
BLUEPRINT

Civil Engineering Department's Newsletter Volume 05, Issue 02, January -July 2021

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VISION

To be the Centre of Excellence in Civil Engineering Education and Consultancy by providing holistic, innovative and research centric environment and keeping pace with rapidly changing technologies.

MISSION

- To impart quality education in civil engineering, through effectiveness and innovation in teaching and learning.
- To promote positive interactions among faculty and students and foster networking with alumni, industry and other stake holders.
- To train young minds in soft skills, intellectual and ethical strengths, conducive to globally competitive environment.
- To motivate students for research and entrepreneurship in relevant sectors of society with focus on excellence and creativity.
- To undertake sponsored research and provide consultancy services in all the areas of civil engineering beneficial to the community.

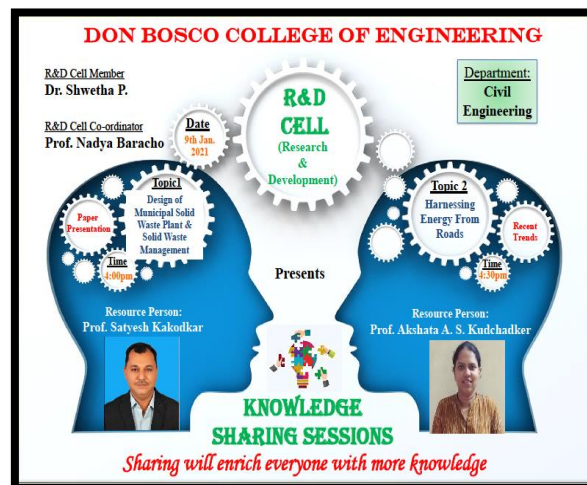
FACULTY CORNER

R&D SESSIONS

1. The Civil Engineering department had its second session under R&D cell on the 9th January 2021 at 4.00 P.M. There were two speakers for this session. Prof. Satyesh Kakodkar presented a research paper while Prof. Akshata Kudchadker presented on a recent trend.

Prof. Satyesh presented his paper titled 'Design of Municipal Waste Plant and Solid Waste Management', in his paper has proposed the design of a waste management plant for the Mapusa area. He elaborated on the various processing and disposal technologies in practice and the criteria for selection of the most suitable technology. The components designed in the proposed Municipal Solid Waste (MSW) plant are Windrow Composting Plant, Landfill Management and Leachate collection system. The paper was presented at ICER-14, 7th International Congress of Environmental Research, held at R.V. College of Engineering, Bangalore, from 26th to 28th December 2014.

Prof. Akshata presented on 'Harnessing Energy from Roads'. With the increased demand for electricity in recent years, newer techniques of generating energy have emerged, like harnessing energy from roads. Energy from roads can be harvested in two ways, by piezo-electric generators and kinetic road ramps. Among these the amount of energy generated from piezo-electric roads is more than that generated by road ramps. This technique has been used in Israel and California.

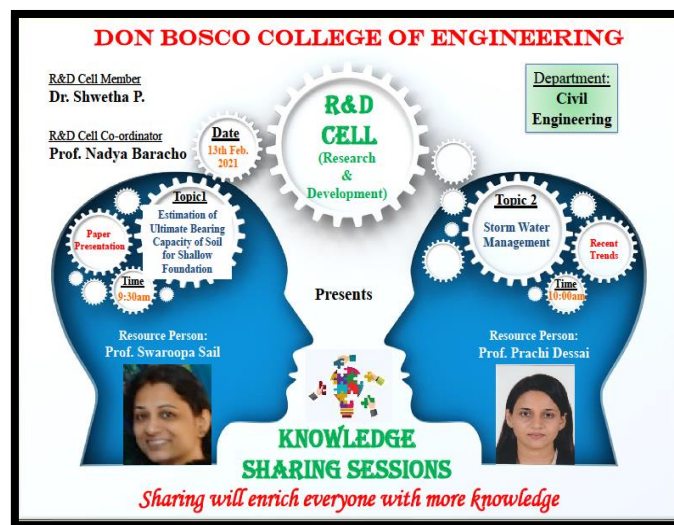


2. The Civil Engineering department had its third session under R&D cell on the 13th february 2021 at 9.30 A.M. There were two speakers for this session. Prof. Swaroopa Sail presented a research paper while Prof. Prachi Dessai presented on a recent trend.

