SREE CHAITANYA COLLEGE OF ENGINEERING, KARIMNAGAR

DEPARTMENT OF MECHANICAL ENGINEERING

NOTICE

All faculty of department of mechanical engineering is here by informed that the department is organizing one week short term course ict based on green manufacturing from 11/02/2019. Hence all should attend this short term course from 11,12,13,14 and 15. (5 days)

On

11.02.2019

12.02.2019

13.02.2019

14.02.2019

15.02.2019 (5 Days)

Resource Persons: **:** Dr.Sunil D Jassal Assoc.Prof, ME NITTTR, Chandigarh
COL. Brijasablok.
Kuldip Singh Sangwan

Dr. Jatindev Madan Prof HodMech CCET (Degree Wing)

Allen Hagestrty Asst Prof

Sunny Jafar Asst Prof

SCHEDULE:

The short term course will organized in CAD LAB and have 2 sessions for each day.

10:00 am – 1:30 pm SESSION- I (Theory Session)
1:30 pm – 2:00 pm LUNCH
2:00 pm – 4:30 pm SESSION – II (Theory Session)

PRINCIPAL **HOD MECH** **CO-ORDINATOR** **DEPARTMENT CO-ORDINATOR**

SREE CHAITANYA COLLEGE OF ENGINEERING, KARIMNAGAR

DEPARTMENT OF MECHANICAL ENGINEERING

Report: 5 DAYS SHORT TERM COURSE ON GREEN MANUFACTURING

Event Objective: The course aims to introduce and explain the design concepts, methods, tools and some technology, and operations of sustainable lean and operations of sustainable lean and green manufacturing systems and processes. It also covers the assessment, audit, design, and maintenance of sustainable green manufacturing products, processes, service systems and leads towards the entire greening process of multi life cycle manufacturing operations, factories and their supply chains.

Date of Event: 11.02.2019 – 15.02.2019

Officials Attended for the Event: Dr.B.Madhusudhan Reddy (Director Academics),Dr.G.Venkateshwarlu(Principal of SCCE)Dr.Yaspal Singh (Professor-CSE),Dr.Ch.Shashikanth(HOD-Mech) .

Resource Persons: 1.Dr.Sunil D Jassal Assoc.Prof, ME NITTTR, Chandigarh
2. COL. Brijasablok.
3. Kuldip Singh Sangwan,Prof BITS Pilani
4. Dr. Jatindev Madan Prof HodMech CCET (Degree Wing)
5. Allen Hagestrty Asst Prof
6. Sunny Jafar Asst Prof ME IIT Roorkee

Day:-01 – Resource person:-Dr Sunil D Jassal (F.N)

Resource Persons Dr Sunil D Jassal and COL. Brijasablok explained about green manufacturing. Green manufacturing is the renewal of production processes and the establishment of environmentally-friendly operations within the manufacturing field.Essentially, it is the “greening” of manufacturing, in which workers use fewer natural resources, reduce pollution and waste, recycle and reuse materials, and moderate emissions in their processes. Green manufacturers research, develop, or utilize technologies and practices to lessen their impact on the environment. As detailed by the Bureau of Labor Statistics, workers at green companies must have specific manufacturing training in green technologies and practices such as:

Energy from renewable source:- Workers may generate electricity, heat, or fuel from renewable sources for use within their establishment. These sources may include wind, biomass, geothermal, solar, ocean, hydropower, landfill gas and municipal solid waste.

Energy efficiency:- Workers will utilize specific technologies and practices to improve energy efficiency within their establishment.
Pollution reduction and removal, greenhouse gas reduction, and recycling. Workers will use green technologies and practices to:
1.Reduce or remove the creation or release of pollutants in their operations
2.Reduce greenhouse gas emissions
3.Reduce or eliminate the creation of waste materials

Resource person:- COL. Brijasablok (A.N)
Lean Manufacturing
Lean manufacturing is a methodology that focuses on minimizing waste within manufacturing systems while simultaneously maximizing productivity.
Five principles of lean manufacturing
1. Identify value from the customer's perspective
2. Map the value stream
3. Create flow
4. Establish a pull system
5. Pursue perfection with continual process improvement or kaizen.

Day:-02 – Resource person:- Kuldip Singh Sangwan (F.N)
Sustainable Manufacturing
A large and growing number of manufacturers are realizing substantial financial and environmental benefits from sustainable business practices. Sustainable manufacturing is the creation of manufactured products through economically-sound processes that minimize negative environmental impacts while conserving energy and natural resources. Sustainable manufacturing also enhances employee, community and product safety.
DRIVERS FOR GREEN MANUFACTUIRNG IMPLEMENTATION
1. Current Legislation

2. Future Legislation
3 .Incentives
4 .Public Pressure
5. Peer Pressure
6. Cost Savings
7. Competitiveness
8. Customer Demand
9. Supply Chain Pressure
10. Top Management Commitment
11. Public Image
12. Technology
13. Organizational Resources

Resource person:- COL. Brijasablok (A.N)

Climate change mitigation generally involves reductions in human (anthropogenic) emissions of greenhouse gases (GHGs). Mitigation may also be achieved by increasing the capacity of carbon sinks, e.g., through reforestation. By contrast, adaptation to global warming are actions taken to manage the eventual (or unavoidable) impacts of global warming, e.g., by building dikes in response to sea level rise. Abiotic Factors: It refers to non-living physical and chemical elements in the ecosystem. Abiotic resources are usually obtained from the lithosphere, atmosphere, and hydrosphere. Examples of abiotic factors are water, air, soil, sunlight, and minerals. Biotic Factors : These are living or once-living organisms in the ecosystem. These are obtained from the biosphere and are capable of reproduction. Examples of biotic factors are animals, birds, plants, fungi, and other similar organisms.

Day:-03 – Resource person:- Prof. JEETH KUMAR GUPTA (F.N)

The Radiant City grew out of this new conception of capitalist authority and a pseudo appreciation for workers' individual freedoms. The plan had much in common with the Contemporary City - clearance of the historic cityscape and rebuilding utilizing modern methods of production. In the Radiant City, however, the pre-fabricated apartment houses, les unites, were at the centre of "urban" life. Les unites were available to everyone based upon the size and needs of each particular family.

Day:-04 – Resource person:- Dr.Jatindev Madan Prof HOD MECH CCET (Degree Wing)

Manufacturing involves the conversion of raw materials, usually supplied in simple or shapeless forms, into finished products with specific shape, structure, and properties that fulfill given requirements. This conversion into finished products is accomplished using a great variety of processes that apply energy to produce controlled changes in the configuration properties of materials. The energy applied during processing may be mechanical, thermal, electrical, or chemical in nature. The results are meant to satisfy functional requirements that were defined during the product design stage.

Day:-05 – Resource person:-Sunny Jafar (F.N) –

The structural integrity of multi-layered material depends on the mechanical properties and the fracture behavior at the interface. The sudden jump in mechanical properties across the interface is the major source of failure in layered materials. An accurate evaluation of mixed-mode SIFs becomes essential for safe design of layered structure components. In this work, extended finite element method (XFEM) has been used to analyze interfacial cracked three-dimensional structures under mechanical loading. In XFEM, partition of unity enrichment concept is used to model a crack e.g. a crack surface is modeled by Heaviside enrichment function whereas a crack front is modeled by branch enrichment functions.