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AIM BEYOND THE HORIZON



Dr. Mahalingam College of Engineering and Technology
Department of Civil Engineering

VISION AND MISSION OF THE INSTITUTION

Vision

We develop a globally competitive workforce and entrepreneurs

Mission

Dr. Mahalingam College of Engineering and Technology, Pollachi endeavors to impart high quality, competency based technical education in Engineering and Technology to the younger generation with the required skills and abilities to face the challenging needs of the industry around the globe. This institution is also striving hard to attain a unique status in the international level by means of infrastructure, state-of-the-art computer facilities and techniques

VISION AND MISSION OF THE DEPARTMENT

VISION

To develop Competent Civil Engineers to meet the infrastructure challenges of India and the world.

MISSION

- To become one of the reputed departments offering Civil Engineering Program in the country.**
- To produce excellent engineers to cope up with the changes through dynamic, innovative and flexible curriculum.**
- To provide a conducive environment for teaching & learning and to develop leaders with effective communication skills.**
- To conduct quality research driven by industry & societal needs and provide affordable engineering solutions.**

The Programme Educational Objectives (PEOs) of our department are,

The Programme Educational Objectives (PEOs) of our department are,

The Graduate will

PEO 1 Technical Expertise: Have successful professional careers dealing with analysis, design and management of construction projects globally.

PEO 2 Lifelong learning: Exhibit attitude, professionalism, ability to communicate with team members and adapt to the latest trends by engaging themselves in continuous learning.

PEO 3 Ethics: Ethically apply their engineering knowledge and skills considering, societal, economic and environmental factors.

PROGRAM OUTCOMES

The graduates of Civil Engineering Programme will be able to:

- PO1. Engineering knowledge:** Apply knowledge of mathematics, science, engineering fundamentals and an engineering specialization in the field of Civil Engineering.
- PO2. Problem analysis:** Identify, formulate, analyse and solve complex problems in construction industries using principles of mathematics, natural sciences and engineering sciences.
- PO3. Design/development of solutions:** Design a solution for complex civil engineering problems and design system processes to meet specific needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations.
- PO4. Conduct investigations of complex problems:** Conduct investigations of complex problems including design of experiments, analysis and interpretation of data, and synthesis of information to provide valid conclusion.
- PO5. Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.
- PO6. The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
- PO7. Environment and sustainability:** Understanding the impact of engineering solutions in social environment and demonstrate the knowledge for sustainable expansion.
- PO8. Ethics:** Apply ethical principles and commit to professional ethics and the norms of engineering practices.
- PO9. Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams and in multidisciplinary settings.
- PO10. Communication:** Communicate with engineers and society to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions related to civil engineering professionals.
- PO11. Project management and finance:** Demonstrate and apply the knowledge of engineering and management principles to one's own work, as a team leader or a member to manage project in multidisciplinary environments.
- PO12. Life-long learning:** Recognize the need for, and have the ability to engage in independent and life-long learning in the context of technological change.

Causes of Rust and Protection Through Galvanization

Rust is a process that occurs when oxygen and moisture contact exposed metal. With the settlement of moisture in dents, and with an increase in the contact period, rust is formed. Rusting is intensified with high temperatures and increased humidity, and leads to a deterioration in the metal.

Formation of Rust:

Technically known as oxidation, is the process that results when there is an interaction between oxygen and various metals for an extended time period. The oxygen and metal combine at an atomic level creating a new compound termed an oxide, and the metal bonds are weakened. When iron or steel are the base metal, then the rust formed is called iron oxide (and similarly rusted aluminum is called aluminum oxide). Iron and steel are apparently hard in appearance, but the minute ruptures and pits in the exposed metal facilitate the penetration of water molecules, and rust is formed. Rusting is an electrochemical process that is commenced with the move of electrons from iron to oxygen, and the process is expedited in salt water. With the passage of time, and availability of water and oxygen, an iron body will be converted into rust and be disintegrated.

Damage Due To Rust:

Rust is a serious issue, and unless taken seriously in the initial stages, car rust damage may be uncontrollable and cause extensive damage by the deterioration.

