OFFICE OF CONSULTATION & TRAINING
College of Engineering and Petroleum

Kuwait University- College of Engineering & Petroleum - Electrical Engineering – OCT

EE001- Introduction to Solar PV Systems

جامعة الكويت
KUWAIT UNIVERSITY

Contact

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Course objectives

The objective of the course is:
- To introduce different Sustainable Energy Technologies.
- To be familiar with Solar Resources and Solar Angles.
- To develop a comprehensive technological understanding in PV materials and electrical characteristics.
- To provide in-depth understanding of On-Grid solar PV system components and design parameters
- To briefly introduce Off-Grid PV Systems with Battery Storage

Training course duration:

Five Days

Timing:

8 a.m. - 2 p.m. Daily

Course outline :

Day one topics:

Chapter 1: Introduction to Sustainable Energy Technologies
Different Renewable Energy Sources
Potential of Kuwait
Current and Future Plans of Kuwait and Gulf Countries

Day two topics:

Chapter 2: Introduction to the Solar Resource
Solar Position at any Time of Day
Sun Path Diagrams for Shading Analysis
Irradiance Data
Tracking Systems

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EE001- Introduction to Solar PV Systems

Day three topics:

Chapter 3: Photovoltaic Materials and Electrical Characteristics
From Cells to Modules to Arrays
The PV I–V Curve Under Standard Test Conditions
Impacts of Temperature, Insolation, and Shading on I–V Curves
Maximum Power Point Trackers

Day Four topics:

Chapter 4: On-Grid Photovoltaic Systems
Physical Components in an On-Grid System
Net Metering and Feed-In Tariffs
Optimum Spacing of Rows of PVs
PV Derating Factors
Steps for Sizing On-Grid PV systems
Example of an On-Grid PV System Sizing in Kuwait

Day Five topics:

Chapter 5: Introduction to Off-Grid PV Systems with Battery Storage
Stand-alone System Components
Estimating the Load
Basics of Batteries

Fees:

250 KD

Instructor:

Dr. Sultan Sh. Alanzi
Electrical Engineering
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EE002- Renewable Energy Sources (RES) for Managers and Heads of Departments

Contact

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Training course duration:

Two Days

Timing:

8 a.m. - 2 p.m. Daily

Fees:

250 KD

Course objectives:

- This introductory course intends to give managers and heads of departments (all majors) an overview of Renewable Energy Sources (RES). The course will focus on Photovoltaic (PV) systems, Wind energy, and Concentrated Solar Power.

Course outline:

Day one topics:

- -Day 1:
  - Global status of Renewable Energy (RE).
  - Renewable Energy Sources (RES) in GCC and specifically Kuwait
  - Photovoltaic Systems (On-grid and Off-grid)
  - Energy storage

Day two topics:

- Day 2:
  - Wind Energy and Wind Turbines (WT)
  - Concentrated Solar Power (Parabolic trough, Power tower)
  - Current technologies and future trends
  - Popular software used for RES

Instructor:

Dr. Sultan Sh. Alanzi
Dr. Rashad M. Kamel
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EE003- دورة في العقود والمناقصات

جامعة الكويت
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Contact

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Training course duration:

Four Days

Timing:

8 a.m. - 2 p.m. Daily

Fees:

250 KD

Course objectives:

تهدف هذه الدورة المتخصصة إلى تقديم شرح شامل عن العقود والمناقصات وخاصة للمهندسين والفنيين في الجهات الحكومية ممن يقومون بإعداد المناقصات ومن ثم طرحها ودراستها وتقديم التوصية بشأن الترسية، وكذلك الذين يقومون بالإشراف على العقود.

من يجب عليه حضور الدورة؟

1. المهندسون والفنيون من جميع التخصصات الذين يعدون وثائق المناقصات ودراسة العطاءات والتوصية بالترسية.
2. المهندسون والفنيون من جميع التخصصات الذين يشرفون على العقود ويعتمدون أوامر العمل وفواتير الصرف.

Course outline:

Day one topics:

اليوم الأول:
- تفاصيل الجهات الخارجية المرتبطة بالعقود والمناقصات مثل: وزارة المالية - الفتوى والتشريع - الجهاز المركزي للمناقصات العامة - ديوان المحاسبة - جهاز المراقبين الماليين.
- إعداد الميزانية ومخاطبة وزارة المالية
- أساليب التعاقد (المناقصة - الممارسة - الأمر المباشر ...).

