

At KFUPM, various aspects of sustainability are addressed in academic courses. These courses are offered to our enrolled students. However, to reach a wider community, the university has established various social and environmental sustainability courses to be delivered to students, faculty, staff and the outside community. This report will highlight the previous year's training courses.

Social Sustainability Courses:

When it comes to social sustainability and developing the nonprofit sector in the community KFUPM's [Al-Fozan Academy](#) is a pioneer in the region. The academy developed many training programs to equip students, staff, and the community with the necessary social sustainability aspects and nonprofit management skills. The following are some of the programs offered last year by KFUPM's Al-Fozan Academy:

- 1- [Raed Program](#): Raed Program provides the youth of the Kingdom, male and female, with important concepts and knowledge in the field of non-profit work and community service and gives them an overview of the reality of volunteer work in the Kingdom of Saudi Arabia and what's to come. The program targets higher education students. The program is divided into three main levels (Basic Raed (3 hours), Advanced Raed (20 hours), and Professional Raed (3 hours)). In 2023, 21682 trainees were enrolled in Basic Raed and 266 were enrolled in Advanced Raed. This amounted to **92,048 training hours**.
- 2- [Rasheed Leaders Program](#): Equips leaders in the education sector with essential skills for organizing and institutionalizing school volunteer work according to a national standard approved by the concerned authorities to increase the efficiency and sustainability of volunteer efforts associated with the Kingdom's schools. In 2023 166 trainees were enrolled. This amounted to **498 training hours**.

Environmental Sustainability Courses:

The university holds frequent training sessions about environmental sustainability. These sessions are offered throughout the year and to the whole community. Faculty, staff, and students are eligible to enroll, in addition, the environmental courses are open to the public. Some examples of these courses are:

- 1- Energy Efficient Building Analysis Using Design Builder (24 hours)
- 2- Zero-Carbon Energy Transition: Technologies and Dynamics (24 hours)
- 3- Marine Baseline Ecological Assessments and Monitoring (24 hours)
- 4- Renewables for Decarbonization and Energy Sustainability (12 hours)
- 5- Solar and Wind Power: Technologies and Applications (40 hours)



جامعة الملك فهد للبترول والمعادن
King Fahd University of Petroleum & Minerals



برامج التعليم المستمر
Continuing Education Programs



SHORT COURSE

Energy Efficient Building Analysis Using Design Builder

13-15 February 2023



An excellent opportunity for the participants to learn about energy efficient building analysis using design builder.

In this training course, the main concepts to use Design Builder program are introduced. The course aims to provide theoretical and practical information on the different modules in the Program, which are used to create energy efficient buildings. Several topics will be offered such as three-dimensional (3D) drawing interface, thermal settings, heat transfer analysis in buildings, thermal insulation and its impact on cooling loads, day lighting and lighting sensors simulation, performance optimization, and comparing building environmental performance to some assessment systems such as LEED.



Topics to be covered:

- In this training course, the main concepts to use Design Builder program are introduced. The course aims to provide theoretical and practical information on the different modules in the Program, which are used to create energy efficient buildings.

Detailed training program are as follows:

- Day 1 (6 Hrs.) User Interface, creation and editing of 3D building geometry, visualization, weather files, model data entry (activity, construction, openings, lighting, HVAC, schedules, and profiles).
- Day 2 (6 Hrs.) Heating and cooling design and simulation, thermal insulation, shading analysis.
- Day 3 (6 Hrs.) Day Lighting simulation (Radiance and CBDM), Optimization, compliance with standards and systems.

Who should attend:

- Building Engineers
- Architects
- Civil Engineers
- City planners and any other disciplines

Faculty Members Participating:

The course is coordinated and conducted primarily by Dr. Omar S. Asfour, who is an expert in energy efficient in building analysis and design with the participation of the following seasoned faculty member from Architecture Engineering Department and research centers of KFUPM may also be engaged in the course.