Prof. Swaroopa presented her paper titled 'Estimation of Ultimate Bearing Capacity of Soil for shallow foundation'. Judging of ultimate bearing capacity is a tough process as it is hard to evaluate the shear strength parameters within the underlying soil structure. In her paper, to determine ultimate bearing capacity of soil for shallow foundation

Terzaghi's (1943) bearing capacity theory, Meyerhof's (1963) bearing capacity theory, Hansen's (1970) bearing capacity theories, Vesic's bearing capacity theory and IS 6403: 1981 method, were used. It was also determined using SOFA and OptumG2 software. An equation was derived for finding ultimate bearing capacity using soil properties like density, specific gravity and grain size distribution using Regression Analysis. Paper related to present work was published in book chapter, Recent trends in Civil Engineering, Select proceedings of TMSF 2019.

Prof. Prachi presented on 'Innovative Method of Storm Water Management using Bioswales'. She highlighted on the present flooding condition in Goa during monsoons and explained how bioswales could be used to tackle this issue. The participants were informed that bioswales were channels used to convey storm water run-off while removing debris. The advantage of these over normal dividers is that it avoids flooding due to accumulation of flood water. The bioswales are cost effective and easy to maintain.

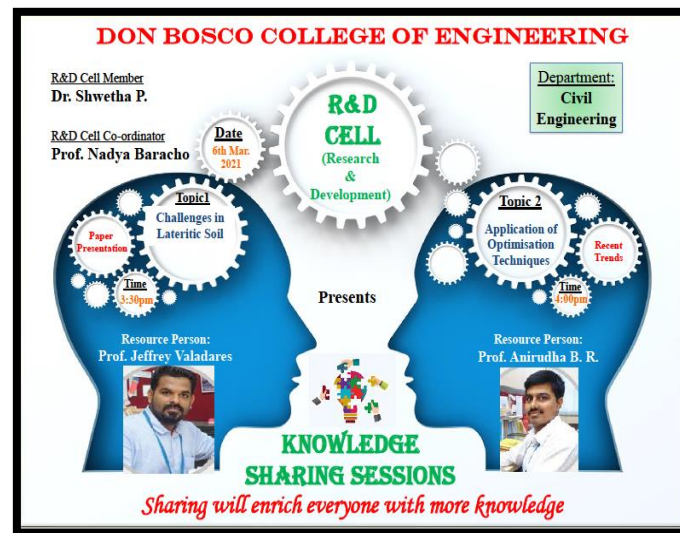


3. The Civil Engineering department had its fourth session under R&D cell on the 6th March 2021 at 3.30 P.M. There were two speakers for this session. Prof. Jeffrey Valadares presented a research paper while Prof. B.R. Anirudha presented on a recent trend.

Prof. Jeffrey presented his paper titled 'Challenges in Lateritic Soil'. He explained how Laterite, which is the most common soil available in Goa, could have a strength varying from 5 Mt/m² to 35 Mt/m². The various geological processes that have cause the parent rock to weather with time led todifferent challenges in soil. Cavities voids and slip circle may cause failure of the supported structure. The understanding of the parent rock and the weathered process and knowing the soil profile below is an important subject that needs attention. Foundation needs to be built on firm strata but having a soft soil which could eventually leach out due to unconfinement could cause an unequal settlement. In his paper, he has presented about different geological formations in Goa and the different lateritic formations and the challenges face with these formations in the laterization process.

