## pics to be Covered;

e Computing Applications Security & Trends

dware Introduction (Sensors, Actuators, Processing and Communication)

dking with Raspberry Pi & DIY Projects with Raspberry Pi

ud Familarisation

ti Project

based Project Development

Diagnostics

ulytical Visualization

king with Arduino & DIY Projects with Arduino

nation Scale Up & Production

## Resource Persons:

Dr. G.Santhosh Kumar, Professor, CSE, Cochin University of Science & Technology
Dr. Sreekanth R., Head- Solutions & Research, ICT Academy Kerala
Mr. Riji N. Das. Head- Knowldge Office, ICT Academy Kerala
Ms. Aparna P. Mahesh, IoT validation Engineer, Zilicon Technologies Pvt Ltd, TVM
Mr. Abhijith Aji Kumar, IoT Technical Skills Trainer, ICT Academy Kerala

# Organizing Committee

Stubi Fatron: Magn. Jone Konnikiare (Manager)
Patrons: Rev. Fr. Thomas Kakkassery (Executive Manager)
Rev. Fr. Dr. Jose Kannampuzha (Academic Director
Stronising Chaitman Dr. Jose P. Therattil (Principal)

Dr.V. M. Xaviuor (Registrar)

Coordinator : Dr. Saju P. John (Professor & Read, Computer Science & Engineering) Executive Committee

Prof. Retnan P. (Vice Principal)

Dr. Vijayakumar R. (Professor, Computer Science & Engineering)



Organized by
Department of Computer Science & Engineering
Jyothi Engineering College, Thrissur
in association with ICT Academy of Kerala



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VOTIN Engineering College

NAAC Accredited College with 1951 Accredited Programmes

Approved by AICTE & affiliated to APJ Abdul Kalam Technological University

# Edge based IoT for Industrial Applications





Sponsored by APJ Abdul Kalam Technological University Trivendrum, Kerala

January 2023





Sona Shaju K., Assistant Professor, sonashajuk@jecc.ac.in, Mob. 8606245031

"URUTHY."

# About the Institution

Jyothi Engineering College (JEC) set up in 2002, under the aegis of Thrissur Educational Trust, founded by the Catholic Archdiocese of Trichur, is a leading engineering college in Rerala. The Archdiocese of Trichur has an illustrious track record of a century and a quarter in the education sector. We at Jyothi Engineering College are aware that our stakeholders, including students and recruiters, look for reliable information on quality education offered. Jyothi Engineering College is a NAAC accredited institution with 'A' Grade, affiliated to APJ Abdul Kalam Technological University, Kerala. The NAAC instrument is developed to objectively assess and grade institutions of higher education. Five of the undergraduate programs offered by Jyothi Engineering College have NBA accreditation, which indicates that we are well recognized for the quality of education we offer. We are periodically evaluated for this stringent NBA accreditation criteria to ensure we sustain the mandated quality levels.

The worlds of study and work have changed dramatically. Students of today require different sets of skills than those of previous generations. We are in the midst of the fourth industrial revolution and the predictions are that 85% of the jobs that will exist in 2030 have not been invented yet. JYOTHI hence prepares students to become T-Shaped professionals, i.e., professionals who have in-depth expertise in their discipline as well as a breadth of competencies required in the twenty-first century. Industry seeks engineers with these skills. In order to train our students to become "T" shaped professionals, so that they are "future ready", we have set up an incubation centre, Integrated Industrial Incubation Centre (IIIC), in association with TATA Technologies.

In order to help students become "job creators" rather than "job seekers", Jyothi Engineering College has also set up a Technology Business Incubator, JEC TBI, to create technology based new enterprises, foster an entrepreneurial spirit among students and connercialize R&D output. Additionally, Jyothi Engineering College offers a vibrant, beautiful, and green environmentally friendly campus, and excellent infrastructure for students, to aid the teaching and learning process. For more information visit www.jecc.ac.in

# About the Department

The Department of Computer Science and Engineering, with a strong team of research orientated faculty, offers Bachelors and Masters programmes in Computer Science. The department offers an intellectually stimulating learning environment and encourages mentoring of the students by its competent faculty members. The department aims to be an intellectually vibrant learning centre focused on quality education and multidisciplinary research with a view to preparing young, creative and entrepreneurial minds to lead the technological and entrepreneuric minds and the technological and control of the region.

## Vision

Creating ethical leaders in the domain of Computational Sciences through quality professional education with a focus on holistic learning and excellence.

HURUT

## Mission

- To create technically competent and ethically conscious graduates in the field of Computer Science and Engineering by encouraging holistic learning and excellence.
  - To prepare students for careers in Industry, Academia and the Government.
- To instill Entrepreneurial Orientation and research motivation among the student of the department.
- To emerge as a leader in education in the region by encouraging teaching, learn ing, industry and societal connect.



API Abelul Kalam Technological Uni are oligible to attend the progras

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Registration https://tinyurl.com/csetdt Link Last date for Registration: 14.01. Notification of selection: 16.01.

# About the programme

The broad objective of this Faculty Development Program is to introduc Trends and Opportunities in Edge Based IoT for Industrial Applications and to it expertise in one of the most fascinating and fastest growing areas of Computer Sci IoT and its security approaches are widely employed in a variety of applications, in ing biometrics, medical imaging Processing, and in industry, defence, healthcare culture and many other areas. This course will cover the fundamentals of IoT seemed how they apply to various research applications. It would assist in improvin skills and capabilities of faculty members at various engineering colleges in Incomell as creating an environment, conducive to research and academic success goal of the course work is to teach theoretical foundations of Edge based IoT approvide hands-on training based on the latest IoT tools to the audience.

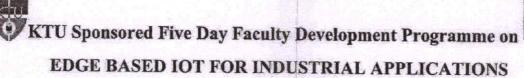


### **Engineering College** NAAC Accredited College with NIS Accredited Programmes

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January 19th - January 25th, 2023

Organized by Department of Computer Science and Engineering in Association with ICT Academy Kerala

Day##	Topic Topic	Date	Time	Resource Persons	
	Inauguration & Keynote		9 AM - 11 AM	Dr. Santhosh G Santhosh Kumar (Professor, CSE, CUSAT)	
Day I	Data Processing in IOT	19-Jan	11.15 AM - 1.15 PM	Dr. Santhosh G Santhosh Kumar (Professor, CSE, CUSAT)	
	Software Familiarisation		2,00 PM - 4.00 PM	Abhijith Ajikumar (IoT Technical skills Trainer, ICT)	
Day 2	Hardware Introduction	20-Jan	9 AM - 12 PM	Abhijith Ajikumar (IoT Technical skills Trainer, ICT)	
, -	Hardware Familiarisation	20-Jan	1.00 PM - 4.00 PM	Aparna P Mahesh(IoT Validation Engineer, Zilicon Technologies. TVM)	
	Industry Expert Session		9 AM - 12.00 AM 01:00PM-2:00PM	Dr. Sreekanth D(Head Solutions & Research, ICT)	
Day 3	IoT Project Development	23-Jan	02.00 AM - 4:00 PM	Aparna P Mahesh(IoT Validation	
	Implementation of IoT			Engineer, Zilicon Technologies. TVM)	
Day 4	Introduction to Raspberry Pi [Hands-on]	24-Jan	9 AM - 12.00 AM	Abhijith Ajikumar	
	IoT Data Analytics [Demo]	24-Jan	01:00PM-04:00PM	Aparna P Mahesh(IoT Validation Engineer, Zilicon Technologies. TVM)	
	Industry Expert Session		9 AM - 12.00 AM	Davis Jose(Trainer, ICT)	
Day 5	Cloud Platform Familiarisation	25-Jan	01.00001.01.01	Riji N Das (Head Knowledge Office.	
	Introduction to Arduino [Hands-on]		01:00PM-04;00PM	ICT)	









#### Report of KTU Sponsored Faculty Development Programme

on

#### **Edge Based IOT for Industrial Applications**

(January 19th-January 25th, 2023)

"Edge Based IOT for Industrial Applications", the KTU sponsored Five day Faculty Development Programme was organized by Department of Computer Science and Engineering in Association with ICT Academy Kerala. The objective of FDP was to take the participants through the world of IOT security and how they apply to various research applications. It would assist in improving the skills and capabilities of faculty members at various engineering colleges, as well as creating an environment, conductive to research and academic success.

ICT Academy of Kerala is a Social Enterprise created in a Public Private Partnership model (PPP) for imparting ICT skills to the youths of Kerala and improving their employability opportunities in the Industry. The Company is supported by Govt. of India, partnered by Govt. of Kerala and the IT industry.

The five day sessions started with an inauguration function at the decennial hall at 10.00 am. HoD, Dr. Saju P John delivered the welcome address. The programme was inaugurated by Dr. G Santhosh Kumar (Professor CSE,CUSAT). Vice Principal Prof. Ratnan addressed the gathering and exhorted the participants to gain knowledge and to transfer them to the student community. The speakers also asked the participants to take the maximum benefits out of this programme. Mr. John J Padamadan (Asst. Knowledge Officer, ICT academy) also briefed about the ICT Academy of Kerala and its activities.





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## Jyothi Engineering College

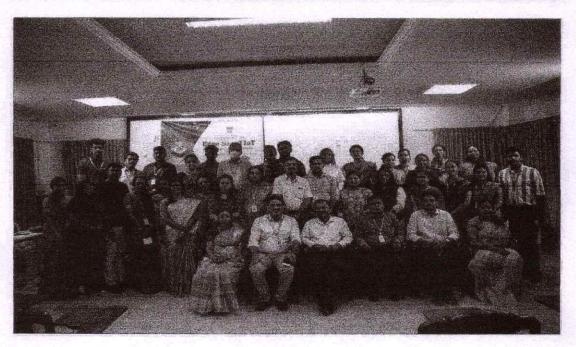
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NBA accredited BJech Programmes in Computer Science & Engineering, Electronics & Communication Engineering, Electronics Engineering and Mechanical Engineering valua for the academic years 2016-2022, NBA accredited 6 Sech Programme in Civil Engineering valua for the academic years 2019-2022.





FDP started with an introduction to IOT by Dr. G Santhosh Kumar. He explained about cyber physical systems for Edge computing: A new frontier to IOT and Integration of cloud computing and IOT, Edge computing, Fog computing, Differentiation of Edge, cloud and







## Jyothi Engineering College

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The second day of FDP dealt with introduction of hardware components like Arudino, RaspberyPi and familiarization of IOT hardware components like LED ,Bazar, Switch, nanoUSB board, joystick, motion sensor, and LDR. The participants are excited to work with such a handson session by Mr.Abijith. On third day there was an industry expert session by Dr. Sreekanthand afternoon session was handled by Ms. Aparna P Mahesh. She introduces various real-world applications of IOT which includes data processing of IOT. Participants were excited to do sample projects using IOT components. The fourth day dealt with introduction and of RaspberryPi and programming by Mr.Abijith and IOT data analytics by Ms.Aparna P Mahesh. Fifth day of fdp dealt with an industry expert session by Mr. Davis jose. Afternoon session dealt with Cloud Platform Familiarization and introduction to Arudino handled by Riji N Das.







Dr. DSE P THERATTIL

Dr. DSE P THERATTIL

Principal

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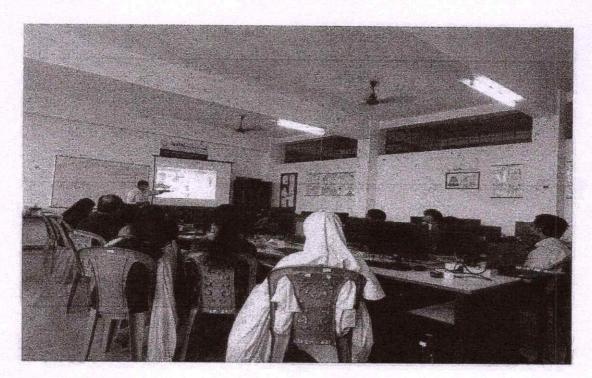
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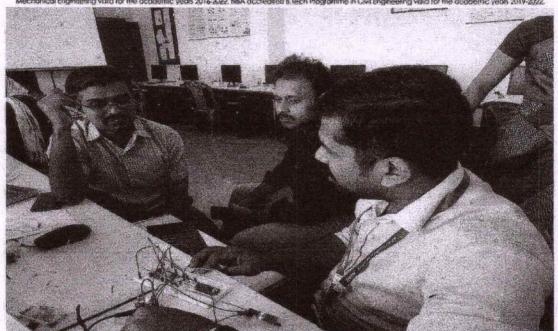
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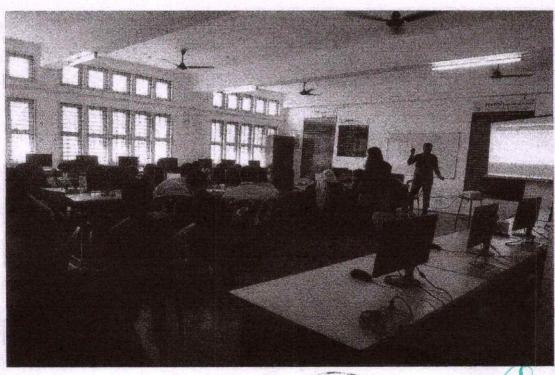
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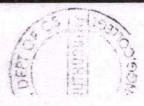


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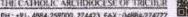


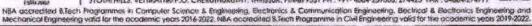


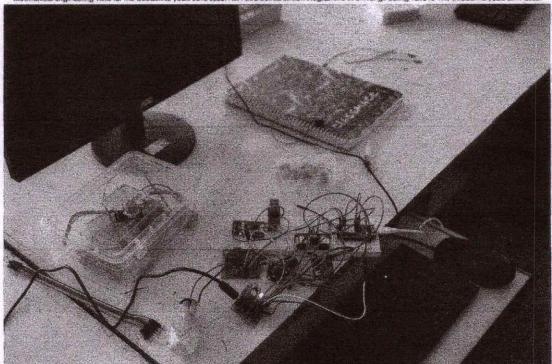
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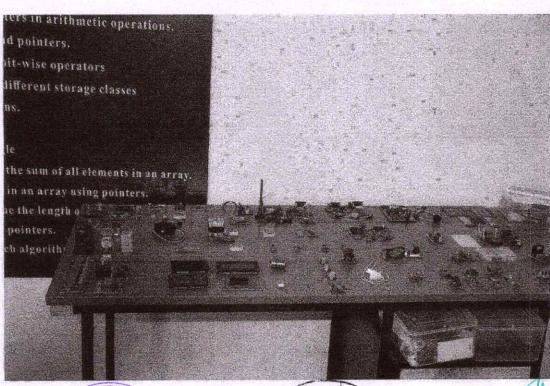
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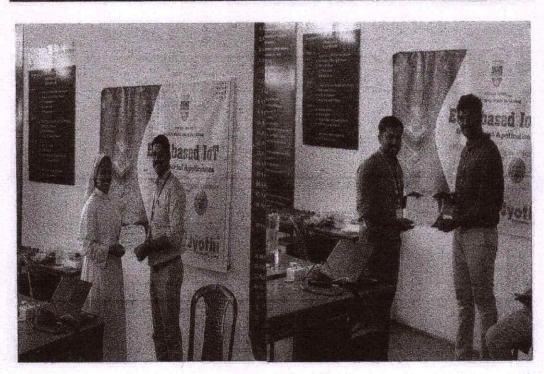
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NBA accredited B.Tech Programmes in Computer Science & Engineering, Declinoiss & Communication Engineering, Bectrical & Bectronics Engineering and Meetanical Engineering votal for the academic years 2016-2022, NBA accredited 8.Tech Programme in Civil Engineering votal for the academic years 2019-2022.









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## Jyothi Engineering College

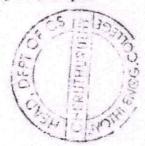
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Total of 30 participants (22 external participants and 8 inhouse participants) attended the FDP.External participants included faculty from various Government Engineering Colleges across Kerala also.FDP was concluded with the valedictory function. Dr.Saju P John, HOD CSE addressed the participants and the participants also provided their feedback about the programme. The programme came to an end after the certificate distribution to all the participants on January 25<sup>th</sup>, 4.00pm.





Dr. JOSE P THERATTIL Dr. JOSE P THERATTIL Dr. JOSE P THERATTIL Principal College Principal College Dr. JOSE P THERATTIL Principal College With Engineering 679531

### **Attendance List**



## Jyothi Engineering College NAAC Accredited College with NSR Accredited Programmes\*

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#### KTU Sponsored Five Day Faculty Development Programme on

#### EDGE BASED IOT FOR INDUSTRIAL APPLICATIONS

January 19th- January 25th, 2023

Organized by Department of Computer Science and Engineering in Association with ICT Academy, Kerala

#### ATTENDANCE SHEET

Date: 19.01.2023 Thursday

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6	Ms.	Reema Jose	CSE	Chairt college of 6mg	Room	Base.
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NBA accredited 8.Tech Programmes in Computer Science & Engineering, Electronics & Communication Engineering, Becklical & Becklenics Brigineering and Mechanical Engineering valid for the academic years 2016-2022. NBA accredited 8 Fach Programme in Civil Engineering valid for the academic years 2019-2022.

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KTU Sponsored Five Day Faculty Development Programme on

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#### ATTENDANCE SHEET

Date: 20.01.2023 Friday

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Approved by AICTE & affiliated to APJ Abdul Kalam Technological University A CENTRE OF EXCELLENCE IN SCIENCE & TECHNOLOGY BY THE CATHOLIC ARCHIDIOCESE OF PRICHER

JYOTHI HILLS, VETTIKATTIRI P.O. CHERUTHURUTHY, THRISSUR, PIN-679531 PH : +91-4884-259090, 274423 FAX : 04884-274777 NBA discretified 8-lean Programmes in Computer Science & Engineering, Electronics & Communication Engineering, Electrical & Electronics Engineering and Mechanical Engineering valid for the academic years 2016-2022, NBA accredited 8-tech Programme in Civil Engineering valid for the academic years 2019-2022.





KTU Sponsored Five Day Faculty Development Programme on

### EDGE BASED IOT FOR INDUSTRIAL APPLICATIONS

January 19th-January 25th, 2023

Organized by Department of Computer Science and Engineering in Association with ICT Academy, Kerala

#### ATTENDANCE SHEET

Date : 23 01 2023 M.

Slno	10.	Name	Dept	Institution Name		Signature
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1	Mos.	Neethy probhaboom	CSG	IES college of engo.	Crothe	S. realis
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6	ros.	Reema Jose	CSE	Chaist college alenge	Brens.	Leave.
7	ma.	Anup Vascevan	ECG	Mahagulu Institute	de	de.
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2	nos.	Sindhu.s	ECE	Tyothi eng college		7
13	ras.	Bindhu.k	Ec€	Tyothi eng college	Bunya	Barnston
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## Jyothi

### **Engineering College**

NA AC Accredited College with NSI Accredited Programmes'

Approved by AICTE & affiliated to APJ Abdul Kalam Technological University

A CENTRE OF EXCELLENCE IN SCIENCE & TECHNOLOGY BY THE CATHOLIC ARCHOROCESE OF TRICHLIC JYOTHE HILLS, VETTIKATIIRI P.O. CHERUTHURUTHY, THRISSUR, PRIS-679531 PH.: +91-4884-259000, 274423 FAX: 04884-274777



NBA accredited B.Tech Programmes in Computer Science & Engineering, Electronics & Communication Engineering, Electronics Engineering and Mechanical Engineering valid for the accidentic years 2016-2022. NBA accredited B.Tech Programme in Civil Engineering valid for the accidentic years 2019-2022.

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26	Mag	BARETHA NOW	OSE	THE COLLEGE OF ENG	As-	
84	Ms.	Savitha: Ps	FCE	1856 college of lange	Carlo	
25	Ms	Sindhu S	CSÆ	Thejus Englollege	E	E
26	l'as	Lucy Vasceo	CSE	Vidya Academy	dus	Las
27	Ms-	Saecja P	ECE	Sa acpathy Institute	de D	de A
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### Engineering College

Approved by AICTE & affiliated to API Abdul Kalam Technological University

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KTU Sponsored Five Day Faculty Development Programme on



#### EDGE BASED IOT FOR INDUSTRIAL APPLICATIONS

January 19th-January 25th, 2023

Organized by Department of Computer Science and Engineering in Association with ICT Academy, Kerala

#### ATTENDANCE SHEET

Date: 24.01.2023 Tuesday

Slno	# E	Name	Dept	Institution Name	Signature		
	7,11				FN	AN	
1	Mrs.	Neethu Prabhakasa	P.P. CSE	Tes college of Engg	CLORE	Dream.	
2.	Ms.	Suvitha P.S	ECE	Its college of Engg	1000	R. M.	
3.	Ms.	Shejina N.M	CS€.	Its cologe of tongg	Sign	80	
4	Ms.	Aswathy Babu	CSE	Mex college of Engg	8		
5.	Ms.	Niveditha P.S	ece	Thejus Eng college	ANDL	ANGU	
6.	Ms.	Reema Jose	CSE	chairt college of for		Received.	
7	Mx	Anup Vasavan	Ece	Mahaguru Institut	de	de.	
8	Mr.	Shine P Xavious	CSE	Vidhya Academy of		3	
7.	1/8.	Valanto Alappat	CSE	Thejus Gry college	Car	advin	
10	M.	Jyothi P. Joy.	CSE	Thejus Eng college	(Mark)	Only	
y.	Me.	Divya Jose	cse	I ces college of the	The -	The same of the sa	
12	Mr.	Sindhu . S	ECE	Tyothi Engrollege	Mali	No.	
13.	Mc-	Bindhu k	ect	Tyothi Gray college	Brenty	Buy	
14.	Mr.	Ambily Francis	ECE	Tyothi Eng college	hit	Mind	



Approved by AICTE & affiliated to API Abdul Kalam Technological University

A CENTRE OF EXCELLENCE IN SCIENCE R TECHNOLOGY BY THE CATHOLIC ARCHIDIOCESE OF TRICHER JYOTHI HILLS, VETTIKATTIRI P.O., CHERUTHURUTHY, THRISSUR, PIN-679531 PH : +91-4834-259000, 274423 FAX ; 04884-274777

Isranous

NBA accredited B.Tech Programmes in Computer Science & Engineering, Electrosics & Communication Engineering, Electrical & Electrosics Engineering and NBA accredited B.Tech Programme in Civil Engineering valid for the academic years 2019-2022.

Mechanical Engineering valid for the academic years 2019-2022. NBA accredited B.Tech Programme in Civil Engineering valid for the academic years 2019-2022.

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15	Ms.	Neether Rose Thomas	ECE	Jyothi Engy Lotlage	Necth	
16		Sudheer Marar		Nehau college	20	200
			MCA	Nehau college	As-	<del>Ro</del>
7	No.	Pramod			Agas	Ala
8	Mr	Ashish L	MCA	Nehau college	(4)	· AD
19	Mr.	Jinesh	Megha-	Jyothi Eng College	, , , , , , , , , , , , , , , , , , ,	<b>3</b> .
20	Mr.	Akhil Balaknishnan	EFF	Jyothi Eng college	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
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12.	Mo.	Jeejo · k.P		Jawaharlal colleg	1	88_
23.	Ms.	Sreekala-R	CSE	Towaharlas College	e di	Lu
24.	Ms.	Anu. T.P	(SE	की हेम्बुव विकास	8	h
25	Ms	Sindhus	CSE	Theyes Eng Colle	ge ·	\$
26.	Ms.	0 01	CSE	Vidya Academy	, dus	dus_
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27	Ms	9		<del>                                     </del>		1
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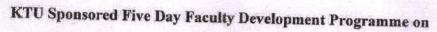
JYOTHI HILLS, VETTIKATIIN P.O. CHERUTHURUTHY, THRISSUR, PIN-679531 PH : 191-4884-259000, 274423 FAX : 04864-274777

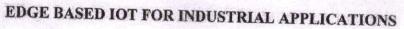


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NBA occredited B.Tech Programmes in Computer Science & Begineering, Electronics & Communication Engineering, Electrical & Electronics Engineering and Machanical Engineering valid for the academic years 2014-2022. NBA acadedited B.Tech Programme in Civil Engineering valid for the academic years 2019-2022.