Duration and Training Strategies:

3-days

PowerPoint slide presentations + hands-on training in the lab.

Courses presented at the KFUPM teaching premises



Dr. Omar S. Asfour
Associate Professor
Course Coordinator

Dr. Adel Abdou
Associate Professor

Total Course Hours	Course Date	Course Fee
SHORT COURSE 24 hours	13 - 15 February 2023	SAR 4,025 (VAT Included)

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Scan here to register

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SHORT COURSE

Renewables for Decarbonization and Energy Sustainability

20th-21st-22nd March 2023



Understanding the Prospects and Challenges of Clean Energy.

This training workshop is sponsored by the NIDL P RETI program, and will be provided free of cost for all the participants.

The unprecedented challenge of climate change and the subsequent global efforts for decarbonization of energy sector will require momentous efforts on the part of various stakeholders including academic and research community, industry, utility sector, policy and decision makers and civil society. This three-day training workshop aims to provide an introduction to various renewable energy sources and their potential for reducing greenhouse gas emissions and achieving a zero-carbon future. It will examine the issue of global warming and climate change and key dimensions of energy and environmental sustainability in modern societies. It will discuss the emerging trends of de-carbonization and zero-carbon energy transition before exploring renewable energy systems in terms of technology fundamentals and applications. Since Saudi Arabia is now ushering in a new era as the Kingdom is aiming to achieve net carbon neutrality by 2060, this workshop will be useful for anyone interested in learning about the role of renewable energy in addressing climate change and promoting sustainable development.

This training workshop will be conducted under the patronage of National Industrial Development and Logistics Program (NIDL P) Renewable Energy Technical Incubator (RETI) program at KFUPM. RETI initiative facilitates and expedites research, development, and innovation (RDI) projects in renewable energy, energy efficiency, and industry 4.0 (IR 4.0) applications in the energy sector.



National Industrial Development and Logistics Program

COURSE OUTLINE:

- Overview of energy systems
- Global warming and climate change
- Principles of energy & environmental sustainability
- Fundamentals of renewable energy resources and technologies
- Sustainable/zero-carbon energy transition: Principles and targets
- Renewable technologies for decarbonization
- Decarbonization solutions and trends: KSA and international perspectives

Course Duration/Location:

3-days

Upon successful completion of the 3 day training program (12 hours in total), certificates will be issued for all the registered participants.

Location:

Building 54/102



Total Course Hours/Timing	Course Date	Course Fee
SHORT COURSE 12 hours Daily 8:00am-12:30pm	20-21-22 (Monday-Tuesday-Wednesday) March - 2023	Absolutely Free of Charge First come first serve only

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مركز أبحاث الطاقة المتجددة ونظم القوى
Renewable Energy and Power Systems

Who Should Attend?

- The training workshop has been primarily designed for the KFUPM students. Other audience include energy professionals, utilities engineers, planners and regulators, building and environmental professionals, investors, entrepreneurs, academics and researchers.
- KFUPM graduate and undergraduate students are highly recommended to attend and benefit from this certified training workshop.
- Subject to limited availability of the seats; Other audience include energy professionals, utilities engineers, planners and regulators, building and environmental professionals, investors, entrepreneurs, academics and researchers.

Faculty Members Participating:

The workshop will be lead primarily by Dr. Muhammad Asif, from the Architectural Engineering Department and the IRC for Renewable Energy and Power Systems. He will be joined by other Faculty and guest speaker from industry.

Registration Notice:

Due to limited seats, registration confirmation will be notified through email.

