimation	3	B+	7	NOV 2022
07	ME8073	Unconventional Machining Processes	3	B+	7	NOV 2022
07	ME8097	Non Destructive Testing and Evaluation	3	B	6	NOV 2022
07	OMF751	Lean Six Sigma	3	B	6	NOV 2022
07	ME8711	Simulation and Analysis Laboratory	2	A+	9	NOV 2022
07	SB8008**	Introduction to Machine Learning	2	A+	9	NOV 2022
07	ME8781	Mechatronics Laboratory	2	A	8	NOV 2022
07	ME8712	Technical Seminar	1	A+	9	NOV 2022
08	MG8591	Principles of Management	3	B	6	APR 2023
08	IE8693	Production Planning and Control	3	B+	7	APR 2023
08	ME8811	Project Work	10	A+	9	APR 2023

Value Added Course(s), and these courses are not considered for CGPA Calculation

SEM	COURSE CODE	COURSE TITLE	C	LG	GP	MONTH & YEAR OF PASSING
07	MVA022	Introduction to Multi Body Dynamics	2	A+	9	NOV 2022

*** End of Statement ***

Cumulative Grade Point Average : 7.42

Classification : FIRST CLASS

** The Grade Point Secured is not included for the calculation of CGPA as per the Regulations.

$$CGPA = \frac{\sum_{i=1}^{n} C_i GP_i}{\sum_{i=1}^{n} C_i}$$

where C_i is the credits assigned to the course
GP_i is the point corresponding to the grade obtained for each course
n is number of all courses successfully cleared during all the semesters

[Grade Classification R-2017]

Range of Marks	91-100	81-90	71-80	61-70	50-60	<50
Letter Grade	O	A+	B+	B	U	
Grade Point	10	9	8	7	6	0

*This grading methodology employed here for the candidate : ... ered on regulations 2017 (R-2017)

SEM - Semester, C- Credits, LG - Letter Grade, GP - Grade Point

Range of Marks	91 - 100	81 - 90	71 - 80	61 - 70	57 - 60	50 - 56	<50
Letter Grade	S	A	B	C	D	E	U
Grade Point	10	9	8	7	6	5	0

[Grade Classification R-2008 / R-2013]

Chennai - 600 025.
Date 10/08/2023

SIGNATURE OF THE STUDENT

CONTROLLER OF EXAMINATIONS

MOHAMED SATHAK A.J. COLLEGE OF ENGINEERING

(Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai)

Department for Electrical and Electronics Engineering

Ref: MSAJCE/EEE/ODD/01   Date:19/8/2022

CIRCULAR

This is to inform all the faculty and students that the below mentioned Add on/

Technology Center Courses are planned to be conducted in the Academic year 2022-2023

(odd semester). Kindly follow the schedule to complete the course successfully.

S.No	Year	Course Title	Coordinator
1	II - EEE	Labview	Mrs.Archana.C
2	IV - EEE	Simulation of Electric Vehicle	Mr.Venkatesh.C

HOD Dr. JEHA. J

Copy to

- Principal
- Class Advisor
- Department File

From

Mrs Archana.C,

EEE Department,

MSAJCE,

Chennai.

To

The Principal,

MSAJCE,

Chennai.

Permitted

Am
1508 22

Respected sir,

Sub: Permission for conducting Technology Center Course regarding.

    We have planned to conduct Technology Center Course – Labview for the students of II year EEE department in the academic year 2022-2023(odd semester). The selected course will be useful for our students. Kindly grant us permission to conduct the course.

            Thank you

        PRINCIPAL Yours faithfully,
Mohamed Sathak A.J. College of Engineering
No.34, Rajiv Gandhi Salai (OMR),
Sipcot - IT Highway Egatur,
Chenai - 603103. ARCHANA·A
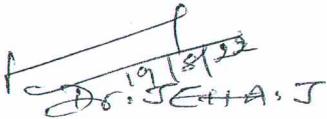
Dr: JEHA·J

MOHAMED SATHAK A J COLLEGE OF ENGINEERING, Chennai - 603103
COURSE CONTENT
Department of Electrical and Electronics Engineering

Class :	II/III sem		Academic Year:	2022-23
Name of the Value Added Course	LAB-VIEW	Name of the handling Faculty	Mrs.Archana.C	

Course Objective

To familiarize the student in introduction and exploring LabView software.

To enable the student on how to approach for solving Engineering problems using simulation tools

To prepare the students to use LabView in their project works.

To provide a foundation in use of this software for real time applications

Course Outcome

Express programming and simulation for Engineering problems

Find importance of this software for lab experimentation

Articulate importance of softwares in research by simulation work.

Have in depth knowledge of providing virtual instruments on LabView environment

Write basic mathematical, electrical,electronic problems in LabView with GUI Simulink

Lesson Plan for TAC

Sl. No.	Topic	T / R* Book	Periods Required	Mode of Teaching
1	Introduction of LabVIEW	T1	3	PPT, Simulation
2	Designing the Software	T1	3	PPT, Simulation
3	Basic Programming	T1	4	PPT, Simulation
4	Designing of Sub Programs	T1	4	PPT, Simulation
5	Programming Loops	T1	4	PPT, Simulation
6	Structures	T1	4	PPT, Simulation
7	String	T1	5	PPT, Simulation
8	Data Handling	T1	2	PPT, Simulation
9	Array and clusters	T1	2	PPT, Simulation
10	External Interfaces	T1	4	PPT, Simulation
11	Data Acquisitions Process	T1	3	PPT, Simulation
12	Instrument Control based on Embedded Controllers	T1	3	PPT, Simulation
13	Instrument Control based on Embedded Controllers	T1	4	PPT, Simulation

Quiz / Mini Projects / Model Develpoed if any

Quiz

Text / Reference Books

1	LabVIEW for Everyone 1. Jeffrey Travis (Author) 2.Jim Kring (Author) Prentice Hall, 3rd Edition

Website / URL References

1	http://www.ni.com/academi... ...ents/learn-labview
2	https://www.labviewmakerhu...om/

Sign. of Course Coordinator

Sign. of Hod with date

Head-TC

LABVIEW SYLLABUS

1. INTRODUCTION to LABVIEW (9 HOURS)

Front panel-Block Diagram- Numeric-Normal method, Formula method, Expression Method-Comparators-Boolean-Logical Gates-Boolean to number Conversion-Selector switch

2. ARRAY & STRING (9 HOURS)

String-Concatenated-Replace String-String Subset-Search and replace string-Match Pattern-Path/Array/string-Array-Array Size-Split Array-Index Array- Replace Subset-Insert into Array-Delete from array-Build array-array subset-Sort 1D array-Cluster

3. PROGRAM EXECUTION WITH STRUCTURES (9 HOURS)

For loop-Tunnel Modes-Shift Register-Feedback Loop- While loop-case structure-SUB VI- Local Variable-Global Variable-Mechanical action of Boolean Switch

4. WAVEFORMS (9 HOURS)

Build waveform- Waveform Chart -Waveform Graph-1D Graph-2D Graph-Different modes in chart-Property Node-Implicit property node-Explicit property node-Invoke Node-State machine Architecture-Type Definition.

5. DATA ACQUISITION (9 HOURS)

Introduction- High level VI -Acquiring Data-Generating Data-Fine Sample-Continuous Sample-Low level VI -Acquiring Data-Generating Data-File I/O-Read Delimiter-Write Delimiter-Error handling concepts. Project Creation-Virtual Folder-Auto populating Folder

LIST OF SUGGESTED BOOKS

1. Virtual Instrumentation using LabVIEW by Jovita Jerome
2. Introduction to LabVIEW and LabVIEW Basics by National Instruments

Prepared by.

Approved by
14/08/22

DEPARTMENT OF EEE & ECE

COURSE MODULE

Course Objectives:

1. To familiarize the student in introducing and exploring LabVIEW software
2. To enable the student on how to approach for solving Engineering problems using simulation tools.
3. To prepare the students to use Lab VIEW in their project works.
4. To provide a foundation in use of this software for real time applications.

MODULE-1
1.Introduction LabVIEW

What Exactly is LabVIEW-What can LabVIEW do for you- How does LabVIEW work-Evolution of LabVIEW- What is DAQ- Communication using SerialPort- LabVIEW addon toolkits- LabVIEW Real Time, FPGA, PDA, and Embedded.

MODULE-2
2: LabVIEW Environment

Front panel, control and indicator- Block Diagram, Nodes, Wires, Data Flow Programming- LabVIEW Projects, Project Explorer window, project Explorer Toolbars- Building Application- Installers- Floating Pallets-

MODULE-3
3: LabVIEW Foundation

Creating VI- Basic Controls- Indicators- Booleans- String- Paths- Decorations- Custom Controls and Indicators- Automatic wire routing- Automatic Wiring – Wiring Complicated Objects- Bad Wires – Wiring Tips- adding Constants- Controls and indicators – Keyboard Shortcuts- Cloning and object.

MODULE-4
4. Programming Execution with Structures

For Loop - The While Loop - Placing Objects inside Objects – Countingthe Loops Shift Registers – Case registers – Dialogs – The Sequence Structures – Timing – Timed Structures – Formula Node – Expression Node.

MODULE-5
5.Embedded combining with LabVIEW

VISA concept - Baud rate Calculation - Measurement and Automation Explorer -Serial Communication with Microcontrollers, Acquiring the real time digital data to the LabVIEW User interface, controlling the LED operations, Acquiring of real time analog sensor values, controlling the Motors
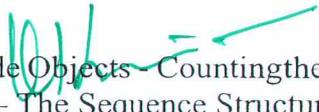
DEPARTMENT OF EEE & ECE

Course Outcomes:

The students will be able to

CO1. Express programming & simulation for engineering problems.

CO2. Find importance of this software for Lab Experimentation.

CO3. Articulate importance of soft wares in research by simulation work.

CO4. Have in-depth knowledge of providing virtual instruments on LabVIEW Environment.

CO5. Write basic mathematical, electrical, electronic problems in LabVIEW, Simulate and Connect programming files with GUI Simulink.

MOHAMED SATHAK A J COLLEGE OF ENGINEERING

DEPARTMENT OF EEE

TCC - Labview

ATTENDANCE SHEET

YEAR/SEM : II / III   **AY: 2022-23**

S.NO	REG. NO	STUDENT NAME	PRESENT (32 HRS)	ATTENDANCE PERCENTAGE %
1	311821105001	ABDUL MALIK J	32	100
2	311821105002	DILLIGANESH A	32	100
3	311821105004	KARTHICK A	28	87.5
4	311821105005	MOHAMED BASIL S	32	100
5	311821105006	MOHAMED IZZAT. A	32	100
6	311821105008	MOHANRAJ.K	28	87.5
7	311821105010	NAGARAJ. B	28	87.5
8	311821105011	SHARIAR SARFAN S.A	28	87.5
9	311821105012	SRIKARTHIK.V	32	100
10	311821105013	SYED HIFZUL RAHMAN F	32	100
11	311821105014	THAMEEM ANSAARI I.S	32	100
12	311821105015	THIYAGU . A	28	87.5
13	311821105301	AL MUHASIF RIFATH M	28	87.5
14	311821105302	HARIHARAN C	28	87.5
15	311821105304	PRASAD.N	32	100
16	311821105305	SANTHOSH KUMAR V	32	100

FACULTY-IN-CHARGE   HOD Dr. JEHA. J

MOHAMED SATHAK A.J. COLLEGE OF ENGINEERING, Chennai - 603103

VAC - STUDENTS NAME LIST

Department of Electrical and Electronics Engineering

Academic Year: 2022 - 2023 (ODD)

Name of the Value Added Course : LAB - VIEW

Yr / Sem : II / III		Faculty In-charge :	Mrs.C.Archana	
Location : 106		Duration :	45 Hours	

Sl.No	Name of the Student	Register No.	Status of Qualifying	Sign of Student
1	ABDUL MALIK J	311821105001	Qualified	
2	DILLIGANESH A	311821105002	Qualified	
3	KARTHICK A	311821105004	Qualified	
4	MOHAMED BASIL S	311821105005	Qualified	
5	MOHAMED IZZAT. A	311821105006	Qualified	
6	MOHANRAJ.K (H)	311821105008	Qualified	
7	NAGARAJ. B	311821105010	Qualified	
8	SHARAIR SARFAN S.A	311821105011	Qualified	
9	SRIKARTHIK.V	311821105012	Qualified	
10	SYED HIFSUL RAHMAN F	311821105013	Qualified	
11	THAMEEM ANSAARI I.S	311821105014	Qualified	
12	THIYAGU . A	311821105015	Qualified	
13	SANTHOSH V	311821105305	Qualified	
14	Prasad.N	311821105304	Qualified	
15	AL MUHASIF RIFATH M	311821105301	Qualified	
16	Hariharan C	311821105302	Qualified	

Head-Training

(C. Archana)

Signature of HoD with date

Dr. JEHA-J

Format No.: TLP 20

Rev.No.: 01

Rev.Date: 04.01.21

PRINCIPAL
Mohamed Sathak A.J. College of Engineering
No.34, Rajiv Gandhi Salai (OMR)
Sipcot - IT Highway Egattur,
Chennai - 603103.

