e-Newsletter

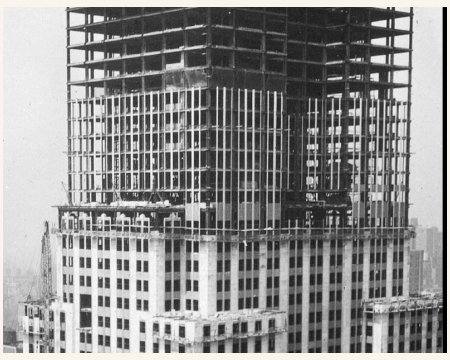
INFRA TODAY

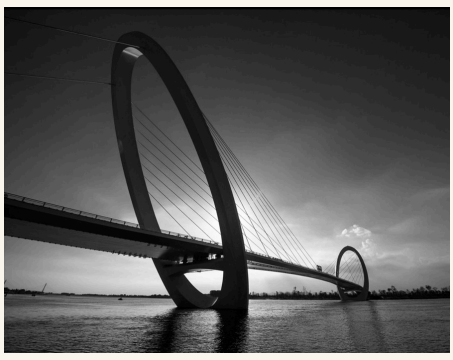
DEPARTMENT OF CIVIL ENGINEERING

Sri Krishnadevaraya Educational Trust

SIR M. VISVESVARAYA INSTITUTE OF TECHNOLOGY

(Affiliated to VTU-Belagavi, Recognized by AICTE and Accredited by NAAC)





DECEMBER 2024
VOLUME 08
ISSUE 1

SUPPORTED BY:
Prof. Rakesh S. G., Principal
Dr. Ravi Kumar H., HOD
Ms. Anitha J., Assistant Professor
Ms. Vyshnavi D. R., Assistant Professor

INSTITUTE

VISION

- To be a Centre of Excellence in technical and management education, fostering innovation, cutting-edge interdisciplinary research and ethical values to create responsible citizens and skilled professionals ready to serve as invaluable assets to the global community.

MISSION

- Providing rigorous academic programs that blend technical expertise and management principles to equip students with the skills needed to excel in their chosen fields.
- Fostering innovation and interdisciplinary collaboration among faculty and students to spearhead impactful research aimed at addressing sustainability challenges, while also providing robust support for entrepreneurial ventures and initiatives.
- Integrating ethical and social responsibility among the engineers and managers who understand the importance of their work in advancing society while upholding professional integrity.
- Establishing partnerships with industry leaders and stakeholders to create opportunities for experiential learning, internships, and real-world projects that prepare students for successful careers in the global marketplace.
- Continuously investing in state-of-the-art facilities, technology, and faculty development to ensure a dynamic learning environment that fosters creativity, critical thinking, and lifelong learning.

DEPARTMENT

VISION

- To create competent, disciplined quality Engineers and administrators of global standards in Civil Engineering with capability of accepting new challenges.

MISSION

- To impart quality education in Civil Engineering.
- To serve society by providing professional Civil Engineering leadership to find solution to community, regional and global problems and accept new challenges in rapidly changing technology.
- To create competent professionals who are trained in the design, and development of Civil Engineering systems and contribute towards research & development activities.

PROGRAM OUTCOMES (POs)

- **PO1**-Engineering knowledge: Apply the knowledge of mathematics, science, engineering Fundamentals and an engineering specialization to the solution of complex engineering problems in Civil Engineering.
- **PO2**-Problem analysis: Identify, formulate, review research literature, and analyse complex Engineering problems in Civil Engineering reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
- **PO3**-Design/development of solutions: Design solutions for complex engineering problems and design system components or processes of Civil Engineering that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
- **PO4**-Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments in Civil Engineering, analysis and interpretation of data, and synthesis of the information to provide valid conclusions for complex problems:
  - that cannot be solved by straightforward application of knowledge, theories and techniques applicable to the engineering discipline as against problems given at the end of chapters in a typical text book that can be solved using simple engineering theories and techniques;
  - that may not have a unique solution. For example, a design problem can be solved in many ways and lead to multiple possible solutions;
  - that require consideration of appropriate constraints / requirements not explicitly given in the problem statement such as cost, power requirement, durability, product life, etc
  - which need to be defined (modelled) within appropriate mathematical framework; and; that often require use of modern computational concepts and tools, for example, in the design of an antenna or a DSP filter
- **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 in Civil Engineering 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 in Civil Engineering.
- **PO7**-Environment and sustainability: Understand the impact of the professional engineering solutions of Civil Engineering in societal and environmental contexts and demonstrate the knowledge of and need for sustainable development.
- **PO8**-Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
- **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 effectively on complex engineering activities with the Engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
- **PO11**-Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
- **PO12**- Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

PROGRAM SPECIFIC OBJECTIVES (PSOs)

- **PSO1**. Identify the broad context of Civil Engineering problems, including describing the problem Conditions, Identifying possible contributing factors and generating alternative solution strategies.

- **PSO2**. Undertake laboratory, field and other data collection efforts using commonly used measurement techniques to support the study and solution of Civil Engineering problems.

- **PSO3.** Employ mathematics, science and computing techniques in a systematic, comprehensive and rigorous manner to support the study and solution of Civil Engineering problems.

- **PSO4.** Exhibit good teamwork skills and serve as effective member of multi-disciplinary project teams.

PROGRAM EDUCATIONAL OBJECTIVES (PEOS)

- **PE01.** Graduates will become leaders in the industries associated with Civil Engineering and become professional entrepreneurs. They will be experts working in public sector, private sector, and international organizations.
- **PE02.** Graduates will engage in continual learning by pursuing advanced degrees or additional educational opportunities through coursework, professional conferences and training, or participation in professional societies.
- **PE03.** Graduates will adapt to different roles and responsibilities in multidisciplinary environment by respecting professionalism and ethical practices. They will contribute to the well-being of the society and environment through responsible practice of Engineering profession

Principal's Message

It gives me immense pleasure to convey my greetings to the Department of Civil Engineering on the release of its Annual Newsletter. A newsletter is not just a compilation of events and achievements, but also a reflection of the collective efforts, aspirations, and progress of the department.

Civil Engineering, being one of the oldest and most impactful branches of engineering, continues to play a pivotal role in nation building and sustainable development. In the present era, with rapid urbanization and increasing emphasis on sustainable infrastructure, civil engineers shoulder the responsibility of creating solutions that are innovative, resilient, and environmentally conscious.

I am delighted to note that the department has been consistently striving to provide quality education, foster research culture, and encourage students to participate in co-curricular and extracurricular activities. The achievements of faculty members and students highlighted in this newsletter are a testimony to their dedication and commitment.

I extend my heartfelt congratulations to the editorial team for their sincere efforts in bringing out this edition. I am confident that this newsletter will inspire students and faculty members alike to aim higher and contribute meaningfully to the growth of the department and the institution.

I wish the Department of Civil Engineering continued success in all its future endeavors.

