AAKAR

A News Letter

Of

THE DEPARTMENT OF

CIVIL ENGINEERING

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SHRI MADHWA VADIRAJA INSTITUTE OF TECHNOLOGY & MANAGEMENT
(A Unit of Shri Sode Vadiraja Mutt Education Trust®, Udupi)
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SMVITM

AAKAR
Newsletter

Department of Civil Engineering

SMVITM

About Department :

The Civil Engineering Department has been in existence since the inception of the Institute during the academic year 2010-11 with an intake approval of 60 Students. The Department has got a highly ualified team of faculty members having rich experience within academic and Industry. The Department is committed to provide quality education and produce competent engineers to meet the growing demand for professionals in Civil Engineering. The Department invites eminent personalities and academicians from prestigious Institutions and industries to deliver quality lectures to the Students frequently and has organized many highly useful workshops which are beneficial to the faculty, students and practisinengineers. The Faculty members attend various workshops/conferences/training programs on a regular basis, which would keep them abreast with the latest happenings and developments occurring in their related fields and upgrade their competencies and Skill-sets up to date.

What is civil Engineering?

Civil Engineering is a professional engineering discipline that deals with design, construction & maintenance of the physical and naturally built environment. To put simply, civil engineers build bridges, roads, canals, dams, tall buildings and other large structures.

Civil Engineering is all about creating, improving and protecting the environment in which we live. It provides the facilities for day to day life and for transport and industry to go about its work.

Civil engineers are concerned with all types of structures including dams, bridges, pipeline, roads towers and buildings. They are responsible for the design and construction of all our transport system, the design and management of our gas and water supply, sewerage systems, harbours, airports and railways. Civil engineering plan, design and test of the structures of private and public building facilities.

Consultancy and Third-party inspection work

Department of Civil Engineering undertakes Testing and Consultancy works for various agencies in the Udupi District

The area of consultancy includes:

- Laboratory testing of soil, cement, sand, Coarse aggregates, bitumen and water samples
- Design and Drafting of RCC and Steel Structures
- Field tests on roads and buildings to check the quality of work
- Inspection of roads, culverts, drains, buildings, etc.
- Concrete mix design
- Surveying of the mobile tower
- Water quality test
- Structural Test on reinforced bars

Third part inspection services to the following Organizations:

- Nirmithi Kendra, Udupi
- City Municipal Council, Udupi
- Town Municipal Council, Kaup
- Panchayath Raj Engineering Division, Udupi

Civil Engineering is the oldest Engineering Profession in the World. The American Society of Civil Engineers was founded in the year 1852. It defines Civil Engineering as the profession, in which a knowledge of the mathematical and physical science gained by study, experience and practice is applied with judgment to develop ways to utilize economically the materials and forces of nature for the progress of well-being of man.

The curriculum is not only a blend of theoretical and practical aspects of varied disciplines ofcivil engineering such as structural engineering, transportation engineering, geotechnicalengineering, and water resources engineering, surveying, but also provides values based education, inculcating the qualities of a responsible engineer who can undertake any challenging project with right understanding towards holistic development of the society.

The booming population and increased demands of sustainable infrastructure in the form of high-end road and railway network, better water supply arrangements and concept buildings provides opportunities and new scope in the civil engineering path. This job is called “evergreen”. Students enrolling for admission in civil engineering in 2022 can prepare and train themselves with the right skill set to be instantly employed in to high-end national and international projects.

Dr. Deepika B V
Associate Professor & Head,
Department of Civil Engineering

Our Vision

• To impart a quality holistic education and consultancy, in civil engineering with integrity, societal benefit, ethical standards and sustainable development.

