



**ESWAR COLLEGE OF ENGINEERING:  
NARASARAOPET**

Approved by AICTE, New Delhi., Affiliated to JNTUK, Kakinada  
Kesanupalli Village, Narasaraopet – 522 601,  
Palnadu Dist. A.P.

Phone No. 9121214708

Email ID: principal@eswarcollegeofengg.org, eswarcollegeofengg@gmail.com  
web:eswarcollegeofengg.org

**Department of Electrical & Electronics Engineering**

Date: 05/10/2018

To  
The Principal  
Eswar College of Engineering  
Narasaraopet

**Through HOD-EEE**

From  
K. Ashok Kumar  
Assistant Professor  
Faculty Coordinator

**Sub:** Requesting for permission to conduct a value-added course on of **Soft Computing Techniques** from 15-10-2018 to 20-10-2018.

Dear Sir,

The Department of EEE is planning to organize a 1 week value-added course on Data Communications from 15-10-2018 to 20-10-2018.

**Total Number of Students registered:** 20 No's (III B.Tech- I Sem EEE).

**Resource Person:** B. Lakshmi kanth , Associate Professor,  
Eswar college of Engineering, Narasaraopet.

**Certificate Criteria:** 60% of marks in Evaluation, 80% of attendance

In connection with the programme, we request your approval to organize the same and to make the programme a grand success.

Thanks and regards,

Name: K. Ashok Kumar

Signature

HOD- Comments

*Requesting for Approval* *V. Prasad*

HOD

Department of EEE  
Eswar College of Engineering  
Kesanupalli (V), Narasaraopet - 522 601

Principal Comments:

*Recommended*

Approved/ Rejected

*K. Ashok Kumar*  
05/10/18

*[Signature]*

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# ESWAR COLLEGE OF ENGINEERING

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Website: [www.eswarcollegeofengg.org](http://www.eswarcollegeofengg.org)




Date: 08-10-2018

## CIRCULAR

All B.Tech IIII-I EEE are hereby notified that a value added course titled "Soft Computing Techniques" will be conducted from 15-10-2018 to 20-10-2018. It is mandatory for all students to enroll their names with course co-ordination K. Ashok Kumar, Assistant Professor, Department of EEE

  
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NARASARAOPET-522 501 Guntur (DL)  
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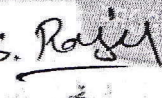
1. A.O 

3. Library 

AME - 

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SSH - 

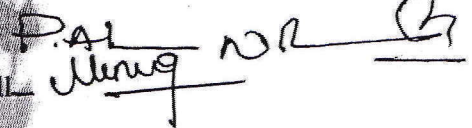
ME - R.S.S. Raju 

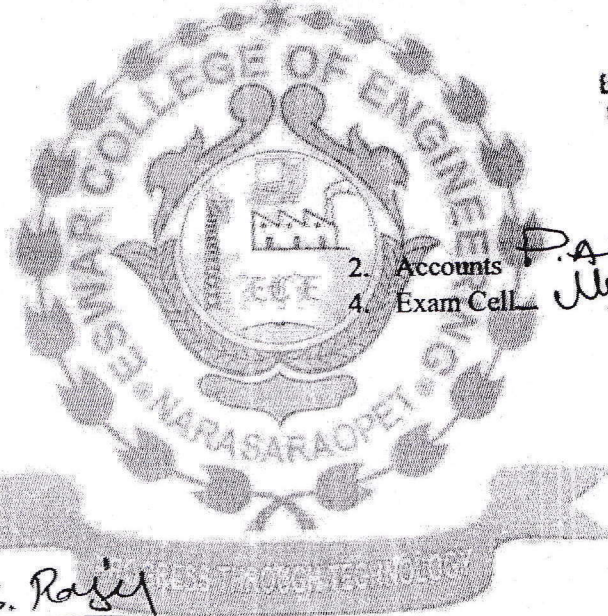
CSE - 

EEE - 

2. Accounts

4. Exam Cell







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**ONE WEEK ADD-ON COURSE ON  
"SOFT COMPUTING TECHNIQUES"**

(15/10/2018 to 20/10/2018)

