

<b>COURSE TITLE</b>	<b>TE142414: Power Plant Automation</b> Credits: 2 ELECTIVE COURSE
<b>LEARNING OBJECTIVE</b>	<ul style="list-style-type: none"> <li>• Understanding automation concept and devices especially at power plant.</li> </ul>
<b>COMPETENCY</b>	<ul style="list-style-type: none"> <li>• Student can understand SCADA concept at power plant.</li> <li>• Student can understand the generator structure, operation concept, monitoring and control.</li> </ul>
<b>SUBJECTS</b>	<ul style="list-style-type: none"> <li>• Introduction about SCADA : general introduction about data communication at electrical power system especially at generation power plant.</li> <li>• Generator structure and operation concept : modern generator stator and rotor structure, generation concept : no load and load, ekivalen circuit, load operation equation, synchronous reactance, power factor, torque and power, relationship between real power and frequency, relationship between reactive power and voltage.</li> <li>• Parallel Operation : parallel operation concept of two generators, parallel with large system, optimal operation, generator stability, capability curve.</li> <li>• Generator control: generator control circuit, voltage control, excitation circuit, concept of AVR, frequency control, turbine governor circuit, operation concept of AGC/LFC, frequency control for large system, power system stabilizer.</li> <li>• Generator monitoring: monitoring for normal operation, monitoring at ill system, Monitoring Visualization.</li> </ul>
<b>MAIN REFERENCES</b>	<ul style="list-style-type: none"> <li>• <u>Operation and Maintenance of Large Turbo Generator</u>, Geoff Klemptner et.all, IEEE Press, 2004</li> <li>• Donald Reimert, <u>Protective Relaying for Power Generation Systems</u>, Taylor and Francis Group, 2006</li> </ul>
<b>OPTIONAL REFERENCES</b>	-
<b>PREREQUISITE</b>	Power System Analysis , Protection System