



AJEENKYA THE INNOVATION
D Y PATIL UNIVERSITY UNIVERSITY



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THE INNOVATION UNIVERSITY

School of
Engineering

Value added course in

ENERGY CONSERVATION AND WASTE MANAGEMENT

27 March, 2019

Proff. Sneha Sarode
SPEAKER

MR. UTTAM KUMAR
CO-CORDINATOR

DR.BISWAJEET CHAMPATY
HEAD OF SCHOOL

CONTACT DETAILS

Mr. Uttam Kumar
8946848620



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School of Engineering

Name of Certificate Course: Energy Conservation and Waste Management

Certificate Course for B Tech students

Course Duration 32Hrs

From: 27th March 2019 to 22nd April 2019

Course Objectives:

- To understand about the different sources of the energy.
- Learn how utilized the energy sources for different applications.
- Understand about how to utilize and optimization waste energy from different energy sources.
- Analyzing the energy audit report for different energy conservation instances.
- Understanding the energy conservation act

Course Outcomes:

- Understand the basic knowledge of different terms & principles of energy conservation, audit and management.
- To Evaluate the energy saving & conservation in different mechanical utilities.
- To understand efficient heat & electricity utilization, saving and recovery in different thermal and electrical system.
- To prepare energy audit report for different energy conservation instances.
- To understand the basics of energy conservation act and ECBC Code

Course Coordinator: **Mr. Uttam Kumar**

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**School of Engineering
Ajeenkya DY Patil University
Charholi Bk., Via-Lohegaon,
Pune-412105**

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School of Engineering

Date-20/02/2018

Circular

Dear all SOE students

For the Academic year 2018-2019, the School of Engineering will offer you an innovative value-added course to help you excel in your career and equip you with new-age creative and technical skills essential to face the new world.

Title of Certificate Course: Energy Conservation and Waste

Details of Trainer: Prof. Sneha Sarode

Name of Coordinator: Mr. Uttam Kumar

Duration of Course: 31 Hrs.

Schedule: 27th March 2019 to 22nd April 2019

Timing: 10:00 AM to 12:30 PM

Venue: School of Engineering

Evaluation Method: 75% Attendance & 60% marks score in the MCQ test are mandatory to get certified in this training program.



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Syllabus

Unit I: Introduction (6Hr.)

Classification of Energy, Indian energy scenario, Sectorial energy consumption (domestic, industrial and other sectors), energy needs of growing economy, energy intensity, long term energy scenario, energy pricing, energy security, energy conservation and its importance, energy strategy for the future

Unit II: Energy Monitoring and Targeting (6Hr.)

Investment-need, appraisal and criteria, financial analysis techniques simple payback period, return on investment, net present value, internal rate of return, cash flows, risk and sensitivity analysis; financing options, energy performance contracts and role of Energy Service Companies (ESCOs). Defining monitoring & targeting, elements of monitoring & targeting, data and information-analysis, techniques – energy consumption, production, cumulative sum of differences (CUSUM). Energy Management Information Systems (EMIS)

Unit III: Energy Management & Audit (8Hr.)

Definition, energy audit, need, types of energy audit. Energy management (audit) approach- understanding energy costs, Bench marking, energy performance, matching energy use to requirement, maximizing system efficiencies, optimizing the input energy requirements, fuel and energy substitution, energy audit instruments and metering

Unit IV: Energy and environment, air pollution, climate change (6 Hr.)

United Nations Framework Convention on Climate Change (UNFCCC), sustainable development, Kyoto Protocol, Conference of Parties (COP), Clean Development Mechanism (CDM), CDM Procedures case of CDM – Bachat Lamp Yojna and industry; Prototype Carbon Fund (PCF).

Unit V: Energy Conservation Act (4 Hr.)





