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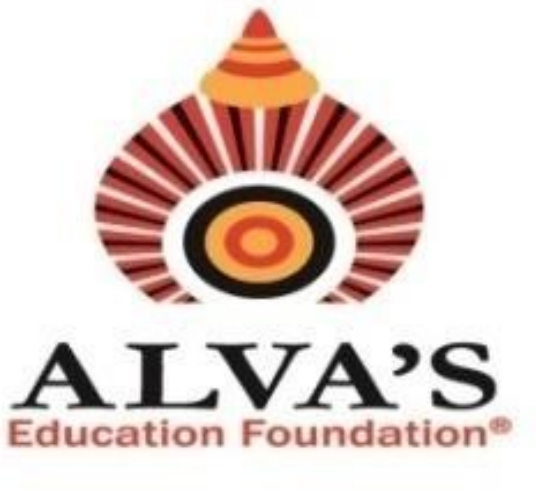
Shobhavana Campus, MIJAR-574225, Moodbidri, D.K., Karnataka
Ph: 08258-262725; Mob:7026262725,mail:principalaiet08@gmail.com



CAREER COUNSELING

AND

TRAINING FOR

COMPETITIVE EXAMINATIONS

5.1.4 Average Percentage of Students benefitted by Guidance for Competitive Examinations and Career Counseling offered by the Institution during the year 2023-24															
Year	**Registration number/roll number for the exam**	**Names of students selected/ qualified**	**NET**	**SLET**	**GATE**	**GMAT**	**CAT**	**GRE**	**JAM**	**IELET**	**TOEFL**	**Civil Services**	**State government examinations**	**Other examinations conducted by the State /**	**STATUS**
2023-24	0124AA0095079	ABHISHEK P												TRUE	NOT CLEARED
	CS23S11227205	CHINMAYA BHAT K K			TRUE										CLEARED
	0124AA0076665	GURULIKHITH S												TRUE	CLEARED
	CS24S51331278	JAGATH S K			TRUE										CLEARED
	CS24S51331424	KARTHIK TOMER			TRUE										CLEARED
	CS24S61331395	MANOJ M			TRUE										CLEARED
	CS24S61331401	NANDA C BANGERA			TRUE										NOT CLEARED
	CS24S51335033	PRASHANTH K			TRUE										CLEARED
	6291177	PRAJWAL B										TRUE			NOT CLEARED
	0223AA0107416	RAHUL												TRUE	CLEARED
	301314	RAHUL										TRUE			NOT CLEARED
	CS24S51331436	RASI K R			TRUE										CLEARED
	3900081	REVANASIDDA B POOJARI										TRUE			NOT CLEARED
	CS24S6134120	RITHIK R M			TRUE										CLEARED
	CS24S51331410	RUCHITHA M R			TRUE										CLEARED
	0124AA0080008	SHARATH RAMANAND NAIK												TRUE	NOT CLEARED
	CS24S51331332	SHIVAPRASAD H S			TRUE										CLEARED
	CS24S61331359	SUCHITH H C			TRUE										CLEARED

Alva's Institute of Engineering & Technology

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Pre-placement Phase-2 Training Schedule

Date	Group_1: SSCD Lab	Group_2: Internet Lab(GF)	Group_3: AIML Lab(2nd F)	Group_4: ISE Lab(3rd F)
11th Aug	**KSCST Project Exhibition: All students must should view all the interdisciplinary projects and Prepare the Synopsis for Final Year Projects**			
12th Aug	**3 Hours Descriptive Assessment on Data Structures & Algorithms(9:30-12:30)**			
Time	**9Am to 5 PM**	**9Am to 5 PM**	**9Am to 5 PM**	**9Am to 5 PM**
14th Aug	**Python Programming Fundamentals** *Prof.Shrikanth & Prof. Rizawan N Shaikh*	**Java Programming** *Dr.Mohideen Badhusha S*	**Java Programming** *Prof.Mahesh Kini M and Mr.Senthil Kumar R*	**Java Programming** *Dr.Pradeep V and Mrs. Deeksha M*
15th Aug	**Python Programming Fundamentals** *Prof.Shrikanth & Prof. Rizawan N Shaikh*	**Java Programming** *Dr.Mohideen Badhusha S*	**Java Programming** *Prof.Mahesh Kini M and Mr.Senthil Kumar R*	**Java Programming** *Dr.Pradeep V and Mrs. Deeksha M*
16th Aug	**Python Programming Fundamentals** *Prof.Shrikanth & Prof. Rizawan N Shaikh*	**Advanced Java Programming** *Mr.Charles Antoni, Mysuru*	**Java Programming** *Dr.Mohideen Badhusha S*	**Web Programming** *Prof.Vidya & Mr.Prashanth Kumar*
17th Aug	**Advanced Python Programming** *Dr. Basavaraj Talawar, NITK Surathkal*	**Advanced Java Programming** *Mr.Charles Antoni, Mysuru*	**Java Programming** *Dr.Mohideen Badhusha S*	**Web Programming** *Prof.Vidya & Mr.Prashanth Kumar*
18th Aug	**Advanced Python Programming** *Dr. Basavaraj Talawar, NITK Surathkal*	**Web Programming** *Prof.Vidya & Mr.Prashanth Kumar*	**Advanced Java Programming** *Mr.Charles Antoni, Mysuru*	**Java Programming** *Dr.Mohideen Badhusha S*
19th Aug	**Advanced Python Programming** *Dr. Basavaraj Talawar, NITK Surathkal*	**Web Programming** *Prof.Vidya & Mr.Prashanth Kumar*	**Advanced Java Programming** *Mr.Charles Antoni, Mysuru*	**Java Programming** *Dr.Mohideen Badhusha S*
20th Aug	**Web Programming** *Prof.Vidya & Mr.Prashanth Kumar*	**Java Programming** *Prof.Mahesh Kini M and Mr.Senthil Kumar R*	**Web Programming** *Dr.G.Srinivasan & Mr.Pradeep Nayak*	**Advanced Java Programming** *Mr.Charles Antoni, Mysuru*
21st Aug	**Web Programming** *Prof.Vidya & Mr.Prashanth Kumar*	**Java Programming** *Prof.Mahesh Kini M and Mr.Senthil Kumar R*	**Web Programming** *Dr.G.Srinivasan & Mr.Pradeep Nayak*	**Advanced Java Programming** *Mr.Charles Antoni, Mysuru*
22nd Aug	**Python & Java Assessment**			
23rd Aug	**Code Craft Placement Drive**			

24th Aug	**Assessment & Guest Lecture by Girish Prasad**			
25th Aug	**Company Specific Training- FACE Academy**	**Company Specific Training- FACE Academy**	**Company Specific Training- FACE Academy**	**Company Specific Training- FACE Academy**
26th Aug	**Company Specific Training- FACE Academy**	**Company Specific Training- FACE Academy**	**Company Specific Training- FACE Academy**	**Company Specific Training- FACE Academy**
27th Aug	**Company Specific Training- FACE Academy**	**Company Specific Training- FACE Academy**	**Company Specific Training- FACE Academy**	**Company Specific Training- FACE Academy**
28th Aug	**Soft Skill Training - Aerodynamiks**	**Soft Skill Training - Aerodynamiks**	**Company Specific Training- FACE Academy**	**Company Specific Training- FACE Academy**
29th Aug	**Soft Skill Training - Aerodynamiks**	**Soft Skill Training - Aerodynamiks**	**Company Specific Training- FACE Academy**	**Company Specific Training- FACE Academy**
30th Aug	**Soft Skill Training - Aerodynamiks**	**Soft Skill Training - Aerodynamiks**	**Company Specific Training- FACE Academy**	**Company Specific Training- FACE Academy**
31st Aug	**Company Specific Training- FACE Academy**	**Company Specific Training- FACE Academy**	**Soft Skill Training - Aerodynamiks**	**Soft Skill Training - Aerodynamiks**
1st Sep	**Company Specific Training- FACE Academy**	**Company Specific Training- FACE Academy**	**Soft Skill Training - Aerodynamiks**	**Soft Skill Training - Aerodynamiks**
2nd Sep	**Company Specific Training- FACE Academy**	**Company Specific Training- FACE Academy**	**Soft Skill Training - Aerodynamiks**	**Soft Skill Training - Aerodynamiks**

Batches for Aptitude Training (Laptops and Mobile Phones not allowed for Aptitude Training)

Group Name	Branches & USN	Room Nos.
Group-I	**CSE- 4AL20CS001 to 4Al20CS090**	**311**
Group-II	**CSE- 4AL20CS091 to 4Al20CS405**	**312**
Group-III	**All AIML + ECE: 4AL20EC001 to 4AL20EC036**	**202**
Group-IV	**All ISE + ECE: 4AL20EC037 to 4AL20EC062**	**302**

Date/Group	G1	G2	G3	G4	G5(ECE)
15-03-2023	Address by Principal/HoDs/Placement Officer, Assessment and Senior Students Interactions at Department Level				
16-03-2023	Structures, Pointers, Strings and Arrays, Pointers to Structures **(Dr.Mohideen Badhusha S)**	Structures, Pointers, Strings and Arrays, Pointers to Structures **(Prof.Venkatesh)**	Structures, Pointers, Strings and Arrays, Pointers to Structures **(Ms.Soundarya B C)**	Structures, Pointers, Strings and Arrays, Pointers to Structures **(Mr.Kiran Raj K M)**	
17-03-2023	Sorting Techniques, Searching Techniques **(Dr.Mohideen Badhusha S)**	Sorting Techniques, Searching Techniques **(Prof.Venkatesh)**	Sorting Techniques, Searching Techniques **(Ms.Soundarya B C)**	Sorting Techniques, Searching Techniques **(Mr.Kiran Raj K M)**	
18-03-2023	Stacks and Queues, Linked Lists **(Dr.Mohideen Badhusha S)**	Stacks and Queues, Linked Lists **(Prof.Venkatesh)**	Stacks and Queues, Linked Lists **(Ms.Soundarya B C)**	Stacks and Queues, Linked Lists **(Mr.Kiran Raj K M)**	
19-03-2023					
20-03-2023	Tress: BST(Binary Search Tree), STL(Standard Template Library), Tree DP, Trees, BFS, DFS, DSU(Disjoint Set Union) MST(minim Spanning Tree) **(Mr.Rizawan N.Shaikh)**.	Tress: BST(Binary Search Tree), STL(Standard Template Library), Tree DP, Trees, BFS, DFS, DSU(Disjoint Set Union) MST(minim Spanning Tree) **(Mrs.Deepika Kamath)**	Tress: BST(Binary Search Tree), STL(Standard Template Library), Tree DP, Trees, BFS, DFS, DSU(Disjoint Set Union) MST(minim Spanning Tree) **(Mrs.Deeksha M)**	Tress: BST(Binary Search Tree), STL(Standard Template Library), Tree DP, Trees, BFS, DFS, DSU(Disjoint Set Union) MST(minim Spanning Tree) **(Mr.Pradeep V)**	
21-03-2023	**Data Structures (Dr.Roshan Fernandes)**	DAGs(directed acyclic graph) and SCCs(Strongly Connected Components), Square Root Decomposition ,Asymptotic Analysis, Greedy Algorithms **(Mrs.Deepika Kamath)**	DAGs(directed acyclic graph) and SCCs(Strongly Connected Components), Square Root Decomposition ,Asymptotic Analysis, Greedy Algorithms **(Mrs.Deeksha M)**	DAGs(directed acyclic graph) and SCCs(Strongly Connected Components), Square Root Decomposition ,Asymptotic Analysis, Greedy Algorithms **(Mr.Pradeep V)**	