January 19th-January 25th, 2023

Organized by Department of Computer Science and Engineering in Association with ICT Academy, Kerala

#### ATTENDANCE SHEET

Date: 25.01.2023 Wednesday

lno		Name	Dept	Institution Name	S	ignature
  -	Mos.	Neethu Prabhakas	CSE	Its college of tong	FN	AN
۶.	Mr.	Suvitha P.S	ECE	Its college of tong	July 1	J. Jan
	Ms.	Shijina NM	CSE	Its college of try	No.	100
4	Ms.	Aswathy Babu	CSE	Mts college of tog	A	A
5	Ms.	Niveditha Ps	ECE		will.	Ald.
6	Ms.	Reema Jose	CSE	Charlet college of tro	Rema.	Ruent.
7_	Mo.	Anup Vasavan	ECE	Mahaguru Institut	h of	d.
	Mr	Shine P. Xavious	CSE	Vidhya accordendy	(A)	A.
	Mr.	Valanto Alappat	CSE	Thejus Eng college	and	Dal
	Me.	Jysthi P. Joy	CS E	Thejus Eng college	(90 × )	Braze,
	Ms.	Divya Jose	CSE	Tes College of the	The second	The second second
2	Ms.	Sindhu · S	ECE	Tyothe Eng college .	Sam	John
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## Engineering College NAAC Accredited College with 16th Accredited Programmes\*

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JYOTHI HILLS, VETTIKATTIRI P.O. CHERUTHURUTHY, THRISSUR, PIN-679531 PH ; +91, 4684-259000, 274423 FAX : 04684-274777

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1.	01	Lun To		19	1 1	16FFIC VEORS 2019-2022.
15	· Ms	Neethy Rose Thomas	PB CCE	Jyothi Eng college	Neel	Roel
16.	Mr.	Sudheer Marag	MCA	Nehru college	700	- Julian
17.	Mr.	Pramod	MCA	Nehau college	danid	dust
18.	Mr.	Ashish.L	MCA	Nehru college	And	Am
19.	Mr.	Jinesh	mechal	Jyothi Eng college	.74)	74
20	Mr.	Akhil Balakrishna	n EEE	Tyothi Eng college	<b>3</b> -	T.
21	Ms.	Reeny Zachasias	CSE	Its college of bog	alund	Rush
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26	Ms	Jucy Vageen	CSE	Vidya Academy	du	Los
27	Ms	Sreeja P	L-CE	Sacepathylastite	Shoo	Seus p
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### **Engineering College** NAAC Accredited College with N33 Accredited Programmes

Approved by AICTE & affiliated to APJ Abdul Kalam Technological University

A CENTRE OF EXCELLENCE IN SCIENCE & TECHNOLOGY BY THE CATHOLIC ARCHDIOCESE OF TRICHUR

JYOTHI HILLS, VETTIKATTIRI P.O, CHERUTHURUTHY, THRISSUR. PIN-679531 PH: +91- 4884-259000, 274423 FAX: 04884-274777



14th September 2022

The Dean(Academics) A P J Abdul Kalam Technological University CET Campus Trivandrum.

Sir.

Sub: Submitting the report, Original audited statement and Bills for reimbursement Ref:-Notification No: KTU/ACA1/1449/2022 dated 14/03/2022 by your office

As per the reference cited above the FDP Proposal submitted by Dr Swapna B Sasi ,Associate Professor, Computer Science& Engineering department has got approval from the University in the Topic "Machine Learning: A Trajectory through the World of adaptive algorithms ". The 5 day FDP has successfully conducted from 22<sup>nd</sup> August 2022 to 26<sup>th</sup> August 2022.

Here we are forwarding the FDP report, audited statement, bills and other enclosures prescribed by the University for your kind consideration. The Total expenditure for the programme is Rs.166533. (1 Lakh Sixty-Six Thousand Five Hundred and Thirty-Three)

It is hereby requested to reimburse the amount to the following account as early as possible.

NAME- JYOTHI ENGINEERING COLLEGE BANK-FEDERAL BANK **BRANCH-CHERUTHURUTHY** IFSC CODE-FDRL0001699 ACCOUNT NUMBER-15250100001019

Yours Truly,

Dr. Swapna B Sasi **FDP** Coordinator Associate Professor, Computer Science & Engineering





Dr. Jose P Therattil Principal

# Report of the Faculty Development Programme 22<sup>nd</sup> -26<sup>th</sup> August, 2022

Trends and Opportunities in Machine Learning & Artificial Intelligence Python for Machine Learning

Hands on session on Tools, Platform and Framework for ML/AI

Introduction to Machine Learning Life Cycle

Introduction to Preprocessing

Introduction to Supervised Learning Techniques

Case Study on Regression

Case Study on Classification

Introduction to Unsupervised Learning Techniques

Introduction to Clustering

Hands on session on Case Study on Clustering

Introduction to Dimensionality Reduction

Hands on session on Case Study on Dimensionality Reduction Artificial Neural Network & Case Study

Introduction to Natural Language Processing Case Study on NLP

Introduction to Computer Vision

Case Study on CV

## Resource Persons:

Mr. Ummar Shaik (Solutions Architect Data Science, Reflections Info Systems, Technopark) Dr. Vinith R. (Postdoctoral Fellow, Amrita Viswha Vidyapeedham, Coimbatore) Dr. Sreekanth D. (Head, Solutions & Research Dept., ICT Academy of Kerala) Mr. Abhimanyu K. S. (Al Consultant, QuEST Global, Technopark) Mr. Unnikrishnan P. (Research Scholar, NIT Calicut)

# Organizing Committee

Chief Patron: Msgr. Jose Konnikkara

Coordinator : Dr. Swapna B Sasi, Associate Professor, Computer Science & Engineering Organizing Chairman: Dr. Jose P Therattil, Principal, Dr. V. M. Xaviuor, Registrar Patrons: Rev Fr. Thomas Kakkassery, Rev Fr. Jose Kannampuzha Executive Committee;

Dr. Vivek Lukose (Centre Coordinator) Prof. Ratnan P. (Vice Principal)

Dr. Vijayakumar R(Professor, Computer Science & Engineering)

Dr. Saju P John (Professor & Head, Computer Science & Engineering)

Contact Details:

Ms. Ninu Francis, Assistant Professor, ninufrancis@jecc.ac.in, Mob. 9446045708 Dr. Swapna B Sasi , Associate Professor, swapna @jecc.ac.in, Mob: 9447125373

Engineering College

Approved by AICTE & affiliated to APJ Abdul Kalam Technological University

Vogorames in Computer Science & Engineering. Bectronics & Communication Engineering. Bectrical & Bectronica Signeering and vide for the accordent system 2014/2022. A CENTRE OF EXCELLENCE IN SCIENCE 8 TECHNOLOGY BY THE CATHOLIC ARCHDIOCESE OF TRICHUR Morihalls, Vetekatir P.O. Cherumuruhy, Mrssur, Pin-48931 PH : +91 -484-539000, 27433 F.X. :0484-27777

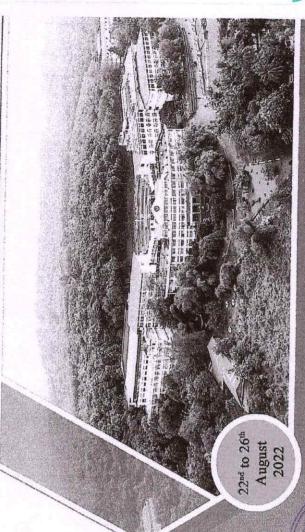
# FACULTY DEVELOPMENT PROGRAMME

(OFFLINE MODE)

Machine Learning : A Trajectory through The World of Adaptive Algorithms



APJ Abdul Kalam Technological University Trivandrum, Kerala Sponsored by



Organized by

Department of Computer Science & Engineering

Iyothi Engineering College, Thrissur

CT Academy of Kerala



www.jecc.ac.in || hodcs@jecc.ac.in

## 

yothi Engineering College (IEC) set up in 2002, under the aegis of Thrissur rigineering college in Kerala. The Archdiocese of Trichur has an illustrious track ecord of a century and a quarter in the education sector. We at Jyothi Engineering college are aware that our stakeholders, including students and recruiters, look or reliable information on quality education offered. Jothi Engineering College is NAAC accredited institution with 'A' Grade, affiliated to APJ Abdul Kalam ducational Trust, founded by the Catholic Archdiocese of Trichur, is a leading issess and grade institutions of higher education. Five of the undergraduate programs offered by Jyothi Engineering College have NBA accreditation, which ndicates that we are well recognized for the quality of education we offer. We are periodically evaluated for this stringent NBA accreditation criteria to ensure we echnological University, Kerala. The NAAC instrument is developed to objectively rustain the mandated quality levels.

The worlds of study and work have changed dramatically. Students of today require exist in 2030 have not been invented yet. JYOTHI hence prepares students to lifferent sets of skills than those of previous generations. We are in the midst of the secome T-Shaped professionals, i.e., professionals who have in-depth expertise in heir discipline as well as a breadth of competencies required in the twenty-first entury. Industry seeks engineers with these skills. In order to train our students to secome "T" shaped professionals, so that they are "future ready", we have set up ourth industrial revolution and the predictions are that 85% of the jobs that will in incubation centre, Integrated Industrial Incubation Centre (IIIC), in association vith TATA Technologies.

n order to help students become "job creators" rather than "job seekers", Jyothi ingineering College has also set up a Technology Business Incubator, JEC TBI, to students and commercialize R&D output. Additionally, Jyothi Engineering College offers a vibrant, beautiful, and green environmentally friendly campus, and excellent infrastructure for students, to aid the teaching and learning process. For reate technology based new enterprises, foster an entrepreneurial spirit among nore information visit www.jecc.ac.in

# ibout the Department

he Department of Computer Science and Engineering, has a strong team of coulty with high orientation towards research, offers Bachelors and Masters rogrammes in Computer Science. The department offers an intellectually imulating learning environment and encourages mentoring of the students by its ompetent faculty members. The department aims to be an intellectually vibrant sarning centre focused on quality education and multidisciplinary research with view to prepare young, creative and entrepreneurial minds to lead the schnological and economic change in the region.

## Mision

Zreating ethical leaders in the domain of Computational Sciences through quality rofessional education with a focus on holistic learning and excellence PUTHY, THE

## MESSION

To create technically competent and ethically conscious graduates in the field of Computer Science and Engineering by encouraging holistic learning and excellence.

To instill Entrepreneurial Orientation and research motivation among the students To prepare students for careers in Industry, Academia and the Government of the department.

To emerge as a leader in education in the region by encouraging teaching, learning, industry and societal connect.

awarded on successful completion Participation certificate will be

Registration No Registration fee



Link

About the programme

https://tinyurl.com/jecfdp

Last date for Registration: 12.08.2022 Notification of salaction :16.08.2022

The broad objective of this Faculty Development Program is to introduce the Trends expertise in one of the most fascinating and fastest growing areas of Computer Science and Opportunities in Machine Learning & Artificial Intelligence and to impart Al approaches are widely employed in a variety of applications, including Biometrics, Medical Imaging Processing, Natural Language Processing, and in industry, defence, healthcare, agriculture and many other areas. This course will cover the fundamentals of AI and how they apply to various research applications.It would assist in improving the skills and capabilities of faculty members at various engineering universities in The goal of the course work is to teach theoretical foundations of artificial intelligence hdia, as well as creating an environment conducive to research and academic success. and to provide hands-on training based on the latest Al tools to the audience.



affiliated to APJ Abdul Kalam Technological University A CENTRE OF EXCELLENCE IN SCIENCE & TECHNOLOGY BY THE CATHOLIC ARCHDIOCESE OF TRICHUR



A CENTRE OF EXCELLENCE IN SCIENCE & TECHNOLOGY BY THE CATHOLIC ARCHIPIDLESS OF TROUBLE AND TRANSPORT OF TRANSPORT

KTU Sponsored Five Day Faculty Development Programme on



### MACHINE LEARNING: A Trajectory through The World of Adaptive Algorithms August 22<sup>nd</sup> - August 26<sup>th</sup>, 2022

Organized by Department of Computer Science and Engineering in Association with ICT Academy Kerala

#	Time Slot	Topic	Sessio n Type	Duratio n (Hrs)	Date	Resource	
		Trends and Opportunities in Machine Learning & Artificial Intelligence			Date	Persons	
	FN	Python for Machine Learning					
		Tools, Platform and Framework for ML/Al				Mr. Abhimany	
Day 1	AN	Introduction to Machine Learning Life Cycle	Hands -on	6	22-Aug	K.S. & Ms. Maya	
		Introduction to Preprocessing			LL Tiug	Mohan	
	FN	Case Study on Preprocessing					
Day 2	Introduction to Supervised Learning Techniques		Hands			Mr. Abhimanyı K.S. &	
2	AN	Case Study on Regression	-on	6	23-Aug	Ms. Maya Mohan	
		Introduction to Classification			25 Ting	Monan	
	FN	Case Study on Classification	+				
		Introduction to Unsupervised Learning Techniques				Mr. Ummar	
Day		Introduction to Clustering	Hands			Shaik & Mr. John J.	
3	AN	Case Study on Clustering	-on	6	24-Aug		
	FN	Introduction to Computer Vision	Hands		24-Aug	Padamadan	
		Case Study on CV	-on	2		D 0 1 1 -	
Day				2		Dr.Sreekanth D	
4	I	Introduction to Graph Neural Networks		2	25-Aug	Dr. Winith D	
	AN	Introduction to Natural Language Processing	Hands			Dr. Vinith R,	
		Case Study on NLP	-on	2		Mr.Unnikrishnan	
	_	Introduction to Dimensionality Reduction	Section of Walley			F	
ay 5	FN	Case Study on Dimensionality Reduction				Mr.Ummar	
1	431	Introduction to Artificial Intelligence	Hands			Shaik & Mr. John J.	
	AN	Artificial Neural Network & Case Study	-on	6	26-Aug	Padamadan	







SI No	Salutation	Name	Institution Name	SIGNATURE 26.08.22 (FRIDAY)	
				FN	AN
26	Ms.	VINCY VERGHESE	JECC	A	4
27	Ms.	SAJITHA I	Ju othi Enga . College	Details-	Borle
28	Ms.	SOBHA XAVIER	Jy of his Engg. College SECC	2582	-811
29	Ms.	ASWATHY WILSON	JECC	Ach	Ad
30	Mr.	BINEESH M	Jyothi Eng	-OLA	-



Dr. JOSE P THE PATTILE.

Jyothi Engineening College
Cheruthuruthy - 678681



### Jyothi Engineering College

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POPUL HELLS, VETTIKATTIRI P.O. CHERUTHURUTHY, THRISSUR. PIN-679531 PH: +91-4884-259000, 274423 FAX: 04884-274777

INDIFFERENCE OF THE PROGRAMMENT OF THE PROGRAMMENT



### KTU Sponsored Five Day Faculty Development Programme on MACHINE LEARNING: A Trajectory through The World of Adaptive Algorithms August 22nd - August 26th, 2022

Organized by Department of Computer Science and Engineering in Association with ICT Academy Kerala

SI No	Salutation	Name	Institution Name	SIGNATURE 26.08.22 (FRIDAY)	
1	Mar.	SHINE P XAVIER	1/AST Thalakkottular	FN	AN
2	Ms.	LINTA A T	MCET Desamongelan	90	
3	Ms.	RAMYA RAJ K P	MIFT, DES am angalan	My	SADIE
4	Ms.	RESHMA V M	Malabas Engineering	and a	koa
5	Ms.	SINDHU S	Theyis Engg College	S. Sudlin	S. Suidhu
6	Ms.	NOUFALA T S	Universal Enga College	Joegala.	payala.
7	Mg.	SAMEEMA I	Malabar Engg. College		92
8	Dr.	KRISHNADAS J	SCET, Kodakara	W	1
9	Mr.	SAVYAN P V	Cotc, PKD	200	20
10	Dr.	VALANTO ALAPPATT	Thejus Eng Gruy.	Od.	Dal.
11	Dr.	SUDHEER S MARAR	Nohou calley Payor	400	HNO_
12	Mr.	PRAMOD K	N N	del	Shril
13	Mo.	ASHISH L		Anil	AN
14	Ms.	ANUGRAHA KR	Iccs, muplium	admind	shough
15	Ms.	JYOTHI P JOY	TEC,	Conste	Const
16	Ms.	DIVYA JOSE	ICCS, Muplim	appropriate -	The same
17	Ms.	SUPRIYA JOSE	Mels School of Engry	Pola	Some
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20	Ms.	SREETHA E S	SCET, Kodakana	Bull	Bank!
21	Dr.	MUBARAK T	Crpmin	H	71
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23	Ma-	BALAKRISHNAN	TEU.	3B	3B ==
24	Ms.	SHINY M I	JECC	90	2
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### Engineering NAAC Accredited College with NSI Accredited Pr

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### Report of KTU Sponsored Faculty Development Programme

on

### MACHINE LEARNING: A Trajectory through The World of Adaptive Algorithms (August 22nd -August 26th , 2022)

"MACHINE LEARNING: A Trajectory through The World of Adaptive Algorithms", the KTU sponsored Five day Faculty Development Programme was organized by Department of Computer Science and Engineering in Association with ICT Academy Kerala. The objective of FDP was to take the participants through the world of adaptive algorithms and impart the theoretical understanding and practical know-how requisite to pursue the area further, Also to introduce the state of art programming technologies and specifically tailored features for data analytics and learning.

ICT Academy of Kerala is a Social Enterprise created in a Public Private Partnership model (PPP) for imparting ICT skills to the youths of Kerala and improving their employability opportunities in the Industry. The Company is supported by Govt. of India, partnered by Govt. of Kerala and the IT industry.

The five day sessions started with an inauguration function at the decennial hall at 10.00 am. HoD, Dr. Saju P John delivered the welcome address. The programme was inaugurated by Fr.Thomas Kakasseri, Excecutive Manager of Jyothi Engineering College. Principal, Dr. Jose P Therattil and Academic director, Rev. Dr. Jose Kannampuzha also addressed the gathering and exhorted the participants to gain knowledge and to transfer them to the student community. The speakers also asked the participants to take the maximum benefits out of this programme. Ms. Priya Susan Varghese, Project Coordinator, ICT academy also briefed about the ICT Academy of Kerala and its activities.







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FDP started with an explanation to the steps in machine learning life cycle. This includes data collection, data preparation, data pre-processing, data analysis, training and testing model, finally with deployment. Also, the session introduces different types of learning namely supervised, unsupervised and reinforcement learning. The widely used language for machine learning are Python, Julia and Go. The major libraries used throughout the fdp was pandas, numpy, matplotlib and seaborn. Every day, the theory as well as handson were practiced on different topics.

The second day of FDP dealt with handling missing value in a data frame using measures of central tendency concept. This includes dropping missing values, various statistical approaches like mean, median and mode: Also, the session handles (hands-on) Principal

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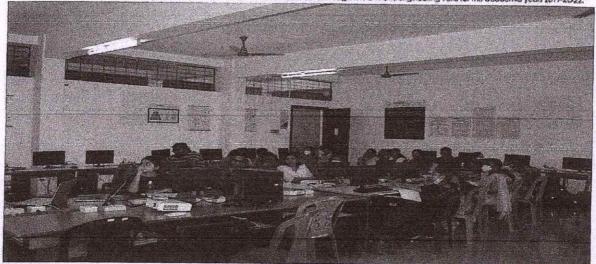
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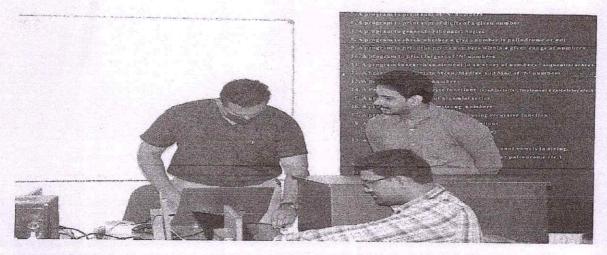
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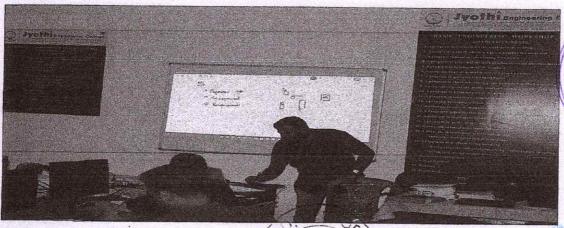
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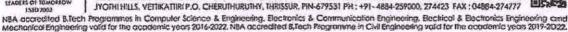


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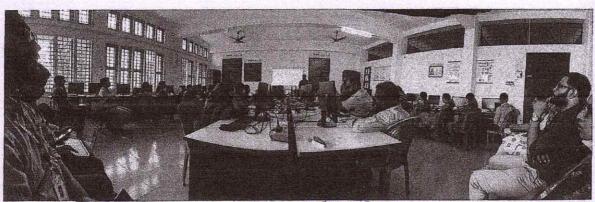


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various encoding schemes like One-hot encoding and Label encoding to change categorical data to numerical values. The third day introduces various real-world applications of ML which includes e-Commerce, Chatbots, Fraud detection and many more. Various metrics including accuracy, precision, f1 score, recall, r2 score etc were discussed as part of evaluating the model. Various classification models like random forest, decision tree and regression models like logistic regression, decision tree regression were discussed and the hands-on were practiced. The fourth and fifth day of fdp dealtwith clustering algorithms, deep learning concepts (with the help of mnist dataset), building a new deep learning model, Graphical neural network and many more.











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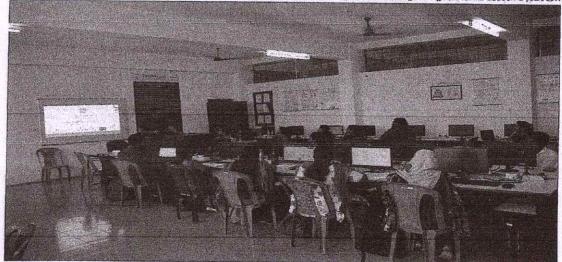
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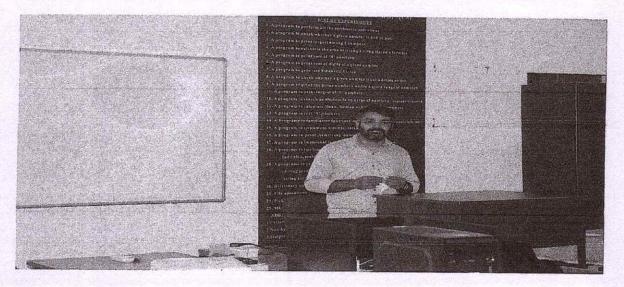
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Dr. JOSE P THERATT Jyothi Engineering Colle



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Total of 30 participants (22 external participants and 8 inhouse participants) attended the FDP. External participants included faculty from various Government Engineering Colleges across Kerala also. FDP was concluded with the valedictory function. Dr. Saju P John, HOD CSE addressed the participants and the participants also provided their feedback about the programme. The programme came to an end after the certificate distribution to all the participants on August 26th, 4.00pm.