Prof. Rakesh S. G.
Principal

HOD's Message

It gives me immense pleasure to address you through this edition of our Department's newsletter. A department is not defined only by its infrastructure or laboratories, but by the people who bring it to life, our dedicated faculty, enthusiastic students, and committed staff. Together, we form a community that strives for excellence in learning, research, and service to society. Civil engineering has always stood as the foundation of progress.

From building resilient infrastructure to shaping sustainable cities, our role is central to the development of the nation. In today's world, where technology and innovation are redefining every field, it is essential for us to remain adaptable, curious, and committed to lifelong learning.

To the students, I encourage you to embrace challenges as opportunities. The knowledge and skills you acquire here will empower you to design solutions that go beyond blueprints and truly impact lives. Engage actively in academics, projects, and research, and never hesitate to explore new ideas. Remember, every great structure begins with a strong foundation and the same is true of your career.

To my colleagues, I extend my gratitude for your tireless efforts in guiding and inspiring our students. Your mentorship and dedication are the pillars of our department's growth.

Let us continue to uphold the values of integrity, hard work, and innovation. Together, we can shape not only successful engineers but also responsible citizens who contribute meaningfully to society.

Dr. Ravi Kumar H.
Head of the Department

EDITORIAL MESSAGE

With great joy and enthusiasm, we present to you this edition of the Civil Engineering Department's newsletter. Serving as student editors has been a rewarding journey for all of us, allowing us to witness the hard work, creativity, and achievements that make our department truly special.

Civil engineering is more than a discipline, it is a commitment to building the foundations of society. Every classroom lecture, project, or research effort undertaken here contributes to shaping a better tomorrow. Through this newsletter, we aim to capture not only the academic accomplishments of our peers and faculty but also the spirit of innovation, teamwork, and resilience that defines our department.

This edition highlights a blend of academic insights, achievements, and personal experiences. It reflects the dedication of our faculty in guiding us, the determination of our students in striving for excellence, and the collaborative spirit that drives us forward. We hope these pages inspire you to aim higher, take pride in your work, and continue contributing to the ever-evolving field of civil engineering.

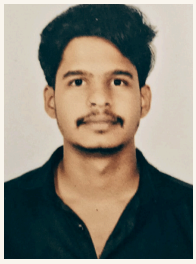
We extend our heartfelt gratitude to our Head of the Department, faculty members, and fellow students for their support and contributions. Without their encouragement, this newsletter would not have been possible. As editors, we believe that every story shared here is a reminder of how far we have come and how much more we can achieve together. Let this newsletter not just be a record of our efforts but also a source of motivation for all of us to dream bigger, learn deeper, and build stronger.

Ms. Anitha J.
Assistant Professor

Ms. Vyshnavi D.R.
Assistant Professor

Pavan S.
1MV24CV412

Shivakumar A.P.
1MV24CV416



Abhishek R. Nagaral
1MV24CV400

Happy reading!

With warm regards,
Editors

MESSAGE FROM ALUMNUS

The Graduate Aptitude Test in Engineering (GATE) is one of the most prestigious competitive examinations for engineering and science graduates in India. Conducted by the Indian Institute of Science (IISc) Bangalore and the Indian Institutes of Technology (IITs), the exam evaluates a candidate's grasp of concepts studied during undergraduate education. Over the years, GATE has evolved from being merely an entrance test to becoming a powerful platform for higher education, professional advancement, and research opportunities. For aspiring engineers, particularly in civil engineering, it serves as a vital milestone in both academic and career growth.

The true relevance of GATE lies in the diverse opportunities it offers. A strong score can secure admission into postgraduate programs such as M.Tech.,, M.E., and Ph.D. at premier institutions including IITs, NITs, IIITs, and IISc. These programs are often supported by scholarships and fellowships, making advanced studies financially sustainable. For students, this not only ensures academic enrichment but also provides the right environment to pursue cutting-edge research.

Beyond higher education, GATE has become a direct gateway to employment in Public Sector Undertakings (PSUs). Leading organizations such as ONGC, IOCL, NHPC, and NHAI recruit through GATE, valuing the analytical and technical expertise of candidates. These career opportunities are highly sought-after, as they offer job security, professional satisfaction, and the chance to work on impactful projects of national importance. GATE scores are also considered by universities and research institutions for doctoral programs and fellowships, thereby opening doors for a career in academia and teaching.

The exam is conducted in a computer-based format and consists of 65 questions for a total of 100 marks, to be attempted in three hours. It includes three components:

General Aptitude – common to all candidates and focused on reasoning and communication skills.
Engineering Mathematics – testing logical ability and problem-solving skills.
Subject-specific section – assessing in-depth knowledge of the chosen discipline.

Questions appear as multiple choice (MCQs), multiple select (MSQs), and numerical answer type (NATs). While MCQs have negative marking, MSQs and NATs do not penalize incorrect attempts. The GATE score remains valid for three years for higher studies and is typically considered for one to two years by PSUs for recruitment.
Consistent preparation is the key to success. Students should begin by understanding the syllabus, practicing previous years' question papers, and strengthening their core subjects. Equal attention must be given to General Aptitude and Engineering Mathematics, as these contribute nearly one-third of the marks. Regular mock tests, timed practice sessions, and periodic revision of formulas and concepts are essential strategies.

From personal experience, GATE shaped both my academic and professional journey. I cleared the exam multiple times between 2017 and 2021. My 2017 score led me to NIT Silchar, where I pursued M.Tech and later continued into Ph.D. with full support through GATE scholarships. The fellowship not only eased financial pressure but also allowed me to focus on research in a stimulating academic environment. Preparing for the exam year after year also sharpened my concepts and strengthened my problem-solving approach, which proved invaluable in both research and teaching.

For civil engineering students, GATE holds special importance. With India's rapid urbanization and infrastructure expansion, demand for skilled civil engineers is at an all-time high. Specialized postgraduate programs in Structural, Geotechnical, Transportation, and Environmental Engineering allow students to explore advanced fields and contribute meaningfully to sustainable national projects. PSUs and academic institutions alike value GATE-qualified civil engineers for their technical depth and innovative mindset.

In conclusion, GATE is not just a test of academic knowledge but a gateway to higher education, secure employment, and impactful research. Preparing for it cultivates critical thinking, analytical reasoning, and resilience, which are the skills that extend far beyond the exam hall. For civil engineering students, it represents an opportunity to unlock potential, contribute to national development, and step confidently into a future filled with professional possibilities.

All the best. Try your best, and leave the rest.

