

Registration

The registration fee is paid by a cheque issued to:
"Dean of College of Engineering, King Saud University, Prof AbdulAziz Al-Turbak"

For any information, please feel free to contact :
Dr. M.A. El-Kady (Course Coordinator)
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Registration Form for Short Course on
Artificial Intelligence
(Fee: SR 3000)

Name :.....
Position :.....
Place of Work :.....
Tel. Office :.....
Fax :.....
E-mail :.....
Mobile :.....
Date :.....
Postal Address :.....

Signatures :.....

Note: There is a limited number of participants who can be accommodated in this course. Registration will be accepted on first come first serve basis.

Please send this form plus fee to Office of Dean, College of Engineering, King Saud University, P.O. Box 800 Riyadh 11421.

Course Outline

- Section1: Overview of Modern Power System Operation and Planning Methods
Section 2: Artificial Neural Networks
Section 3: Fuzzy Logic
Section 4: Genetic Algorithms
Section 5: Expert Systems
Section 6: Practical Applications of Artificial Intelligence in System Planning
Section 7: Practical applications of Artificial Intelligence in Load Forecasting
Section 8: Practical applications of Artificial Intelligence in System Operation

Hands-On Computer Simulations

- Simulation #1: MTLAB Artificial Intelligence Toolboxes
Simulation #2: POWER! Artificial Intelligence Application Modules

Lecturers

Dr. M.A. El-Kady
Received his Ph.D. from McMaster University, Canada in 1980. Since then, he has held a dual University/Industry career both at McMaster University and Ontario Hydro, Canada. At McMaster University, he progressed through academic ranks until he became a Professor in

1991. At Ontario Hydro, he progressed through several engineering and management positions where he ultimately filled the position of the Development Planning Manager. Dr. El-Kady has supervised Eleven (11) Ph.D. students and many Master students and has authored and co-authored over 290 publications in various power system topics. He has conducted lectures and workshops in power utilities across the USA and Canada. He was awarded a Who's Who in Toronto (Canada). He is a registered Professional Engineer in the Province of Ontario (Canada).

Dr. Adel Abdennour, Received the B.S. degree in Electrical Engineering from the Ohio State University in 1989, the M.S. and Ph.D. degrees in Electrical Engineering from Pennsylvania State University, University Park, in 1991 and 1995, respectively. He is currently an Associate Professor in the Department of Electrical Engineering at King Saud University, Riyadh. His current research interests include: Applications of Fuzzy Logic, Neural Networks, Genetic Algorithms and Expert System in the areas of Control, Power, and Image Processing.

Course Fees

Course Fees for each participant is SR 3000 and must be paid two weeks before course date.

Course Language

The course material will be in English & Arabic but Lectures will be in English.

Course Location and Schedule

The course will be held at College of Engineering, (Building 3), King Saud University from Saturday, to Wednesday from 8:30 am to 2:30 pm.

Attendance Certificate

A certificate will be issued to each participant who attends at least 80% of lectures.

Time Table

Day 1 (Saturday)

8:30 am - 10.00 am

Session #1 (Lecture) Overview of Modern System Operation and Planning Technologies
Dr. M.A. El-Kady

10:30 am - 12:00 n

Session #2 (Lecture) Role of Artificial Intelligence in Power System Planning
Dr. M.A. El-Kady

12:30 pm - 2:30 pm

Session #3 (Lecture) Role of Artificial Intelligence in Power System Operation
Dr. M.A. El-Kady

Day 2 (Sunday)

8:30 am - 10.00 am

Session #4 (Lecture) Fundamentals of Neural Networks (1)
Dr. A. Abdennour

10:30 am - 12:00 n

Session #5 (Lecture) Fundamentals of Neural Networks (2)
Dr. A. Abdennour

12:30 pm - 2:30 pm

Session #6 (Lecture) Fundamentals of Fuzzy Logic (1)
Dr. A. Abdennour

Day 3 (Monday)

8:30 am - 10.00 am

Session #7 (Lecture) Fundamentals of Fuzzy Logic (2)
Dr. A. Abdennour

10:30 am - 12:00 n

Session #8 (Lecture) Fundamentals of Genetic Algorithms
Dr. A. Abdennour

12:30 pm - 2:30 pm

Session #9 (Lecture) Fundamentals of Expert Systems
Dr. A. Abdennour

Day 4 (Tuesday)

8:30 am - 10.00 am

Session #10 (Lecture) Applications of Artificial Intelligence in Load Forecasting
Dr. M.A. El-Kady

10:30 am - 12:00 n

Session #11 (Lecture) Applications of Artificial Intelligence in Power System Planning
Dr. M.A. El-Kady

12:30 pm - 2:30 pm

Session #12 (Lecture) Applications of Artificial Intelligence in Power System Operation
Dr. M.A. El-Kady

Day 5 (Wednesday)

8:30 am - 10.00 am

Session #13 (Simulation) Simulation Software & Hands-On Session on *Use of MATLAB in Simulation*
Dr. A. Abdennour

10:30 am - 12:00 n

Session #14 (Simulation) Simulation Software & Hands-On Session on *Artificial Intelligence Applications using POWER!*
Dr. M.A. El-Kady

12:30 pm - 2:30 pm

Session #15 (General) Open Questions & Answers Session

Intensive Short Course on

ARTIFICIAL INTELLIGENCE AND THEIR APPLICATIONS TO MODERN POWER SYSTEM OPERATION AND PLANNING

Introduction

Power companies in the region, as other electric companies around the world, have come to the consciences that they can improve their productivity and enhance ways of system operation by adopting and integrating modern technologies in their diverse business environment. Among the new technologies that have emerged recently are the artificial intelligence techniques, which include artificial neural networks, fuzzy logic, genetic algorithms and expert systems. This intensive course is offered in response to such drive and initiative by the power companies to learn and implement modern artificial intelligence methodologies.

Objectives

The objective of this intensive short course and workshop is to familiarize participants with the basic concepts, practical aspects and computer-aided simulation of modern technologies using artificial intelligence in various power utility operation and planning applications. The participant will be able to gain fundamental knowledge of a variety of artificial intelligence techniques such as Artificial Neural Networks, Fuzzy Logic, Genetic Algorithms and Expert Systems. The participant will also learn the basic concepts of implementing these advanced techniques in practical utility industry operating and planning environments.