Bharath
INSTITUTE OF HIGHER EDUCATION AND RESEARCH
(Declared as Deemed - to - be - University under section 3 of UGC Act 1956)

Requisition Letter

Date: 21 .11.2019

From

The HOD,

Department of Mechanical Engineering,

Bharath Institute of Higher Education and Research,

Selaiyur, Chennai.

To

The Dean Engineering,

Bharath Institute of Higher Education and Research,

Selaiyur, Chennai.

Respected Sir,

Sub: Requisition for conducting Value added course – reg.

School of Mechanical Sciences has planned to conduct Value added course entitled" Energy conservation and waste heat Recovery" from 28/11/2019 to 5.12.2019. In this regard we kindly request you to grant permission for the same.

Thanking You

HOD/MECH

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Date: 21.11.2019

Department of Mechanical Engineering

Circular

The of Department of Mechanical Engineering, BIHER glad to conduct on five days value added program on " **Energy Conversion and Waste Recovery** " from 28.11.2019 to 5.12.2019 for 30 hours. Those who are interested to participate do register your name to the program coordinator.

All reregistered students must attend all the classes without fail. The students who are completed the course successfully with good score will get the course completion certificate from the institute/Department.

Resource person: Dr.R.Ravi, Dr.R.Hariharan

Maximum no. of registration Allowed – 60.

Program coordinator

Mr.V.Jose Ananth Vino

Department of Mechanical Engineering

Energy Conversion and Waste Recovery

Objective

Estimates from analyses and audits from various industries suggest that 20 to 50% of industrial energy input is lost as waste heat.

Module 1 **(6Hours)**

Introduction to Waste Heat, Importance of Waste Heat Recovery, Review of Thermodynamics, Introduction to First and Second Laws, Review of Thermodynamics, Introduction to First and Second Laws, Review of Thermodynamics – Entropy, Entropy Generation First and Second Law efficiency

Module 2 **(6Hours)**

Power Plant Cycles - Energy Cascading, Rankine Cycle, modification of Rankine cycle, examples,

Gas Turbine Cycle, Combined Cycle, Combined Gas Turbine-Steam, Turbine Power Plant, Heat Recovery Steam Generators

Module 3 **(6Hours)**

Thermodynamic cycles for low temperature application, Cogenerations ,Introduction to Heat Exchangers, Analysis – LMTD and ε-NTU method ,Analysis of Heat Exchanger – continued, Problem solving, Special Heat Exchangers for Waste Heat Recovery, Synthesis of Heat Exchanger

Module 4 **(6Hours)**

Heat pipes & Vapor Chambers, Direct conversion technologies – Thermoelectric Generators. Direct conversion technologies – Thermoelectric Generators (contd.), Thermoionic conversion, Thermo-PV, MHD

Module 5 **(6 Hours)**

Heat Pump; Heat Recovery from Incinerators, Energy Storage – Introduction, Energy Storage Techniques – Pumped hydro, Compressed Air, Flywheel, Superconducting Magnetic storage

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Department of Mechanical Engineering

One Week Value added Program on Energy Conversion and Waste Recovery from 28.11.2019 To 5.12.2019

Date	Morning Session (9 AM – 12 PM)	Afternoon Session (1:30 PM – 4:30 PM)
28– 11– 2019 (Thursday)	Program Inauguration Dr.R.Ravi Introduction to Waste Heat, Importance of Waste Heat Recovery, Review of Thermodynamics, Introduction to First and Second Laws, Review of Thermodynamics	Mr.Josh Ananth Vino Introduction to First and Second Laws, Review of Thermodynamics – Entropy, Entropy Generation First and Second Law efficiency
29– 11- 2019 (Friday)	Dr.R.Ravi Power Plant Cycles - Energy Cascading, Rankine Cycle,modification of Rankine cycle, examples,	Dr.R.Hariharan Gas Turbine Cycle, Combined Cycle, Combined Gas Turbine-Steam, Turbine Power Plant, Heat Recovery Steam Generators
3–12– 2019 (Wednesday)	Dr.R.Ravi Thermodynamic cycles for low temperature application, Cogenerations ,Introduction to Heat Exchangers, Analysis – LMTD and ε-NTU method	Dr.R.Hariharan Analysis of Heat Exchanger – continued, Problem solving, Special Heat Exchangers for Waste Heat Recovery, Synthesis of Heat Exchanger
4–12-2019 (Thursday)	Dr.R.Ravi Heat pipes & Vapor Chambers, Direct conversion technologies, Thermoelectric Generators. Direct conversion technologies	Mr.Josh Ananth Vino Thermoelectric Generators (contd.), Thermoionic conversion, Thermo-PV, MHD
5– 12– 2019 (Friday)	Dr.R.Ravi Heat Pump; Heat Recovery from Incinerators, Energy Storage – Introduction, Energy Storage Techniques	Dr.R.Ravi Pumped hydro, Compressed Air, Flywheel, Superconducting Magnetic storage