Dr. Gautam
(Sir MVIT, Batch 2011-2015)

SITE VISITS

- The department organized an industrial visit to Karnataka State Natural Disaster Management Centre Near Yelahanka, Bengaluru on 24th January 2024. 19 students from Fifth Semester took part in the visit. The event was coordinated by Dr. Shivanna S., and Ms. Vyshnavi D. R.
- The department organized Site Visit to “Steel Structure Construction” at Sir MVIT, Block 5 on 1st February 2024. The event was organized by Ms. Anitha J. and Ramya N. and coordinated by Dr. Pradeepa S. and Ms. Tamil Selvi N.
- As part of Road safety month, the department organized a technical visit to Traffic Management Centre (TMC), Bengaluru on 13th February 2024. The event was coordinated by Mr. K.V.R. Prasad and Dr. Shivanna S.
- As the part of the course “Social connect & Responsibility” the department organized Heritage trip to ISKCON temple on 23rd February 2024. The event was coordinated by Dr. Pradeepa S. and Ms. Bhavya S.
- The department organized Site Visit to Rajanukunte Railway Station, Yelahanka Bengaluru, on 4th March 2024. 33 students from third semester took part in the visit. The visit was organized by Mr. K. V. R. Prasad and Ms. Ramya N.
- The department organized Site Visit to New Library Block at Sir MVIT campus, on 24th June 2024. 33 students from fourth semester took part in the visit. The visit was organized by Ms. Ramya N.
- The department organized a site visit to ACC plant near Sir MVIT on 18th July 2024. 19 students from Sixth Semester took part in the visit. The visit was organized by Dr. Pradeepa S., and Ms. Bhavya S.
- The department organized a site visit to a Ready-Mix Concrete plant located near Sir MVIT on 26th July 2024. 33 students from fourth Semester took part in the visit. The visit was organized by Ms. Ramya N., Ms. Subhadra G. D., and Ms. Anitha J.

DEPARTMENTAL EVENTS

- As the part of the course “Renewable Energy sources” the department organized an Activity Project Based Learning on 17th January 2024 at Sir MV Seminar Hall. The event was coordinated by Dr. Pradeepa S.
- As the part of the course “Renewable Energy sources” the department organized Skill development program on 17thJanuary 2024 at Sir M.V. Seminar Hall. The event was coordinated by Ms. Ramya N.
- As the part of the course “Social connect & Responsibility” the department organized “Awareness program on organic Farming” on 27th January 2024 at Suggatta Village. The event was coordinated by Dr. Pradeepa S., and Ms. Bhavya S.
- The department organized Two Days SDP on “Land Survey using Total Station” on 6th and 7th February 2024. The event was coordinated by Ms. Ramya N., Ms. Bhavya S., Ms. Subhadra G. D. and Mr. Sriram Mustapure.
- The department organized One-Day Training Program on “Differential Global Positioning System” on 8th February 2024. The event was coordinated by Ms. Ramya N., Dr. Pradeepa S., Ms. Anitha J. and Ms. Vyshnavi D. R
- The department organized SDP on “A Practical Approach on Fire Safety in Buildings” on 15th February 2024. The event was coordinated by Mr. Sriram Mustapure, Dr. Shivanna S., Ms. Subhadra G. D.
- The department organized One Day SDP on “Personality Development Skills” at Sir M V Seminar Hall on 27th February 2024. The event was coordinated by Dr. Pradeepa S., Ms.Bhavya S., Ms. Anitha J., Ms. Tamil Selvi N., Ms. Ramya N. and Ms. Subhadra G. D.
- The department organized a Project Based Learning Activity on 13th March 2024 at Sir M. V. Seminar Hall. 19 students from Fifth Semester participated in the event. The event was coordinated by Ms. Subhadra G. D., Ms. Bhavya S. and Mr. Sriram Mustapure.
- The department in association with Indian Oil Corporation Limited Organized Webinar on “Road Construction and use of Bitumen” on 15th March 2024. The resource person was Mr. Dhanesh Kumar, Sr. Manager, IOCL R&D Centre. 75 students from Third, Fifth and Eighth Semester attended the session. The event was coordinated by Mr. K. V. R. Prasad, Ms. Ramya N. and Ms. Subhadra G. D.
- The department organized Five Day Online Faculty Development Program on “Sustainable Construction Materials, Practices, and Technologies.” from 18 to 22 March 2024. The event was coordinated by Ms. Anitha J., Dr. Pradeepa S., Ms. Tamil Selvi N. and Ms. Ramya N.
- As part of the course “Universal Human Values”, the department organized an Awareness program on Social Justice and Equity and Environmental Stewardship at Hunasamaranahalli Village on 3rd July 2024. 33 students from Fourth semester participated in the event. The event was coordinated by Dr. Pradeepa S. and Ms. Bhavya S.
- As part of the course Construction Management and Entrepreneurship the department organized Online Interaction: “Bridging Theory and Practice: Industry Insights on Cutting-Edge Construction Management “on 29th July 2024 and 30th July 2024. 19 students from Sixth Semester took part in the visit. The event was Coordinated by Ms. Tamil Selvi N.

- The department in association with IIC Innovation Council Cell organized an “Innovation and Entrepreneurship Outreach Program: Cultivating Innovators of Tomorrow” at Govt Primary School Suggatta, Bengaluru on 29th and 30th July 2024. 30 school students took part in the Program. The event was Coordinated by Ms. Tamil Selvi N., Ms. Anitha J., and Mr. Sriram Mustapure.
- The department organized an Alumni Interaction on 4thJuly 2024. The resource Person was Mr. Srikrishna Nudurumati, Consultant in AI, RF, IOT and Spectral Imaging. students from fourth semester took part in the Interaction. The event was Coordinated by Dr. Ravikumar H., and Mr. K. V. R. Prasad.
- The department had organized a guest lecture on “Smart Tunnelling” on 28th October 2024 at Sir M. V. Seminar Hall. 49 Students of 3rd and 5th semester participated in the event. This event was coordinated by Ms. Ramya N. and Mr. KVR Prasad.
- The department in association with the Institution’s Innovation Council, organized an inspiring session titled “My Story- Motivational Session by Successful Innovators,” at CSE Seminar Hall on 29th November 2024. 119 students of Fifth Semester from the Civil Engineering, Information Science, and Computer science Engineering departments participated in the event. This event was coordinated by Ms. Tamil Selvi N., Ms. Anitha J., and Ms. Subhadra G. D.
- The department in association with Mechanical Engineering Department Organized Career Development Program on Recent Technological Advancements in CRIP Sector-Project, Communicational Challenges and Techno-Managerial Opportunities on 29th November 2024 at CSE Seminar Hall. 110 students from Third and Fifth semester of Civil and Mechanical Engineering Department took part in the event. The event was organized by Mr. K V R Prasad, Dr. Shivanna S., Mr. Sriram Mustapure and Ms. Veena B. G.

- The department organized a 2 Day Workshop on “BIM using Revit Architecture” on 27th and 28th November 2024 at Civil CAD Lab. 43 Students from third Semester took part in the event. The event was organized by Ms. Anitha J., Ms. Tamil Selvi N., Ms. Ramya N., and Mr. Sriram Mustapure.
- The department had organized a Guest lecture on “Air Quality Modeling and Climate Influence” on 21st November 2024 at Faraday Seminar Hall. 59 Students from third and seventh semester participated in the event. This event was coordinated by Ms. Vyshnavi D. R.
- The department organized a 3 Day Workshop on Digitalized Land Survey from 7th to 9th November 2024 at Sir MVIT Ground. 43 Students from third semester took part in the event. The event was organized by Ms. Ramya N., Ms. Anitha J., Ms. Vyshnavi D. R., Ms. Bhavya S. and Ms. Subhadra G. D.
- The department organized a 2-Day Workshop on “Evaluation of Geotechnical Properties of Soil for Foundation Design” on 13th and 14th December 2024 at Geotechnical Engineering Laboratory. 33 Students from fifth semester took part in the event. The event was organized by Ms. Subhadra G. D., Ms. Bhavya S. and Ms. Ramya N.


