A report on

Faculty Development Programme

'Industry 4.0 – The Future of Productivity and Growth in Manufacturing Supply Chain'
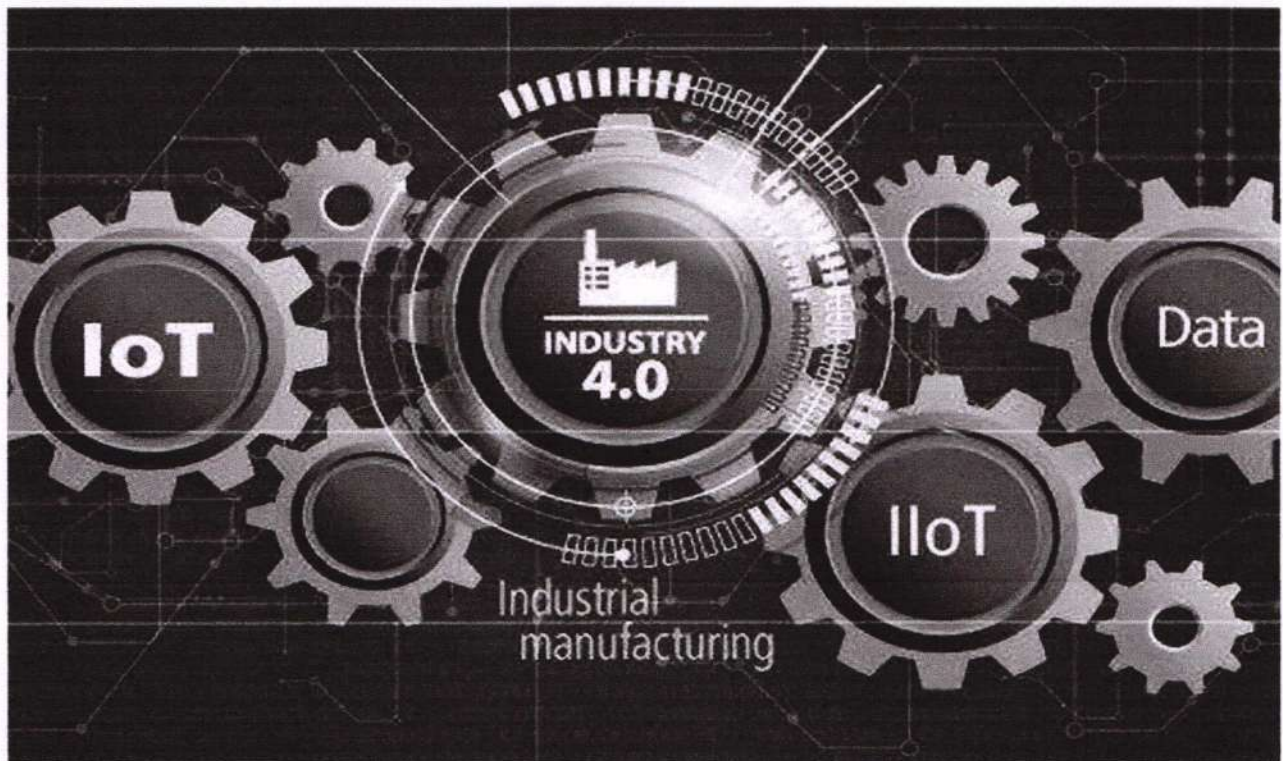
24 to 28/04/2023

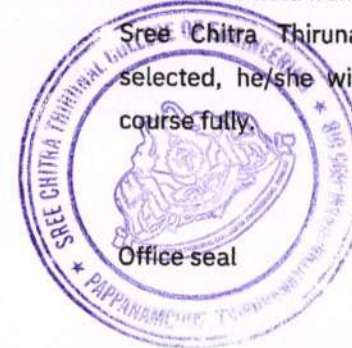Organised by

Department of Mechanical Engineering,

Sree Chitra Thirunal College of Engineering

Sponsored by

A P J Abdul Kalam Technological University, Kerala.

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Resource Persons:

Experts in the concerned field from academics and industries are invited to deliver lectures in the programme.

Who can apply?

The programme is open to faculty members from Government /Aided / Self Financing Engineering Colleges affiliated to KTU.

How to apply?

