# AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY,

**TAMARAM (V), MAKAVARAPALEM (M),**
**VISAKHAPATNAM-531113**

*Certificate Course*

*on*

# *APPLICATIONS OF ARTIFICIAL INTELLIGENCE FOR MODERN POWER SYSTEM*

***From 15TH Nov 2021 T0 19TH Nov 2021***

## ORGANIZED BY

**DEPT. OF ELECTRICAL &ELECTRONICS ENGINEERING**
**AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY,**
**TAMARAM (V), MAKAVARAPALEM (M),**
**VISAKHAPATNAM-531113**

## AVANTHI EDUCATIONAL SOCIETY

Avanthi Educational Society under the Leadership of Sri M.Srinivasa Rao garu as chairman was started in the Year 1991. Within a short span of its establishment, the group has made a remarkable stride in the field of education offering various courses at Under Graduate, Post Graduate, Pharmacy & Engineering levels. This milestone is achieved as the institution carved itself to impart quality and career oriented education, countering the challenges of the modern world through planning, dedication, determination, prompt execution and with the innovative ideas of our advisory board. Today, Avanthi Educational Society is proud to have a strength of over 16000 students with 15 institutions under its ambit. It is the path of glory towards the success during the last 19 years. The institution has been adjudged many times as the second best educational institutions in the twin cities and 16th best in all over India through the impartial survey made by the renowned magazine "India Today".

## AVANTHI INSTITUTE OF ENGINEERING & TECHNOLOGY

AIET started in the year 1999 and offers various courses at Engineering and PG level. The college is providing with rooms, computer centre, laboratories and seminar hall with audio-visual equipments. Industry Institute interaction is conducted regularly to emphasize on the latest trends in the present market.

It is very near to Narsipatnam. Frequent bus facilities are available both from Visakhapatnam and Narsipatnam. Very safe and secure hostel facility is available for Girl students. These are the additional facilities besides excellent academic atmosphere in the college campus.

## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

The Department of Electrical & Electronics Engineering was established in the year 2001 along with the MECHANICAL, ECE and CSE departments. The department has an intake of 60 students. Commencing the academic year 2011, a post-graduate course in Power Electronics and 2014 in Power Systems was started. The department has full fledged laboratories, workshops and P.G. labs. The department is staffed with qualified, experienced and dedicated members who engage in research activities.. The department with active support from the management is aiming to expand its research activities and industrial consultancies.

## ABOUT COURSE

This session is dedicated for smart grids explains clearly about the basics of the smart grid operation. He explains about the problems with the traditional grid and the need for smart grids. The challenges of transition from conventional grid to smart grid are also explained in detail. The basic functional blocks of the smart grids and the participation of various entities in smart grids structure is also explained in detailed manner. The requirements of the transmission and distribution networks, intelligent electric devices (IED), communication networks, data handling, data processing and trouble shooting is also explained in detail. This session is also explores the need for new control and optimization algorithm based on Artificial Intelligence for the efficient operation of smart grids.

## TOPICS TO BE COVERED

**Day 1:** Introduction to smart grids and Transforming Power Sector with Digital Innovations

**Day 2:** Machine learning for smart grids and Differential Evolution for Economic operation of Power

**Day 3:** Implementation of AMR in Indian Utilities and control of micro grids

**Day 4:** AI applications to power system and Optimization for Modern Power system

**Day 5:** Application of machine learning in power system operation and Role of Energy storage in modern power system

For any further information Contact Mr K DURGARAO, Assistant Professor, EEE, and Mr U ANJAIAH Assistant Professor, EEE

**CHIEF PATRON**
Smt.M.Gnaneswari
President, Avanthi Educational Society

**PATRON**
Dr. C P V N J Mohan Rao
Principal,
Avanthi Institute Of Engineering And Technology

**CHAIRMAN**
Dr. T Srinivasa Rao
Head of the Department
Electrical & Electronics Engineering

**COORDINATORS**
K Durgarao
Asst. Professor

U Anjaiah
Asst. Professor

# AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY

(Approved by AICTE, Permanently Affiliated to JNT University Kakinada,
Accredited by NAAC and Recognized under 2(f) &12 (b) by UGC, New Delhi)
Tamaram, Makavarapalem, Narsipatnam (RD), Visakhapatnam-531113

## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

Date: 13/11/2021

## CIRCULAR

A short term course on ***"APPLICATIONS OF ARTIFICIAL INTELLIGENCE FOR MODERN POWER SYSTEM"*** for III&IV Year students of Electrical and Electronics Engineering Department is scheduled from 15th Nov 2021 to 19th Nov 2021. All the students should attend the course without fail. For further information Contact course coordinators Mr K Durga Rao, Assistant Professor, EEE, and Mr U Anjaiah Assistant Professor EEE Department.

**Resource Person Details:**

1.Prof. G.Raja Rao,ME,PhD
Head Of the Department
Department of Electrical and Electronics Engineering
Anil Neerukonda Institute of Technology & Sciences
Sangivalasa,Visakhapatnam

2.Dr.K.Durga Syam Prasad
Associate Professor
Viganan's Institute of Engineering for Women,

13/11/21
Dr. T Srinivasa Rao
Head of the Department, EEE

Copy to: Principal, AIET

Head of the Department
Department of Electrical & Electronics Engg.
Avanthi Institute of Engg & Tech.
Makavarapalem, Visakhapatnam - 531113.

# AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY

(Approved by AICTE, Permanently Affiliated to JNT University Kakinada,
Accredited by NAAC and Recognized under 2(f) &12 (b) by UGC, New Delhi)
Tamaram, Makavarapalem, Narsipatnam (RD), Visakhapatnam-531113

## APPLICATIONS OF ARTIFICIAL INTELLIGENCE FOR MODERN POWER SYSTEM

**Duration: 15-11-2021 to 19-11-2021**

## SYLLABUS

**Day 1:** Introduction to smart grids. Transforming Power Sector with Digital Innovations.

**Day 2:** Machine Learning for Smart Grids. Differential Evolution for Economic operation of Power system.

**Day 3:** Implementation of AMR in Indian Utilities. Control of Micro grids.

**Day 4:** AI applications to power system. Optimization for Modern Power system.

**Day 5:** Application of machine learning in power system operation. Role of Energy storage in modern power system.

COORDINATOR

HOD

Head of the Department
Department of Electrical & Electronics Engg.
Avanthi Institute of Engg & Tech.
Makavarapalem, Visakhapatnam - 531113.

# AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY

(Approved by AICTE, Permanently Affiliated to JNT University Kakinada,
Accredited by NAAC and Recognized under 2(f) &12 (b) by UGC, New Delhi)
Tamaram, Makavarapalem, Narsipatnam (RD), Visakhapatnam-531113

## APPLICATIONS OF ARTIFICIAL INTELLIGENCE FOR MODERN POWER SYSTEM

## SCHEDULE

**Duration: 15-11-2021 to 19-11-2021**

| DAY/DATE | Live Session - 1<br>09.00AM to 12.30 PM | Live Session - 2<br>1 PM to 4 PM |
|---|---|---|
| Monday<br>15-11-2021 | Introduction to smart grids | Transforming Power Sector with Digital Innovations |
| Tuesday<br>16-11-2021 | Machine Learning for Smart Grids | Differential Evolution for Economic operation of Power system. |
| Wednesday<br>17-11-2021 | Implementation of AMR in Indian Utilities | Control of Microgrids |
| Thursday<br>18-11-2021 | AI applications to power system | Optimization for Modern Power system |
| Friday<br>19-11-2021 | Application of machine learning in power system operation | Role of Energy storage in modern power system. |

COORDINATOR

HOD

Head of the Department
Department of Electrical & Electronics Engg.
Avanthi Institute of Engg & Tech.
Makavarapalem, Visakhapatnam - 531113.

**AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY**

**Approved by AICTE , Permanently Affiliated to JNT University Kakinada,**
**Accredited by NAAC and Recognized under 2(f) & 12(b) by UGC ,New Delhi**
**Tamaram,Makavarapalem,Narsipatnam(RD),Visakhapatnam-531113**

**APPLICATIONS OF ARTIFICIAL INTELLIGENCE FOR MODERN POWER SYSTEM**

**From 15th Nov 2021 TO 19th Nov 2021**

**3rd &4th Year Students Attendance**

| SNO | ROLL NUMBER | NAME OF THE STUDENT | 15-Nov | 16-Nov | 17-Nov | 18-Nov | 19-Nov |
|---|---|---|---|---|---|---|---|
| 1 | 19811A0201 | CHENNA YOGINDRAPRASAD | ✓ | ✓ | ✓ | ✓ | ✓ |
| 2 | 19811A0202 | KURAMDASU SRINU | ✓ | ✓ | ✓ | ✓ | ✓ |
| 3 | 19811A0203 | MADAGALA VIJAY | ✓ | ✓ | ✓ | ✓ | ✓ |
| 4 | 19811A0204 | MOLLI BHOOLAKSHMI | ✓ | ✓ | ✓ | ✓ | ✓ |
| 5 | 19811A0205 | MOLLI SAI GANESH | ✓ | ✓ | ✓ | ✓ | ✓ |
| 6 | 19811A0206 | NEELAPATI NAGA PRAVEEN | ✓ | ✓ | X | ✓ | ✓ |
| 7 | 19811A0207 | SARAKAPU SURESH | ✓ | ✓ | ✓ | ✓ | ✓ |
| 8 | 19811A0208 | MAJJI SUMANTH | ✓ | ✓ | ✓ | ✓ | ✓ |
| 9 | 19811A0209 | ADAPAKA BHANU PRASAD | ✓ | ✓ | ✓ | ✓ | ✓ |
| 10 | 19811A0211 | BALIBOINA PAVAN KUMAR | ✓ | ✓ | ✓ | ✓ | ✓ |
| 11 | 19811A0212 | BOJJA JAYASRI | ✓ | ✓ | ✓ | ✓ | ✓ |
| 12 | 19811A0213 | CHANDAKA ASHOK | ✓ | ✓ | ✓ | ✓ | ✓ |
| 13 | 19811A0214 | CHINTHA BHUVAN KUMAR | ✓ | ✓ | ✓ | ✓ | ✓ |
| 14 | 19811A0215 | CHINTHALA HARISH | X | ✓ | ✓ | ✓ | ✓ |
| 15 | 19811A0217 | DADI DINAKAR | ✓ | ✓ | ✓ | ✓ | ✓ |
| 16 | 19811A0218 | DANDUPATI SEKHAR | ✓ | ✓ | ✓ | ✓ | ✓ |
| 17 | 19811A0219 | DASAMANTHARAO SAI GOUTHAM | ✓ | ✓ | ✓ | ✓ | ✓ |