SAY
NO
TO PAPER
CUPS


DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

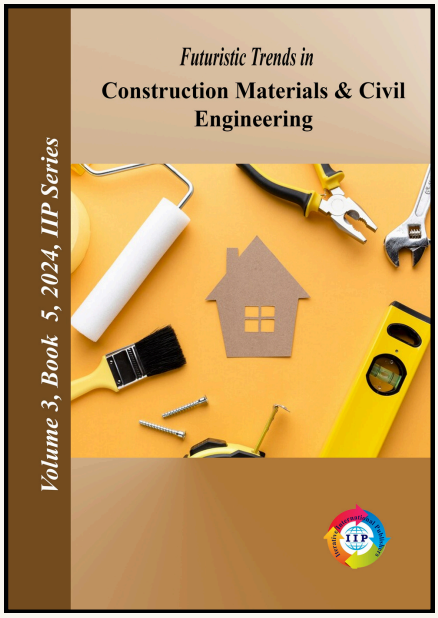

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

PATENTS PUBLISHED

- Chethan Kumar Srinivas, Nanjunda Swamy, Satheesh Kumar, K. V. R. Prasad, Ravi Kumar H., Sagar SidappaJirli, Shahaji Shahaji, Cocrete Filled Bridge panel having Galvanized Steel Tube, Application number 6369633, 15thJune 2024, UK.
- Anjum Ghazala, Ravi Kumar H., Ashwini L. K., K. V. R. Prasad, Nanjunda Swamy, S. Chethan Kumar "An Integrated System for Modelling and Verifying Mechanical Response in MWCNTs & HNCs Reinforced Cement Nano Composites" Application Number 20 2024 100713, 08.05.2024, Germany.
- Tamil Selvi N. published a patent on "Integrated Deep learning for Adaptive Smart Energy Management in Urban Environments" Application Number 202441000139A, 26th January 2024, India.
- Pradeepa S., Sowjanya Lakshmi A., Ch. Vanipriya."Smart Plumb Bob: Plumb Bob with AI and Sensor Fusion for Optimized Construction Alignment and Surface Accuracy." Application number202441093229, 6th December 2024, India.
- Pradeepa S., Rashmi K. V., and Prashanth G. K. "Antifungal Treatment for Concrete Surfaces using Zinc Oxide: A sustainable Approach to Mitigate Fungal Growth.", Application number 202441072124, 4th October 2024, India.

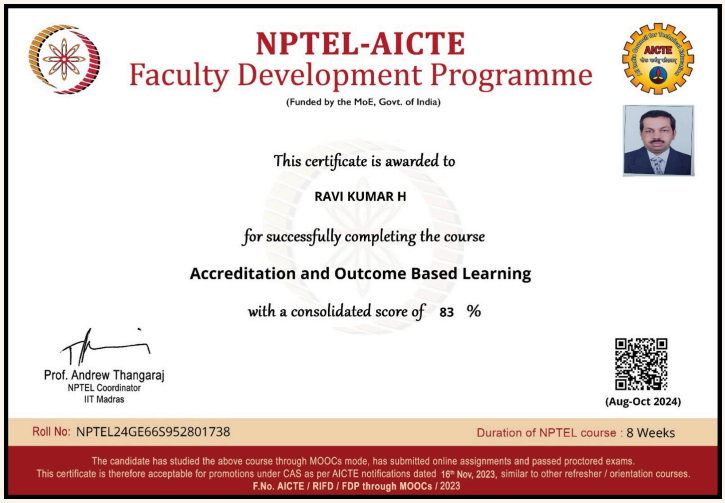
BOOK CHAPTERS PUBLISHED

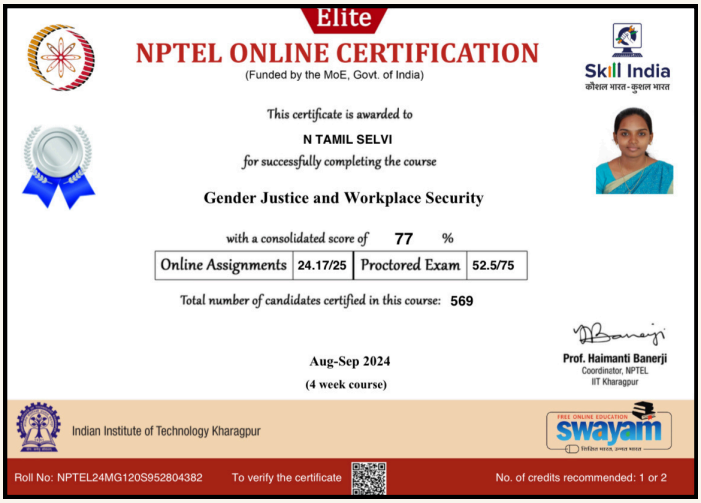
- Anitha J. "Smart Materials in Construction" Futuristic Trends in Construction Engineering, IIP Series, 2024. 132 -145. Volume 3 book 5.
- Pradeepa S., Anitha J., and Ramya N. "Eco Materials" Futuristic Trends in Construction Engineering, IIP Series, 2024. 161- 170.Volume 3 book 5.

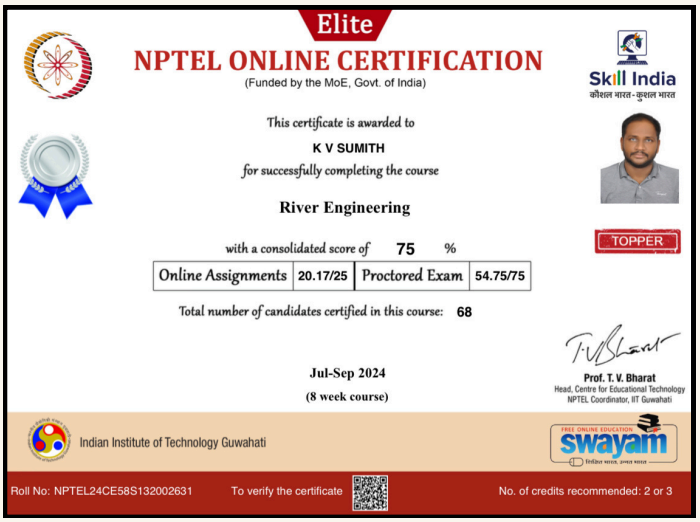


FACULTY ACHIEVEMENTS

- **Dr. Pradeepa S.** successfully completed her PhD from Visvesvaraya Technological University.
- **Dr. Ravi Kumar H.** successfully completed the course with Silver Elite grade offered by IIT-Kharagpur on “Accreditation and Outcome Based Learning” through the NPTEL Swayam online platform.
- **Dr. Ravi Kumar H.** carried out the Academic and Administrative Audit of the Department of Civil Engineering, BMSIT on 22nd January 2024.
- **Ms. Tamil Selvi N.** successfully completed the following course offered by IIT-Kharagpur on
  1. Gender Justice and Workplace Security and
  2. Intellectual Property Rights and Competition Law” through the NPTEL Swayam online platform.
- **Ms. Tamil Selvi N.** successfully completed the course offered by IIT-Roorkee on “International Studies in Vernacular Architecture” through the NPTEL Swayam online platform.
- **Mr. K. V. Sumith** successfully completed the NPTEL Swayam online course on River Engineering and was recognized as a topper in the program.