The number of participants is limited to 30. Selection will be on a first come first serve basis.

Applications should be submitted online by filling up the Google Form (link provided below) before the last date.

Application Form:

PDF download link

Registration Link:

Online registration link

Registration fees

No registration fee will be collected from the participants.

Certificate

It is compulsory for all the participants to physically attend all the sessions and give feedback to receive the certificate of participation.

Course schedule

5 days offline sessions - 3 hours each on FN and AN

Important dates

Start date of registration: 08/04/2023
Last date of registration : 18/04/2023
Selection intimation   : 20/04/2023

Chief Patron
Dr. Sheeja M. K., Principal

Patron
Prof. Harikuttan K., HOD ME
Co-ordinators

Dr. Kavilal E. G.
Assistant Professor
Department of Mechanical Engineering
Sree Chitra Thirunal College of Engineering
Mobile: 8714247259
Email: kavilal2001@gmail.com

Dr. Anoop M. S.
Assistant Professor
Department of Mechanical Engineering
Sree Chitra Thirunal College of Engineering
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Email: anoopms@sctce.ac.in

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About the programme:

The objective of the course is to expose and impart technical expertise to the faculty, researchers, and industrialists about the future of productivity and growth in the manufacturing supply chain based on Industry 4.0. Through the lectures of eminent speakers, the programme intends to focus on the practical and applied aspects of the manufacturing supply chain. The course also aims at giving some hands-on experience in this field and enabling the participants to take up research initiatives in these areas.

All the prospective learners in the above topic are encouraged to register and attend the FDP.

Course Content

➤Industry 4.0: Concepts & Principles Building Blocks of Industry 4.0
➤Smart manufacturing and 3D Printing
➤Supply Chain Management
➤Simulation and Modelling of Supply Chain Systems

About SCTCE:

Sree Chitra Thirunal College of Engineering (SCTCE), Thiruvananthapuram was established by the Govt. of Kerala in the year 1995 in memoriam of the Great Maharaja of Travancore and is affiliated to the APJ Abdul Kalam Technological University of Kerala with AICTE approval. The Institution has the broad objective of grooming young men and women into technocrats through the process of engineering education, training and research. SCTCE offers 7 undergraduate and 3 postgraduate courses. SCTCE is also a research centre under APJ Abdul Kalam Technological University since 2015 and offers PhD programmes.

Vision of the institution:

To become an engineering and technology institution which is renowned for producing professionally capable and socially responsible engineers.

Mission of the institute:

To create a learning process for students to acquire engineering fundamentals, in an environment that encourages analysis, teamwork, entrepreneurship and ethical values, thus preparing them for productive careers.

About Mechanical Engineering Department:

The Department of Mechanical Engineering offers three UG programs and one PG programme. It also offers doctoral programs under the APJ Abdul Kalam Technological University. PRINCIPAL

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Faculty Development Programme
on

Industry 4.0
The Future of Productivity and Growth in Manufacturing Supply Chain

24 to 28 April, 2023

Organized by

Department of Mechanical Engineering
Sree Chitra Thirunal College of Engineering
Thiruvananthapuram-18

Sponsored by

APJ Abdul Kalam Technological University Kerala

A five day KTU- sponsored Faculty Development Programme on "Industry 4.0: The Future of Productivity and Growth in Manufacturing Supply Chain" was organised by the Department of Mechanical Engineering, Sree Chitra Thirunal College of Engineering, Thiruvananthapuram from 24 to 28th April, 2023. The main aim of the programme was to provide a platform for the faculty members from KTU-affiliated institutions to explore the opportunities of Industry 4.0 towards the future of productivity and growth in manufacturing supply chain. The chief guest, Dr. Rajasree M. S., Senior Joint Director of Technical Education inaugurated the programme and delivered the inaugural address. The program was coordinated by Dr. Kavilal E. G. and Dr. Anoop M. S.