Day two topics:

اليوم الثاني:
- أهم مواد قانون رقم (49) لسنة 2016 الخاص بالمناقصات العامة

Day three topics:

اليوم الثالث:

أهم مواد القوانين والتعاميم المرتبطة بالعقود والمناقصات مثل:

a. تعميم رقم (5) لسنة 2020 بشأن نظم الشراء للجهات العامة
c. قانون رقم (30) لسنة 1964 بالخاص بإنشاء ديوان المحاسبة
d. تعميم رقم (6) لسنة 2018 بشأن الضوابط والقواعد الواجب اتباعها عند العرض على الرقابة المسبقة

Day Four topics:

:اليوم الرابع
وثائق المناقصة (الشروط العامة والخاصة - الشروط والمواصفات الفنية - صيغة العقد ...).
مراحل سير المناقصة (الإعداد - الطرح - الدراسة - الترسية - توقيع العقد).
التعاميم المهمة المتعلقة بالأوامر التغييرية وتمديد العقود.
أمثلة عملية مع نبذة عن الأخطاء الشائعة في العقود والمناقصات.

Instructor:

د. سلطان شفاقه العنزي
Electrical Engineering
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College of Engineering and Petroleum

Kuwait University- College of Engineering & Petroleum - Electrical Engineering – OCT

EE004- Grid-Connected Solar PV Systems

جامعة الكويت
KUWAIT UNIVERSITY

Contact

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Training course duration:

Five Days

Timing:

8 a.m. - 2 p.m. Daily

Fees:

250 KD

Course objectives:

- This specialist course aims to provide engineers from all fields with an in-depth discussion of photovoltaic (PV) panels (solar energy panels). The course will focus on PV systems connected to the electrical grid (on-grid systems).

  The course covers all the important subjects, such as an introduction to the fundamentals of solar systems and electrical engineering, an explanation of how photovoltaic panels function, tools and equipment for photovoltaic systems connected to the grid (less than 1000 kW), and a brief overview of the popular PVsyst® program in the field of photovoltaic systems.

Course outline:

Day one topics:

- -Day 1: Fundamentals of Electrical Engineering and Solar Resources
  • Brief electrical engineering background
  • Introduction to solar resources
  • Solar position and sun path diagram
  • Solar radiation measurements
  • Tracking systems
  • Current and future status of PV (Kuwait and worldwide)

Day two topics:

- -Day 2: Photovoltaic (PV) Modules, Characteristics, and Performance
  • Fundamentals of PV modules
  • Types of PV module (Mono-Si, Poly-Si, and Thin-film)
  • Standard Test Conditions (STC)
  • Effect of the ambient conditions on PV modules
  • Bypass and Blocking diodes
  • Maximum power point tracking (MPPT)
  • Cleaning the PV module
  • Understanding PV module data sheets

Day three topics:

- -Day 3: Grid-connected components
  • PV arrays and strings

• Series and parallel connections of PV panels
• Essential Components (inverters, array junction box, mounting structures, earthing system, net meter … etc.)
• Derate factor, performance ratio, and estimating PV performance
• Calculating energy of a small PV system
• Practical design considerations
• PV system economics
• Power Purchase Agreements (PPA)

Day Four topics:

- -Day 4 Exercises of Designing Multiple PV Systems
  • Exercises of designing grid-connected PV systems in buildings (less than 1000 kW)
  • Rules and regulations of Ministry of Electricity, Water, and Renewable Energy (MEWRE)
  • Choosing suitable PV modules from the market
  • Choosing a suitable inverter
  • Estimating the required land space for installation
  • Deciding the suitable fixed tilt angle based on location
  • Designing the PV plant configurations (number of columns, number of rows, spacing between the rows to avoid shadow, … etc.)