22-03-2023					
23-03-2023	**Data Structures (Dr.Roshan Fernandes)**	Recursion, Dynamic Programming, Backtracking **(Mrs.Deepika Kamath)**	Recursion, Dynamic Programming, Backtracking **(Mrs.Deeksha M)**	Recursion, Dynamic Programming, Backtracking **(Mr.Pradeep V)**	
24-03-2023	DAGs(directed acyclic graph) and SCCs(Strongly Connected Components), Square Root Decomposition ,Asymptotic Analysis, Greedy Algorithms **(Mr.Rizawan N.Shaikh)**				
25-03-2023	**Data Structures (Dr.Roshan Fernandes)**				
26-03-2023	**Algorithms (Dr.Prasanna Kumar H R)**	**Data Structures (Dr.Roshan Fernandes)**			
27-03-2023	**Algorithms (Dr.Prasanna Kumar H R)**				
28-03-2023	Recursion, Dynamic Programming, Backtracking **(Mr.Rizawan N.Shaikh)**	**Data Structures (Dr.Roshan Fernandes)**			
29-03-2023					
30-03-2023		**Data Structures (Dr.Roshan Fernandes)**			
31-03-2023					
01-04-2023					
01-04-2023					
02-04-2023		**Algorithms (Dr.Prasanna Kumar H R)**			
03-04-2023		**Algorithms**			

		(Dr.Prasanna Kumar H R)			
04-04-2023					
05-04-2023					
06-04-2023					
07-04-2023			**Algorithms (Dr.Prasanna Kumar H R)**		
08-04-2023			**Algorithms (Dr.Prasanna Kumar H R)**		
09-04-2023					
10-04-2023					
11-04-2023					
12-04-2023					
13-04-2023					
14-04-2023				**Algorithms (Dr.Prasanna Kumar H R)**	
15-04-2023				**Algorithms (Dr.Prasanna Kumar H R)**	
16-04-2023					
17-04-2023					
18-04-2023					
19-04-2023					
20-04-2023					
21-04-2023					
22-04-2023					

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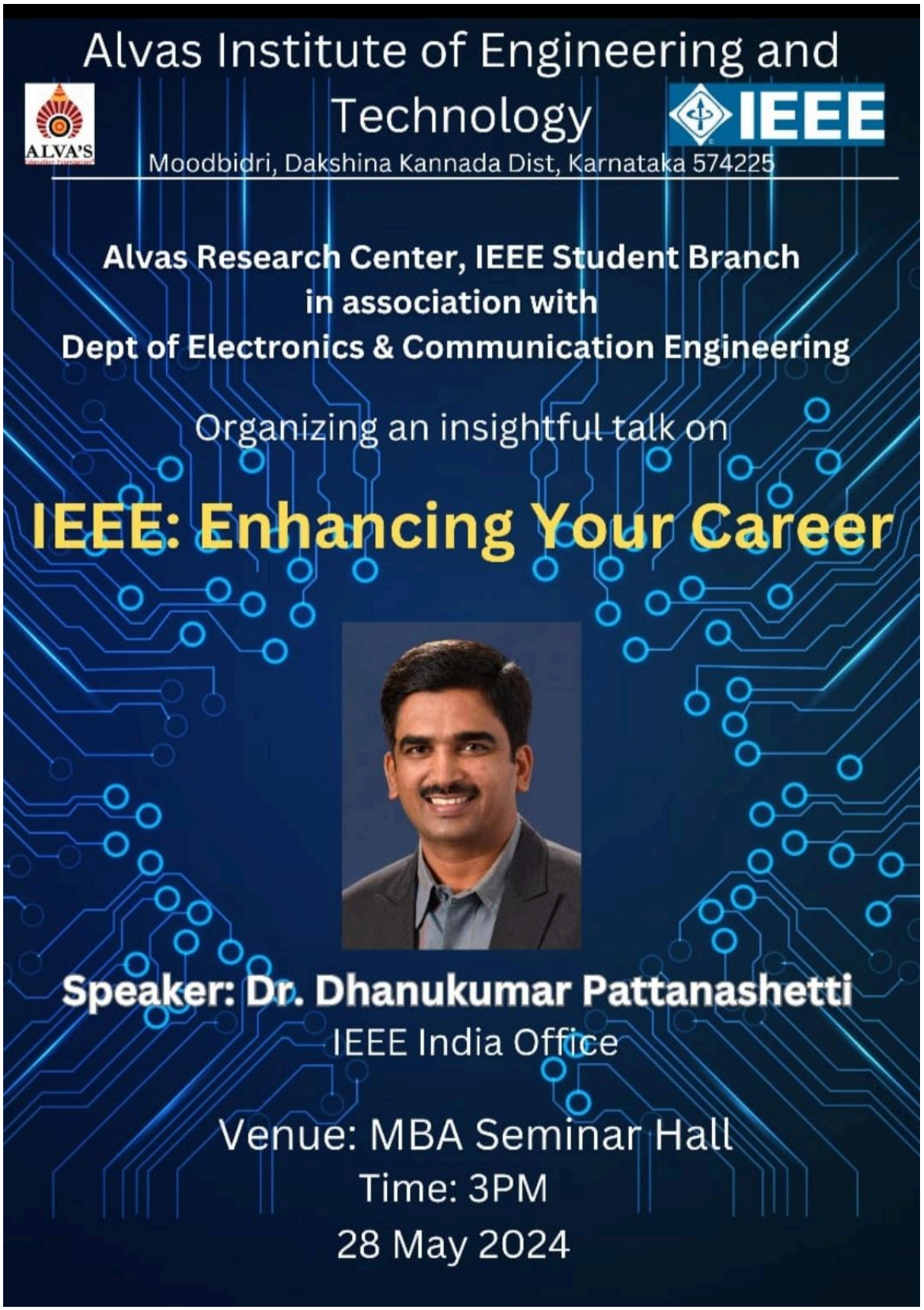
Report on "IEEE - Enhancing Your Career" Talk



Event Details

Date: May 28, 2024

Venue: MBA Seminar Hall, Alvas Institute of Engineering and Technology, Moodbidire

Organized by: Department of Electronics and Communication Engineering (E&CE)

Speaker: Dr. Dhanukumar Pattanashetty

Introduction to IEEE

The Institute of Electrical and Electronics Engineers (IEEE) is a leading professional association dedicated to advancing technological innovation and excellence. Founded in 1963 through the merger of the American Institute of Electrical Engineers (AIEE) and the Institute of Radio Engineers (IRE), IEEE is now a global organization with over 400,000 members in more than 160 countries.

Key Objectives of IEEE:

- Standards Development: IEEE develops and promotes internationally recognized standards for a wide range of technologies, including electrical, electronic, and computer engineering.
- Professional Development: IEEE provides numerous opportunities for members to enhance their skills and knowledge through conferences, workshops, and educational resources.
- Publications: The IEEE publishes a vast array of journals, magazines, and conference proceedings that cover the latest research and developments in engineering and technology.
- Networking Opportunities: IEEE facilitates professional networking through local chapters, technical societies, and global events.

IEEE's Impact on Careers:

- Certification and Recognition: IEEE offers certifications and awards that recognize professional achievements and contributions to the field.
- Career Resources: Members gain access to job boards, career counseling, and mentoring opportunities.
- Continuing Education: IEEE provides access to webinars, online courses, and technical papers to help professionals stay updated with the latest trends and technologies.

Event Overview

Speaker: Dr. Dhanukumar Pattanashetty, an expert in the field with extensive experience in

IEEE and professional development, delivered the keynote address on enhancing career prospects through IEEE involvement.

Topics Covered:

1. Benefits of IEEE Membership: Dr. Pattanashetty highlighted how IEEE membership can open doors to numerous professional opportunities, including access to a wide network of professionals, industry-leading publications, and exclusive educational resources.
2. Career Development Resources: The talk emphasized the various career development tools available through IEEE, such as workshops, certifications, and networking events that can significantly impact career advancement.
3. Success Stories: Dr. Pattanashetty shared real-life examples of professionals who have leveraged IEEE resources to enhance their careers, providing practical insights and inspiration to the attendees.

Audience: The talk was attended by students from the E&CE department, faculty members, and IEEE representatives, including the Head of the Department Dr. Siddesh G. K., Dean of Planning Dr. Dattathreya, IEEE Branch Counsellor Dr. Manjunath Kothari, Dr. Manjunath, Dr. Ganesh V. N, Dr. G. B. Vaggar and Dr. Guruprasad. The event was well-received, with active participation and engagement from the audience.

Coordinator: The event was meticulously organized by Dr. Ganesh K., who ensured that all logistical arrangements were in place for a smooth and successful session.

Conclusion

The "IEEE - Enhancing Your Career" talk provided valuable insights into how IEEE can be a significant catalyst for career growth and professional development. Dr. Pattanashetty's presentation equipped attendees with practical knowledge on leveraging IEEE resources to advance their careers and highlighted the importance of active involvement in professional organizations. The event successfully fulfilled its objective of informing and inspiring students and professionals about the benefits of IEEE membership and engagement.

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Ph: 08258-262725; Mob:7026262725,mail:principalaiet08@gmail.com
Department of Electronics & Communication Engineering

List of students attended the IEEE Event

6TH SEM (A SECTION)		
#	**USN**	**Student Name**
1	4AL21EC002	ABHISHEK S
2	4AL21EC003	AKASH A H
3	4AL21EC007	Anchita
4	4AL21EC009	B.VENNELA
5	4AL21EC013	Bharath N
6	4AL21EC020	Chethan K.M
7	4AL21EC024	Darshana Basavaraj Bandi.
8	4AL21EC026	Deekshith D Shetty
9	4AL21EC031	Hemanth R
10	4AL21EC035	Jeevan K G
11	4AL21EC036	JEEVAN V
12	4AL21EC039	Keerthan S
13	4AL21EC041	Kishor U
14	4AL21EC042	Lakshan
15	4AL21EC043	Lakshmi Keerthana B
16	4AL21EC052	Muhammad Razi
17	4AL21EC054	Naveen Kumar H S
18	4AL21EC062	Prajwal s das
19	4AL21EC104	Vaishnavi S
20	4AL22EC401	CHETANA A BURUD
21	4AL22EC403	LAKSHMI BALAKKANAVAR
22	4AL22EC405	PALLAVI A BHOOMANAGOUDRA
23	4AL21EC037	kalmesh G Galigoudra
24	4AL21EC022	Chithra L

