

## Course Objectives and Outcomes

<b>1.</b>	<b>Course code and title:</b>	EE4285 Computational intelligence										
<b>2.</b>	<b>Number of AUs:</b>	3			<b>3.</b>	<b>Course type:</b>	Technical Elective					
<b>4.</b>	<b>Course schedule:</b>	<b>Lecture:</b>	2 hours/per week for 13 weeks									
		<b>Tutorial:</b>	1 hour/per week for 12 weeks									
<b>5.</b>	<b>Course assessment:</b>	<b>Assignment:</b>	0%									
		<b>Quiz:</b>	20%									
		<b>Exam:</b>	50%									
<b>6.</b>	<b>Course prerequisites:</b>	Nil										
<b>7.</b>	<b>Course description:</b>	<p>This course aims at introducing the fundamental theory and concepts of computational intelligence methods, in particular neural networks, fuzzy systems, genetic algorithms and their applications in the area of machine intelligence. This can be summarized as:</p> <ol style="list-style-type: none"> <li>1. To understand the fundamental theory and concepts of neural networks, neuro-modeling, several neural network paradigms and its applications.</li> <li>2. To understand the concepts of fuzzy sets, knowledge representation using fuzzy rules, approximate reasoning, fuzzy inference systems, and fuzzy logic control and other machine intelligence applications of fuzzy logic.</li> <li>3. To understand the basics of an evolutionary computing paradigm known as genetic algorithms and its application to engineering optimization problems.</li> </ol>										
<b>8.</b>	<b>Textbook(s):</b>	<ul style="list-style-type: none"> <li>• Jang Jyh-Shing Roger, Sun Chuen-Tsai and Mizutani Eiji, Neuro-Fuzzy and Soft Computing: A Computational Approach to Learning and Machine Intelligence, Prentice-Hall, 1997. (QA76.9.S63J33)</li> <li>• Zurada Jacek M, Introduction to Artificial Neural Systems, West, 1992. (QA76.87.Z96)</li> <li>• Back Thomas, Evolutionary Algorithms in Theory and Practice : Evolution Strategies, Evolutionary Programming, Genetic Algorithms, Oxford University Press, 1996. (QA402.5.B365).</li> </ul>										
<b>9.</b>	<b>Reference Book(s)</b>	<ul style="list-style-type: none"> <li>• Terano Toshiro, Asai Kiyoji and Sugeno Michio, Fuzzy Systems Theory and its Applications, Academic Press, 1992. (QA248.T315)</li> <li>• Lin Ching Tai and Lee C S George, Neural Fuzzy Systems: A Neuro-Fuzzy Synergism to Intelligent Systems, Prentice-Hall, 1996. (TJ217.25.L735)</li> </ul>										
<b>10.</b>	<b>Level of course contribution to Learning Outcomes</b>											
		<b>COURSE CODE AND TITLE</b>			<b>STUDENT LEARNING OUTCOME</b>							
		a	b	c	d	e	f	g	h	i	j	
		●		●								

### Legend

- Fully consistent (contributes to more than 75% of the SLO)
- ◐ Partially consistent (contributes to about 50% of the SLO)

- Weakly consistent (contributes to about 25% of the SLO)
- Blank Not related to the SLO