MOHAMED SATHAK

A.J. COLLEGE OF ENGINEERING

Siruseri IT Park, OMR, Chennai - 603103.

Golden Jubilee Year
1973 - 2022

ISO 9001:2015
Certified by IRQS   NABCB QM 006

AICTE CII SURVEY
SILVER RANKING

INSTITUTION'S
INNOVATION COUNCIL
(Ministry of Education Initiative)

Performer

Certificate of Completion

This is to certify that Mr. / Ms. _____Abdul Malik . J_____ student of

Mohamed Sathak A J College of Engineering, Chennai has successfully

completed the training program on **"Lab View"** from 22nd August 2022 to 01st

November 2022 conducted by Lab View Academy - Associate with National

Instruments, Department of Electrical and Electronics Engineering.

I. M. mju
Dr. I. Manju
Head - Technology Centre & Industry Relations

Dr. K.S. Srinivasan
Principal

Mrs. C. Archana
Course Co - ordinator

PRINCIPAL
Mohamed Sathak A.J. College of Engineering
No.34, Rajiv Gandhi Salai (OMR)
Sipcot - IT Highway Egattur,
Chennai - 603103.

From

Mr Venkatesh.C,

EEE Department,

MSAJCE,

Chennai.

To

The Principal,

MSAJCE,

Chennai.

Permitted

~~

1908 23

Respected sir,

Sub: Permission for conducting Technology Center Course regarding.

We have planned to conduct Technology Center Course – Simulation of Electric Vehicle

for the students of IV year EEE department in the academic year 2022-2023(odd semester). The

selected course will be useful for our students. Kindly grant us permission to conduct the course.

Thank you

Yours faithfully,

Dr. JEHA. J

Venkatesh. C

MOHAMED SATHAK A J COLLEGE OF ENGINEERING, Chennai - 603103

COE - COURSE CONTENT

Department of ELECTRICAL AND ELECTRONICS ENGINEERING

Class : IV/VII Sem

Academic Year: 2022-23

Name of the COE	Simulation of Electric Vehicle	Name of the handling Faculty	Mr.C.Venkatesh

Course Objective
To present a comprehensive overview of Electric and Hybrid Electric Vehicles.
To study about the working of Electric Vehicle and to learn electric vehicle drive systems
To understand the configuration of hybrid vehicle.

Course Outcome
Analysis the configuration and control methods of electric propulsion unit.
Summarize the factors that control battery operational characteristics and the primary mechanisms.
Analysis the transmission characteristics and mathematical models of electric vehicles.
Discuss the energy management strategies used in hybrid and electric vehicles.
Describe the basic fundamentals and working principles of electrical machines.

Lesson Plan for COE				
Sl. No.	Topic	T / R* Book	Periods Required	Mode of Teaching
1	2-Wheeler disassemble,2-Wheeler front wheel fitting,2-Wheeler rare wheel fitting	T1	4	Software-MATLAB
2	Chassis design for 3-Wheeler,Chassis design for 3-Wheeler	T1	3	Software-MATLAB
3	Chassis material cutting,Chassis welding	T1	3	Software-MATLAB
4	Suspension system fitting to chassis,Differential setup fitting to chassis	T1	3	Software-MATLAB
5	Motor fitting to chassis and differential	T1	3	Software-MATLAB
6	Back side wheels fitting	T1	3	Software-MATLAB
7	Front T shape welding	T2	3	Software-MATLAB
8	Front wheel assemble	T2	3	Software-MATLAB
9	Handle fitting and Throttle fitting to handle	T2	3	Software-MATLAB
10	Battery box welding	T2	3	Software-MATLAB
11	Sheet metal welding	T2	3	Software-MATLAB

12	Lights, indicators assemble	T2	3	Software-MATLAB
13	Battery connections	T2	3	Software-MATLAB

Quiz / Mini Projects / Model Develpoed if any
2 Wheeler E-Vehicle Prepared by students

Text / .Reference Books	
1	Electrical Vehicle Future of Mobility-Praful Vijay Nandankar-2020
2	Electric Vehicle Technology Explained-J.Larminie-2012

Website / URL References	
1	
2	
3	

Sign. of Course Coordinator

Sign. of HoD with date
Dr. JEHA. J

Head-TC

Format No.: TLP 21   Rev. No.: 1.0   Rev. Date:04.01.21

MOHAMED SATHAK A J COLLEGE OF ENGINEERING, Chennai - 603103

COE - COURSE CONTENT

Department of ELECTRICAL AND ELECTRONICS ENGINEERING

Class : IV/VII Sem

Academic Year: 2022-23

Name of the COE	Simulation of Electric Vehicle	Name of the handling Faculty	Mr.C.Venkatesh

Course Objective

To present a comprehensive overview of Electric and Hybrid Electric Vehicles.

To study about the working of Electric Vehicle and to learn electric vehicle drive systems

To understand the configuration of hybrid vehicle.

Course Outcome

Analysis the configuration and control methods of electric propulsion unit.

Summarize the factors that control battery operational characteristics and the primary mechanisms.

Analysis the transmission characteristics and mathematical models of electric vehicles.

Discuss the energy management strategies used in hybrid and electric vehicles.

Describe the basic fundamentals and working principles of electrical machines.

Lesson Plan for COE

Sl. No.	Topic	T / R* Book	Periods Required	Mode of Teaching
1	2-Wheeler disassemble,2-Wheeler front wheel fitting,2-Wheeler rare wheel fitting	T1	4	Software-MATLAB
2	Chassis design for 3-Wheeler,Chassis design for 3-Wheeler	T1	3	Software-MATLAB
3	Chassis material cutting,Chassis welding	T1	3	Software-MATLAB
4	Suspension system fitting to chassis,Differential setup fitting to chassis	T1	3	Software-MATLAB
5	Motor fitting to chassis and differential	T1	3	Software-MATLAB
6	Back side wheels fitting		3	Software-MATLAB
7	Front T shape welding	T2	3	Software-MATLAB
8	Front wheel assemble	T2	3	Software-MATLAB
9	Handle fitting and Throttle fitting to handle	T2	3	Software-MATLAB
10	Battery box welding	T2	3	Software-MATLAB
11	Sheet metal welding	T2	3	Software-MATLAB

| 12 | Lights, indicators assemble | T2 | 3 | Software-MATLAB |
| 13 | Battery connections | T2 | 3 | Software-MATLAB |

Quiz / Mini Projects / Model Develpoed if any
2 Wheeler E-Vehicle Prepared by students

	Text / Reference Books
1	Electrical Vehicle Future of Mobility-Praful Vijay Nandankar-2020
2	Electric Vehicle Technology Explained-J.Larminie-2012

	Website / URL References
1	
2	
3	

Sign. of Course Coordinator

Sign. of HoD with date
Dr. JEHA. J

Head-TC

Format No.: TLP 21

Rev. No.: 1.0

Rev. Date:04.01.21

MOHAMED SATHAK A.J. COLLEGE OF ENGINEERING

(Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai)

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING
Academic Year - 2022-2023 (ODD SEMESTER)

COE Name: Simulation of Electric Vehicle

Attendance

S.No	Reg No	Name of the Student	Hours Conducted	Hours Present	Percentage
1	311819105001	Fahed.S	39	29	74%
2	311819105002	Mohammed Rijwan.H	39	29	74%
3	311819105003	Sathiyan	39	30	77%
4	311819105005	Stalin K	39	30	77%
5	311819105301	Bhuvanesh S	39	29	74%
6	311819105302	F. Akram Mohiuddin	39	27	69%

Incharge
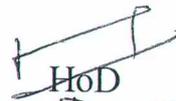
HoD
Dr JEHA.J

PRINCIPAL
Mohamed Sathak A.J. College of Engineering
No 34 Rajiv Gandhi Salai (OMR)
Sipcot IT Highway Egattur,
Chennai 603103.

MOHAMED SATHAK A.J. COLLEGE OF ENGINEERING, Chennai - 603103

COE - STUDENTS NAME LIST

Department of ELECTRICAL AND ELECTRONICS ENGINEERING

Academic Year:2022/23

Name of the Value Added Course : Simulation of Electric Vehicle				
Yr / Sem : IV/VII	Faculty In-charge :		C.Venkatesh	
Location : GF 119	Duration :		30 hrs	
Sl.No	Name of the Student	Register No.	Status of Qualifying	Sign of Student
1	Fahed.S	311819105001	Yes	
2	Mohammed Rijwan.H	311819105002	Yes	
3	Sathiyan	311819105003	Yes	
4	Stalin K	311819105005	Yes	
5	Bhuvanesh S	311819105301	Yes	
6	F. Akram Mohiuddin	311819105302	Yes	
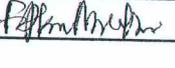
Head-Training
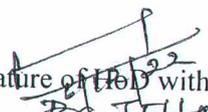
Signature of HoD with date
Dr. JEHA.J

Format No.: TLP 20   Rev.No.: 01   Rev.Date: 04.01.21

MOHAMED SATHAK

A.J. COLLEGE OF ENGINEERING

Siruseri IT Park, OMR, Chennai - 603 103.

Certificate of Completion

This is to certify that Mr. / Ms. ___Fahed . S___ student of

Mohamed Sathak A J College of Engineering, Chennai has successfully

completed the training program on **"Simulation of E-Mobility"** from 10th

August 2022 to 01st November 2022 conducted by E-Mobility Centre,

Department of Electrical and Electronics Engineering.

Mr.C.Venkatesh
Course Co - ordinator

Dr. I. Mahju
Head - Technology Centre & Industry Relations.

Dr. K.S. Srinivasan
Principal

PRINCIPAL
Mohamed Sathak A.J. College of Engineering
No.34, Rajiv Gandhi Salai (OMR)
Sipcot - IT Highway Egattur,
Chennai - 603 103.

ISO 9001-2015
Certified by IRQS QM 006
NABCB

Golden Jubilee Year
1973 - 2022

AICTE CII SURVEY
SILVER RANKING

From

Mr.Suresh.N,

EEE Department,

MSAJCE,

Chennai.

To

The Principal,

MSAJCE,

Chennai.

Permitted

Dr
13 0223

Respected sir,

Sub: Permission for conducting Technology Center Course regarding.

    We have planned to conduct Technology Center Course - Fundamentals of MATLAB for

the students of II year EEE department in the academic year 2022-2023(even semester). The

selected course will be useful for our students. Kindly grant us permission to conduct the course.

                Thank you

                                        Yours faithfully,

PRINCIPAL
Mohamed Sathak A.J. College of Engineering
No.34, Rajiv Gandhi Salai (OMR)
Sipcot - IT Highway Egattur,
Chenai - 603103.

SURESH. N

Dr.JEHA.J 13/2/23

MOHAMED SATHAK A J COLLEGE OF ENGINEERING, Chennai - 603103

COURSE CONTENT

Department of Electrical and Electronics Engineering
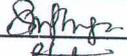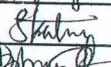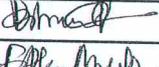
Class :	II year/IV sem		Academic Year:	2022-23	
Name of the Value Added Course	Fundamentals of MatLab	Name of the handling Faculty		Mr.Suresh.N	

Course Objective
To make the students familiarise with MATLAB
To analysis the given electric circuit applying electrical laws
To make the students design the electronic devices
To make the students design the power electronics converters
To make the students design solar panel

Course Outcome
Analyse the given electric circuits using electrical laws
Design simple electronic devices
Design power electronic convertors
Analyse the given control system
Design the solar panel

Lesson Plan for VAC

Sl. No.	Topic	T / R* Book	Periods Required	Mode of Teaching
1	Simulation of Kirchoff's voltage law	T1	3	PPT, Simulation
2	Simulation of Kirchoff's current law	T1	3	PPT, Simulation
3	Design of voltage regulator using Zener Diode	T1	3	PPT, Simulation
4	Design of full wave bridge rectifier	T1	3	PPT, Simulation
5	Design of Buck Boost converter	T1	3	PPT, Simulation
6	Simulation of Single phase inverter	T1	3	PPT, Simulation
7	Transfer function, Zero pole gain model and states spaces model of continious times system	T1	3	PPT, Simulation
8	Step response of second order system	T1	3	PPT, Simulation
9	Effect of PID controller on the system	T1	3	PPT, Simulation
10	Design of solar panels	T1	3	PPT, Simulation

Quiz / Mini Projects / Model Develpoed if any
Quiz

Text / Reference Books	
1	A Guide to MATLAB: For Beginners and Experienced Users by Brian R. Hunt

Website / URL References	
1	https://www.mathworks.com/academia/book. ...tml

Sign. of Course Coordinator

Sign. of HoD with date

Head-TC

FUNDAMENTALS OF MATLAB -SYLLABUS

COURSE OBJECTIVE:

- To make the students familiarize with MATLAB.
- To analyse the give electric circuit applying electrical laws.
- To make the students design the electronic devices.
- To make the students design the power electronic converters
- To analyse the given control system
- To make the students design solar panel.