**ESWAR COLLEGE OF ENGINEERING  
Kesanupalli (V), Narasaraopet - 522 601**

**Registration Form**

Name: \_\_\_\_\_

Department: \_\_\_\_\_

Designation: \_\_\_\_\_

Organisation: \_\_\_\_\_

Address: \_\_\_\_\_

Contact No.: \_\_\_\_\_

E-mail: \_\_\_\_\_

**CERTIFICATE**

This is certified that, Mr./Mrs./ \_\_\_\_\_  
is nominated for attending One Week Add-on  
Course on "SOFT COMPUTING TECHNIQUES" at  
Eswar College of Engineering, Kesanupalli(V),  
Narasaraopet(M), Guntur-Dt.,

15/10/2018 to 20/10/2018

**A JUT ESWAR COLLEGE OF ENGINEERING**

Eswar College of Engineering was established during the academic year 2008 -09 and sponsored by Shaik Dada Saheb Charitable Trust, with a vision of imparting futuristic technical education and instill high patterns of discipline in order to set global standards and making the students technologically superior and ethically strong. They young and dynamic promoters have selected this rural area with lot of foresight. The Institution is spread over 22 acres of lush green landscape and located at 5<sup>th</sup> km stone on the Narasaraopet- Chilakaluripet Road. The Institution offers the UG Courses B.Tech-CIVIL, EEE, ECE, CSE, AME, ME, PG Courses M.Tech-PE&ED, DECS, CSE, CAD/CAM & MBA. The tourist places nearby are Kotappakonda, Amaravathi, Surylanka Beach. Eswar College of Engineering is having MOU with International Institute of Information Technology IIIT-Hyderabad and introduced CIT Programme for students Digital Class facility is also provided in association with Manipal K12, Bangalore, the very first college in Andhra Pradesh

**Address for Correspondence:**

The Co-ordinator,  
One Week Add-on Course on "SOFT COMPUTING  
TECHNIQUES" ESWAR COLLEGE OF ENGINEERING,  
KESANUPALLI (V) NARASARAOPET (M),

GUNTUR-DT, AP.

E-mail: eswarcollegeofengg@gmail.com

Ph.No. +91 8985793922/9581741110

**ESWAR COLLEGE OF ENGINEERING**  
NARASARAOPET-522 601, Guntur (Dt.)

**ONE WEEK  
ADD-ON COURSE ON  
"SOFT COMPUTING TECHNIQUES"**

15/10/2018 to 20/10/2018

Organized by





**DESCRIPTION:**

Add on course on **SOFT COMPUTING TECHNIQUES** provides knowledge about various energy sources such as solar, wind, geothermal energy, biomasses and other potential energy.

**SCHEDULE OF THE PROGRAMME:**

S.NO	Day-Wise	Course Content
1	Day-1	Chapter1: Introduction to soft computing Chapter2: Artificial Intelligence,
2	Day-2	Chapter 3: Artificial Neural Networks Chapter4: Fuzzy systems
3	Day-3	Chapter 5: Genetic Algorithm and Evolutionary programming. Swarm Intelligent systems Chapter6: Expert systems, Comparison among Intelligent systems.
4	Day-4	Chapter 7: Artificial Neural Networks, Classification of ANNS
5	Day-5	Chapter 8: First generation neural networks, Perceptron network
6	Day-6	Chapter 9: Adaline, Madaline, Second generation neural networks, Back propagation neural networks Chapter 10: Hopfield Neural Network

**Add-on Course:**

The objective of Add-on course is, the students are well trained for the Prerequisite courses of certification.

**Objectives:**

To equip students with the knowledge about various alternate energy sources

**Training Methodology:**

- offline

**RESOURCE PERSONS:**

B. Lakshmi kanth , Associate Professor, Eswar College of Engineering, Kesanupalli.

**No Registration fee.**

**CHIEF PATRONS**

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Chairman

SRI.SHAIK.KAREEM MOHIDDIN  
Secretary & Correspondent

SRI.SHAIK MASTHAN SHARIF  
Managing Director

**PATRON**

DR.G. NAGA MALLESWARA RAO  
Principal

**CO-ORDINATOR**

K..ASHOK KUMAR *M.Tech.* Asst.Prof  
EEE DEPARTMENT

**SEND YOUR ENTRIES TO :**

The Co-Ordinator,

**ONE WEEK Add-on Course ON**

**"SOFT COMPUTING TECHNIQUES"**

ESWAR COLLEGE OF

ENGINEERING, KESANUPALLI (V),

NARASARAOPET (M), GUNTUR-DT

Ph.No: 8985793922, 9581741110

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web:[eswarcollegeofengg.org](http://eswarcollegeofengg.org)

## Department of Electrical & Electronics Engineering

Course Name: Value Added Course on Soft Computing Techniques.

