

REPORT OF ONE WEEK FACULTY DEVELOPMENT PROGRAMME ON

FUNDAMENTALS OF MECHATRONICS ENGINEERING

(19 – 23 OCTOBER 2020)



Coordinator:

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Jt. Coordinator:

Prof. Tejas D. Patel

Asst. Professor, Mechatronics Dept

Objectives:

The main objectives to organize this FDP on the topic of “Fundamentals of Mechatronics Engineering” were to make faculty aware about the recent technological developments in the field of Automation and to understand the role of Mechatronics Engineering in new product / process development.

Significance:

Looking to the need of present engineering requirements and new product development, knowledge of single core-engineering discipline is not sufficient. An engineer of today’s era must know about the basics of automated system, which comprises the

information about control system, micro controllers, various programmable devices, hardware part based on mechanical engineering, interfacing of hardware system with computer, data transmission between devices, etc. It means that there is a need of a multidisciplinary engineering branch in which all these area are explored. All these topics are basically related to Automation and parallel name of Automation is Mechatronics Engineering. Under one roof of Mechatronics Engineering all the concepts of multidisciplinary engineering are well recognized. Hence, in the benefit of faculty members belonging to different engineering disciplines, this FDP was organized. This FDP was useful for the faculty with background of Mechanical Engineering, Production Engineering, Electrical Engineering, Electronics and Communication Engineering, and allied disciplines.

Following table shows the detailed schedule of the FDP.

Table1. Schedule and Topic

Day and Date	Session Time	Topic	Name of Expert
19/10/2020	10:30 am - 12:00 noon	Introduction to Mechatronics Engineering in Automation	Prof. Sanket N Bhavsar Mechatronics Dept G H Patel College of Engg & Technology
	02:00 pm - 03:30 pm	Fundamentals of Microcontrollers	Dr. Mukesh Bhesaniya Electrical Engineering Dept G H Patel College of Engg & Technology
	04:00 pm - 05:30 pm	Applications of microcontrollers with Practical performance and simulation	Dr. Mukesh Bhesaniya Electrical Engineering Dept G H Patel College of Engg & Technology
20/10/2020	10:30 am - 12:00 noon	Introduction to fluid power	Prof. Tejas D. Patel Mechatronics Dept G H Patel College of Engg & Technology
	02:00 pm - 03:30 pm	Study of various control devices in oil hydraulic system	Prof. Tejas D. Patel Mechatronics Dept G H Patel College of Engg & Technology
	04:00 pm - 05:30 pm	Practical performance and simulation on electrohydraulic and electropneumatic trainer	Prof. Pathik P. Patel Mechatronics Dept G H Patel College of Engg & Technology

21/10/2020	10:30 am - 12:00 noon	Automation using pneumatic system and introduction to fluidics	Prof. M. J. Zinzuvadia Mechanical Engineering Department Birla Vishvakarma Mahavidyalaya Engineering College
	02:00 pm - 03:30 pm	Advance electrohydraulic and electropneumatic system for low cost automation	Prof. Prashant Parmar Department of Mechatronics TeamLease Skills University
	04:00 pm - 05:30 pm	Servo control in oil hydraulic power transmission system	Prof. Shashank Joshi Mechanical Engineering Department Birla Vishvakarma Mahavidyalaya Engineering College
22/10/2020	10:30 am - 12:00 noon	Basics of PLC hardware	Prof. Bhavesh R Hindocha Electrical Engineering Dept G H Patel College of Engg & Technology
	02:00 pm - 03:30 pm	Introduction to ladder diagram: A programming language of PLC	Prof. Bhavesh R Hindocha Electrical Engineering Dept G H Patel College of Engg & Technology
	04:00 pm - 05:30 pm	Industrial applications of PLC	Mr. Himanshu Sharma Asst Manager, Applications B&R Industrial Automation Pvt. Ltd.
23/10/2020	10:30 am - 12:00 noon	Intelligent control and its applications	Prof. Hitesh B Shah Electronics & Communication Engg Dept G H Patel College of Engg & Technology
	02:00 pm - 03:30 pm	Happiness in challenging time	Dr. Nishit Surti Dermatologist Faculty with the Art of Living
	08:00 pm - 09:30 pm	Exam, Feedback and Valedictory	Prof. Sanket N Bhavsar Mechatronics Dept G H Patel College of Engg & Technology

Online Platform:

For the online conduction of various sessions of this FDP platform of MicroSoft Team (MS Team) was utilized. Individual user-ids of all participants were created in MS Team software and separate emails were sent to them with their respective login credentials. The registered participant only can login to participate in the FDP. Involvement of outsiders with unwanted activities is prevented in this way.

Summary:

One week FDP on the topic of Fundamentals of Mechatronics Engineering was initiated with a very meaningful prayer with the wordings of “Mann Usi Ki Karo Prarthana” by remembering the almighty god. The Principal, G H Patel College of Engineering & Technology, were invited at the beginning of FDP and he shared motivational thoughts with all the participants.

All the sessions were properly planned and executed. Uninterrupted internet connectivity and electricity were made available to execute entire FDP smoothly. Total 74 faculty participated actively in this FDP and became eligible to download the certificate by fulfilling the requirements of percentage attendance and marks obtained in the examination. Participants took maximum benefit of all the sessions and interacted with the experts to enhance their knowledge and solve doubts.

Coordinator, Prof. Sanket N Bhavsar, exhibited vote of thanks in the valedictory function. He delivered words of gratitude to the Director and Asst Director of ATAL Academy (New Delhi and Local Center Vadodara) for giving opportunity to organize the FDP on the topic of Fundamental of Mechatronics Engineering with full financial support. Prof. Sanket also appreciated the support received from the Principal, G H Patel College of Engineering & Technology, Vallabh Vidyanagar, Gujarat. He thanked Prof. Tejas Patel for providing his help and timely support for the smooth functioning of the FDP by serving as joint coordinator. Participants at the end expressed positive feedback with lots of appreciation and praiseworthy words of thanks.