Day Five topics:

- -Day 5 Using PVsyst® Software for designing and estimating the performance of the PV project
  • Meteorological data management
  • Components management
  • Executing the simulation
  • Creating variants
  • Full study of a sample project
  • Analyzing the results and report

Instructor:

Dr. Sultan Sh. Alanzi
Dr. Rashad M. Kamel
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Kuwait University- College of Engineering & Petroleum - Electrical Engineering – OCT

EE005-MS words Basics for Report writing

جامعة الكويت
KUWAIT UNIVERSITY

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Course objectives

Learn Basics toolbars in MS Word
Learn how to generate a Report template
Learn how to generate table of content based on Report sections
Learn how to use layout functionalities in MS word
Learn how to type symbols and Equations in MS word

Training course duration:

Two Days

Timing:

8 a.m. - 2 p.m. Daily

Course outline :

Day one topics:

MS word basic Toolbars

Day two topics:

How to write a Report using MS word

OFFICE OF CONSULTATION & TRAINING
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Kuwait University- College of Engineering & Petroleum - Electrical Engineering – OCT

EE005-MS words Basics for Report writing

Fees:

250 KD

Instructor:

Lina Al-Saleh
Electrical Engineering
College of Engineering & petroleum
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EE006-MS Excel Basics

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KUWAIT UNIVERSITY

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Course objectives

Learn how to use Excel Tables
Learn how to use Basic functions in Excel
Learn how to Plot different graphs using Excel

Training course duration:

One Days

Timing:

8 a.m. - 2 p.m. Daily

Course outline :

Day one topics:

MS Excel Basics

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College of Engineering and Petroleum

Kuwait University- College of Engineering & Petroleum - Electrical Engineering – OCT

EE006-MS Excel Basics

Fees:

250 KD

Instructor:

Lina Al-Saleh
Electrical Engineering
College of Engineering & petroleum
Kuwait University

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Kuwait University- College of Engineering & Petroleum – Electrical Engineering

EE007- Grid-Connected Solar PV Systems

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Course objectives

The purpose of this intensive training workshop is to provide engineers from different disciplines an in-depth analysis of the important subjects of solar photovoltaic (PV) panels and specifically grid-connected systems. This 30-hour program will cover the fundamentals of solar resources, brief electrical engineering background, photovoltaic (PV) modules, grid-connected components, designing a complete system (lower than 1000 kW), and rules and regulations of Ministry of Electricity, Water, and Renewable Energy (MEWRE). Further, the final day of the workshop will teach participants on using the popular PVsyst® software.

Training course duration:

Five Days

Timing:

8 a.m. - 2 p.m. Daily

Course outline :

Day One:

the fundamentals of solar resources, brief electrical engineering background

Day Two:

photovoltaic (PV) modules, grid-connected components

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EE007- Grid-Connected Solar PV Systems

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Day Three:

designing a complete system (lower than 1000 kW)

Day Four:

rules and regulations of Ministry of Electricity, Water, and Renewable Energy (MEWRE)

Day Five:

teach participants on using the popular PVsyst® software

Fees:

250 KD

Instructor:

Dr. Sultan S. Alanzi
Dr. Rashad M. Kamel
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Kuwait University- College of Engineering & Petroleum – Electrical Engineering

EE008- Renewable Energy Technologies

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Course objectives

This specialized course aims to provide engineers from all disciplines with a comprehensive explanation of the subject of renewable energy, especially photovoltaic systems, wind energy, and concentrated solar power. The topics include (1) introduction to the basics of electrical engineering and an introduction to the basics of solar and wind systems, (2) introduction to the types of renewable energy and the current and future status of photovoltaic energy (in Kuwait and the world), (3) how photovoltaic panels work, standard test conditions (STC) and datasheets, (4) devices and equipment for photovoltaic systems connected to the electrical grid (On-Grid Solar PV systems), (5) review about wind energy systems devices and equipment, (6) types and components of wind turbines and how to connect them to the network, (7) concentrated solar power systems devices and equipment, (8) types and components of concentrated solar energy systems and energy storage methods.