### Proposed Syllabus

#### UNIT –I:

Introduction to soft computing: Introduction, Artificial Intelligence, Artificial Neural Networks, Fuzzy systems, Genetic Algorithm and Evolutionary programming, Swarm Intelligent systems, Expert systems, Comparison among Intelligent systems.

#### UNIT –II:

Artificial Neural Networks: Introduction to Artificial Neural Networks, Classification of ANNS. First generation neural networks, Perceptron network, Adaline, Madaline, Second generation neural networks, Back propagation neural networks, Hopfield Neural Network, Kohonen neural network, Hamming neural network, Radial basis function neural networks, spike neuron models.

#### UNIT –III:

Fuzzy Logic System: Introduction to fuzzy logic, classical sets and fuzzy sets, fuzzy set operations, fuzzy relations, fuzzy composition, natural language and fuzzy interpretations, fuzzy inference system, fuzzy controllers

#### UNIT –IV:

Genetic Algorithm: Introduction to Genetic algorithms, Genetic algorithms, procedures of Gas, working of Gas, Travelling sales man problem, Evolutionary programming, working principle of GA Machine learning classifier system

#### UNIT –V:

Swarm Intelligent system: Introduction to swarm intelligence, back ground, Ant colony system, working of ant colony optimization, Particle swarm intelligent systems, Artificial beecolony system, cuckoo search algorithm..

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## CO Statements

CO1	Develop intelligent systems leveraging the paradigm of soft computing techniques.
CO2	Implement, evaluate and compare solutions by various soft computing approaches for finding the optimal solutions
CO3	Recognize the feasibility of applying a soft computing methodology for a particular problem
CO4	Design the methodology to solve optimization problems using fuzzy logic, genetic algorithms and neural networks.
CO5	Design hybrid system to revise the principles of soft computing in various application
CO6	Develop of different intelligence networks

  
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**Department of Electrical & Electronics Engineering**

**Feedback form**

**Course Name: Value Added Course on Soft Computing Techniques.**

Please place tick marks at the respective column

S.No	Particulars	Excellent	Very good	Good	Average	Poor
1	How well did you achieve this learning goal in this course?		✓			
2	The course contain meet the expectation		✓			
3	The lecture sequence was well planned	✓				
4	Lecture content illustrated with adequate examples	✓	✓			
5	Level of the course up to the mark?		✓			
6	Course highlights the level of new knowledge		✓			
7	The lecture was clear and easy to understand?	✓				
8	Teaching aids are effectively used?		✓			
9	The resource person interacted well and cleared the doubts.	✓				
10	Overall organization of the course	✓				

Comments

1.

2.

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M. EPSI  
Signature of the student





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Palnadu Dist. A.P.

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9121  
21470  
8

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web:eswarcollegeofengg.org

Department of Electrical and electronics Engineering

## Feedback Analysis

Course Name: SOFT COMPUTING TECHNIQUES

Number of students attended/ given feedback 20

S.No	Particulars	Excellent	Very good	Good	Average	Poor	levels
1	How well did you achieve this learning goal in this course?	9	6	4	1		0.7875
2	The course contain meet the expectation	7	6	5	1	1	0.7125
3	The lecture sequence was well planned	9	4	4	1	1	0.7125
4	Lecture content illustrated with adequate examples	10	5	4	1		0.8
5	Level of the course up to the mark?	9	5	5	1		0.775
6	Course highlights the level of new knowledge	7	7	5	1		0.75
7	The lecture was clear and easy to understand?	9	5	5	1		0.775
8	Teaching aids are effectively used?	7	7	5	1		0.75
9	The resource person interacted well and cleared the doubts.	7	6	6	1		0.7375
10	Overall organization of the course	8	5	6	1		0.75

0.755

Over all feedback value :

3.02

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**Department of Electrical and Electronics Engineering**

