

Accredited by NAAC with 'B+' Grade, 2(f) & 12B Status Institution by UGC

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

## **NAAC DOCUMENTS**

**QUALITY INDICATOR FRAME WORK** 

CRITERION – 2

## **TEACHING-LEARNING** AND EVALUATION

SUBMITTED BY

**IQAC** 

INTERNAL QUALITY ASSURANCE CELL INDRA GANESAN COLLEGE OF ENGINEERING









Criteria2

**Teaching-Learning and Evaluation** 

350

### **KeyIndicator-2.3.Teaching-Learning Process**(40)

### 2022-2023

### **PARTICIPATIVE LEARNING**

# ELECTRONICS AND COMMUNICATION ENGINEERING and ME (VLSI DESIGN)

Activity	Number of Students Attended	Page No.
Value Added Course(VAC)	94	3
TOTAL STUDENTS ATTENDED	94	-







Criteria2

**Teaching-Learning and Evaluation** 

350

**KeyIndicator-2.3.Teaching-Learning Process**(40)

2022-2023

# ELECTRONICS AND COMMUNICATION ENGINEERING and ME (VLSI DESIGN)

# PARTICIPATIVE LEARNING VALUE ADDED COURSE



### COLLEGE OF ENGI

Madural Main Road (NH-45B), Manikandam, Tiruchirappalli - 620 012 Apprived by AICTE NewDellit & Affiliated to Amin University, Chernul
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Department of Electronics and Communication Engineering

## Academic Year 2022-2023 -ODD Semester

25.01.2023

### DEPARTMENT CIRCULAR

Department of Electronics and communication Engineering and IQAC of IGCE in association with Hitakey Infosys, is going to organize Value Added Course for all Second, Third and Final year students on "INTRODUCTION TO ROBOTICS" from 30.01.2023 to 03.02.2023. Certificates will be issued to the eligible participants at the end of the Course. This training is to be provided in our campus.

Resource Person Detail	Mrs.Shalom Jerlin, Technical Head, Hitakey Infosys, Trichy
Venue	DSP Lab, IGCE

Cc:

- · Principal office
- IQAC Co-Ordinator
- Class In charges II, III & IV-Year
- II, III & IV-Year ECE Students
- · Office File
- Notice Board

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



Medurai Main Road (NH-45B), Manikandam, Tiruchirappalii - 620 012 Approved by AICTE, NewDelbi & Affiliated to Annu University, Chemnal NAAC Accordited, 2(F) Status Institution by UGC



## Value Added Course

### "INTRODUCTION TO ROBOTICS"

### **SYLLABUS**

S.NO	TOTIC COVERED	DURATION (in hours)	DATE		
1	Basic concepts- Definition and origin of robotics, different types of robotics	3	30.01.2023		
2	Asimov's laws of robotics, dynamic stabilization of robots.	3	30.01.2023		
3	Power sources, sensors and actuators - Hydraulic, pneumatic and electric drives: Design and control issues	3	31.01.2023		
4	Variable speed arrangements – path determination	3	31.01.2023		
	Micro machines in robotics, machine vision – ranging laser – acoustic – magnetic, fiber optic and tactile sensors.	3	01.02.2023		
	Manipulators and grippers differential motion	3	01.02.2023		
	Construction of manipulators – manipulator dynamics and force control	3	02.02.2023		
8	Electronic and pneumatic manipulator control circuits – end effectors	3	02.02.2023		
9 1	various types of grippers, Design	3	01.02.2023		
0 F	Forward Kinematics Forward solution - Denavit Hartenberg procedure.	3	01.02.2023		
1	Exam	1	01.02.0000		
	Total Hours (Excluding Exam)	30	01.02.2023		

G. Keerthin VAC Coordinator

HOD/ECE

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

Manikandam, Trichy-620 012.



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## Value Added Course

### "INTRODUCTION TO ROBOTICS"

### STUDENTS PARTICIPATION LIST

S.	NO REG NO	STUDENTS NAME	YEAR/ BRANCH
	1 8112191060	001 Dayana P	IV ECE
	2 8112191060		IV ECE
1	8112191060		IV ECE
1	8112191060		IV ECE
5		1	IV ECE
6		71	IV ECE
7			IV ECE
8	1	- John Gridian D	IV ECE
9	,		IV ECE
10		- Stround 12	IV ECE
11	1		IV ECE
12		Day arrest A	IV ECE
13			IV ECE
14	01122010000	111/4	III ECE
15	81122010600		III ECE
16	81122010601		III ECE
17	811220106019		III ECE
18	811220106021		III ECE
19	811220106022	- I THE CALL	III ECE
20	811220106023	The state of the s	III ECE
21	811220106025		III ECE
22	811220106026	The state of the s	III ECE
23	811220106028	1-,-	III ECE
24	811220106031	Pradhap.J	III ÉCE
25	811220106032	Prasannaa.J	III ECE
26	811220106033	Preethika.M	III ECE
27	811220106034	Premalatha.M	III ECE
28	811220106037	Shri Harini Priya B	III ECE
29	811220106038	M.Snega	III ECE
30	811220106039	N.Sobi amirtha	III ECE
31	811220106041	Sunil Kumar B	III ECE
32	811220106042	Susila N	III ECE
33	811220106049	Yoga priya.R	III ECE
34	811221106001	AarthI,S	III BERG. Balakri

BEG. Balakrishnan, M.E., Ph.D.,

**Principal** 



### COLLEGE OF ENGINEERING

Madurai Main Road (NH-45B), Manikandam, Tiruchirappalli - 620 012
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S.NO	REG NO	STUDENTS NAME	YEAR/ BRANCH
35	811221106003	Arockia Jenifer.M	II ECE
36	811221106005	Deepalakshmi.S	II ECE
37	811221106008	Dhinesh babu.C	II ECE
38	811221106012	Jaya Kamakshe Radha.S.P	II ECE
39	811221106022	Parkavi.S	II ECE
40	811221106024	Premkumer.S	II ECE
41	811221106033	Thamilarasi.C	II ECE
42	811221106034	Thrisha.S	II ECE
43	811221106035	Veerakumar.R	II ECE
44	811221106036	Vellaisamy.S	II ECE
45	811221106037	Victorraj.S	II ECE
46	811221106040	Vishal.V	II ECE
47	811221106301	Om Parkash.R	II ECE

Ca. Leethy VAC Coordinator

Dr. G. Balakrishnan, M.E., Ph.D.,

Principal



**VAC** Coordinato

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### REPORT ON VALUE ADDED COURSE Title: "INTRODUCTION TO ROBOTICS" Resource Person: Mrs. Shalom Jerlin, Technical head, Hitakey Infosys, Trichy Date of conduct from: 30.01.2023 To: 03.02.2023 Duration: 30 Hours Organized Department: Electronics and Communication Engineering Participant Year: 2,3,4 No. of Students Registered: Venue: DSP Lab Outcome of Value Added Course (VAC): At the end of the Course, Students can be able to Understand basic components of robotics, classification of robots and their applications. Know on types of robot grippers, their usage and design considerations. Understand about various types of sensory devices their working and applications. Apply basic transformations related to the movement of manipulator. Design a robot mechanism to meet kinematics requirements and to write simple programs. Assessment Process • Students, who are securing more than 70% on total score and secured more than 75% in attendance is eligible to receive the certificate for the VAC course conducted • Total Score = (0.5 \*Attendance in VAC out of 100 percentage + 0.5 \*Test mark in VAC out of 100 marks)