The inagruation started with a prayer song. The program began with a warm welcome to all the participants by Dr. Kavilal E. G., Assistant Professor, the coordinator of the Faculty Development Program (FDP). Prof. Harikuttan K., the Head of the Department of Mechanical Engineering a brief explanation of FDP. Dr. Sheeja M. K., Principal , Sree Chitra Thirunal college of Engineering highlighted the significance of the program and its objectives in improving. The chief guest, Dr. Rajasree M. S., Senior Joint Director of Technical Education inaugurated the programme and delivered the inaugural address. In the inaugural address, the chief guest provided an insightful overview of Industry 4.0, highlighting its significance and potential to revolutionize the manufacturing sector. She emphasized that Industry 4.0 represents the fusion of digital technologies, automation, and data analytics to create a new era of manufacturing characterized by interconnectedness, intelligent systems and efficient production processes. Dr. Sheeja M. K, handed over the momento to the chief guest. The vote of thanks was given by Dr. Anoop M. S., the co coordinator of the FDP, expressed gratitude to the chief guest for gracing the event with her solemn presence.

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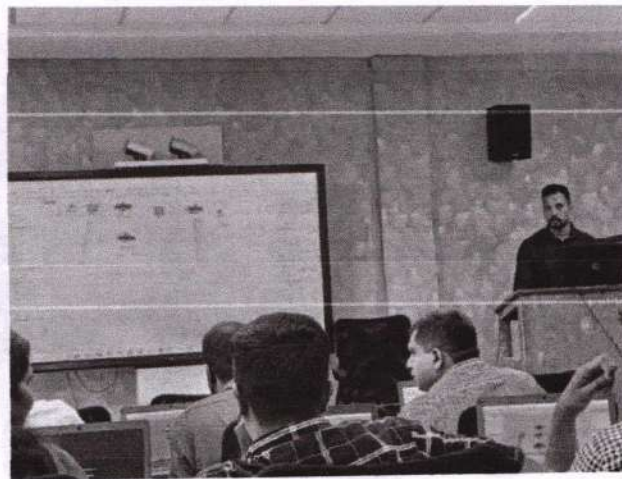
Day 1(24/04/2023)

After inauguration the technical sessions started with key note speech by Dr. Arun Surendran, Strategic Director and Principal, Trinity College of Engineering. His keynote address provided an insightful overview of Industry 4.0, highlighting its significance and potential to revolutionize the manufacturing sector. He emphasized that Industry 4.0 represents the fusion of digital technologies, automation, and data analytics to create a new era of manufacturing characterized by interconnectedness, intelligent systems and efficient production processes.

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The afternoon session was taken by Sri. Arun K. R., Technical Head, Commercial Consultancy Service. Introduction to FlexSim: Software for Simulation and Modelling. The session commenced with an overview of FlexSim, a powerful software tool used for simulation and modelling in various industries. The facilitator highlighted the key features and capabilities of FlexSim, including its user-friendly interface, extensive library of objects, advanced visualization, and powerful analytical tools. The session provided participants with valuable insights into the capabilities of FlexSim and its potential applications in their respective fields. The attendees left the session with a solid foundation in simulation modelling using FlexSim and were equipped to apply their newly acquired skills to real-world scenarios.

Day 2 (25/04/2023)

The second day of FDP started with talk by Dr. Ravi V. Professor, Department of Humanities, Indian Institute of Space Science and Technology, Thiruvananthapuram, on the topic, Understanding the Voice of Customer in Modern Competent Environment. The session explained how understanding the voice of customers in the competitive world is of

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paramount importance for businesses striving to succeed in a crowded marketplace. It involves actively listening to customers, analyzing their feedback, and using those insights to improve products, services, and overall customer experience.

The afternoon session was continuation of hands-on training on FlexSim. The session was delivered by Sri. Brijesh Diwakar, Simulation Consultant, Commercial Consultancy Service. The session delivered in-depth knowledge of FlexSim's capabilities and prospective uses. The participants gained hands on experience with a strong foundation in FlexSim simulation modelling and the ability to use their newly learned skills in practical situations.

Day 3 (26/04/2023)

The third day of FDP started with talk by Er. Binish Moulana APAC Head of Platform Enablement, Principal Dev Ops & SRE on topic, 'Application of Python in Industry 4.0'. The session provided participants with insights into the concept of Industry 4.0, with integration of advanced technologies, automation, and data exchange in the

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manufacturing sector. Participants gained understanding of the key components and principles of Industry 4.0 and how Python fits into this transformative paradigm.