FACULTY ACHIEVEMENTS

- **Ms. Vyshnavi D. R.** successfully completed the course on Research Methodology through NPTEL Swayam online course.
- **Ms. Anitha J.** successfully completed the following courses through MathWorks Training Services.
  "Curve Fitting Onramp" on 3rd January 2024.
  "Statistics Onramp" on 30th January 2024.
- **Dr. Shivanna S.** has chaired the technical session in International Conference on Climate Change and Geosciences (ICCCG-2024) held on 5th and 6th February 2024 organized by the Department of Geology, Bangalore University, Bangalore, Karnataka.


MathWorks | Training Services

Course Completion Certificate

Anitha J

has successfully completed **100%** of the self-paced training course

Curve Fitting Onramp

DIRECTOR, TRAINING SERVICES

3 January 2024


MathWorks | Training Services

Course Completion Certificate

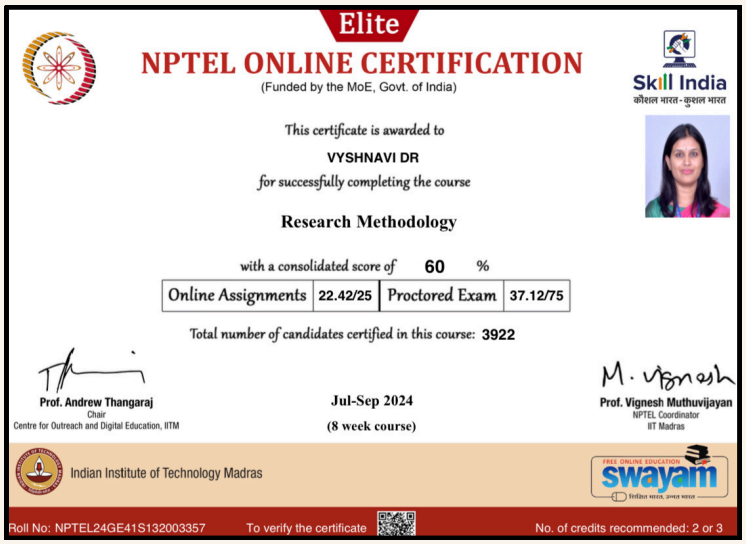
Anitha J

has successfully completed **100%** of the self-paced training course

Statistics Onramp

DIRECTOR, TRAINING SERVICES

30 January 2024


Elite

NPTEL ONLINE CERTIFICATION

(Funded by the MoE, Govt. of India)

Skill India
कौशल भारत-कुशल भारत

This certificate is awarded to

VYSHNAVI DR

for successfully completing the course

Research Methodology

with a consolidated score of 60 %

Online Assignments	22.42/25	Proctored Exam	37.12/75

Total number of candidates certified in this course: 3922

Prof. Andrew Thangaraj
Chair
Centre for Outreach and Digital Education, IITM

Jul-Sep 2024
(8 week course)

Prof. Vignesh Muthuvijayan
NPTEL Coordinator
IIT Madras

Indian Institute of Technology Madras

swayam

Roll No: NPTEL24GE41S132003357 To verify the certificate No. of credits recommended: 2 or 3

CHENAB RAILWAY

WORLD'S TALLEST RAILWAY ARCH

KEY FACTS AT A GLANCE

The Chenab Railway Bridge, located in the Reasi district of Jammu and Kashmir, stands as a landmark achievement in civil engineering and infrastructure development. Conceived as part of the Udhampur–Srinagar–Baramulla Rail Link (USBRL) project, this bridge is crucial for connecting the Kashmir Valley to the rest of India, overcoming some of the most challenging Himalayan terrain ever tackled by a railway. Soaring an impressive 359 meters above the riverbed, the Chenab Railway Bridge proudly claims the title of the world's highest railway arch bridge.

Spanning a total length of 1,315 meters with a central arch of 467 meters, the bridge is engineered to withstand wind speeds up to 266 km/h, temperature variations from -20°C to +45°C, and significant seismic forces characteristic of the Himalayan zone. Advanced construction techniques, including incremental launching and cable crane methods, were adopted to navigate the region's deep gorges and difficult access. The use of specially treated steel and high-performance concrete ensures a design life of 120 years, highlighting the meticulous planning and execution behind this iconic structure.

Beyond its engineering brilliance, the Chenab Railway Bridge is of immense strategic significance. It will substantially enhance military mobility, enable easier civilian transit, and promote economic growth by linking remote communities with the national railway network. Following completion of the arch in 2021, the bridge's superstructure was finalized in 2022, and track installation and testing concluded in 2023, setting the stage for full operational readiness.

As civil engineers, we can take pride in this inspiring project, which not only demonstrates technical excellence but also embodies the spirit of nation-building. The Chenab Railway Bridge is more than just an infrastructural element; it is a powerful symbol of resilience, connectivity, and progress for India.

Source http://blogs.foaidindia.in

SHIVA KUMAR A. P.
3rd Sem , 1MV24CV416

DUBAI CREEK TOWER

T A L L E S T S T R U C T U R E

THE MAKING

Rising from the heart of Dubai Creek Harbour, Dubai Creek Tower is a testament to Dubai's relentless pursuit of architectural and engineering innovation. Originally unveiled in 2016, this monumental project was designed by renowned architect Santiago Calatrava, drawing inspiration from the elegant form of a lily flower and the slender profile of a traditional Islamic minaret. Blending cultural symbolism with cutting-edge structural engineering, Dubai Creek Tower is poised to become one of the most striking towers in the world.

Planned initially to exceed 1,300 meters in height and challenge the record held by the Burj Khalifa, the tower's final design is now undergoing a measured revision. The most recent reports indicate a height slightly below the Burj Khalifa's 828 meters, a recalibration reflecting both economic realities and shifting priorities post-pandemic. However, even with a moderated scale, Dubai Creek Tower retains its extraordinary ambitions. Its central reinforced-concrete shaft is anchored by an innovative system of high-strength steel cable stays that radiate outward, providing exceptional stability against wind and seismic forces. The foundations themselves are a marvel: 140 barrette piles were driven to unprecedented depths, with load testing carried out at 36,000 tonnes, setting a global record for foundation testing.

At the tower's summit, the "flower bud" observation pod is engineered to house multiple observation decks, ten in total which includes the Pinnacle Room, promising a breathtaking 360-degree view of Dubai's skyline and the Arabian Gulf.