Dr. JOSEP THERATTIL

DR. JOSEP



### **Attendance Sheets**



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### KTU Sponsored Five Day Faculty Development Programme on MACHINE LEARNING: A Trajectory through The World of Adaptive Algorithms August 22nd - August 26th, 2022

Organized by Department of Computer Science and Engineering in Association with ICT Academy Kerala **SIGNATURE** SI 22.08.22 Salutation Name **Institution Name** (MONDAY) No Mr. 1 SHINE P XAVIER Vidya Academy of Ms. LINTA A T Ms. 3 RAMYA RAJK P Ms. 4 RESHMA V M 5 Mr. BINEESHM Thejus 6 Ms. SINDHU S of Sundbu D. stiridle Ms. NOUFALA T S Universal Ms. Malabax SAMEEMA I College of one Dr. KRISHNADAS J Dyothi Engs Ms. Colle 10 ASMATHY WILSON Ms. College, SOBHA XAVIER 11 Mr. 12 SAVYAN P V GIEC, DX. 13 VALANTO ALAPPATT DX SUDHEER S MARAR MK PRAMOD K Wh 6 ASHISH L NIK NOVEN ANUGRAHA KR MS. ICCS college of Engineering Ms. They Engineering college, JYOTHI P JOY ICCS COLLEGE OF Ms. **DIVYA JOSE** NGINEERING raels School of Engineering Ms. SUPRIYA JOSE Mr. AN URANJ P 1 FISAT 1.12 TOM JACOB ATCE, Kamildoom Ms SREETHA E S DR\_ MOHAMED MUBARAK T SAJITHA M AKHIL A. SYUTHI ENGINEERING MR. BALAKRISHNAN COLLEGE CHERUTHURUTHY

SI No	Salutation	Name	Institution Name	SIGNATURE (MO)	22.08.22 NDAY)
				FN	AN
27	Ms.	SHINY M I	TRUC	888	3
28	Ms.	NEETHU ROSE THOMAS	Jean	Neet	Neet
28 29	Ms.	VINCY VERGHESE	JECC .	VI VI	W.
30	Ms.	SAJITHA I	Jyothi Engg. College	SATUL	Return



Dr. JOSE P. THERATTIL Dr. JOSE P. THERATTIL Dr. JOSE P. THERATTIL Principal College Principal College Principal College Worth Engineering 579531



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SI No	Salutatio		Institution Name	SIGNATURI	
1	Mr.	SHINE P XAVIER	Vidya Academy of	FN	MAN
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4	Ms.	RESHMA V M	Malabay Engineering	Some	And And
5	Ms.	SINDHU S	They any College	S. Ludhu	
6	Ms.	NOUFALA T S	Universal Engg College	Neufola	1 walls
7	Ms.	SAMEEMA I	Malabar College	200	Nous
8	Dr.	KRISHNADAS J	SCET, Koda Kara	1	
9	Mr.	BINEESH. M	Jyothi Engs. College Charachandhy	1	200
10	Ms.	ASWATHY WILSON	Jyothi Engs. College Cheruthu rathy	Bel	100
11	Mr.	SAVYAN P V	CREC, PKD	0	00
12	Dr.	VALANTO ALAPPATT	They is Englidleg.	01.	TO TO
13	Dr.	SUDHEER S MARAR		mo-	201
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15	Mr.	ASHISH L	IA .	aul	dal
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17	Ms.	JYOTHI P JOY	This Engineering cla	Gine	Conse
18	Ms.	DIVYA JOSE	ICCS, Muplium	A Commercial Commercia	
19		SUPRIYA JOSE	Met's School of Engg.	20 nicht	In mich
20	W	ANURÁNJ P	FISAT	Town .	And the second
21	Mr.	ГОМ ЈАСОВ	ASCE	CO	2
22	Ms. S	SREETHA E S	SCET, Kodakone	Beult	Rosella
23	DY. N	OR. MOHAMED MUBARAK T	CE paramen	M	1
4	Ms. s	AJITHA M Engineerin	GEC, PKD	/ - N	
5	В	ALAKRISHNAN	JECE	TE.	or Bridge
6	Ms. S	HINYMI	SECC		20

SI No	Salutation	Name	Institution Name	SIGNATURE (TUE	23.08.22 ESDAY)
				FN	AN
27		NEETHU ROSE THOMAS	Jyothi Enga College	Neel	
28		VINCY VERGHESE	JECC	¥4.	W.
29		SAJITHA I	Jyothi Engg. College	O.	COOK
30		SOBHA XAVIER	Lyothi Eya college	Sar-	806



Dr. JOSE P THERATTIL Dr. JOSE P THERATTIL Principal College Principal College Principal College



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### KTU Sponsored Five Day Faculty Development Programme on MACHINE LEARNING: A Trajectory through The World of Adaptive Algorithms August 22nd - August 26th, 2022

Organized by Department of Computer Science and Engineering in Association with ICT Academy Kerala

SI No	Salutation	Name	Institution Name	SIGNATURE (WEDN	24.08.22 NESDAY)
			Vidua Academy of Sie	FN	AN
1	Mr.	SHINE P XAVIER	Vidya Academy of Scien	(D)	(40)
2	Ms.	LINTA A T	Malabar College of Eng.	-lest	2 Juli
3		RAMYA RAJ K P	MCET, Desamangalam	Ma	Bung
4	Ms.	RESHMA V M	Martabas college	A CONTRACT	Mark
5	Ms.	SINDHU S	They is Engg College	S. Sindke	S. Suidher
6	Ms.	NOUFALA T S	Universal Engg college	Newals	Noutale
7	Ms.	SAMEEMA I	Malabar College	8	Sup
8	Dr.	KRISHNADAS J	SCET, Kodakara	1	B.
9	Mr.	BINEESH M	JECE	O. S.	de
10	Ms.	ASWATHY WILSON	JECC	Belz	Bole
11	Mr.	SAVYAN P V	GREC, PKD	520	755
12	D.	VALANTO ALAPPATT	Theyes Enga college	Dal	Caj!
13	Dr.	SUDHEER S MARAR	Nelson College	4/102	-MD.
14	Mr.	PRAMOD K	u l	dol	- drol
15	Mr.	ASHISH L	N. N.	Adt	Det !
16	M5.	ANUGRAHA KR	Iccs, Muplium	Starting	Some
17	Ms.	JYOTHI P JOY	TEC, velleralland	Avet	MA
18	Me	DIVYA JOSE	Iccs, Muplium	1	A Date of the last
19	Ms.	SUPRIYA JOSE	Mets School of Engineering	Street	四季
20	M	ANURANJ P	FISAT	dist	do
21		TOM JACOB	ATCE	05-	200
22	Ms.	SREETHA E S	SCET, Kodelena	Bully	Baull
23	, ) A . I	DR. MOHAMED OGINEERING COMEERING CO	SCET, Kodelana CE, Dormen		M
24	Ms.	SAJITHA M	GEC PKD	2007	Sel
25	11/1/201	AKHIL A BALAKRISHNAN	JECC	蓝	II.
26	Mg.	SHINY M I	TECC	<b>D</b>	JOS Principal College



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### KTU Sponsored Five Day Faculty Development Programme on MACHINE LEARNING: A Trajectory through The World of Adaptive Algorithms August 22nd - August 26th, 2022

Organized by Department of Computer Science and Engineering in Association with ICT Academy Kerala

SI No	Salutation	Name	Institution Name	SIGNATURE (THU	25.08.22 (RSDAY)
1	Mr.	SHINE P XAVIER	VAST Thatele bottle	FN	AN
2	Ms.	LINTA A T	Malabian Cullap of Engine	The state of the s	The state of the s
3	Ms.	RAMYA RAJ K P	MCET, Desamangalars	alde	and the second
4	Ms.	RESHMA V M	Malabas Engineering college	bial	Jan State St
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9	Mr.	SAVYAN P V	GEC, SUPIRED	Row	20
10	Dr.	VALANTO ALAPPATT	Thepre Eng Lolly	Odi	21.
11	Dr.	SUDHEER S MARAR	Nahou, Coleya Pompany	omo_	1 1000
12	Mr	PRAMOD K	N	dol	700
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14	Ms.	ANUGRAHA KR	ices, muplium	Novies .	alous .
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19	Mr.	ТОМ ЈАСОВ	AJCE	Territoria.	al-
20	Ms.	SREETHA E S	SCET, Kodakaa	Bulle.	Freil.
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24	Ms. s	SHINY M I	DELC	80	9
25	Ms.	VEETHU ROSE THOMAS	JECC		

SI No	Salutation	Name	Institution Name	SIGNATURE (WED!	24.08.22 NESDAY)
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26	Ms.	VINCY VERGHESE	AECC	V+	3/0
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28	Ms.	SOBHA XAVIER	Lyothi ang. College	0811	08 31
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Dr. JOSEP THERATTILL

Five Day Faculty Development Programme on

### "RESEARCH PUBLICATION AND ETHICS INTENDED FOR RESEARCH SCHOLARS IN COLLABORATION WITH IEEE"

From 23-01-2023 to 25-01-2023 & 27-01-2023 to 28-01-2023

Sponsored by: APJ Abdul Kalam Technological University

Complete Faculty Development Programme (FDP) Event

Report

Submitted to

APJ Abdul Kalam Technological University



**FDP** Coordinator

DR. JARIN T, ASSOCIATE PROFESSOR, JYOTHI ENGINEERING COLLEGE

Organized by

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING



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Five Day Faculty Development Programme on

### "RESEARCH PUBLICATION AND ETHICS INTENDED FOR RESEARCH SCHOLARS IN COLLABORATION WITH IEEE"

Sponsored by: APJ Abdul Kalam Technological University

### **Summary of FDP**

Name of FDP	RESEARCH PUBLICATION AND ETHICS INTENDED FOR
Date	RESEARCH SCHOLARS IN COLLABORATION WITH IEEE
	23-01-2023 To 25-01-2023 And 27-01-2023 To 28-01-2023
Duration	5 Days
Organized by	Department Of Electrical and Electronics Engineering
Name of the college	Jyothi Engineering College, Cheruthuruthy, Thrissur
Coordinator	Dr. Jarin T, Associate Professor, Jyothi Engineering College
Mode of Conduction	Offline
No of External	5
Resource Person	
No of Internal	3
Resource Person	
No of Participants	30
Total Expenditure	1,71,090 (One Lakh Seventy-One Thousand and Thirty Rupees Only)

Organized By:

Department Of Electrical and Electronics Engineering

Dr. JOSE P. THERATTIL Dr. JOSE P. THERATTIL Woth Engineering 679531

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Dr. Jarin T., Associate Professor, EEE - Jyothi Engineering College

ASSISTANT COORDINATOR

Mr. Jithin K. Jose, Assistant Professor, EEE - Jyothi Engineering College

CONTACT

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Mobile: +91 9626623332, +91 8547156458

Email: jarint@jecc.ac.in, jithinkjose@jecc.ac.in | Website: www.jecc.ac.in

CREATING TECHNOLOGY LEADERS OF TOMORROW



APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY FACULTY DEVELOPMENT PROGRAMME (FDP) 2022-2023



Research Publication and nded for Research Scho

in collaboration with IEEE

23.01.2023 to 28.01.2023



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Beclifical and Electronics Engineering and Mechanical Engineering valid ## 2025

### DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

### RESEARCH PUBLICATION AND ETHICS INTENDED FOR RESEARCH SCHOLARS IN COLLABORATION WITH HEEK

23RD JANUARY TO 28TH JANUARY 2023

### SCHEDULE OF SESSIONS

Date: 23-01-2023 (Monday)

Time	Topic/Session
09:30AM To 12:30PM	Why Publication?, Types of publication, Basic structure of an Article Dr. B. Chitti Babu, Editor-in-Chief, International Journal of Ambient Energy, Taylor & Francis, Associate Editor, IET Renewable Power Generation
12-30PM TO 01-30PM	Birealk
01:30PM To 04:30PM	Writing effective esearch articles  Dr. B. Chitti Babu, Editor-in-Chief, International  Journal of Ambient Energy, Taylor & Francis,  Associate Editor, IET Renewable Power Generation

### Date: 24-01-2023 (Tuesday)

Time	Topic/Session
09:30AM To 12:30PM	Philosophy and ethics in Research (Module 1) Dr. Mubarak M., HoD - ME, MEA Engineering College
12:30PM TO 01:30PM	Break
01:30PM To 04:30PM	Publication Misconduct (Module 5)  Dr. Mubarak M., HoD ME, MEA Engineering College







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### Engineering College NAAC Resccredited College with MSA Passccredited Programmes\*

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### Date: 25-01-2023 (Wednesday)

Time	Topic/Session
09:30AM To 12:30PM	Open Access Publishing (Module 4)  Dr. Renjith V. Ravi, Assoc. ProfECE, MEA Engineering College
12:30PM To 01:30PM	Break
01:30PM To 04:30PM	Data bases and research Matrics (Module 6) Dr. Jarin T., Associate Professor - EEE, JECC

### Date: 27-01-2023 (Friday)

Time	Topic/Session
09:30AM To 12:30PM	Scientific Conduct (Module 2)  Dr. Biju C. V., Professor & HoD - ME, JECC
12.30PM To 01:30PM	Break
01:30PM To 04:30PM	Publication Ethics (Module 3)  Dr. Biju K., HoD-EEE College of Engineering, Munnar,  IEEE Kerala Section Secretary -2023

### Date: 28-01-2023 (Saturday)

Time	Topic/Session
09:30AM To 12:30PM	Research Methodology Simplified  Dr. Shijoh V., Professor & Dean (PG Studies), JECC, Thrissur
12430PM(To 0130PM	Break
01:30PM To 04:30PM	On Teaching, Learning, Researching and Publishing Dr. Rajesh M. V., Assoc. Prof. Dept. of ECE, College of Engineering, Chengannur. IEEE Kochi Subsection Chair & IETE Vice Chair

Principal thi Engineering College Cheruthuruthy - 679531

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### Jyothi Engineering College NAAG Reaccredited College with NSA Reaccredited Programmes\*

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Five Day Faculty Development Programme on

### "RESEARCH PUBLICATION AND ETHICS INTENDED FOR RESEARCH SCHOLARS IN COLLABORATION WITH IEEE"

Sponsored by: APJ Abdul Kalam Technological University

### RESOURCE PERSON PROFILE: Dr. B.Chitti Babu

Dr. B. Chitti Babu received Ph.D degree in Electrical Engineering from National Institute of Technology Rourkela, India in 2012. He was an Assistant Professor in the Department of Electrical Engineering, National Institute of Technology Rourkela, India from 2007 to 2013. He had Post-Doctoral research appointments with the Wroclaw University of Science and Technology, Poland, during 2013-2014, and with the Technical University of Ostrava, Czech Republic, during 2014-2015. He was a visiting researcher at the Polytechnic University of Milan, Italy during 2015 and Visiting Scientist at Yildiz Technical University, Turkey during 2019. He was a recipient of prestigious Young Systems Scientist Award 2019 sponsored by Systems Society of India. And also, he received IEEE MAS Best Researcher Award from IEEE Madras Section during Feb 2021. He has published over 60 papers in SCI-indexed journals including IEEE Transactions and IET Journals. He is a senior member of IEEE, IEEE Power & Energy Society, IEEE Industrial Application Society, IEEE Smart Grid Community.

Dr. JOSE P THERATTIL Principal

Cheruthuruthy - 679531

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Five Day Faculty Development Programme on

### "RESEARCH PUBLICATION AND ETHICS INTENDED FOR RESEARCH SCHOLARS IN COLLABORATION WITH IEEE"

Sponsored by: APJ Abdul Kalam Technological University

### RESOURCE PERSON PROFILE: Dr Mubarak M

Dr Mubarak M currently working as Associate Professor and Head,
Department of Mechanical Engineering, MEA Engineering College. He has
Published 1 Book and many publications in International and National Journals
and Conferences. He is also, an Editorial board member and Reviewer of many
International and National Journals. His area of interest Internal Combustion
Engines Production and utilization of biofuels from algae, Low heat rejection
engines, Characterization of biofuels and Automotive pollution measurement and
control.

Dr. JOSE P THERATTIL
Principal
Jyothi Engineering College
Cheruthuruthy - 679531



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Five Day Faculty Development Programme on

### "RESEARCH PUBLICATION AND ETHICS INTENDED FOR RESEARCH SCHOLARS IN COLLABORATION WITH IEEE"

Sponsored by: APJ Abdul Kalam Technological University

### RESOURCE PERSON PROFILE: Dr. Renjith V. Ravi

Dr Renjith V Ravi is presently employed as Associate Professor and Head of the Department of Electronics and Communication Engineering and Coordinator of the Post Graduate Programmes conducting at MEA Engineering College, Kerala, India. He possesses B.Tech. degree in Electronics and Communication Engineering in, M.E. degree in Embedded System Technology and Ph.D. in Electronics and Communication Engineering. He is a member of the panel of academic auditors of APJ Abdul Kalam Technological University, Kerala and had conducted external academic auditing in various affiliated institutions under the same University.

He has been published four edited books and currently editing three edited books from renowned international publishers. He got granted one patent, one industrial design and two copyrights. He has been served as the Program Committee member, Session Chair as well as reviewer of several National and International conferences conducted in India and abroad.

DJOSEP THERATTIL
Principal
Pyothi Engineering College
Cheruthuruthy - 67953



# Engineering College NAAC Rescredited College with 1958 Rescredited Programmes.

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Five Day Faculty Development Programme on

# "RESEARCH PUBLICATION AND ETHICS INTENDED FOR RESEARCH SCHOLARS IN COLLABORATION WITH IEEE

Sponsored by: APJ Abdul Kalam Technological University

# Consolidated Statement of Registered Participants for FDP

| o N & | Name            | KTUID          | KTU ID Department  | Designati<br>on        | College                                       | Contact<br>Number | E- Mail ID   |
|-------|-----------------|----------------|--|------------------------|---|-------------------|--|
| hand. | Dr. A<br>Benham | KTU-<br>F35110 | Mechanical<br>Engineering  | Professor              | IES College Of                                | 9488390358        | mehod@iesce mity   |
| 2     | Alex Jose       | KTU-<br>F25585 | Electrical & Electronics Engineering   | Assistant<br>Professor | St. Alberts College<br>Autonomous             | 9895395133        | alexiose@alberts.edu   |
|       | Aneesh A        | KTU-<br>F13227 | Mechanical<br>Engineering  | Assistant<br>Professor | Malabar College Of Engineering And Technology | 9645862838        | and the same of th |
| 4     | Ancop V         | KTU-<br>F5394  | Electronics & Communication Engineering  | Assistant<br>Professor | Jyothi Engineering<br>College, Thrissur       | 9895837646        | THE STATE OF THE   |
| , u   | Dr. Arun M P    | F40841         | Mechanical<br>Engineering  | Professor              | Holy Grace<br>Academy Of<br>Engineering       | 9946184366        |  |
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Department of Electrical and Electronics Engineering





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Consolidated Statement of Registered Participants for FDP

| S   | Name         | KTUID  | Department    | Designati | College            | Contact    | E- Mail ID             |
|-----|--------------|--------|---------------|-----------|--------------------|------------|------------------------|
| Z   |              |        |               | on        |                    | Number     |                        |
| 6.  | Ashmita      | KTU-   | Electronics & | Assistant | Eranad Knowledge   | 6282307480 | ashmitha@ekc.edu.in    |
|     | Moidu        | F25506 | Communication | Professor | City Technical     |            |                        |
|     |              |        | Engineering   |           | Campus             |            |                        |
| 7.  | Dr. GR       | KTU-   | Electronics & | Professor | Sahrdaya College   | 9488883786 | kings.326@gmail.com    |
|     | Gnana King   | F30408 | Communication |           | Of Engineering     |            |                        |
|     |              |        | Engineering   |           | And Technology     |            |                        |
| 000 | Dr. Jarin T  | KTU-   | Electrical &  | Associate | Jyothi Engineering | 9626623332 | jarint@jecc.ac.in      |
|     |              | F28528 | Electronics   | Professor | College            |            |                        |
|     |              |        | Engineering   |           |                    |            |                        |
| 9.  | Jenson Jose  | KTU-   | Electrical &  | Assistant | Jyothi Engineering | 9497359153 | jensonjosep@jecc.ac.i  |
|     |              | F13444 | Electronics   | Professor | College            |            | n                      |
|     |              |        | Engineering   |           |                    |            |                        |
| 10. | Jisha Akkara | KTU-   | Civil         | Assistant | Jyothi Engineering | 9605089715 | jishaakkara@jecc.ac.in |
|     |              | F10641 | Engineering   | Professor | College            |            |                        |

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# Consolidated Statement of Registered Participants for FDP

| sistant Malabar College ofessor Of Engineering And Technology sociate College Of Engineering Thalasseri sistant Jyothi Engineering fessor College sistant Holy Grace fessor Engineering Fengineering Fengineering  | N.  | Name                 | KTUID          | KTUID Department                     | Designati College      | College                                 | Contact          | E-Mail D                        |
|--|-----|----------------------|----------------|--------------------------------------|------------------------|---|------------------|---------------------------------|
| Mohamed<br>Mubarak TKTU-<br>F25724Computer<br>ScienceAssociate<br>ProfessorCollege Of<br>Engineering9946437845Navin Sam<br>Navin SamKTU-<br>F43388Electronics<br>ElectronicsAssistant<br>ProfessorJyothi Engineering<br>Professor8778703990Nibin M<br>F40940KTU-<br>EngineeringCivil<br>EngineeringAssistant<br>ProfessorHoly Grace<br>Academy Of<br>Engineering9181294254<br>14 | 15. | Mobin CM             | KTU-<br>F13228 | Mechanical<br>Engineering            | Assistant<br>Professor | Malabar College<br>Of Engineering       | 9198959478       | chandramobin44@yah              |
| Navin SamKTU-<br>F43388Electrical & ElectronicsAssistant ProfessorJyothi Engineering College8778703990Nibin MKTU-<br>F40940Civil EngineeringAssistant ProfessorHoly Grace Academy Of Engineering9181294254   | 16. | Mohamed<br>Mubarak T | KTU-<br>F25724 | Computer<br>Science<br>Engineering   | Associate<br>Professor | College Of<br>Engineering               | 9946437845       | mubarak.fma@gmail.c             |
| Nibin M KTU- Civil Assistant Holy Grace 9181294254 F40940 Engineering Professor Academy Of Engineering   |     | Navin Sam            | KTU-<br>F43388 | Electrical & Electronics Engineering | Assistant<br>Professor | ngineering                              | 8778703990       | dnavinsam@jecc.ac.in            |
|  |     | Nibin M              | KTU-<br>F40940 | Civil<br>Engineering                 | Assistant<br>Professor | Holy Grace<br>Academy Of<br>Engineering | 9181294254<br>14 | nibin.a.madhav092@g<br>mail.com |

Department of Electrical and Electronics Engineering



Five Day faculty development programme

On

Research Publication and Ethics intended for Research Scholars in Collaboration with IEEE Organized by: Department of Electrical and Electronics Engineering Sponsored by APJ Abdul Kalam Technological University

### **Event Report**

### Day 1 (23/01/2023)

Five Day faculty development programme on "Research Publication and Ethics intended for Research Scholars in Collaboration with IEEE" Organized by the Department of Electrical and Electronics Engineering and Sponsored by APJ Abdul Kalam Technological University started on 23/01/2023. The FDP was conducted in offline mode.

The inaugural function started at 9.00 am with a silent prayer.

The welcome address was given by Mr. Jenson Jose, HoD-EEE, JEC. He welcomed all the respected guests and the faculty attending the FDP. Rev. Dr. Jose Kannampuzha, Director of Academics, JECC gave the presidential address. He specially mentioned the importance of research.

The principal of JECC, Dr. Jose P. Therattil addressed the meeting with great words. He shared his experience during his research times.

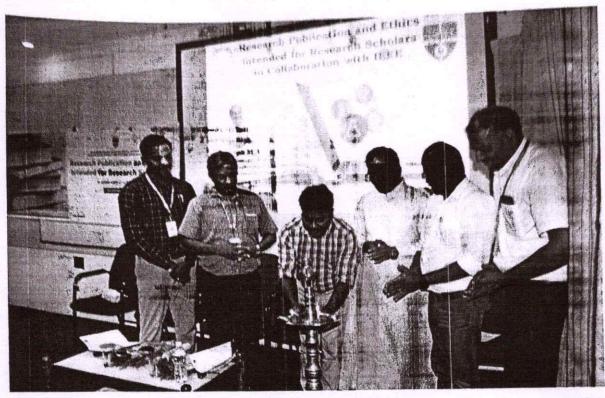
Dr. B. Chitti Babu, Editor in Chief, of the International Journal of Ambient Energy, Taylor & Francis, Associate Editor, of IET Renewable Power Generation, inaugurated the FDP. He expressed his happiness for inviting him to the meeting.

A vote of thanks was given by Dr. Jarin T. coordinator of FDP.

After the inaugural function the morning session started at 9.30 am, Dr. Chitti Babu delivered a very informative session on the need for publication and how to structure and publish an article in the morning session. The morning session was completed at 12.30 pm.

In the afternoon session, he delivered a session on how to review articles. He shared his experience as an editor. The session started at 1.30 pm and was completed at 4.30 pm.

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Day 2 (24/01/2023)

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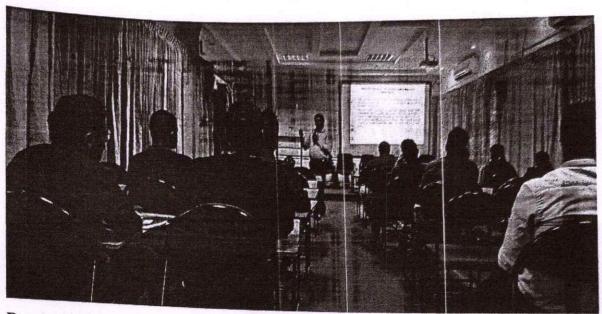
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On the second day, the session started at 9.30 am. Dr. Mubarak, HoD-ME, MEA Engineering On the second day, the session on the philosophy of research and the ethics to be followed in College delivered the session on the philosophy of research and the ethics to be followed in the completed at 12.20 min research in the morning session, and the session was completed at 12.30 pm.

The afternoon session started at 1.30 pm. In the afternoon session, he mentioned publication

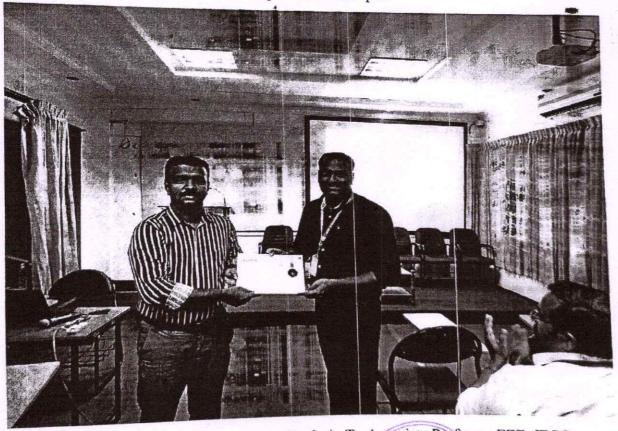
misconduct. The session was completed at 4,30 pm.