Prof. Anirudha presented on 'Application of Optimization Techniques'. He highlighted on use of optimization techniques in civil and structural engineering problems. Specifically,

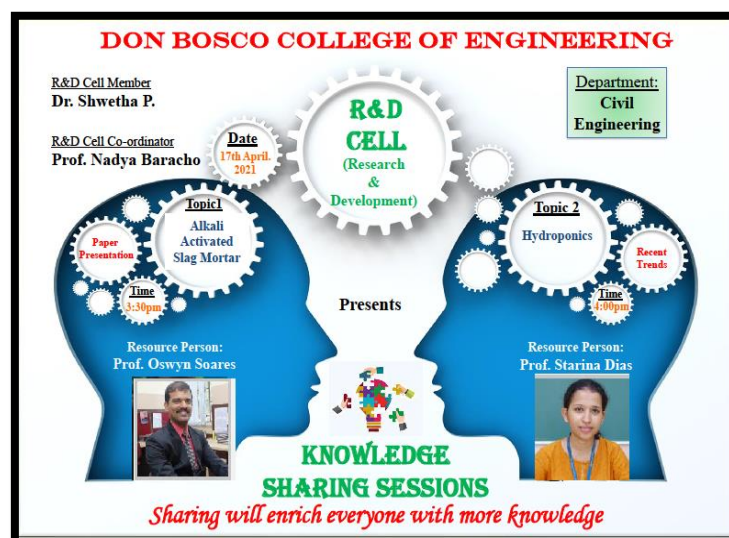
a case of particle swarm optimization for minimum cost and minimum weight on a simple framed structure was illustrated.



4. The Civil Engineering department had its fifth session under R&D cell on the 17th April 2021 at 4.00 P.M. There were two speakers for this session. .

Prof. Prof. Oswyn Soares presented on ‘Alkali Activated Slag mortar’. He explained the concept of molarity and how to make alkali solution, He also presented about activation of slag using an alkali activator. He stressed on replacement of cementitious material by Ground Granulated Blast furnace Slag (GGBS) and replacement of sand by course slag. This leads to the total usage of industrial wastes.

Prof. Starina Dias presented on ‘Hydroponics’. She highlighted on the use of ‘Hydroponics’ as an alternative to address issues of environmental degradation and the growing demand for food production. She explained the six types ‘Hydroponics’ system that include wick system, deep water culture system, drip irrigation system , etc. She also presented the benefits of the system and its usage in various environments.



5. The Civil Engineering department had its sixth session under R&D cell on the 19th April 2021 at 3.30 P.M. The two speakers for this session were Prof. Shruti Jambhale and Prof. Nadya Baracho.

Prof. Shruti presented on 'Self Healing Mechanism on Concrete'. The speaker explained that to overcome the problem of cracking in concrete, autonomous self-healing mechanism is introduced in the concrete which helps to repair the cracks by producing calcium carbonate crystals which block the micro cracks and pores in the concrete. The speaker also highlighted that the selection of the bacteria is done according to their survival in the alkaline environment such as *B. pasteurii*, *Bacillus subtilis* and *B. sphaericus*. In her study, for the growth, bacteria were put in a medium containing different chemicals at a particular temperature and for a particular time period. It was found that bacteria improves the structural properties such as water permeability, durability and compressive strength of the normal concrete which was found by performing different types of experiment on different specimens in comparison with the conventional concrete and from the experiment, it was also found that use of bacteria helps in self-healing property of concrete.

Prof. Nadya presented on 'Use of CABKOMA rods for Earthquake Resistance'. CABKOMA rods were introduced as a composite material made of carbon fibers in a thermoplastic resin. The rods are used as retrofitting for existing structures to resist earthquakes by either connecting the rods from roof to ground or by using as a shear wall. The advantages of this rod were summarized as (i) Light-weight, high strength and durable; (ii) High productivity at low cost; (iii) Can be bent easily on application of heat making it workable on site; (iv) Easy to install and maintain; (v) Adaptive to various structures and materials like timber, concrete, masonry;(vi) Reduces stress on structure by providing alternate path for transfer of forces from roof to ground and reducing sway.