| 18 | 19811A0220 | DEGALA RAJENDRAKUMAR | ✓ | ✓ | ✓ | ✓ | ✓ |
| 19 | 19811A0221 | DEVI PRASAD YALLAPU | ✓ | ✓ | ✓ | ✓ | X |
| 20 | 19811A0222 | EDUBILLI RAVI TEJA | ✓ | ✓ | ✓ | ✓ | ✓ |
| 21 | 19811A0223 | ELLA NOOKARAJU | ✓ | ✓ | ✓ | ✓ | ✓ |
| 22 | 19811A0224 | GANESH KANDALAM | ✓ | ✓ | ✓ | ✓ | ✓ |
| 23 | 19811A0225 | GOLLAVILLI RAMU | ✓ | ✓ | ✓ | ✓ | ✓ |
| 24 | 19811A0226 | GUMMADI CHAKRI | ✓ | ✓ | ✓ | ✓ | ✓ |
| 25 | 19811A0227 | KALLA BALA MURALI | ✓ | ✓ | ✓ | ✓ | ✓ |
| 26 | 19811A0228 | KARRI ANDREWS | ✓ | ✓ | ✓ | ✓ | ✓ |
| 27 | 20815A0222 | MOLLI SAGAR KUMAR | ✓ | X | ✓ | ✓ | ✓ |
| 28 | 20815A0223 | NAGIREDDY GANESH | ✓ | ✓ | ✓ | ✓ | ✓ |
| 29 | 20815A0224 | NAKIREDDY JAGADEESH | ✓ | ✓ | ✓ | ✓ | ✓ |
| 30 | 20815A0225 | NETTEM SRI HARSHA VAMSI | ✓ | ✓ | ✓ | ✓ | ✓ |
| 31 | 20815A0226 | P.A.V.N.S.DEEPAK | ✓ | ✓ | ✓ | ✓ | ✓ |
| 32 | 20815A0227 | PERAM SUMANTH | ✓ | ✓ | ✓ | ✓ | ✓ |
| 33 | 20815A0229 | PODUGU SAI HEMANTH | ✓ | ✓ | ✓ | ✓ | ✓ |
| 34 | 20815A0230 | PRASADULA LAKSHMANA RAO | ✓ | ✓ | ✓ | ✓ | ✓ |
| 35 | 20815A0231 | SAMALA SAI RAM | ✓ | ✓ | ✓ | ✓ | ✓ |
| 36 | 20815A0232 | SAMOJI ADINARAYANA | ✓ | ✓ | ✓ | ✓ | ✓ |
| 37 | 20815A0233 | SANAPATHI NOOKARAJU | ✓ | ✓ | ✓ | X | ✓ |
| 38 | 20815A0234 | SARIPALLI DEVA PRASAD | ✓ | ✓ | ✓ | ✓ | ✓ |
| 39 | 20815A0235 | URIGITI DEVA | ✓ | ✓ | ✓ | ✓ | ✓ |
| 40 | 20815A0236 | VASAM JYOTHI PRAKASH | ✓ | ✓ | ✓ | ✓ | ✓ |
| 41 | 20815A0237 | VENUKOTI KIRAN | ✓ | ✓ | ✓ | ✓ | ✓ |
| 42 | 20815A0239 | YELLAPU SONIKA | ✓ | ✓ | ✓ | ✓ | ✓ |

