



“Techno – Social Excellence”  
MarathwadaMitraMandal’s  
**INSTITUTE OF TECHNOLOGY (MMIT)**  
Lohgaon, Pune-411047.

“Mechanized Design Application”  
**Department of Mechanical Engineering**

**Course Name: Mechatronics**  
**Course Code: 302050**

**Class: TE Mechanical Engineering**  
**(2015Pattern)**

**Course Objectives:**

1. Understand key elements of Mechatronics system, representation into block diagram
2. Understand concept of transfer function, reduction and analysis
3. Understand principles of sensors, its characteristics, interfacing with DAQ microcontroller
4. Understand the concept of PLC system and its ladder programming, and significance of PLC systems in industrial application
5. Understand the system modeling and analysis in time domain and frequency domain.
6. Understand control actions such as Proportional, derivative and integral and study its significance in industrial applications

**Course Outcomes:**

- CO1 - Identification of key elements of mechatronics system and its representation in terms of block diagram
- CO2 - Understanding the concept of signal processing and use of interfacing systems such as ADC, DAC, digital I/O
- CO3 - Interfacing of Sensors, Actuators using appropriate DAQ micro-controller
- CO4 - Time and Frequency domain analysis of system model (for control application)
- CO5 - PID control implementation on real time systems
- CO6 - Development of PLC ladder programming and implementation of real life system.