PAPER/JOURNAL PUBLICATIONS

Author Name	Title of Paper	Details (journal name, volume, series, year)
Dr. Shwetha Prasanna and Swaroopa Sail	Strength analysis of soil blocks admixed with sugarcane bagasse ash, Sustainability	Agri, Food and Environmental Research, (ISSN: 0719-3726), 10(X), 2022: http://dx.doi.org

WORKSHOPS/SEMINARS ATTENDED

Name of the Faculty Participated	Seminar/Workshop/Short Term Courses/ Conferences/Training Programmes etc.	Organization	Date
Dr. Shwetha Prasanna	All India Council for Technical Education Quality Improvement scheme(AQIS) Faculty Development Programme on "Shallow and Deep Foundations"	Department of Civil Engineering, Andhra University College of Engineering, Andhra University, Visakhapatnam	25 th January- 6 th February 2021
	International conference on Advances in Construction Technology and Management (ACTM - 2021)	Organised by the Department of Civil Engineering (COEP)	11 th and 12 th March 2021
	AICTE-Margdarshan one week virtual faculty development program on "Outcome based education and NBA accreditation for TIER-II colleges"	S.R.K.R. Engineering College(Autonomous), Bhimavaram, Andhra Pradesh	29 th March -3 rd April 2021
	AICTE Training And Learning (ATAL) Academy Online Elementary FDP on "Trailblazing Practices in Geotechnical Engineering"	Meenakshi Sundararajan Engineering College	7 th June -11 th June 2021
	International Virtual Conference "Recent	Organized by ERANAD Knowledge City Technical Campus,	19 th June -20 th June 2021

Innovations in Science & Technology(RIST 2021)”
Malappuram, Kerala, India in association with ISET Research & HEXAIND Technologies and Services.

Name of the Faculty Participated	Seminar/Workshop/Short Term Courses/ Conferences/Training Programmes etc.	Organization	Date
Prof. Satyesh Kakodkar	Innovation Ambassador Training conducted by MoE's Innovation Cell & AICTE, New Delhi	MoE's Innovation cell	16 th February-16 th February 2021

Name of the Faculty Participated	Seminar/Workshop/Short Term Courses/ Conferences/Training Programmes etc.	Organization	Date
Prof. Swaroopa Sail	All India Council for Technical Education Quality Improvement scheme(AQIS) Faculty Development Programme on “Shallow and Deep Foundations”	Department of Civil Engineering, Andhra University College of Engineering, Andhra University, Visakhapatnam	25 th January- 6 th February 2021

Name of the Faculty Participated	Seminar/Workshop/Short Term Courses/ Conferences/Training Programmes etc.	Organization	Date
Prof. Shruti Jambhale	NPTEL-AICTE Faculty Development Programme on Plastic Waste Management	NPTEL-AICTE	Jan-Mar 2021
	Interpretation of NDT results for acceptance of concrete	UltraTech Cement Ltd.	29 th January 2021
	AICTE-Margdarshan one week virtual faculty development program on “Outcome based education	S.R.K.R. Engineering College(Autonomous), Bhimavaram, Andhra Pradesh	29 th March -3 rd April 2021

and NBA accreditation for TIER-II colleges”

Name of the Faculty Participated	Seminar/Workshop/Short Term Courses/ Conferences/Training Programmes etc.	Organization	Date
Prof. Nadya Baracho	NPTEL-AICTE Faculty Development Programme on Development and applications of Special Concretes	NPTEL-AICTE	Jan-Mar 2021
	Webinar 117 Analysis, Design & Detailing of Shear Walls	Epicons Consultants Pvt. Ltd	30 th January 2021
	Online International webinar on “Geopolymer Concrete”	Indian Concrete Institute (Chennai Centre) in association with Department of Civil Engineering, SRM Institute of Science & Technology, Bharathi Salai, Ramapuram, Chennai	9 th April 2021
	Webinar 120 Strengthening techniques-Merits & Demerits	Epicons Consultants Pvt. Ltd	30 th April 2021

Name of the Faculty Participated	Seminar/Workshop/Short Term Courses/ Conferences/Training Programmes etc.	Organization	Date
Prof. Starina Dias	International conference on Advances in Construction Technology and Management (ACTM - 2021)	Organised by the Department of Civil Engineering (COEP)	11 th and 12 th March 2021

MoU SIGNED

The Department of Civil Engineering - Don Bosco College of Engineering (DBCE), Fatorda signed a MoU with Public Works Department, Goa in a small function held at Panaji on July 7th, 2021. Shri. Uttam Parsekar, Principal Chief Engineer represented the Public Works Department while Fr. Kinley D'Cruz - Director and Dr. Neena S. P. Panandikar - Principal represented Department of Civil Engineering, Don Bosco College of Engineering.