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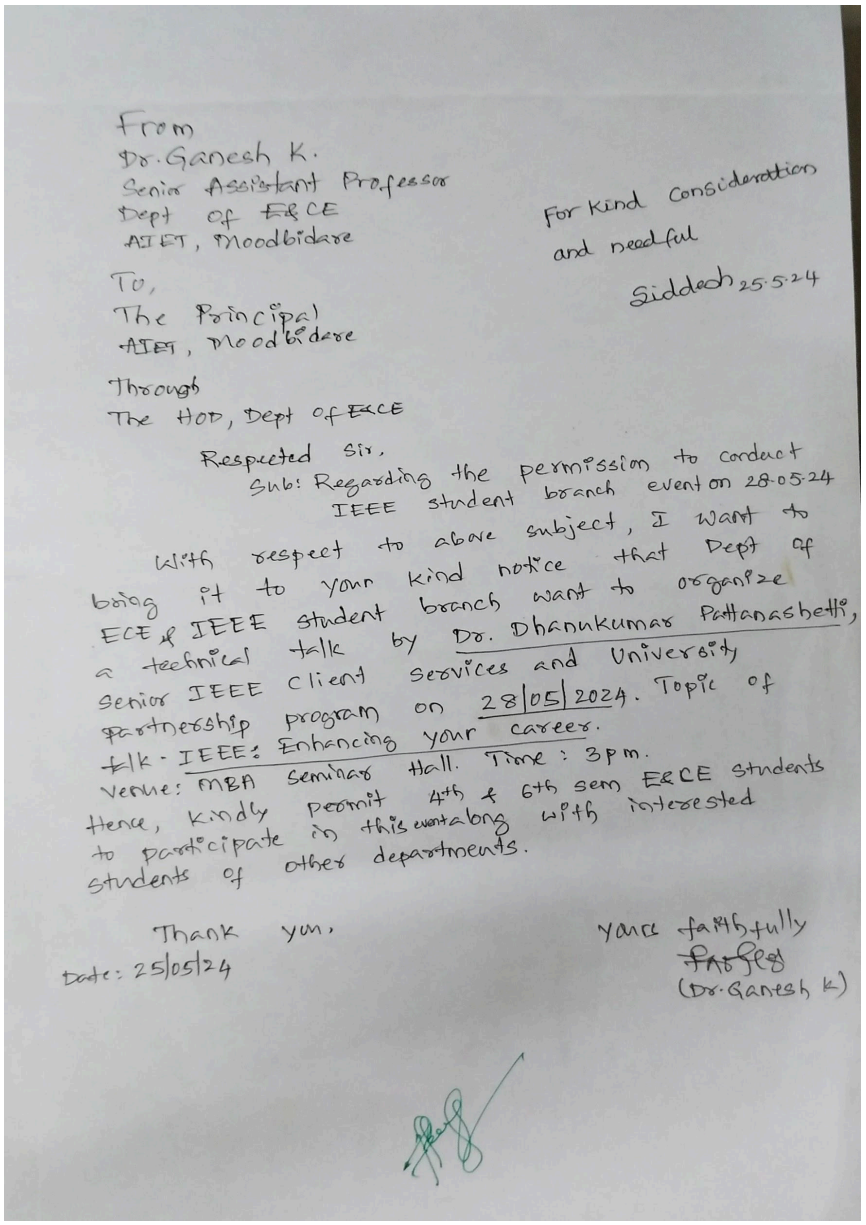
6TH SEM (B SECTION)		
1	4AL21EC056	Nivedita T Patil
2	4AL21EC057	Prajyot Rajgonda Patil
3	4AL21EC058	Pavan
4	4AL21EC059	Pooja Venkatesh Naik
5	4AL21EC066	Raksha
6	4AL21EC067	Rakshith
7	4AL21EC069	Ravi Kovi
8	4AL21EC070	Sahana
9	4AL21EC071	Saikumar
10	4AL21EC073	Sanjana Shrikant Havanoor
11	4AL21EC074	Santhosha S
12	4AL21EC076	Shashank C Soppannavar
13	4AL21EC079	Shivakumar K V
14	4AL21EC081	Shreya Chandrahasa Shetty
15	4AL21EC082	Shreya K R
16	4AL21EC083	Shreyas S Naik
17	4AL21EC086	Sinchana C K
18	4AL21EC087	Sinchana R
19	4AL21EC091	Sindhu S Patil
20	4AL21EC092	Sonali
21	4AL21EC093	Srishti S Shetty
22	4AL21EC094	Suma K G
23	4AL21EC096	Sushrutha N
24	4AL21EC097	Tanishka
25	4AL21EC099	Thejas J Kotian
26	4AL21EC100	Thejashwi P Acharya
27	4AL21EC101	Thrisha P Hegde
28	4AL21EC103	V Venkta Sainihith Mullapudi
29	4AL21EC105	Vaishnavi Vithal Naik
30	4AL21EC106	Varshini Shetty
31	4AL21EC107	Varun Kumar R
32	4AL21EC109	Veena Basavaraj Rachappanavar
33	4AL21EC110	Videesh D Shetty
34	4AL21EC112	Vishwanath HB

35	4AL21EC113	Yashaswini T R
36	4AL21EC114	Yashwanth GT
37	4AL21EC115	Yogeshwar M
38	4AL22EC404	Navaneeth

Permission Letter



From
Dr. Ganesh K.
Senior Assistant Professor
Dept of E&CE
AIET, Moodbidare

For kind consideration and needful

Siddesh 25.5.24

To,
The Principal
AIET, Moodbidare

Through
The HOD, Dept of E&CE

Respected Sir,

Sub: Regarding the permission to conduct IEEE student branch event on 28.05.24

With respect to above subject, I want to bring it to your kind notice that Dept of ECE & IEEE student branch want to organize a technical talk by Dr. Dhanukumar Pattanashetti, Senior IEEE client services and University partnership program on 28/05/2024. Topic of talk - IEEE: Enhancing your career.
Venue: MBA seminar hall. Time : 3pm.
Hence, kindly permit 4th & 6th sem E&CE students to participate in this event along with interested students of other departments.

Thank you,

Date: 25/05/24

Yours faithfully
(Dr. Ganesh K)

Event Photos

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Report of Technical Talk-V

Topic: "Biomedical Signals and its Applications in Machine Intelligent Automation and Robotic control"

Resource Person: Dr. Roshan Joy Martis, Associate Professor, Global Academy of Technology, Bangalore.

Date: 23-07-2024 **Time: 11:00AM to 1:00 PM.**

Department of ECE in Association with e-Yanthra conducted the fifth technical talk of the even semester 2023-24 on **"Biomedical Signals and its Applications in Machine**

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Intelligent Automation and Robotic control" by Dr. Roshan Joy Martis, Associate Professor, Department of Computer Science and Engineering at Global Academy of Technology, Bangalore on 23-07-2024.

Dr. Roshan Joy Martis, has appeared consecutively for four years (since 2020 till 2023.) as one among the top 2 percent meritorious researchers of the world as per the survey conducted by the Stanford University, CA, USA . He is currently serving as Associate Editor in the International Journal titled "Frontiers in Digital Health", Frontier Publisher, which is a leading journal in Biomedical Engineering. He has published more than 80 research publications in the reputed, peer reviewed, high impact factor international journals and conferences. He is known globally for his research in the field of Biomedical Signal Processing and application of Artificial Intelligence in medicine and healthcare.

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Resource person explained the Sources of biomedical signals including neural activity, cardiac rhythm, muscle movement, and other physiological activities. Signals such as electrocardiogram (ECG), electroencephalogram (EEG), electromyography (EMG) can be captured non-invasively. He discussed about Human–machine interfaces (HMI) which are currently a trendy and rapidly expanding area of research. He said that the human user does not readily observe the interface between humans and machines. Instead, interactions between the machine and electrical signals from the user's body are obscured by complex control algorithms. The result is effectively a one-way street, wherein data is only transmitted from human to machine.

Resource person described that the biomedical Robotics research focus area is centered on the design, development, and evaluation of medical robotics systems and smart assistive robotic platforms that enhance the physical capabilities of both patients and clinicians via

advancements in mechanical design, modeling and control, sensors and instrumentation, computing, and image processing. He pointed that recently, bio-signal based control has been gradually deployed in biomedical devices and assistive robots for improving the quality of life of disabled and elderly people, among which EMG (Electromyography) and EEG (Electroencephalography) bio-signals are being used widely.

Finally Prof. Udayakumar S, Assistant Professor, department of ECE gave memento to the resource person and expressed gratitude for giving such an informative talk to the students.

H. O. D.
Dept. Of Electronics & Communicatio
Alva's Institute of Engg. & Technology
Mijar, MOODBIDRI - 574 225

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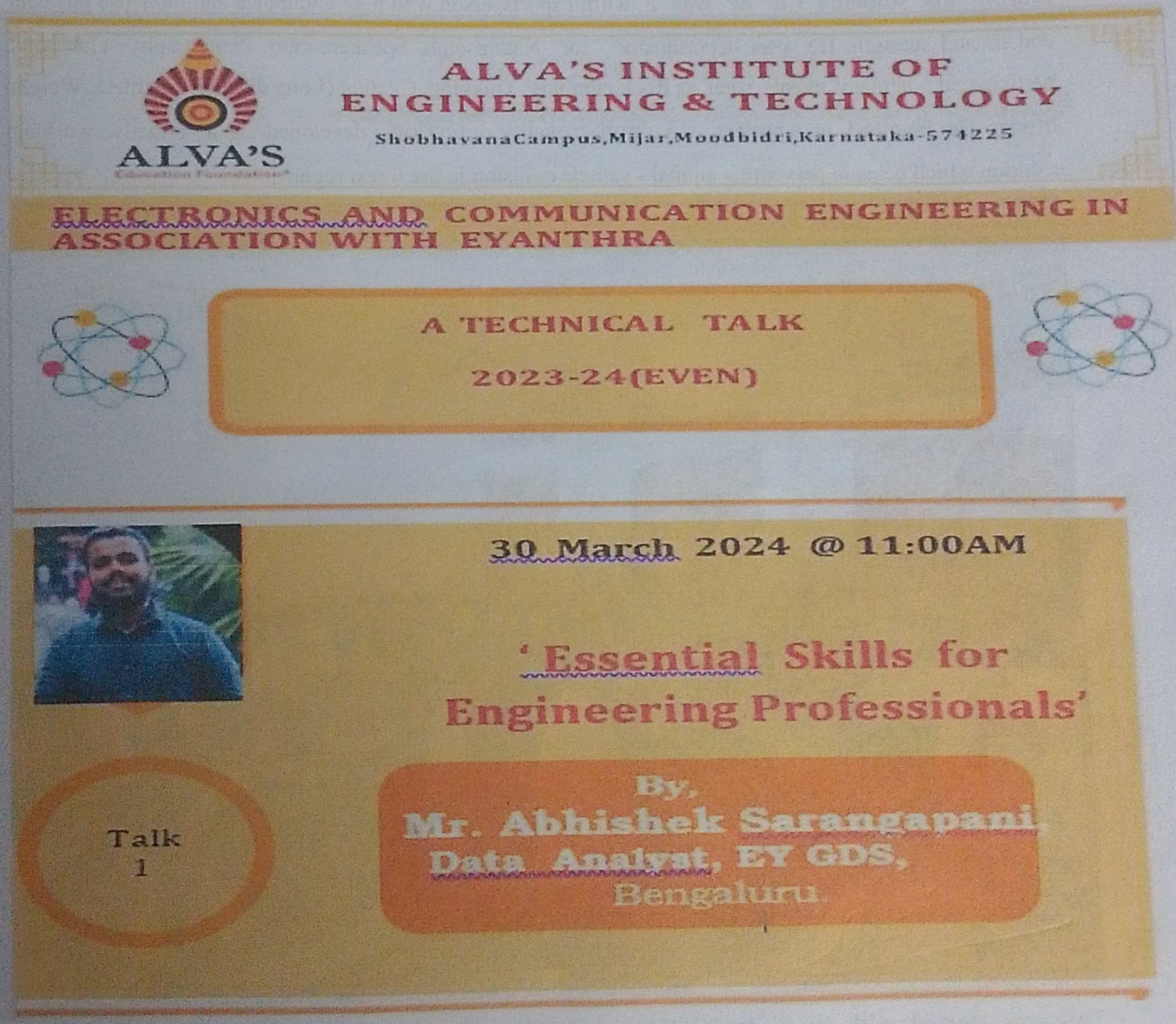
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Report of Technical Talk-I

Topic: **"Essential Skills for Engineering Professionals"**
Resource Person: **Mr. Abhishek Sarangapani**
Data Analyst, EY GDS, Bangalore

Date: 30-03-2024 **Time: 11:00AM to 1:00 PM.**



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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Department of ECE conducted the first technical talk of the even semester 2023-24 on "Essential skills for Engineering Professionals" by Mr. Abhishek Sarangapani , Data Analyst, EY GDS, Bangalore on 30-03-2024.

Mr. Abhishek Sarangapani is a proud Alumni of AIET, Department of ECE, a passed out student from 2021-22 batch. Presently He is working as Data Analyst, EY GDS, Bangalore from September 2022 and has extreme coding skills in C, C++ and other languages. During his students life he was a willful sportsperson with high endurance and immense physical and mental strength. He was Coordinator for Nature club, Speakers club, Photography club and participated in many events such as Rock climbing, Trekking, Cycling (Long distance), Athlete, Weight lifting. He involved in a project Animal crossing detection developed as an effective working solution which helps in preventing animal - vehicle collision in the forest regions.

Talk was started with brief description about benefits of ECE Engineering and Resource person pointed that ECE course offers a pathway to a rewarding and fulfilling career, with

wide career opportunities both in the communication and engineering fields. An ECE professional can work in the governmental as well as private sectors.