**Course Name: Value Added Course on Soft computing techniques**

**Evaluation of the Value-Added Courses**

**Answer all the Questions Each Question Carry 1 Mark**

**Total Marks: 20M**

**Min Marks: 12 Marks**

**Name of the Student:**

**H.T. No:**

**Marks obtained:**

1. Which of the following is not a characteristic of soft computing?
  - a) Exactness
  - b) Fuzziness
  - c) Approximation
  - d) Tolerance for uncertainty
2. Which soft computing technique is primarily inspired by the behavior of neurons in the human brain?
  - a) Fuzzy Logic
  - b) Genetic Algorithms
  - c) Neural Networks
  - d) Particle Swarm Optimization
3. Which soft computing technique is used for optimization and search problems based on the principle of natural selection?
  - a) Genetic Algorithms
  - b) Fuzzy Logic
  - c) Neural Networks
  - d) Ant Colony Optimization
4. What is the primary objective of Fuzzy Logic?
  - a) To make crisp decisions
  - b) To handle uncertainty and imprecision

  
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- c) To perform gradient descent  
d) To classify data into distinct categories
5. Which soft computing technique is particularly useful for solving classification and regression problems?
- a) Neural Networks  
b) Genetic Algorithms  
c) Ant Colony Optimization  
d) Particle Swarm Optimization
6. Which soft computing technique is based on the principle of swarm intelligence and simulates the behavior of bird flocking or fish schooling?
- a) Genetic Algorithms  
b) Particle Swarm Optimization  
c) Neural Networks  
d) Ant Colony Optimization
7. In which soft computing technique are solutions represented as points in a multidimensional search space, with each point evaluated based on a fitness function?
- a) Neural Networks  
b) Genetic Algorithms  
c) Fuzzy Logic  
d) Ant Colony Optimization
8. Which soft computing technique is often used for feature selection and optimization problems inspired by the behavior of social insects?
- a) Fuzzy Logic  
b) Genetic Algorithms  
c) Ant Colony Optimization  
d) Neural Networks
9. Which soft computing technique is best suited for handling imprecise, vague, or uncertain data?
- a) Genetic Algorithms  
b) Fuzzy Logic  
c) Neural Networks  
d) Particle Swarm Optimization
10. Soft computing techniques are primarily used for:
- a) Solving only linear problems  
b) Solving problems with clear, deterministic solutions



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- c) Solving complex, real-world problems with uncertainty and ambiguity
  - d) Solving problems with no constraints
11. Which of the following soft computing techniques is primarily based on the principle of evolution?
- a) Neural Networks
  - b) Fuzzy Logic
  - c) Genetic Algorithms
  - d) Particle Swarm Optimization
12. Which soft computing technique is particularly suitable for optimization problems where the solution space is discrete and non-linear?
- a) Fuzzy Logic
  - b) Ant Colony Optimization
  - c) Genetic Algorithms
  - d) Neural Networks
13. What is the primary advantage of using neural networks in soft computing applications?
- a) Ability to handle uncertainty
  - b) Easy interpretability of results
  - c) Fast convergence during training
  - d) Efficient handling of crisp data
14. In which soft computing technique are linguistic variables used to represent fuzzy sets?
- a) Genetic Algorithms
  - b) Fuzzy Logic
  - c) Ant Colony Optimization
  - d) Particle Swarm Optimization
15. Which soft computing technique mimics the social behavior of birds or fish to solve optimization problems?
- a) Particle Swarm Optimization
  - b) Genetic Algorithms
  - c) Ant Colony Optimization
  - d) Neural Networks
16. What type of problems is Fuzzy Logic particularly suitable for?
- a) Deterministic problems with clear boundaries
  - b) Linear optimization problems





- c) Problems with uncertainty and imprecision
- d) Non-iterative optimization problems

17. Which soft computing technique is inspired by the behavior of ants searching for the shortest path between their colony and a food source?

- a) Genetic Algorithms
- b) Neural Networks
- c) Ant Colony Optimization
- d) Particle Swarm Optimization

18. In which soft computing technique are solutions represented as individuals in a population, subject to crossover and mutation operations?

- a) Ant Colony Optimization
- b) Particle Swarm Optimization
- c) Genetic Algorithms
- d) Fuzzy Logic

19. Which soft computing technique is most suitable for dynamic optimization problems where the environment changes over time?