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Day 3 (25/01/2023)

The morning session started at 9.30 am. The session was handled by Dr. Renjith V. Ravi, Associate Professor-ECE, MEA Engineering College. He delivered the session on open-access publishing. The session was completed at 12.30 pm.



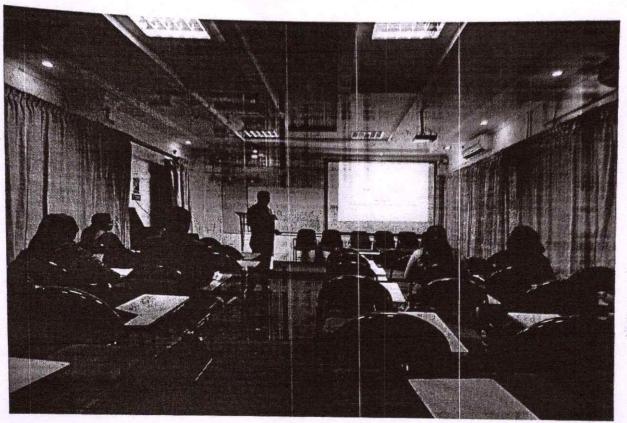
The afternoon session started at 1.30 pm. Dr. Jarin T., Associate Professor-EEE, JECC handled the session on Databases and Research Matrics. The session was completed at 4.30 pm.

Day 4 (27/01/2023)

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Principal
Jothi Engineering College
Cheruthuruthy - 679531

The morning session started at 9.30 am. The session was handled by Dr. Biju C. V. Professor & HoD-ME, JECC on the topic of Scientific Conduct. The session was completed at 12.30 pm.



The afternoon session started at 1.30 pm. Dr. Biju K., HoD-EEE, College of Engineering, Munnar, took the session on the topic of Publication Ethics. The session was completed at 4.30 pm.



Cheruthuruthy - 679

The morning session started at 9.30 am. The session was handled by Dr. Shijoh V., Professor & Dean (PG Studies), JECC on the topic of Research Methodology Simplified. The session was completed at 12.30 pm

The afternoon session was handled by Dr. Rajesh M. V., Associate Professor-ECE, College of Engineering, Chengannur on the topic of Teaching, Learning, Researching and Publishing. The session started at 1.30 pm and was completed at 4.30 pm.



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University from 23rd January to 28th January 2023. Faculty Development Programme on "Research Publication and Ethics intended for Research Jyothi Engineering College, Cheruthuruthy, Thrissur and sponsored by APJ Abdul Kalam Technology Scholars in collaboration with IEEE" organized by Department of Electrical & Electronics Engineering,



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HoD, EEE

Dr. Jose P. Therattii

Principal

& Momentaham

Rev. Fr. Thomas Kakkassery

**Executive Manager** 



### Five Day Faculty Development Programme On "RECENT ADVANCEMENTS IN INTELLIGENT CONTROL SYSTEMS (RAICS)"

Sponsored by: APJ Abdul Kalam Technological University

Complete Faculty Development Programme (FDP) Event Report

Submitted to

**APJ Abdul Kalam Technological University** 



FDP Coordinator

DR. SHIJOH V., PROFESSOR, JYOTHI ENGINEERING COLLEGE

Organized By

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING



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Jyothi Engineering College Cheruthuruthy - 679531



The FDP is open to the faculty members of all the KTU affiliated institutions

### REGISTRATION

FDP is fully sponsored by APJ Abdul Kalam Technological No registration fee is charged for the programme, since the University. For online registration please scan:



### https://tiny.cc/fdpeeeraics

### IMPORTANT DATES

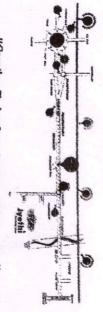
| TOND dates               | Intimation to selected participants | Online registration ends |
|--------------------------|-------------------------------------|--------------------------|
| 30th Jan - 3rd Peb, 2027 | 25th January, 2023                  | 20th January, 2023       |

### HOW TO REACH JEC



https://goo.gl/maps/MvsXScEswzmNvXp96

### ROUTE MAP



"Creating Technology Leaders of Tomorrow"

Certificates shall be issued to all the participants who

have attended the program with minimum 80% attendance and submitted the feedback forms at the end of each sessions.

### ORGANIZING COMMITTEE

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Dr. Jose P. Therattil, Principal, JECC

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Dr. Suresh K. Damodaran, Assoc. Professor, GEC Thrissur

Dr. V. M. Xaviour, Registrar, JECC

Dr. Vivek Lukose, KTU FDP, Center Coordinator Mr. Jenson Jose, Head of the Department - BEE, JECC Prof. Ratuan P., Vice Principal & Dean (UG), JECC

### COORDINATOR

6 0 9544 900 980 Dr. Shijoh V., Professor & Dean (PG Studies), JECC

### ASSISTANT COORDINATORS

\$ 09496 351517 Mr. Kapildas K. S., Assistant Professor, EEE 🖾 kapil@jecc.ac.in

6) 0 9496 347 695 Mr. Akhil A. Balakrishnan, Assistant Professor, EEF 🖾 akhilbalakrishnan@jecc.ac.in

FOIT Engineering College

FACULTY DEVELOPMENT PROGRAMME

INTELLIGENT CONTROL SYSTEMS RECENT ADVANCEMENTS (RAICS)

30th January - 3rd February

Organized by

DEPARTMENT OF

ELECTRICAL AND ELECTRONICS ENGINEERING

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### Jyothi Engineering College

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### DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

### RECENT ADVANCEMENTS IN INTELLIGENT CONTROL SYSTEMS (RAICS)

30TH JANUARY TO 03RD FEBRUARY 2023

### SCHEDULE OF SESSIONS

Date: 30-01-2023 (Monday)

| Time               | Session No. & Topic  |
|--------------------|--|
| 08:30AM To 09:00AM | <u>Inauguration</u>  |
|                    | Session 1  |
| 09:00AM To 11:00AM | Nonlinear Digital Control Systems                            |
|                    | Dr. Jeevamma Jacob, Professor, NIT Calicut                   |
| 11:00AM To/14:10AM | Break  |
|                    | Session 2  |
| 11:10AM To 12:10PM | Artificial Intelligence in Engineering Systems               |
|                    | Dr. Shijoh V., Professor & Dean (PG Studies), JECC, Thrissur |
| 12:10PM To 01:00PM | Break Break  |
|                    | Session 3  |
| 01:00PM To 04:00PM | Control of Parallel Robots                                   |
|                    | Dr. Ramesh Kumar P., Associate Professor, GEC Wayanad        |

Date: 31-01-2023 (Tuesday)

| Time               | Session No. & Topic                                      |
|--------------------|--|
|                    | Session 4  |
| 09:00AM To 11:00AM | Intelligent Predictive Control                           |
|                    | Dr. Shihabudheen K. V., Assistant Professor, NIT Calicut |
| 11:00AM To 11:10AM | Break  |
|                    | Session 5  |
| 11:10AM To 01:10PM | Soft Computing Techniques                                |
|                    | Mr. Jenson Jose., HoD - EEE, JECC, Thrissur              |
| 01:10PM To 02:00PM | Break  |
|                    | Session 6  |
| 02:00PM To 04:00PM | Modeling and Control of Unmanned Aerial Vehicles         |
|                    | Dr. Rakesh R. Warier, Assistant Professor, NIT Calicut   |



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| Date: 01-02-2023 | (Wednesday) |
|------------------|-------------|
|------------------|-------------|

| Time                | Session No. & Topic  |
|---------------------|--|
| 09:00AM To 11:00AM  | Session 7  Learning Controllers  Dr. Imthias Ahamed T. P., Professor, TKMCE  |
| 11:00AM To 11:10AM  | Break  |
| 11-10 AM T- 01-10PM | Session 8  Learning Controllers  Dr. Imthias Ahamed T. P., Professor, TKMCE  |
| 01:10PM To 02:00PM  | • <b>▼</b> BTEAK   |
| 02:00PM To 04:00PM  | Session 9  Recent Research Trends in Instrumentation and Control Dr. C. Karthik, Associate Professor, JECC, Thrissur |

Data: 00.02.2022 (Thursday)

| Time               | Session No. & Topic   |
|--------------------|---|
| 09:00AM To 11:00AM | Session 10 • PLC based Automation& Ladder Programming SMEC Automation Pvt. Ltd., Cochin |
| 11:00AM To 11:10AM | Break   |
| 11:10AM To 01:10PM | Session 11  PLC based Automation& Ladder Programming SMEC Automation Pvt. Ltd., Cochin  |
| 01:10PM To 02:00PM | Break   |
| 02:00PM To 04:00PM | Session 12 PLC based Automation - Hands on Session SMEC Automation Pvt. Ltd., Cochin    |

an on ones (Eriday)

| <u>Date: 03-02-2023 (Fr.</u><br>Time | Session No. & Topic   |
|--------------------------------------|---|
| 09:00AM To 11:00AM                   | Session 13  Design of Bio-Inspired Robots using Shape Memory Alloys Dr. Sreekanth M., KabaniTech - Maker Space, Shoranur  |
| 11:00AM To 11:10AM                   | Break Break   |
| 11:10AM To 01:10PM                   | Session 14  Design of Bio-Inspired Robots using Shape Memory Alloys Dr. Sreekanth M., Kabani Tech – Maker Space, Shoranur |
| 01-10PM To 02:00PM                   | Break   |
| 02:00PM To 04:00PM                   | Session 15 ANN Application in B   |
| 04:00PM To 04:10PM                   | Dr. Shijoh V., Professor & Dean (PG Studies), JECC, Thrissu<br>Feedback Session and Valedictory Function                  |



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| Email Address                    | College Address  | Department                              | Designation            | KTUID      | Name of<br>Participant   | No.        |

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| 8157911466 | -                                     | потову  | Electrical & Electronics Engineering    | Assistant<br>Professor | KTU-F8145  | DINTO THOMAS           | 10. |
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| Contact    |                                       |   |   |                        |  |                        |     |





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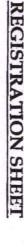


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| 25.  | 24.  | 23.  | 8  | 21.  | 20.  | 19.  | 18.   | SI.                 |
|--|--|--|--|--|--|--|---|---------------------|
| SHABAB O   | SARITHA P  | SABIRA - JAMALUDHEEN C.  | ROSHNI RAJAN K   | REMYAK V.  | REJANEESH R  | PRAJOON P  | NIVYA WILSON  | Name of Participant |
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| Associate<br>Professor                               | Assistant<br>Professor   | Assistant<br>Professor   | Assistant<br>Professor   | Associate<br>Professor                               | Assistant<br>Professor   | Associate<br>Professor   | Assistant<br>Professor  | Designation         |
| Electrical & Electronics<br>Engineering              | Electrical & Electronics<br>Engineering  | Mechatronics   | Electronics & Communication Engineering  | Electrical & Electronics<br>Engineering              | Electrical & Electronics<br>Engineering                            | Electronics & Communication Engineering  | Science & Humanities  | Department          |
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Report of KTU Sponsored Faculty Development Programme

On

### RECENT ADVANCEMENTS IN CONTROL SYSTEMS (RAICS)

(January 30th - February 3rd, 2023)

"RECENT ADVANCEMENTS IN CONTROL SYSTEMS (RAICS)" the KTU sponsored Five-Day Faculty Development Programme was organized by the Department of Electrical and Electronics Engineering. The objective of FDP was to make sense of the new advancement in control systems, and understand the applications of control systems at an analysis level. Control system is a common word these days, but many of us do not realize the amazing impact it has on our daily lives. According to the statistics, control systems are gaining a wider application in the industries. Most of the industries are on the automation levels so the control systems have high demand in their usage. Since technological advancements are growing day by day, technology has taken the control system to a next level. So, the FDP aims to provide valuable knowledge of advancements in the field of control systems.

The five-day sessions started with registration followed by an inauguration function at the Insight hall of Jyothi Engineering College at 8.30 am, HOD, Mr. Jenson Jose delivered the welcome address. The programme was inaugurated by Dr. Jeevamma Jacob, Professor, NIT Calicut. Principal, Dr. Jose P Therattil and Academic Director, Rev. Dr. Jose Kannampuzha also addressed the gathering and motivated the participants to gain knowledge at its maximum level and to transfer them to the student community. Dr. Shijoh V and Mr. Akhil A. Balakrishnan were the FDP Coordinators.







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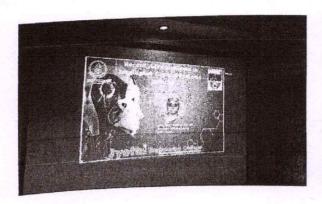


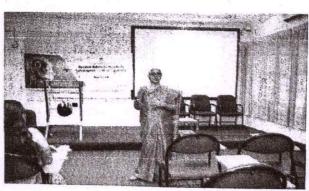
Day 1 (Monday- 30/01/2023)

Session 1: "Nonlinear Digital Control Systems".

Resource Person: Dr. Jeevamma Jacob, Professor, NIT Calicut.

The main topics covered in this session were Elements of nonlinear systems, Estimation of the DoA and Small gain theorem. She also pointed out the classifications of equilibrium points. She discussed lyapunov functions. With examples, brief ideas about the different stabilities were given. She further moved on to absolute stability. The most effective session was about the state feedback controller. Then 10 minutes were given for discussion. It was an effective discussion. At last participants came forward for the feedback. The session was very interesting and all the participants got more knowledge on the same.







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Session 2: "Artificial Intelligence in Engineering Systems"

Resource Person: Dr. ShijohV , Professor & Dean (PG Studies), JECC, Thrissur

In the second session resource person discussed Control systems, Neural network basics and Control Applications. He gave the introduction about control systems and requirements of controller design. Explained in detail about the estimator block diagram and ANN in controller design etc. After this, a slot of 10 minutes was given for discussion. The session was wonderful and informative.







Dr. JOSE P THERATTII

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Session 3: "Control of Parallel Robots"

Resource Person: Dr. Ramesh Kumar P, Associate Professor, GEC Wayanad.

Resource person discussed about the control of parallel robots. A basic motivation was given for this topic to be taken by him. The basic types of robotic geometry and comparison between series and parallel robot were discussed. Also explained in detail about high order sliding mode controller. Then a slot of 10 minutes given for discussing the topic and clarifying the doubts. Feedback was given from the audience.



Day 2 (Tuesday - 31/01/2023)

Session 4: "Intelligent Predictive Control"

Resource Person: Dr. Shihabhudheen K.V., Assistant Professor, NIT Calicut.

Control systems is an unavoidable part in the field of electrical and electronics. The recent advancement in control technology led to the development of intelligent control systems. The resource person had discussed the various modelling of the control systems. Prediction of the future events using the intelligent control system was the core topic discussed during the session. Various predictive models were discussed. The Matlab Simulink modelling was included in the session, which helped the audience to understand the concept very well. The 10 minutes interactive discussion paved the way for the new possibilities in the field of intelligent predictive control systems. The session was ended by feedback of participants.



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Session 5: "Soft Computing Techniques"

Resource Person: Mr. Jenson Jose, HOD - EEE, JECC, Thrissur.

The topic of the session was soft computing techniques. Various applications of the soft computing was discussed in the session. The novel area of the session was about artificial neural networks. It is an efficient information processing system which resembles the human brain's neural network. The artificial neural network is further classified into supervised learning, unsupervised learning and reinforcement learning. The session was very informative. The speaker was given 10 minutes for the open discussion for the topic. The session was ended by the feedback given by the participants.







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Dr. JOSE PTHERATTIL

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## Session 6: Modelling and Control of Unmanned Aerial Vehicles

Resource Person: Dr. Rakesh R. Warier, Assistant Professor, NIT Calicut.

The resource person had given an overview of the modelling and control of the UAV. The applications of the UAV are limitless. In this session the speaker had discussed how to model a UAV and their control techniques. UAVs are applied in various fields like defense, agriculture, surveillance etc. Also, he discussed the advantages and disadvantages about the UAV. The session was very actively taken by the speaker. Every participant was actively engaged in the session. 20 minutes was given to the participants for the discussion. The session was ended by the feedback from the faculty members.







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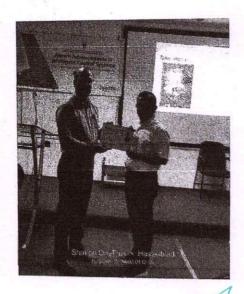
Day 3 (Wednesday -01/02/2023)

Session 7 & 8: "Learning Controllers"

Resource Person: Dr. Imthias Ahamed T. P., Professor, TKMCE

He discussed about controller problems, regulator problems, PID contollers. An informative topic was taken which was reinforcement learning. A detailed explanation of requirements of reinforcement learning was given by the resource person in a simplified manner with interesting examples. Then he discussed about different Robbins Munro Algorithm & Greedy Algorithm. Then LA applications were given. Learning of neural network were discussed further. The discussion was held between resource person and participants. After that feedback was given from participants.







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# Jyothi Engineering College NAAC Reaccredited College with MSR Reaccredited Programmes\*

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A CENTRE OF EXCELLENCE IN SCIENCE AND TECHNOLOGY BY THE CATHOLIC ARCHDIOCESE OF TRICHER
JYOTREHILLS, VETTIKATURI P.O., CHERUTHURUTHY, THRISSUR. 679531 | Ph. +91 4884 259000 | Info@pec.og.in | www.jecc.og.in



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Session 9: "Recent Research Trends in Instrumentation and Control"

Resource Person: Dr. C. Karthik, Associate Professor, JECC Thrissur

Resource person gave an introduction about control systems. A chart showing impact of advanced control technologies on real world was shown. Then he discussed about classical and intelligent control and approaches to modelling was given and need for modelling was discussed. A comparison between first principles and empirical modelling was given. Soft computing tools were discussed and the session was wrapped up. Then a discussion time was given for 10 minutes and feedback was given of how the session was informative.

Day 4 (Thursday-02/02/2023)

Sessions 10, 11 and 12: "PLC based Automation & Ladder Programming - Hands on Session"

Resource Person: SMEC Automation Pvt. Ltd., Cochin

It was arranged as three sessions. First session was about the basics of Programmable Logic Controllers(PLCs) and types etc., while second session deals with ladder programming. Third session was arranged to provide Hands on training.

In the first session, the resource person gave a brief introduction about (PLC) and different classifications of PLC according to their make and based on the output. He also discussed about the various PLCs in different industries. This session was very informative and it had given a clear-cut idea about the PLCs. We get familiar with the PLCs used in Siemens and Bosch.

He discussed the various kinds of programming methods for the implementation of the PLCs in second session. We had studied about ladder programming. And we tried to design the ladder diagram for different logical operations. Also, an introduction about SCADA was given.



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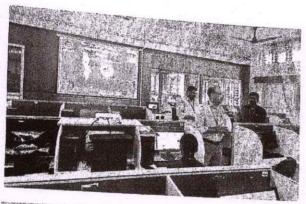
## Engineering College NAAC Reaccredited College with NBA Reaccredited Programmes\*

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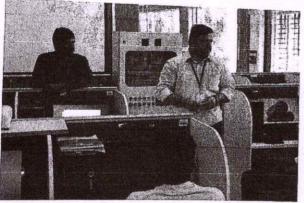


JYODH HILS, VETTIKATTIRI P.O., CHERUTHURUTHY, THRISSUR, 679531 [ Ph. +91 4884 259000 ] info@jecc.oc.in [ www.jecc.oc.in and the process of th

\*NBA reaccredited Black Programmes in Civil Engineering. Computer Science and Engineering. Electronics and Communication Engineering that there was a bond electronics Engineering and Mechanical Engineering volid till 2025 After that there was a hands-on session on the software in which ladder programming was done. He also motivated the participants by showing and discussing about different projects done by SMEC Automation. The participants got a brief idea about the PLCs and the ladder programming language. The session was concluded with the feedback from two of the participants. It was a very informative session and the speaker motivated us by sharing his real-world industrial experience.











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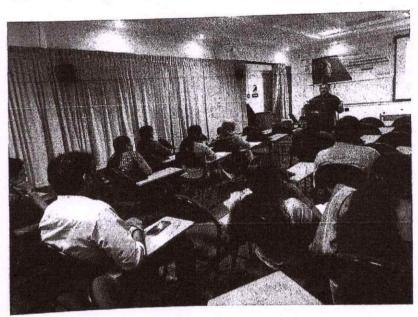
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Day 5 (Friday -03/02/2023)

Session 13 & 14: "Design of Bio- Inspired Robots using Shape Memory Alloys"

Resource Person: Dr. Sreekanth M, Kabani Tech- Maker Space, Shoranur

Dr. Sreekanth discussed about the stand we are having right now about robotics and in the future to what extent this would go. Then he discussed about 3D printing and system control. The different types of system were discussed as in the open loop system and closed loop system. He discussed about longest lab in the world, cars running with the help of code, multivariable control etc. Then he discussed about the different characteristics of robot. This session was really informative and interesting. After this a 10-minute time was given for a quick discussion. Participants came forward to give their feedback.





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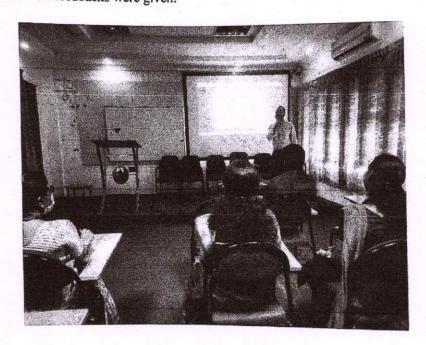


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Bectrical and Electronics Engineering and Mechanical Engineering valid 181 2025

Session 15:"ANN Application in Process Control"

Resource Person: Dr. ShijohV., Professor & Dean(PG Studies), JECC, Thrissur

He discussed about the idea of ANN. He showed the inspiration of neurobiology, a basic model of neurons. A brief history of neurons study was shown by the resource person. He showed how the neural network can be used in control system. After this, participants were given a time to discuss and then the feedbacks were given.





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# Certificate of Participation

Thrissur and sponsored by APJ Abdul Kalam Technology University from 30th January to 3rd February by the Department of Electrical & Electronics Engineering, Jyothi Engineering College, Cheruthuruthy, Faculty Development Programme on "Recent Advancements in Intelligent Control Systems" organized



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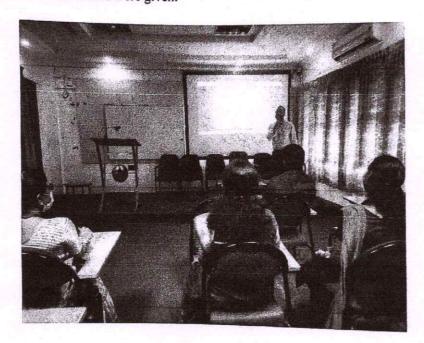
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# JYOTHI Engineering College

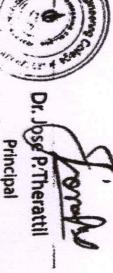
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by the Department of Electrical & Electronics Engineering, Jyothi Engineering College, Cheruthuruthy, Faculty Development Programme on "Recent Advancements in Intelligent Control Systems" organized Thrissur and sponsored by APJ Abdul Kalam Technology University from 30th January to 3rd February



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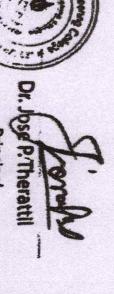
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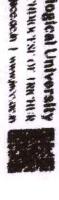
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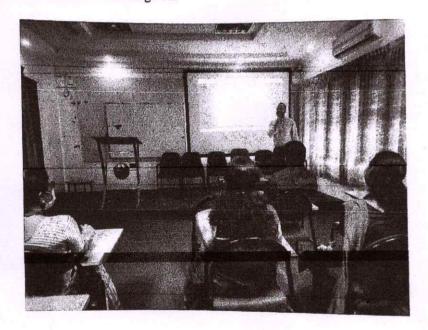


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JOSE P THERATTIL Dr. JOSE P IMERAL III

Principal

Jyothi Engineering 679531

Charuthuruthy - 679531 Report of Faculty development Programme Conducted on January 19<sup>th</sup> - January 25<sup>th</sup>, 2023

Dr. JOSE P THERATTIL

Dr. JOSE P THERATTIL

Principal

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# **Engineering College**

NAAC Reaccredited College with Reaccredited Programmes\* Approved by AICTE and Affiliated to APJ Abdul Kalam Technological University

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"NBA reaccredited BTech Programmes in Civil Engineering, Computer Science and Engineering, Electronics and Communication Engineering, Electronical and Electronics Engineering and Mechanical Engineering voted sit 2025

### Department of Mechanical Engineering

**KTU Sponsored Five Day Offline Faculty Development Programme** 

on

Outcome Based Education (OBE): Adapting Effective Pedagogy (30<sup>th</sup> Jan. – 03<sup>rd</sup> Feb. 2023)

Document Submission to APJ Abdul Kalam Technological University







# Engineering College

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A CENTRE OF EXCELLENCE IN SCIENCE AND TECHNOLOGY BY THE CALIFORN ARCHIDIOCESE OF TRICHTAR JYOTHI HILLS, VETTIKATTIRI P.O., CHERUTHURUTHY, THRISSUR, 679531 E.Ph. 191 4884 259000 1 Molinger acid I www.jecc.oc.in [ www.jecc.oc.in ]



The Dean (Academics) A P J Abdul Kalam Technological University CET Campus Trivandrum.

