

**VALUE ADDED COURSES ON
Advance Energy Harvesting
(26-08-2017 TO 02-12-2017)**



COURSE CODE : VAC-P-002

The objective of the program

The main objective of this course is to create awareness among students about the new technologies arising day to day. It updates the required knowledge and improve the applicability. The Practical work related with data interpretations therefore energy skill plays a pivotal role in increasing their employability.

Basic Renewable Energy

The **objective** of this kind of **energy** is to replace the use of fossil fuels which are mainly made of hydro-carbons and hence result in pollution. ... We all need to shift to these **resources of energy** and try to avoid usage of fossil fuels. Reusable or **renewable energy** is greener and keeps our planet clean

COURSE COORDINATOR : DR NISHANT MITTAL

**(Assistant Professor
Department of Physics KVSCOS)**

E-mail Id:- nishantphysics@gmail.com

Phone no. 9456662599

Academic Section's copy

COURSE REGISTRATION FORM

(To be filled up in consultation with the Course Advisor at the time of admission)

Roll No. : **Name :**

Programme : **Year :**

*** Courses to be offered :**

Course Code	Course Title	Cr.	L	T	P	Course Type
	Basic Instrumentation Skills	VAC-P-001				
	Renewable Energy And Energy Harvesting	VAC-P-002				

Value Added Course II

Course Name: Advance Energy Harvesting

VAC-P-002

Objectives: To acquire basic knowledge about Fossil fuels and Alternate Sources of energy, Solar energy, Wind Energy harvesting, Ocean Energy and Geothermal Energy

Unit I: Fossil fuels and Alternate Sources of energy: Fossil fuels and nuclear energy, their limitation, need of renewable energy, non-conventional energy sources. An overview of developments in Offshore Wind Energy, Tidal Energy, Wave energy systems, Ocean Thermal Energy Conversion, solar energy, biomass, biochemical conversion, biogas generation, geothermal energy tidal energy, Hydroelectricity.

Unit II: Solar energy: Solar energy, its importance, storage of solar energy, solar pond, applications of solar pond and solar energy, solar water heater, flat plate collector, solar distillation, solar cooker, solar green houses, solar cell, absorption air conditioning. Need and characteristics of photovoltaic (PV) systems, PV models and equivalent circuits, and sun tracking systems.

Unit III: Wind Energy harvesting: Fundamentals of Wind energy, Wind Turbines and different electrical machines in wind turbines, Power electronic interfaces, and grid interconnection topologies.

Ocean Energy: Ocean Energy Potential against Wind and Solar, Wave Characteristics and Statistics, Wave Energy Devices. Tide characteristics and Statistics, Tide Energy Technologies, Ocean Thermal Energy, Osmotic Power, Ocean Bio-mass.

Unit IV: Geothermal Energy: Geothermal Resources, Geothermal Technologies.

Hydro Energy: Hydropower resources, hydropower technologies, environmental impact of hydro power sources.

Piezoelectric Energy harvesting: Introduction, Physics and characteristics of piezoelectric effect, materials and mathematical description of piezoelectricity, Piezoelectric parameters and modeling piezoelectric generators, Piezoelectric energy harvesting applications, Human power

Electromagnetic Energy Harvesting: Linear generators, physics mathematical models, recent applications Carbon captured technologies, cell, batteries, power consumption, Environmental issues and Renewable sources of energy, sustainability.


Registrar
Swami Vivekanand
Subharti University
MEERUT

Vikram Tyagi



Department of Physics

KERAL VERMA SUBHARTI COLLEGE OF SCIENCE
SWAMI VIVEKANAND SUBHARTI UNIVERSITY

Subhartipuram, NH-58 Delhi-Haridwar-Meerut Bypass Road, Meerut -250005



Report on Value added course Advance Energy Harvesting

Value added course on Advance Energy Harvesting was organized from 26-08-17 to 02-12-2017 in department of physics, Keral Verma Subharti College Of Science, Swami Vivekanand Subharti University, Meerut. The speaker was Dr.Nishant Mittal. A total number of forty two participate were present. The encompass topic Advance Energy Harvesting The purpose of the course was to give the holistic knowledge of renewable energy to the student.

Registrar
Swami Vivekanand
Subharti University
MEERUT

(Vikas Targul)
(HOD)



Students attending Value added course

KERAL VERMA SUBHARTI COLLEGE OF SCIENCE, SWAMI VIVEKANAND SUBHARTI UNIVERSITY

DEPARTMENT OF PHYSICS

Attended sheet(2017-18)

Course: Advance Energy Harvesting

S.N	NAME	26/10	30/10	1/11	4/11	7/11	14/11	21/11	30/11	2/12	4/12	11/12	21/12	11/1	19/1	2/2
1	LOVEY	P	P	P	P	P	P	P	P	P	A	P	A	P	P	P
2	SUJAT ALI	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
3	DOLLY TYAGI	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
4	SONIYA	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
5	SANGEETA	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
6	PRINCE MALIK	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
7	POOJA	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
8	Harsh VARDHAN	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
9	MUDRIKA	A	P	A	P	P	P	P	P	P	P	P	P	P	P	P
10	RITIKA TYAGI	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
11	AKSHIT CHAUHAN	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
12	AMIT KUMAR	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P
13	AMIT KUMAR MORAL	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
14	AMRITA KARDAM	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
15	ANKIT CHAUHAN	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
16	ANKIT CHHOKER	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
17	MOHD SHADAB	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
18	MUDDASIR	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
19	MUKUL TYAGI	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
20	NAJISH PRAVEEN	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
21	NEHA SAROHA	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
22	NIDHI PAL	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
23	NISHANT ANAND	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
24	NISHANT SHARMA	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P
25	PARIDHI GOEL	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
26	VIKAS RATHOR	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
27	VIKRANT KUMAR	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
28	VIVEK KUMAR	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
29	ASHISH RANA	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
30	HIMANSHU	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
31	SANDEEP KUMAR	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
32	SANGEETA GAUTAM	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
33	SHUBHAM SAINI	P	A	P	P	P	P	P	P	P	P	P	P	P	P	P
34	DEVIKA	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
35	SAKSHI	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
36	DEEPAK CHODHARY	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
37	MD ANAS	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
38	AMIT PAL	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
39	SHEETAL	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
40	AAYUSHI	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
41	SWATI	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
42	SACHIN RANA	A	P	P	P	P	P	P	P	P	P	P	P	P	P	P


 Registrar
 Swami Vivekanand
 Subharti University
 MEERUT