The purpose of MoU is to strengthen Industry-Academic relationship for mutual benefit, to build fruitful and mutual relations, and propose to offer programs of mutual interest. It will also help to collaboratively identify common areas of interest in the sector of sustainable water distribution, transportation network and facilities, Geotechnical and Structural works for further study, research and documentation.

The MoU will focus to carry out studies in existing and new academic frameworks to yield a better public understanding of the problem areas and to suggest social, economic and technological solutions. Stress on developing academic and research frameworks suitable for training of students in upgrading their skills is also a part of MoU.

Shri. Amar Vazirani - Superintending Engineer, Shri. Kishore Kolwalkar –Engineering Officer, Dr. Shwetha Prasanna –Head of Civil Engg. Department - DBCE- and Prof. Satyesh Kakodkar – Assistant Professor, Department of Civil Engineering - DBCE were present on the occasion.

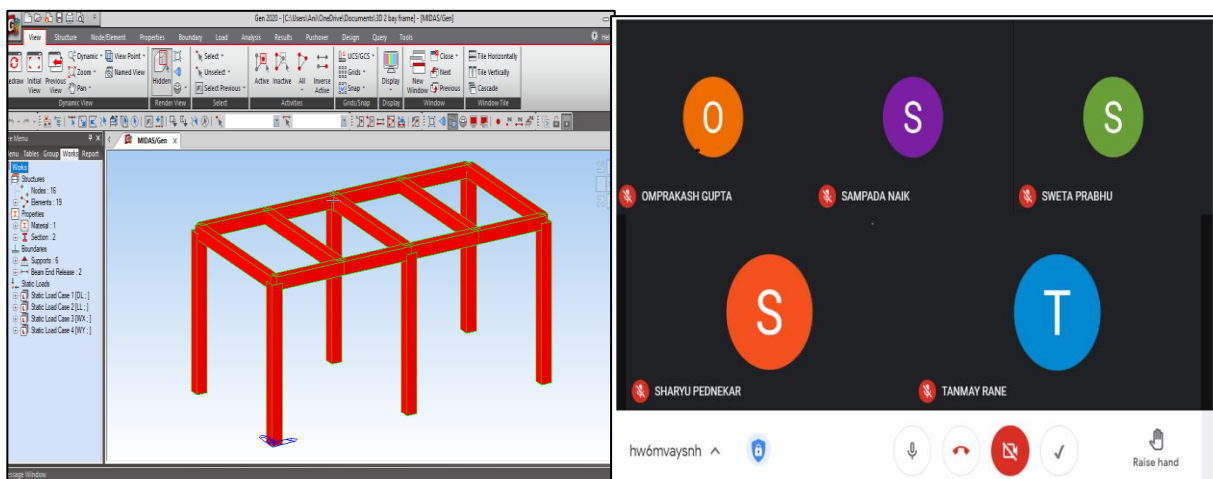


STUDENTS CORNER

WORKSHOPS/ SEMINARS/ IN-HOUSE TRAININGS

Online MIDAS Gen Training

Three days hands on Online MIDAS GEN training was conducted for B.E. civil students of 2020-21 batch of Don Bosco College of Engineering on the 21st April, 28th April and 5th May 2021. The Resource person for the training was Prof. B.R. Anirudha, Civil Engineering Department, Don Bosco College of Engineering. A total of 48 students attended the training. MIDAS GEN is a Windows-based, general-purpose structural analysis and optimal design system. The intuitive user interface, contemporary computer graphics and substantially fast solver are some of the highlights of this software. The user-oriented input/output features and significant analysis capabilities enable engineering students to readily undertake structural analysis and design for even complex and large structures. In addition, MIDAS GEN provides design capabilities using latest Indian standards leading to an optimal design solution. The topics covered during the training were modelling and analysis of 2-D beam, rigid jointed frame and pin jointed plane frames. Also, modelling and analysis of a 15 story building with gravity as well as seismic loading was covered in these sessions.