He suggested to the students that a fresher's resume should include the skills and importantly reflect how ready freshers are for the job. He discussed many important ideas and focussed in his talk about the following,

- A strong foundation in core concepts such as circuits, electronic devices, electronics, signal processing, and communication systems is essential.
- ECE professionals encounter complex problems such as designing circuits, troubleshooting hardware issues, or optimizing communication systems.
- Proficiency in programming languages such as C, C++, Python, MATLAB, and VHDL/Verilog is valuable for ECE professionals. Programming skills for Electronic Engineering are used for developing embedded systems, designing digital circuits, signal processing, and simulation tasks.
- Innovative people can often be talented at approaching problems in unique ways. The electronics engineering field offers many opportunities for electronics engineers to develop new products and techniques
- Even though electronic engineers work in a highly technical field, soft skills are still important for completing projects.
- An electronic engineer's career path may eventually lead to leadership roles. Knowing how to manage a project properly can be quite beneficial.
- Electronic engineers often operate as part of a larger team. Multiple electronics engineers, support workers and management may all be working on the same project, especially for larger project
- One of the best ways to grow any skills, including technical skills and soft skills, is by accepting feedback from superiors and peers and it would be helpful in growth.

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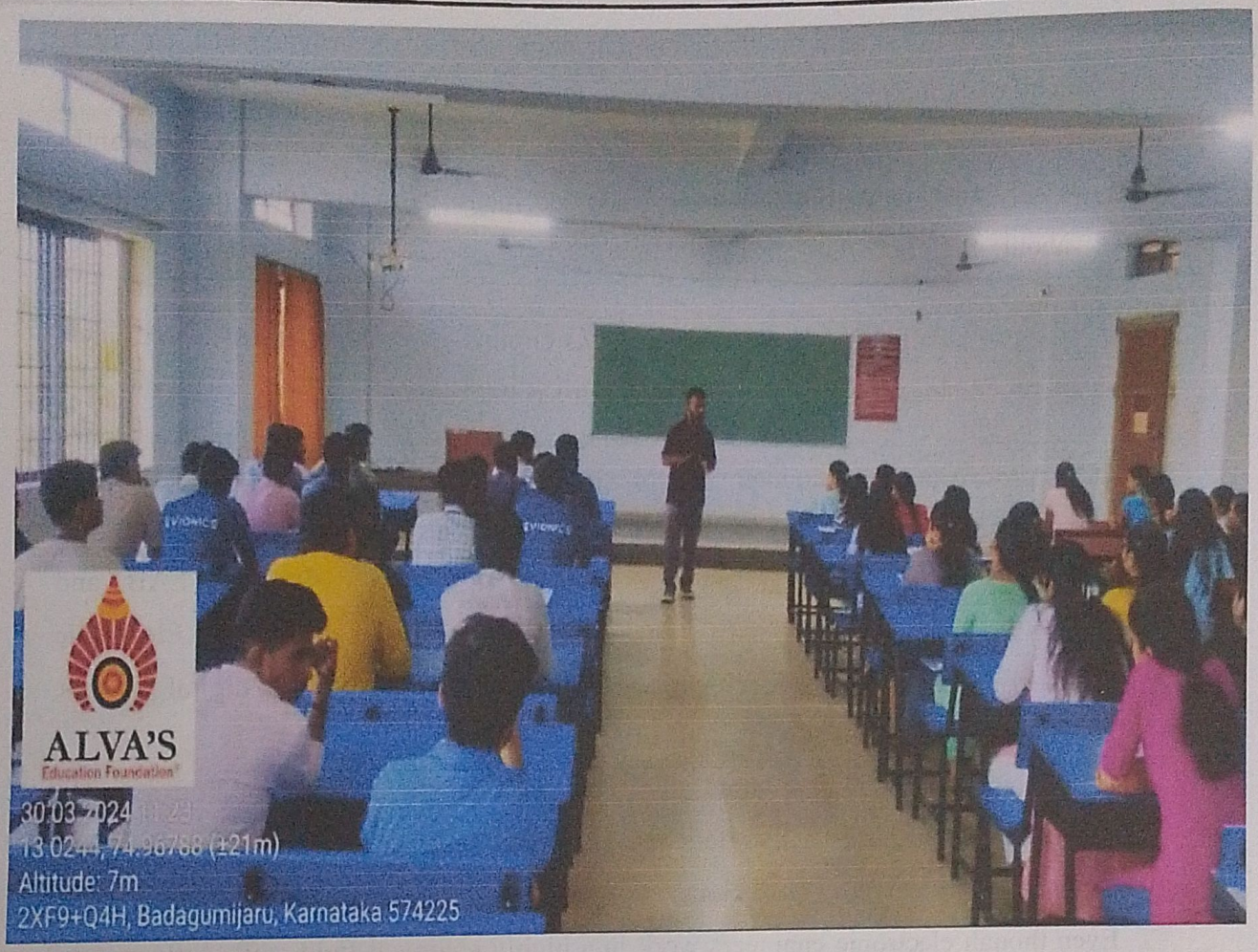
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING



Finally Dr.Dattathreya, Dean planning, AIET, expressed gratitude to the Resource person for giving such an informative talk to the students.

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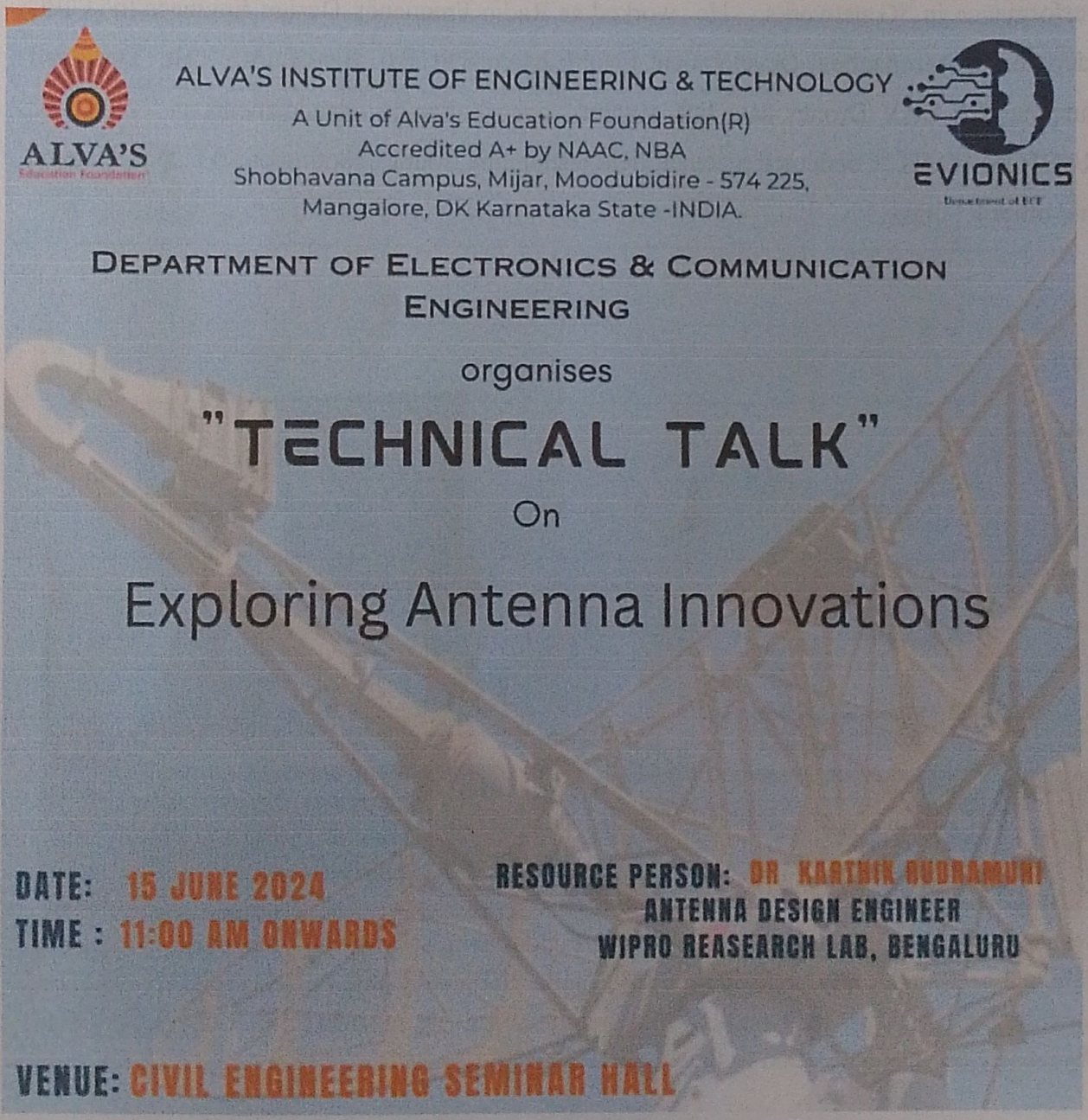
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Report of Technical Talk-III

Topic: **"Exploring Antenna Innovations"**
Resource Person: Dr. Karhik Rudramuni, Antenna Design Engineer,
Wipro Research lab, Bangalore.

Date: 15-06-2024 **Time: 11:00AM to 1:00 PM.**



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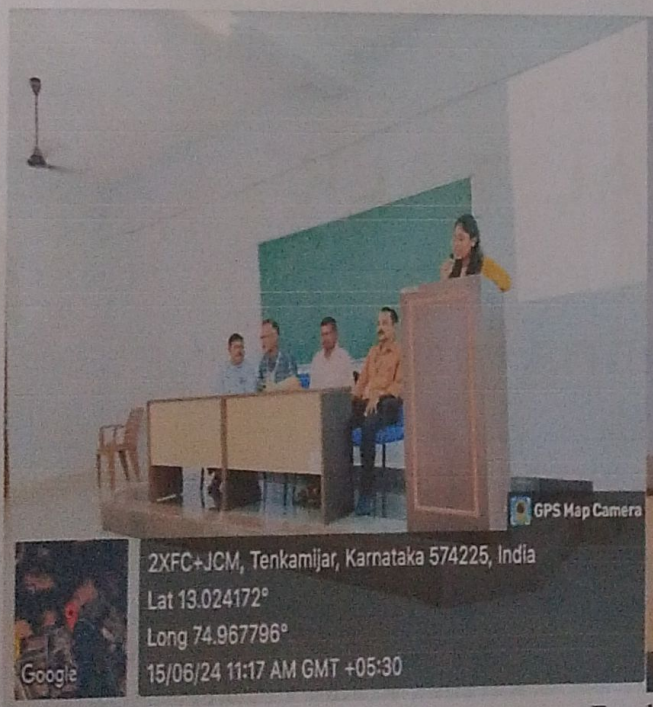
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Department of ECE conducted the second technical talk of the even semester 2023-24 on **"Exploring Antenna Innovations"** by Dr. Karhik Rudramuni, Antenna Design Engineer, Wipro Research lab, Bangalore on 15/06/2024 A dedicated Design Researcher with extensive experience in RF Systems and Antenna Design, currently spearheading initiatives in the 5G Research Group at Wipro Technologies. He has a proven track record of innovative research contributions and practical applications in the field of Radio Frequency Engineering. He has work Experience as Design Researcher in 5G R&D Group, Wipro Technologies, Bengaluru. He is Leading the design and development of RF Power Amplifiers for high-efficiency performance in 5G networks. He worked as Radio Frequency Design Engineer In CIPL (deputed to Aeronautical Development Establishment-DRDO), Bengaluru. He Designed antennas for UAV Drones data link systems, contributing to advancements in TAPAS & RUSTOM UAVs. Conducted practical field testing and troubleshooting of SATCom Systems and other RF links.



Resource person started with Antenna Fundamentals such as Operating Frequency, Bandwidth, Radiation Pattern, Directivity, Gain, Efficiency and Polarization . He explained Antenna Design steps and pointed that engineering life is so basic that developers don't always pay adequate attention to the antenna choice.

He explained following key advantages of antenna:

- Predictable antenna performance: IoT devices operate the same in the field as they do in the lab.
- Agility: A single product design can be easily re-tuned across multiple radio frequencies.
- Greater thermal latitude: Stable operations
- Less performance variance: Greater efficiency across the IoT frequency
- Real-world previews: Accurate in-field simulations prior to product manufacturing.

Resource person suggested that Antenna Innovations and new requirements are expanding the antenna applications by increased capacity demand, spectrum scarcity, and denser networks. Selecting the right antenna from the wide range available can yield significant increases in both capacity and spectrum efficiency.