LIST OF EXPERIMENTS

1. Simulation of Kirchhoff's Voltage Law
2. Simulation of Kirchhoff's Current Law
3. Design of Voltage Regulator using Zener diode
4. Design of Full-Wave Bridge Rectifier
5. Design of Buck-Boost Converter
6. Simulation of Single-phase inverter
7. Transfer function, Zero-pole-gain model and State space model of continuous-time system.
8. Step response of second order system
9. Effect of PID controller on the system
10. Design of Solar panels

COURSE OUTCOMES:

At the end of this course, the students will demonstrate the ability

CO1: To analyse the given electric circuits using electrical laws.

CO2: To design simple electronic devices

CO3: To design power electronic converters

CO4: To analyse the given control system

CO5: To design solar panel

MOHAMED SATHAK A J COLLEGE OF ENGINEERING

DEPARTMENT OF EEE
TCC-FUNDAMENTALS OF MATLAB
ATTENDANCE SHEET

AY: 2022-23

YEAR/SEM : II / IV

S.NO	REG. NO	STUDENT NAME	PRESENT (32 HRS)	ATTENDANCE PERCENTAGE %
1	311821105001	ABDUL MALIK J	32	100
2	311821105002	DILLIGANESH A	28	87.5
3	311821105004	KARTHICK A	28	87.5
4	311821105005	MOHAMED BASIL S	32	100
5	311821105006	MOHAMED IZZAT. A	32	100
6	311821105008	MOHANRAJ.K	28	87.5
7	311821105010	NAGARAJ. B	28	87.5
8	311821105011	SHARIAR SARFAN S.A	28	87.5
9	311821105012	SRIKARTHIK.V	32	100
10	311821105013	SYED HIFZUL RAHMAN F	32	100
11	311821105014	THAMEEM ANSAARI I.S	32	100
12	311821105015	THIYAGU . A	28	87.5
13	311821105301	AL MUHASIF RIFATH M	28	87.5
14	311821105302	HARIHARAN C	28	87.5
15	311821105304	PRASAD.N	32	100
16	311821105305	SANTHOSH KUMAR V	32	100

FACULTY-IN-CHARGE

HOD
Dr. JEHA. J

PRINCIPAL
Mohamed Sathak A.J. College of Engineering
No.34, Rajiv Gandhi Salai (OMR)
Sipcot - IT Highway Egattur,
Chennai - 603103.

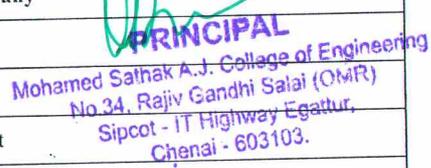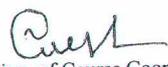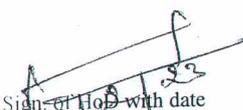# MOHAMED SATHAK A.J. COLLEGE OF ENGINEERING, Chennai - 603103

TCC - STUDENTS NAME LIST

Department of Electrical and Electronics Engineering

Academic Year: 2022-23

Name of the TCC Fundamentals of Matlab				
Yr / Sem : II / IV		Faculty In-charge :	Mr.N.Suresh	
Location : 305 PSS LAB		Duration :	32 Hrs	
Sl.No	Name of the Student	Register No.	Status of Qualifying	Sign of Student
1	ABDUL MALIK J	311821105001	Yes	
2	DILLIGANESH A	311821105002	Yes	
3	KARTHICK A	311821105004	Yes	
4	MOHAMED BASIL S	311821105005	Yes	
5	MOHAMED IZZAT. A	311821105006	Yes	
6	MOHANRAJ.K	311821105008	Yes	
7	NAGARAJ. B	311821105010	Yes	
8	SHARIAR SARFAN S.A	311821105011	Yes	
9	SRIKARTHIK.V	311821105012	Yes	
10	SYED HIFZUL RAHMAN F	311821105013	Yes	
11	THAMEEM ANSAARI I.S	311821105014	Yes	
12	THIYAGU . A	311821105015	Yes	
13	AL MUHASIF RIFATH M	311821105301	Yes	
14	HARIHARAN C	311821105302	Yes	
15	PRASAD.N	311821105304	Yes	
16	SANTHOSH KUMAR V	311821105305	Yes	
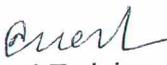
Head-Training

Signature of HoD with date
Dr. JEHA. J

PRINCIPAL
Mohamed Sathak A.J. College of Engineering
No. 34. Rajiv Gandhi Salai (OMR)
Sipcot - IT Highway Egattur,
Chennai - 603103.

MOHAMED SATHAK
A.J. COLLEGE OF ENGINEERING

34, Rajiv Gandhi Salai (OMR), Siruseri IT Park, Chennai - 603 103.

Certificate of Completion

This is to certify that Mr./Ms. DILLIGANESH A training program of II year EEE has successfully completed the on "Fundamentals of MATLAB" from 2nd May 2023 to 10th May 2023 conducted by Mohamed Sathak A.J. College of Engineering, Chennai.

Dr. K.S. Srinivasan
PRINCIPAL

Dr.A.Kamalaselvan
Head –Technology Centre & Industrial Relations

Mr.N.Suresh
Course Co-ordinator

PRINCIPAL
Mohamed Sathak A.J. College of Engineering
No.34, Rajiv Gandhi Salai (OMR)
Sipcot - IT Highway Egattur,
Chennai - 603 103.

From

Mrs.Anupreyaa.K,

EEE Department,

MSAJCE,

Chennai.

To

The Principal,

MSAJCE,

Chennai.

Respected sir,

Sub: Permission for conducting Technology Center Course regarding.

We have planned to conduct Technology Center Course - Fundamentals of AutoCAD for

the students of III year EEE department in the academic year 2022-2023(even semester). The

selected course will be useful for our students. Kindly grant us permission to conduct the course.

Thank you

Yours faithfully,

Anupreyaa. K

MOHAMED SATHAK A J COLLEGE OF ENGINEERING, Chennai - 603103

COURSE CONTENT

Department of Electrical and Electronics Engineering

Class :	III year/VI sem		Academic Year:	2022-23

Name of the Value Added Course	Fundamentals of AutoCAD	Name of the handling Faculty	Mrs.Anupreyaa.K

Course Objective
To apply basic CAD concepts to develop and construct accurate 2D geometry .
To create 2D drawings and figures.
To manipulate and edit 2D drawing and figures.

Course Outcome
Understand the AutoCAD environment by creating new drawings, opening existing drawings and saving drawings
Create 2D models of Engineering components
Use the software package for drafting and modelling

Lesson Plan for VAC

Sl. No.	Topic	T / R* Book	Periods Required	Mode of Teaching
1	Introduction to CAD	T1	3	PPT, Simulation
2	AutoCAD – BASICS	T1	3	PPT, Simulation
3	Exercise on standard commands	T1	3	PPT, Simulation
4	2 - D Figures Using ACAD	T1	3	PPT, Simulation
5	Exercise on 2D drawing commands	T1	3	PPT, Simulation
6	Exercise on Modify 2D commands	T1	3	PPT, Simulation
7	Exercise on Dimensioning commands	T1	3	PPT, Simulation
8	Exercise on Formatting commands	T1	3	PPT, Simulation
9	Exercise on Insert commands	T1	3	PPT, Simulation
10	Isometric Drawings Using ACAD	T1	3	PPT, Simulation

Quiz / Mini Projects / Model Develpoed(if any
Quiz

PRINCIPAL
Mohamed Sathak A.J. College of Engineering
Rajiv Gandhi Salai (OMR)
T Highway Egattur,
nai - 603103.

| **Text / Reference Books** |
|---|
| 1 | Engineering graphics with Auto CAD- R.B. Choudary/Anuradha Publishers |

Website / URL References
1	https://sourcecad.com/courses/autocad-electrical-course/

AutoCAD Syllabus

Objectives:

To develop skill to use software to create 2D models.

Syllabus:

1. Introduction to CAD

   CAD- Reason for implementing CAD system- Application of CAD – Benefits – Limitation- CAD software - Learning about the user interface of AutoCAD, such as panels, ribbon, model space - Types and structures of drawings in AutoCAD - Learning basic drawing tools.

2. Draw commands

   Understanding the concept of drawing a toolbar - Learning about line command, polyline command, and circle command - Understanding the concept of other commands - Arc command - Text and rectangle command

3. Cartesian Coordinate System

   Developing different designs - Methods of developing title block Setting up attributes - Set up layers of industry standards - Development of plans and elevations

4. Modify commands

   Use of erase commands - Selection of multiple objects - Move and copy command - The distance method - The two points method - Trim and extend

5. Text command layer blocks

   Understanding the concept of creating, renaming, and removing layers - Specifying the default properties - Sort, filter, and group layer names - Dimension objects - Layers visibility

Reference Books:

1. Engineering graphics with Auto CAD- R.B. Choudary/Anuradha Publishes

Outcomes:

- Ability to use the software packers for drafting and modelling
- Ability to create 2D models of Engineering Components

MOHAMED SATHAK A J COLLEGE OF ENGINEERING

DEPARTMENT OF EEE

TCC-FUNDAMENTALS OF AutoCAD

ATTENDANCE SHEET

YEAR/SEM : III / VI   **AY: 2022-23**

S.NO	REG. NO	STUDENT NAME	PRESENT (32 HRS)	ATTENDANCE PERCENTAGE %
1	311820105001	ARSHAD.K	32	100
2	311820105002	ASSLAM.A	28	87.5
3	311820105003	DIVYASRI S	32	100
4	311820105004	HARISHANKAR.V	32	100
5	311820105005	IMRAN R	32	100
6	311820105006	MOHAMED RASITH	28	87.5
7	311820105009	SWETHA MARIA FAUSTINA.S	32	100
8	311820105010	SYED HARRUN	28	87.5
9	311820105011	THOUFIQ AHAMED	28	87.5
10	311820105012	THOWFIQ M	32	100
11	311820105301	JUNAIDEEN.M	28	87.5
12	311820105302	MOHAMED FAZIL. M	28	87.5
13	311820105303	MOHAMED SAMEER. L	32	100
14	311820105304	MOHAMED YAHYA. A	32	100
15	311820105305	MUHAMMED IMRAN. K	28	87.5
16	311820105306	MUZAMMIL HAQ.	32	100
17	311820105307	SHAHUL HAMEED. M.A.K	28	87.5
18	311820105308	SYED AFRIDI. P	30	93.75
19	311820105701	MOHAMED UNIAS	32	100

FACULTY-IN-CHARGE

PRINCIPAL
Mohamed Sathak A.J. College of Engineering
No.34, Rajiv Gandhi Salai (OMR)
Sipcot - IT Highway Egattur,
Chenai - 603103.

HOD Dr. JEHA J

MOHAMED SATHAK A.J. COLLEGE OF ENGINEERING, Chennai - 603103

COE- STUDENTS NAME LIST

Department of Electrical and Electronics Engineering

Academic Year: 2022-2023

Name of the COE Course : Fundamentals of AutoCAD

Yr / Sem : III/VI			Faculty In-charge :	Mrs.ANUPREYAA.K	
Location : MSAJCE			Duration :	32 hrs	
Sl.No	Name of the Student		Register No.	Status of Qualifying	Sign of Student
1	ARSHAD.K		311820105001	Qualifyed	
2	ASSLAM.A		311820105002	Qualifyed	
3	DIVYASRI S		311820105003	Qualifyed	
4	HARISHANKAR.V		311820105004	Qualifyed	
5	IMRAN R		311820105005	Qualifyed	
6	MOHAMED RASITH		311820105006	Qualifyed	
7	SWETHA MARIA FAUSTINA.S		311820105009	Qualifyed	
8	SYED HARRUN		311820105010	Qualifyed	
9	THOUFIQ AHAMED		311820105011	Qualifyed	
10	THOWFIQ M		311820105012	Qualifyed	
11	JUNAIDEEN.M		311820105301	Qualifyed	
12	MOHAMED FAZIL. M		311820105302	Qualifyed	
13	MOHAMED SAMEER. L		311820105303	Qualifyed	
14	MOHAMED YAHYA. A		311820105304	Qualifyed	
15	MUHAMMED IMRAN. K		311820105305	Qualifyed	
16	MUZAMMIL HAQ.		311820105306	Qualifyed	
17	SHAHUL HAMEED. M.A.K		311820105307	Qualifyed	
18	SYED AFRIDI. P		311820105308	Qualifyed	
19	MOHAMED UNIAS		311820105701	Qualifyed	

Head-Training

Signature of HOD with date
Dr. JEHA. J
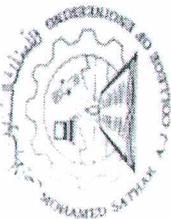
MOHAMED SATHAK
A.J. COLLEGE OF ENGINEERING

34, Rajiv Gandhi Salai (OMR), Siruseri IT Park, Chennai - 603 103.