These decks are designed not only for observation but also for hosting restaurants, sky gardens, and potentially luxury hospitality facilities, making the structure far more than just a communications mast. Vertical transportation within the tower is expected to rely on ultra-fast, high-capacity lifts integrated with advanced smart controls, ensuring minimal wait times even at extreme In terms of sustainability, Dubai Creek Tower plans to integrate water recycling systems, solar technologies, and vertical gardens, echoing Dubai's broader commitment to sustainable urban development. The tower will also serve as a powerful broadcast and telecommunications hub, cementing its place in Dubai's infrastructure ecosystem.

Although construction came to a standstill in April 2020 due to the global COVID-19 pandemic, Emaar, the developer, announced a resumption of activity in 2024. A fresh design revision is currently in progress, with further details expected to be released soon. The tower is part of the larger Dubai Creek Harbour master plan, which includes residential, commercial, and leisure precincts surrounding a vast new waterfront development.

Dubai Creek Tower's audacious engineering, advanced foundation design, and culturally inspired architecture position it as a true emblem of twenty-first-century infrastructure. Even as its height ambitions are scaled back, its symbolic power and technical mastery remain undiminished, ensuring that once complete, the tower will stand proudly as a new beacon on Dubai's ever-evolving skyline.

PRABHU
3rd Sem , 1MV24CV413

HIGH SPEED 2 (HS2)

BRITAIN'S NEW HIGH SPEED RAILWAY

Britain’s HS2 (High Speed 2) is a groundbreaking high-speed rail project designed to connect London and Birmingham at speeds up to 360 km/h, featuring advanced slab track systems, aerodynamic rolling stock, and state-of-the-art ETCS Level 2 signaling. The route includes some of the most challenging infrastructure in Europe, such as the 16 km Chiltern Tunnel constructed with slurry shield TBMs, and the 3.4 km Colne Valley Viaduct built using precast post-tensioned concrete segments. By adopting a slab track system instead of traditional ballast, HS2 ensures smoother, lower-maintenance operations at high speed, while the electrified 25 kV AC system supports its low-carbon objectives.

Though initially budgeted at £30 billion, the project has faced significant cost overruns, pushing estimates past £80 billion due to land acquisition, complex stakeholder engagement, and construction challenges. Nevertheless, HS2 stands as a global model of integrated engineering and sustainability, with lessons highly relevant for India’s bullet train ambitions, particularly in tunnel construction, viaduct design, and advanced signaling. With its environmental focus on green tunnels, wildlife crossings, and spoil reuse, HS2 also demonstrates how modern infrastructure can balance performance with ecological responsibility.

Fig. 1 HS2 under Construction

Fig 2. HS2 3D Image

(Source https://timesofindia.indiatimes.com/)

CHETHAN G S
3rd Sem, 1MV24CV406

THE LINE – NEOM, SAUDI ARABIA

Saudi Arabia has embarked on one of the most ambitious infrastructure projects in human history with The Line, a radical linear smart city at the heart of the NEOM megaproject. Spanning 170 km in length, with a constant width of 200m and a height of 500 m, The Line challenges every established norm of urban planning and civil engineering.

Designed to accommodate up to 9 million people within just 34 km² of built-up area, The Line consists of two parallel mirrored skyscrapers enclosing a high-density urban spine. Its vertical arrangement introduces the concept of Zero-Gravity Urbanism, distributing functions vertically rather than horizontally, thereby integrating residential, commercial, and recreational spaces stacked across multiple levels.

The transportation system eliminates conventional streets and private vehicles, relying instead on an ultra-high-speed underground transit corridor capable of end-to-end travel in 20 minutes, supported by pedestrian-centric layers at the surface. All amenities are promised to be within a five-minute walking distance, reinforcing a walkable, car-free urban lifestyle.

From a sustainability perspective, The Line pledges to operate on 100% renewable energy, preserving 95% of the surrounding NEOM territory from development. Smart city technologies, including advanced AI, IoT integration, and automated waste and water management systems, are planned to optimize operations with near-total data-driven control of urban resources.

Construction commenced in 2021, with the initial phases involving excavation, foundation, and site preparation currently underway.

While the ultimate project timeline envisions full realization beyond 2045, authorities aim to deliver an initial 2.4–5 km segment by 2030, housing around 300,000 people.

Despite its promise, The Line has drawn criticism from urban planners and human rights organizations. Concerns include the forced relocation of local tribes such as the Howeitat, the environmental footprint of its massive mirrored façade, the risk of social isolation within its uniform structure, and significant challenges in long-term maintenance of such a hyper-dense vertical city. Furthermore, its staggering costs and the engineering complexities of tunneling, load transfer, and vertical circulation in a desert environment raise legitimate feasibility questions.

Nevertheless, The Line embodies a new paradigm in infrastructure and urbanism — one that dares to rethink the 21st century city at an unprecedented scale. Its ultimate success or failure will serve as a landmark case study for engineers, architects, urban designers, and policymakers around the world.

UMAR FARUK
3rd Sem, 1MV24CV419

BUILDING CLIMATE RESILIENCE INTO OUR INFRASTRUCTURE

Climate change is reshaping the design challenges civil engineers face. Roads are deforming during prolonged heatwaves, bridges are stressed by more frequent floods, and power lines and transportation networks are increasingly at risk from devastating wildfires. These extreme events highlight the urgent need for climate-resilient infrastructure systems designed not just for today's conditions, but for the future we know is coming.

Resilience means moving beyond historical climate data and embracing adaptive approaches. Engineers are now testing infrastructure systems under higher temperature thresholds, developing fire-resistant materials and coatings to protect critical structures, and designing stormwater and coastal systems that can handle more intense rainfall and rising seas. Nature-based solutions such as wetlands, urban forests, blue-green infrastructure and permeable surfaces are also being integrated to reduce heat buildup and act as buffers against both floods and fires.

What makes this shift so important is that resilience is proactive, not reactive. Incorporating climate modeling, advanced materials and more adaptable infrastructure can lower long-term costs, protect communities, and even improve quality of life. In this evolving landscape, resilience is not just a design feature it is becoming the defining principle of modern civil engineering.