He described that Antennas are now, more than ever, playing a key role in getting the most out of microwave links. The diverse set of antenna options and innovations discussed produce the positive impacts that decide choices of antennas can have on capacity, hop length, spectral efficiency, network densification. He advised students to do the following to enhance chances to get selected in core companies

- Do projects by own
- Acquire Skills
- Learn programming (Must)
- Do internship
- Learn Simulation tools (Matlab, Ltspice, ADS etc….)

- In his talk he described recent Advances and trends and highlighted a **Reconfigurable Intelligent Surface (RIS)** is programmable surface structure that can be used to **control the reflection** of electromagnetic (EM) waves by changing the electric and magnetic properties of the surface. He addressed Challenges and Future Directions such as,

- **Bandwidth Limitations**: Increasing demand for higher data rates exceeds current spectrum allocations.
- **Size and Form Factor**: Antenna size constraints in compact devices like wearables and IoT sensors.
- **Interference and Crosstalk**: Mitigating signal interference in densely populated frequency bands.
- **Environmental Factors**: Performance degradation due to weather conditions and physical obstacles.

- **Integration with Advanced Technologies**: Ensuring compatibility with AI, IoT, and 5G/6G networks.
- **5G and Beyond**: Antennas tailored for ultra-high-frequency bands and massive MIMO systems.
- **IoT and Smart Cities**: Antennas optimized for low-power, long-range communication in IoT networks.

Finally Mr. Sudhakara HM, Associate Professor, department of ECE gave memento to the resource person and expressed gratitude for giving such an informative talk to the students.

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Report of Technical Talk-IV

Topic: "FPGA and ASIC"

Resource Person: Dr. Srinivasa Rao Udara

Associate Professor, STJIT

Managing Director BJV Tech . Ranebennur

Date: 01-07-2024 **Time: 11:00AM to 1:00 PM.**

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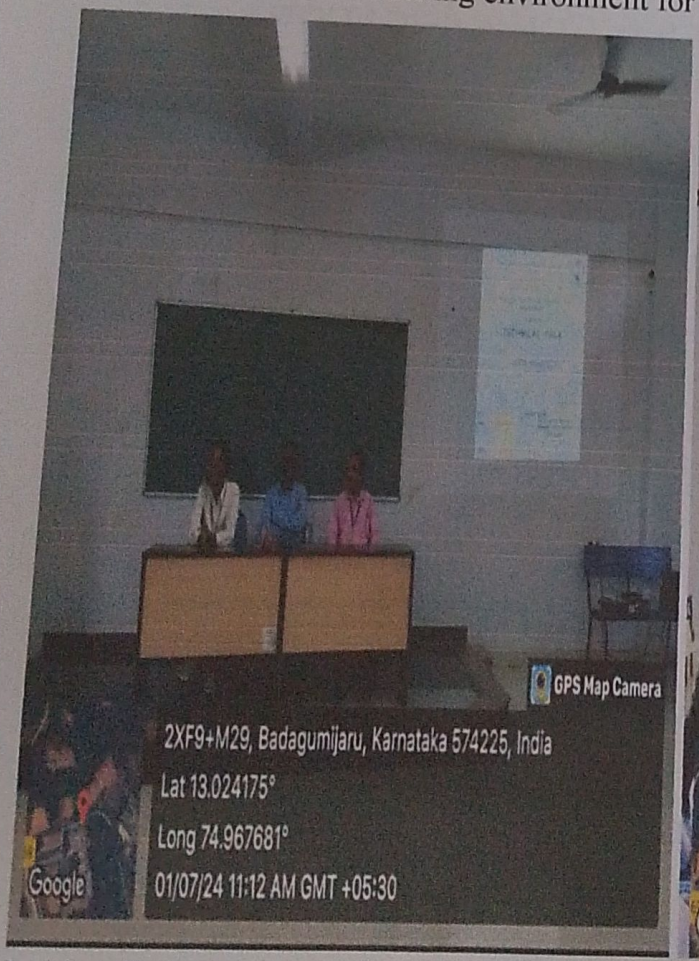
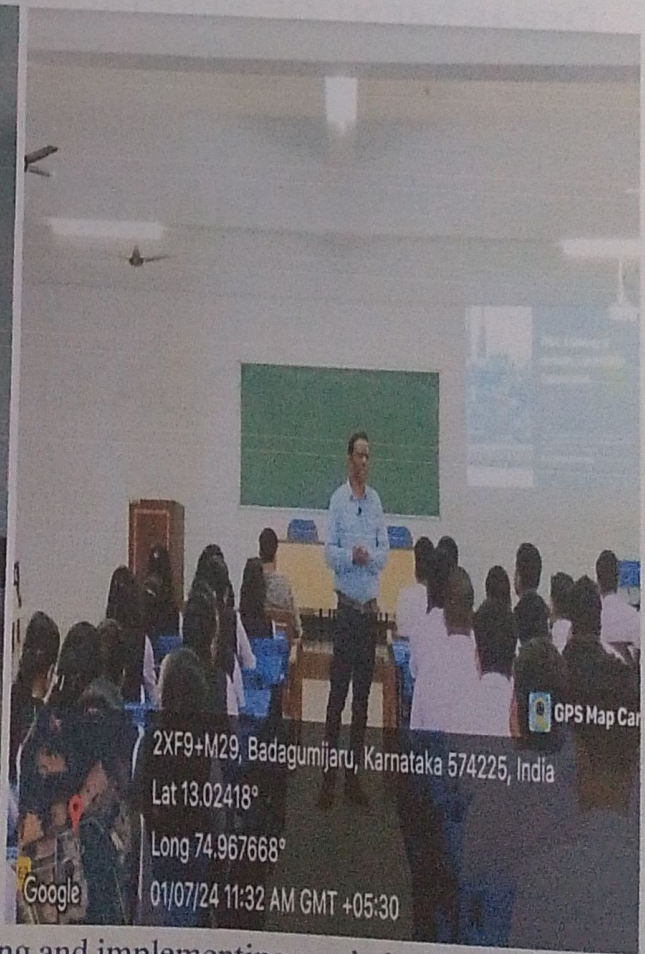
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Department of ECE conducted the third technical talk of the even semester 2023-24 on "FPGA and ASIC" by Dr. Srinivasa Rao Udara, Associate Professor, STJIT & Managing Director BJV Tech . Ranebennur on 01/07/2024.

Dr. Srinivasa Rao Udara presently Working as Associate Professor and R&D Head in the Department of Electronics and Communication Engineering, S T J Institute of Technology, Ranebennur, He carried out Research work from IISC Bangalore and IIT Bombay He received Distinguished Scientist award from Elsevier. He was Programme Advisory Committee Member for NIE, Andhrapradesh . He worked as Session Chair of 2nd International Conference on Advances in Computer Engineering & Communication Technology, Andhrapradesh. He is director of "BJV TECH HUB which is a core VLSI based company and offers the learning environment for the research scholar to learn by the practical hand. It has their own electronics project and team to deliver the project on time and by working on the live project offer the learning environment for the research scholar.





In his talk resource person pointed that creating and implementing a suitable hardware design defines the operability and efficiency of the entire product. Today, the range of integrated

circuits and their design processes has considerably expanded, complicating the choice for product engineering and manufacturing. He told that FPGA is a field programmable gate array comprising numerous configurable interconnected logic blocks. It is possible to program this integrated circuit to perform the expected function like a graphics card or reprogram it so that the same circuit performs another action like a microprocessor. Such capabilities allow changing the existing product functionality by updating software without any manufacturing and physical design change. He discussed Advantages of FPGA such as,

- Capable of capturing more than one lakh designed gates.
- Standard interfaces are provided.
- It also provides built-in memories, processor cores, and many other things.
- It is cheap for small volumes because one does not need to pay for fabrication.
- Quite flexible.

In this talk he described that ASIC stands for Application Specific Integrated Circuit, built especially for a specific application or any purpose. If one compares this with any other device, it is having improved speed. Basically, it is an integrated circuit that is specified for one specific purpose. . He discussed Advantages of ASICs such as,

- It has improved speed when compared to any other logic device.
- It is quite efficient.
- It reduces space requirements

Resource person concluded that the choice of the right approach depends on project specifications, business requirements, and capabilities. The core characteristics you need to take into account are product complexity, expected production volume, available budget, prototype necessity, and market launch deadlines

Finally Dr. Ganesh VN, Associate Professor, department of ECE gave memento to the resource person and expressed gratitude for giving such an informative talk to the students.

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Internal Quality Assurance Cell (IQAC)
&
Department of Civil Engineering
Organises

Three-days hands-on workshop

Basics of Remote Sensing and Geographical Information Systems.

28th to 30th August 2023

Venue: CAD lab, Dept. of Civil Engineering
AIET, Mijar Moodbidri

Visvesvaraya Technological University, Belgaum

Table of Contents

Internal Quality Assurance Cell (IQAC) &

Department of Civil Engineering,

Alva's Institute of Engineering and Technology (AIET), Mijar, Dakshina Kannada

Organizes a three-day hands-on workshop on "Basics of Remote Sensing and Geographic Information Systems"

The workshop aimed to disseminate knowledge on geospatial among the young minds and teaching faculties, i.e., GIS and Remote Sensing emphasizing the need of multidisciplinary approaches.

About AIET

Alva's Institute of Engineering and Technology in Moodbidri stands as a testament to the pursuit of academic excellence and holistic development.

Established with the aim of fostering academic excellence and holistic development in 2008, the institute is affiliated to Visvesvaraya Technological University, Belagavi. Through its comprehensive programs, dedicated faculty, modern infrastructure (state of the art classrooms, well equipped laboratories, a library with a vast collection of academic resources) and commitment to innovation, the institute plays a significant role in shaping the future engineers and technologists of India

Located in Moodbidri, Karnataka, Alva's educational institution has continually focused on providing quality engineering and technical education to its students and to support them both in academic and extracurricular activities.

AIET is associated with numerous Government and Private Organizations thus working on research and consultancy projects. AIET currently has MoU's with reputed organizations viz., ISRO, NRSC, NAL, RRSC, IIT's, IISc, NIT's, and so on…

Day 1

Inaugural Session

The three day workshop on Basics of Remote Sensing and Geographic Information Systems was held between August 28-30, 2023 at CAD lab, Civil Engineering Department, Alva's Institute of Engineering and Technology, Moodbidri. The workshop began at 9:30 AM with the lighting of the lamps. Dr. H Ajith Hebbar, welcomed the gathering addressing the need of geospatial and its importance in the real world. He also spoke about the Geoinformatics Research Lab budding at AIET, which will focus on multidisciplinary aspects research integrating engineering, science, humanitarian and various other disciplines. Dr Kurian, the Guest of Honour (Principal Alva's Degree College) gave a keynote address indicating the knowledge system that had evolved in India, and now we are concentrating/studying one aspect viz., Civil, Agricultural, Economics, Sociology, Botany, Zoology, Electronics, Computres etc. He also emphasized the need of cross domain knowledge and how youngsters can adapt them for getting edge in the competitive world. Dr. H G Umeshchandra thanked the guests, principal, management, colleagues, students for the support extended.

Figure: Dr Kurian (Principal, Alvas Degree College) addressing the gathering

Introduction to Remote Sensing and Geographic Information System

Dr. Vinay S, spoke about the basics of RS & GIS followed by select applications. Starting with RS he explained what RS along the working principle is. He elaborated and related the human body with Remote Sensing Sensors. Electromagnetic Spectrum and the role of Spectral Reflectance across various wavelengths was elaborated with real world examples of Deciduous and Evergreen species. Importance of Falce Colour composition was emphasized with help of an aerial images. Based on where the images/photographs were taken, satellite platforms were categorized. Light was thrown on Visual image interpretation and digital image interpretation. Digital image interpretation involves patten classification, segmentation, image enhancement, machine learning, etc. He also spoke on evolution of Remote Sensing at Global and Indian context. This was followed by explanation of various resolutions viz spatial, spectral radiometric and temporal. This was followed by describing Geographical Information System and how as an entity each of the departments can contribute to the common platform. Dr Vinay spoke about the capabilities and requirements of GIS, data types and operations that can be performed. He also elaborated on WebGIS and mobile GIS and their implementation and applicability. He also emphasized various applications that included hydrology, forestry, disaster management, environmental economics, climate change *etc.* In the afternoon, he spoke on Maps and Projections, important components of map, scale, map types, etc. in the hands on session, the training focused on importing satellite data from the web portals.