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Energy conservation Act 2001 and its features, notifications under the Act, Schemes of Bureau of Energy Efficiency (BEE) including Designated consumers, State Designated Agencies, Electricity Act 2003, Integrated energy policy, National action plan on climate change, ECBC code for Building Construction



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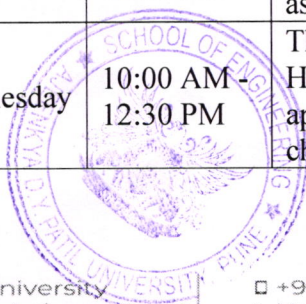


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Certificate Course in Energy Conservation and Waste Management

Teaching Plan

Date	Day	Time	Topics	Duration
Feb 5, 2019	Tuesday	10:00 AM - 12:30 PM	Introduction to Industry 4.0: Core ideas and origin	2.5 hours
Feb 6, 2019	Wednesday	10:00 AM - 12:30 PM	Industry 4.0 production systems and India's preparation	2.5 hours
Feb 7, 2019	Thursday	10:00 AM - 12:30 PM	Current state and technologies of Industry 4.0	2.5 hours
Feb 8, 2019	Friday	10:00 AM - 12:30 PM	Conceptual Framework: Main concepts, components, and state-of-the-art technologies	2.5 hours
Feb 11, 2019	Monday	10:00 AM - 12:30 PM	Introduction to Technology Roadmap and Strategy Phase	2.5 hours
Feb 12, 2019	Tuesday	10:00 AM - 12:30 PM	New product and process development in Industry 4.0	2.5 hours
Feb 13, 2019	Wednesday	10:00 AM - 12:30 PM	Automation, data exchanges, cloud computing, and cyber-physical systems	2.5 hours
Feb 14, 2019	Thursday	10:00 AM - 12:30 PM	Mobile robots, Big Data, deep machine learning, IoT, distributed systems, and agile methodology	2.5 hours
Feb 15, 2019	Friday	10:00 AM - 12:30 PM	Industry 4.0 in Robotics: Advanced sensor technologies and Internet of Robotic Things	2.5 hours
Feb 18, 2019	Monday	10:00 AM - 12:30 PM	Cloud robotics and cognitive architecture for cyber-physical robotics	2.5 hours
Feb 19, 2019	Tuesday	10:00 AM - 12:30 PM	Industrial robotic applications: Manufacturing, maintenance, and assembly	2.5 hours
Feb 20, 2019	Wednesday	10:00 AM - 12:30 PM	The role of AR in Industry 4.0: Hardware and software, industrial applications, and overcoming challenges	2.5 hours



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2.5 hours

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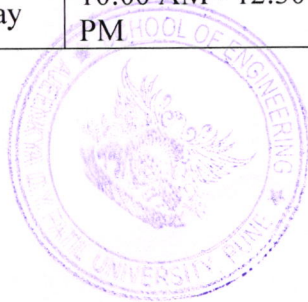


School of Engineering

Certificate Course in Energy Conservation and Waste Management

Timetable

Date	Day	Time	Topics	Duration
Mar 27, 2019	Wednesday	10:00 AM - 12:30 PM	Introduction to Energy Conservation: Core concepts, Indian energy scenario, sectorial energy consumption	2.5 hours
Mar 28, 2019	Thursday	10:00 AM - 12:30 PM	Energy needs of a growing economy, energy intensity, long-term energy scenario	2.5 hours
Mar 29, 2019	Friday	10:00 AM - 12:30 PM	Energy pricing, energy security, energy conservation importance, energy strategy for the future	2.5 hours
Apr 1, 2019	Monday	10:00 AM - 12:30 PM	Energy Monitoring and Targeting: Investment needs, appraisal criteria, financial analysis techniques	2.5 hours
Apr 2, 2019	Tuesday	10:00 AM - 12:30 PM	Simple payback period, ROI, NPV, IRR, cash flows, risk and sensitivity analysis	2.5 hours
Apr 3, 2019	Wednesday	10:00 AM - 12:30 PM	Financing options, energy performance contracts, role of Energy Service Companies (ESCOs)	2.5 hours
Apr 4, 2019	Thursday	10:00 AM - 12:30 PM	Defining Monitoring & Targeting, data analysis techniques: energy consumption, CUSUM	2.5 hours
Apr 5, 2019	Friday	10:00 AM - 12:30 PM	Energy Management Information Systems (EMIS)	2.5 hours
Apr 8, 2019	Monday	10:00 AM - 12:30 PM	Energy Auditing: Definitions, types, understanding energy costs, benchmarking	2.5 hours
Apr 9, 2019	Tuesday	10:00 AM - 12:30 PM	Energy performance, matching energy use to requirements, maximizing system efficiencies	2.5 hours
Apr 10, 2019	Wednesday	10:00 AM - 12:30 PM	Energy audit instruments, fuel and energy substitution, auditing processes	2.5 hours
Apr 11, 2019	Thursday	10:00 AM - 12:30 PM	Case Studies and Review Session	2.5 hours



