

**Maulana Abul Kalam Azad University of Technology, West Bengal***(Formerly West Bengal University of Technology)***Syllabus for B. Tech in Electronics & Communication Engineering**

(Applicable from the academic session 2018-2019)

<b>EC691</b>	<b>Control and Instrumentation Laboratory</b>	<b>0L:0T:2P</b>	<b>1 credits</b>
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1. Familiarization with MATLAB control system toolbox and representation of pole zero and transfer function of control system.
2. Determination of transfer function of a given system from its state model and its vice-versa.
3. Determination of impulse & step response for 2<sup>nd</sup> order under damped system on CRO & calculation of control system specifications for variation of system design.
4. Determination of root Locus from transfer function and evaluation of system parameters like marginal value of gain, frequency etc. of a given control system.
5. Drawing of Nyquist plot and Bode plot from transfer function of a control system and estimation of relative system parameters like gain margin, phase margin etc.
6. Design PI, PD and PID controller for specified system requirements.
7. Study of static (accuracy, precision, repeatability, linearity) and dynamic (fidelity, speed of response) characteristics of a measuring instrument.
8. Design and study of Instrumentation Amplifier.
9. Study and analysis of electrical signal with CRO.