| 43 | 20815A0240 | BHARANIKALA RAM PRASAD | ✓ | ✓ | ✓ | ✓ | ✓ |
|---|---|---|---|---|---|---|---|
| 44 | 20815A0242 | KUNDRAPU LAKSHMI NARAYANA | ✓ | ✓ | ✓ | ✓ | ✓ |
| 45 | 20815A0243 | NANEPALLI PAVANKUMAR | ✓ | ✓ | ✓ | ✓ | ✓ |
| 46 | 18811A0201 | BENIYA GNANESWARA RAO | ✓ | X | ✓ | ✓ | ✓ |
| 47 | 18811A0202 | CHACHUPATLA ROSHINI | ✓ | ✓ | ✓ | ✓ | ✓ |
| 48 | 18811A0203 | KILLI YOGESH | ✓ | ✓ | ✓ | ✓ | ✓ |
| 49 | 18811A0204 | KOROPOLU BHAGYARAJU | ✓ | ✓ | ✓ | ✓ | ✓ |
| 50 | 18811A0205 | LALAM HEMANTH KUMAR | ✓ | ✓ | ✓ | ✓ | ✓ |
| 51 | 18811A0206 | MURUKUTTI PREMAKUMAR | ✓ | ✓ | ✓ | ✓ | ✓ |
| 52 | 18811A0207 | PAILA SAIRAM | ✓ | ✓ | ✓ | ✓ | ✓ |
| 53 | 18811A0208 | THOTA VASU | ✓ | ✓ | ✓ | ✓ | ✓ |
| 54 | 18811A0209 | VEMULAPUDI MAHESH | ✓ | ✓ | ✓ | ✓ | ✓ |
| 55 | 19815A0201 | ADDURU SAI KUMAR | ✓ | ✓ | ✓ | ✓ | ✓ |
| 56 | 19815A0202 | BANDARU HEMANTH KUMAR | ✓ | ✓ | X | ✓ | ✓ |
| 57 | 19815A0204 | BANTU LAKSHMANA RAO | ✓ | ✓ | ✓ | ✓ | ✓ |
| 58 | 19815A0205 | B A VENKATESWARA RAO | ✓ | ✓ | ✓ | ✓ | ✓ |
| 59 | 19815A0206 | BONGU RAVIKUMAR | ✓ | ✓ | ✓ | ✓ | ✓ |
| 60 | 19815A0207 | CHALAPAREDDY JAGAN KUMAR | ✓ | ✓ | ✓ | ✓ | ✓ |
| 61 | 19815A0208 | CHUKKA SAIRAJ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 62 | 19815A0209 | DADI CHINNA | ✓ | ✓ | ✓ | ✓ | ✓ |
| 63 | 19815A0210 | DEVAREDDY SRINU | ✓ | ✓ | ✓ | ✓ | ✓ |
| 64 | 19815A0211 | GANAGALLA SATISH | ✓ | ✓ | ✓ | ✓ | ✓ |
| 65 | 19815A0212 | GATREDDI TEJA | ✓ | ✓ | ✓ | ✓ | ✓ |
| 66 | 19815A0213 | GOLLU VENKATA RAMANA | ✓ | ✓ | ✓ | ✓ | ✓ |
| 67 | 19815A0215 | KONA SIVA GANESH | ✓ | ✓ | ✓ | ✓ | ✓ |
| 68 | 19815A0216 | KONATHALA GOPINADH | ✓ | ✓ | ✓ | ✓ | ✓ |
| 69 | 19815A0217 | KOTHAPALLI VEERA SAI | ✓ | ✓ | ✓ | ✓ | ✓ |
| 70 | 19815A0218 | KUNDURU RAGA SUDHA | ✓ | ✓ | ✓ | ✓ | ✓ |
| 71 | 19815A0219 | L MOHAN SIVA DURGA PRASAD | ✓ | ✓ | ✓ | ✓ | ✓ |
| 72 | 19815A0220 | LANKA NAVEEN | X | ✓ | ✓ | ✓ | ✓ |
| 73 | 19815A0221 | LEKKALA SWARNALATHA | ✓ | ✓ | ✓ | ✓ | ✓ |
| 74 | 19815A0222 | LALAM DURGA PRASAD | ✓ | ✓ | ✓ | ✓ | ✓ |
| 75 | 19815A0223 | MAMIDI LOKESH | ✓ | ✓ | ✓ | ✓ | ✓ |
| 76 | 19815A0224 | MATTURTHI BHARGAVA | ✓ | ✓ | ✓ | ✓ | ✓ |
| 77 | 19815A0225 | NADIPALLI PUSHPANJILI | ✓ | ✓ | ✓ | ✓ | ✓ |
| 78 | 19815A0226 | NAKKA THARUNKUMAR | ✓ | ✓ | ✓ | ✓ | ✓ |
| 79 | 19815A0227 | PATCHARA SIVA KUMAR | ✓ | ✓ | X | ✓ | ✓ |
| 80 | 19815A0228 | PATNALA DURGA PRASADU | ✓ | ✓ | ✓ | ✓ | ✓ |
| 81 | 19815A0229 | P RAM KARUN KUMAR | ✓ | ✓ | ✓ | ✓ | ✓ |
| 82 | 19815A0232 | THAMMANA YASWANTH | ✓ | ✓ | ✓ | ✓ | ✓ |
| 83 | 19815A0233 | TUMPALA MOHAN MANU | ✓ | ✓ | ✓ | ✓ | ✓ |
| 84 | 19815A0234 | VANTEDDU LINGA CHAKRADHAR | ✓ | ✓ | ✓ | ✓ | ✓ |
| 85 | 19815A0235 | VARADI LEELA SAI | ✓ | ✓ | ✓ | ✓ | ✓ |
| 86 | 19815A0236 | YETTULA KIRAN KUMAR | ✓ | ✓ | ✓ | X | ✓ |
| 87 | 19815A0237 | ARUGULA APARNA | ✓ | ✓ | ✓ | ✓ | ✓ |
| 88 | 19815A0238 | PARAVADA PAVANKUMAR | ✓ | ✓ | ✓ | ✓ | ✓ |