Dr. G. Balakrishnan, M.E., Ph.D., - Principal Indra Ganesan College of Engineering

HoD/ECE

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### Value Added Course "INTRODUCTION TO ROBOTICS"

### SAMPLE PHOTOS OF VALUE ADDED COURSE

Title:

"INTRODUCTION TO ROBOTICS"

Resource Person:

Mrs. Shalom Jerlin,

Technical head,

Hitakey Infosys,

Trichy

Date of conduct from:

30.01.2023

03.02.2023 To:

Duration:

30 Hours

Organized Department: Electronics and Communication Engineering

Participant Year:

2,3,4

No. of Students Registered:

Venue:

DSP Lab

Sample Photo



a. Kosett VAC Coordinator

HoD/ECE

Dr. G. Balakrishnan, M.

Principal Indra Ganesan College of Engineering

IG Valley, Madurai Main Road Manikandam, Trichy-620 012.



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## Value Added Course "INTRODUCTION TO ROBOTICS"

Dr G. Balakrishnan, M.E., Ph.D.,
Principal
Indra Ganesan College of Engineering
Year/Sem:
Walley, Madurai Main Road
Manikandam, Trichy-620 012.

Name of the Student:

AU Register Number:

1. A place where power, information, or a result leaves a system

### **MULTIPLE CHOICE QUESTIONS (25X1 = 25 Marks)**

a. Chassis	b, output
c. sensor	d. troubleshooting
2. Which of the following describes the use of technology or machinery	y, specifically involving gases?
a. Pneumatics	b. Hydraulics
c. Actuation	d, Carbonation
3. The position or alignment relative to points of the compass or other	specific directions
a. Loops	b. Sensor
c. Chassis	d. Orientation
4. A mechanism having its motive power so concealed that it appears to	o move spontaneously
a. Automatic	b. Clock Jack
c. Robot	d. Automata
5. The branch of technology that deals with dimensions of microscopic p	proportion, is known as?
a. Nanny technology	b. Nanotechnology
c. Microtechnology	d. Micromachinery
6. Which of the following is not an advantage of Robots?	
a. They can assist humans with disabilities	b. They can replace jobs
c. They can be used in dangerous environment	d. They don't get tired or require a break
7. The Hummingbird require extra power to be able to wor	k
a. Sensors	b. LEDs
c. Motors	d. Tri-Color LEDs
8. The branch of technology that deals with the design, construction, op	peration, and application of robots
a, levers	b. robotics
c. creative power	d. Science CSF
9. When working in a group for robotics, students should	NAME.
a. Stay on task but don't work with other group members	b. Socialize with group members outside of
•	your group and then work alone
c. Socialize with other group members and don't help your group	d. Stay on task and work with other group
	members appropriately
10. A rigid external covering for the body in some invertebrate animals bu	* * * *
a. Exoskeleton	b, Armor
c. Endoskeleton	d. Hardware
11. The 3rd law of robotics Spirit Isaac Asimov first announced the 3 law	
a. A robot may not injure a human being or, through inaction, allow a human being to come to harm	b. A robot can't go to school
c. A robot must obey orders given it by human beings except where	d. A robot must protect its own existence as



a. Code

c, Robots

23. The three characteristic capabilities that define a robot

# Indra Ganesan





## Value Added Course "INTRODUCTION TO ROBOTICS"

such orders would confli	ict with the First law	long as such protection does not conflict wit the First or Second Law
	•	
12. How many systems o	does a robot have?	
a. 2		b. 6
c. 4		d. 3
13, Engines and joints be	elong to what system?	
a. Digestive system		b, Sensory system
c. Electric system		d. Mechanic system
14, How many types of ro	obots are there?	
a. 7	b. 10	
с. б	d. 8	
15. What are the compo	nents of the electric system?	
a. Electric joints and cables	b. Batteries and electric wiring	Dr. G. Balakrishnan, M.E., Ph
c. Engines and joints	d. Thunder and lightning	Principal  Indra Ganesan College of Engineering
	nts does the control system have?	Indra Ganesan College of Engineering IG Valley, Madurai Main Road
a. 4		b. 1 Manikandam, Trichy-620 012.
c. 2		d. 5
17. The processor belong	s to the	
a. Sensory system		b. Mechanic system
c. Electric system		d. Control system
18. One of these is NOT a	type of robot	
a. Medical		b. Industrial
c. Household		d. Apologetic
19. The small mobile robo	ot base used in the Robot Educator. This re	obot is able to perform some but not all of the tasks
in the Robotics Engineering	ng activities	
a. Light sensor		b. Lego Mindstorms Education Software
c. Robot		d. Robot Educator Model (REM)
	• •	ing Software. Blocks perform their operations in
order along the Sequence	Beam	
a. Touch Sensor		b. Block (programming)
c. Ports		d. Behaviors
	physical motion in the Mind storms NXT	•
a. Interactive Servo Motor		b. Behaviors
c. Light Sensor		d. Touch Sensor
		nment. characterized by three central capabilities:
the ability to Sense, the ab	oility to Plan, and the ability to Act	

b. Taskbot

d. Ports



a. Comment

# Indra Ganesan



b. Sensor

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## Value Added Course "INTRODUCTION TO ROBOTICS"

c. Sense-Plan-Act

d. NXT Brick

24. When working in a group for robotics, students should\_\_\_\_\_\_\_
a. Socialize instead of work and then work alone

b. Stay on task and don't work with your group

c. Work alone and don't socialize with group members

d. stay on task and work with group members

appropriately

25. General term for any command or group of commands in a program. In the NXT Programming Software, this is one or more blocks\_\_\_\_\_

a. Comment

b. Code

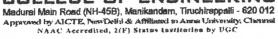
c. Ports

d. NXT Brick

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



### COLLEGE OF ENGINEERING





### Value Added Course "INTRODUCTION TO ROBOTICS"

### ANSWER KEY

1	A	6	A	11	A	16	Α	21	В
2	С	7	В	12	D	17	C	22	D
3	A	8	В	13	В	18	В	23	В
4	В	9	В	14	С	19	Α	24	С
5	В	10	В	15	В	20	D	25	Α

G- Keesthair VAC Coordinator

Dr. G. Balakrishnan, M.E., Ph.D.,

Principal



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the First or Second Law

Value Added Course "INTRODUCTION TO ROBOTICS"
KANTHIKA · S

Name of the Student:

