

RME 3102: Course Outline

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RME 3102: Advanced Mechatronics Engineering
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RME 3102: Syllabus

- **Introduction:** Identification of Software into Mechatronics Systems, Identify Types of Industrial Sensors in Mechatronics System, Advanced Applications of PLC, Advanced Applications of Microcontroller.
- **Control System in Mechatronics:** Actuation Principles, Control Systems and its Role in Mechatronics.
- **Interfacing:** Interfacing of Software with Hardware, Real-time Computation Tasks.
- **Mechatronic Systems Design:** Integrating PLC with Cognex Vision System, Microelectromechanical Systems (MEMS), Machine Vision, Industrial Automation and Robotics.
- **Case Studies:** Systematic Approach in Design Process of Mechatronic Systems, Innovative Mechatronic Product Design, Autonomous Wireless Systems, Monitoring and Control of Mechatronic Systems.



Tentative Lecture Plan [2024]

	Topics	No. Lectures
1.	Course overview	1
2.	Introduction	6
3.	Control System in Mechatronics	5
4.	Interfacing	3
5.	Mechatronic Systems Design	6
6.	Case studies	5



Text/Reference Books

- Mechatronics
by S Cetinkunt
- Mechatronics System Design
D Shetty and RA Kolk
- Introduction to Mechatronics and Measurement Systems
by DG Alciatore and MB Histanad
- Mechatronics: Electronic Control Systems in Mechanical and Electrical Engineering
by W Bolton
- Programmable Logic Controller
by FD Petruzella