Our Mission

• To provide a value added education to make the civil engineers to address the complex and multi- faceted Civil Engineering problems

• To improvise the industry and institute interaction by interdisciplinary research

• To provide the necessary holistic education to be a leader, planner, decision maker, structural designer, constructor and operator of the built environment

Programme Educational Objectives (PEOs)

The objectives of the Civil Engineering undergraduate program at SMVITM are to develop civil engineers with the following

5 years down the line after graduation, the graduates should have

- A strong foundation for becoming a technically competent human resource in the broad disciplines of Civil Engineering
- Excel in Civil Engineering profession to meet the challenges of construction industry
- Update and adopt modernization in Civil Engineering with lifelong learning
- Preserve the environment for the society by adopting sustainability in Civil engineering with professional ethics

Programme Outcomes (POs)

Graduates of the Civil Engineering program are able to:

PO No	Graduate Attributes	At the end of the programme the student should be able to
1	Engineering Knowledge	Apply knowledge of mathematics, science, and engineering to solve the Civil engineering problems
2	Problem Analysis	Identify the problem, analyze, formulate and apply appropriate Civil engineering techniques to obtain the solutions
3	Design & Development of Solutions	Design Civil Engineering structures, components or processes by considering public health and safety, societal, sustainability and environmental issues
4	Conduct Investigations of Complex Problems	Conduct investigations of problems, search, identify and select relevant information from the literature to provide valid conclusions.
5	Usage of Modern Tools	Use modern tools for solving the engineering issues associated with social and professional context
6	Engineer & Society	Understand the role and responsibility of a Civil Engineer and apply the knowledge for the development of society
7	Environment & Sustainability	Apply the concepts of Civil engineering to minimize the environmental hazards by adopting sustainability in construction activities
8	Ethics	Understand and apply professional ethics for the issues relevant to the Civil engineering practices.
9	Individual & Team Work	Work as a member of a multidisciplinary project or research teams and have an understanding of leadership in teams and organizations.
10	Communication	Produce engineering reports, communicate the thoughts and ideas clearly and effectively.
11	Project Management & Finance	Demonstrate knowledge of the civil engineering project management principles and apply them to manage construction projects
12	Life-long Learning	Understand the need of engaging in life-long learning to update the knowledge in Civil Engineering field
PSO-1	Focus on developing and exposure to alternative/ advanced technologies	Understand, develop and implement state-of-art technologies related to civil engineering
PSO-2	Extension of knowledge and testing facilities for the society	Provide solutions to day-to-day civil engineering problems by extending the intellectual knowledge base and the testing facilities for the society

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Programe Conducted in Odd Sem

• "Techno Week-2022"

ISTE Student chapter of Shri Madhwa Vadiraja Institute of Technology, Bantakal in association with Association of consulting Civil Engineers Mangaluru Centre, organized a "TECHNO WEEK-2022" technical talk in college premises on 01st October 2022. Speaking on the occasion, Resource person Mr. Laxman Kudva, Assistant Professoor,Department of Civil Engineering, MIT Manipal on the topic of "Attributes of a Civil Engineer" where he explained for any budding civil engineers who are early on in their career, or for those who are looking to further their career success, it's important to have certain qualities of the essential skills that are necessary for civil engineers today in order to be successful. He also stressed that the Civil Engineer should have the Technical Skills, Oral Communication Skills, Organizational Skills and Attention to detail, Constant Learner and Creativity. Second Resource person Mr. Girish M G, Assistant Professoor, Department of Civil Engineering, MIT Manipal on the topic of "Smart materials" where he explained the effective utilization of locally available waste material has certainly a great importance in civil engineering. In the recent years, the various materials such as flyash, silica sand, ceramic dust, steel scrap from lathe, polyurethane foam etc. were used as a smart material to decrease the various problems occur during and after the construction.