COORDINATOR

05/11/21

Head of the Department
Department of Electrical & Electronics Engg.
Avanthi Institute of Engg & Tech.
Makavarapalem, Visakhapatnam - 531113.

# AVANTHI

## INSTITUTE OF ENGINEERING AND TECHNOLOGY

**Tamaram (V), Makavarapalem (M), Visakhapatnam Dist. 531113.**
**(Approved by AICTE, Accredited by NAAC, Permanently Affiliated to JNTU Kakinada)**

# Certificate of Participation

This is to certify that Mr./Ms._____ of_____has participated in the Certificate Course entitled on **APPLICATIONS OF ARTIFICIAL INTELLIGENCE FOR MODERN POWER SYSTEM**during from 15th NOV 2021to 19TH NOV 2021 was organised by the Department of ELECTRICAL AND ELECTRONICS ENGINEERING at Avanthi Institute of Engineering and Technology.

**Coordinator** **HOD** **Principal**

# AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY

(Approved by AICTE, Permanently Affiliated to JNT University Kakinada,
Accredited by NAAC and Recognized under 2(f) &12 (b) by UGC, New Delhi)
Tamaram, Makavarapalem, Narsipatnam (RD), Visakhapatnam-531113

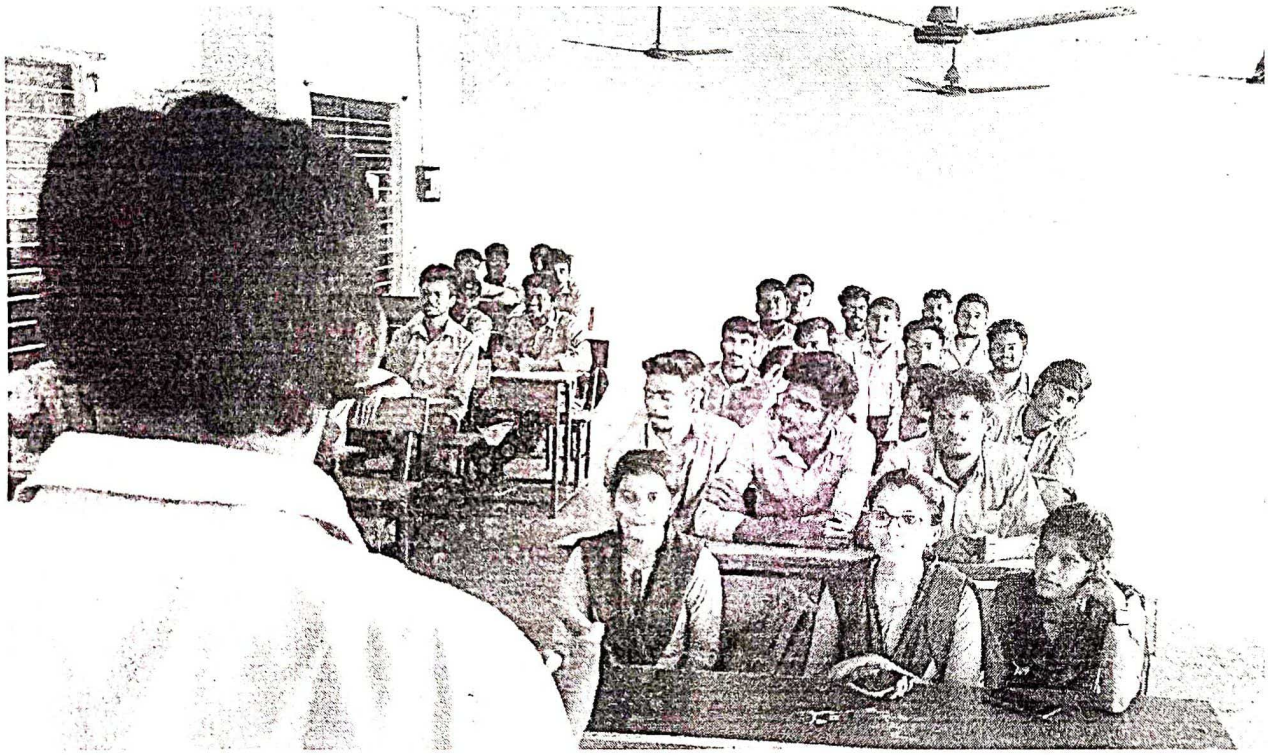
## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