14th Feb. 2023

Sir.

Sub: Submitting the report Original audited statement and Bills for reimbursement

Ref -Notification No: KTU/ACA1/1449/2022 dated 14/03/2022 by your office

As per the reference cited above the FDP Proposal submitted by Dr. Biju C V (Professor) and Dr. George Raphael (Assistant Professor), Department of Mechanical Engineering has got approval from the University in the Topic "Outcome Based Education (OBE): Adapting Effective Pedagogy". Since Dr. George Raphael, Associate Professor of Mechanical Engineering Department has been relieved from service on 31st July, 2022, the coordinator ship of FDP has been allotted to Mr. Christy V Vazhappilly, Asst. Professor of Mechanical Engineering Department.

The 5 day FDP was successfully conducted from 30th Jan. to 03rd Feb. 2023. Here we are forwarding the FDP report, audited statement, bills and other enclosures prescribed by the University for your kind consideration. The Total expenditure for the programme is Rs.1,98,313. (One lakh ninety-eight thousand three hundred and thirteen only). It is hereby requested to reimburse the amount to the following account as early as possible.

NAME

: JYOTHI ENGINEERING COLLEGE

BANK BRANCH

: FEDERAL BANK

IFSC CODE

: CHERUTHURUTHY : FDRL0001699

ACCOUNT NUMBER: 15250100001019

Yours Truly

Dr. Biju C

FDP Coordinator

Professor & Head

Dept. of Mechanical Engineering

Mr. Christy V Vazhappilly

FDP Coordinator

Assistant Professor

Dept. of Mechanical Engineering

Dr. Jose P Therattil

Principal



# Jyoth Engineering College

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\*NBA recorrected Blech Programmes in Civil Engineering. Computer science and Engineering, Electronics and Communication Engineering. Electrical and Electronics Engineering and Mischanical Engineering valid till 2025

### Report of KTU Sponsored Faculty Development Programme

on

Outcome Based Education (OBE): Adapting Effective Pedagogy

(30th Jan. to 03rd Feb. 2023)



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Certificates will be given to the registered and effective participants

# REGISTRATION

Registration Fee Free

https://tinyurl.com/MEFDPOBE



QR code for registration Click on the link or scan the

# How to reach



https://tinyurl.com/jecmap

Msgr. Jose Konikkara, Manager JEC

Dr. Jose P. Therattil, Principal, JEC

Fr. Thomas Kakkassery, Executive Manager, JEC

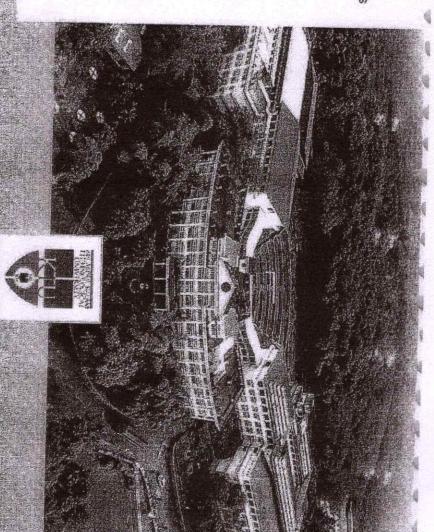
Jase Kannampuzha, Academic Director Jyothi Engineering College, Thrissur

ntisty V. Vazhappilly, Assistant Professor, Dept. of Mechapical Engineering Dr. Biju C.V., Prafessar, HOD, Dept. of Mechanical Engineering

Tel: +91 4884 259000, 274423

Email:fdpme@jecc.ac.in | Website:www.jecc.ac.in fobile: +9| 9447388932 +9| 9895638|92

CREATING TECHNOLOGY LEADERS OF TOMORROW



APJ ABDULKALAM TECHNOLOGICAL UNIVERSITY FACULTY DEVELOPMENT PROGRAMME (FDP) 2022-2023 sponsored by

Organized by Department of Mechanical Engineering

OUTCOME BASED EDUCATION (OBE): ADOPTING EFFECTIVE PEDAGOGY

30.01.2023 to 03.02.2023



JECHHARIS VERIKLATENE O, CHERUFICHUM, FARSAR AFRON F.PH. -FERBANDSEC I REGIRECULTE I WOWLVELDEN Approved by AICTE's affiliated to APJ Abdul Kalam Technological University in ATTENDED TO THE TRANSPORT OF THE ATTENDED TO THE ATTENDED TO THE TRANSPORT OF THE ATTENDED TO THE TRANSPORT OF THE TRANSPORT OF THE TRANSPORT



# **30UT JYOTHI ENGINEERING COLLEGE**

cord of a century and a quarter in the education sector. ogrammes in Engineering and Technology. The Archdiocese of Trichur has on illustrious track is college is affiliated to Kerala Technological University and offers various BTech, MTech, Php unded by the Catholic Archdiocese of Trichur, is one of the leading engineering colleges in Kerala. Jyothi Engineering Callege (JEC), set up in 2002, under the aegis of Trichur Educational Trust

ed for this stringent NBA accreditation criteria to ensure that we sustain the mandated quality dicates that we are well recognized for the quality of education we offer. We are periodically evaluidergraduate programs offered by Jyathi Engineering College have NBA accreditation, which Jyothi Engineering College is a NAAC re-accredited institution with Grade 'A'. Five of the

its of skills than those of previous generations. We are in the midst of the fourth industrial revolution nd the predictions are that 85% of the jobs that will exist in 2030 have not been invented yet. The worlds of study and work have changed dramatically. Students of today require different

IC), in association with TATA Technologies. ey are "future ready", we have set up an incubation centre, integrated industrial incubation Centre quired in the 21st century. In order to train our students to become "1" shaped professionals, so that ofessionals who have in-depth expertise in their discipline as well as a breadth of competencies Jyothi Engineering College prepares students to become T-Shaped professionals, i.e.

e R&D output ichnology based new enterprises, foster an entrepreneurial spirit among students and commercialigineering College has also set up a Technology Business Incubator, JEC TBI, to help students create Additionally for students desirous of being "job creators" rather than "job seekers", Jyothi

formation visit www.jecc.ac.in ampus, and excellent infrastructure for students, to aid the teaching and learning process. For more Jyothi Engineering College offers a vibrant beautiful, and green environmentally friendly

# BOUT DEPARTMENT

nced and dynamic faculty members with specialization in Thermal Englineering, Machine Design, laterials Engineering, Advanced Manufacturing, Industrial Engineering and CAB/CAM. The apparaons for careets in industry, research, and academia. The department has highly qualified, experirent is equipped with most modern infrastructure and state of art igboratories to undertake ngineering attracts bright and aspiring students every year and is designed to provide solid foundangineering, affiliated to APJ Abdul Kalam Technological University. UG program, Mechanical igh-end leaching, research and developmental activities. ception of the College. Currently, the department offers four year UG program in Mechanical The Department of Mechanical Engineering started functioning in 2004, two years after the

# COURSE DETAILS

outcomes. The FDP is an endeavour in this direction and emphasizes on various aspects of teaching effectiveness to be explored within the changing dynamics of the educational environment. instructors knowledge of the subject matter and ability to develop and use best methods within learning experiences received by the students and thereby, directly influencing their learning teaching pedagogy. In fact, the pedagogical practices adapted, play a major role in determining the successfully, deliver the curricular material to students, It is facilitated by the interactions between the fixed curricula. Outcome based Education (OBE) is a shift towards "Students-Centered" classrooms conventional and traditional classroom setup which are highly "Teacher-Centered" or taught with current state of learning outcomes and what is required by undertaking major reforms that bring the recent National Education Policy 2020 has also envisaged the idea to bridge the gap between the with focus on learning outcomes. To achieve this, it is pertinent to adapt high-quality pedagogy to bothat mode of classroom teaching to an outcome based teaching - learning environment. The highest quality, equity, and integrity into higher education. Presently, there is a pre-dominance of the The changing nature of the education sector worldwide has shifted the focus from the tradi-

thinking and share best practices related to OBE pracess. Furthermore, the FDP will facilitate the participants to share innovative ideas, develop critical ate attributes, formative and adaptive assessment of learning outcomes, competency-based learning, and related pedagogies, such as experiential learning and use of ICT applications to aid the the latest pedagogies regarding foundational conceptual frameworks of Blooms' taxonomy, graduteaching pedagogy. The themes of the programme are designed in a manner to systematically cover required to move beyond the scope of traditional classroom and to implement novel approaches in The current Programme aims to train the faculty members in the new knowledge and skills,

# Objectives:

- I. To define the perspectives of effective teaching.
- 2. To enhance the knowledge on Outcome-Based Education (OBE) and its implications in teaching. assessment and evaluation
- 3. To facilitate understanding of teaching pedagogy and effective implementation of every aspect of eering College
- 4. To enable self-introspective assessment of effectiveness in teaching
- 5. Understand the mapping of Mission, Vision, Core Values and Objectives

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6. To familiarize with the developments in communication and technology

# DEPARTMENT OF MECHANICAL ENGINEERING

MISSION professionalism with ethical values, to work in a team and to face global challenges To provide quality education of international standards in Mechanical Engineering and promote

PURUTY.

- To provide an education that builds a solid foundation in Mechanical Engineering.
- To prepare graduates for employment, higher education and enable a lifelong growth in their
- \* To develop good communication, leadership and entrepreneurship skills to enable good knowledge transfer.
- To inculcate world class research program in Mechanical Engineer

# APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY Sponsored JYOTHI ENGINEERING COLLEGE, CHERUTHURUTHY DEPARTMENT OF MECHANICAL ENGINEERING

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5 Days' FDP on "OUTCOME BASED EDUCATION (OBE): ADOPTING EFFECTIVE PEDAGOGY" [30/01/2023 - 03/02/2023]

Afternoon Timing (12.45PM to 04.00PM) (Tea break: 02.15PM to 02.30PM)

02.30PM to 04.00PM

12.45PM to 02.15PM

| DAY 5<br>03/02/2923   | DAY 4<br>02/02/2023  | BAY 3<br>01/02/2023  | I                                       | DAY 2<br>31/01/2023   | BAY 1<br>30/01/2023   | Timing             | Day & Date  |
|---|--|--|---|---|---|--------------------|---|
| Dr. K., S. S.AJAN  (Asst. Professor of Education, NSS Training College, Ottappalain)  "College Miss from Spacific Learning Outcomes?" | Dr. INDIRAMNIA NI.<br>(Professor-Dept. of CSE, BMS College, Bangalore)<br>CO PO on | Dr. SURESH NAMBOOTHIRI (Director - Espair Technologies, Puna, & Furmer COO - TATA Motors) "Lower Order Thinking" Thinking" | "Blooms Taxon                           | Dr. SUNIL JOB<br>(Faculty - Marian College, Knuthkaram, & Chief of Academics, IPSR Salutions) | H ELIAS<br>College of   | 09.00AM to 10.30AM | T   |
| S. SAJAN  S. SAJAN  N. NSS Training College, Ottappalam)  "College Mission to ILO, PLO, CLO, or from Specific Learning Outcomes?"     | Bangalore)<br>CO PO mapping and assessment   | Furmer COO - TATA Motors) "Lower Order Thinking to Higher Order Thinking"  | "Blooms Taxonomy & Introduction to OBE" | & Chief of Academics, IPSR Schutons)  | FEngg, Irinjslakuda)<br>"OBE Based Tenching Learning Process" | 10.45AM to 12.15PM | Farenson Timing (9.00AM to 12.15PM) (Ten break: 10.45AM to 11.00AM) |
| UNCH BRE  | AK   | (12.15   | PM                                      | f to 12.4   | SPM)  |                    |   |
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| (Professor - Dept. of M.E., CUSAT) "OBE - A Gatew       | Dr. B. KANMANI (Professor-Dept. of ECE, BMS College, Bangnlore) Assessment and | Dr. RAJESH P. NAIR (Asst Professor - Ship Technology, CUSAT) "Imperhance of Values in OBE"                    | Faculty - Dept. of Ship Technology, CUSAT) "The Paradigm Shift in Enginee   | Dr. ELIZABETH ELIAS (Director - Research, Christ College of Engg., (Irinjalakuda) "Mapping & Attainment of COs & PQg" |
| IIP's B. S.<br>I'OBB - A Gateway for NBA Accreditation" | ge, Bangniore) Assessment and CO PO attainment : Intractive session            | Ms. JASNA AVINASH<br>(YOGA Specialist & Trainer) "Stress Management through Yoga & Role of Yogn in Education" | AR C. G. (Former Ship Technology, CUSAT) "The Paradigm Shift in Engineering Education with NEP 2028 & the relevance of OBE" | Dr. BIJU C. V  ROD-M.E., JBCC  "Page & Search - An Effective Tool for Active Teaching Learning Process"               |





Jyothi Engineering College Cheruthuruthy - 679531



# Engineering College Approved by AlCTE & Affiliated to API Abdul Kalain Technological University

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## DEPARTMENT OF MECHANICAL ENGINEERING

# KTU Sponsored Five Days FDP on "OUTCOME BASED EDUCATION (OBE): ADOPTING EFFECTIVE PEDAGOGY"

## InaugurationProgramme Schedule - 30/01/2023

| 09.30am-09.33am | Prayer: Ms. Sreelakshmi S., S2 M. Tech                       |
|-----------------|--|
| 09.33am-09.38am | Welcome Address: Dr. Biju C. V., HOD-M.E.                    |
| 09.38am-09.45am | Address the audience: Dr. Jose P Therattil, PRINCIPAL        |
| 09.45am-09.50am | Inauguration: Lighting the lamp                              |
| 09.50am-09.55am | Message by the chief guest: Dr. ELIZABETH ELIAS, Director    |
| os.soam-os.ssam | - Research, Christ College of Engg., Irinjalakuda            |
| 09.55am-10.00am | Felicitation: Fr. Dr. Jose Kannampuzha, Director - Academics |
| 10.00am-10.05am | Felicitation: Dr. V. M. Xaviour, Registrar                   |
| 10.05am-10.10am | Vote of Thanks: Mr. Christy V. Vazhappilly, FDP Coordinator  |
| 10.10am-10.12am | National Anthem: Ms. Sreelakshmi S., S2 M. Tech              |
| 10.15am-10.30am | Tea Break  |
|                 |  |



Dr. JOSE P THERATTIL
Principal
Jyothi Eponactini, Collan
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### Report of KTU Sponsored Faculty Development Programme

Or

Outcome Based Education (OBE): Adopting Effective Pedagogy

Mechanical Engineering department of Jyothi Engineering College conducted five day KTU sponsored Faculty Development Programme (FDP) on Outcome based Education from 30<sup>th</sup> Jan – 03<sup>rd</sup> Feb. 2023. Thirty faculty members from different KTU affiliated institutions.

In the five days programme 15 sessions were conducted focusing on various key aspects of OBE & NBA including two hands sessions on CO - PO Attainment, Course File, ICT & Interactive Teaching Practices.

FDP sessions consists of Vision, Mission & Outcome Based Education, Skill India in OBE, Implementation of OBE, Achieving Academic Excellence, Mapping & Attainment of COs and POs, Course File Preparation & Rubrics, OBE based Teaching Learning, Occupational Stress Management, Role of Teacher in Value Based Education, Continuous Improvement based on PO/PSO Attainment, Active Learning Strategies, Continuous Quality Improvement, Systematic

Pedagogy with Constructive Alignment and Interactive Learning Platform

The five Day FDP comprising 15 sessions started with registration followed by Inaugural function at the Insight Hall at 09.30 am. Dr. Biju CV, Head of the Department delivered the welcome address. The programme was inaugurated by Dr. Elizebath Elias, Retd. Professor NIT Calicut. Principal Dr.



Jose P Therattil, Academic Director Fr. Dr. Jose Kannampuzha also addressed the gathering. Mr. Christy V Vazhappilly FDP coordinator presented vote of thanks.





Dr. OSE P THERATTIL
Principal
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### Session Wise Report Faculty Development Programme

on

# Outcome Based Education (OBE): Adopting Effective Pedagogy (30th Jan. - 03th Feb. 2023)

Day - 1

: 30<sup>rd</sup> Jan. 2023

Session-

: 1&2

Topic

: OBE Based Teaching Learning Process

Speaker

: Prof (Dr.) Elizabeth Elias, Retd. NIT Calicut

Speaker focused on higher education which includes World class research with high quality teaching learning process. The history of OBE and accreditation process was well covered in the session. The concept of vision and mission and formulation of the same for institute and Department level was presented in the morning session on the first day of FDP.





Day - 1

: 30th Jan. 2023

Session

: 03

Topic

: Mapping & Attainment Of Cos & Pos

Speaker

: Prof (Dr.) Elizabeth Elias, Retd. NIT Calicut

Speaker covered the formation of Course Outcomes (CO) in relation with the syllabus of the particular course and assessment of CO's at different stages of the academic calendar. The direct and indirect assessment tools were also discussed in the session. Speaker focused on Programme Educational Objectives, Programme Outcomes, Course Outcomes and Blooms Taxonomy. PEOs are the expected achievements of graduates in their career that are expected to achieve during after few years of their graduation. PEOs must be quantifiable, suitable, realistic and attainable. Graduate Attributes (GAs) are prescribed by NBA and programme outcomes should be defined from these GAs. Mapping of PEO & PO and PO & CO is enlightened.

Principal
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Day - 1

: 30th Jan. 2023

Session-

: 04

Topic

: Pause & Search - An Effective Tool for Active Teaching Learning Process

Speaker

: Prof (Dr.) Biju CV, Head of the Department, Jyothi Engineering College.

Speaker enlightened the need to introduce efficient teaching methodology to ensure unaltered attention of the students in the classrooms. The concept of "Pause and search", an active teaching learning tool was well discussed in the session. Examples from different fields were presented in the programme. The concept and formation of nodes, knowledge junctions etc were shared in the last session on the first day of the faculty Development Programme. The participants actively involved in the hands on session. Each every participant presented their models and explained the potential of the tool in their academic domain.



Day - 2

: 31st Jan. 2023

Session-

: 1&2

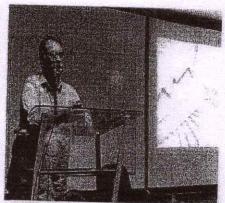
Topic

: Blooms Taxonomy & Introduction to OBE

Speaker

: Prof (Dr.) Sunil Job, Marian College Kuttikkanam

Dr. Sunil Job started his presentation with the statement of knowledge, skill and attitude the graduate engineer will be able to demonstrate after successful completion of the course. Training extended in the area of incorporating Blooms taxonomy while preparing question papers. Blooms taxonomy has 6 levels. Level-1: Understand, Level-2: RememberLevel-3: Apply, Level-4: Analyze, Level-5: Evaluate, Level-6: Create. The assessment tools -



Direct and Indirect were covered in the session. The design of direct assessment tools in mid examinations, assignments, laboratory examinations, semester examinations, seminars, min and major projects were explained in detail in the presentation.

Day - 2

: 31st Jan. 2023

Session-

: 3 & 4

Topic

: The Paradigm Shift in Engineering Education with NEP 2020 & the

relevance of OBE

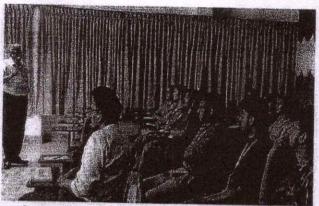
Speaker

: Retd. Prof (Dr.) Dr. Nandakumar C. G. (CUSAT)





Speaker Prof. (Dr.) Nandakumar CG gave a brief description about New Education Policy 2020. In view of NEP 2020, he explained the changes required in the higher education sector. The need of strong curriculum and its execution to address the emerging areas such as Big Data, ML, AI etc. where most of the unskilled jobs may be taken over by the machines were discussed



in the afternoon session. The need of the time such as solution for climatic change, depletion of natural resources, sanitation needs etc. More than meeting the lower levels of blooms taxonomy, he invited the attention of the faculty members attending the FDP to mould the their students to address the higher levels of BT.

Day - 3

: 01st Feb. 2023

Session-

: 1&2

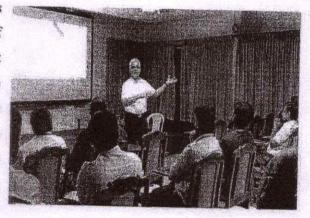
Topic

: Lower Order Thinking to Higher Order Thinking

Speaker

: Dr. Suresh Namboothiri

Speaker Dr. Suresh Namboothiri started his session with the statistics of employability of engineering graduates from different institutions in the country. He focused in the area of graduate attributes and how it is reflected in the NBA accreditation process. He presented the adoption of revised blooms taxonomy in the knowledge dimensions. The tools to improve critical creative thinking were



discussed in the session. In the hands on session, participants presented their models based on on Vygotsky's pedagogical works.

Day - 3

: 01st Feb. 2023

Session-

: 03

Topic

: Importance of Values in OBE

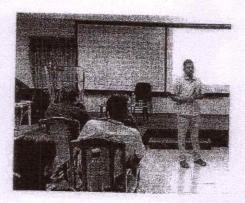
Speaker

: Prof. (Dr.) Rajesh P. Nair, Dept of Ship Technology, CUSAT



Speaker Dr. Rajesh P Nair emphasized the need of value education in professional curriculum. He shared the concept of Universal Human Values where Value education has being envisaged to be universally applicable to all human beings and be true at all times and all places. The logically connected the role of value education for skill education and with the help of examples in the professional career, he established the relationship. The difference between moral education and value education was presented in detail. The role of education which can be used to enable transformation ensuring the proper relationship with human beings were beautifully shared in the session.





Day - 3

: 01st Feb. 2023

Session-

: 04

Topic

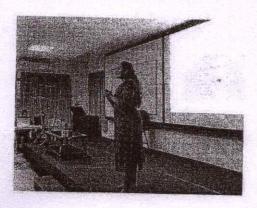
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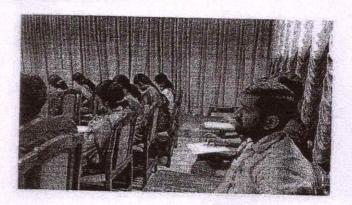
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: Stress Management through Yoga & Role of Yoga in Education

Speaker

: Ms. Jasna Avinash, YOGA Specialist & Trainer





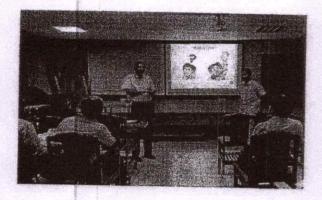
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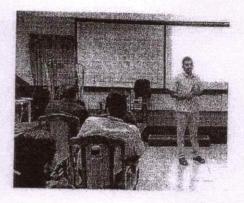
Speaker Ms. Jesna who has rich experience in the area of YOGA training shared the need of mental health and techniques to manage mental stress especially in teaching learning process. She started with the cause of mental stress and its classifications like Eustress and Distress, The



Dr. JOSE P THERATTIL
Principal
Jyothi Engineering

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Day - 3 Session-

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: 01st Feb. 2023

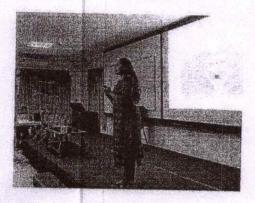
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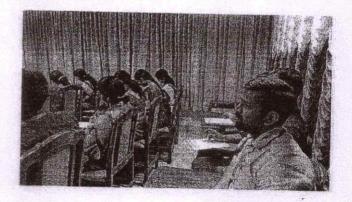
Topic Speaker

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: Stress Management through Yoga & Role of Yoga in Education

: Ms. Jasna Avinash, YOGA Specialist & Trainer





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Dr. Josephal College Dr. Jyothi Engineering Cheruthuruthy - 6

following benefits of practicing yoga such as improvement of cognitive power, improvement of amazing creative power, smoothening of the brain power etc. were discussed in detail.