Certificate of Completion

This is to certify that Mr./Ms. ARSHAD.K IIIrd year EEE has successfully completed the training program on "Fundamentals of AutoCAD" from 2nd May 2023 to 10th May 2023 conducted by Mohamed Sathak A.J. College of Engineering, Chennai.

Mrs.K.Anupriyaa
Course Co-ordinator

Dr.A.Kamalaselvan
Head —Technology Centre & Industrial Relations

Dr. K.S. Srinivasan
PRINCIPAL

PRINCIPAL
Mohamed Sathak A.J. College of Engineering
No 34, Rajiv Gandhi Salai OMR,
Sipcot IT Highway Egattur
Chenai - 603103.

1.3.2.

From   Date: 08-08-2022

    Dr. Prasath S,

    Associate Professor and Head,

    Department of Mechanical Engineering,

    Mohamed Sathak AJ College of Engineering,

    Siruseri (IT Park), Chennai -603 103.

To   *Permitted*

    The Principal,   08/08/22

    Mohamed Sathak AJ College of Engineering,

    Siruseri (IT Park), Chennai -603 103.

Respected Sir,

    Sub: Permission for conducting Add on/Value Added course-reg.

    With reference to the above cited subject, we have proposed to conduct Add on/ Value Added Courses for the students of II Year Mechanical department in the academic year 2022-23 (Odd Sem) through offline. The selected course is useful to the students for learning the emerging technical fields. Kindly grant me the permission.

S.No	Title of the course	Year/Branch	Durations
1.	3D Modelling using CATIA	II/Mech	30 Hrs

Thanking You

Yours faithfully

S.P.R

8|8|22

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MOHAMED SATHAK A J COLLEGE OF ENGINEERING

Chennai-603103

DEPARTMENT OF MECHANICAL ENGINEERING

Ref: MSAJCE/MECH/CIR/03   Date: 22-08-2022

CIRCULAR

We the department of Mechanical Engineering, planned to conduct the Add on/Value added course for the below mentioned students in the academic year of 2022-23. Kindly follow the below schedule to complete the course successfully.

S.No	Title of the Course	Year/Branch	Course Co-ordinator
1	3D Modelling using CATIA	II/Mech	Mr. Vinothkumar KK
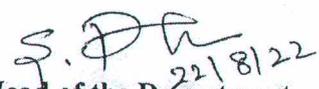
Head of the Department

Head of the Department
Department of Mechinical Engineering
Mohamed Sathak A.J.College of Engineering
Egattur, Chennai - 603 103.

Copy to

Principal Office
Class Coordinator
Dept File

PRINCIPAL
Mohamed Sathak A.J. College of Engineering
Rajiv Gandhi Salai (OMR)
Egattur,

MOHAMED SATHAK A.J. COLLEGE OF ENGINEERING, Chennai - 603103
STUDENTS NAME LIST
Department of Mechanical Engineering

Academic Year: 2022-2023 Odd Sem

Name of the Value Added Course / COE : 3D Modelling Using CATIA			
Yr / Sem : II / III			
Location : Room No:102		Mr. K.K.Vinothkumar	
		30 Hrs	
Sl.No	Register No.	Name of the Student	Signature
1	311821114001	AADIL T	
2	311821114002	ABDUL KAFFAR	
3	311821114003	DHANUSH ADITHYA S	
4	311821114004	GOKULNATH.D	
5	311821114005	HAJI PUTHU MYDEEN . S	
6	311821114006	HARI M	
7	311821114007	JASWIN KUMAR B	
8	311821114009	MOHAMED ANSARI N	
9	311821114010	MOHAMED FAZID S	
10	311821114011	MOHAMMED SAFREES	
11	311821114012	NARESH.P	
12	311821114014	SANDEEP . S	
13	311821114015	SEYED AHAMED S .T	
14	311821114016	SHAIK IRFAN	
15	311821114017	SHAILESH KUMAR P	
16	311821114018	UDHAYAKUMAR.G	
17	311821114307	SYED MOHAMMED	
18	311821114301	ABDUR RAHMAN J	
19	311821114305	SHAMMER AHAMED	
20	311821114303	MOHAMED ANWAR TA	
21	311821114304	RASOOL MOHAMED	
22	311821114701	MOHAMED SAMEEM P	
23	311821114302	CHANDRU P	
24	311821114306	SWARUPAMALVAN R	

K.K.V
Head-Training

Format No.: TLP 20

Head of the Department
DEPARTMENT OF MECHANICAL
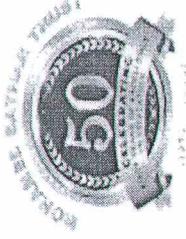Mohamed Sathak A.J.College of Engineering
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Chenai - 603103.

3D Modeling using CATIA - Syllabus

L T P C

2 0 0 2

OBJECTIVES:

To impart knowledge on how to prepare drawings for various mechanical components using any commercially available 3D modeling software's

Unit I Introduction

4

Concept of Parametric Modeling, Feature Based Modeling, User Interface, Mouse operations, File types and Management, drawing profiles. Major user industries of Catia.

Unit II Drafting

4

Creating Drawings, Creating Drawing Sheets, Drawing Views, Creating Drawing Views, Folding Lines, View Plane Definition

Unit II Sketcher

6

Profile toolbar, operation (corner, chamfer, relimitations, transformations, project 3D element), constraints, types of constraints, workbench, sketch tools, tools (Sketch solving status, sketch analysis, output feature), visualization toolbar, user selection filter.

UNIT IV Solid modeling

6

Material Addition and Removal (Pad, Pocket, Shaft, Groove), Sketch and Positioned Sketch, Types of Fillets, Types of Chamfer, Types of Hole, Pattern (Rectangular, Circular, User),Thread/Tap, Datum Features (Plane, Axes, Points),Simple Draft. Frequently used commands for Machined components.

Unit V Creation of 3D Parts

10

Flange Coupling, Plummer Block, Screw Jack, Piston, Stuffing Box

Total: 30 Hours

OUTCOMES:

On completion of the course the student will be able to

- Use the modern engineering tools necessary for engineering practice

- Draw 2D part drawings, sectional views, and assembly drawings as per standards.

- Create 3D Model on any CAD software

References :

1. CATIA V5 Design Fundamentals – Jaecheol Koh, Publisher: ONSIA, Inc. (www.e-onsia.com)
2. CATIA V5 Surface Design - Student Handbook Version 5 Release 19.

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Sipcot - IT Highway Egattur,
Chenai - 603103.

MOHAMED SATHAK A J COLLEGE OF ENGINEERING, Chennai - 603103
COURSE CONTENT
Department of Mechanical Engineering

Class : II Year/ III Semester

Academic Year: 2022-23 Odd Sem

Name of the Value Added Course	3D Modelling Using CATIA	Name of the handling Faculty	Mr. K.K.Vinothkumar

Course Objective
• To impart knowledge on how to prepare drawings for various mechanical components using any commercially available 3D modeling software's

Course Outcome
Upon completion of the course,
• Use the modern engineering tools necessary for engineering practice
• Draw 2D part drawings, sectional views, and assembly drawings as per standards.
• Create 3D Model on any CAD software

Lesson Plan for VAC

Sl. No.	Topic	T / R* Book	Periods Required	Mode of Teaching
1	Introduction to Solid Modeling.	T	1	PPT
2	Concept of Parametric Modeling, Feature Based Modeling, User Interface	T	1	PPT
3	Creating Drawings, Creating Drawing Sheets, Drawing Views, Creating Drawing Views	T	1	PPT
4	Folding Lines, View Plane Definition	T	1	PPT
5	Profile toolbar, operation (corner, chamfer, relimitations, transformations, project 3D element),	T	1	PPT
6	constraints, types of constraints, workbench, sketch tools, tools (Sketch solving status, sketch analysis, output feature), visualization toolbar, user selection filter.	T	2	PPT
7	Material Addition and Removal (Pad, Pocket, Shaft, Groove), Sketch and Positioned Sketch	T	2	PPT
8	Types of Fillets, Types of Chamfer, Types of Hole, Pattern (Rectangular, Circular, User) ,	T	2	PPT
9	Thread/Tap, Datum Features (Plane, Axes, Points),Simple Draft.	T	1	PPT
10	Frequently used commands for Machined components	T	1	PPT
11	Part Drawing	T	2	-
12	Flange Coupling - Part Drawing	T	3	-
13	Plummer Block - Part Drawing	T	3	-
14	Screw Jack - Part Drawing	T	3	-
15	Piston - Part Drawing	T	3	-
16	Stuffing Box - Part Drawing	T	3	-

Quiz / Mini Projects / Model Develpoed if any
Model Drawings Completed

Text / Reference Books	
1	CATIA V5 Design Fundamentals – Jaecheol Koh, Publisher: ONSIA Inc. (www.e-onsia.com)
2	CATIA V5 Surface Design - Student Handbook Version 5 Release 19

Website / URL References	
1	https://nptel.ac.in/courses/112104031
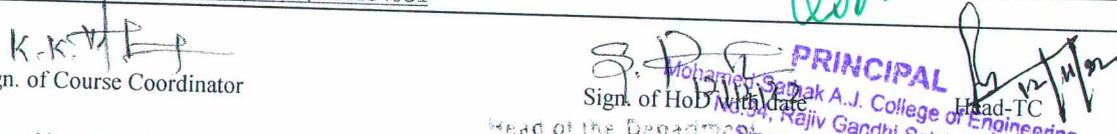
K.K.V

Sign. of Course Coordinator

Sign. of HoD with date

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No.54, Rajiv Gandhi Salai (OMR)
Sipcot - IT Highway, Siruseri,
Chennai - 603103.

Head-TC

Head of the Department
DEPARTMENT OF MECHANICAL ENGINEERING
Mohamed Sathak A.J.College of Engineering
Siruseri IT Park, Chennai - 603 103

Format No.: TLP 21

Rev. No.: 1.0

Rev. Date:04.01.21

MOHAMED SATHAK A J COLLEGE OF ENGINEERING
DEPARTMENT OF MECHANICAL ENGINEERING
COE CATIA- STUDENTS ATTENDANCE

S.No	Reg.No	Student Name	August		Sep			Oct			Nov				Dec		No of Absent
		Date	22	29	05	12	19	10	17	31	07	14	21	28	05	12	
		Period	7,8	7,8	7,8	7,8	7,8	7,8	7,8	7,8	7,8	7,8	7,8	7,8	7,8	7,8	
1	311820114001	AADIL T	a	/	/	/	/	/	/	/	/	/	/	/	/	/	
2	311820114002	ABDUL KAFFAR	a	/	/	/	/	/	/	/	/	/	/	/	/	/	
3	311820114003	DHANUSH ADITHYA S	/	/	/	/	/	/	/	a	/	/	/	/	/	/	
4	311820114004	GOKULNATH.D	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
5	311820114005	HAJI PUTHU MYDEEN . S	a	a	a	/	a	/	/	/	/	/	/	/	/	/	
6	311820114006	HARI M	/	/	a	/	/	a	/	/	/	/	/	/	/	/	
7	311820114007	JASWIN KUMAR B	a	a	a	a	/	/	/	/	/	/	/	/	/	/	
8	311820114008	MOHAMED ANSARI N	a	a	a	/	/	/	/	/	/	/	/	/	/	/	
9	311820114009	MOHAMED FAZID S	/	.	a	/	/	/	/	/	/	/	/	/	/	/	
10	311820114010	MOHAMMED SAFREES	a	a	/	/	/	/	/	/	/	/	/	a	/	/	
11	311820114011	NARESH.P	a	/	a	/	/	/	/	/	/	/	/	/	/	/	
12	311820114012	SANDEEP . S	a	/	a	a	a	/	/	/	/	a	a	/	/	/	
13	311820114013	SEYED AHAMED S .T	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
14	311820114014	SHA IRFAN	/	/	/	/	/	/	/	/	/	a	a	/	/	/	
15	311820114015	LESH KUMAR P	/	/	/	/	a	a	/	/	/	/	a	a	a	/	
16	311820114016	JAYAKUMAR.G	a	/	a	/	/	/	/	/	/	/	/	/	/	/	
17	311820114017	MOHAMMED	/	/	/	/	/	/	/	/	/	/	/	/	/	a	
18	311820114018	ABDUR RAHMAN J	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
19	311820114304	SHAMMER AHAMED	/	/	a	/	a	/	/	/	/	/	/	/	/	/	
20	311820114305	MOHAMED ANWAR TA	/	/	/	/	/	a	/	/	/	/	/	/	/	/	
21	311820114305	RASOOL MOHAMED	/	/	/	/	a	a	/	/	/	/	/	/	/	/	
22	311820114305	MOHAMED SAMEEM P	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
23	311820114306	CHANDRU P	/	/	/	/	/	/	/	/	/	/	/	/	a	a	
24	311820114307	SWARUPAMALVAN R	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
		No of Absent	9	4	7	2	3	3	1	01	1	01	01	02	01	0	