Training course duration:

Five Days

Timing:

8 a.m. - 2 p.m. Daily

Course outline :

Day One:

introduction to the basics of electrical engineering and an introduction to the basics of solar and wind systems. introduction to the types of renewable energy and the current and future status of photovoltaic energy (in Kuwait and the world)

Day Two:

how photovoltaic panels work, standard test conditions (STC) and datasheets. devices and equipment for photovoltaic systems connected to the electrical grid (On-Grid Solar PV systems)

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EE008- Renewable Energy Technologies

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Day Three:

review about wind energy systems devices and equipment. types and components of wind turbines and how to connect them to the network

Day Four:

concentrated solar power systems devices and equipment

Day Five:

types and components of concentrated solar energy systems and energy storage methods

Fees:

250 KD

Instructor:

Dr. Sultan S. Alanzi
Dr. Rashad M. Kamel
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Kuwait University- College of Engineering & Petroleum – Electrical Engineering

EE009- Planning and designing electrical networks for various facilities

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Course objectives

The course contains an introduction to the Kuwait electrical network with a discussion of electric power stations for power generation, main and secondary stations for transmission and distribution of electricity. Then, the general specifications for the basic equipment in the electricity distribution network in various facilities will be discussed focusing on: (1) The first group includes electricity supply and supply equipment. (2) The second group includes It includes cables and connectors and their various extension methods. (3) The third group includes the protection system and equipment for the electricity distribution network (fuses, electrical breakers). (4) The fourth group includes a group of loads and control equipment (light bulbs, motors, elevators, water pumps, fire pumps, air conditioning devices, switches of various types, and electrical sockets).

Training course duration:

Five Days

Timing:

8 a.m. - 2 p.m. Daily

Course outline :

Day One:

introduction to the Kuwait electrical network with a discussion of electric power stations for power generation, main and secondary stations for transmission and distribution of electricity the general specifications for the basic equipment in the electricity distribution network in various facilities

Day Two:

The first group includes electricity supply and supply equipment.

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EE009- Planning and designing electrical networks for various facilities

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Day Three:

The second group includes It includes cables and connectors and their various extension methods

Day Four:

The third group includes the protection system and equipment for the electricity distribution network (fuses, electrical breakers)

Day Five:

The fourth group includes a group of loads and control equipment (light bulbs, motors, elevators, water pumps, fire pumps, air conditioning devices, switches of various types, and electrical sockets).

Fees:

250 KD

Instructor:

Dr. Sultan S. Alanzi
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Kuwait University- College of Engineering & Petroleum – Electrical Enginerring

EE010-Street Lighting Systems

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KUWAIT UNIVERSITY

Contact

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Course objectives

(1) Overview of street lighting design, (2) Protective elements used in street lighting, (3) Identify the basic types of lamps & luminaires used, (4) Introduction to electrical cable networks, supply and control methods, (5) Measuring devices and Feeder pillars, (6) Maintenance, moving existing poles, and common problems, (7) Rules and regulations in Kuwait regarding street lighting design.

Training course duration:

Five Days

Timing:

8 a.m. - 2 p.m. Daily

Course outline :

Day One:

Overview of street lighting design. Protective elements used in street lighting

Day Two:

Identify the basic types of lamps & luminaires used. Introduction to electrical cable networks, supply and control methods

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EE010-Street Lighting Systems

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Day Three:

Measuring devices and Feeder pillars

Day Four:

Maintenance, moving existing poles, and common problems

Day Five:

Rules and regulations in Kuwait regarding street lighting design.

Fees:

250 KD

Instructor:

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Kuwait University- College of Engineering & Petroleum – Electrical Engineering

EE011- Design and Implementation of Wired and Wireless Networks

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KUWAIT UNIVERSITY

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Course objectives

This training course provides a thorough technical overview of modern telecommunications, data, wireless, and mobile networks. Participants will acquire an understanding of telecommunications, basic telephony, access and transport technologies, public and private voice, data convergence, IP networking, and fixed and mobile wireless technologies and standards. Also, participants will gain a deeper understanding of how current advances and technologies will fit into today's networks to build the next generation of telecommunication services.

Training course duration:

Five Days

Timing:

8 a.m. - 2 p.m. Daily

Course outline :

Day One:

Introduction and Overview.

Day Two:

Fiber-Optical Networks.

Day Three:

Communication Networks.

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College of Engineering and Petroleum

Kuwait University- College of Engineering & Petroleum – Electrical Engineering

EE011- Design and Implementation of Wired and Wireless Networks

Day Four:

Voice, Data, and Multimedia Networking.

Day Five:

Wireless Networks.

Fees:

250 KD

Instructor:

Prof. Mohammad W. Baidas
electrical engineering
College of engineering & petroleum
Kuwait university