The afternoon session was delivered by Dr. Regi Kumar V. Professor, Department of Mechanical Engineering, College of Engineering Trivandrum, on the topic 'Current Trends in Supply chain management'. The participants gained knowledge on how manufacturers can achieve greater operational efficiency, reduce costs, enhance customer satisfaction, and gain a competitive edge in the dynamic marketplace. By leveraging IOT technologies, manufacturing can revolutionize supply chain management by providing enhanced visibility, optimizing asset management, improving inventory control, enabling real-time collaboration, enhancing quality control, supporting sustainable practices, and facilitating data-driven decision-making.

Day 4 (27/04/2023)

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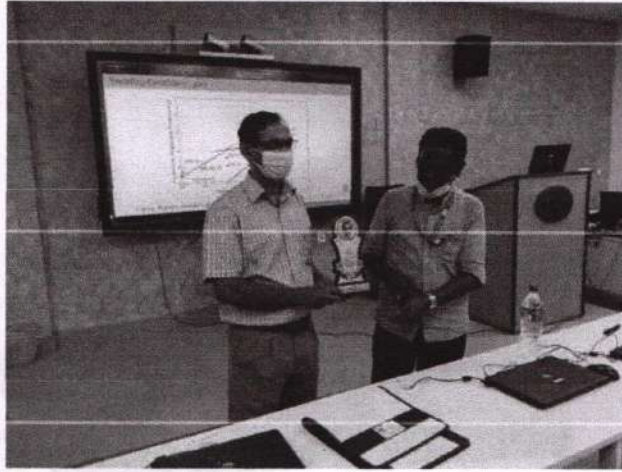College of Engineering
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The third day of FDP started with talk by Dr. Ravi V. Professor, Department of Humanities, Indian Institute of Space Science and Technology, Thiruvananthapuram, on the topic, From Trash to Treasure- The Value of Reverse Logistics. The talk provided a comprehensive understanding of reverse logistics, which involves the management of product returns, repairs, recycling, and disposal. Participants understand the importance of reverse logistics in maximizing the value of products throughout their lifecycle and minimizing waste. The talk empowered the participants to implement effective reverse logistics strategies, optimize processes, reduce costs, improve sustainability practices, enhance customer satisfaction, and unlock new business opportunities.

The afternoon session was delivered by Dr. Bijulal D. Professor, Department of Mechanical Engineering, Government Engineering College, Barton Hill, Thiruvananthapuram on the topic ' Simulation Modelling of Multi Echelon Supply Chains'. The session provides a valuable information on tool for analyzing, optimizing, and managing complex supply chain systems. It helps in identifying inefficiencies, mitigating risks, optimizing inventory, designing supply chain networks, and enhancing collaborative decision-making, ultimately leading to improved operational performance and customer satisfaction.

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Day 5 (28/04/2023)

The third day of FDP started with talk by Sri. Brijesh Diwakar, and continuation of hands-on training on FlexSim. Training sessions provide participants with practical, hands-on experience in using FlexSim. They will learn how to build, analyze, and modify simulation models specific to supply chain scenarios. These skills are valuable in understanding and improving complex supply chain systems.

The second session on third day of FDP started with talk by Dr. Suresh Subramoniam, Director CET School of Management, College of Engineering Trivandrum, on the topic, Role of AI in making Resilient Supply Chain. The session provided participants with valuable knowledge and skills for navigating the evolving landscape of supply chain management. The knowledge on AI applications, decision-making, risk management, automation, and customer-centric approaches to optimize supply chain operations, and ensure their organizations are well-prepared for the future.

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The afternoon began with a feedback session where participants were encouraged to share their thoughts and opinions on the overall FDP. The feedback session was structured to gather insights on the strengths of the program, areas for improvement, and specific topics or activities that participants found particularly beneficial or challenging. Participants actively participated in the feedback session and provided valuable input. They expressed appreciation for the quality of the sessions, relevance of the topics and the expertise of the resource persons. Participants appreciated the importance of hands-on exercises on practical applications and case studies to enhance their learning experience.

Following the feedback session, participants took a test to assess their understanding of the concepts covered throughout the FDP. The test consisted of multiple-choice questions. It aimed to evaluate participants' comprehension, critical thinking, and ability to apply the knowledge gained during the program. The test was designed to cover various aspects including the all the sessions' topics of the FDP. Questions were carefully crafted to assess participants' grasp of the theoretical concepts.