K.K.
Sign. of Course Coordinator

MOHAMED SATHAK A.J. COLLEGE OF ENGINEERING, Chennai - 603103

Department of Mechanical Engineering
ATTENDANCE REPORT

2022-23 Odd Sem

Name of the Value Added Course / COE : 3D Modelling Using CATIA				
Yr / Sem : II / III			Mr. K.K.Vinothkumar	
Location : Room No:102			30 Hrs	
Sl.No	Register No.	Name of the Student	Total Hr	Attended Hr
1	311821114001	AADIL T	30	28
2	311821114002	ABDUL KAFFAR	30	28
3	311821114003	DHANUSH ADITHYA S	30	28
4	311821114004	GOKULNATH.D	30	30
5	311821114005	HAJI PUTHU MYDEEN . S	30	24
6	311821114006	HARI M	30	26
7	311821114007	JASWIN KUMAR B	30	24
8	311821114009	MOHAMED ANSARI N	30	26
9	311821114010	MOHAMED FAZID S	30	28
10	311821114011	MOHAMMED SAFREES	30	24
11	311821114012	NARESH.P	30	24
12	311821114014	SANDEEP . S	30	22
13	311821114015	SEYED AHAMED S .T	30	28
14	311821114016	SHAIK IRFAN	30	28
15	311821114017	SHAILESH KUMAR P	30	26
16	311821114018	UDHAYAKUMAR.G	30	24
17	311821114307	SYED MOHAMMED	30	28
18	311821114301	ABDUR RAHMAN J	30	28
19	311821114305	SHAMMER AHAMED	30	30
20	311821114303	MOHAMED ANWAR TA	30	28
21	311821114304	RASOOL MOHAMED	30	30
22	311821114701	MOHAMED SAMEEM P	30	26
23	311821114302	CHANDRU P	30	30
24	311821114306	SWARUPAMALVAN R	30	28
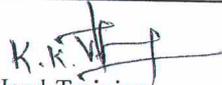
K.K.V

Head-Training

S. P 12/12/22

Signature of HoD with date

Head of the Department

DEPARTMENT OF MECHANIC...
Mohamed Sathak A.J.College of Engineering
Siruseri IT Park, Chennai - 603 103

Format No.: TLP 20

Rev.Date: 04.01.21

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Chennai - 603103.

MOHAMED SATHAK A.J. COLLEGE OF ENGINEERING, Chennai - 603103
Department of Mechanical Engineering
ASSESSMENT MARKS

Academic Year: 2022-23 Odd Sem

Name of the Value Added Course / COE : 3D Modelling Using CATIA			
Yr / Sem : II / III		Mr. K.K.Vinothkumar	
Location : Room No:102		30 Hrs	
Sl.No	Register No.	Name of the Student	Assessment Marks (50)
1	311821114001	AADIL T	32
2	311821114002	ABDUL KAFFAR	32
3	311821114003	DHANUSH ADITHYA S	45
4	311821114004	GOKULNATH.D	28
5	311821114005	HAJI PUTHU MYDEEN . S	26
6	311821114006	HARI M	32
7	311821114007	JASWIN KUMAR B	26
8	311821114009	MOHAMED ANSARI N	28
9	311821114010	MOHAMED FAZID S	42
10	311821114011	MOHAMMED SAFREES	38
11	311821114012	NARESH.P	35
12	311821114014	SANDEEP . S	30
13	311821114015	SEYED AHAMED S .T	31
14	311821114016	SHAIK IRFAN	30
15	311821114017	SHAILESH KUMAR P	43
16	311821114018	UDHAYAKUMAR.G	35
17	311821114307	SYED MOHAMMED	37
18	311821114301	ABDUR RAHMAN J	36
19	311821114305	SHAMMER AHAMED	30
20	311821114303	MOHAMED ANWAR TA	33
21	311821114304	RASOOL MOHAMED	32
22	311821114701	MOHAMED SAMEEM P	30
23	311821114302	CHANDRU P	35
24	311821114306	SWARUPAMALVAN R	30

K.K.
Head-Training

Signature of HoD with date
Head of the Department
DEPARTMENT OF MECHANICAL
Mohamed Sathak A.J.College of Engineering
Siruseri IT Park, Chennai - 603 103

Format No.: TLP 20

Rev.Date: 04.01.21

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Mohamed Sathak A.J. College of Engineering
No.34, Rajiv Gandhi Salai (OMR)
Sipcot - IT Highway Egattur,
Chenai - 603103.

Department of Mechanical Engineering
Status of Qualifying List

			Academic Year:	2022-23 Odd Sem

Name of the Value Added Course / COE : 3D Modelling Using CATIA				
Yr / Sem : II / III			Mr. K.K.Vinothkumar	
Location : Room No:102			30 Hrs	
Sl.No	Name of the Student	Register No.	Status of Qualifying	Student Signature
1	AADIL T	311821114001	PASS	
2	ABDUL KAFFAR	311821114002	PASS	
3	DHANUSH ADITHYA S	311821114003	PASS	
4	GOKULNATH.D	311821114004	PASS	
5	HAJI PUTHU MYDEEN . S	311821114005	PASS	
6	HARI M	311821114006	PASS	
7	JASWIN KUMAR B	311821114007	PASS	
8	MOHAMED ANSARI N	311821114009	PASS	
9	MOHAMED FAZID S	311821114010	PASS	
10	MOHAMMED SAFREES	311821114011	PASS	
11	NARESH.P	311821114012	PASS	
12	SANDEEP . S	311821114014	PASS	
13	SEYED AHAMED S .T	311821114015	PASS	
14	SHAIK IRFAN	311821114016	PASS	
15	SHAILESH KUMAR P	311821114017	PASS	
16	UDHAYAKUMAR.G	311821114018	PASS	
17	SYED MOHAMMED	311821114307	PASS	
18	ABDUR RAHMAN J	311821114301	PASS	
19	SHAMMER AHAMED	311821114305	PASS	
20	MOHAMED ANWAR TA	311821114303	PASS	
21	RASOOL MOHAMED	311821114304	PASS	
22	MOHAMED SAMEEM P	311821114701	PASS	
23	CHANDRU P	311821114302	PASS	
24	SWARUPAMALVAN R	311821114306	PASS	

K. K. Y.
Head-Training

Signature of HoD with date
Head of the Department

Format No.: TLP 20

Rev.No.: 01   DEPARTMENT OF MECHANICAL
Mohamed Sathak A.J.College of Engineering
Sipcot IT Park, Chennai - 603 103

Rev.Date: 04.01.21

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Sipcot - IT Highway Egattur,
Chenai - 603103.

MOHAMED SATHAK
A.J. COLLEGE OF ENGINEERING
Siruseri IT Park, OMR, Chennai - 603103.

MOHAMED SATHAK TRUST
CHENNAI - 600 006

Golden Jubilee Year
1973 - 2022
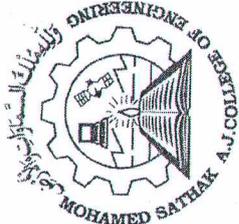
Certificate of Completion

This is to certify that Mr. **Aadil T, II Year Mechanical** student of Mohamed Sathak A J College of Engineering, Chennai has successfully completed the training program on **"3D Modelling using CATIA"** from August 2022 to November 2022. Conducted by Centre for Computer Aided Engineering, Department of Mechanical Engineering.

Mr.K.K.Vinothkumar
Coure Co - ordinator

Dr.S.Prasath
Head of the Department

Dr. I. Manju
Head - Technology Centre & Industry Relations

Dr. K.S. Srinivasan
Principal

PRINCIPAL
Mohamed Sathak A.J. College of Engineering
No.34, Rajiv Gandhi Salai, OMR,
Sipcot IT Highway Egattur,
Chenai - 603103.

MOHAMED SATHAK

A.J. COLLEGE OF ENGINEERING

Siruseri IT Park, OMR, Chennai - 603103.

Golden Jubilee Year
1973 - 2022

Certificate of Completion

This is to certify that Mr. __DHANUSH ADITHYA S, II Year Mechanical__ student of

Mohamed Sathak A J College of Engineering, Chennai has successfully completed the training

program on **"3D Modelling using CATIA"** from August 2022 to November 2022. Conducted by

Centre for Computer Aided Engineering, Department of Mechanical Engineering.

Mr.K.Vinothkumar
Course Co - ordinator

Dr.S.Prasath
Head of the Department

Dr. I. Manju
Head - Technology Centre & Industry Relations

Dr. K.S. Srinivasan
Principal

CII

Department of Mechanical Engineering

3D Modelling using CATIA – Question Paper

1. Draw the modelling and assembly of the plumber block with the given dimensions in mm. (50)
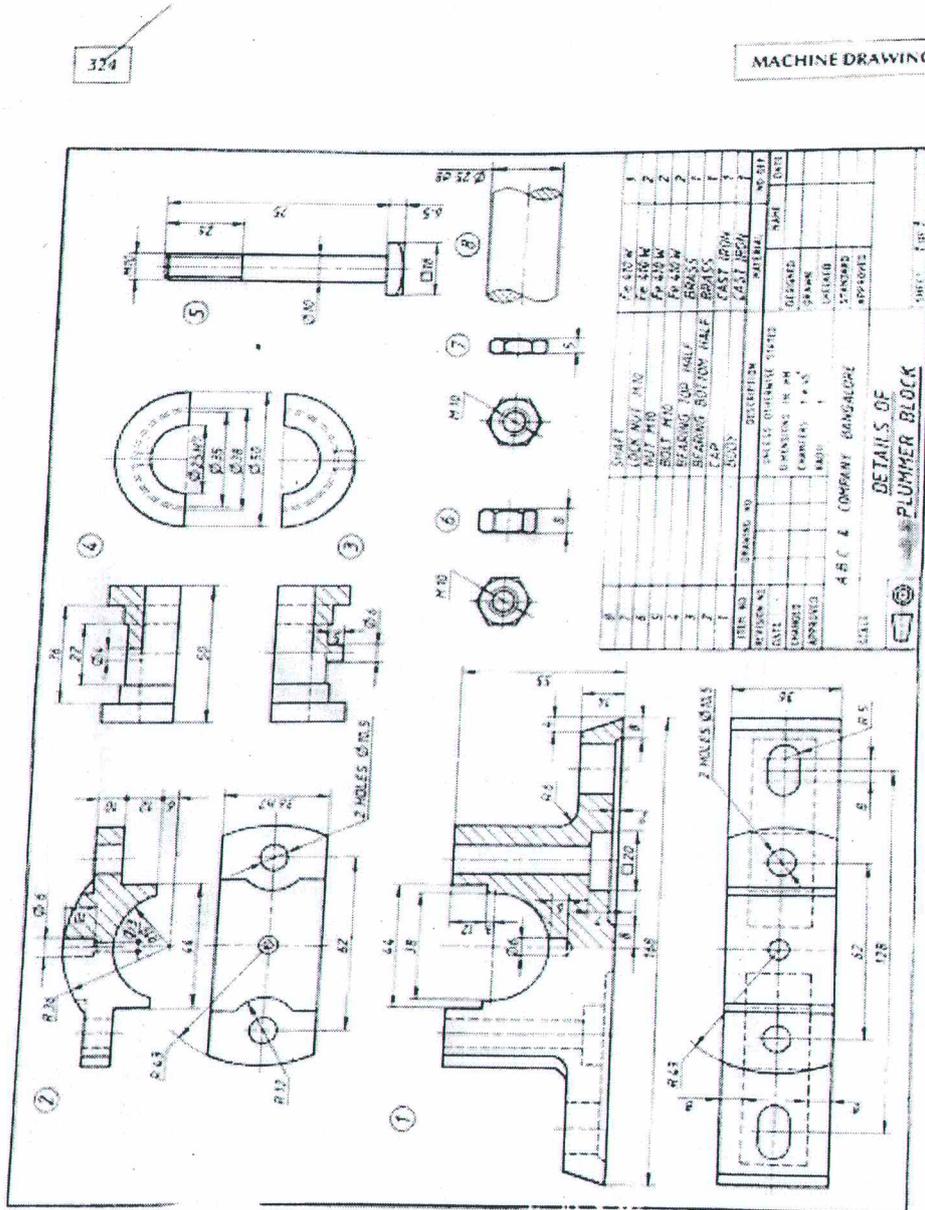
Details of a Plummer Block