For more details: azaheer@kfupm.edu.sa
Phone: +966 013 860 2753



Scan here to register

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SHORT COURSE

Marine Baseline Ecological Assessments and Monitoring

Assist you in environment protection and conservation in offshore projects

May, 9-11, 2023



"A unique opportunity to develop a sound understanding of the marine environment with emphasis on Saudi Arabian waters"

The marine environment and coastal areas are of strategic importance due to the large number of uses, resources and services they provide. Much of the activities carried out in these environments can cause environmental impacts on ecosystems and, at times, be a source of conflicts between users. This makes sustainable management of the marine environment one of the intentions of the Kingdom's Vision 2030, which is to ensure both environmental sustainability and the competitiveness of the economic activities that depend on this environment. The need to respond to these new challenges has led to the demand for specialized professionals who, with an important character of sustainability and technological applicability, are able to apply solutions in strategic areas that guarantee the sustainability of the coastal territories and their communities. These strategic areas include assessment, management, environmental monitoring, control and planning of coastal systems.

"Meet your peer from environmental department".

"Applied Research Center for Environment and Marine Studies"

Course Outline/ Topics

- Elements of physical oceanography
- Marine chemistry
- Concepts in biological oceanography
- Good practice for marine and coastal monitoring
- Survey techniques

Who Should Attend?

- (1) Engineers and scientists Researchers who are familiar with the marine flora and fauna of the region and who may be involved in future environmental monitoring projects; or
- (2) Environmental managers with responsibility for developing or implementing policy to protect natural marine resources.

Who will benefit?

- If you are managing or contributing in marine related activities, this course will provide you with a full understanding of the marine baseline ecological assessments and monitoring.
- If you are responsible for reviewing reports, this course will equip you with the knowledge to critically review the baseline and monitoring reports.
- If you are passionate in saving the environment and working in a wide range of sectors, this course will benefit you in understanding the marine environmental conditions.

Short Course Strategy

This short course will be conducted with formal lectures, lab visits, case studies, and interactive work examples. There will be ample opportunities for class discussion and sharing experiences.

Participating Faculty Members:

Expert and participating faculty Applied Research Centers for Environment and Marine Studies

Dr. Fahad Saleh Al-Ismael
Director, Applied Research Center for Environment and Marine Studies

Dr. Sivasankar Ramakrishnan
Research Scientist III

Dr. Thadickal Viswanathan Joydas
Research Scientist I

Dr. Manikandan Karuppasamy
Research Scientist II

Mr. Mohamed Asharaf Thatta Thazhath
Scientist I

Dr. Krishnakumar Periyadan Kadinjappalli
Consultant

Dr. Rommel Hilot Maneja
Research Scientist II

Dr. Mazen Khalid Hamed Nazal
Research Scientist II

Dr. Surya Prakash Tiwari
Research Scientist II

Engr. Rizwanullah Khan
Research Engineer III

Dr. Manokaran Seerangan Pappathy
Lab Specialist

Dr. Rajaneesh Kolchar Muddappa
Lab Specialist

Dr. Priya Brata Das
Lab Specialist

Mr. Reynaldo Lindo
Specialist II

Mr. Premlal Panickan
Specialist II

Total Course Hours	Course Date	Course Fee
SHORT COURSE 24 hours	9 - 11 May 2023	SAR 7,000 VAT Included

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إدارة الخدمات التعليمية
DEPARTMENT OF EDUCATIONAL SERVICES
برامج التعليم المستمر
Continuing Education Programs



SHORT COURSE Zero-Carbon Energy Transition: Technologies and Dynamics

3-5 September 2023



A unique opportunity to learn about the zero carbon energy transition

The global energy landscape of the 21st century is experiencing a vibrant and intriguing transition. The ongoing energy transition, which is much more dynamic and impactful compared to the earlier energy transitions in the recorded history, is mainly driven by the fight against climate change. In the wake of Paris Agreement, the United Nations is urging the world to become zero-carbon by the middle of the century, and nations across the world are moving in this direction. KSA has also pledged to become zero-carbon by 2060. The KSA's shift to zero-carbon requires monumental efforts by all stakeholders including by not limited to energy sector and utilities, industry, building sector, transport, academic, and research and development organizations. The short course, first of its type in the entire GCC region, aims to educate various stakeholders on the key drivers and dynamics of the sustainable and zero-carbon energy transition. It will cover technological as well as policy aspects of the transition.

