<table>
<thead>
<tr>
<th>Course code</th>
<th>Course Name</th>
<th>L-T-P - Credits</th>
<th>Year of Introduction</th>
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</thead>
<tbody>
<tr>
<td>EE368</td>
<td>SOFT COMPUTING</td>
<td>3-0-0-3</td>
<td>2016</td>
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**Prerequisite:** Nil

**Course Objectives**
- To provide the students with the concepts of soft computing techniques such as neural networks, fuzzy systems, genetic algorithms

**Syllabus**
Introduction to Soft Computing and Neural Networks, Fuzzy Sets and Fuzzy Logic; Fuzzy Sets, Neuro-Fuzzy Modelling, Machine Learning, Machine Learning Approach to Knowledge Acquisition

**Expected outcome.**
The students will be able to get an idea on:
- i. Artificial Intelligence, Various types of production systems, characteristics of production systems.
- ii. Neural Networks, architecture, functions and various algorithms involved.
- iii. Fuzzy Logic, Various fuzzy systems and their functions.
- iv. Genetic algorithms, its applications and advances
- v. The unified and exact mathematical basis as well as the general principles of various soft computing techniques.

**Text Book:**
1. Digital Neural Network -S.Y Kung , Prentice-Hall of India

**References:**
5. Simon Haykin, “Neural Networks: A Comprehensive Foundation”, Prentice Hall,

**Course Plan**

<table>
<thead>
<tr>
<th>Module</th>
<th>Contents</th>
<th>Hours</th>
<th>Sem. Exam Marks</th>
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</thead>
<tbody>
<tr>
<td>I</td>
<td>Introduction To Soft Computing And Neural Networks : Evolution of Computing - Soft Computing Constituents – From Conventional AI to Computational Intelligence - Adaptive Networks – Feed forward Networks – Supervised Learning</td>
<td>7</td>
<td>15%</td>
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**FIRST INTERNAL EXAMINATION**
<table>
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<tr>
<th>IV</th>
<th>Data Clustering Algorithms – Rulebase Structure Identification Neuro-Fuzzy Control.</th>
<th>7</th>
<th>15%</th>
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<tr>
<td>VI</td>
<td>Applications of GA in Machine Learning - Machine Learning Approach to Knowledge Acquisition. Support Vector Machines for Learning – Linear Learning Machines – Support Vector Classification – Support Vector Regression - Applications.</td>
<td>7</td>
<td>20%</td>
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**SECOND INTERNAL EXAMINATION**

**END SEMESTER EXAM**

**QUESTION PAPER PATTERN:**

Maximum Marks: 100
Exam Duration: 3Hours.

**Part A:** 8 compulsory questions.

One question from each module of Modules I - IV; and two each from Module V & VI.

Student has to answer all questions. (8 x5)=40

**Part B:** 3 questions uniformly covering Modules I & II. Student has to answer any 2 from the 3 questions: (2 x 10) =20. Each question can have maximum of 4 sub questions (a,b,c,d), if needed.

**Part C:** 3 questions uniformly covering Modules III & IV. Student has to answer any 2 from the 3 questions: (2 x 10) =20. Each question can have maximum of 4 sub questions (a,b,c,d), if needed.

**Part D:** 3 questions uniformly covering Modules V & VI. Student has to answer any 2 from the 3 questions: (2 x 10) =20. Each question can have maximum of 4 sub questions (a,b,c,d), if needed.