AU Register Number:

such orders would conflict with the First law

811920106023

# Verr/Sem: III/V

MULTIPLE CHOICE QUESTIONS	Ilr ( Dalan Sille
	D-incipal
1. A place where power, information, or a result leaves a system	h output Indra Ganesan College of Engineering
a) Chassis	D, Output
c. sensor	d. troubleshooting Manikandam, Irichy-120 0220
2. Which of the following describes the use of technology or machiner	
a. Pneumatics	b. Hydraulics
© Actuation	d. Carbonation
3. The position or alignment relative to points of the compass or other	
3 Loops	b. Sensor
c. Chassis	d. Orientation
4. A mechanism having its motive power so concealed that it appears	to move spontaneously
a. Automatic	(b) Clock Jack
c. Robot	d. Automata
5. The branch of technology that deals with dimensions of microscopic	proportion, is known as?
Nanny technology .	b. Nanotechnology
c. Microtechnology	d. Micromachinery
6. Which of the following is not an advantage of Robots?	
They can assist humans with disabilities	b. They can replace jobs
c. They can be used in dangerous environment	d. They don't get tired or require a break
7. The Hummingbird require extra power to be able to wo	ork _
a, Sensors	(b) LEDs
c, Motors	d. Tri-Color LEDs
8. The branch of technology that deals with the design, construction, o	peration, and application of robots
a, levers	(b) robotics
c. creative power	d. Science CSF
9. When working in a group for robotics, students should	NAME AND ADDRESS OF THE ADDRESS OF T
a) Stay on task but don't work with other group members	b. Socialize with group members outside of
	your group and then work alone
c. Socialize with other group members and don't help your group	d. Stay on task and work with other group
C. Double Color Brown	members appropriately
10. A rigid external covering for the body in some invertebrate animals b	out also robots.
a. Exoskeleton	(b) Armor
c. Endoskeleton	d. Hardware
11. The 3rd law of robotics Spirit Isaac Asimov first announced the 3 la	ws of robotics in 1942.
a) A robot may not injure a human being or, through inaction, allow a	b. A robot can't go to school
human being to come to harm	
•	ha i i i i i i i i i i i i i i i i i i i
C. A robot must obey orders given it by human beings except where	d. A robot must protect its own existence as
such orders would conflict with the First law	long as such protection does not conflict with



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## Value Added Course "INTRODUCTION TO ROBOTICS"

12. How many systems does a robot have?	
a. 2	b. 6
€. 4	<b>√</b> (a) 3
13, Engines and joints belong to what system?	
a, Digestive system	b. Sensory system
( Electric system	d. Mechanic system
14. How many types of robots are there?	d. Wedding System
a. 7 b. 10	J.P.
<b>€</b> 6 d. 8	
15. What are the components of the electric system?	Dr. G. Balakrishnan, M.E., Fh.
a. Electric joints and D. Batteries and electric wiring	Principal
cables	Indra Ganesan College of Engineering
c. Engines and joints d. Thunder and lightning	IG Valley, Madurai Main Road
16. How many components does the control system have?	Manikandam, Trichy-620 012.
	, , , , , , , , , , , , , , , , , , ,
<b>3</b> 4	b. 1
c. 2	d. 5
17. The processor belongs to the	
a. Sensory system	b. Mechanic system
© Electric system	d. Control system
18. One of these is NOT a type of robot	
a. Medical	(b) Industrial
c. Household	d. Apologetic
19. The small mobile robot base used in the Robot Educator. The	nis robot is able to perform some but not all of the task
in the Robotics Engineering activities	I
(a) Light sensor	b. Lego Mindstorms Education Software
c. Robot	d. Robot Educator Model (REM)
20. A block is the basic unit of programming in the NXT program	mming Software. Blocks perform their operations in
order along the Sequence Beam	o per a la l
a. Touch Sensor	b. Block (programming)
c. Ports	(a) Behaviors
21. The primary source of physical motion in the Mind storms N	IXT system
a. Interactive Servo Motor	(b) Behaviors
c. Light Sensor	d. Touch Sensor
22. A machine that is able to interact with and respond to its en	yiranmant characterized by the state of the
the ability to Sense, the ability to Plan, and the ability to Act	who intent. Characterized by three central capabilities:
a. Code	O/D Toolkhoo
c. Robots	<b>◯</b> Taskbot
23.The three characteristic capabilities that define a robot	d. Ports
a, Comment	(A) Samuel
c. Sense-Plan-Act	6b. Sensor
W	d, NX1 Brick



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## Value Added Course "INTRODUCTION TO ROBOTICS"

24. When working in a group for robotics, students should	
a. Socialize instead of work and then work alone	b. Stay on task and don't work with your group
Work alone and don't socialize with group members	d. stay on task and work with group members appropriately
25. General term for any command or group of commands in a primore blocks	program. In the NXT Programming Software, this is one
Comment . Ports	b. Code d. Robot

Dr. G. Balakrishnan, M.E., Ph.D., Principal Indra Ganesan College of Engineering

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Manikandam, Trichy-620 012.



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## Department of Electronics and Communication Engineering

Academic Year 2022-2023 - Odd Semester

STUDENTS ATTENDANCE LIST

Value Added Course

"INTRODUCTION TO ROBOTICS"

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

N )	REG NO	STUDENTS NAME	YEAR/ BRANCH	30.01	.2023	31.01	.2023	01.02	.2023	02.02	2022	1	The state of the s	NO OF	y-620 012.
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ī	811219106001	Dayana P	IV/ ECE	FN	AN	FN	AN	FN	AN	FN	AN	FN	AN	ONS ATTE	STODENT
2	811219106002	Devika K	IV/ ECE	n	n	n	5	4	4	h	ч	4	4	NDED	1
3	811219106003	Dinesh J	IV/ ECE	17	1	7	N	7	4	n	n	en	5	10	belling to
1	811219106004 811219106005	Mohana Sundaram K Ravikumar B	IV/ ECE	4	7	7	5	F	~	~	M	N	57	9	J. Direl
	811219106006	Santhanaraj A	IV/ ECE	4	7		~	n	U	7	2	in	M	10	Holmen Ser
	811219106008	Srikanth M	IV/ ECE	5	<u>~</u>	ン	5	~	u	1	n		7	10	novikumit
	811219106009 811219106010	Surendran S	IV/ ECE	4	1	27	1	1	1	4	1	~	7	10	Southan Pay
)	811219106011	Surya V Swetha K	IV/ ECE	5	ч		2	5	9	A	7	1	7	q	- Cusuri
-	811219106301	Yuvashree S	IV/ ECE	7	ca	1	U	~		A	N	7	1	9	Swy
	811219106701	Vijayalakshmi V	IV/ ECE	2	67	دسع ا	~	~	1	1	u	元	n	a selection of the second	YUVAIS
-	811219106702 811220106006	Ponnarasu S	IV/ ECE	77	5	9	2	- Ft-	7	7	-	7	7	q	Very-
		Banu priya G	III / ECE	7	~	47	2	-	2	7	7	1	7	10	Don't Payer



### COLLEGE OF ENGINEERING

Madurai Main Road (NH-45B), Manikandam, Thuchirappalli - 620 012
Approved by AICTE, New Delhi & Affiliated to Anna University, Chemial
NAAC Accredited, 2(F) Status Institution by UCC.