EXPERT TALKS

Waterproofing Solutions and Construction

The Department of Civil Engineering of Don Bosco College of Engineering conducted a webinar on Water Proofing solutions by Ultra tech Cement Pvt. Ltd on 10th April 2021. The webinar was attended by Civil Engineering students of SE, TE and BE. The speaker for the session was Mr. Vikrant Dessai, from Ultra Tech Cement Pvt. Ltd. In his session he spoke about various types of Waterproofing, its importance and different waterproofing products offered by Ultra tech cement. He also discussed about the various areas of the structure which requires attention with respect to waterproofing.

The second session of the webinar was a recorded video shared by Ultra tech cement on the Construction of Motera Cricket Stadium -The largest cricket stadium in the world which was delivered by Er. Subrat Dutta, Project Director, Motera Cricket Stadium, Ahmedabad Project, L&T Construction. The speaker spoke about technicality, design and construction process of the stadium which was very beneficial to our students.

In all 83 students and faculty members from Civil Engineering Department attended the webinar. The webinar was coordinated by Assistant Professor Starina Dias and Assistant Professor Akshata Kudchadker.

Global Heritage Conserving The Basilica Of Bom Jesus

Goa Heritage Action Group (GHAG) and Don Bosco college of Engineering, Fatorda Goa, organized a webinar on local identity, Global heritage: Conserving the Basilica of Bom Jesus, on the 19th of April 2021 to commemorate world heritage day (18th April 2021). The coordinators for the event were Er. Alint Cohelo from GHAG, Assistant professor Nadya Baracho and Assistant Prof Jeffrey Valadares (DBCE). The Speakers for the webinar was Dr. Vishvesh Kandolkar, Ar. Fernando Velho and Fr. Patricio Fernandez S.J. Dr. Vishvesh Kandolkar spoke on the lime plaster and the different techniques they used to restore the heritage structures. He enlightened the group on the early modern church design and the creation of indo Portuguese aesthetics and their afterlife. Ar, Fernand Velho, in his talk spoke about the heritage structures which existed in Velha Goa and how they have lost existence. He also spoke about the drainage systems in ancient times .He shed light on how the government must intervene on restoration and conservation rules to be implemented so as to save structure in these zones.

Fr Patricio Fernandez S.J. in conversation with Dr. Vishvesh Kandolkar spoke on the restoration of the basilica of Bom Jesus and how the structure was plastered in lime , the reasons for removal of the plaster, and why there is a need to re plaster the Basilica of Bom Jesus. He spoke on the maintenance of the structure and the specialized teams that work on the structures. The urgent need and study need to be carried out on these

heritage structures as with modern tools and techniques. The webinar ended with question and answer session

Concrete in Practice

A Webinar on “Concrete In Practice” was organized by Department of Civil Engineering on 24th April 2021 at 3.30pm for second year, third year and final year civil engineering students. The speaker for the session was Mr. Siddhesh R. Kamat Mhamai, DGM, QCP, Alcolab India LLP, Goa. He gave an insight to the students on properties of concrete like cohesiveness, workability and factors effecting workability. He stated that workability decreases with time. Ready mix concrete is more workable as drum of transit mixer rotates continuously and agitates concrete, but on site it depends on efficiency of the workforce. Quantity & characteristics of cementing materials affect workability and it is also affected by concrete batching consistency, aggregate grading, shape and surface texture. He explained effect of adding water to concret wherein it was mentioned that with more water addition compressive strength decreases. Workability is affected by ambient air temperature and also admixtures. He highlighted on factors affecting durability like silt content, mixing and process involved in transporting, placing, compacting and curing. Silt content increases water demand and concrete becomes more porous. He focused on factors affecting measured cube strength, representative sampling (IS 1199), assembling of cube moulds, casting of cubes (IS 516). He explained how to maintain de-moulded cubes in water at right temperature, correct mode of cube failure in CTM and purpose of quality control to store cube moulds. All together 72 participants attended the session. The talk was organized to enlighten students on practical applications of concrete to follow proper methods of mixing, casting, testing etc for better quality work. The Faculty coordinators are Asst Prof. swaroopa Sail and Asst Prof. Starina Dias.