Day - 4

: 02<sup>nd</sup> Feb. 2023

Session-

:01 & 02

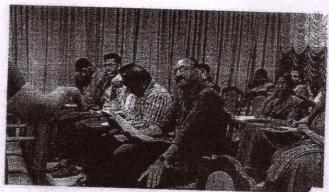
Topic

: CO PO mapping and assessment

Speaker

: Prof. (Dr.) Indiramma M, Dept. of CSE, BMS College, Bangalore.





Speaker focused on preparing assessment tools for the various theory and practical courses included in the Engineering Curriculum. The feedback format for collecting data from various stakeholders, review of direct &indirect achievements, action taken based on the results of evaluation of each of the POs & PSOs were discussed in the forenoon session. Identifying the areas of weaknesses in the program based on the analysis of evaluation of POs & PSOs attainment levels. Some of the areas that are initiated are remedial classes, workshop, assignments, etc. Weak students in each area are identified and counseled separately by their mentors. All participants were trained to identify the blooms taxonomy levels and PO mapping for previous question papers was really informative.

Day - 4

: 02<sup>nd</sup> Feb. 2023

Session-

: 03 & 04

Topic

: CO PO mapping and assessment

Speaker

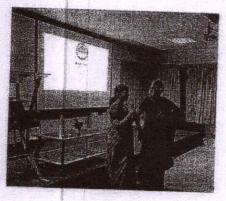
: Prof. (Dr.) B. Kanmani, Dept. of ECE, BMS College, Bangalore.

Dr. Kanmani having rich experience as the peer team member and Chairman of the NBA accreditation started her presentation with the importance of NBA for technical institutions. The National Board of Accreditation (NBA) has permanent membership in the Washington Accord, an international agreement for standardizing engineering education. Institute with Grade as Tier-I and Tier –II based on status of Autonomy and University status. Advantages of NBA are that



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students get quality education and better employment opportunity. Institution builds up a brand, continuous improvement towards excellence and many more. There are many active learning strategies to empower, engage, and stimulate a classroom by putting students at the center of the learning process. Some of them are group assignments, collaborative learning, jigsaw, think pair share, fish in bowl, etc. and she trained the participants how to map all the activities with PO and PSO.





Day - 5 Session-Topic

Speaker

: 03rd Feb. 2023

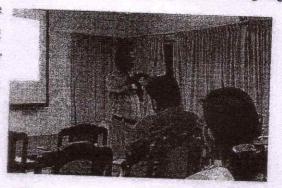
:01 & 02

: College Mission to ILO, PLO, CLO, or from Specific Learning Outcomes?

: Prof. (Dr.) K, S. Sajan, NSS Training College, Ottappalam, Palakkad

Dr.Sajan, resource person of the Faculty Development Programme explained pedagogy which refers to the "interactions between teachers, students, and the learning environment and the learning tasks." This broad term includes how teachers and students relate together as well as the instructional approaches implemented in the classroom were discussed in detail. Designing

appropriate outcome-based curriculum, were trained in the hands on session. In the second session he enlightened the need of the concept of Course/Activity Learning Outcomes (CLOs) which are the specific take always from a course activity that students are meant to apply in future settings.









## KTU SPONSORED 5-DAY FACULTY DEVELOPMENT PROGRAMME

"OUTCOME BASED EDUCATION (OBE):
ADOPTING EFFECTIVE PEDAGOGY"

DEPARTMENT OF MECHANICAL ENGINEERING

# PARTICIPANTS LIST & REGISTRATION DETAILS









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# KTU SPONSORED 5-DAY FACULTY DEVELOPMENT PROGRAMME

"OUTCOME BASED EDUCATION (OBE): ADOPTING EFFECTIVE PEDAGOGY"

DEPARTMENT OF MECHANICAL ENGINEERING PARTICIPANTS LIST

| IES COLLEGE OF ENGINEERING                       | KTU- F4211 | MANIKANDAN N R   | MF         | -    |
|--|------------|------------------|------------|------|
| NSS COLLEGE OF ENGINEERING PALAKKAD              | KTU-F3179  | I HOMAS JOSEPH   |            | 0    |
| JAWAHARLAL COLLEGE OF ENGINEERING AND TECHNOLOGY | KTU-F39103 | RINCHUP          |            | . (8 |
| JAWAHARLAL COLLEGE OF ENGINEERING AND TECHNOLOGY | KTU-F3224  | VIJITHA G        |            | 3 0  |
| AHALIA SCHOOL OF ENGINEERING AND TECHNOLOGY      | KTU-F19768 | ANIL M           |            | r u  |
| IES COLLEGE OF ENGINEERING                       | KTU-F39941 | AINEESH S        |            | 1 .  |
| JAWAHARLAL COLLEGE OF ENGINEERING AND TECHNOLOGY | KTU-F1387  | AMEEGI A         | Z,         | 4    |
| THE COLLEGE OF ENGINEERING                       |            | DII ECD V        | 7          | ω    |
| IES COLL ECE OF ENGINEERS                        | KTU-F6709  | JOHN CHEMBUKKAVU | Dr         | 2    |
| M.E.A ENGINEERING                                | KTU-F10724 | RENJITH V RAVI   | 무          | -    |
| Name of the Institution                          | KTU ID     | Name             | Salutation | OMIC |
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# "OUTCOME BASED EDUCATION (OBE): ADOPTING EFFECTIVE PEDAGOGY" KTU SPONSORED 5-DAY FACULTY DEVELOPMENT PROGRAMME

DEPARTMENT OF MECHANICAL ENGINEERING PARTICIPANTS LIST











# "OUTCOME BASED EDUCATION (OBE): ADOPTING EFFECTIVE PEDAGOGY" KTU SPONSORED 5-DAY FACULTY DEVELOPMENT PROGRAMME

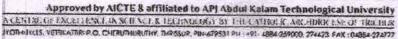
DEPARTMENT OF MECHANICAL ENGINEERING PARTICIPANTS LIST

| 30                         | 29                         | 28                         | 27                         | 26                         | 25                         | 24                         | 23                         | 22                         | 21                          |
|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|-----------------------------|
| Mr                         | Ms                         | Sr                         | Dr                         | Ms                         | Ms                         | Dr                         | Ms                         | Mr                         | Ms                          |
| NICE MENACHERY             | SUGANTHI T                 | JESNA CATHERINE            | CIJIL B JOHN               | SANDHYA E                  | VIDYA. V. MENON            | віјису                     | ANNA JOSEPH                | CHRISTY V VAZHAPPILLY      | TINTU DEVASSY               |
| KTU- F11077                | KTU-F20428                 | KTU-F42541                 | KTU-F13125                 | KTU-F 43865                | KTU-F7338                  | KTU- F13494                | KTU-F14303                 | KTU- F13576                | KTU-F12600                  |
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# Engineering College







### KTU SPONSORED 5-DAY FACULTY DEVELOPMENT PROGRAMME on "OUTCOME BASED EDUCATION (OBE): ADOPTING EFFECTIVE PEDAGOGY" DEPARTMENT OF MECHANICAL ENGINEERING

### **Attendance Sheet**

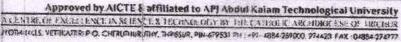
| S.No | Salutation | Name              | KTUID       | 01/02/2023 |            |  |
|------|------------|-------------------|-------------|------------|------------|--|
|      |            |                   | KIUID       | FN         | AN         |  |
| 1    | Dr         | RENJITH V RAVI    | KTU-F10724  | Roule      | Dent P     |  |
| 2    | Dr         | JOHN CHEMBUKKAVU  | KTU-F6709   | 100        | 100        |  |
| 3    | Dr         | DILEEP K          | KTU-F1387   | £3.        | 6)         |  |
| 4    | Mr         | ANEESH S          | KTU-F39941  | ASA        | ML         |  |
| 5    | Mr         | ANIL M            | KTU-F19768  | A          | R          |  |
| 6    | Ms         | VIJITHA G         | KTU -F3224  | Sa         | late       |  |
| 7    | Ms         | RINCHU P          | KTU-F39103  | Pinchant   | Pinehal    |  |
| 8    | Mr         | THOMAS JOSEPH     | KTU-F3179   | any        | 6m         |  |
| 9    | Mr         | MANIKANDAN N R    | KTU- F4211  | Nough S    | MART       |  |
| 10   | Ms         | NEGMA IQBAL       | KTU- F43819 | (Degrobal) | · Degmalba |  |
| 11   | Ms         | ANITHA MATHEW     | KTU- F30521 | dm         | d'm        |  |
| 12   | Mr         | NASID K           | KTU- F36863 | 0          | at .       |  |
| 13   | Mr         | SANJEEV KUMAR C P | KTU- F6118  | Daine      | Aniel      |  |
| 14   | Ms         | ARUNIMA RAJEEV    | KTU- F44412 | Anne       | Alexanor   |  |
| 15   | Mr         | SHINTO BABY       | KTU- F44767 | Clare      | Shape      |  |
| Lo   | Mr         | RAMESH M          | KTU- F34413 | Read       | P. A       |  |
| 17   | Mr         | ABIN SEBASTIAN    | KTU- F44720 | Iller      | View       |  |

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# **Engineering College**







## KTU SPONSORED 5-DAY FACULTY DEVELOPMENT PROGRAMME "OUTCOME BASED EDUCATION (OBE): ADOPTING EFFECTIVE PEDAGOGY" DEPARTMENT OF MECHANICAL ENGINEERING

### Attendance Sheet

| S.No Salutation |    | Name                  | KTU ID      | 01/02/2023 |       |  |
|-----------------|----|-----------------------|-------------|------------|-------|--|
|                 |    |                       | NIO ID      | FN         | AN    |  |
| 18              | Mr | SALMAN BIN ALI        | KTU- F7929  | 0          | 90    |  |
| 19              | Mr | ARJUN G NAIR          | KTU- F29705 | 10d        | d     |  |
| 20              | Mr | SHAMEER HASSAN P M    | KTU- F44135 | Series     | Sough |  |
| 21              | Ms | TINTU DEVASSY         | KTU-F12600  | PUL        | C/E   |  |
| 22              | Mr | CHRISTY V VAZHAPPILLY | KTU- F13576 | 20         | A     |  |
| 23              | Ms | ANNA JOSEPH           | KTU-F14303  | 1          | 4     |  |
| 24              | Dr | BIJUCV                | KTU- F13494 | and        | Road  |  |
| 25              | Ms | VIDYA. V. MENON       | KTU-F7338   | Vidha      | Vidh  |  |
| 26              | Ms | SANDHYA E             | KTU-F 43865 | Smels      | Sad3  |  |
| 27              | Dr | CIJIL B JOHN          | KTU-F13125  | del        | Del   |  |
| 28              | Sr | JESNA CATHERINE       | KTU-F42541  | - La       | Fol   |  |
| 29              | Ms | SUGANTHI T            | KTU-F20428  | Q.H.       | 一条    |  |
| 30              | Mr | NICE MENACHERY        | KTU- F11077 | TAR        | No.   |  |

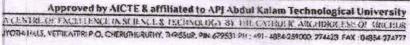




Jyothi Engineering College Cheruthuruthy - 679531



## **Engineering College**







### KTU SPONSORED 5-DAY FACULTY DEVELOPMENT PROGRAMME "OUTCOME BASED EDUCATION (OBE): ADOPTING EFFECTIVE PEDAGOGY" DEPARTMENT OF MECHANICAL ENGINEERING

### **Attendance Sheet**

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|------|------------|-------------------|-------------|------------|-------------|--|
|      | 100        |                   | KIUID       | FN         | AN          |  |
| 1    | Dr         | RENJITH V RAVI    | KTU-F10724  | Partile    | Rough       |  |
| 2    | Dr         | JOHN CHEMBUKKAVU  | KTU-F6709   | 100        | John        |  |
| 3    | Dr         | DILEEP K          | KTU-F1387   | 0          | (C)         |  |
| 4    | Mr         | ANEESH S          | KTU-F39941  | Apla       | Alle        |  |
| 5    | Mr         | ANIL M            | KTU-F19768  | A          | P-          |  |
| 6    | Ms         | VIJITHA G         | KTU -F3224  | De         | 200         |  |
| 7    | Ms         | RINCHU P          | KTU-F39103  | Rinchard   | Pinche      |  |
| 8    | Mr         | THOMAS JOSEPH     | KTU-F3179   | on         | Dan .       |  |
| 9    | Mr         | MANIKANDAN N R    | KTU- F4211  | Walter     | MA          |  |
| 10   | Ms         | NEGMA IQBAL       | KTU- F43819 | Regnatbar. | Degralibal. |  |
| 11   | Ms         | ANITHA MATHEW     | KTU- F30521 |            | A           |  |
| 12   | Mr         | NASID K           | KTU- F36863 | No         | OF TO       |  |
| 13   | Mr         | SANJEEV KUMAR C P | KTU- F6118  | Doing      | Anive (8)   |  |
| 14   | Ms         | ARUNIMA RAJEEV    | KTU- F44412 | Amous      | Amount      |  |
| 15   | Mr         | SHINTO BABY       | KTU- F44767 | Chale      | Me          |  |
| Com  | Mr         | RAMESH M          | KTU- F34413 | Read       | Roo         |  |
| 7    | Mr         | ABIN SEBASTIAN    | KTU- F44720 | Hest Jos   | Star        |  |

# Jyoin Engineering College Reaccredited with NAAC (Grade A) and NBA Programmes:

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his is to certify that Dr./Prof./Mr./Ms.....SANDHYA. E

epartment of Mechanical Engineering, Jyothi Engineering College, Cheruthuruthy, from 30th January fective Pedagogy" sponsored by APJ Abdul Kalam Technological University and organized by te five-day Faculty Development Programme on "Outcome Based Education (OBE): Adopting 03rd February 2023 TYOTH! ENGINEERING COLLEGE participated in

Yr. Fr. Jose Kannampuzha

(print)

Dr. Jose P. Therattil Principal

& Mountabary

Fr. Thomas Kakkassery **Executive Manager** 

EURUTZ!

# Jyoin Engineering College Reaccredited with NAAC (Grade A) and NBA Programmes.

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he five-day Faculty Development Programme on "Outcome Based Education (OBE): Adopting ffective Pedagogy" sponsored by APJ Abdul Kalam Technological University and organized by TYOTH! ENGINEERING COLLEGE participated in

Department of Mechanical Engineering, Jyothi Engineering College, Cheruthuruthy, from 30th January

o 03rd February 2023

Dr. Fr. Jose Kannampuzha

Convene

Dr. Jose P. Therattil Principal

& Moonew Krahlen my

Fr. Thomas Kakkassery Executive Manager



# Jyonh Engineering College Reaccredited with NAAC (Grade A) and NBA Programmes.

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# Certificate of Participation

his is to certify that Dr./Prof./Mr./Ms. ... Y.I.DHYA Y MENON

epartment of Mechanical Engineering, Jyothi Engineering College, Cheruthuruthy, from 30th January ffective Pedagogy" sponsored by APJ Abdul Kalam Technological University and organized by 03<sup>rd</sup> February 2023 ne five-day Faculty Development Programme on "Outcome Based Education (OBE): Adopting TYOTH! ENGINEERING COLLEGE participated in

Jr. Fr. Jose Kannampuzha

Dr. Jose P. Therattil Principal

A Marona of endobra my

Fr. Thomas Kakkassery **Executive Manager** 



# REPORT OF THE FACULTY DEVELOPMENT PROGRAMME "Nanotechnology"

9th to 13th January 2023

Dr. JOSE P. THERATTIL

Joseph Joseph John Joseph Jo

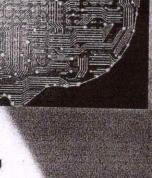
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APJ Abdul Kalam Technological University Ibiruvananthapuram, Kerala





DEPARTMENT OF MECHANICAL ENGINEERING JYOTHI ENGINEERING COLLEGE, THRISSUR



Engineering College NAAC Accordited College with 1823 Accredited Program

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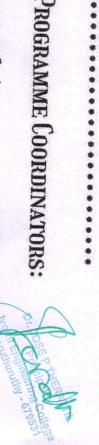
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PROGRAMME COORDINATORS:

ASSOCIATE PROFESSOR, ME ASSISTANT PROFESSOR: ME DR. S. KRISHNANUNNI 9037974084

DR. LAWRANCE C. A.

9446393693



Five Day Offline
Faculty Development Programme

# "NANOTECHNOLOGY"

9<sup>th</sup> to 13<sup>th</sup> January, 2023

Certificate

Sertificates will be given to the registered and effective participants

# Registration

Registration Fee: FREE

Click on 'register now' icon or scan the QR code for registration





# How to reach





Chief Potron Msgr. Jose Konnikkara

# Patrons

Rev. Fr. Thomas Kakkassery Fr. Dr. Jose Kannampuzha

Organizing Chairman
Dr. Jose P. Therattil, PRINCIPAL, JEC

Executive Committe
Prof. Ratnan, VICE PRINCIPAL, JEC

Dr. Vivek Lukose, CENTRE COORDINATOR

Convenor

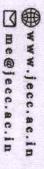
Dr. Biju C. V.

# **FDP** Coordinators

Dr. Lawrance C. A.
Associate Professor, ME
© 9446893693
S lawranceca@jecc.ac.in

Dr. S. Krishnanunni Assistant Professor, ME © 9037974084 Skrishnanunni@jecc.ac.in





# Five Day Offline Faculty Development Programme (FDP)

9

# "NANOTECHNOLOGY"

9th to 13th January, 2023

Organized by

Department of Mechanical Engineering Jyothi Engineering College, Thrissur





Sponsored by

APJ Abdul Kalam Technological University
Thiruvananthapuram, Kerala



# Resource Persons

Scientist, Centre for Nano and Soft Matter Sciences (Cens), Bangalore Dr. C. V. YELAMAGGAD (Chief Guest)

Dr. SWAPNA S. NAIR

Professor, Dept. of Physics, Central University of Kerala, Kasaragod

DR. ANAND H. S.

Associate Professor, Bept. of CSE, Muthoot Institute of Technology and

Dr. BINITHA N. N.

Professor, Dept. of Chemistry, University of Calicut.

Dr. SANDEEP KUMAR

Professor, Dept. of Chemistry, Nitte Meenakshi Institute of Technology (NMIT), Bangalore

Dr. MANJUNATHA PATTABI

Director, Dept. of Science & Technology, Mangalore University, Mangalore

Dr. PRADEEPAN PERIYAT

Associate Professor and HOD, Dept. of EUS, Kannur University

Dr. S. ANANDHAN

Professor, Dept. of Metallurgical and Materials Engineering, NIT Karnataka.

Karnataha.

Dr. SASHI BHUSHAN ARYA Assistant Professor, Dept. of Metallurgical and Materials Engineering, NIT

Dr. MOHAMMAD RIZWANUR RAHMAN

Associate Professor, Dept. of Metallurgical and Materials Engineering, NII

Dr. A. O. SURENDRANATHAN

Retired Professor, Dept. of Metallurgical and Materials Engineering, NIT



# Course Significance

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reactivity compared to their larger-scale equivalents enhanced properties such as higher strength, lighter in making materials at the nanoscale to take advantage of expanding field. Scientists and engineers have great success weight, increased electrical conductivity, and chemical behave differently at the nanoscale. It is also a rapidly Scientists have discovered that atoms and molecules sheet of newspaper is about 100,000 nanometers thick billionth of a meter, or 10-9 of a meter. For comparison, a which is about 1 to 100 nanometers." One nanometer is engineering, and technology conducted at the nanoscale Nanotechnology Initiative, nanotechnology is "science, lives. According to the United States National us do not realize the amazing impact it has on our daily Nanotechnology is a common word these days, but many of

# Course Objectives

- 1. To make sense of nanotechnology.
- 2. To understand the smallness of nano scale.
- materials with macro scale tools. 3. To appreciate the impossibility of creating nano scale
- 4. Explore the applications of nanotechnology and how it is changing materials

# Course Confents

- 1. Nano materials
- 2. Polymer Nano composites
- 3. Molecular Nano composites
- 4. Liquid Crystals
- 5. Environmental Biology
- 6. Nano technology from lab to industry
- 8. Nano fabrication by Electrospinning 7. Green and Economical methods in Graphene synthesis
- 9. Nanotechnology in concrete materials
- 11. Fundamentals of carbon nanostructure 10. Engineered nano systems for next generation sensing energy harvesting and medicine

teaching and learning process. a vibrant, beautiful, and green environmentally friendly campus, and excellent infrastructure for students, to aid th R&D output. Additionally, Jyothi Engineering College offer entrepreneurial spirit among students and commercializ create technology based new enterprises, foster a Technologies and Technology Business Incubator, JEC TBI, t Incubation Centre (IIIC), in association with TAT Engineering College has also set up a Integrated Industric become "job creators" rather than "job seekers", Jyoti College have NBA accreditation. In order to help studen undergraduate programs offered by Jyothi Engineerin grade institutions of higher education. Five of th Kerala. Jyothi Engineering College is NAAC accredited. Th NAAC instrument is developed to objectively assess an Archdiocese of Trichur, is a leading Engineering College Jyothi Engineering College (JEC) set up in 2002, under the aegis of Trichur Educational Trust, founded by the Cathol

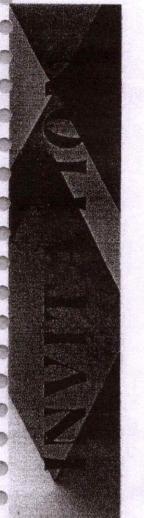
# THURUTAY. TO **About Department**

cultural round the year. is vibrant with several activities, both academic and software like Pro-E, Catia Solid works etc. The departm department library computing facilities with the latest The department has well equipped infrastructure, infrastructure and state-of-art laboratories to undertake CAD/CAM. The department is equipped with most modern high-end teaching, research and developmental activities. Engineering, Machine Design, Materials Engineering, Advanced Manufacturing, Industrial Engineering and dynamic faculty members with specialization in Thermal The department has highly qualified, experienced and College. Currently, the department offers a four year UG foundations for careers in industry, research, and academia students every year and is designed to provide solid Mechanical Engineering attracts bright and aspiring program in Mechanical Engineering and is affiliated to APJ The Department of Mechanical Engineering started Abdul Kalam Technological University. UG program in functioning in 2004, two years after the inception of the

| DAY 5<br>13/01/2023  | DAY 4<br>12/01/2023   | DAY 3<br>11/01/2023   | DAY 2<br>10/01/2023   | DAY 1<br>09/01/2023  | Time                 | Day & Date Forenoon Timing: 9.00am to 12.30pm (Tea Break: 10.30am to 10.45am) |                    |  | APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY SPONSORE | DEPARTMENT OF MECHANICAL ENGINEERING |                            |
|--|---|---|---|--|----------------------|---|--------------------|--|---|--------------------------------------|----------------------------|
| Dr. MOHAMMAI<br>NIT, Kard  | Assi<br>"Synthesis, Pr  | Dr. MANJUNATHA PATTABI<br>Director, IQAC, Dept. of Science & Technology, Mangalore University, Mangalore<br>"Biological Applications of Nanoparticles" and "Applications of thin films" | DR. ANAND H. S. Associate Professor, Dept. of GSE, Muthoot Institute of Technology and Science "Artificial Intelligence Integration with Nanotechnology"  | Registration   | 9,00 to 9,30 am      |   |                    |  |   |                                      |                            |
| ) RIZWANUR RAHM<br>ataka. "Fundament   | Dr. S.ANANDHAN, Assistant Professor, Dept. of MME, NIT, Karnataka. "Synthesis, Properties and Applications of Electrospun Nanofibers" Dr. MOHAMMAD RIZWANUR RAHMAN, Associate Professor, Dept. of MME, NIT, Karnataka. "Fundamentals of Carbon Nanostructure" |   |   | Dr. C. V. YELAMAGGAD, FRSC, Scientist, Centre for Nano and Soft Matter Sciences (CeNS) Inagruation "Chiral plasmonic nanomaterials: Towards dreamy invisibility application" | 9.30 to 10.30 am     |   |                    | FIVE DAY OFFLINE FDP ON NANOTECHNOLOGY- 9th to 13th January 2023 |   |                                      |                            |
| AN,Associate Professor, Dept. of MME,<br>als of Carbon Nanostructure"                              |   |   |   |  | 10.45 am to 12.30 pm | m (Tea Break : 10.30am to 10.45am)  | PROGRAMN           |  |   |                                      | JYOTHI ENGINEERING COLLEGE |
|  |   |   |   |  |                      | Lunch Break<br>(12.30pm to<br>1.00pm)   | PROGRAMME SCHEDULE |  |   |                                      | ERING CO                   |
| Dr. A.O. SURENDRANATHAN, Retired Professor, Dept. of MME, NIT, Karnataka. "Polymer Nanocomposites" | Dr. SASHI BHUSHAN ARYA, Assistant Professor Grade 1. Dept. of MME, NIT, Karnataka. "Development of bulk nanostructured Metallic alloy and its effect on corrosion and passivity"  | Dr. PRADEEPAN PERIYAT Associate Professor and Head of the Department, Kannur University "Nanotechnology from lab to industry"   | Dr. BINITHA N. N. Professor, Dept. of Chemistry, University of Calicut "Green and Economic Methodologies in Graphene Synthesis"   | Dr.SWAPNA S NAIR, Professor, Dept. of Physics, Central University of Kerala, Kasaragod "Engineered Nanosystems for next generation sensing energy harvesting and medicines"  | 1.00 to 2.00 pm      | Afternoon Timing: 1.00pm to 4.00pm (Tea Break : 2.45pm to 3.00pm)             |                    | 13th January 2023  | YSPONSORED  | RING                                 | LEGE                       |
|  |   |   | Dr. SANDEEP KUMAR, Department of Chemistry, Nitte Meenakshi Institute of Technology (NMIT), Yelahanka, Bangalore "Self-assembling Supramolecular structures as Advanced Materials for Opto-electronics" | A S NAIR, Professor, Dept. of Physics, Central University of Kerala,<br>"Engineered Nanosystems for next generation sensing energy<br>harvesting and medicines"              | 2.00 to 3.00 pm      |   |                    |  |   |                                      |                            |
| Valedictory Function   | IIT, Karnataka.<br>Uloy and its effect on   | , Kannur University<br>ustry"   | epartment of Chemistry, e of Technology (NMIT), Bangalore amolecular structures for Opto-electronics"   | tral University of Kerala,<br>eration sensing energy   | 3.15 to 4.00 pm      | k : 2.45pm to 3.00pm)   |                    |  |   |                                      |                            |