- a) Neural Networks
- b) Fuzzy Logic
- c) Genetic Algorithms
- d) Ant Colony Optimization

20. Which of the following soft computing techniques is most commonly used for function optimization?

- a) Neural Networks
- b) Fuzzy Logic
- c) Genetic Algorithms
- d) Ant Colony Optimization

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**Department of Electrical and Electronics Engineering**

**Course Name: Value Added Course on Soft computing techniques**

**Evaluation of the Value-Added Courses**

**KEY SHEET**

1. a) Exactness
2. c) Neural Networks
3. a) Genetic Algorithms
4. b) To handle uncertainty and imprecision
5. a) Neural Networks
6. b) Particle Swarm Optimization
7. b) Genetic Algorithms
8. c) Ant Colony Optimization
9. b) Fuzzy Logic
- 10.c) Solving complex, real-world problems with uncertainty and ambiguity
- 11.c) Genetic Algorithms
- 12.c) Genetic Algorithms
13. c) Fast convergence during training
14. b) Fuzzy Logic
15. a) Particle Swarm Optimization
16. c) Problems with uncertainty and imprecision
17. c) Ant Colony Optimization
- 18 c) Genetic Algorithms
- 19.d) Ant Colony Optimization
- 20.c) Genetic Algorithms

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web:eswarcollegeofengg.org

Department of Electrical and Electronics Engineering

Course Name: Value Added Course on Soft computing techniques

Evaluation of the Value-Added Courses

Answer all the Questions Each Question Carry 1 Mark

Total Marks: 20M

Min Marks: 12 Marks

Name of the Student: A. Nagamani H.T. No: 16JE1A0207 Marks obtained: 17

1. Which of the following is not a characteristic of soft computing?

- a) Exactness
- b) Fuzziness
- c) Approximation
- d) Tolerance for uncertainty

[ a ]

2. Which soft computing technique is primarily inspired by the behavior of neurons in the human brain?

- a) Fuzzy Logic
- b) Genetic Algorithms
- c) Neural Networks
- d) Particle Swarm Optimization

[ b ]

3. Which soft computing technique is used for optimization and search problems based on the principle of natural selection?

- a) Genetic Algorithms
- b) Fuzzy Logic
- c) Neural Networks
- d) Ant Colony Optimization

[ a ]

4. What is the primary objective of Fuzzy Logic?

- a) To make crisp decisions
- b) To handle uncertainty and imprecision
- c) To perform gradient descent

[ b ]

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- d) To classify data into distinct categories
5. Which soft computing technique is particularly useful for solving classification and regression problems? [a]
- a) Neural Networks
  - b) Genetic Algorithms
  - c) Ant Colony Optimization
  - d) Particle Swarm Optimization
6. Which soft computing technique is based on the principle of swarm intelligence and simulates the behavior of bird flocking or fish schooling? [b]
- a) Genetic Algorithms
  - b) Particle Swarm Optimization
  - c) Neural Networks
  - d) Ant Colony Optimization
7. In which soft computing technique are solutions represented as points in a multidimensional search space, with each point evaluated based on a fitness function? [b]
- a) Neural Networks
  - b) Genetic Algorithms
  - c) Fuzzy Logic
  - d) Ant Colony Optimization
8. Which soft computing technique is often used for feature selection and optimization problems inspired by the behavior of social insects? [c]
- a) Fuzzy Logic
  - b) Genetic Algorithms
  - c) Ant Colony Optimization
  - d) Neural Networks
9. Which soft computing technique is best suited for handling imprecise, vague, or uncertain data? [a]
- a) Genetic Algorithms
  - b) Fuzzy Logic
  - c) Neural Networks
  - d) Particle Swarm Optimization
10. Soft computing techniques are primarily used for: [c]
- a) Solving only linear problems
  - b) Solving problems with clear, deterministic solutions
  - c) Solving complex, real-world problems with uncertainty and ambiguity



d) Solving problems with no constraints

11. Which of the following soft computing techniques is primarily based on the principle of evolution?

[ C ]

- a) Neural Networks
- b) Fuzzy Logic
- c) Genetic Algorithms
- d) Particle Swarm Optimization

12. Which soft computing technique is particularly suitable for optimization problems where the solution space is discrete and non-linear?

