

<b>COURSE TITLE</b>	<b>TE142409: Modern Control and FACTS Device Design</b> Credits: 2 ELECTIVE COURSE
<b>LEARNING OBJECTIVE</b>	To give capabilities for the students in syntheses, evaluation, and description to explore the idea logically on AI application for power system and FACTS.
<b>COMPETENCY</b>	<ul style="list-style-type: none"> <li>• Student can sintesize the role of Artificial Intelligence (AI) for problem solving in electric power system.</li> </ul>
<b>SUBJECTS</b>	<ul style="list-style-type: none"> <li>• Application of AI in Governor and Excitation control.</li> <li>• Application of AI in PSS.</li> <li>• Application of AI in UPFC.</li> <li>• Application of AI in TCSC.</li> <li>• Application of AI in STATCOM and SVC.</li> <li>• Application of AI in Solar Energy design.</li> <li>• Application of AI in Load Forecasting.</li> <li>• Application of AI in Electric car.</li> <li>• Application of AI in Load Flow.</li> <li>• Application of AI in Early Warning System.</li> </ul>
<b>MAIN REFERENCES</b>	<ul style="list-style-type: none"> <li>• Imam Robandi, <u>Desain Sistem Tenaga Modern: Fuzzy Logic, Optimization, Genetic Algorithm</u>, ANDI Publisher, 2006.</li> <li>• Mohamed El-Hawari, <u>Electric Power Applications of Fuzzy Systems</u>, IEEE Press, 1998.</li> <li>• Imam Robandi, <u>Artificial Intelligence Applications</u>, 2008</li> <li>• Junhong Nie, et.al., <u>Fuzzy-Neural Control, Principles, Algorithms and Applications</u>, Prentice Hall, 1995.</li> <li>• Mohammad Jamshidi, <u>Fuzzy Logic and Control, Software and Hardware Applications</u>, Vol.2, Prentice Hall, 1993.</li> <li>• James Larminie and John Lowry, <u>Electric Vehicle Technology Explained</u>, Wiley &amp; Sons, Ltd., 2003.</li> <li>• Deo Prasad &amp; Mark Snow, <u>Designing with Solar Power – a Sourcebook for Building Integrated Photovoltaics – New edition</u>, Eartscan, May 2005.</li> </ul>
<b>OPTIONAL REFERENCES</b>	-
<b>PREREQUISITE</b>	<ul style="list-style-type: none"> <li>• Power System Conversion</li> <li>• Basic Control System</li> </ul>