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### Invitation for

Inauguration of Faculty Development
Programme on

"Nanotechnology"

Sponsored By



In association with Department of Mechanical Engineering
9th to 13th January 2023

<u>Inauguration</u>

Dr. C. V. Yelamaggad

Scientist, Centre for Nano and Soft Matter Sciences (CeNS), Bangalore

9.30 AM. 9th Jan 2023 INSIGHT HALL

FDP COORDINATORS

Dr. Lawrance C A & Dr. S Krishnanunni



# Programme on

### "Nanotechnology"

### **Inauguration Schedule**

Welcome Address : Dr. Biju C. V (HOD-ME)

**FDP Convenor** 

Address the audience : Dr. Jose P Therattil (Principal)

Organizing Chairman

Inauguration : Lighting the lamp

Message by the chief guest: Dr. C. V. Yelamaggad

Blessings : Fr. Thomas Kakkassery,

**Executive Manager** 

Felicitation : Fr. Dr. Jose Kannampuzha,

Academic Director

Felicitation : Dr. V. M. Xaviour

Registrar

Vote of Thanks : Dr. Lawrance C. A
Course Coordinator

Dr. JOSET THERATTIL Principal Jyothi Engineering College Cheruthuruthy - 679531



### **Engineering College** NAAC Reaccredited College with MES Resecredited Programm

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### Report of KTU Sponsored Faculty Development Programme

On

### NANOTECHNOLOGY

(January 9th - January 13th, 2023)

"NANOTECHNOLOGY" the KTU sponsored Five Day Faculty Development Programme was organized by the Department of Mechanical Engineering. The objective of FDP was to make sense of nanotechnology, understand the smallness of nano scale, appreciate the impossibility of creating nanoscale materials with macro scale tools and to explore the applications of nanotechnology and how it is changing materials. Nanotechnology is a common word these days, but many of us do not realize the amazing impact it has on our daily lives. According to the United States National Nanotechnology Initiative, nanotechnology is "Science, Engineering and Technology conducted at the nanoscale, which is about 1 to 100 nanometers." One nanometer is a billionth of a meter, or 10-9 of a meter. For comparison, a sheet of newspaper is about 100,000 nanometers thick. Scientists have discovered that atoms and molecules behave differently at the nanoscale. It is also a rapidly expanding field. Scientists and Engineers have great success in making materials at the nanoscale to take advantage of enhanced properties such as higher strength, lighter weight, increased electrical conductivity and chemical reactivity compared to their larger scale

The five day sessions started with registration followed by an inauguration function at the Insight hall at 10.00 am, HOD, Dr.Biju C V delivered the welcome address. The programme was inaugurated by Dr. C V Yelamaggad, Scientist, Centre for Nano and Soft Matter Sciences (CeNS). Principal, Dr.Jose P Therattil and Academic Director, Rev. Dr. Jose Kannampuzha also addressed the gathering and motivated the participants to gain knowledge at its maximum level and to transfer them to the student community. Dr. Lawrance C A and Dr. S Krishnanunni were the FDP Coordinators. OTHI ENGG

Department of Mechanical Facing



# Engineering College NAAC Reaccredited College with NSR Reaccredited Programmes\*

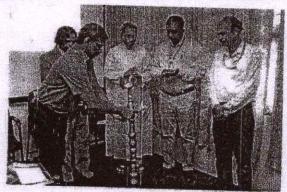
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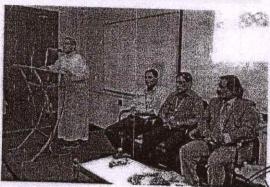
















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THE Sponsored FDP-Nanotechnology





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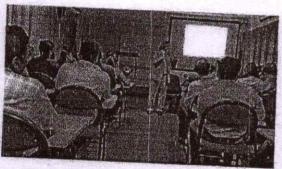
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Day 1 (Monday- 09/01/2023)

Session 1: "Chiral Plasmonic nanomaterials: Towards dreamy invisibility application".

Resource Person: Dr C V Yelamaggad, Scientist, Centre for Nano and Soft matter Sciences (CeNS)

The main topics covered in this session were Liquid Crystals, Nanomaterials and Soft nano composites. He also pointed out the scope and applications of Metamaterials. He brought polarisors and conducted the experiment on how the solid, liquid and liquid crystals behaves in plane polarised. It is seen in the experiment that Solids shows double refraction, Liquids shows fluidity and Liquid Crystals shows both double refraction and fluidity. Hence it is understood that Liquid crystal is a state of matter and its position will be in between Solid and Liquid. The session was very interesting and all the participants got more knowledge on the same.











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KTU Sponsored FDP-Nanatechnology

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# Jyothi Engineering College NAAC Reaccredited College with MR Reaccredited Programmes\*

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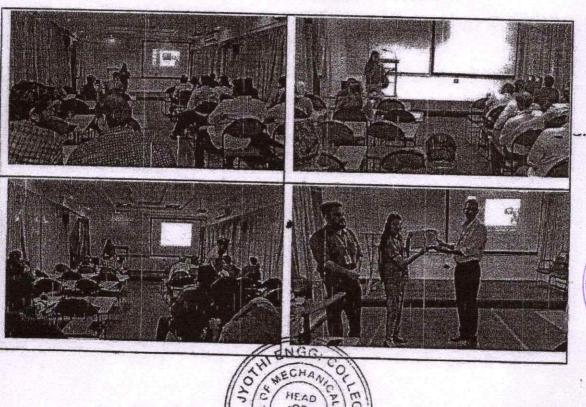


\*NBA reaccredited Blech Programmes in Civil Engineering, Computer Science and Engineering, Bectronics and Communication Engineering, Bectronics and Communication Engineering, 2016

Session 2: "Engineered Nanosystems for next generation sensing, energy harvesting and medicines."

Resource Person: Dr. Swapna S Nair, Professor, Dept. of Physics, Central University of Kerala, Kasaragod

In the second session resource person discussed Carbon NanoStructures, Definition of Nanomaterials similarly the properties of Nanomaterials. She said that Nanotechnology is mainly focussed in Fuel Cells, Solar Cells, Batteries and Capacitors. Explained in detail about the applications of Nanomaterials like Bio sensors, Bio COM Chip, Drug Delivery, Regenerative medicine etc. The session was wonderful and informative.



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### **Engineering College**

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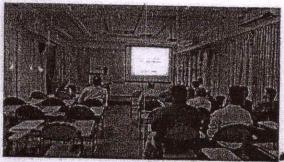
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Day 2 (Tuesday -10/01/2023)

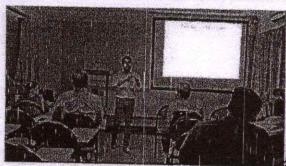
Session 1:"Artificial Intelligence Integration with Nanotechnology"

Resource Person: Dr. Anand H S, Associate Professor, Dept. of CSE, Muthoot Institute of Technology and Science

AI is being used, for instance, to understand carbon nanotube structures by quantifying structural qualities like alignment and curvature. There are many factors that must be considered in order to generate an image or a dynamic depiction of a chemical system. Up until recently, and as with the example of microscopy above, isolating these factors from the surrounding noise has been very difficult. AIs, however, are effective at this task. He also shared his experiences with Some institutes which helped us a lot in understanding the scope of the same. Session was very interactive.











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### **Engineering College**

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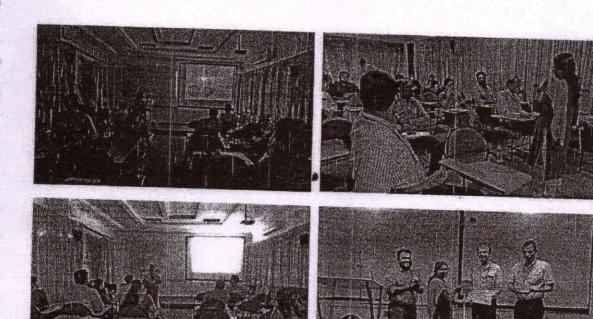


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Session 2:"Green and Economic Methodologies in Graphene Synthesis"

Resource Person: Dr. Binitha N N, Professor, Dept. of Chemistry, University of Calicut.

Resource person discussed the Carbon Nanostructures, Applications of Graphene and different methods for Graphene production. She said that if surface atoms are increased the property is also enhanced. In the case of Graphene all atoms are surface atoms. Graphene is fundamentally a two dimensional material with extraordinary optical, thermal, mechanical and electrical characteristics. It has a versatile surface chemistry and large surface area. It is a carbon nanomaterial, which comprises sp2 hybridized carbon atoms placed in a hexagonal lattice with one -atom thickness, giving it a two -dimensional structure. The session was informative.





Department of Mechanical Engineering KTU Sponsored FDP-Nanotechnology

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# Jyothi Engineering College NAAC Reaccredited College with NER Reaccredited Programmes\*

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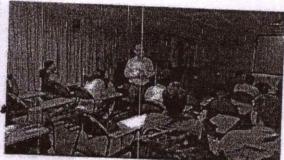
\*\*NSA reacciedited Black Programmes in Civil Engineering, Computer Science and Engineering, Bectronics and Communication Engineering, and Mechanical Engineering valid till 2025

Session 3: "Self-assembling Supramolecular Structures as Advanced Materials for Opto-Electronics"

Resource Person: Dr.Sandeep Kumar, Department of Chemistry, Nitte Meenakshi Institute of Technology (NMIT), Yelahanka, Bangalore

He pointed out that Supramolecular organic electronics rests on the use of bottom-up chemical self assembly phenomena in order to design components on the 5-100 nm Scale. The Challenges to take up in this field are both the construction of 1D-nanostructures displaying optimized charge transport properties and their insertion in optoelectronic devices. He also described several processing strategies to engineer and integrate them in (opto) electronic devices such as field effect transistors, light emitting diodes and organic solar cells.











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Day 3 (Wednesday -11/01/2023)

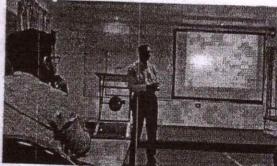
Session 1:"Biological Applications of Nanoparticles and Applications of Thin films"

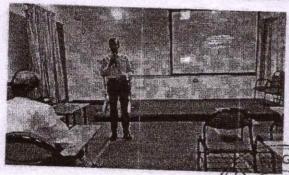
Resource Person: Dr. Manjunatha Pattabi, Director, IQAC, Dept. Of Science and Technology, Mangalore University, Mangalore

He discussed Chemical and physical properties of Nanoparticles, Giant Magneto resistance, Tunnelling Magnetoresistance and transparent conducting films. Nanoparticles and thin films are currently among the most active research fields in material sciences for technological applications. The interest in nanoscale systems arises not only from the purpose of miniaturization, but also from the fact that new properties are emerging at this length scale and these properties change with their size, surface to volume ratio and shape.

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Department of Mechanical Engineering



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Cheruthuruthy





# Jyoth Engineering College

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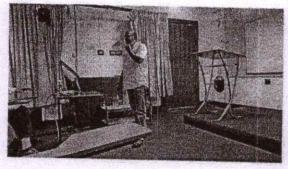


\*NBA reaccredited Blach Programmes in CWI Engineering, Computer Science and Engineering, Bactronics and Communication Engineering, and Mechanical Engineering valid #8 2025.

Session 2: "Nanotechnology from Lab to Industry"

Resource Person: Dr. Pradeepan Periyat, Associate Professor and Head of the Department, Kannur University

Nanotechnology holds great promise and is hyped by many as the next industrial revolution. Medicine, food and cosmetics, agriculture and environmental health, and technology industries already profit from nanotechnology innovations and their influence is expected to increase dramatically in the near future. However, there are also many challenges that need to be overcome to bring a nanotechnological product or business to the market. The session was very much interesting with real world applications.











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## Jyothi

### Engineering College NAAC Reaccredited College with 1937 Reaccredited Programmes\*

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Day 4 (Thursday-12/01/2023)

Session 1: "Synthesis, Properties and Applications of ElectrospunNanofibres"

Resource Person: Dr. S Anandhan, Assistant Professor, Dept. of MME, NIT, Karnataka

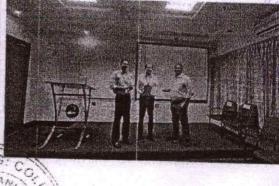
Ceramic nanofibers have recently been developed for advanced applications due to their unique properties. Surface activity of electro spun ceramic NFs is improved by post pyrolysis, hydrothermal and carbothermal processes. Also, when combined with another surface modification method, electro spun ceramic NFs result in the advancement of properties and widening of the application domains. With the decrease in diameter and length of a fibre, many properties of fibrous materials are modified; characteristics of such ceramic NFs are different from their wide and long counterparts.

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Session 2: "Development of bulk nanostructured Metallic alloy and its effect on corrosion and passivity"

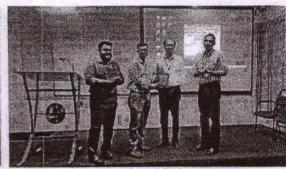
Resource Person: Dr. Sashi Bhushan Arya, Assistant Professor Grade 1, Dept. of MME, NIT, Karnataka

Resource person discussed corrosion, reasons to know corrosion engineering etc. He also showed some real word case studies about corrosion. It helped us a lot for understanding the dangerous situation of corrosion. The session was interactive & informative.











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Day 5 (Friday -13/01/2023)

Session 1:"Fundamentals of Carbon Nanostructure"

Resource Person: Dr. Muhammad Rizwanur Rahman, Associate Professor, Dept. of MME, NIT, Karnataka

With the carbon nanostructures proving their widespread application in the development of sustainable technologies, during the past three decades research efforts have been devoted to the development of a variety of synthesis methods. Among the various synthesis methods, chemical vapour deposition and arc discharge have been reported to be economically viable on an industrial scale. He also pointed out the unit cell construction of Carbon Nanotubes.









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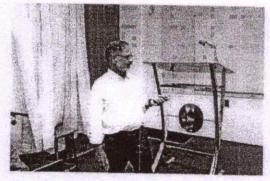


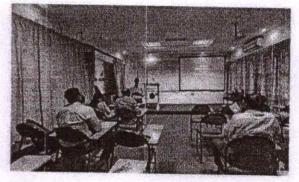
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Session 2: "Polymer Nanocomposites"

Resource Person: Dr. A. O. Surendranathan, Retired Professor, Dept. of MME, NIT, Karnataka

He told that in the field of nanotechnology, one of the most popular areas for current research and development are polymer nanocomposites, and the investigation field covers a broad range of topics. This would include nanoelectronics, polymeric bio nanomaterials, reinforced PNCs, nanocomposite-based drug delivery systems etc.













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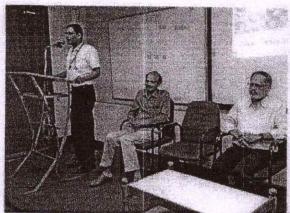


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Total of 30 participants (24 External Participants and 6 in-house participants) attended the FDP. External Participants includes faculty from Government, Aided and Self financing Institutes. Last session was followed by a Valedictory function which was inaugurated by Dr. A O Surendranathan, Retired Professor, Dept. of MME, NIT, Karnataka. Rev. Dr. Jose Kannampuzha distributed certificates to all the participants.















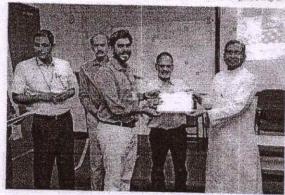
### **Engineering College**

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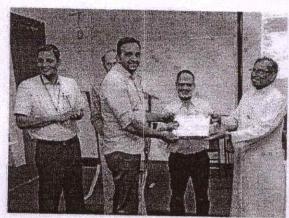
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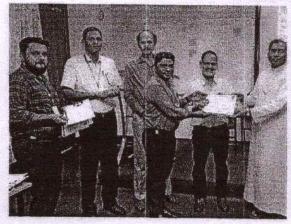
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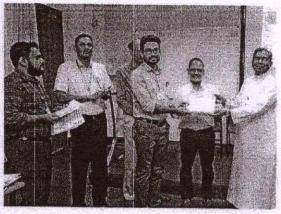
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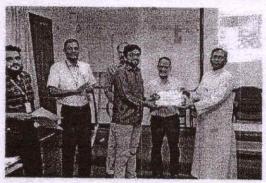
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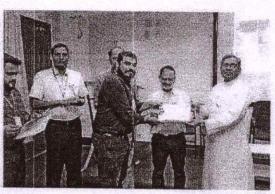


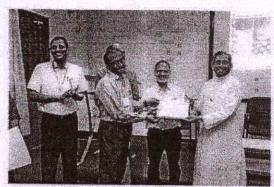
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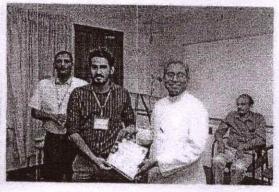


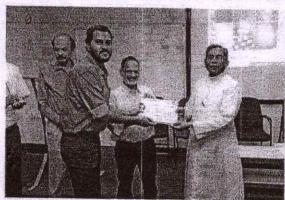
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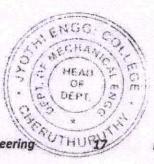












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Valedictory function ends with distributing certificates and mementos to the coordinators, convenor and the active participant's.







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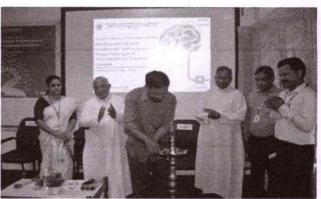
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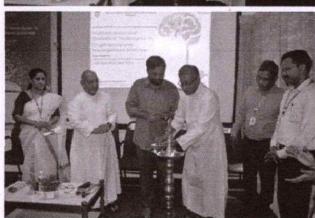


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### **Inauguration Photos**















Dr. JOSE P THERATTIL

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### Day - 1 FN (Monday 13-02-2023)

Session 1: "A talk on statistical Inference"

Resource Person: Dr. P.G Sankaran (Professor and Pro Vice Chancellor Department of Statistics, CUSAT, Kerala, India)

The resource person started the session by explaining simple life situations where statistical inference is applied (pharmaceutical, anthropology, business etc). The main topics covered included deductive ,inductive approach, parametric and non parametric approach using graphical representations. He also explained the methods of estimation namely point estimation , interval estimation , pivotal quantity method and sampling distributions. The session also covered the topics confidence interval, testing of hypothesis, non parametric estimation, goodness of fit ,test for independence and homogeneity and Krushkal –Wallis test . The session was highly informative and interesting.







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### Day - 1 AN (Monday 13-02-2023)

Session 2: "Introduction to R Programming"

Resource Person: Dr Jerin Paul

(Assistant Professor, Department of Statistics, Vimala College, Thrissur,

Kerala, India)

The resource person gave a brief history of R programming which included features of R, introduction to R studio, R as a calculator, variable assignment and printing. He also explained basic programming in R/R studio which consisted of basic arithmetic operations. He also gave a detailed practical session on installing a package in R and loading a package to R. The hands on training session was highly useful to the participants.





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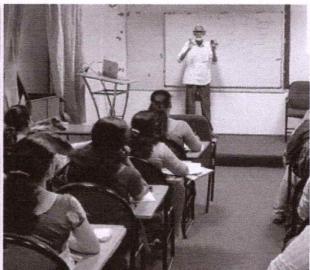
### Day - 2 FN (Tuesday 14-02-2023)

Session 1: "Queues, Inventory, Queuing-Inventory and Reliability Modeling"

Resource Person: Prof Achyutha Krishnamoorthy (Emeritus Professor, CMS College Kottayam, Kerala, India)

The resource person explained the relevance of queues and inventory in engineering and other branches of study. The topics covered in the session included stochastic process, Markov chain, Markov process, Poisson process, Queues , Inventory and Queuing –Inventory systems. He gave a simple derivation the probability of the number of customers by time t in a Poisson process .Then he explained about queuing systems and their characteristics. He further discussed the different types of queues namely M/M/1,M/M/c etc. The session also covered the topic Reliability and queuing models. The session was highly informative .







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### Day 2 AN (Tuesday 14-02-2023)

Session 2: "Introduction to R Programming"

Resource Person :Dr Jerin Paul (Assistant Professor, Department of Statistics, Vimala College, Thrissur, Kerala, India)

The hands on training session on R programming included methods to import data set in xlsx format, procedure to import data set into R studio, creating frequency tables, labeling the variables, drawing basic diagrams in R/R studio (Bar diagram, Pie chart, Histogram etc). He also explained R-functions and the basic syntax of R functions. The session was very interesting and interactive. He cleared the doubts of the participants.







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### Day - 3 FN (Wednesday 15-02-2023)

Session 1: "Some Aspects of stochastic processes"

Resource Person: Dr M.Manoharan (Professor & Member of Syndicate, Department of Statistics, Calicut University, Kerala, India)

The resource person started with explaining the basic theory and applications of stochastic processes, covering fundamental aspects. The session included the topics Stationary processes, Processes with stationary and independent increments ,Markov processes and Renewal processes. In the session the speaker explained the formulation of a stochastic process ,Analytic definition FDD, Daniell-Kolmogorov theorem ,Poisson processs, exponential fuction, PASTA and Gauss Markov process .The speaker also gave a brief summary of Renewal theory and Stochastic modeling with examples. The session concluded with alternating Renewal process and the light bulb example of an inspection paradox.







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#### Day 4 FN (Thursday 16-02-2023)

Session 1: "Introduction to Statistical Computing Methods"

Resource Person: Dr Joby K Jose

(Registrar, Kannur University Department of Statistics, Kannur

University, Kerala, India)

The speaker explained that the fundamental tools required in computational statistics are the ability to stimulate random variables from specified probability distributions. In the session the resource person covered the topics which included Monte Carlo Integration, Monte Carlo methods in inference ,Markov chain Monte Carlo methods .The speaker also gave a detailed description about MSE percentiles ,law of Large numbers, Central limit theorem ,Bias and MSE standard error of a sample proportion, multi variate Normal distributions, finite mixture models with graphical representations and in R programming steps. The speaker concluded the session by explaining estimation of MSE of trimmed mean , MCMC methods ,Hastings sampler and the Gibbs sampler.







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#### Day 4 AN (Wednesday 16-02-2023)

Session 2: "Analysis of variance"

Resource Person: Dr Jenson P.O (Professor, Jyothi Engineering College, Thrissur, Principal (Retired), St. Thomas College, Thrissur)

The resource person began with stating that analysis of variance is a powerful statistical tool for tests of significance. In a situation where there are three or more samples to consider at a time ,the technique of Analysis of variance is used. The speaker explained that the total variation in any set of numerical data is due to a number of causes which may be classified as assignable causes and chance causes. Later the speaker explained the validity of F-test in ANOVAs, Randomized design (CRD) and Randomized Block design (RBD),Latin square design(LSD) and factorial design .The session was highly informative.