Program Coordinator:
Mr.V.Jose Ananth Vino
Assistant Professor,
Jose ananthvino.mech@bharathuniv.ac.in

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Attendance sheet

S.No	Name	Register No.	Department
1	YOGACHENDOORAN	U17ME056	Mechanical Engineering
2	ABUBAKKAR SIDHEEK	U17ME057	Mechanical Engineering
3	BALAJI	U17ME058	Mechanical Engineering
4	ABBAS	U17ME059	Mechanical Engineering
5	GOWTHAM	U17ME060	Mechanical Engineering
6	KAUSIK SHANKAR	U17ME061	Mechanical Engineering
7	HARISH	U17ME062	Mechanical Engineering
8	SAILEN SAIKIA	U17ME063	Mechanical Engineering
9	PATAN FAYAZ KHAN	U17ME064	Mechanical Engineering
10	MANIKANDAN	U17ME065	Mechanical Engineering
11	KUNDRAPU	U17ME066	Mechanical Engineering
12	MUKKAMALLA NANDISHWARA REDDY	U17ME067	Mechanical Engineering
13	PALAPARTHI	U17ME068	Mechanical Engineering
14	RANJITHKUMAR	U17ME069	Mechanical Engineering
15	REYAS DHEEN	U17ME070	Mechanical Engineering
16	CHAKKA VENKATA CHENNA PAVAN	U17ME071	Mechanical Engineering
17	JAYA SURYA	U17ME072	Mechanical Engineering
18	SURIYA	U17ME073	Mechanical Engineering
19	SHAKEEL MOHIDEEN	U17ME074	Mechanical Engineering
20	BALAGA	U17ME075	Mechanical Engineering
21	GUDUGUNTLA SRAVAN KUMAR	U17ME076	Mechanical Engineering
22	JADDU SIVA RAMA KRISHNA	U17ME077	Mechanical Engineering
23	ANGADALA PAVAN KALYAN	U17ME078	Mechanical Engineering
24	KARRI GOWTHAM MALLA REDDY	U17ME079	Mechanical Engineering
25	SARAKANA UDAY KUMAR	U17ME080	Mechanical Engineering
26	SERU SAI RAM REDDY	U17ME081	Mechanical Engineering
27	POLA	U17ME082	Mechanical Engineering
28	YALLA	U17ME083	Mechanical Engineering
29	BURUGUPALLI	U17ME084	Mechanical Engineering
30	VEGIREDDI	U17ME085	Mechanical Engineering
31	DAMALAPATI KIRAN KUMAR	U17ME086	Mechanical Engineering
32	RITHISHKRISHNA D V	U17AM020	Automobile Engineering
33	SHAIK REHAMAN	U17AM021	Automobile Engineering
34	MARTHA CHAITANYA	U17AM022	Automobile Engineering

35	BIRADAR GANESH	U17AM023	Automobile Engineering
36	YOGACHENDOORAN	U17AM025	Mechanical Engineering
37	DHARANIDHARAN J	U17MT038	Mechatronics Engineering
38	SAGADEVAN G	U17MT039	Mechatronics Engineering
39	NIZAMUDEEN A	U17MT040	Mechatronics Engineering
40	METHIL KRISHNAN A H	U17MT042	Mechatronics Engineering

Bharath Institute of Higher Education and Reseaarch

CERTIFICATE OF PARTICIPATION

This certificate goes to

REYAS DHEEN

for successfully completing the Value Added Course
on "Energy Conservation and Waste Heat Recovery"
conducted by the School of Mechanical Engineering
during the month of November 2019.

VAC CO-ORDINATOR

HOD MECHANICAL

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FEEDBACK FORM

❖ As part of a continuing improvement process, our college appreciates suggestions and inputs regarding the institution. We request you to sincerely answer these questions under assurance of complete confidentiality. Your interest in making our institution better is greatly appreciated.

Name of Department : MECHANICAL

Date : 5/12/2019

Event / Speaker Name : Value added Program "Energy Conversion and Waste Recovery" Dr. R. RAVI, Mr. Josh Ananthvinu Dr. R. Hariharan

- Please rate the session on the scale indicated. Your comments are most appreciated.

S.No	Parameters	Below Average	Average	Good	Excellent	Outstanding
1.	**The Topic**					✓
	The choice of topic was relevant to me				.	✓
2.	**The Lecturer / Speaker**					✓
	Self-confidence				.	✓
	Communication skills				✓	
	Doubts/ queries were answered satisfactorily					✓
3.	**The Content (Topic)**					✓
	Refers to latest developments in the field				✓	
	Career oriented					✓
	Innovative learning, if any					✓

- Overall, how would you rate this Guest Lecture / Workshop / Seminar / Event/Value added course?

1. Below Average	2. Average	3. Good	4. Excellent	5. Outstanding
				✓

- Comments (If any):

Very Informative, How we use the Energy efficiently.


2019.07.29 10:13