S. N	REG NO	STUDENTS NAME	YEAR/ BRANCH		1.2023	31.0	1.2023	01.02	2.2023	02.02	.2023	03.02	.2023	NO OF SESSION	SIGNATURE OF THE
)				FN	AN	FN	AN	FN	AN	FN	AN	FN	AN	S ATTEND	STUDENT
15	811220106008	Bharathidasan C	III / ECE	1	7	-	***************************************			-				ED	
16	811220106018	Jancy J	III / ECE	1		-	1	~	A		_	_	~	9	Booker
17	811220106019	Jeevasen N	III / ECE		-		1	1	(1-4		A	-7	1	8	Dawy.
18	811220106021	Kamaraj.S	III / ECE		-			1	A	_	4	1	1	8	Javas
19	811220106022	.karthick C	III / ECE				A		اسن				y	9	frammy + 5
20	811220106023	Karthika S	III / ECE	1		1		5 m		بسو		~	1	10	Kanting.c
21	811220106025	Kishore R	III / ECE			4	~	A	7	•	~	1	· · ·	9	Kauthiko,
22	811220106026	Kishore kumar M	III / ECE	1	-	-	-			Stands.	A	1	-	8	Korbaik
23	811220106028	Mancy.E	III / ECE	1		~		~			A	_		9	Rushye Kg
24	811220106031	Pradhap.J	III / ECE	-		-	- Carried Street	_	~	1	_		1	10	ROHEN T
25	811220106032	Prasannaa.J	III / ECE					_	~		-			10	tent
26	811220106033	Preethika.M	III / ECE	-		1		1			وسي	_	~	10	Pray
27	811220106034	Premalatha.M	III / ECE	-	_		_	1		1	prog.			10	Profly
28	811220106037	Shri Harini Priya B	III / ECE	/					-		A	and the same of th	_	90	Perry Tath
29	811220106038	Snega M	III / ECE			1			1	A	2009	, grandy	1	9	Harrin Priya.
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31	811220106041	Sunil Kumar B	III / ECE	1		7	~	_	_		A	-	_	9	Schranether
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33	811220106049	Yoga priya.R	III / ECE			7		1		_	A	-	است	90	Susun
34 •	811221106001	Aarthi.S	III/ ECE				1	1	-				-	la	Yoga
38	811221106003	Arockia Jenifer.M		1	_	1	-	1	-	/	· ·	1	1	10	Starters
36	811221106005	Deepalakshmi.S	II/ ECE	/		/	ممتا	1	A		/	/		9	and the state of
ch	ian, M.E., Ph.D.,	1 voputaniiii.3	II /ECE				1	1	1		1	^	1	10	Domalwel

Dr. G. Bala



Madurai Main Road (NH-45B), Manikandam, Tiruchirappalli - 620 012
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HoD/ECE

	**************************************	YEAR/ BRANCH		01.2023	31.0	1.2023	01.0	2.2023	02.02	2.2023	03.03	2.2023	NO OF	SIGNATURE
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a . Iceerthail VAC Coordinator

Dr. G. Balakrishnan, M.E., Ph.D.,

Principal





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

Manikandam, Trichy-620 012.

Department of Electronics and Communication Engineering

Academic Year 2022-2023 - Odd Semester

VALUE ADDED COURSE ASSESMENT SHEET

"INTRODUCTION TO ROBOTICS"

S.NO	REG NO	STUDENTS NAME	YEAR/	Attenda	nce Details	VAC-M	ICQ TEST	OVERALL
Rating language		STUDENTS NAME	BRANCH	No. of Session Attended	Attendance Mark(100) (A)	No of Correct	MCQ Mark(100)	MARK(100) (50% of A + 50% of B)
1	811219106001	Dayana P	IVECE		m m m	Answers	(B)	
2	811219106002	Devika K		27	90	24	96	93
3	811219106003		IV ECE	30	100	20	ship recognises and principle programs as the	of the party of the second
<i></i>		Dinesh J	IVECE	27			80	90
4	811219106004	Mohana Sundaram K	IVECE		90	21	84	87
5	811219106005	Ravikumar B	* s - le	30	100	20	80	90
	-		IV ECE	30	100	19	***************************************	Militaria de la composición del composición de la composición de l
6	811219106006	Santhanaraj A	IVECE		Aspergrammes assistantial to protect the second	19	76	82
7	811219106008	Srikanth M		30	100	19	76	88
8	811219106009	Surendran S	IV ECE	30	100	21	84	92
*******	1		IV ECE	27	90	10	·	92
9	811219106010	Surya V	IV ECE		-	19	76	83
10	811219106011	Swetha K		27	90	19	76	83
11	811219106301	1	IV ECE	27	90	20	80	CONTRACTOR OF STATE O
11	011713100301	Yuvashree S	IV ECE	20		Their res (\$160000) at representations	OU	85
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S.NO	REG NO			1	dance Details		ICQ TEST	
	120 110	STUDENTS NAME	YEAR/ BRANCH	No. of Session Attend	Attendance Mark(100) (A)	No of Correct Answers	MCQ Mark(100) (B)	OVERALL MARK(100) (50% of A + 50% of B)
12	811219106701	Vijayalakshmi V	IVECE	ed				
13	811219106702	Ponnarasu S	IV ECE	27	90	20	80	85
14	811220106006	Banu priya G		30	100	21	84	92
15	811220106008	Bharathidasan C	III ECE	30	100	23	92	96
16	811220106018	Jancy J	III ECE	27	90	19	76	83
17	811220106019	Jeevasen N	III ECE	24	80	20	80	80
18	811220106021	Kamaraj.S	III ECE	24	80	21	84	
19	811220106022	karthick C	III ECE	27	90	22	88	82
20	811220106023	Karthika S	III ECE	30	100	20	80	89
21	811220106025	Kishore R	III ECE	27	90	21	84	90
22	811220106026		III ECE	24	80	20		87
23	811220106028	Kishore kumar M	III ECE	27	90	21	80	80
24	811220106031	Mancy.E	III ECE	30	100		84	87
25	811220106032	Pradhap.J	III ECE	30	100	20	80	90
26		Prasannaa.J	III ECE	30	100	19	76	82
27	811220106033	Preethika.M	III ECE	30	Obstance of the second	19	76	88
E., Ph. 1).,	811220106034	Premalatha.M	III ECE	27	100	21	84	92
Seed the consequence	811220106037	Shri Harini Priya B	III ECE		90	19	76	83
ineering	811220106038	Snega M	III ECE	27	90	19	76	83
Road30	811220106039	Sobi amirtha N	III ECE	27	90	19	76	83
012.			III LOD	27	90	19	76	83