*CERTIFICATE COURSE*

*ON*

**APPLICATIONS OF ARTIFICIAL INTELLIGENCE FOR MODERN POWER SYSTEM**

Dated :15-11-2021 to 19-11-2021



COORDINATOR

HOD

Head of the Department
Department of Electrical & Electronics Engg.
Avanthi Institute of Engg & Tech.
Makavarapalem, Visakhapatnam - 531113.

# AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY

(Approved by AICTE, Permanently Affiliated to JNT University Kakinada,
ACCREDITED BY NAAC and Recognized under 2(f) &12 (b) by UGC, New Delhi)
Tamaram, Makavarapalem, Narsipatnam (RD), Visakhapatnam-531113

## Department of Electrical and Electronics Engineering

Dt:10-12-2021

## BRIEF REPORT

**Department of Electrical and Electronics Engineering, Avanthi Institute of Engineering and Technology** organized a certificate course On APPLICATIONS OF ARTIFICIAL INTELLIGENCE FOR MODERN POWER SYSTEM from 15-11-2021 to 19-11-2021

Pro G Raja Rao HOD ,Department of Electrical and Electronics Engineering explains clearly about the basics of the smart grid operation. He explains about the problems with the traditional grid and the need for smart grids. The challenges of transition from conventional grid to smart grid are also explained in detail. The basic functional blocks of the smart grids and the participation of various entities in smart grids structure is also explained in detailed manner. The requirements of the transmission and distribution networks, intelligent electric devices (IED), communication networks, data handling, data processing and trouble shooting is also explained in detail and also the need for new control and optimization algorithm based on Artificial Intelligence for the efficient operation of smart grids.

He discusses the significance of digital innovation in the area of power systems. The placement of PMUs and the processors for smart grid operation are also discussed.

He also starts one of the session with a nice introduction to machine learning and deep learning and its possible application to power systems. He considered two test cases to discuss the implementation of machine learning in power systems. For the first case study he considered fault identification using a voltage waveform using the concept of regression. The error identification of the smart meters using state vector machines is discussed in detail for the second case study.

Dr. K. Durga Syam Prasad , Associate Professor, Viganan's Institute of Engineering for Women, is clearly explains the various aspects of power system optimization techniques. He starts with the introduction to conventional optimization techniques and then slowly explains the need for the stochastic algorithms. He nicely explains the basics of AMR and the concepts with lot of real time data. He is also explains the difficulties of handling huge amount of data on regular basis and the software requirements to handle this data. He starts the introduction to MG and ended with the dynamic analysis of MG and also discuss the various modeling of the MG of different types. In particular, the Hamilton model of MG and the static and dynamic analysis using this model is nicely explained by the speaker.

He explains the uncertainty modeling of the wind power and modeling of the wind generators for the multi objective dynamic economic dispatch problem. The solution of this problem by using non-dominated crisscross optimization algorithm and the detailed result analysis is discussed in detail. Two optimization algorithms namely, PSO, DE is considered for the discussion. He clearly explains the algorithmic steps of the above algorithms and the implementation to solve the economic dispatch problem

He introduces the concept of machine learning, deep learning and the application of this concept for power system problems.. The Matlab implementation of deep learning and Tenser flow

based approach is discussed in detail by the speaker. The operation of Microgrids and the need for energy storage is the main focus of his presentation.. .Finally the course is very interactive and informative.

COORDINATOR

HOD

Head of the Department
Department of Electrical & Electronics Engg.
Avanthi Institute of Engg & Tech.
Makavarapalem, Visakhapatnam - 531113.