COURSE OUTLINE

- Global Energy Landscape
- Energy Transition: Concept And Definitions
- Drivers of Sustainable and Zero-Carbon Energy Transition
- Global Warming & Climate Change
- Trends and Best Practices: KSA and Global Perspectives
- Dynamics of Energy Transition
- Decarbonization
- Decentralization
- Decreasing the Use of Energy/Energy Efficiency
- Digitalization
- Zero-Carbon Energy Transition: Role of Key Stakeholders
- Zero-Carbon Energy Transition: Challenges and Prospects

Course Duration

3-days

Who Should Attend?

This course has a broad spectrum of audience including but not limited to representatives from energy policy and decision making circles including concerned ministries and regulators, utilities and power sector, energy industry, economic and environmental institutions, trade and commerce, and academics and researchers.

Faculty Members Participating

The course will be conducted primarily by Prof. Muhammad Asif who is an authority in the field of Zero Carbon Energy Transition, thanks to his pioneering work which also includes two of his recent books: 'The 4Ds of Energy Transition: Decarbonization, Decentralization, Decreasing Use, and Digitalization' and 'Handbook of Energy Transitions'. Prof. Asif will be joined by other seasoned faculty from different departments and research centers of KFUPM.



For more details please write or call Course Coordinator Prof. Muhammad Asif
asifm@kfupm.edu.sa - Phone: +966 54 064 9188

Total Course Hours	Proposed Course Date	Proposed Fee
SHORT COURSE 24 hours	2023 3 to 5 September	SAR 6000 + VAT 15%

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SHORT COURSE

Solar and Wind Power: Technologies and Applications

28 May -1 June 2023



"A unique opportunity to develop a sound understanding of Solar and wind power technologies within a week"

The Kingdom of Saudi Arabia (KSA), parallel to global trends, is taking up solar and wind power technologies to play a vital role in the energy supply mix. In the wake of Vision 2030, there have been numerous initiatives in place as the Kingdom targets to have 58GW of solar and wind power projects. In coming decades, solar and wind power technologies would need to grow exponentially to help KSA meet the target of becoming net-zero by 2060. This course has been designed to help with capacity building in the field of solar energy and wind power. Through its diverse yet focused range of topics, it will provide valuable insight into technology fundamentals, design principles and application, economics and policy dimensions, and local and international trends and best practices. The course will be delivered by KFUPM faculty with extensive international experience in the field of solar and wind power.

Topics to be covered

- Overview of energy systems
- Fundamental of solar energy
- Classification of solar PV systems
- Solar PV system design
- Application of solar PV systems
- Solar thermal power generation
- Solar water heating
- Wind resource assessment
- Wind turbines – technologies and application
- Wind power projects – design consideration
- Operation & maintenance
- Grid integration
- Solar and wind power policies
- Economics and market trends
- Site visit
- Software modelling

Who should attend?

This course has a broad spectrum of audience including but not limiting to energy professionals, utilities engineers, planners and regulators, building and environmental professionals, investors, entrepreneurs, academics and researchers.

Instructors:

Expert and seasoned faculty from across the KFUPM departments and research centers i.e. Architectural Engineering, Electrical Engineering, Mechanical Engineering, and IRCs will teach the course. Guest speaker(s) from abroad/industry will also be invited.

Duration:

5-days

Faculty Members Participating

The course will be conducted by senior KFUPM Faculty with rich expertise and international experience in the field of solar energy and wind power.



For more details: asifm@kfupm.edu.sa
Phone: +966 54 064 9188

Total Course Hours	Proposed Course Date	Proposed Fee
SHORT COURSE 40 hours	2023 28 May to 1 June	SAR 8000 + VAT 15%

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