Fig. Dr Vinay S addressing the participants

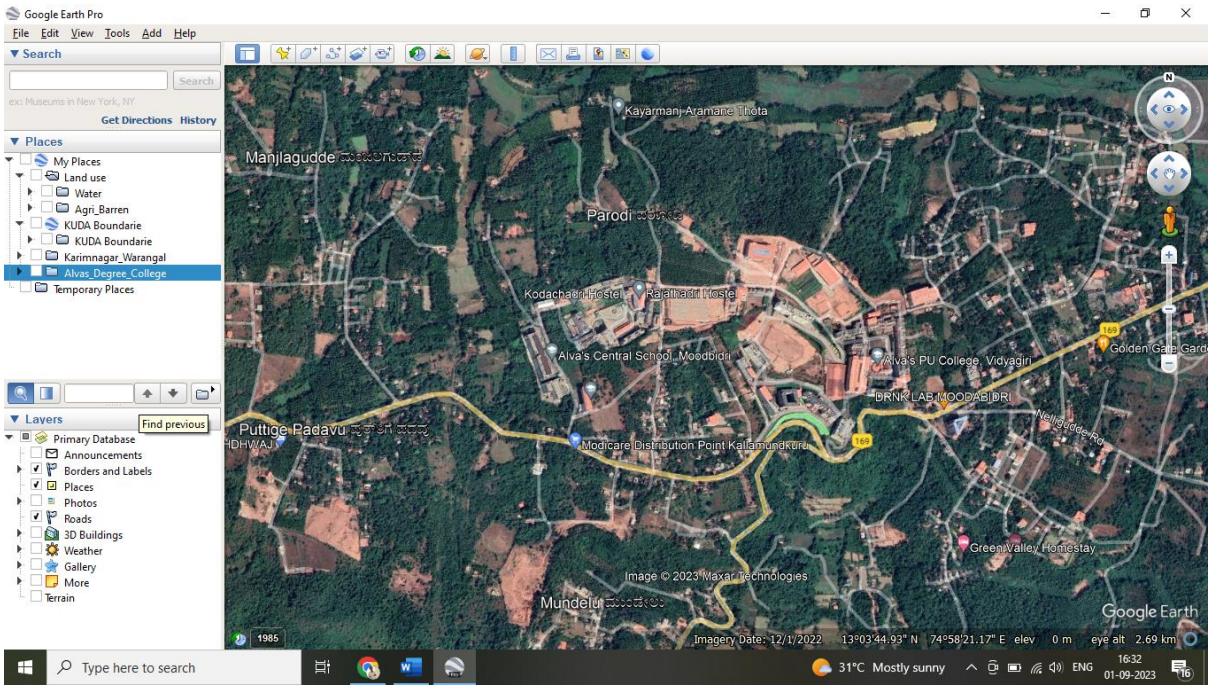

Fig. Google Earth (Screenshot)

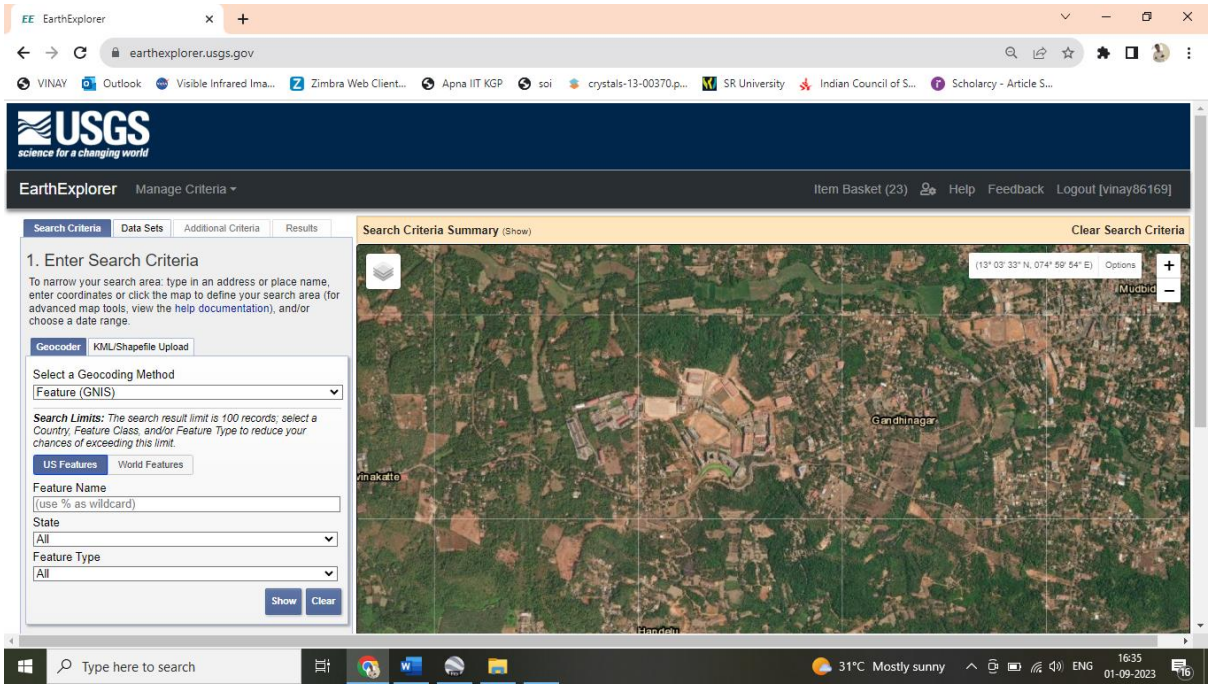

Fig. Earthexplorer (Screenshot)

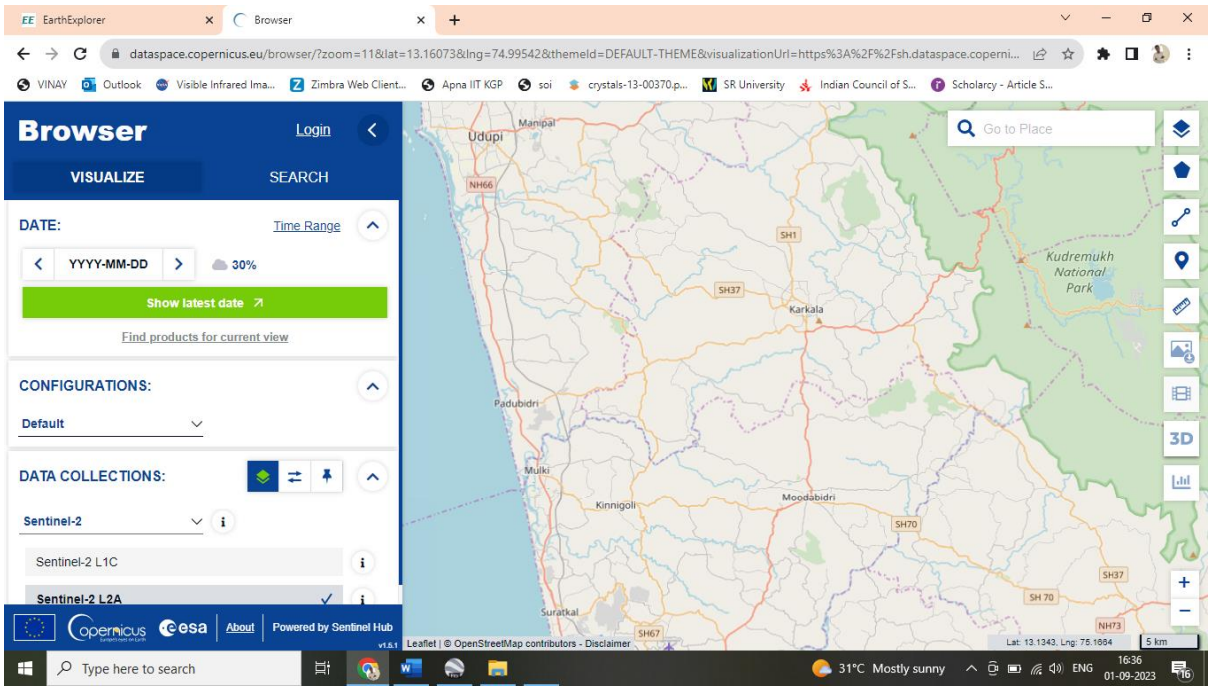

Fig. Dataspace Copernicus (Scrrenshot)

Day 2

Dr Umeshchandra H G, explained in detail about various data structures used in GIS. He explained about vector file formats, raster file formats, attributes. He also elaborated of the likely advantages and disadvantages, errors, limitations of the spatial data. He also elaborated about the models viz., Spaghetti, Topology, TIN, DEM, etc. Dr Umeshchandra elaborated about compression of Raster data which is essential for distribution. Speaking about vectors he explained about the applicability of points, lines and polygons. He also showed how a real world data can be put in GIS using vectors and rasters while integrating spatial data.

Fig. Dr H G Umeshchadra addressing the participants

Dr Vinay spoke about QGIS, its development, various libraries that are a commonality in both open source and commercial software's. He started the hands-on by showing the layout of QGIS, Plugins etc. On this day, the following components were thought.

- Data importing into the QGIS platform
- Querying and exporting
- Vector mathematics (or, and, sum, geometry, etc)

- Creation of fields,
- Preparation of thematic maps
- Georeferencing of data
- Importing an excel file (CSV)
- Joining multiple databases
- Interpolating data
- Extracting information to the required area of interest