BODY
xy plane
yz plane
zx plane
Axis Systems
PartBody

311821114003

Product
BODY (BODY.1)
BRASS (BRASS.1)
cao (cao.1)
BOLT (BOLT.1)
BOLT (BOLT.2)
Part4 (Part4.1)
Part4 (Part4.2)
NUT2 (NUT2.1)
NUT2 (NUT2.2)
Constraints
Applications

311821114003
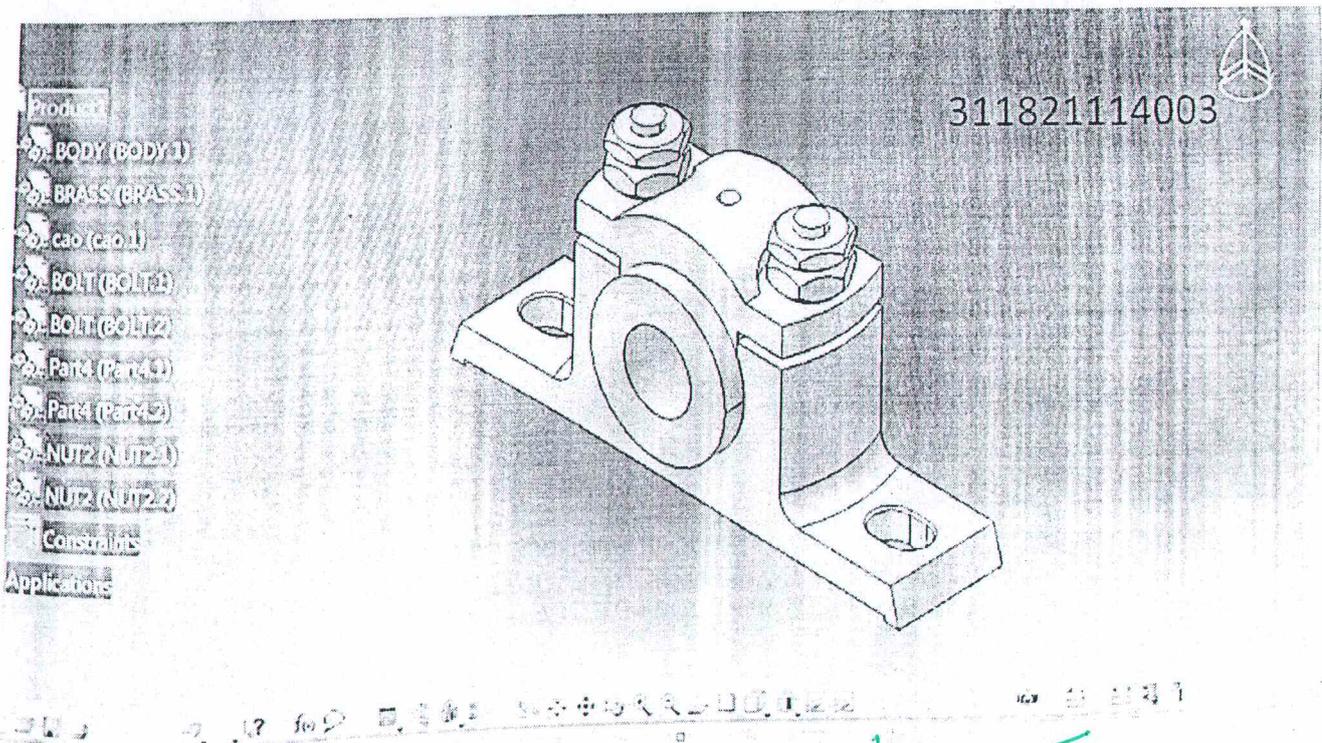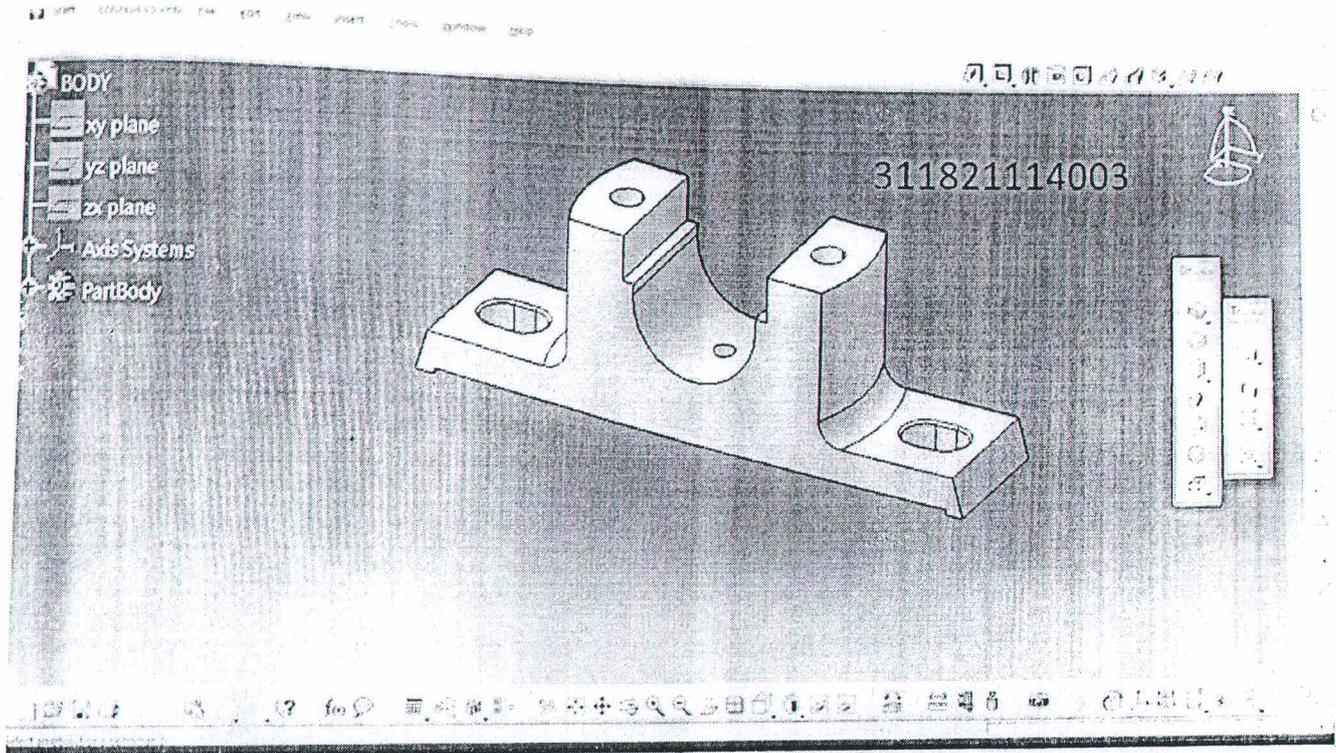
From

Head of the Department

Department of Computer Science and Engineering

MSAJCE

To

The Principal

MSAJCE

Respected sir,

Sub : Conducting **Value Added Course** – Reg.

We have selected the following subject as Value Added Course for the upcoming semester (ODD SEM) (AY: 2022-2023). So, I kindly request you to approve the same to update in the **Anna University web portal.**

IV – Year CSE (R-2017)

1. IVA018 - Advanced Python and Introduction to Machine Learning

Thanking you
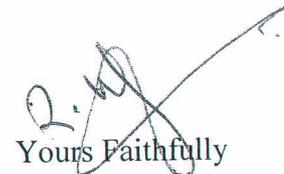
Yours Faithfully

CSE- VAC

MOHAMED SATHAK A J COLLEGE OF ENGINEERING, Chennai - 603103

CONSOLIDATED REPORT OF VALUE ADDED COURSES OFFERED FOR THE PERIOD OF ODD / EVEN SEM 2022 / 2023

Department of Computer Science and Engineering

S.No	Name of the Course	Year	Sem	Period	No.of students		Faculty Incharge
					Enrolled	Qualified	
1	Advanced Python and Introduction to Machine Learning	IV	VII	12-08-2022 to 14-10-2022	52	52	Sumana T

Sign. of HoD with date

Head-Technology Centers

Rev No 1 0

Rev Date : 04 01 21

Format No TLP 21

MOHAMED SATHAK A.J. COLLEGE OF ENGINEERING, Chennai- 603103
VAC - STUDENTS NAME LIST
Department of Computer Science and Engineering
Academic Year: 2022-23

Name of the Value Added Course : Advanced Python and Introduction to

Yr / Sem : IV/VII		Faculty In-	Sumana T	
Location : lab 1& lab2		Duration :	2022-2023	
Sl.No	Name of the Student	Register No.	Status of Qualifying	Sign of Student
1	AFRAR AHAMED I	311819104002	YES	
2	AMJATH M	311819104003	YES	
3	ANUM FARHEEN	311819104004	YES	
4	ARIHARAN T	311819104005	YES	
5	ASHFAQUE AHAMED F	31819104006	YES	
6	ATIF AHMED ANSARI	31819104007	YES	
7	BAZEER AHAMAD V	31819104008	YES	
8	FADAL RAZIN S	31819104009	YES	
9	FARDEEN SHA M	31819104010	YES	
10	FAUWAAZ ASHAL	31819104011	YES	
11	HAMEED JAUFAR HAJA ALADUIN	31819104012	YES	
12	HAMZA ADHNAN SHAKIR	31819104013	YES	
13	HARINE R	31819104015	YES	
14	HUSSAINA PARVEEN J B	31819104016	YES	
15	HYDER ALI M	31819104017	YES	
16	JAVID BASHA J	31819104018	YES	
17	KARTHIKEYAN R	31819104019	YES	
18	MOHAMED AADIL A	311819104020	YES	
19	MOHAMED ABUL FAIZ S	31819104021	YES	
20	MOHAMED AKIL H	31819104022	YES	
21	MOHAMED FAIZ ALI M	31819104023	YES	
22	MOHAMED KHAN D	31819104024	YES	
23	MOHAMED MUSARAF K	31819104025	YES	
24	MUHAMMAD MUNSHID P P	31819104026	YES	
25	MUHAMMED SHIBIL C V	31819104027	YES	
26	MUSTHABUSHIRA S M	31819104028	YES	
27	NAFISA MAHIRA K M	311819104029	YES	
28	NAVANEETHAN P	31819104030	YES	
29	NAVEENA R	311819104031	YES	
30	NITHISH B	31819104032	YES	
31	NOWFAL K	311819104033	YES	
32	PRAKASH T	311819104034	YES	
33	PRATHIKSHA S	31819104035	YES	
34	ROHITH E S	31819104037	YES	
35	SAJITHA N	31819104038	YES	
36	SALAMATH N	311819104039	YES	
37	SALMAN FARISH A J	311819104040	YES	

B.E COMPUTER SCIENCE AND ENGINEERING (REGULATIONS 2017)
VALUE ADDED COURSE

	L	T	P	C
IVA018 Advanced Python and Introduction to Machine Learning	0	0	2	1

Advanced Python and Introduction to Machine Learning Course Curriculum

Objective of this course

- To learn Advance mathematical libraries of python.
- To understand data exploration and data wrangling.
- To perform data visualization ,experting and importing file contents.
- To understand basics of machine learning

Numpy   4 + 2

Creating Arrays-Numpy Data types-Array Mathematics-Array Manipulation-Subsetting,Slicing,Indexing-boolean Indexing-Array Manipulation –Reshaping,Transposingm,Splitting and combining arrays-Inspecting Array and aggregating array.

Pandas   4 + 2

Series- Dataframe-Importing pandas-Dictionary into data frames ,read and write to CSV and Excel,Selecting,Boolean Indexing,Setting,dropping,soring,filling missing values,getting dataframe information and retrieving series,summary and applying lambda function.

Plotting and Visualization   4 + 2

Figures-Subplot-Colors-Markers-Linestyles-Ticks-Labels-Legens-drawing subplots-Lineplot-Barplot-Scatter Plot-Histograms.

Object Oriented Programming   4 + 2

OOPS concepts- creating class-Object-accessing class members-inheritance-abstract class.-

Introduction to Machine Learning   4 + 2

Introduction to Machine Learning – types of learning – supervised – unsupervised – K means Clustering – Hierarchical Clustering.