Rust is extremely harmful to cars. As the body is stained, the rust spreads to other parts of the car body if exposed to extreme moisture in the weather- and if appropriate rust prevention measures are not taken. Electrical appliances and instruments may fail if the metallic parts are rusted since rust is a non-conductor of electricity. Similarly, the machines and equipment that use magnets may malfunction due to the inferior magnetic properties of rust. Furthermore, since rust formation increases the volume of the initial iron mass, adjacent rusted parts may be forced apart, causing failure of the machines or assemblies. Rusting of iron in reinforced concrete bridges may be a source of serious structural problems that may be extremely dangerous, and also require huge expenditures for repairs.

Rust Prevention By Galvanization :

Galvanization is an important metallurgical process for rust prevention that involves the application of a zinc layer, by electroplating or hot dip galvanizing, on the iron or steel object desired to be protected. In this process, iron or steel is dipped in melted zinc at a temperature at which there is a great similarity between these materials, and an alloy is formed, with a zinc coating at the exterior surface.

ASSOCIATION ACTIVITIES



STUDENT TALENT ENCHANCEMENT PROGRAM



INTERACTION ABOUT "HIGHER STUDIES IN ABROAD"

Staffs Contribution for the Department

Dr. R. Venkatasubramani, Prof &
CoE

Training programme on “ NBA
Documentation”

Dr. N. Natarajan, Associate Professor

Mr. A. Manikandan, AP

Mr. S. Syed Masoodhu, AP

Mr. S. Sriram, AP

Two day Workshop on “Ethical &
Moral Responsibility (PS IV)”

Mr. S. Sriram, AP

Ms. P. Shyamala Eswari, AP

Two day Workshop on “Campus
to Corporate (PS VI)”

Mr. S. Krishnakumar, AP along with
other department OBE Co-ordinators

Training on “Best Practices in
Teaching Learning”

Dr. R. Elangovan, Associate Profes-
sor,

Ms. A. Dhivya, AP

Ms. S. Karthika, AP

Best Practices in Teaching Learn-
ing Practices

Dr. N. Natrajan, Associate Professor

Two days Workshop on “Skill
up gradation & training needs
for university teachers”

GREEN BUILDING MATERIALS

Building and Construction activities worldwide consume about 3 billion tons of raw materials each year. Using green building materials and products promotes conservation of dwindling non renewable resources. In addition, integrating green building materials into building projects can help reduce the environmental impacts associated with the excavation, extraction, transport, processing, recycling and disposal of these building industry source materials.

Green building materials are composed of renewable, rather than nonrenewable resources and are environmentally responsible because impacts are considered over the life cycle period.

Depending upon project-specific goals, an assessment of green materials may involve an evaluation of one or more of the following parameters:

- a. Resource efficiency
- b. Energy efficiency
- c. Affordability
- d. Possible Recycling of Material and Waste generation
- e. Water conservation
- f. Effective Indoor air quality



GREEN BUILDING MATERIALS

A) Resource Efficiency: It can be accomplished by utilizing materials that meet the following criteria.

B) Resource efficient manufacturing process: Products manufactured with resource-efficient processes including reducing energy consumption, minimizing waste (recycled, recyclable and or source reduced product packaging) and thus reducing greenhouse gases.

C) Local availability: Building materials, components and systems found locally or regionally will save energy and resources in transportation to the project site.

D) Salvaged, refurbished, or remanufactured: It avoids the material from disposal and renovating, repairing, restoring, or generally improving the appearance, performance, quality, functionality or value of a product.

E) Durable: Materials that are longer lasting or are comparable to conventional products with long life

D) Energy Efficiency: It can be maximized by utilizing materials and systems that meet the various criteria that help reduce energy consumption in buildings and facilities as indicated above.

E) Affordability: It can be considered as the cost for the building product when life-cycle costs are comparable to conventional materials or as a whole it is within a project-defined percentage of the overall budget



Students Activities

Participation of Inter and Intra Collegiate Competition / Events by the Students

E.Muthuganapathy	Survey	Kongu College of Engineering, Coimbatore
S.Kamatchi	Code Cracking	KSR College of Technology, Coimbatore
Neethu Muarali Nair	Poster Presentation	KSR College of Technology, Coimbatore
R Nirmal Kumar	Popsicle	Amrita Vishwa Vidyapeetham Uni- versity
M F Samsudeen	Workshop	Shri Krishna College of Engineer- ing and Techniology, Coimbatore
R Ponkathires	Treasure Hunt	Government College of Technol- ogy, Coimbatore
S Muthu Ragavi	Floating Concrete	Government College of Technol- ogy, Salem
L Anandha Raj	Paper Presenattion	Bannari Amman Institute of Tech- nology, Sathyamangalam.
S Sangeetha	Floating Concrete	Government College of Technol- ogy, Salem
g Vanmathi	Moidelismo	Bannari Amman Institute of Tech- nology, Sathyamangalam
Emil Kuriyakose	Sode Cracking	P.A College of Technology, Pollachi