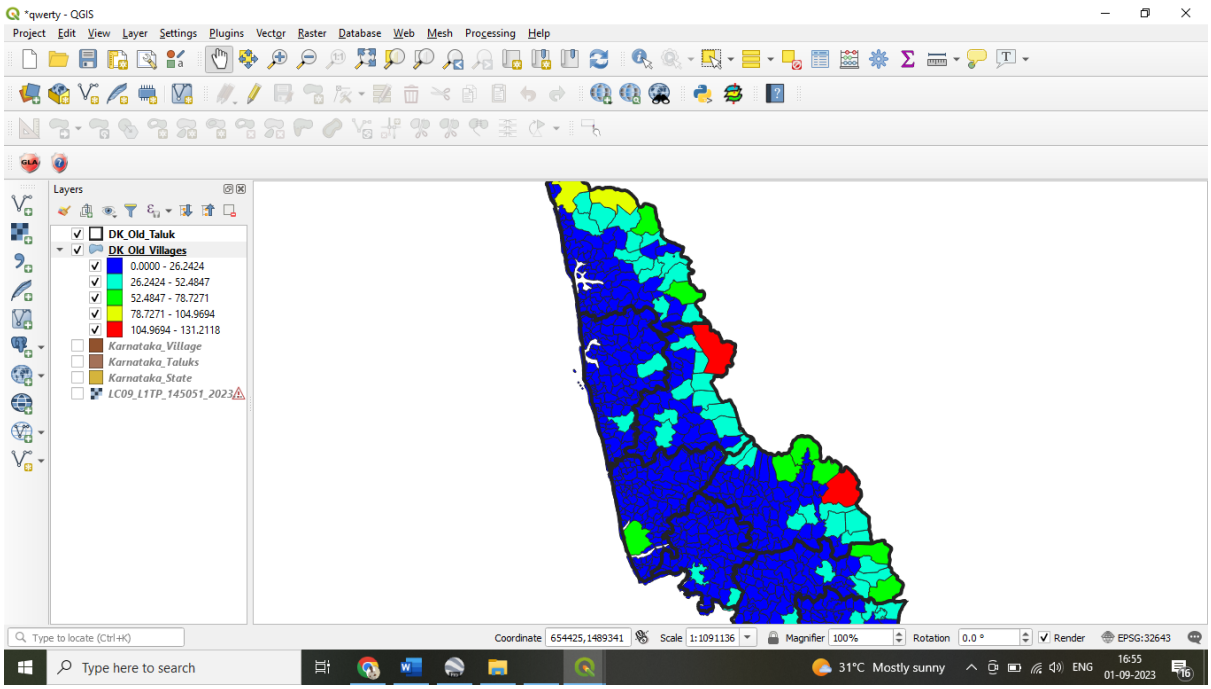

Fig. Screenshot of QGIS

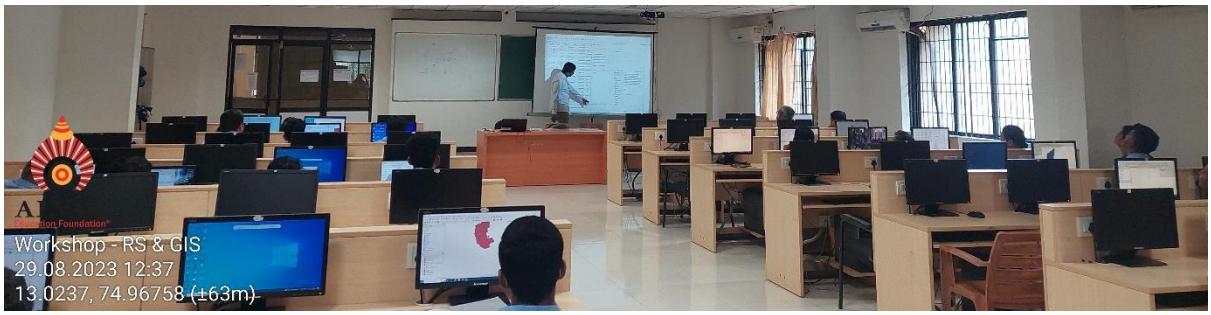

Fig. Participants working on QGIS

Day 3

The workshop began with a revision of the previous class so as to clear the doubts if any. Image processing software viz., GRASS GIS was introduced. The participants were trained about GRASS GIS, such as creating location, mapsets and their importance. Data importing, calculation of vegetation and water indices was explained. This was followed by preparation of Colour composites (TCC and FCC) that are necessary for identification of features. Machine learning using GMLC algorithm was further demonstrated to analyse the land use in the study area. at the end before concluding session, Dr. Vinay demonstrated all the steps carried out for the day using GRASS GIS in a span of 40 minutes.

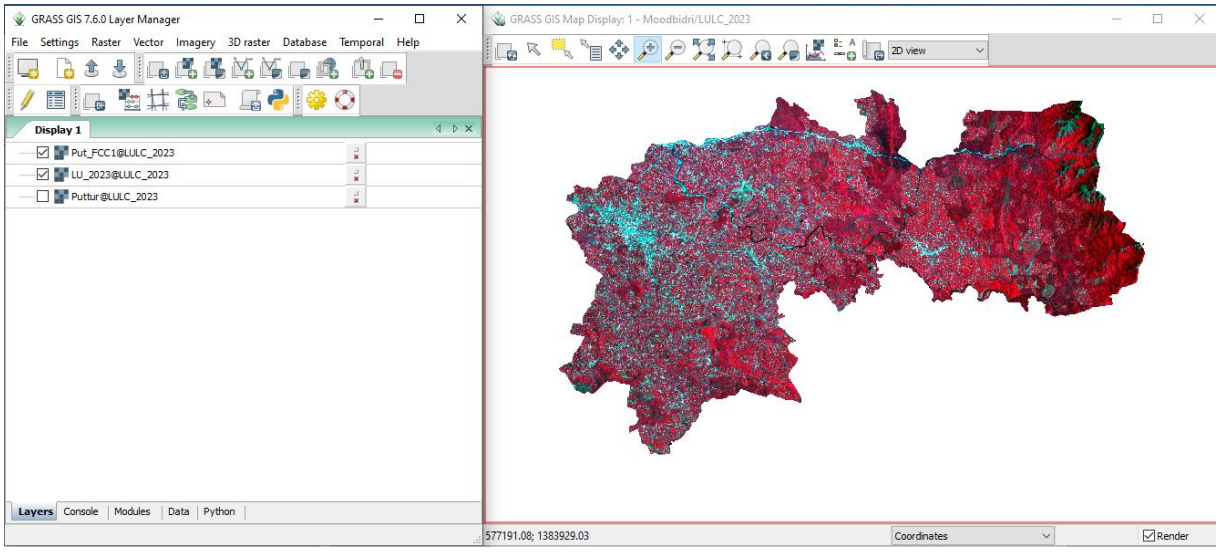

Fig. Screenshot of GRASS GIS

Concluding Session

The Concluding session started at 4:00 PM at CAD lab, Department of Civil Engineering. Dr. Vinay S gave the report of the entire workshop indicating the importance and some deliberations that happened during the workshop hours. Participants were requested to give their feedback and comments over the workshop, for all the participants the concept was new and for few it triggered new ideas, while for

science background students handling computers was a tough task.

Dr. Peter Fernandes, Principal AIET and Chairman IQAC, spoke about the workshops, training programmes that are very common in AEF but the concern was that these were never taken forwards by the participants, he urged the students to move forward in the direction and use the resource person who is specifically brought for GIS and RS. He congratulated the participants, IQAC, Dept of Civil Engineering for completing the workshop. Mr. Vivek Alva spoke about his passion towards space and geospatial. He also indicated about the creation of New Geoinformatics Research Laboratory and asked the participants to take part in the upcoming works pertaining to Western Ghats. He also emphasized the need of multidisciplinary aspect that are necessary for imposing information to the public, decision makers etc. He spoke about humungous data that are available for carrying out spatial analytics that are of need for the current time. Dr. H Ajith Hebbar thanked the management, principal, Dept of Civil Engineering, Colleagues, Participants for supporting and being parts of the workshop.

Fig. Participants giving their feedback

Fig. Participants giving their feedback

Workshop Outcomes

The workshop focused on giving ideas on basics of remote sensing and GIS with hands on training. The participants were able to develop maps, query data, distinguish between different data types, perform land use analysis and land cover analysis using indices and probability based supervised classification techniques (Gaussian Maximum likelihood). The participants were exposed to software's such as GRASS GIS, QGIS, Google Earth. The various sources of data were demonstrated and practiced.

Dr S Vinay
Convener
Associate Professor,
Civil Engineering
AIET, Mijar

Dr H Ajith Hebbar
Professor & Head
Civil Engineering,
AIET, Mijar

Dr Peter Fernandes
Chairman IQAC &
Principal
AIET, Mijar

ANNEXURES

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Ref.No.: AIET/IQAC/2022-23/

24/08/2023

Internal Quality Assurance Cell (IQAC)
&
Department of Civil Engineering

To,
Dr. Peter Fernandes
IQAC Chairman
AIET, MIJAR

Subject: Request permission to conduct 3 day hands on workshop on Basic of Remote Sensing and Geographical Information Systems.

Respected Sir,

We are pleased to inform you that AIET-IQAC & Dept of Civil Engineering, are planning to organize a three-day workshop from 28th to 30th August 2023. The event will be conducted for faculty members and select students across all the departments of AIET and Alva's Degree College. We are planning this workshop for 30 participants with an E-Certificate.

We would request you to kindly permit to proceed with the activities planned. Your valuable suggestions and support in this endeavor would be greatly appreciated.

Thank you for your consideration.

(Attached here with the schedule of the workshop)

24 Aug 2023

Dr. Vinay S
Geoinformatics Research Lab,
Associate Prof. Dept of Civil Eng.
AIET, MIJAR

Through
Dr. Ajith Hebbar
HoD, Civil Engineering
AIET, MIJAR

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Schedule

Date\Time	9:15 to 10:30	10:30 to 10:45	10:45 to 12:45	12:45 to 1:45	1:45 to 3:15	3:15 to 3:30	3:30 to 5:00
28 Aug 2023	Inauguration	**Break**	GIS & RS with Applications (Dr. Vinay S)	**Lunch Break**	Maps and Projection (Dr. Vinay S)	**Break**	Data Source and Google Earth (Dr. Vinay S)
29 Aug 2023	Vector and Raster Operations (Dr. Umeshchandra)		QGIS (Dr. Vinay S)		QGIS (Dr. Vinay S)		QGIS (Dr. Vinay S)
30 Aug 2023	GRASS GIS (Dr. Vinay S)		GRASS GIS (Dr. Vinay S)		GRASS GIS (Dr. Vinay S)		Conclusion (4:00 to 5:00)

Contents

- What is Remote Sensing and GIS
- Applications of GIS and Remote Sensing in various domains (Examples)
- What is Map and How to develop maps
- Various Data sources viz., Earth explorer, Survey of India, Bhuvan…etc.
- Working with vectors in Google Earth
- Image processing basics for remote sensing
- Preparation of layers, querying, georeferencing, adding attributes, preparing Maps in QGIS, (Vector Operations)
- Digital image Processing – Indices, Supervised classification, (Raster Operations

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24/08/2023

CIRCULAR

It is here by informed that a three day hands on workshop on **Fundamentals of Remote Sensing and Geographical Information System** would be organized by IQAC in association with Department of Civil Engineering **during 28th and 30th of August 2023,** the venue being CAD Lab, department of Civil Engineering. In this regards all the HODs (Engg and Basic Science) are requested to depute at least one faculty and 2 students (2nd Sem & 4th Sem) for the workshop from each department.

(Course content and Schedule attached herewith)

Dr. Peter Fernandes
Principal & IQAC Chairman
AIET MIJAR

PRINCIPAL
Alva's Institute of Engg. & Technology,
Mijar, MOODBIDRI - 574 225, D.K

To

All Deans of AIET

All Heads of AIET

Principal Alva's Degree College.

Schedule

Date\Time	9:15 to 10:30	10:30 to 10:45	10:45 to 12:45	12:45 to 1:45	1:45 to 3:15	3:15 to 3:30	3:30 to 5:00
28 Aug 2023	Inauguration	**Break**	GIS & RS with Applications (Dr. Vinay S)	**Lunch Break**	Maps and Projection (Dr. Vinay S)	**Break**	Data Source and Google Earth (Dr. Vinay S)
29 Aug 2023	Vector and Raster Operations (Dr. Umeshchandra)		QGIS (Dr. Vinay S)		QGIS (Dr. Vinay S)		QGIS (Dr. Vinay S)
30 Aug 2023	GRASS GIS (Dr. Vinay S)		GRASS GIS (Dr. Vinay S)		GRASS GIS (Dr. Vinay S)		Conclusion (4:00 to 5:00)

Contents

- What is Remote Sensing and GIS
- Applications of GIS and Remote Sensing in various domains (Examples)
- What is Map and How to develop maps
- Various Data sources viz., Earth explorer, Survey of India, Bhuvan…etc.
- Working with vectors in Google Earth
- Image processing basics for remote sensing
- Preparation of layers, querying, georeferencing, adding attributes, preparing Maps in QGIS, (Vector Operations)
- Digital image Processing – Indices, Supervised classification, (Raster Operations

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28/08/2023

Workshop on BASIC OF REMOTE SENSING AND GEOGRAPHICAL INFORMATION SYSTEMS

Registration Form

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30 August 2023

To whomsoever it may concern

This is to certify that **Mr. Prasanna B M , Dept. of PG Physics**, Alva's Degree College has attended the 3 day hands on workshop on Basics of Remote Sensing and Geographical Information Systems from 28th to 30th August 2023 organised by.AIET-IQAC & Dept of Civil Engineering.