•"Manthana"

Civil Engineering Department of Shri Madhwa Vadiraja Institute of technolog and management in association with Science and Technology Academy, Bangalore organized a symposium on Jasmine cultivation and effective harvesting under the Unnath Bharath Abhiyan Scheme on 28 October 2022. Speaking on the occasion, Resource person Bantakal Ramakrishna Sharma explained the root cause of the less harvest in the jasmine, due to wrong proportion of compost usage and extensive use of Chemical pesticides. Organic farming is need of the hour to save our soil and increase the yield of jasmine. He appealed the farmers to make use of the Govt, schemes and subsidies available for the benefit of the farmers. Another resource person Shri Kudi Shrinivas Bhat, gave deep insights about the preservation of soil and proper water management in the cultivation of jasmine in tropical region. He clarified the issues like crop disease, insects attack etc. Evolution in the refrigeration technique would solve the problem of seasonal fluctuation in the market and help the farmers to preserve the jasmine during peak time and provide the market in the fall season, was the key point discussed in the forum. More than 40 farmers have participated in the program, Soil health card were distributed to the farmers to know the Soil properties.

Programe Conducted in Odd Sem

• "Alumini Talk"

Civil Engineering Department of Shri Madhwa Vadiraja Institute of technology and management in association with ISTE student chapter organized a technical talk to the Civil Engineering students. Speaking on this occasion our proud Alumni Er. Sandeep Nayak, Global Trade Compliance Specialist, Allyn Trade International inspired the students with his site experience, case studies in construction Technology & Management. In his address, he spoke on the skill that the aspiring Civil Engineer should have and the present day market demand and the expertise in the field of management.

Er. Sandeep Nayak also stressed on NICMAR(National Institute of Construction Management & Research) where he obtained his Post-graduation in Construction Engineering Management. He spoke on the enrollment process, how to prepare for the entrance exam, life style in the campus, Placement companies and future prospectus for the students.

• Talk on "Cracks in concrete and its prevention"

Department of Civil Engineering in association with Sthapati student club, SMVITM, organized a talk on "Cracks in concrete and its prevention" for the civil engineering students on 8th December 2022 at 2:30pm in seminar hall admin block. The recourse person was Mr. Elan Thendral, Technical Head South Karnataka, ACC Limited. More than 40 students participated and benifited by the program.

The session was lively and interactive. In his talk he started simple question by asking the difference between normal man and Civil engineer and answered that normal man gives answer to the question and civil engineer gives solution. He also gave enough information regarding cracks in concrete, possible causes due to improper planning and poor workmanship in construction, its effects and remedies overcome the cracks by proper curing and maintenance.

Programe Conducted in Odd Sem

• Technical Trip"

In association with ISTE student chapter organized a One day technical site visit to the Civil Engineering students. On the first visit students and faculty members visited Dakshina Kannada Nirmithi Kendra, Speaking on the site visit Er. Rajendra Kalbhavi, Project Director gave great insights into the importance of low cost effective options available for building & constructions. In his address, he highlighted there is lot happening in the field of innovative construction, enormous changes are taking place especially in the Research and Development part of it.

Second site visit, Applied mechanics and Hydraulics lab of NITK Surathkal, where reaserch scholars demonstrated the wave flume, venture flume and various research projects undergone and undergoing in the field of Hydraulics and Marine structures. Students also visited GIS and GPS lab of NITK and able to get the knowledge of GIS mapping and software's available in the GIS database.

Third Visit was in Sristi ventures, Padubidri where students able to get the knowledge of Ecowall as an modern construction technology used in construction technology used in construction of RCC walls and slabs for buildings. Panels, are factory produced constituting of central core of EPS in a wave form, which mainly performs as thermal barrier.

• Technical Trip"

In association with Entrepreneurship development cell organized a "Industrial Visit" to Udupi – Residential building construction site on 06th December 2022.

The Students were taken to Udupi site were a Residential building plinth beam and retaining wall construction process under progress. Er. Jayaram explained the detailing of reinforcement in plinth beam, column and retaining wall. The students got an understanding of bar bending. Er. Jayaram explained the concepts of reinforcement at intersection of beam column joints. Students learnt the different diameter & length of bars, how stirrups spacing are provided and how lapping are done. The retaining wall reinforcement detail and the soil condition was explained. Also, the mixing of concrete was shown at the site.

The process of foundation with the steps involved in stone masonry foundation was explained. Students got an idea about properties of various construction materials in the site.

