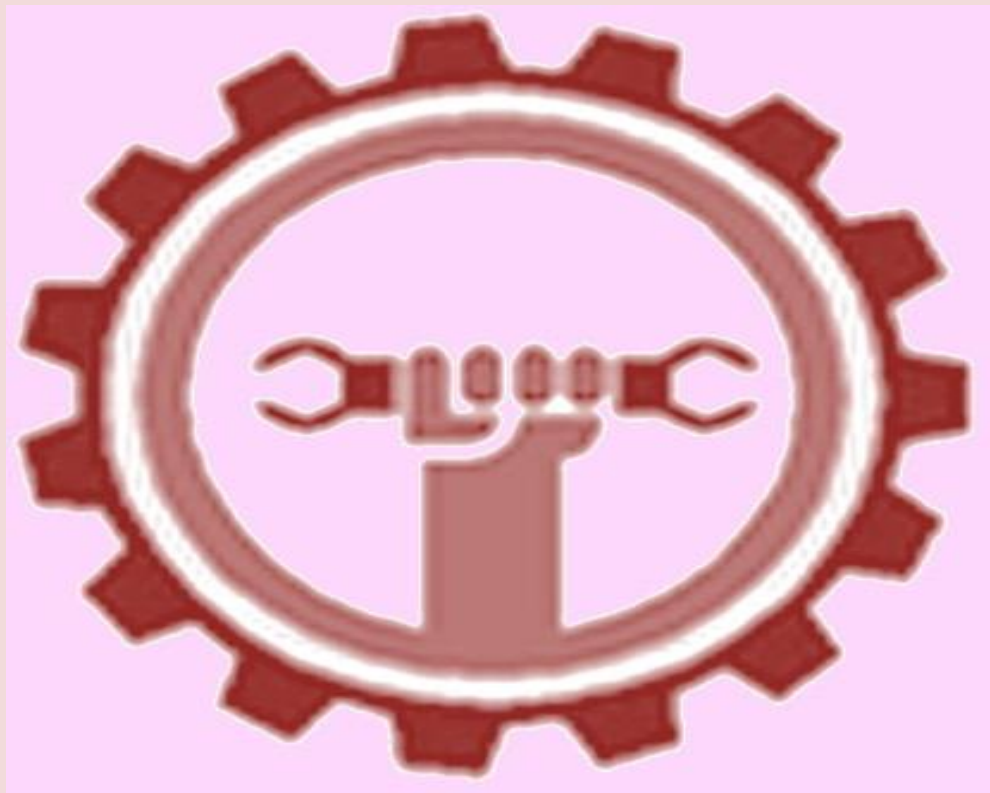


Mechanical Engineering Department

MECHANICAL ENGINEERING STUDENTS' ASSOCIATION

M.E.S.A

Activity Report 2022-23



MESA Faculty Advisor: - Prof. H. S. Salave

**Modern Education Society's
WADIA COLLEGE OF ENGINEERING, PUNE-01**

MECHANICAL ENGINEERING STUDENTS' ASSOCIATION (MESA)

MESA is MESCOE Mechanical Student Association. The MESA was formed to bring about the technical development of students by organizing seminars, workshops and other activities and also to improve non-technical abilities of students by engendering good communication skills, managerial abilities, presentation skills and teamwork.

Objectives

- To Promote the interaction between academia and industry by organizing industrial visits, special lectures and facilitate in industrial training
- Promoting the interests of students in various technical areas pertaining to mechanical engineering
- To encourage students of the mechanical Engineering department to develop their personal skills, like event management & time management by organizing inter & inter Collegiate Events
- To bring about the technical development of students by organizing seminars, workshops and other activities.

Outcomes:

The students will be able to

- Develop their technical and non-technical competitive skill
- Develop their communication skills, managerial abilities, presentation skills and teamwork.
- Put forth their ideas

Role of the Faculty Coordinator:

- The faculty coordinator will be responsible for team selection.
- Faculty coordinators have all rights to terminate any non performing member in the committee.
- All purchases for event conduction must be processed through faculty coordinator.

- All events should be conducted under the guidance of respective coordinators as well as respective event coordinators.

Team Selection Policy:

- Academic result is considered for the post of President and Vice-President
- All interested students for committee members are called for interview.
- The interview is conducted by faculty coordinator, Senior faculties and President in Semester II and charge is handed over to new President and committee members

Industrial Visit at ISRO, Bangalore

Date: 25/04/2023-30/04/2023

Venue: U.R.Rao Satellite Centre,Bengalore and KRS Dam, Mysore

No. of Students: 20

Faculty Co-ordinator: Prof.H.S. Salave and Prof. V.S.Mane

Introduction:

During my recent visit to India, we had the opportunity to explore two remarkable destinations: the Indian Space Research Organization (ISRO) and the Krishnaraja Sagar (KRS) Dam. In this report, We will provide an overview of ISRO's vision and mission, discuss its branches across India, list some notable satellites and their respective visions and missions. Additionally, we will explain the functioning of solar panels in satellites. Furthermore, we will delve into the KRS Dam, discussing its capacity, construction, and operation as a hydroelectric dam. We will touch upon site selection factors for hydroelectric dams and provide an explanation of a hydrograph.