Mini Project

Pre requisite : Python Programming Total period: 20+10(practice& project)= 30 periods

MOHAMED SATHAK A J COLLEGE OF ENGINEERING, Chennai - 603103

VALUE ADDED COURSE - COURSE CONTENT
IVA018 Advanced Pyhton and Introduction to Machine Learning
Department of Computer Science and Engineering

Class : IV/VII

Academic Year: 2022-23

Name of the Value Added Course	Advanced Python and Introduction to Machine Learning	Name of the handling Faculty	SUMANA T

Course Objective
1. To expose students with the basics of managing the Numpy
2.To explore the various analysis of Pandas
3.To examine the basic of Plotting and Visualization
4. To understand the overview of Object Oriented Programming Concepts
5. To understand the Machine Learning concepts

Course Outcome
1 Explain the different Numpy functions
2 Buid the applion on Pandas functions
3 show the Plotting and Visualization
4 Devlop the Object Oriented Programming
5 judge the Machine Learning concepts

Lesson Plan for VAC				
SI. No.	Topic	T / R* Book	Periods Requir	Mode of Teaching
1	Creating Arrays-Numpy Data Types	T1	1	PPT
2	Array Mathematics-Array Manipulation	T1	1	PPT
3	Subsetting, slicing , Indexing-boolean	T1	1	PPT
4	Indexing-Array Manipulation	T1	1	PPT
5	Reshaping,Transposing	T1	1	PPT
6	Splitting and combining arrays	T1	1	PPT
7	Inspecting Array and aggregation array	T1	1	PPT
8	Series-Dataframe	T1	1	PPT
9	Importing pandas- Dictionary into data frames	T1	1	PPT
10	Read and write to CSV and excel	T1	1	PPT
11	Selecting, boolean indexing	T1	1	PPT
12	Setting, dropping,soring,filling missing values	T1	1	PPT
13	Getting dataframe information and retrieving series,	T1	1	PPT
14	Summary and applying lambda function.	T1	1	PPT
15	Figures-Subplot-Colors _ markers	T1	1	PPT
16	Line styles-ticks-Labels	T1	1	PPT
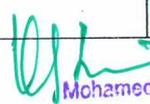
17	legends -drawing subplots	T1	1	PPT
18	Line Plotbarplot -Scatter plot	T1	1	PPT
19	histograms	T1	1	PPT
20	OOPS concepts	T1	1	PPT
21	creating class-Object	T1	1	PPT
22	accessing class members	T1	1	PPT
23	inheritance	T1	1	PPT
24	Abstract class	T1	1	PPT
25	Introduction to Machine Learning	T2	1	PPT
26	Kmeans Clustering	T2	1	PPT
27	Types of learning	T2	1	PPT
28	Supervised	T2	1	PPT
29	unsupervised	T2	1	PPT
30	Hierarchical Clustering.	T2	1	PPT

Quiz / Mini Projects / Model Develpoed if any

Text / Reference Books	
1	Python Crash Course: A Hands-On, Project-Based Introduction to Programming (2nd Edition)
2	Kevin Night and Elaine Rich, Nair B., "Artificial Intelligence (SIE)", McGraw Hill- 2008

Website / URL References	
1	Peter Jackson, "Introduction to Expert Systems", 3rd Edition, Pearson Education, 2007.
2	Stuart Russel and Peter Norvig "AI – A Modern Approach", 2nd Edition, Pearson Education 2007

Sign. of Course Coordinator   Sign. of HoD with date   Head-TC

MOHAMED SATHAK A.J. COLLEGE OF ENGINEERING, Chennai

VAC - STUDENTS NAME LIST

Department of Computer Science and Engineering

Name of the Value Added Course : Advanced Python and Introduction to Machine Learning

Academic year: 2022 - 2023

Yr / Sem : IV/VII

Faculty In-charge : Sumana T

Location : lab 1& lab2

Duration : 12.08.2022 to 14.10.2022.

	Name	Reg No	12/8	16/8	19/8	24/8	9/1	9/5	9/8	9/12	16/9	20/9	22/9	27/9	27/9
1	AFRAR AHAMED I	31181910402	X	X	X	X	X	X	X	X	X	X	X	X	X
2	AMJATH M	31181910403	X	X	X	X	X	X	a	X	X	X	X	X	X
3	ANUM FARHEEN	31181910404	X	X	X	X	X	X	a	a	X	X	X	a	X
4	ARIHARAN T	31181910405	X	X	X	a	X	X	X	X	X	X	X	Y	X
5	ASHFAQUE AHAMED F	31181910406	X	X	X	X	X	X	X	X	X	X	X	X	X
6	ATIF AHMED ANSARI	31181910407	X	a	X	X	X	X	a	X	X	X	X	X	X
7	BAZEER AHAMAD V	31181910408	X	X	X	X	a	a	X	X	a	X	X	X	X
8	FADAL RAZIN S	31181910409	a	X	X	X	a	X	X	X	X	X	X	X	X
9	FARDEEN SHA M	31181910410	X	X	a	X	X	X	X	X	X	a	X	X	X
10	FAUWAAZ ASHAL	31181910411	X	X	X	X	X	X	a	a	X	X	X	X	a
11	HAMEED JAUFAR HAJA ALADDIN H	31181910412	a	X	X	X	X	a	X	X	X	a	X	X	X
12	HAMZA ADHNAN SHAKIR	31181910413	X	X	X	X	X	X	X	a	X	a	X	X	Y
13	HARINE R	31181910415	X	X	X	X	X	X	a	X	X	X	X	X	X
14	HUSSAINA PARVEEN J B	31181910416	a	X	X	X	X	X	a	X	X	X	X	a	X
15	HYDER ALIM	31181910417	X	a	X	a	X	X	X	a	X	X	X	X	a

PRINCIPAL
Mohamed Sathak A.J. College of Engineering
Rajiv Gandhi Salai (OMR)
IT Highway Egattur,
Chennai 603103.

S.No	Name	Register No
16	JAVID BASHA J	311819104018
17	KARTHIKEYAN R	311819104019
18	MOHAMED AADIL A	311819104020
19	MOHAMED ABUL FAIZ S	311819104021
20	MOHAMED AKIL H	311819104022
21	MOHAMED FAIZ ALI M	311819104023
22	MOHAMED KHAN D	311819104024
23	MOHAMED MUSARAF K	311819104025
24	MUHAMMAD MUNSHID P P	311819104026
25	MUHAMMED SHIBIL C V	311819104027
26	MUSTHABUSHIRA S M	311819104028
27	NAFISA MAHIRA K M	311819104029
28	NAVANEETHAN P	311819104030
29	NAVEENA R	311819104031
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33	PRATHIKSHA S	311819104035
34	ROHITH E S	311819104037
35	SAJITHA N	311819104038
36	SALAMATH N	311819104039
37	SALMAN FARISH A J	311819104040
38	SANJAY KHANNA S	311819104041
39	SHAAFIA TASNEEM N	311819104042
40	SHAHIDHA K	311819104043
41	SHALINI S	311819104044
42	SUHAIL BASHA A	311819104045
43	SUSMITHA V	311819104046
44	SYED SUHEAB A	311819104047
45	SYED SULAIMAN SAIT H	311819104048

S.No	Name	Register No															
46	TAHIR JAMAL	311819104049	a	a	a	x	x	a	x	a	a	a	a	x	a	a	a
47	VANCHINATHAN V	311819104050	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
48	VISHAL V	311819104051	x	x	x	a	x	x	a	x	x	x	x	a	x	x	a
49	YASAR ARAFARTH S	311819104052	x	a	x	x	a	a	a	x	x	a	a	x	x	a	a
50	AHAMAD BASHA K	311819104301	x	x	x	x	a	x	x	x	x	x	x	a	x	x	x
51	BHUVANESHWARI V B	311819104302	a	x	a	x	x	x	x	x	x	x	x	x	x	x	a
52	DHANUSH V	311819104303	x	x	x	x	x	x	x	x	x	a	x	x	x	x	a
53	MUDDASIR AHMAD M	311819104304	x	a	x	x	x	x	a	a	x	x	x	x	x	x	a

HOD SIGN

Head of the Department
DEPARTMENT OF CSE
Mohamed Sathak A.J.College of Engineering
Siruseri IT Park, Chennai 603 103

PRINCIPAL
Mohamed Sathak A.J. College of Engineering
No.34 Rajiv Gandhi Salai (OMR)
Sipcot IT Highway Egattur,
Chennai 603103.

ANNA UNIVERSITY :: CHENNAI - 600025.
OFFICE OF THE CONTROLLER OF EXAMINATIONS
Provisional Results of Nov. / Dec. Examination,2022.

Semester No.: 07   DATE OF PUBLICATION :DD-MM-YYYY   Page 10/12

Inst.Code/Name : 3118 - MOHAMMED SATHAK A.J.COLLEGE OF ENGINEERING

Branch : 104-B.E. Computer Science and Engineering

Reg. Number	Stud. Name	CS8079	CS8080	CS8711	CS8791	CS8792	HX8001	IT8761	IVA018	MG8591	OMF751
	Subject Code - >	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade	Grade
311819104002	AFRAR AHAMED I	B+		O	A	B+	O	O		B	U
311819104003	AMJATH M	B+		O	A	A	O	O		B	B+
311819104004	ANUM FARHEEN	B+		A+	A+	A	O	O		A+	B+
311819104005	ARIHARAN T	B		O	A+	A	O	O		A	B+
311819104006	ASHFAQUE AHAMED F	B		O	A	B+	O	O		B	B+
311819104007	ATIF AHMED ANSARI	B+	B+	O	B+	A	A+	O		B	B
311819104008	BAZEER AHAMAD V	B		A+	B+	B	O	A		A	B
311819104009	FADAL RAZIN S	B+		O	A	A	O	O		B+	B+
311819104010	FARDEEN SHA M	B	A	A+	B	B	O	A+		B	A
311819104011	FAUWAAZ ASHAL	B+	A	O	B+	A	O	O		B+	U
311819104012	HAMEED JAHUFAR HAJA	A		O	A	A	O	O		B+	B+
311819104013	HAMZA ADHNAN SHAKIR	B	B+	B	B	A	O	O		A	A
311819104015	HARINE R	A+		O	A+	A+	O	O		A	A
311819104016	HUSSAINA PARVEEN J B	A+		O	A	A+	O	A+		A	U
311819104017	HYDER ALI M	U		A+	B	U	O	O		A	B
311819104018	JAVID BASHA J	B		O	B	B	O	A+		B	B
311819104019	KARTHIKEYAN R	B		O	B+	B+	O	O		A	U
311819104020	MOHAMED AADIL A	B		O	U	A	O	O		B	B
311819104021	MOHAMED ABUL FAIZ S	A		O	B+	A	A+	O		U	U
311819104022	MOHAMED AKIL H	B		O	B+	B+	O	O		B+	A+
311819104023	MOHAMED FAIZ ALI M	B+		O	B+	A	A+	O		A	A+
311819104025	MOHAMED MUSARAF K	B		A+	B	B	A+	A+	A+	A	B
311819104026	MUHAMMAD MUNSHID P P	B		A+	B+	B+	O	O		B	B
311819104027	MUHAMMED SHIBIL C V	B		O	B	B+	O	O		A	B
311819104028	MUSTHABUSHIRA S M	A+		O	A+	A+	A+	O	A+	A+	A
311819104029	NAFISA MAHIRA K M	B+		O	A	A	A+	O		A	B+
311819104030	NAVANEETHAN P	B		O	B	B+	A+	A		A	B
311819104031	NAVEENA R	B+		O	A	A	O	A+		B	B
311819104032	NITHISH B	B		O	B	B	O	O		B+	B
311819104033	NOWFAL K	B+		O	A	A	A+	O		B+	B+
311819104034	PRAKASH T	B		O	B+	B	O	O		B	B+
311819104035	PRATHIKSHA S	B+		O	B+	U	O	O		B+	B+
311819104037	ROHITH E S	B		O	A	B+	O	O		B+	B+
311819104038	SAJITHA N	A		O	A	A	O	O		B	B+

ANNA UNIVERSITY :: CHENNAI - 600025.
OFFICE OF THE CONTROLLER OF EXAMINATIONS
Provisional Results of Nov. / Dec. Examination,2022.

Page 11/12

Reg. No.	Name								
311819104039	SALAMATH N	B+	B+	A	O	B+		B+	
311819104040	SALMAN FARISH A J	A	A	A+	O	A+		B+	
311819104041	SANJAY KHANNA S	B+	A	A	O	B+		B+	
311819104042	SHAAFIA TASNEEM N	A	A+	A	O	B+		B+	
311819104043	SHAHIDHA K	O	B+	B+	A+	O	A	B+	
311819104044	SHALINI S	U	B+	A	O	A	O	A	
311819104045	SUHAIL BASHA A	B	B	B+	O	B	B	U	
311819104046	SUSMITHA V	O	A	A	O	B	A	B	
311819104047	SYED SUHEB A	O	B+	A	A+	A	O	B+	
311819104048	SYED SULAIMAN SAIT H	B	B	B	A	O	A+	B+	
311819104049	TAHIR JAMAL	U	A+	B	A	O	A+	B	
311819104050	VANCHINATHAN V	B	B	B+	A+	B+	O	B	
311819104051	VISHAL V	A	O	A	A+	B+	A+	B	
311819104052	YASAR ARAFARTH S	B+	A+	A	O	A+	O	B+	
311819104301	AHAMAD BASHA K	B+	A+	A	A	A+	O	B+	
311819104302	BHUVANESHWARI V B	A+	A+	B+	A	A+	O	B	
311819104303	DHANUSH V	A	A	A+	A+	O	O	A	
311819104304	MUDDASIR AHMAD M	B	O	A	B+	O	A+	B+	B

W - Withdrawal   I - Inadequate Attendance
WH1 - Withheld for Suspected Malpractice   WH(others) - Withheld for want of Clarification,approval,etc.