CMRY Scheme 2020

A webinar on enlistment procedure under CMRY scheme 2020 for engineering Professionals which is announced by Public Works Department, Govt. of Goa was conducted by Mr. Satyesh Kakodkar, Assistant Professor in Civil Engineering of Don Bosco College of Engineering on 10th June 2021. All together 45 students from Civil and Mechanical participated. Mr. Satyesh Kakodkar, while introducing the scheme gave an overview of the department and its role in economic, commercial and touristic development of the State of Goa. He highlighted the different sectors of P.W.D. and the job opportunities in these sectors. Further while addressing the students, Mr. Kakodkar, explained the benefits, eligibility criteria and enlistment procedure of the scheme. Mr. Kakodkar gave a detailed insight of the scheme and explained how the scheme will be beneficial to the students. He also gave a detailed explanation on how to fill the form and what are the required documents. The students participated in the discussion by floating questions and have shown interest in the scheme.

Geostudio

A workshop on Geostudio was conducted by Department of Civil Engineering for third year Civil Engineering students on 19TH June 2021 from 2pm – 4pm. Geostudio is a modeling software used by Geotechnical Engineers & Earth scientists. It is integrated software suited for modeling slope stability, ground deformation, heat & mass transfer in soil & rock. The session was conducted by Assistant Professor, Ms. Akshata Kudchadker to explain various functions within GeoStudio like SLOPE/W, SEEP/W, QUAKE/W, SIGMA/W, TEMP/W, CITRAN/W and AIR/W. Slope stability analysis was done by students using student edition. All together 38 students participated in the workshop. Faculty co-ordinators for workshop were Mrs. Annapurna Sakhardande, Ms. Akshata Kudchadker and Mrs. Swaroopa Sail.

FIELD VISIT

NIT Goa Campus, Balli

A group of third year Civil Engineering visited new campus of NIT Goa at Balli on 27th March 2021. Prof. Satyesh Kakodkar, Assistant Professor accompanied the students. The Project is being undertaken by the Pune based construction company, B G Shirke. Er. Yadav informed the students that the total area was about of the project as 120 acres and that the project is divided into two phases. The students visited batching plant where he explained how concrete mix is prepared as per the design and how the materials are collected from the silos. The aim is to reduce the duration for the complete completion of the work by using precast technology.

ACHIEVEMENTS

TECHNICAL

Name of the students	Date	Seminar/Workshop/Technical Events/Conferences/Training Programmes etc.	Organized by
Dinesh Joseph John Lopes Pereira Flinton Milroy Silveira John Joseph Reji	Jan- March 2021	NPTEL Foundation Course on Managerial Economics	IIT Kharagpur

Shubham Prashant Kamat Pranath Gauns Dessai Varad Vishwajit Shirodkar			
Sampada Naik, Ankita Phadte, Sharayu Pednekar, Shradha Shirodkar, Richa Satardekar	March 11th-12th, 2021	International conference on Advances in Construction Technology and Management. ACTM -2021	Department of Civil Engineering (COEP)
Parth Kushte Avisha Satarkar Sonam Shailesh Bhagat	5 th June 2021	National E-Conference on Environment and Sustainable Development	Sardar Patel College of Engineering (SPCE), Bakrol and State NSS Cell of Gujarat
Shifa Gaunker Pawan Arolkar Kishan Arondekar Sheriton Fernandes De Melo Aristophanes	19 th & 20 th June 2021	International Virtual Conference on Recent Innovations in Science and Technology (RIST 2021)	Eranad Knowledge City Technical Campus, Malappuram, Kerela, India in association with ISET Research and HEXAIND Technologies and Services.
Shubham Prashant Kamat	22 nd June 2021	National Level Mathematical E-Quiz	Department of Mathematics, Sri Santhoshi Art and Science College Paiyambadi-Polambakkam
Shubham Prashant Kamat Parth Kushte	26 th June 2021	Expert Lecture on Computer Aided Engineering	Election