Dr. G. Balakrishnan, M.E. Principal

Indra Ganesan College of Engi IG Valley, Madurai Main R Manikandam, Trichy-620



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S.NO	REG NO	STUDENTS NAME	YEAR/	Annual An	ance Details	VAC-M	ICQ TEST	OVERALL
31	2112201060		BRANCH	No. of Session	Attendance Mark(100)	No of Correct	MCQ Mark(100)	MARK(100) (50% of A +
32	811220106041	Sunil Kumar B	III ECE	Attended	(A)	Answers	(B)	50% of B)
	811220106042	Susila N		30	100	20	80	00
33	811220106049	Yoga priya.R	III ECE	27	90	19	76	90
34	811221106001	Aarthi.S	III ECE	30	100	19	76	83
35	811221106003	Arockia Jenifer.M	II ECE	30	100	23		88
36	811221106005	Deepalakshmi.S	II ECE	27	90	19	92	96
37	811221106008	Dhinesh babu.C	II ECE	30	100		76	83
38	811221106012	The state of the s	II ECE	27	90	20	80	90
39	811221106022	Jaya Kamakshe Radha.S.P	II ECE	30	× 200-1111 -1 1111- 100-10-1111-1111-1111	19	76	83
40	811221106024	Parkavi.S	II ECE	30	100	19	76	88
41	811221106033	Premkumer.S	II ECE	27	100	21	84	92
-	HY Personal Communication Comm	Thamilarasi.C	II ECE		90	21	84	87
	811221106034	Thrisha.S	II ECE	24	80	20	80	80
	811221106035	Veerakumar.R	II ECE	27	90	24	96	93
	811221106036	Vellaisamy.S	II ECE	30	100	20	80	90
THE PERSON NAMED IN COLUMN TWO IS NOT THE OWNER, THE OW	811221106037	Victorraj.S		27	90	19	76	A NAME AND POST OF THE PARTY OF
	811221106040	Vishal.V	II ECE	30	100	19	76	83
17	811221106301	Om Parkash.R	II ECE	30	100	21		88
	Mandana Hard Tondayangan	TA CERCUIE.	II ECE	27	90	21	84	92

a, Keertha VAC Coordinator

Or. G. Balarishnan, M.E., Ph.D.,

Frincipal
Indra Ganesan College of Engineering IG Valley, Madurai Main Road Manikandam Trichy 620 012

HOD/ECE









## CERTIFICATE OF PARTICIPATION

This is to certify that Ms. SURYA.V, IV Year, ECE has successfully completed the Value Added Course on "INTRODUCTION TO ROBOTICS" organized by Department of Electronics and Communication Engineering and IQAC of our Institution in Association with Hitakey Infosys from 30<sup>th</sup> January 2023 to 03<sup>rd</sup> February 2023 (5days) during the Academic year 2022-2023.

Mrs. Shalom Jerlin Technical Head, Hitakey Infosys.

On C. Rolalwichman

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

Principal
IGCE



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# Department of Electronics and Communication Engineering Academic Year 2022-2023 –EVEN Semester

26.07.2023

### DEPARTMENT CIRCULAR

Department of Electronics and communication Engineering and IQAC of IGCE in association with Hitakey Infosys, is going to organize Value Added Course for all Second, Third and Final year students on "FIBER OPTIC SYSTEM DESIGN AND SIMULATION" from 31.07.2023 to 04.08.2023. Certificates will be issued to the eligible participants at the end of the Course. This training is to be provided in our campus.

Resource Person	Mrs.Shalom Jerlin, Technical Head, Hitakey Infosys, Trichy
Venue	DSP Lab, ECE

HOD/ECE

PRINCIPAL

Cc:

- · Principal office
- IQAC Co-Ordinator
- Class In charges II, III & IV-Year
- II, III & IV-Year ECE Students
- Office File
- · Notice Board

Dr. G. Balakrishnan, M.E., Ph.D.,

Principal



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## Value Added Course

## "FIBER OPTIC SYSTEM DESIGN & SIMULATION"

### **SYLLABUS**

S.NO	TOTIC COVERED	DURATION (in hours)	DATE
1	OPTICAL TRANSMITTERS-Light Emitting Diodes - Laser diodes	3	31.07.2023
2	Modulators – Optical Layouts for the simulation	3	31.07.2023
Component libraries and procedures for simulation in Optsim and/or Optisystem software		3	01.08.2023
4	FIBER OPTIC LINK ANALYSIS- Fiber – Structure of the fiber - Types –Single Mode fiber – Multimode fiber	3	01.08.2023
5	absorption, scattering, bending losses  —Dispersion	3	02.08.2023
6	Intra and inter modal dispersion – dispersion compensation methods –optical amplifiers	3	02.08.2023
7	OPTICAL RECEIVERS-Photo multiplier tubes - photo diodes -	3	03.08.2023
3	Responsivity, Quantum Efficiency, Sensitivity, photo current and transfercharacteristics of photo diodes	3	03.08.2023
	PIN diode and Avalanche diode - basic optical receiver configuration	3	04.08.2023
	Preamplifiers - BER - WDM concepts.Outline of Li-Fi and Communication through LED	3	04.08.2023
	Exam		The State of the S
	Total Hours (Excluding Exam)	30	05.08.2023

**VAC Coordinator** 

Dr. G. Balakrishnan, M.E., Ph.D.,

**Principal** 

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Manikandam, Trichy-620 012.



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### REPORT ON VALUE ADDED COURSE

Title:

"FIBER OPTIC SYSTEM DESIGN & SIMULATION"

Resource Person:

Mrs. Shalom Jerlin.

Technical head, Hitakey Infosys,

Trichy

Date of conduct from:

31.07.2023

To: 04.08.2023

Duration:

30 Hours

Organized Department: Electronics and Communication Engineering

Participant Year: | 2,3,4

No. of Students Registered:

Venue:

DSP Lab

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

- Know about the Optical transmitters.
- Know the simulation in Optsim and/or Optisystem software
- Explain the Fiber optic link analysis
- Know the Intra and inter modal dispersion & Dispersion compensation methods
- Explain the Optical receivers
- Develop Outline of Li-Fi and Communication through LED

### Assessment Process

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

VAC Coordinator

HoD/ECE

Dr. G. Balakrishnan, M.E., Ph.D.,

**Principal** 



### COLLEGE OF ENGINEERING

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## SAMPLE PHOTOS OF VAC ON FIBER OPTIC SYSTEM DESIGN & SIMULATION

Title:

"FIBER OPTIC SYSTEM DESIGN & SIMULATION"

Resource Person:

Mrs. Shalom Jerlin,

Technical head, Hitakey Infosys,

Trichy

Date of conduct from:

31.07.2023

To: 04.08.2023

Duration:

30 Hours

Organized Department: Electronics and Communication Engineering

Participant Year:

No. of Students Registered:

Venue:

DSP Lab

Sample Photos



VAC Coordinator

HoD/ECE

Dr. G. Balakrishnan, M.E., Ph.D.,

Principal

Indra Ganesan College of Engineering IG Valley, Madurai Main Road



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## Value Added Course

## "FIBER OPTIC SYSTEM DESIGN AND SIMULATION"

### STUDENTS PARTICIPATION LIST

Dr. G. Balakrishnan, ME.