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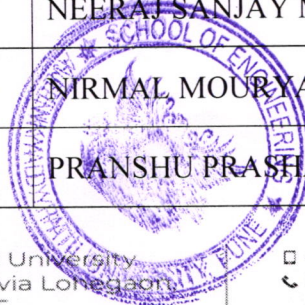


School of Engineering

Certificate Course Energy Conservation and Waste Management

List of Students

S.N.	Name of Student	URN
1	AKSHAY BHARAT BANKAR	2016-B-28121998
2	ANUSHKA KUMAR	2016-B-02031998
3	AQIB KAPOOR	2016-B-28121997
4	AQUIB ALI	2016-B-18071997
5	AVADHOOT BHASKAR SHEJWALKAR	2016-B-13121997
6	BHAVIL NAGAR	2016-B-17011999
7	BHUSHAN BELANEKAR	2016-b-26121998
8	DHANANJAY KRISHNA BIRMOLE	2016-B-22111998
9	ESHWAR DEEPAK DHAT	2016-B-11111997
10	HRISHIKESH PRAVIN SHINDE	2016-B-22051998
11	KSHITIJ AVINASH RAJE	2016-B-23041999
12	KSHITIJ MADHUKAR JAGTAP	2016-B-13121996
13	KUNJ MANISH VACHHANI	2016-B-08061997
14	NEERAJ SANJAY MOGAL	2016-B-28061997
15	NIRMAL MOURYA	2016-B-15041998
16	PRANSHU PRASHANT TOPLE	2016-B-14101998



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17	PRASANA PRAFFUL SANCHETI	2016-B-29071998
18	ROHIT SRINIVAS REDDY	2016-B-27081998
19	SANKALP SUNIL SAHU	2016-B-27021998
20	SHASHWAT SHRIVASTAVA	2016-B-25111997
21	SHUBHAM DIPANKAR NANDI	2016-B-12071998
22	SNEHA AGARWAL	2016-B-19051998
23	VIRAJ VASANT WADIKAR	2016-B-19011998



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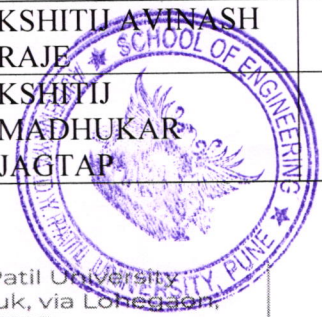


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Certificate Course Energy conservation and waste management

Students Attendance

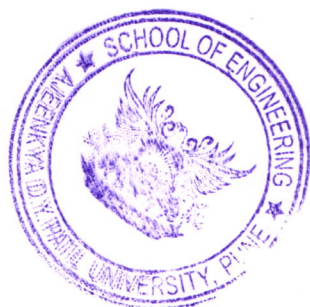
Academic Year		2018-19	Energy conservation and waste management											
School Name		School of Engineering												
		Lecture No	1	2	3	4	5	6	7	8	9	10	11	12
S.N.	URN	Name of Student	27-Mar	29-Mar	01-Apr	03-Apr	05-Apr	08-Apr	10-Apr	12-Apr	15-Apr	17-Apr	19-Apr	22-Apr
1	2016-B-28121998	AKSHAY BHARAT BANKAR	1	1	1	1	1	1	1	1	1	1	1	1
2	2016-B-02031998	ANUSHKA KUMAR	A	1	1	1	1	1	1	1	1	1	1	1
3	2016-B-28121997	AQIB KAPOOR	1	A	1	1	1	1	1	1	1	1	1	1
4	2016-B-18071997	AQUIB ALI	1	1	A	1	1	1	1	1	1	A	1	1
5	2016-B-13121997	AVADHOOT BHASKAR SHEJWALKAR	1	1	1	1	1	1	1	1	1	1	1	1
6	2016-B-17011999	BHAVIL NAGAR	1	1	1	1	1	1	A	1	1	1	1	1
7	2016-b-26121998	BHUSHAN BELANEKAR	1	1	1	1	1	1	A	1	1	1	1	1
8	2016-B-22111998	DHANANJAY KRISHNA BIRMOLE	1	1	A	1	1	1	1	1	1	1	1	1
9	2016-B-11111997	ESHWAR DEEPAK DHAT	1	1	1	1	1	1	1	1	1	1	1	1
10	2016-B-22051998	HRISHIKESH PRAVIN SHINDE	1	A	1	1	1	1	1	1	1	1	1	1
11	2016-B-23041999	KSHITIJ AVINASH RAJE	1	1	A	1	1	A	1	1	1	1	1	1
12	2016-B-13121996	KSHITIJ MADHUKAR JAGTAP	1	1	1	1	A	1	1	1	1	1	1	1