[ C ]

- a) Fuzzy Logic
- b) Ant Colony Optimization
- c) Genetic Algorithms
- d) Neural Networks

13. What is the primary advantage of using neural networks in soft computing applications?

[ C ]

- a) Ability to handle uncertainty
- b) Easy interpretability of results
- c) Fast convergence during training
- d) Efficient handling of crisp data

14. In which soft computing technique are linguistic variables used to represent fuzzy sets?

[ b ]

- a) Genetic Algorithms
- b) Fuzzy Logic
- c) Ant Colony Optimization
- d) Particle Swarm Optimization

15. Which soft computing technique mimics the social behavior of birds or fish to solve optimization problems?

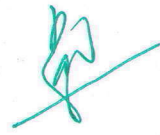
[ b ]

- a) Particle Swarm Optimization
- b) Genetic Algorithms
- c) Ant Colony Optimization
- d) Neural Networks

16. What type of problems is Fuzzy Logic particularly suitable for?

[ C ]

- a) Deterministic problems with clear boundaries
- b) Linear optimization problems
- c) Problems with uncertainty and imprecision



d) Non-iterative optimization problems

17. Which soft computing technique is inspired by the behavior of ants searching for the shortest path between their colony and a food source?

[C]

a) Genetic Algorithms

b) Neural Networks

c) Ant Colony Optimization

d) Particle Swarm Optimization

18. In which soft computing technique are solutions represented as individuals in a population, subject to crossover and mutation operations?

[C]

a) Ant Colony Optimization

b) Particle Swarm Optimization

c) Genetic Algorithms

d) Fuzzy Logic

19. Which soft computing technique is most suitable for dynamic optimization problems where the environment changes over time?

[d]

a) Neural Networks

b) Fuzzy Logic

c) Genetic Algorithms

d) Ant Colony Optimization

20. Which of the following soft computing techniques is most commonly used for function optimization?

[C]

a) Neural Networks

b) Fuzzy Logic

c) Genetic Algorithms

d) Ant Colony Optimization

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**Department of Electrical and Electronics Engineering**

**1 Week Add-On Course on “SOFT COMPUTING TECHNIQUES”**

**MARKS SHEET**

**Date: 15/10/2018 to 20/10/2018**

SNO	HT.NO	NAME OF STUDENT	MARKS(20M)
1	16JE1A0201	SHAIK ANWARBASHA	17
2	16JE1A0203	MADDU EPSI	18
3	16JE1A0204	NUTALAPATI HARI KRISHNA	16
4	16JE1A0205	SHAIK MASTAN VALI	15
5	16JE1A0206	DURBHAKULA MEGHANA	17
6	16JE1A0207	ALLADI NAGAMANI	17
7	16JE1A0208	DAGGUBATI NARMADA	16
8	16JE1A0209	UPPULURI PRAVEEN KUMAR	16
9	16JE1A0210	MUTLURI RAJESH	18
10	16JE1A0211	UPASI RAJESH	19
11	16JE1A0212	SYED RESHMA	17
12	16JE1A0213	KRISHNA SELVARAJ	15
13	16JE1A0214	CHILAKA SRIKANTH	16
14	16JE1A0215	SHAIK SUBHANI	17
15	16JE1A0216	CHERUKUPALLI SURESH	18
16	16JE1A0218	KONAKALAVENKATESWARARAO	16
17	17JE5A0201	SHAIK ABDUL REHMAN	15
18	17JE5A0202	SHAIK ANSAR VALI	18
19	17JE5A0203	SHAIK ANSAR VALI	17
20	17JE5A0204	NUTHALAPATI VENKATA SIVAKUMAR	16

*K. Ashok Kumar*  
Course Coordinator

*V. Prasad*  
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Principal

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web:eswarcollegeofengg.org

### Department of Electrical & Electronics Engineering

#### Summary of the Program

Course Name: Value Added Course on Soft computing techniques.

1. This course provides introduction to soft computing.
2. It covers artificial neural networks and fuzzy logic systems.
3. The course emphasizes Evolutionary programming.
4. Total 20 No of students are registered out of the 20 No of students and 20 No of students are qualified.

*K. Ashok Kumar*  
Faculty Coordinator

*[Signature]*  
HOD-EEE

HOD

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Eswar College of Engineering  
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*[Signature]*  
Principal

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*[Signature]*

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