JANTAR MANTAR

" Jantar Mantar" these two magical and mysteries words chanting in India by many people in their childhood to fulfill their magical dreams but these words are more than that. The term "Jantar Mantar" literally means "instruments for measuring the harmony of the heavens". In Jaipur city there are palaces, temples, gardens and ponds they all have their importance in their place but the astronomical observatory established by the king Sawai Jai Singh have International importance. The Jantar Mantar houses various architectural and astrological instruments that have caught the interests of astronomers, historians and architects around the world. It is considered to be one of the largest observatories ever built.

In the early 18th century Maharaja Sawai Jai Singh II of Jaipur constructed five Jantar Mantar in total in New Delhi, Jaipur, Ujjain, Mathura and Varanasi. They were completed between 1724 -1735. The Jantar Mantar observatory was constructed between 1728 -1734. It is the largest observatories among five and best preserved and still running. It is a collection of 19 architectural astronomical instruments. It features the world's biggest stone sundial "Smarat Yantra", and is UNESCO World heritage site. The one observatory in Mathura has almost disappeared today.

This observatory was built in 1734 for the study of space and time. The builder of the Jantar Mantar Maharaja Sawai Jai Singh was a brilliant star and great scholar of his subjects like astronomy and Indian politics. He is the ruler of Amber and founder of Jaipur, a great builder and ruler and exceptional astronomer. Sawai Jai Singh II was commissioned by Emperor Muhammad Shah, to make corrections in the astronomical tables and to confirm the data, already available on the planetary positions.

The main aims of Jai Singh II scientific program were to refine the ancient Islamic zij tables, to measure the exact hour at continuously and to define the calendar precisely. Another aim was to apply the cosmological vision deriving from the Ptolemaic one based upon astronomical facts to astrological prediction both social and individual. Sawai Jai Singh is aware of Hindu tradition of astronomical data and he also studies all the astronomy related books and data of Europeans, Islamic and Persian civilization and collects all the data and adopts the data. That helps him for building observatory.

For collecting data Sawai Jai Singh II sent his envoys to various parts of world. The emissaries came back with manuals and astronomical tables besides tones of data on the advances made in the fields of astronomy. La Hires's tables was one of these manuals. The Jantar mantar is also called the renewal edition of the observatory of the king Ulugh Beg ruler of Samarkand 1339-1449 at Uzbekistan. But it was more accurate compare to Ulugh Beg observatory. Where Ulugh beg observatory is called as "mistake of its time". The first prime minister of India Pundit Jawaharlal Nehru wrote "not a mistake of its time".

It took seven years to finish the task. He built the first stone observatory in 1724 in Delhi. The Jaipur observatory of Rajasthan was built in 1728-1734. The king Sawai Jai Singh built three more observatories in various places. The Jaipur observatory is the largest and more accurate than others. Jantar mantar is the most complete and best preserved great observatory site built in the Ptolemaic tradition. It provides an outstanding testimony of the scientific and technical conceptions of the great observatory devised in the medieval world.

Jantar Mantar is situated in 18,700 square meters of area. The observatory restored several times during these years particularly in 1902 in British rule and also in 2006 and replaced some of the original materials of construction with different materials. It is still in use today, both for teaching and calculation purposes and retains extraordinary accuracy. Some of the instruments uses are still mystery for visitors and how we can use them and how accurate predication they gave in time of 18th century. And some of the instruments are largest in world. Now it is part of a National monument of Rajasthan and also a part of UNASCO world heritage site. Some of the instruments used in the observatory of Jantar mantar

PLACEMENT DETAILS



Total No of Students = 68
No of Students Placed = 20
No of Students in In-Plant Training = 57



OUR INTERNSHIP PARTNERS





Editorial Team

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