ME 6401: Course Outline

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ME 6401: Advanced Mechatronics

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ME 6401: Syllabus

1. Mechatronics systems overview;
2. Sensors, transducers and actuators;
3. System responses, transfer functions;
4. Closed loop controllers;
5. Signals, interfacing, data processing and communications;
6. Microprocessors and programmable logic controllers;
7. Machine vision, industrial automation and robotics;
8. Case studies.

Topics 2, 3, 7, 8 will be covered by Dr. Kazi Arafat Rahman.

Tentative Lecture Plan [2025]

	Topics	No. Lectures
1.	Course overview	1
2.	Control system	4
3.	Microprocessor & micro-controllers	4
4.	Programmable logic controllers (PLCs)	4

- Lecture time: 75 minutes/lecture.
- 1.5 cr. hr. will be covered by Dr. Kazi Arafat Rahman.

Text/Reference Books

- Mechatronics
  by S Cetinkunt
- Mechatronics System Design
  D Shetty and RA Kolk
- Programmable Logic Controller
  by FD Petruzella
- Control Systems Engineering
  by NS Nise
- Modern Control Engineering
  by K Ogata