Principal Indra Ganesan College of Engineering IG Valley, Madurai Main Read REG NO YEAR/ BRANCH Manikandam, Tric

:hy-62	0 012. REG NO	STUDENTS NAME	YEAR/ BRANCH
1	811219106001	Dayana P	IVECE
2	811219106002	Devika K	IVECE
3	811219106003	Dinesh J	IVECE
4	811219106004	Mohana Sundaram K	IVECE
5	811219106005	Ravikumar B	IVECE
6	811219106006	Santhanaraj A	IVECE
7	811219106008	Srikanth M	
8	811219106009	Surendran S	IVECE
9	811219106010	Surya V	IV ECE
10	811219106011	Swetha K	IVECE
11	811219106301	Yuvashree S	IV ECE
12	811219106701	Vijayalakshmi V	IV ECE
13	811219106702	Ponnarasu S	IVECE
14	811220106006	Banu priya G	IV ECE
15	811220106008	Bharathidasan C	III ECE
16	811220106018	J.Jancy	III ECE
17	811220106019	Jeevasen N	III ECE
18	811220106021	Kamaraj.S	III ECE
19	811220106022	C.karthick	III ECE
20	811220106023	S.Karthika	III ECE
21	811220106025	Kishore R	III ECE
22	811220106026	M. Kishore kumar	III ECE
23	811220106028	Mancy.E	III ECE
24	811220106031	Pradhap.J	III ECE
25	811220106032	Prasannaa.J	III ECE
26	811220106033	Preethika.M	III ECE
27	811220106034	Premalatha.M	III ECE
28	811220106037	Shri Harini Priya B	III ECE
29	811220106038	M.Snega	III ECE
30	811220106039	The state of the s	III ECE
31	811220106041	N.Sobi amirtha Sunil Kumar B	UI ECE
32	811220106042		III ECE
33	811220106049	Susila N	III ECE
4	811221106001	Yoga priya.R	III ECE
	011771100001	AARTHI.S	II ECE



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S.NO	REG NO	STUDENTS NAME	YEAR/ BRANCH
35	811221106003	AROCKIA JENIFER.M	II ECE
36	811221106005	DEEPALAKSHMI.S	II ECE
37	811221106008	DHINESH BABU.C	II ECE
38	811221106012	JAYA KAMAKSHE RADHA.S.P	II ECE
39	811221106022	PARKAVI.S	II ECE
40	811221106024	PREMKUMER.S	II ECE
41	811221106033	THAMILARASI.C	II ECE
12	811221106034	THRISHA.S	II ECE
13	811221106035	VEERAKUMAR.R	II ECE
4	811221106036	VELLAISAMY,S	II ECE
5	811221106037	VICTORRALS	II ECE
6	811221106040	VISHAL.V	- Table Service Management of the Service Serv
7	811221106301	OM PARKASH.R	II ECE

a · Keathay

VAC Coordinator

HOD/ECE

Dr. G. Balakrishnan, M.E., Ph.D.,

Principal



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Name of the Student:

Year/Sem:

**AU Register Number:** 

### Value Added Course

## "FIBER OPTIC SYSTEM DESIGN & SIMULATION" MULTIPLE CHOICE QUESTIONS (25X1 = 25 Marks)

Multimode step index fiber has	
a) Large core diameter & large numerical aperture	10
b) Large core diameter and small numerical aperture	Dr. G. Balakrishnan, M.E., Ph.
c) Small core diameter and large numerical aperture	Principal
d) Small core diameter & small numerical aperture	Indra Ganesan College of Engineering IG Valley, Madurai Main Road
2. A typically structured glass multimode step index fiber shows as ofattenuation in range of	s variati Manikandam, Trichy-620 012.
a) 1.2 to 90 dB km <sup>-1</sup> at wavelength 0.69μm	
b) 3.2 to 30 dB km <sup>-1</sup> at wavelength 0.59µm	
c) 2.6 to 50 dB km <sup>-1</sup> at wavelength 0.85µm	
d) 1.6 to 60 dB km <sup>-1</sup> at wavelength 0.90μm	
-	
<ul><li>3. Multimode step index fiber has a large core diameter of range is</li><li>a) 100 to 300 μm</li></ul>	definition or many and a second
b) 100 to 300 nm	
c) 200 to 500 µm	
d) 200 to 500 nm	
4. Multimode step index fibers have a bandwidth of a) 2 to 30 MHz km	
b) 6 to 50 MHz km c) 10 to 40 MHz km	
d) 8 to 40 MHz km	
<ul><li>5. Multimode graded index fibers are manufactured from materials w</li><li>a) Lower purity</li></ul>	vith
b) Higher purity than multimode step index fibers.	
c) No impurity	
d) Impurity as same as multimode step index fibers.	
6. The performance characteristics of multimode graded index fibers	are
a) Better than multimode step index fibers	Andread State Control of the Control
b) Same as multimode step index fibers	
c) Lesser than multimode step index fibers d) Negligible	
7. Multimode graded index fibers have overall buffer jackets same as a stepindex fibers but have core diameters.	multimode



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- a) Larger than multimode step index fibers
- b) Smaller than multimode step index fibers
- c) Same as that of multimode step index fibers

d) Smaller than single mode step index fibers	
<ul> <li>8. Multimode graded index fibers with wavelength of 0.85μm ha</li> <li>0.29 have core/cladding diameter of</li></ul>	ve numerical aperture of a) 62.5 µm/125 µm
<ul><li>9. Multimode graded index fibers use incoherent source only.</li><li>a) True</li><li>b) False</li></ul>	Dr. G. Balakrishnan, M.E., Ph.D. Principal Indra Ganesan College of Engineering IG Valley, Madurai Main Road
10. In single mode fibers, which is the most beneficial index profile) Step index b) Graded index c) Step and graded index d) Coaxial cable	Manikandam, Trichy-620 0 <b>12.</b> le?

- 11. The fibers mostly not used nowadays for optical fiber communication system are
- a) Single mode fibers
- b) Multimode step fibers
- c) Coaxial cables
- d) Multimode graded index fibers
- 12. Single mode fibers allow single mode propagation; the cladding diameter must be atleast
- a) Twice the core diameter
- b) Thrice the core diameter
- c) Five times the core diameter
- d) Ten times the core diameter
- 13. A fiber which is referred as non-dispersive shifted fiber is?
- a) Coaxial cables
- b) Standard single mode fibers
- c) Standard multimode fibers
- d) Non zero dispersion shifted fibers
- 14. Standard single mode fibers (SSMF) are utilized mainly for operation in
- a) C-band
- b) L-band
- c) O-band
- d) C-band and L-band



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15. Fiber mostly suited in single-wavelength transmission in O-band is? a) Low-water-peak non dispersion-shifted fibers b) Standard single mode fibers c) Low minimized fibers d) Non-zero-dispersion-shifted fibers limits receiver sensitivity. Dr. G. Balakrishnan, M.E., Ph.D., a) Noise **Principal** b) Depletion layer Indra Ganesan College of Engineering c) Avalanche IG Valley, Madurai Main Road d) Current Manikandam, Trichy-620 012. performs the linear conversion of the received optical signal into anelectric current. a) Receiver b) Converter c) Detector d) Reflector \_are provided to reduce distortion and to provide a suitable signal shapefor the filter. a) Detector b) Equalizer c) Filters d) Amplifier maximizes the received signal-to-noise ratio in the receiver circuitry. 19. A a) Filter b) Equalizer c) Detector d) Reflector 20. \_\_\_\_can be operated in three connections. a) Reflectors b) Diodes c) LED's d) FET's 21. How many structures of pre-amplifiers exist? a) Two b) Three c) Four