Dr. Pranav Pradeep Kumar
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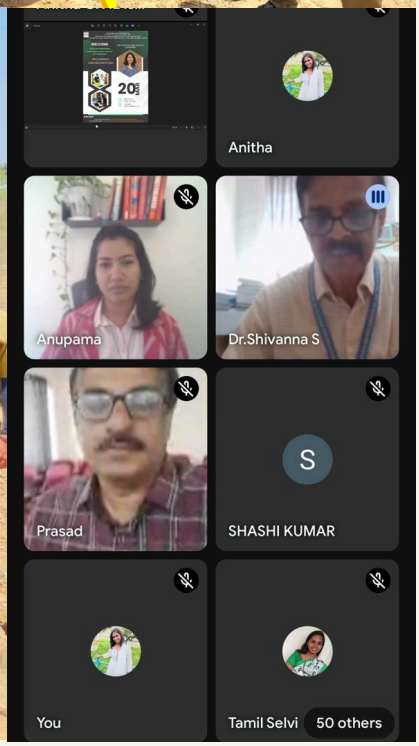
(Sir MVIT, Batch 2012-16)

DEPARTMENT GALLERY

DEPARTMENT GALLERY



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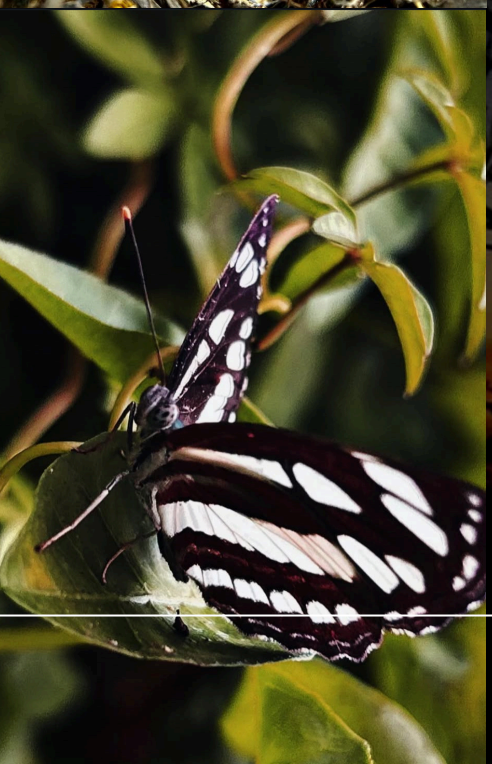
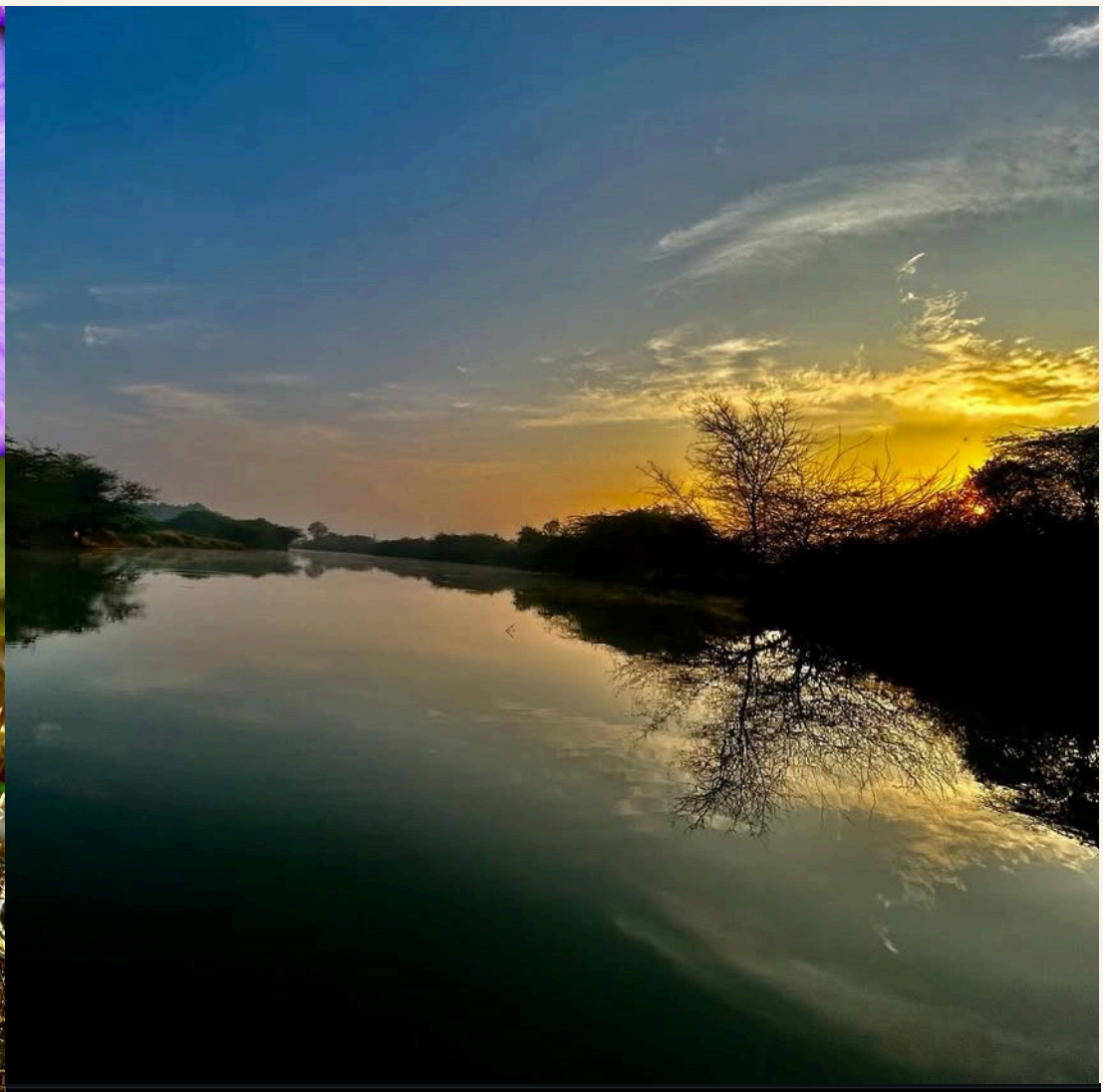




PAVAN S.
1MV24CV412
3RDSEM

Quotes

PEOPLE CONDEMN PLACING IDOLS OF GODS NEAR GARBAGE, DEEMING IT DISRESPECTFUL, YET MANY OF THE SAME PEOPLE WORSHIP WITH HEARTS FULL OF THE VERY TOXICITY AND WASTE THAT POLLUTES THEIR SOULS. TRUE REVERENCE LIES NOT JUST IN OUTWARD RITUALS, BUT IN CLEANSING THE MIND AND SPIRIT FROM WITHIN.

-Yoyo pavan

Life is a wondrous journey,
A tapestry of moments and emotions,
From birth to growth, love to sorrow,
An ever-changing dance of existence.

~Yoyo pavan

The most essential thing in the world to any individual is to understand himself. The next is to understand the other fellow. For life is largely a problem of running your own car as it was built to be run, plus getting along with the other drivers on the highway.

Yo-yo pavan

In my view, everyone is a liar, including myself, because no one dares to speak the whole truth. If everyone were to reveal the complete truth, the connections we hold so closely would begin to unravel, leaving us more distant from one another.

