**اسم البرنامج : New and renewable Energy**

الهدف من البرنامج :

- Installation and design Solar System
- Design, functionality and use of fuel cells
- Understanding the design and operation of wind power plants

مدة تنفيذ البرنامج : 4 اسبوع

شروط الترشيح :

الخبرة : لا يوجد

المؤهل: - خريجى كليات و معاهد الهندسة و التكنولوجيا شعبة كهرباء

- خريجى المدارس الفنية الصناعية و المعاهد الفنية المتوسطة تخصص كهرباء و الكترونيات

اساليب تقييم المتدرب : امتحان نظرى وعملى

| المحتوى العلمى | إجمالى الساعات موزعة على الايام التدريبية | عدد الساعات موزعة على اساليب التدريب | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | محاضرة | ندوة | تطبيق عملى | دراسة حالة | مناقشة | تمثيل ادوار | مجموعات عمل | ورشة عمل |
| **1- Photovoltaic Training system**<br>- Structure of a PV cell -Open-circuit voltage<br>-Short-circuit current -U-I characteristic<br>-Maximum power point - Filling factor<br>- Power of a PV cell<br>- Series and Parallel connection of PV cells<br>- Direct operation - Storage operation<br>**2- Design and operation of Solar system**<br>- Introduction of solar radiation<br>- Introduction to the fundamentals of photovoltaic<br>- Inspection and evaluating installation sites for photovoltaic generators<br>- Planning and dimensioning stand-alone (off-grid) photovoltaic systems | 120 | 24 | | 96 | | | | | |

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| | | | | | | | | | - Planning and dimensioning grid-coupled photovoltaic systems<br>- Commissioning photovoltaic systems<br>- Energy-saving measures<br>- Solar Installation Training System<br>**3- Fuel-cell technology training system**<br>- Design and functionality of an electrolyzer<br>- Current, voltage, work and power - Efficiency<br>- Measurements of current, voltage and power on an electrolyzer and a fuel cell<br>- Calculation of overall efficiency<br>- Study of hydrogen and oxygen<br>**- Wind power plants with a doubly-fed induction generator (DFIG)**<br>- Understanding the design and operation of wind power plants<br>- Learning about various wind power plant concepts<br>Studying the design and operation of a doubly-fed asynchronous (induction) generator<br>**5- Smart Grid Training system**<br>**6- visit to industry ( 1-2 weak)** |