Programe Conducted in Odd Sem

- "Value added Course"

In association with ISTE student chapter organized a value added course to the Civil Engineering students. Speaking on this occasion Er. Amith Aravind Nayak, Partner Archana Projects Udupi gave a great insight into the importance of learning the multinational companies. In his address, he highlighted the importance of a civil engineer to understand the Digital construction techniques and proper software skills to build the infrastructural development with futuristic views.

Er. Amith Aravind Nayak also stressed how society has realized the importance of home during these difficult covid pandemic times.

In today & market, software skills are valuable addition to students & core subject knowledge and contribute to a prosperous professional life. He, appreciated the facilities provided in the Civil Engineering Department, Shri Madhwa Vadiraja Institute of Technology & Management, Bantakal for providing a wonderful platform for the students to enhance their knowledge.

TESTS ON WATER
As per BIS standards

CONDUCTIVITY
TURBIDITY
CHLORIDES
FLOURIDE
IRON
pH
TDS
E-COLI
HARDNESS
ALKALINITY
CHLORINE DEMAND
RESIDUAL CHLORINE

Tests on
Building Materials

Compressive strength, water absorption and effloresence of bricks.

Compressive and flexural strength of timber and ceramic/roofing tiles.

Tensile strength, percentage elongation, weight and other properties of mild and TOR steel.

Fineness modulus, crushing and impact values, flakiness and elongation indices, abrasion andwater absorption of coarse aggregate.

Fineness modulus, silt content and bulking of fine aggregates.

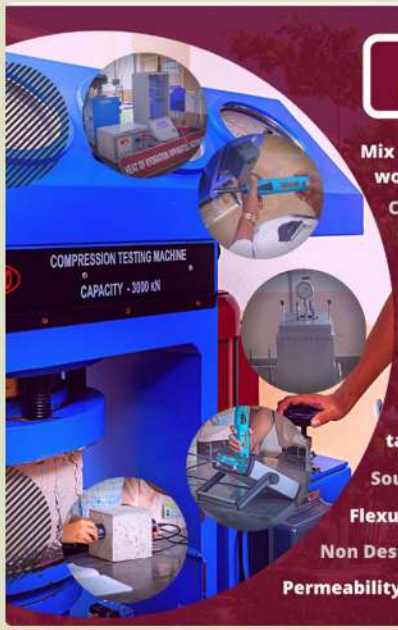
Soil Investigation
Tests on soil

Index properties, grain size distribution, standard and modified compaction characteristics.

Shear strength parameters, permeability values, consolidation characteristics.

California Bearing Ratio (CBR) Value and determination of Safe Bearing Capacity (SBC) etc.

Soil investigation report with recommendations



Tests on
Cement/ concrete

Mix Design of concrete for varieties of works.

Compressive strength, of Concrete cubes and solid/hollow blocks, bricks etc.

Concrete air permeability (blaine type).

Specific gravity, Normal consistency and setting time of cement.

Workability of concrete using flow table as well as slump test.

Soundness of cement using autoclave.

Flexural strength of hardened concrete.

Non Destructive Testing.

Permeability of concrete as per DIN Standards.

Tests on
Highway Materials

Flash and fire point of bitumen.

Ductility of bitumen.

Viscosity of bitumen.

Measurement of resistance to plastic flow.

Bitumen consistency testing.

Specific gravity test on bitumen.

Quantification of percentage of bitumen used in road construction.

Crushing strength of aggregates.

California Bearing ratio test to determine the road subgrade strength.

We also undertake

Surveying works including mapping and preparation of layout plans, counter map and earthwork estimation.

Analysis design and drawing of all Civil Engineering sub - structures and super structures.

Estimation, costing and valuation of proposed and existing structures.

Third party inspection for flood damage, drought and other infrastructure works sanctioned under various heads, executed by different Government agencies such as PWD, Panchayathraj, Irrigation department, and Municipal authorities etc.

For Testing, Consultancy and R&D Works/Needs
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