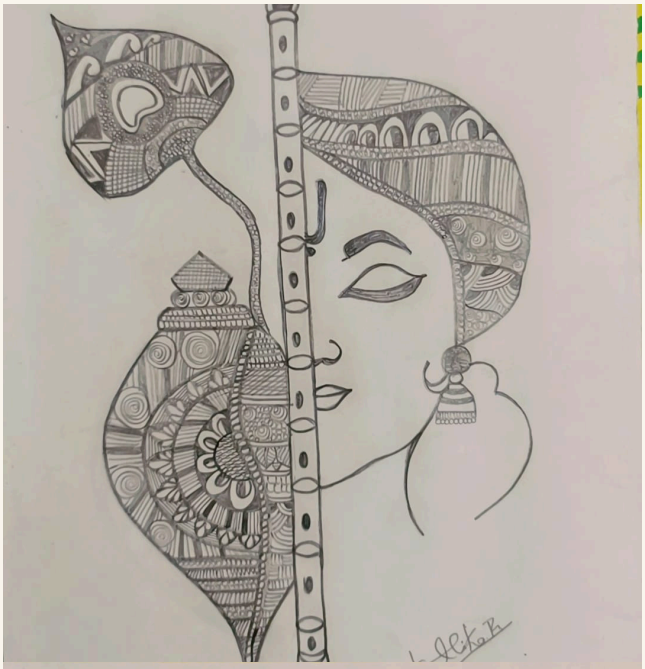
-Yoyo pavan

CERTAINLY! IT SOUNDS LIKE YOU'RE GRAPPLING WITH THE PRESSURE AND COMPARISON OFTEN ASSOCIATED WITH COLLEGE. REMEMBER, FEELING SUFFOCATED MIGHT INDICATE YOU'RE NOT IN THE RIGHT ENVIRONMENT. SUCCESS ISN'T ABOUT FITTING AN ELEPHANT INTO A HORSE RACE; IT'S ABOUT FINDING YOUR TRUE PATH. YOU'RE CAPABLE AND UNIQUE, BUT PERHAPS JUST ON THE WRONG TRACK.

-Yoyo pavan

PAVAN S
3rd sem, 1MV24CV412

Arts



KRUTHIKA
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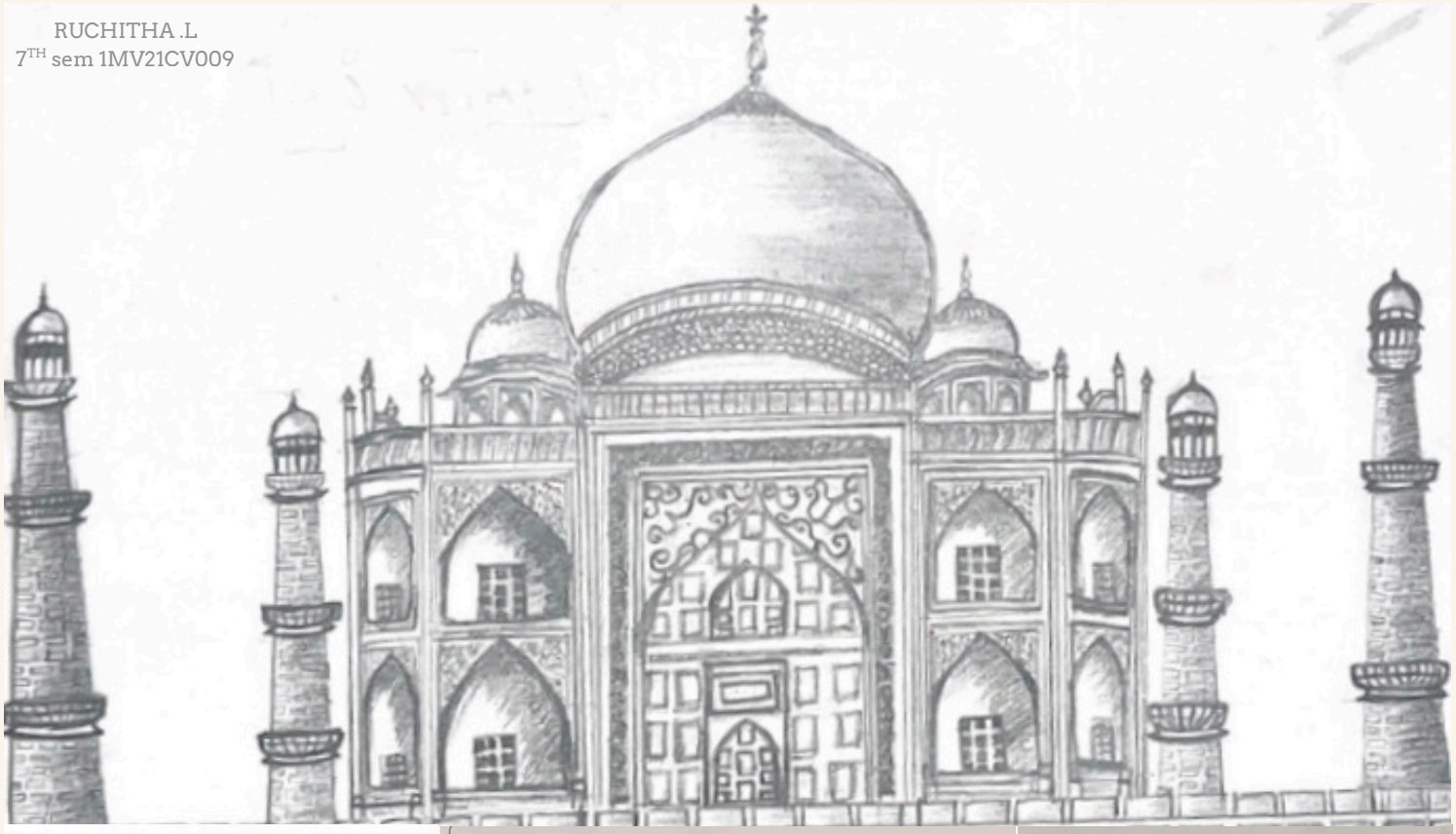
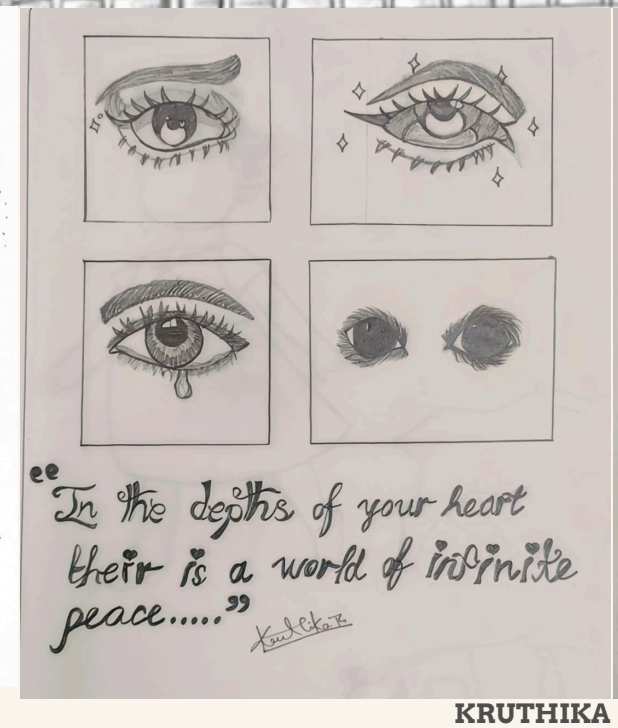
Arts

RUCHITHA .L
7TH sem 1MV21CV009





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2024-2025