Vision and Mission of ISRO:

The Indian Space Research Organization (ISRO) has a clear vision to harness space technology for the benefit of India's society and to achieve self-reliance in space technology. Its mission is to develop and deliver space-based services, promote space research, and develop space technology for national development.

ISRO Branches Available in India:

- ISRO has several branches and centers spread across India. Some notable ones include:
- Indian Space Research Center (ISRC) in Thiruvananthapuram
- Vikram Sarabhai Space Centre (VSSC) in Thiruvananthapuram
- Satish Dhawan Space Centre (SDSC) SHAR in Sriharikota
- Space Applications Centre (SAC) in Ahmedabad
- ISRO Satellite Centre (ISAC) in Bengaluru
- Physical Research Laboratory (PRL) in Ahmedabad
- Liquid Propulsion Systems Centre (LPSC) in Thiruvananthapuram

List of Satellites and Their Vision and Mission:

ISRO has launched numerous satellites to serve various purposes. Here are a few notable ones:

Chandrayaan-2: Its mission was to explore the lunar surface, including the possibility of water ice in the South Polar region.

Mars Orbiter Mission (Mangalyaan): It aimed to study Mars' surface features, morphology, mineralogy, and search for signs of life.

INSAT series: These satellites provide services like weather forecasting, telecommunications, television broadcasting, and disaster management.

Cartosat series: These satellites aid in cartography and earth observation for resource management and urban planning.

Working of Solar Panels in Satellites:

Satellites utilize solar panels to generate electrical power. The solar panels consist of photovoltaic cells that convert sunlight directly into electricity using the photovoltaic effect. Each solar panel is made up of multiple solar cells connected in series. These cells are typically composed of semiconductor materials, such as silicon, that have the ability to absorb photons from sunlight and convert them into electrons. The generated electricity is then used to power the satellite's on board systems and charge its batteries for use during eclipse periods or when sunlight is not available.

1. Capacity of KRS Dam:

The Krishnaraja Sagar (KRS) Dam, located near Mysuru in Karnataka, has a total capacity of approximately 49,000 million cubic feet (TMC) or 1,470 million cubic meters (MCM). It is one of the largest reservoirs in Karnataka, primarily built for water storage and irrigation purposes.

2. Construction and Working of Hydroelectric Dams:

Hydroelectric dams, such as the KRS Dam, are constructed to generate electricity from the potential energy of falling or flowing water. The construction process involves the following steps:

Site selection: Identifying suitable locations where water resources are abundant, such as rivers or large water bodies.

Dam construction: Building a structure across the river to create a reservoir or impoundment area. This involves constructing

Conclusion

We are thankful for all our faculties for organizing such an Informative event for us in crucial for development of our practical skills. We got the in depth knowledge about satellites and power plant

Opportunity to research on it.

We hope to get more chances further to have such an informative & wonderful Experiences of visiting different industries.







Industrial Visit at Adani Thermal Power Plant

Name of Resource Person: Mr. Shubham Sonar
Designation : Co-ordinator
Organisation / institute: Adani Thermal Power Plant Dahanu, Mumbai
Activity Organised by : Prof. H.S.Salave, Dr. S. H. Gawande, Prof. S. P. Gadewar and Dr. K. A. Mahajan

SCHEDULE :

Duration : Wednesday 15/03/2023 to 17/03/2023
College Reporting Time : Wednesday 09:00 AM
Visit Venue : Adani Thermal Power Plant Dahanu, Mumbai

OBJECTIVES OF ACTIVITY :

- Students can know Working of Thermal Power Plant
- Students can understand Basic components of thermal energy power plant
- Students can understand the principles of energy management, storage and economics of power generation

INSTRUCTION FOR STUDENTS

- All students, Faculty members are requested to carry their I cards, Failing which they will not be allowed to the site visit
- All students strictly follow the Covid Instruction.
- Shoes are mandatory to all students and Faculties
- Possession and consumption of alcohol, cigarette, gutkha and pan -masala are strictly prohibited during visit
- All students must follow rule and regulations during visit.
- In case of foreign students/faculty must carry their Passport.

Introduction:-

Dahanu Thermal Power Station (DTPS) is a coal based thermal power plant located at coastal Dahanu town in Palghar district in the Indian state of Maharashtra. It was constructed by BSES Limited (now Reliance Infrastructure). The power plant operated by Adani Electricity is located on Mumbai-Ahmedabad rail line and is 120 km away from Mumbai and 20 km away from Mumbai-Ahmedabad-Delhi National Highway 8.

It has an installed capacity of 500 MW (2x250 MW). The power plant was commissioned in 1995 and is commercially producing power since 1996

