

CC5002 MECHATRONICS APPLICATIONS IN MANUFACTURING

DETAILED SYLLABUS

OBJECTIVES

To impart knowledge about the elements and techniques involved in Mechatronics systems Which are very much essential to understand the emerging field of automation.

UNIT I INTRODUCTION

Introduction to Mechatronics - Systems - Mechatronics in Products - Measurement Systems - Control Systems - Traditional design and Mechatronics Design.

UNIT II SENSORS AND TRANSDUCERS

Introduction - Performance Terminology - Displacement, Position and Proximity - Velocity and Motion - Fluid pressure - Temperature sensors - Light sensors - Selection of sensors – Signal processing - Servo systems.

UNIT III MICROPROCESSORS IN MECHATRONICS

Introduction - Architecture - Pin configuration - Instruction set - Programming of Microprocessors using 8085 instructions - Interfacing input and output devices - Interfacing D/A converters and A/D converters –Applications - Temperature control - Stepper motor control - Traffic light controller.

UNIT IV PROGRAMMABLE LOGIC CONTROLLERS

Introduction - Basic structure - Input / Output processing - Programming -Mnemonics Timers, Internal relays and counters - Data handling - Analog input / output - Selection of PLC.

UNIT V DESIGN AND MECHATRONICS

Designing - Possible design solutions - Case studies of Mechatronics systems.

REFERENCES

1. Bradley, D.A., Dawson, D, Buru, N.C. and Loader, AJ, "Mechatronics ", Chapman and Hall, 1993
2. Ghosh, P.K. and Sridhar, P.R., 0000 to 8085, "Introduction to Microprocessors for Engineers and Scientists ", Second Edition, Prentice Hall, 1995

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Notes
Syllabus
Question Papers
Results and Many more...

Available @

www.AllAbtEngg.com

3. Lawrence J.Kamm, " Understanding Electro-Mechanical Engineering, An Introduction to Mechatronics ", Prentice-Hall, 2000.
4. Michael B.Histand and David G. Alciatore, " Introduction to Mechatronics and Measurement Systems", McGraw-Hill International Editions, 1999.
5. Ramesh.S, Gaonkar, "Microprocessor Architecture, Programming and Applications" Wiley Eastern, 1998.