PRINCIPAL
Mohamed Sathak A.J College of...
No.34, Rajiv Gandhi Sala...
Sipcot - IT Highway...
Chennai - 603 ...

MOHAMED SATHAK A.J. COLLEGE OF ENGINEERING, Chennai - 603103

VAC - STUDENTS NAME LIST

Department of Computer Science and Engineering

Course : PYTHON PROGRAMMING *Advaned* AND *Introduction to Machine Learning*

Academic Year: 2022-23

Yr / Sem : IV/VII

Faculty In-charge : Sumana T

Duration : 2022-23/odd (Aug 22 – Oct 22)

Sl.No	Name of the Student	Register No.	Sign of Student
1	AFRAR AHAMED I	311819104002	
2	AMJATH M	311819104003	
3	ANUM FARHEEN	311819104004	
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5	ASHFAQUE AHAMED F	311819104006	
6	ATIF AHMED ANSARI	311819104007	
7	BAZEER AHAMAD V	311819104008	
8	FADAL RAZIN S	311819104009	
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12	HAMZA ADHNAN SHAKIR	311819104013	
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16	JAVID BASHA J	311819104018	
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21	MOHAMED FAIZ ALI M	311819104023	
22	MOHAMED KHAN D	311819104024	
23	MOHAMED MUSARAF K	311819104025	
24	MUHAMMAD MUNSHID P P	311819104026	
25	MUHAMMED SHIBIL C V	311819104027	
26	MUSTHABUSHIRA S M	311819104028	
27	NAFISA MAHIRA K M	311819104029	
28	NAVANEETHAN P	311819104030	
29	NAVEENA R	311819104031	

MOHAMED SATHAK A J COLLEGE OF ENGINEERING, Chennai - 603103
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
VALUE ADDED COURSE
IVA018 Advanced Python and Introduction to Machine Learning
ASSESSMENT I

Sl.No	Name of the Student	Assessment 1
1	AFRAR AHAMED I	96
2	AMJATH M	87
3	ANUM FARHEEN	90
4	ARIHARAN T	87
5	ASHFAQUE AHAMED F	89
6	ATIF AHMED ANSARI	97
7	BAZEER AHAMAD V	86
8	FADAL RAZIN S	89
9	FARDEEN SHA M	84
10	FAUWAAZ ASHAL	87
11	HAMEED JAUFAR HAJA ALADUIN N H	90
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16	JAVID BASHA J	93
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18	MOHAMED AADIL A	97
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21	MOHAMED FAIZ ALI M	96
22	MOHAMED KHAN D	97
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24	MUHAMMAD MUNSHID P P	96
25	MUHAMMED SHIBIL C V	94
26	MUSTHABUSHIRA S M	97
27	NAFISA MAHIRA K M	97
28	NAVANEETHAN P	95
29	NAVEENA R	99
30	NITHISH B	96

PRINCIPAL
Mohamed Sathak A.J. College of Engineering
No.34, Rajiv Gandhi Salai (OMR)
Sipcot - IT Highway Egattur,
Chennai - 603103.

MOHAMED SATHAK A J COLLEGE OF ENGINEERING, Chennai - 603103
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1. **What is a correct syntax to create a NumPy array?**
   a) np.array([1,2,3,4,5])
   b) np.createArray([1,2,3,4,5])
   c) np.object([1,2,3,4,5])
   d) None of the above

2. **What is a correct syntax to check the number of dimensions in an array?**
   a) np.dim
   b) np.ndim()
   c) np.ndim
   d) d)np.dim()

3. **What is a correct syntax to check the data type of an array?**
   a) arr.ntype
   b) arr.datatype
   c) arr.type
   d) arr.dtype

4. **What is a correct method to join two or more arrays?**
   a) array_join()
   b) join()
   c) concatenate()
   d) None of the above

5. **What is a correct method to split arrays?**
   a) np.array([1,2,3,4,5])
   b) np.createArray([1,2,3,4,5])
   c) np.object([1,2,3,4,5])

   d) none of the above

6. **What is a correct syntax to check the number of dimensions in an array?**
   a) np.dim

d) np.dim()

7. **What is a correct syntax to check the data type of an array?**
   a) arr.ntype
   b) arr.datatype
   c) arr.type
   d) arr.dtype

8. **What is a correct method to join two or more arrays?**
   a) array_join()
   b) join()
   c) concatenate()

9. **What is a correct method to split arrays?**
   a) correcthstack()
   b) vstack()
   c) array_split()

10. **Which of the following feature is not provided by the Pandas module?**
    a) Merge and join the data sets
    b) Filter data using the condition
    c) Plot and visualize the data
    d) None of the above

11. **From which of the following files, pandas can read data?**
    a) JSON
    b) Excel
    c) HTML
    d) All the above

12. **(i)Given a dataset named 'data' containing the 5 columns and 10 rows, find the output of the below code?**
    (ii)print(len(data. Columns))
    a) 5
    b) 10
    c) 15
    d) 30

13. **Which of the following commands return the data type of the values in each column in the data frame df?**
    a) print(df.dtype)
    b) print(dtypes(df))
    c) print(df.dtypes)
    d) None of the above

14. **What does the attribute shape return?**
    a) It returns the number of rows and columns respectively in the form of a tuple

b) It returns the number of columns and rows respectively in the form of a list

c) It returns the number of columns and rows respectively in the form of a list

d) It returns the number of columns and rows respectively in the form of a list

15. By default, number of rows are returned by the head() and tail() function?
    a) 10,5
    b) 5,5
    c) 1,5
    d) 1,1

16. Which of the following can be stored in a dataframe?
    a) a two-dimensional ndarray
    b) lists, dictionaries, or Series
    c) Pandas DataFrame
    d) All the above

17. Which of the following is the correct way to create a data frame?
    a) pandas.DataFrame(data, index, columns, dtype, copy)
    b) pandas.Dataframe(data, index, columns, dtype, copy)
    c) pandas.Dataframe(data, index, columns, dtype, copy)
    d) pandas.dataframe(data, index, columns, dtype)

18. (i)What is the output of the following code?
(ii)print(df.iloc[2:5])
    a) prints the 2nd, 3rd,4th,5th columns of the dataframedf
    b) prints the 2nd, 3rd,4th,5th columns of the dataframedf
    c) prints the 2nd, 3rd,4th rows of the dataframedf
    d) prints the 2nd, 3rd,4th,5th rows of the dataframedf

19. Which of the following changes the data type of a column named clmn in data frame dfto string datatype?
    a) df .clmn .astype(str)
    b) df .clmn .type(str)
   c) str(df .clmn)
    d) None of the above

20. (i)What is the output of the below code?
    (ii)df.loc[df.clmn==10,:]
    a) Return the columns clmn where the value us equal to 10
    b) Return all the columns of the data frame df withe value equals 10
    c) Return all the columns clmn and the first 10 rows
    d) None of the above

21. Which of the following commands remove missing values?
    a) df.dropna()
    b) df.removena
    c) df.removenull()
    d) df.delnull()
22. Which of the following is/are used to get the columns named 'clmn1' and 'clmn3' from the data frame df?
    a) print(df.loc['cl3','cl5'])
    b) print(df.loc[['cl3','cl5']])
    c) print(cls.iloc[['cl3','cl5']])
    d) print(df.iloc['cl3','cl5'])
23. What is a correct method to search for a certain value in an array?
    a) where()
    b) search()
    c) find()
24. What is a correct method to sort the elements of an array?
    a) order()
    b) orderby()
    c) sort()
25. What is a correct syntax to mathematically add the numbers of arr1 to the numbers of arr2?
    a) np.add(arr1, arr2)
    b) sum(arr1, arr2)
    c) np.append(arr1, arr2)
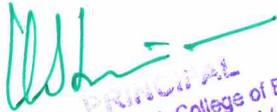
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ASSESSMENT II

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1. The plot method on Series and Data Frame is just a simple wrapper around
   _____

   a)gplt.plot()

   b) plt.plot()

   c) plt.plotgraph()

   d) none of the mentioned

   Answer: b

2. Point out the correct combination with regards to kind keyword for graph plotting.

   a)'hist' for histogram

   b) 'box' for boxplot

   c) 'area' for area plots

   d) all of the mentioned

   Answer: d

3. Which of the following value is provided by kind keyword for barplot?

   a)bar

   b) kde

   c) hexbin

   d) none of the mentioned

   Answer : a

4. You can create a scatter plot matrix using the _____ method in pandas.tools.plotting.

   a) sca_matrix

   b) scatter_matrix

   c) DataFrame.plot

   d) all of the mentioned
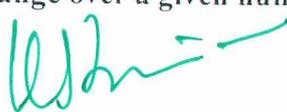
   Answer: b

5. Which of the following is used to compute the percent change over a given number of periods?

   a)pct_change

   b) percent_change

   c) per_change

   d) none of the mentioned

   Answer: a

6. Point out the correct statement.

a) Pandas represents timestamps in microsecond resolution

b) Pandas is 100% thread safe

c) For Series and DataFrame objects, var normalizes by N-1 to produce unbiased estimates

d) All of the mentioned

Answer: c

7. **Which of the following object has a method cov to compute covariance between series?**

a) Series

b) DataFrame

c) Panel

d) None of the mentioned

Answer: a

8. **What does the following python program print out?**

1234str1 = "hello"

Str2 = 'there'

Bob= str1+str2print(bob)

a)Hello

b)there

c)hellothere

d)hello there

Answer: c

9. **What does the following python program printout?**

X='40'

Y=int(x)+2

print(y)

a)x2

b)int402

c)402

d)42

Answer: d

10. **Which one of the below is not divide and conquer approach?**

a) Insertion Sort

b) Merge Sort

c) Shell Sort

d) Heap Sort

Answer: b

11. What data structure can be used to check if a syntax has balanced paranthesis ?

   a) queue

   b) tree

   c) list

   d) stack

Answer: d

12. Minimum number of queues required for priority queue implementation?

   a) 5

   b) 4

   c) 3

   d) 2

Answer: d

13. Which of the following searching techniques do not require the data to be in sorted form

   a) Binary Search
   b) Interpolation Search
   c) Linear Search
   d) All of the above

Answer: a

14. Which of the following is example of in-place algorithm?
   a) Bubble Sort
   b) Merge Sort
   c) Insertion Sort
   d) All of the above
   e) Answer: b

15. Which of the below mentioned sorting algorithms are not stable?
   a) Selection Sort
   b) Bubble Sort

c) Merge Sort
d) Insertion Sort
Answer: a

16. **Which of the following uses memorization?**
    a) Greedy approach
    b) Divide and conquer approach
    c) Dynamic programming approach
    d) None of the above!
    Answer: c

17. **All possible spanning trees of graph G**
    a) have same number of edges and vertices.
    b) have same number of edges and but not vertices.
    c) have same number of vertices but not edges.
    d) depends upon algorithm being used.
    Answer: a

18. **If locality is a concern, you can use _____ to traverse the graph.**
    a) Breadth First Search
    b) Depth First Search
    c) Either BFS or DFS
    d) None of the above!
    Answer: b

19. **Among the following option identify the one which is not a type of learning**
    a)Semi unsupervised learning
    b)Supervised learning
    c)Reinforcement learning
    d)Unsupervised learning
    Answer:a

20. **Identify the kind of learning algorithm for "facial identities for facial expressions".**
    a) Prediction
    b) Recognition patterns
    c) Recognizing anomalies
    d) Generating patterns
    Answer: b

21. **What is the application of machine learning methods to a large database called?**
    a) Big data computing
    b) Internet of things
    c) Data mining

d) Artificial intelligence

Answer: c

22. **Identify the model which is trained with data in only a single batch.**
    a) Offline learning
    b) Batch learning
    c) Both A and B
    d) None

    Answer: c

23. **Identify the type of learning in which labeled training data is used.**
    a) Semi unsupervised learning
    b) Supervised learning
    c) Reinforcement learning
    d) Unsupervised learning

    Answer: b

24. **Among the following identify the one in which dimensionality reduction reduces.**
    a) Performance
    b) Entropy
    c) Stochastics
    d) Collinearity

    Answer: d

25. **Which of the following machine learning algorithm is based upon the idea of bagging?**
    a) Decision tree
    b) Random-forest
    c) Classification
    d) Regression

    Answer: b