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#### Day 5 FN (Friday 17-02-2023)

Session 1: "Probability based design: Probability models and statistical methods"

Resource Person: Dr. S. M Sunoj

(Head, Department of Statistics, CUSAT, Cochin, Kerala, India)







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#### Day 5 AN (Friday 17-02-2023)

Session 1: "Application of Statistics in Economics"

Resource Person: Dr. Baby CB

(Professor, Department of Basics Science and Humanities, JECC, Thrissur,

Kerala, India)



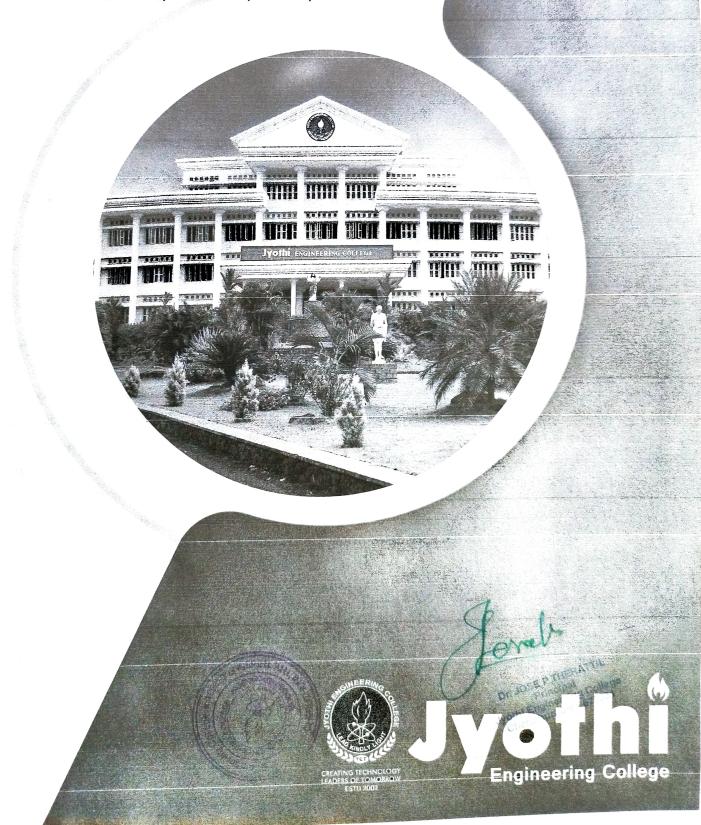






Three-day Faculty Development Programme 06.08.2022 to 08.08.2022

Venue: Yuvakshetra Institute of Management Studies, Mundur, Palakkad, Kerala, 678631.



#### **About Jyothi Engineering College**

Jyothi Engineering College (JEC), set up in 2002, under the aegis of Trichur Educational Trust, founded by the Catholic Archdiocese of Trichur, is one of the leading engineering colleges in Kerala. This college is affiliated to Kerala Technological University and offers various B.Tech, M.Tech, Ph.D programmes in Engineering and Technology. The Archdiocese of Trichur has an illustrious track record of a century and a quarter in the education sector.

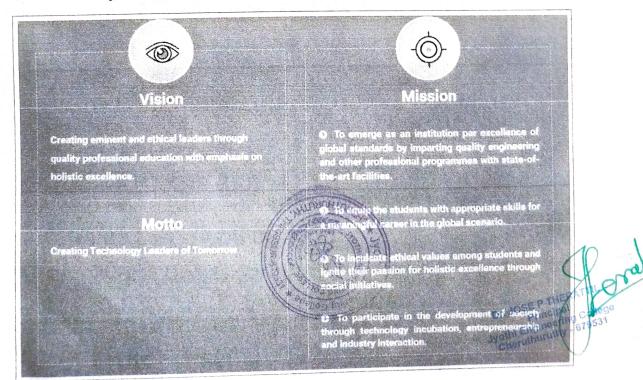
Jyothi Engineering College is a NAAC reaccredited institution with Grade 'A'. Five of the undergraduate programs offered by Jyothi Engineering College have NBA accreditation, which indicates that we are well recognized for the quality of education we offer. We are periodically evaluated for this stringent NBA accreditation criteria to ensure we sustain the mandated quality levels.

The worlds of study and work have changed dramatically. Students of today require different sets of skills than those of previous generations. We are in the midst of the fourth industrial revolution and the predictions are that 85% of the jobs that will exist in 2030 have not been invented yet.

Jyothi Engineering College prepares students to become T-Shaped professionals, i.e., professionals who have in-depth expertise in their discipline as well as a breadth of competencies required in the 21st century. In order to train our students to become "T" shaped professionals, so that they are "future ready", we have set up an incubation centre, Integrated Industrial Incubation Centre (IIIC), in association with TATA Technologies.

Additionally for students desirous of being "job creators" rather than "job seekers", Jyothi Engineering College has also set up a Technology Business Incubator, JEC TBI, to help students create technology based new enterprises, foster an entrepreneurial spirit among students and commercialize R&D output.

Jyothi Engineering College offers a vibrant, beautiful, and green environmentally friendly campus, and excellent infrastructure for students, to aid the teaching and learning process. For more information visit www.jecc.ac.in



#### PROGRAMME SCHEDULE

#### 1st Day - 6th August 2022 (Saturday)

Session 1 (10.30 AM - 1 PM)

Resource Person: Dr. T. C. Thankachan

Topic: 21st Century -Learners and Learning Style

Session 2 (2 PM - 3 PM)

Resource Person: Dr. T. C. Thankachan

Topic: Session on 21st Century -Learners and Learning Style Continues

Session 3 (3.30 PM - 6 PM)

Resource Person: Fr. Bobby Jose Kattikad

Topic: Masters as consciousness

Session 4 (7 PM - 9 PM)

Resource Person: Mr. Vineesh K. I.

Topic -Yoga

#### 2<sup>nd</sup> day - 7th August 2022 (Sunday)

6 AM- 7 AM - Holy Mass 7 AM - 9 AM - Yoga Session 1 (10 AM -1.30 PM)

Resource Person : Dr. Thomas George

Topic: Dealing with Gen -Z students

1.30 PM- 2.30PM - Lunch break Session 2 (2.30 PM - 4.30 PM)

Resource Person: Dr. Chandra Sekhar

Topic: Paradigm shift in handling engineering students.

5 PM - 6 PM - Break Session3 (6 PM - 8 PM)

Resource Person: Dr. Balamourougane R.

Topic: Radiant thinking: Where is your sketch pen?

8 PM - 9 PM - Break

9 PM - 11 PM - Cultural Program

#### 3rd day - 8th August 2022 (Monday)

7 AM - 9 AM - Yoga Session1 (10 AM - 12.05 PM)

Resource Person: Mr. Joe A. Scaria

Topic: Teachers as leaders

Session 2 (12.15 PM - 1.30 PM)

Resource Person : Dr. Thomas George

Topic: How to make sessions interesting for the students?

1.30 PM - 2.30 PM - Lunch Break
2.30 PM - 3.30 PM - Valedictory Function

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Jyothi Eving ting College
Cherymuruthy - 679531

#### Overview of the Faculty Development Programme

The Faculty Development Programme provides a platform for improving teaching – learning outcomes. This initiative shall be of great benefit for Jyothi Faculty to contribute to the process of evolving effective strategies for student development. This Faculty Development Programme focuses on enabling faculty to understand their strengths and weaknesses and to be more specific on skill sets. This ensures the ability to become effective facilitators for learning. The sessions include Various types of learners and their learning styles, Dealing with Gen –Z students, Making sessions interesting for the students, Paradigm shifts in handling engineering students etc. They also help in improving social skills necessary for collaboration, professional growth, personnel management, and leadership. Practice sessions on Yoga are arranged considering the health and well being of the participants.

### Organizing Committee Chief Patron

His Grace Mar Andrews Thazhath

Archbishop of Trichur Archdiocese

#### **Patrons**

Rev. Msgr. Jose Konikkara - Manager

Rev. Fr. Thomas Kakkassery - Executive Manager

Rev. Dr. Jose Kannampuzha - Director of Academics

Dr. Sunny Joseph Kalayathankal - Principal

Prof. Ratnan P. - Vice Principal

#### Coordinators

Prof. Dr. Jose P. Therattil

H.O.D. - Electronics & Communication Engineering

Prof. Jasmin Jose

H.O.D. - Basic Science and Humanities



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# LIST OF PARTICIPANTS

| 25             | 24              | 23            | 22              | 21          | 20          | 19                     | 18                 | 17       | 16        | 15         | 14             | 13         | 12       | 11            | 10           | 9              | <sub>∞</sub> | 7         | 6             | 5             | 4                     | ω                          | 2                    | 1                     | ST     |
|----------------|-----------------|---------------|-----------------|-------------|-------------|------------------------|--------------------|----------|-----------|------------|----------------|------------|----------|---------------|--------------|----------------|--------------|-----------|---------------|---------------|-----------------------|----------------------------|----------------------|-----------------------|--------|
| Aswathy Wilson | Aneesh Chandran | Soorya M Nair | Rosmi Sebastian | Neeraja P.G | Jeffy Johny | Dr. Jacob Chandapillai | Dr. Alwyn Varghese | Anju M.J | Viji E.P. | Suganthi T | Sivakumar K.S. | Sandhya E. | Rich K.J | Renju Francis | Nivya Wilson | Nidhin Johnson | Jasmine Jose | Bibin Joy | Aswathy P. M. | Antony Joseph | Fr. David Nettikkadan | Fr. Ajeesh Babu Perinchery | Fr. Jose Kannampuzha | Fr. Thomas Kakkassery | NAME   |
| FEMALE         | MALE            | FEMALE        | FEMALE          | FEMALE      | FEMALE      | MALE                   | MALE               | FEMALE   | FEMALE    | FEMALE     | MALE           | FEMALE     | MALE     | FEMALE        | FEMALE       | MALE           | FEMALE       | MALE      | FEMALE        | MALE          | MALE                  | MALE                       | MALE                 | MALE                  | GENDER |
| CSE            | CSE             | CE            | Œ               | Œ           | CE          | CE                     | CE                 | CE       | BSH       | BSH        | BSH            | BSH        | BSH      | BSH           | BSH          | BSH            | BSH          | BSH       | BSH           | BSH           | Admn                  | Admn                       | Admn                 | Admn                  | DEPT   |





|               |             |              |             |                     |           |              |                    |            |              |                |                      |                      |             |                | -               | _               |                 | <b>P</b>    | -          |                 |              |               |                    | _                |                     |           |
|---------------|-------------|--------------|-------------|---------------------|-----------|--------------|--------------------|------------|--------------|----------------|----------------------|----------------------|-------------|----------------|-----------------|-----------------|-----------------|-------------|------------|-----------------|--------------|---------------|--------------------|------------------|---------------------|-----------|
| 52            | 51          | 50           | 49          | 48                  | 47        | 46           | 45                 | 44         | 43           | 42             | 41                   | 40                   | 39          | 38             | 37              | 36              | 35              | 34          | 33         | 32              | 31           | 30            | 29                 | 28               | 27                  | 26        |
| Jithin K Jose | Jenson Jose | Dr. Shijoh V | Dr. Jarin T | Sr. Jesna Catherine | Saritha P | Ponmani Raja | Neethu Rose Thomas | Drisya M.K | Dr. Sindhu S | Dr. Prajoon P. | Dr. Jose P Therattil | Dr. Gaswin Kastro G. | Dr. Anoop V | Ambily Francis | Thomas George K | Sonia A. Joseph | Sobha Xavier P. | Shaiju Paul | Sajitha I. | Parvathy Jyothi | Ninu Francis | Lufiya George | Dr. Swapna B. Sasi | Dr. Saju P. John | Dr. Adarsh N. Gokul | Bineesh M |
| MALE          | MALE        | MALE         | MALE        | FEMALE              | FEMALE    | MALE         | FEMALE             | FEMALE     | FEMALE       | MALE           | MALE                 | MALE                 | MALE        | FEMALE         | MALE            | FEMALE          | FEMALE          | MALE        | FEMALE     | FEMALE          | FEMALE       | FEMALE        | FEMALE             | MALE             | MALE                | MALE      |
| EEE           | EEE         | EEE          | EEE         | ECE                 | ECE       | ECE          | ECE                | ECE        | ECE          | ECE            | ECE                  | ECE                  | ECE         | ECE            | CSE             | CSE             | CSE             | CSE         | CSE        | CSE             | CSE          | CSE           | CSE                | CSE              | CSE                 | CSE       |



| 7 | 53   | Kapil Das K.S                  | MALE   | EEE |
|---|------|--------------------------------|--------|-----|
|   | 54   | Navin Sam D.                   | MALE   | EEE |
|   | 55   | Ratnan P.                      | MALE   | EEE |
|   | 56   | Soumya C                       | FEMALE | EEE |
|   | 57   | Anto Zacharias                 | MALE   | ME  |
|   | 58   | Christy V. Vazhappilly         | MALE   | ME  |
|   | 59   | Dr. Anandakrishnan N.          | MALE   | ME  |
|   | 60   | Dr. Cijil B John               | MALE   | ME  |
|   | 61   | Dr. S. Krishnanunni            | MALE   | ME  |
|   | 62   | Hareesh N.V                    | MALE   | ME  |
|   | 63   | Manoj Kumar V.K                | MALE   | ME  |
|   | 64   | Melvin Raj C.R.                | MALE   | ME  |
|   | 65   | Sukesh O.P.                    | MALE   | ME  |
|   | 66   | Dr. Anoopa Jose Chittilappilly | FEMALE | MR  |
| - | 67   | Dr. Vivek Lukose               | MALE   | MR  |
|   | 68   | Nyni K.A                       | FEMALE | MR  |
|   | 1 69 | Dr. C. Karthik                 | MALE   | RA  |



Dr. JOSE P THERATTIL
Dr. JOSE P THERATTIL
Dr. Jose P THERATTIL
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## Jyothi Engineering College NA AC Accredited College with PER Accredited Programmes\*

Approved by AICTE & affiliated to API Abdul Kalam Technological University

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VBA accredited 8.Tech Programmes in Computer Science & Engineering, Electronics & Communication Engineering, Electronic & Electronics & Communication Engineering, Electronic & Electronics & Electronics & Electronics & Electronics & Communication Engineering, Electronics & Communication Engineering, Electronics & Electron

Session 2 (2.30P.M. - 4.30P.M.)

Resource Person: Dr. Chandra Sekhar

Topic: Paradigm shift in handling engineering students.

5P.M. - 6P.M. - Break

Session3 (6 P.M. - 8 P.M.)

Resource Person: Dr.Balamurugane

Topic: Radiant thinking: Where is your sketch pen?

8P.M. - 9P.M. -Break

9P.M. -11P.M. - Cultural Program

3rd day - 8th August 2022 (Monday)

7A.M. - 9A.M. - Yoga

Session1 (10A.M. - 12.05P.M.)

Resource Person: Mr. Joe A. Scaria

Topic: Teachers as leaders

Session 2 (12.15P.M.-1.30P.M.)

Resource Person: Dr. Thomas George

Topic: How to make sessions interesting for the students?

1.30P.M.-2.30P.M. - Lunch Break

2.30P.M. - 3.30P.M. - Valedictory Function

Dr. JOSE P THERATTIL
Principal
Principal
Syothi Engineering College
Cheruthuruthy - 679531

#### Report on Faculty Development Programme

#### 'Reinventing The Process of Teaching Learning'

Organized by Jyothi Engineering college, Cheruthuruthy, Thrissur-679531

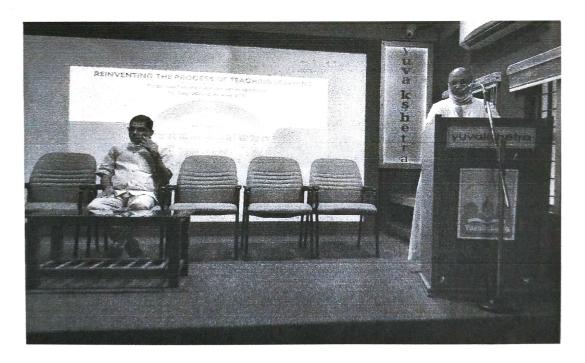
Date: 06 Aug 2022 to 08-Aug-2022

Venue: Yuvakshetra Institute of Management Studies

Mundur, Palakkad, Kerala-678631

Inauguration: 6th Aug 2022, 10.30 am.

The three-day faculty development programme was inaugurated by Rev.Fr Thomas Kakkasserry, Executive Manager, Jyothi Engineering College. In his inaugural address he pointed out the importance of such programmes and congratulated all the participants and organizers of the programme.



Inauguration of the FDP by Rev. Fr. Thomas Kakkasserry

Dr. JOSE P THERATTIL Principal Jyothi Engineering College Cheruthuruthy - 679531



Day 1, 6 - August 2022 (Saturday)

#### Session 1 and 2

Resource Person: Dr. T. C. Thankachan.

Topic: 21st Century –Learners and Learning Style

Dr. T. C. Thankachan, Associate Professor in Education, St. Thomas College of Teacher Education, Pala, Kerala joined in permanent service in 2005. The area of interest in teaching are; education, social science, educational technology, guidance and counselling, research, value education, peace education, etc. Presently, he is handling four subjects in the college; contemporary India and education, knowledge and curriculum, language across the curriculum, gender school and society. He has teaching and research guidance experience in the Department of PG Studies in Education (M. Ed), St. Thomas College of Teacher Education, Pala since 2005. The career objective of Dr. T. C. Thankanchan is to become an inspiring humanistic teacher educator with a difference — intellectually competent, emotionally stable, socially efficient, spiritually mature, physically strong, morally upright, technically advanced, culturally refined, and internationally liberal.

In his talk, Dr. Thankachan spoke about the learning styles of 21st century learners and learning styles. The talk was very informative and interactive. Dr. Thankachan also shared his insights about Digital Generation — Natives/Immigrants, Teaching-Learning and Digital Platforms, SMART Learner, Managing the 21st Cy Learners and Contemporary Teaching Methods.

Dr. JOSE P THERATTIL

Principal

Principal

Jyothi Engineering 679531

Cheruthuruthy - 679531



Day 1, 6 - August 2022 (Saturday)

Session 3

Resource Person: Fr. Bobby Jose Kattikad

Topic: Masters as consciousness

Fr. Bobby Jose Kattikad popularly known as 'Bobbyachan' or 'Fr. Bobby Jose Capuchin' is a Roman Catholic priest from Order of Friars Minor Capuchin in India, known for his preaching and especially evangelization through television, radio and other media. He founded Theo Publications in 2002, which publishes many books related to spirituality. Fr. Bobby is also author for many books which gained popularity around spirituality of malayalam speaking world. The television preaching programs called Gurucharanam in Shalom TV India and many other programs are led by him. Those programs are reported to have large number of viewers. He also leads growth retreats which is conducted all over the world among Malayali communities. For a long time, he was associated with conducting growth retreats in San Pio retreat centre, Kovilthottam, Kollam. Fr. Bobby was appointed as the first director and guardian of the retreat centre. He is an editor and contributor for a magazine called Theo Manusyasnehi. Fr.Bobby was born at Thumpoly Alappuzha district in 1968.

Rev. Fr. Bobby Jose Kattikkad starts his session by putting the idea of becoming a master, not only in the physical level; but also, in the literal stage through becoming a real master who encourage the students. He emphasises on the importance of converting oneself into rivers through various propaganda. The relevance of finding out the master inside oneself and exploring the talent is a point stresses throughout the session.

| Day 1, | 6 - | August | 2022 | (Saturda | y) | ۱ |
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Session 4

Resource Person: Mr. Vineesh K. I

Topic: Yoga

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Mr. Vineesh K. I is a Skilled Yoga Instructor certified in Ashtanga Yoga and familiar with hatha yoga, vinyasa, traditional Indian martial arts as Kalarippayattu, Self defense techniques, Mixed martial art and Thai chi old yang styles. Builds effective relationships with students of all backgrounds and skill levels. Hardworking, dedicated and supportive with excellent communication and problem-solving abilities. He is Trained in different martial art forms. He conducted sessions on basis of self defense. He conducted yoga demonstrations in different places for the promotion and spreading of yoga. He has worked in an international yoga tutorial CD taken by Sri. Dileep Yoga and holistic trainer.



Day 2, 7 - August 2022 (Sunday)

Session 1 & 3

Resource Person: Dr. Thomas George Topic: Dealing with Gen Z Students



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Dr. Thomas George K, had his Engineering Degree in Electronics and Communication and did MBA in Systems, further he pursued M.Sc. in Applied Psychology, M. Phil in Psychology, M.Phil in Management and obtained his Doctorate on the thesis 'Enhancing Competencies of Engineering and Management Students' from Bharathiar University. In 1994, he started his professional career as an entrepreneur of a startup computer firm called Prompt Computers who have developed India's largest touch screen network for Indian Railways.. He is the Chief Mentor of 'Turning Point' — a 6-day life skill training programme which is widely recommended by many management specialists. LEAD College of Management is one of the institutions that stands out from the rest with its unique methodologies in education .He is currently the Chairman of NIPM (National Institute of Personnel Management) Palakkad Chapter, Executive member at ASMIK (Association of Self-Financing Management Institutions in Kerala, Secretary at AMICU (Association of Management Institutions under Calicut University) and Treasurer at VISWAS (Victims, Sensitization, Welfare and Assistance).

The resource person divided the faculties into various groups in order to find out the challenges face by teachers to handle new generation students. He proposed some suggestions to overcome these challenges in an effective manner. As a first step, teachers have to change their attitude and teaching methodology while handling these students.

Day 2, 7 - August 2022 (Sunday)

Session 2

Resource Person: Dr. Chandra Sekhar Menon
Topic: Paradigm Shift in Handling Engineering Students

pr. Jose P THERATTIL

pr. Jose P THERATTIL

principal



Dr. R. Chandrasekhar Menon, a healthcare professional turned renowned professor having core competency in business Analytics, Healthcare Management and Management education. Dr. Menon started his career with M/s. Sarabhai Chemicals in analytical side of healthcare marketing in 1977 and groomed to the position of heading a global conglomerate M/s. B. Braun AG. Dr. Menon became the first overseas head for the international operation for its PGPM program at Knowledge village Dubai for the prestigious M/s. S.P.Jain Centre of Management in 2000.. He has been Dean Kalasalingam University and now Founder Director of M/s.Swift MBA a business Analytics organization specialized in healthcare analytics and also visiting faculty to IIMs and IMT. He has published 23 International and 18 national articles with Scopus Index and enjoying high citations. His academic credentials include Ph.D. from Washington University, U.S.A, M. Phil in Environmental Economics Madras University, Master's degree in Sociology, Economics, Psychology, Public administration, and a Fellowship in Advanced Marketing (FAM) from International Institute of Advanced Marketing, LL. B from Siddhartha College of Law Mumbai, PGDBA from University of Calicut (First Class and First Rank Holder), and B.Sc., from Govt. Victoria College, Palakkad.

Dr. Chandra Sekhar discussed about the issues faced by the engineering students such as language proficiency, lesser industry interaction, lesser exposure to reality etc. He changed our thought to break the existing norms and methods to a modern one. He also emphasizes that better thinking can make changes in one's feeling to convert that into successful actions. He addresses teachers as good facilitators and instructor to use the new pedagogy in teaching. The session comes to an end with the note on the importance of self-management necessary to a learner.

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#### **Cultural** events



Day 3, 8- August 2022 (Monday)

Session 1

Resource Person : Mr. Joe A. Scaria

Topic: Teachers as Leaders

Joe A Scaria is a Journalist, Trainer, Speaker and an Author. He worked around 4 decades as editors in Indian Express and Economic times and has worked all across the country He is basically from Bharananganam Changanaserry. He now teaches journalism students, gives talks on media and socio economic trends, and conducts workshops for corporate leaders.

Mr. Joe A Scaria distinguished the ideas of real and academic life by adding more points regarding the topic. It was a motivational session that encouraged the audience to utilize the present moment and he also talks about identifying the open levels and professionalism in new teaching learning process. He motivated the teachers to be the reason for changes in the coming generations.

Day 3, 8- August 2022 (Monday)

Session 2

Resource Person: Dr.Balamurugane

Topic: Radiant thinking: Where is your sketch pen?

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He has around 20 years of teaching experience in handling management and accounting subjects under various streams like engineering, management subjects under various streams like engineering, management and computer applications. His expertise is in HRM and he has obtained three post-graduation degrees from two central universities and he was awarded PhD in the area of HRM in specific to QWL and Family Enrichment. As he is passionate about student engagement, he learned the art of mind-mapping in academics and experimented the same in enriching the student's memory for a better outcome and also among the faculty memories through FDPs. His publications are listed in ABDC, Scopus and UGC listed Journals.

Valedictory Function

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