After the test, a validatory function was conducted to acknowledge participants achievements and distribute certificates of participation. The validatory function involved a brief ceremony, where distinguished guests, facilitators, and participants gathered to recognize the efforts and dedication of the participants throughout the FDP. Certificates of participation were presented to each participant, acknowledging their active involvement and successful completion of the program. The validatory function also provided an opportunity for participants to engage in discussions on their learning journey during the FDP. The validatory session came to an end by vote of thanks by the coordinators of the FDP,

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expressing the gratitude to all the guests, resource persons, participants, KTU for sponsoring the programme and all the supporters.

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Statement of Expenditure for FDP on " Industry 4.0 – The Future of Productivity and Growth in Manufacturing Supply Chain "

Department of Mechanical Engineering

Sanction Order No: 1545/2022/KTU

Purpose of Grant: Faculty Development programme (FDP)

Sl No	Criteria	Sub No	Particulars	Date	No of sessions	Rs	Amount
			Honorarium to faculty/external experts other than IIT/NIT				
			Name of expert	Date	No of sessions	Rs	Amount
1		a)	Dr Arun Surendran	24-04-2023	3	3,000.00	
2		b)	Er Arun K R	24-04-2023	3	3,000.00	
3		c)	Er Brijesh Kumar	28-04-2023	3	3,000.00	
4		d)	Mr Binish Moulana	26-04-2023	3	3,000.00	24,000.00
5	6	e)	Dr Reji Kumar V	26-04-2023	3	3,000.00	
6		f)	Dr Bijulal	27-04-2023	3	3,000.00	
7		g)	Er Brijesh Kumar	25-04-2023	3	3,000.00	
8		h)	Dr Suresh Subramanian	28-04-2023	3	3,000.00	
9	7	a)	Dr Ravi V	27-04-2023	1	5,000.00	10,000.00
10		b)	Dr Ravi V	25-04-2023	1	5,000.00	

Sl.No	Criteria	Sub No	Name of personnal	Date	Rs	Amount
11	10	a)	Dr Shreya M K	28-04-2023	7,500.00	
12		b)	Dr Kanilal E G	28-04-2023	4,000.00	15,000.00
13		c)	Anoop M S	28-04-2023	3,500.00	
14	11	a)	Vishnu V J	28-04-2023	5,000.00	
15		b)	Ajay Kumar V R	28-04-2023	5,000.00	13,400.00
16		c)	K Ushanandini	28-04-2023	3,400.00	

ANOOP M.S.
Assistant Professor
Department of Mechanical Engineering
Sree Chitra Thirunal College of Engineering

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3/5/2024

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Sl.No	Criteria	Sub No	Item	Name of Agency	Date	Bill No	Rs	Amount
17	9	a)	Taxi charge incurred for Dr Ravi V	Tourist Taxi	24-04-2023	308	4,800.00	4,800.00
18	12	a)	Certificate printing	Print Home	25-04-2023	442	3,300.00	
19	12	b)	Report printing	Print Home	25-04-2023	442	6,540.00	14,625.00
20	12	c)	Paper, Pen, File	SCT employees co-operative Society Ltd	24-04-2023	6671	3,985.00	
21	12	d)	Banner	Print Home	25-04-2023	442	800.00	
22	13	a)	Cotton cloth and Jute Sling bag	Sanchi Bags	22-04-2023	SG00220	11,693.00	12,782.00
23	13	b)	Stationary	Premier towers	22-04-2023	MG2324/1009446	1,089.00	
24	14	a)	Lunch, Tea and snacks	Kailas Hotel	28-04-2023	706	37,500.00	37,500.00
25	15	a)	Memento designing and making	Vaiga crafts	26-04-2023	048	6,600.00	9,600.00
26	15	b)	Certification by Chartered Accountant	CA Alan John Saji	04-03-2024	39/A15/23-24	3,000.00	
			Total Expenditure					1,39,707.00

Rupees One Lakh Thirty-Nine Thousand Seven Hundred and Seven only

Name & Signature of Chartered Accountant

Signature of Course Coordinator   Name & Signature of HOD of CE   Name & Signature of Principal/Centre coordinator

ANCIOP M.S.

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