

<b>COURSE TITLE</b>	<b>TE142305: Advanced Power Electronics</b> Credits: 3 Semester: II
<b>LEARNING OBJECTIVES</b>	<ul style="list-style-type: none"> <li>• Students are able to review the power electronic based systems.</li> <li>• Students are able to understand the characteristics, to analyze, to model and to develop energy conversion systems, including the open loop and the closed loop.</li> <li>• Students are able to understand and develop power electronic system for any applications, such as power supply system, variable speed drive, power quality improvement, Flexible AC Transmission Systems (FACTS).</li> </ul>
<b>COMPETENCY</b>	<ul style="list-style-type: none"> <li>• Students are able to explain the semiconductor switch based systems.</li> <li>• Students are able to identify, analyze, model, and develop energy conversion systems, open loop and closed loop.</li> <li>• Students are understand and develop power electronic systems based on available standards.</li> <li>• Students are able to explain ideas in written and oral presentation.</li> </ul>
<b>SUBJECTS</b>	<ul style="list-style-type: none"> <li>• Basic concept and semiconductor switches, concept and principles of harmonic distortion, dc-dc converter, ac-dc converter, dc-ac converter, ac-c converter, closed loop systems, error compensator, system integration, application example: uninterruptible power supply, variable speed drive.</li> </ul>
<b>MAIN REFERENCES</b>	<ul style="list-style-type: none"> <li>• Phillip T Krein, <u>Element of Power Electronics</u>, Oxford University Press.</li> <li>• MH. Rashid. <u>Power Electronics</u>, John Wiley and Son publishing Company, 2003.</li> </ul>
<b>OPTIONAL REFERENCES</b>	<ul style="list-style-type: none"> <li>• Ned Mohan, Underland, Robbins. <u>Power Electronics converters, applications, and design</u>, John Wiley and Sons publishing Co, second edition.</li> </ul>
<b>PREREQUISITE</b>	<ul style="list-style-type: none"> <li>• Electric Circuits, Electric Power Conversion</li> </ul>