- 22. What is the main factor contributing to the choice of the operational amplifier?
- a) Gain

d) One

- b) Impedance
- c) Conductance
- d) Gain-Bandwidth product



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- 23. How many categories of dynamic gain equalizers are available?
- a) One
- b) Two
- c) Three
- d) Four
- 24. How many simultaneous channels can be provided in a band DGE (Dynamic gainequalizer)?
- a) Six
- b) Two
- c) Eight
- d) Ten
- 25. The multiplication factor for the APD varies with the device temperature.
- a) True
- b) False

Dr. G. Balakrishnan, M.E., Ph.D.,

Principal



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## Value Added Course

### "FIBER OPTIC SYSTEM DESIGN & SIMULATION" MULTIPLE CHOICE QUESTIONS (25X1 = 25 Marks)

### ANSWER KEY

1	A	6	A	11	A	16	A	21	В
2	С	7	В	12	D	17	С	22	D
3	A	8	В	13	В	18	В	23	В
4	В	9	В	14	C	19	A	24	С
5	В	10	В	15	В	20	D	25	A

VAC Coordinator

Dr. G. Balakrishnan, M.E., Ph.D., Principal





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Name of the Student: VISTAL V

Year/Sem: IL /IV

AU Register Number: 31221106040

## Value Added Course

### "FIBER OPTIC SYSTEM DESIGN & SIMULATION"

MULTIPLE CHOICE OUESTIONS (25X1 = 25 Marks)

CHOICE CESTIONS 25AI - 2	3 Marks
1 Multimode step index fiber has  a) Large core diameter & large numerical aperture b) Large core diameter and small numerical aperture c) Small core diameter and large numerical aperture d) Small core diameter & small numerical aperture	$\begin{pmatrix} 21\\25 \end{pmatrix}$
<ul> <li>2. A typically structured glass multimode step index fiber shows as ofattenuation in range of</li> <li>a) 1.2 to 90 dB km<sup>-1</sup> at wavelength 0.69μm</li> <li>b) 3.2 to 30 dB km<sup>-1</sup> at wavelength 0.59μm</li> </ul>	variation
d) 1.6 to 60 dB km <sup>-1</sup> at wavelength 0.85μm at wavelength 0.90μm	Dr. G. Balakrishnan, M.E., Ph.D., Principal Indra Ganesan College of Engineering
<ul> <li>3. Multimode step index fiber has a large core diameter of range is</li> <li>b) 100 to 300 μm</li> <li>c) 200 to 500 μm</li> <li>d) 200 to 500 nm</li> </ul>	and the second second second second second
4. Multimode step index fibers have a bandwidth of	
5. Multimode graded index fibers are manufactured from materials was Lower purity  by Tighter purity than multimode step index fibers.  c) No impurity  d) Impurity as same as multimode step index fibers.	vith
6. The performance characteristics of multimode graded index fibers a state than multimode step index fibers b) Same as multimode step index fibers	ате
c) Lesser than multimode step index fibers d) Negligible	
7. Multimode graded index fibers have overall buffer jackets same as a stepindex fibers but have core diameters	multimode



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NAAC Accredited, 2(F) Status Institution by UGC a) Larger than multimode step index fibers Sphaller than multimode step index fibers c) Same as that of multimode step index fibers d) Smaller than single mode step index fibers 8. Multimode graded index fibers with wavelength of  $0.85\mu m$  have numerical aperture of 0.29 have core/cladding diameter of a) 62.5 μm/125 μm 5) 100 μm/140 μm c) 85 µm/125 µm d) 50 µm/125µm Dr. G. Balakrishnan, M.E., Ph.D., 9. Multimode graded index fibers use incoherent source only. Principal a) True Indra Ganesan College of Engineering IG Valley, Madurai Main Road Manikandam, Trichy-620 012. 10. In single mode fibers, which is the most beneficial index profile? a) Step index b) Graded index c) Step and graded index Coaxial cable 11. The fibers mostly not used nowadays for optical fiber communication system are Single mode fibers b) Multimode step fibers c) Coaxial cables d) Multimode graded index fibers 12. Single mode fibers allow single mode propagation; the cladding diameter must be atleast

a) Twice the core diameter

b) Thrice the core diameter

Fixe times the core diameter

d) Ten times the core diameter

13. A fiber which is referred as non-dispersive shifted fiber is?

a) Coaxial cables

Standard single mode fibers c) Standard multimode fibers

d) Non zero dispersion shifted fibers

14. Standard single mode fibers (SSMF) are utilized mainly for operation in

a) C-band

b) L-band

c) O-band

d)/C-band and L-band



c) Conductance

Jain-Bandwidth product

## Indra Ganesan

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15. Fiber mostly suited in single-wavelength transmission in O-band is? a) Low-water-peak non dispersion-shifted fibers b) Slandard single mode fibers c) Low minimized fibers d) Non-zero-dispersion-shifted fibers Dr. G. Balakrishnan, M.E., Ph.D., limits receiver sensitivity. Whise **Principal** Indra Ganesan College of Engineering b) Depletion layer IG Valley, Madurai Main Road c) Avalanche Manikandam, Trichy-620 012. d) Current 17. A performs the linear conversion of the received optical signal into anelectric current. a) Receiver b) Converter S Detector d) Reflector are provided to reduce distortion and to provide a suitable signal shapefor the filter. a) Detector b) Equalizer Ellters d) Amplifier maximizes the received signal-to-noise ratio in the receiver circuitry. b) Equalizer c) Detector d) Reflector 20. \_\_\_\_ can be operated in three connections. a) Reflectors b) Diodes c) LED'S STEV'S 21. How many structures of pre-amplifiers exist? Je Three c) Four d) One 22. What is the main factor contributing to the choice of the operational amplifier? a) Gain b) Impedance



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- 23. How many categories of dynamic gain equalizers are available?
- a) One
- b) Two
- c) Three

Four

- 24. How many simultaneous channels can be provided in a band DGE (Dynamic gainequalizer)?
- a) Six
- b) Iwo
- 2) Fight
- d) Ten
- 25. The multiplication factor for the APD varies with the device temperature.
- b) False

Dr. G. Balakrishnan, M.E., Ph.D.,
Principal

The IC Committee to the Committee of the

## Department of Electronics and communication Engineering

Academic Year 2022-2023- Even Semester

STUDENTS PARTICIPATION LIST

Dr. G. Balakrishnan, M.E., Ph.D.,

Principal

AC PROGRAM- RIBER OPTIC SYSTEM DESIGN AND SIMULATION Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012.