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13	2016-B-08061997	KUNJ MANISH VACHHANI	1	1	1	1	1	1	1	1	1	1	1	1
14	2016-B-28061997	NEERAJ SANJAY MOGAL	1	1	1	1	1	1	A	1	1	1	1	1
15	2016-B-15041998	NIRMAL MOURYA	1	1	A	1	1	1	1	1	1	1	1	1
16	2016-B-14101998	PRANSHU PRASHANT TOPLE	1	1	1	1	1	1	1	1	1	1	1	1
17	2016-B-29071998	PRASANA PRAFFUL SANCHETI	1	1	1	1	1	1	1	1	1	1	1	1
18	2016-B-27081998	ROHIT SRINIVAS REDDY	1	1	1	1	1	1	1	1	1	1	1	1
19	2016-B-27021998	SANKALP SUNIL SAHU	1	1	1	1	1	1	1	1	1	1	1	1
20	2016-B-25111997	SHASHWAT SHRIVASTAVA	1	1	1	1	1	1	1	1	1	1	1	A
21	2016-B-12071998	SHUBHAM DIPANKAR NANDI	A	1	1	1	1	1	1	1	1	1	1	1
22	2016-B-19051998	SNEHA AGARWAL	1	1	1	1	1	1	1	1	1	1	1	1
23	2016-B-19011998	VIRAJ VASANT WADIKAR	1	1	1	1	1	1	1	1	1	1	1	1



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Certificate Course Energy conservation and waste management

Evaluation Plan

- 75 % attendance is mandatory for this training program.
- Student should get a minimum 60% score on the Multiple-Choice Questions Test.



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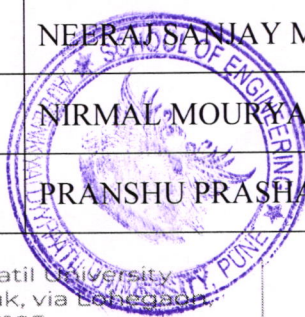


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Certificate Course Energy conservation and waste management

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13	KUNJ MANISH VACHHANI	2016-B-08061997
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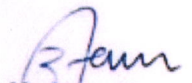


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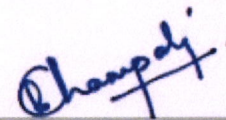
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CERTIFICATE OF PARTICIPATION & COMPLETION

This is to certify that, Mr./Ms. Shaitan Singh Parmar of
School of Engineering, Ajeenkya D Y Patil University, Pune
has enrolled and successfully completed the Value Added Course entitled Energy Conservation and Waste Management organized by the School of
Engineering, Ajeenkya DY Patil University, Pune held during 27th March 2019 to 22nd April 2019.


Mr. Utam Kumar

Co-ordinator



Dr. Biswajeet Champaty
Head, SOE-ADYPU



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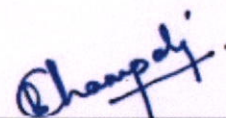
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CERTIFICATE OF PARTICIPATION & COMPLETION

This is to certify that, Mr./Ms. Pramil Singh of
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Mr. Utam Kumar

Co-ordinator



Dr. Biswajeet Champaty
Head, SOE-ADYPU