DATE: DATE: DATE: DATE: DATE: NO OF 31.07.23 SIGNATURE 01.08.23 02.08.23 8.110 REGINO 03.08.23 YEAR/ STUDENTS NAME 04.08.23 SESSIONS OFTHE BRANCH AN IN AN IN AN ATTENDAD STURMNY FN AN FN AN 811312106001 Dayana F IV ECE 311219106002 Devila K 10 IV ECE \$11219106003 Dinesh I IV ECE 0 811319106004 Mohana Sundaram K 9 IV ECE 5 811219106005 Ravikumar B 9 IV ECE Mohana Sandaram to 811219106006 6 Santhanaraj A 0 TV ECE avitumus 811219106008 Srikanth M IV ECE. d 8 811219106009 Surendran S IV ECE 0 0 811219106010 Surya V IV ECE 9 81121910(011 10 Swetha K IV ECE 811219106301 11 Yuva.hree S IV ECE 0





Dr. G. Balakrishnan, M.E., Ph.D.,
Principal

Indra Ganesan College of Engineering
IG Valley, Madurai Main Road

5,80	REG NO	REG NO STUDENTS NAME		YEAR/ DATE: 31.07.23		9AVE: 01.08.23		DATE: 02.08.23		DATE: 03.08,23		DATE: 04.08.23		IG Valley, Madurai Main R NO Manikandam, Trichy-620 (	
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or. G. Balakrishnan, M.E., Ph.D.,

Principal

Indra Ganesan College of Engineering

SNO	REG NO STUDENTS I	YEAR/	31.	ATE: .07.23	01.0	TV: 8.23	DAT 02.08	4	DATE: 03.08.23	 ATE: 1.08.23	Manikano NO OF SESSIONS	Madurai Main Ro lam, Trichy-620 0: SIGNATURE
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VAC Coordinator

M. Bhise



## Department of Electronics and Communication Engineering

Academic Year 2022-2023 - Even Semester

# VALUE ADDED COURSE ASSESMENT SHEET FIBER OPTIC SYSTEM DESIGN & SIMULATION

Dr. G. Balakrishnan, M.E., Ph.D.,

S.NO REG NO	REG NO	G NO STUDENTS NAME	YEAR/	Attenda	ince Details	VAC-M	OVERALL MARK(100) (50% of A +	
		BRANCH	No. of Session	Attendance Mark(100)	No of Correct	MCQ Mark(100)		
1	811219106001	Dayana P	****	Attended	(A)	Answers	(B)	50% of B)
2	811219106002	Devika K	IV ECE	30	100	20	80	90
3	811219106003	Dinesh J	IV ECE	30	100	20	80	Account of the Assessment of t
4	811219106004		IV ECE	27	90	19		90
5	811219106005	Mohana Sundaram K	IV ECE	27	90		76	83
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6	811219106006	Santhanaraj A		27	90	19	76	83
7	811219106008	Srikanth M	IV ECE	27	90	19	76	83
8	811219106009	Surendran S	IV ECE	30	100	20	80	90
9	811219106010	Surya V	IVECE	27	90	19	76	property of the same
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	811219106011	Swetha K	IV ECE		harmon a livernos de deserve de	19	76	83
11	811219106301	Yuvashree S		27	90	19	76	83
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Dr. G. Balakrishnan, M.E., Ph.D.,

Indra Ganesan College of Engineering

IG Valley, Madurai Mair Manikandam, Trichy-62

lain Roa -620 012	d REG NO	STUDENTS NAME	YEAR/	Attenda	nce Details	VAC-M	ICQ TEST	OVERALL
and the state of t		ATEMPARA	BRANCH	No. of Session Attended	Attendance Mark(100)	No of Correct	MCQ Mark(100)	MARK(100) (50% of A +
12	811219106701	Vijayalakshmi V	IVECE	The Manager and the state of the same and th	(A)	Answers	(B)	50% of B)
13	811219106702	Ponnarasu S	manager & manager manager manager	27	90	20	80	85
14	811220106006	Banu priya G	IV ECE	30	100	21	84	92
15	811220106008	Bharathidasan C	III ECE	30	100	19	76	88
16	811220106018	J.Jancy	III ECE	27	90	19	76	P-044640-444-00010-00010-00-00-00-00-00-00-00-00-00-
17	811220106019	Jeevasen N	III ECB	24	80	20	80	83
18	811220106021		III ECE	24	. 80	21	-00x00,07970 - 000	80
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20		C.karthick	III ECE	30	AND DESCRIPTION OF THE PARTY OF	22	88	89
	811220106023	S.Karthika	MECE	m -man une for	100	20	80	90
21	811220106025	Kishore R	III ECE	27	90	21	84	87
22	811220106026	M. Kishore kumar		24	80	20	80	80
23	811220106028	Mancy.E	ШЕСЕ	27	90	21	84	87
24	811220106031	Pradhap.J	III ECE	30	100	20	80	90
25	811220106032	Prasannaa.J	III ECE	30	100	19	76	82
26	811220106033	Preethika.M	III ECE	30	100	19	76	88
27	811220106034	Premalatha.M	III ECE	30	100	21	84	92
28	811220106037	Shri Harini Priya B	III ECE	27	90	19	76	manner parlamente sans sq
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· Strikenschappen			BRANCH	No. of Session Attended	Attendance Mark(100)	No of Correct	MCQ Mark(100)	MARK(100) (50% of A + 50% of B)
31	811220106041	Sunil Kumar B	III ECE		(A)	Answers	(B)	5070 01 15)
32	811220106042	Susila N	III ECE	30	100	19	76	88
33	811220106049	Yoga priya.R		27	90	19	76	83
34	811221106001	AARTHIS	III ECE	24	80	21	84	82
35	811221106003		II ECE	27	90	20	80	85
36	811221106005	Parent internal and the same of the same o	II ECE	30	100	21	84	92
37	811221106008	DEEPALAKSHMI.S	II ECE	27	90	19	76	
38	811221106012	DHINESH BABU.C	II ECE	30	100	19	***************************************	83
	1	JAYA KAMAKSHE RADHA.S.P	II ECE	30	100	19	76	88
39	811221106022	PARKAVI.S	II ECE	30	100	the state of the s	76	88
40	811221106024	PREMKUMER.S	II ECE	27	- 2000000000000000000000000000000000000	21	84	92
41	811221106033	THAMILARASI.C	II ECE	Affirmation , santaning con-	90	21	84	87
42	811221106034	THRISHA.S	II ECE	24	80	20	80	80
43	811221106035	VEERAKUMAR.R	***************************************	27	90	21	84	87
44	811221106036	VELLAISAMY.S	II ECE	30	100	20	80	90
45	811221106037	VICTORRAJ.S	II ECE	27	90	19	76	83
46	811221106040	VISHAL.V	II ECE	30	100	19	76	88
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		OM PARKASH.R	II ECE	27	90	19	76	92

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**VAC Coordinator** 

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Dr. G. Balakrishnan, M.E., Ph.D.,
Principal

Indra Ganesan College of Engineering IG Valley, Madurai Main Road Manikandam, Trichy-620 012. MBlum

HOD/ECE





# Indra Ganesan COLLEGE OF ENGINEERING Madural Main Road (NH-458), Manikandam, Tiruchirappalli - 620 012

Madural Main Road (NH-458), Manikandam, Tiruchirappalli - 620 012
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## CERTIFICATE OF PARTICIPATION

This is to certify that Ms. SURENDRAN.S, IV Year, ECE has successfully completed the Value Added Course on "FIBER OPTIC SYSTEM DESIGN & SIMULATION" organized by Department of Electronics and Communication Engineering and IQAC of our Institution in Association with Hitakey Infosys from 31<sup>st</sup> July 2023 to 04<sup>th</sup> August 2023 (5days) during the Academic year 2022-2023.

Mrs.Shalom Jerlin Technical Head, Hitakey Infosys. ()··

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

Principal IGCE