Dr. Ajith Hebbar
HoD, Civil Engineering
AIET, MIJAR

H.O.D.
Dept. of Civil Engineering
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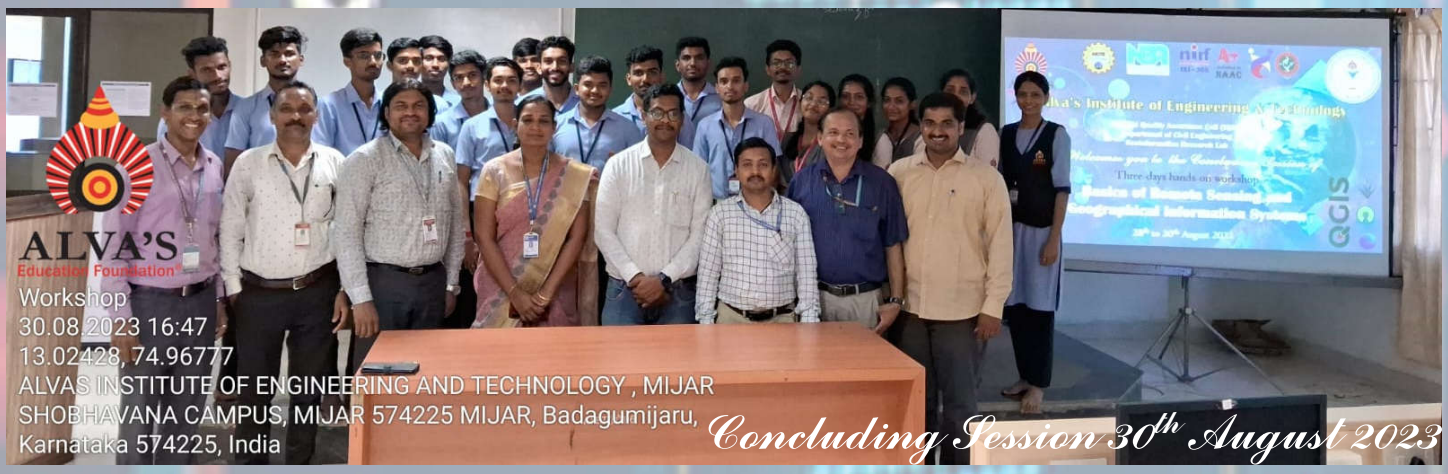
QGIS

Inaugural Session 28th August 2023

Concluding Session 30th August 2023



Concluding Session 30th August 2023

Alva's Institute of Engineering & Technology,

Shobhavana Campus, Mijar, Moodbidri
Dakshina Kannada, Karnataka - 574225

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Alva's Institute of Engineering and Technology

Internal Quality Assurance Cell (IQAC),

Geoinformatics Research Lab,

AIET IEEE Student Branch Chapter

(STB60215368)

&

Institute Innovation Council – AIET

Jointly Organises

Five-Days workshop on

Innovative Tools and Methods for Satellite Image Processing

30th October 2023 to 4th November 2023

Venue: DS Lab, Dept of AI & ML
AIET, Mijar, Moodbidri

Table of Contents

Internal Quality Assurance Cell (IQAC)
Geoinformatics Research Lab
IEEE- Student Branch Chapter – AIET (STB60215368)
Institute Innovation Council – AIET

Alva's Institute of Engineering and Technology (AIET),
Mijar, Moodbidri, Dakshina Kannada

Organises a five-day hands-on workshop on "Innovative Tools and Methods for Satellite Image Processing"

The workshop aimed to enhance the skills with knowledge in the domain of Remote Sensing amongst the young minds using state of the art tools focused on AI, ML, Image Processing.

About Geoinformatics Research Lab

Geoinformatics Research Lab aims to leverage geospatial technology and data to solve complex spatial problems, contribute to scientific research, inform policy decisions, and enhance the knowledge of interconnectedness of natural and human systems on a geographic scale.

With an immediate vision of Monitoring the Fragile Western Ghats Ecosystems using geospatial technologies involving multidisciplinary approaches to promote sustainability, conservation and management.

This involves mapping visualizing and simulating the land use and land cover changes, its associated processes in the Western Ghats and Coastline using geospatial tools and disseminating the information to public, researchers, decision makers though web portals (WebGIS) and mobile applications (Mobile GIS), etc.

GIS lab is responsible for training budding researchers, teachers across domain for integrating the geospatial data.

Alva's Institute of Engineering and Technology

Alva's Institute of Engineering and Technology in Moodbidri stands as a testament to the pursuit of academic excellence and holistic development.

Established with the aim of fostering academic excellence and holistic development in 2008, the institute is affiliated to Visvesvaraya Technological

University, Belagavi. Through its comprehensive programs, dedicated faculty, infrastructure and commitments towards innovation, the institute plays a significant role in shaping the future decisionmakers, technologists and engineers of India.

Located in Moodbidri, the Institute has continually focused on providing quality engineering and technical education to its students and to support them both in academic and extracurricular activities.

AIET is associates with numerous Government, Non-Government and Private Organisations with a focus on research and consultancy projects. AIET currently has MoU's with reputed national level organizations viz., ISRO, NRSC, NIAS, NAL, RRSC, IIT, NIT and many more.

Day 1. **Inauguration**

The five-day workshop on "Innovative Tools and Methods for Satellite Image Processing" was held between 30th October and 4th November 2023 at DS lab, Dept of AI and ML. The workshop began at 9:30 AM with lighting of lamps. Dr. Majunath Kotari, HoD CSE and IEEE-faculty coordinator- AIET welcomed the gathering and addressed the need for Geospatial tools in the digital world. Dr. Vinay S, highlighted the applications of GIS, Remote Sensing and need of interdisciplinary research and studies for addressing real world problems. He also highlighted about the contents deliverable in the workshop. The speech underscored the importance of GIS in promoting innovation, sustainability, and informed decision-making across various industries. The audience gained valuable insights into the practical applications of GIS and its significant impact on addressing real-world challenges.

Dr. Dattathreya, Dean Planning and IQAC main Coordinator, expressed his thoughts and need geospatial tools. He elaborated on how ISRO, NRSC and AIET have collaborated worked in the past as a result, AIET is a testament for developing skills of student.

Dr. Peter Fernandes, Principal AIET, in his presidential address indicated the role of Remote Sensing in the growing world and its importance in decision making. He emphasized on how GIS has been extensively used across multiple domains. He emphasized the importance of conducting multidisciplinary research and urged the students to think beyond the box to comprehend and resolve real-world issues. He appreciated the move of inducing the students as resource persons for the event.

The vote of thanks was given by Mr. Neerav Patel, Chairman of IEEE-Student Branch Chapter. He expressed our gratitude to the organisation, principal, deans and faculty, students, and IEEE for their support.

Fig: Welcoming the Gathering – Dr. Majunath Kotari

Fig: Lighting of Lamps

Fig: About the Workshop – Dr Vinay S

Fig: Presidential Address – Dr. Peter Fernandes

Introduction to Remote Sensing

Dr. Vinay S introduces the very basics of remote sensing, providing a comprehensive understanding on the domain. He introduced the key components of remote sensing, principal, the physics behind it and explained their significance and future prospects. The session covered topics viz., energy interactions in the atmosphere, (including the different types of reflection,

such as specular and diffuse reflection); remote sensing platforms; Spectral reflection curves; Resolutions (Spatial, spectral, temporal, radiometric). The session also included an in-depth analysis of remote sensing satellite images, deliberated on how to interpret and analyze the satellite images.

Fig: Participants

Digital Image Processing

Mr. Vedanth conducted a highly effective and detailed session on image processing. He explained the basics of image processing, starting with introduction to images, resolution, and aspect ratio. He also provided insights on using various libraries and tools in Python for image processing. The importance of image processing, including image compression, restoration, and denoising, was also discussed in detail. We also installed PyCharm, which is a crucial tool for image processing. The session concluded with a group quiz based on the topic of image processing, which was fun and effective way to reinforce our learning.

Fig: Digital Image Processing – Mr. Vedanth

Day 2: Artificial Intelligence and Machine Learning

Mr. Satyam systematically elucidated the concepts and components of AI and ML, commencing with an overview of what AI is and the genesis of its formation. He highlighted AI's role in automating routine tasks, such as image classification and pattern recognition, while intermediate AI delves into more complex functions like predictive analysis and route optimization. The advanced applications of AI in GIS incorporate machine learning, deep learning, and neural networks, enabling sophisticated spatial analysis and decision-making.

Spatial data analysis in GIS involves scrutinizing geographic data to derive meaningful insights. Automated feature recognition utilizes AI to identify and classify objects in maps or imagery. Predictive analysis in GIS anticipates future trends or events based on historical spatial data. Routing and navigation tools optimize travel routes and offer real-time directions. Spatial clustering and pattern recognition assist in detecting spatial relationships and groupings in geographic data, facilitating decision-making and problem-solving.

During the afternoon session, the speaker delved into Convolutional Neural Networks (CNN), a deep learning model primarily used for image analysis. Three types of machine learning were discussed: supervised, unsupervised, and reinforcement learning. Supervised learning entails training a model on labeled data to predict outcomes, with regression predicting continuous outcomes and various algorithms like decision trees, random forests, and K-Nearest Neighbors (KNN). Challenges such as overfitting and underfitting were highlighted in supervised learning.

Unsupervised learning involves algorithms extracting patterns from unlabeled data, including K-means clustering and Principal Component Analysis (PCA). In GIS, backpropagation in neural networks optimizes spatial analysis and decision-making processes by refining models through iterative learning and adjustments based on error minimization.

Fig: Introducing AI and ML to the participants – Mr. Satyam

Fig: Introducing AI and ML to the participants – Mr. Satyam

Day 3:

Open-Source Software's

During the session with Mr. Neerav, he expounded on the concept of Open Source Software (OSS). This term encompasses software that is freely accessible to the public, allowing users the freedom to modify, distribute, and enhance the software. In contrast to closed-source proprietary software, open source promotes collaboration and transparency, providing users with freedoms such as the ability to study, modify, and distribute the software. The operational framework of open source follows a community-driven model, where users actively contribute to the development and improvement of the software.

Free and Open-Source Software (FOSS) is a categorization of software that endows users with the freedoms of using, studying, modifying, and distributing the source code. FOSS is further subdivided into various categories, including copyleft licenses (e.g., GPL), permissive licenses (e.g., MIT), and public domain licenses (e.g., CC0), each governing usage and distribution terms.

In the realm of GIS, FOSS tools like QGIS, GRASS GIS, and GeoServer, in conjunction with organizations such as OSGeo, advocate for the development and utilization of open-source geospatial software. Platforms like Mapbox offer mapping services, while protocols like Web Map Service (WMS), Web Feature Service (WFS), and Web Coverage Service (WCS) facilitate data sharing and interoperability within GIS. FOSS in GIS finds applications across diverse fields, including environmental monitoring, urban planning, disaster management, and public health, providing cost-effective and customizable solutions for spatial data analysis and visualization.

UNET Demonstration

Mr. Satyam elucidated that the U-Net architecture, one of the widely employed convolutional neural network for image segmentation/classification tasks. Within the domain of GIS, this architecture is harnessed for object detection and classification in satellite or aerial imagery. The code typically encompasses data preprocessing, model training, and evaluation, utilizing annotated datasets to identify and categorize objects in geographical imagery.

The application of U-Net in GIS facilitates detailed and precise identification of various objects, including buildings, roads, or vegetation. This capability proves invaluable for tasks such as land use mapping, disaster response, and urban planning. Leveraging the network's capacity to discern unique features and patterns, the implementation of the code enables accurate spatial classification within geographical data. This, in turn, simplifies the process of making well-informed decisions and analyzing geographic information systems.

GRASS GIS – Hands on

During the afternoon session under the guidance of Dr. Vinay S., participants successfully installed GRASS GIS and imported geographical data into the software. They acquired a fundamental understanding of navigating the GRASS interface, managing spatial datasets, and initiating GIS workflows. This hands-on experience provided them with the necessary foundation to leverage GRASS for geographic analysis and laid the groundwork for further exploration of the tool's capabilities in spatial data management and analysis. Processes such as land cover analysis, land use analysis were focused during the session. Overall, the session proved to be a valuable introduction to the installation of GRASS GIS and the initial steps of data importation. It empowered the participants to embark on their journey in utilizing this powerful tool for geographic analysis and geospatial modeling.

Day 4:

Mobile GIS for Field Data Collection

Under the guidance of Dr. Vinay S., the GIS field visit constituted a comprehensive effort to collect detailed spatial data on various elements of the ecosystem, including medicinal plants, butterflies, birds, and land use. To achieve this objective, four teams, each consisting of 10 members, utilized the Epicollect5 app and GitHub to ensure efficient and organized data collection, storage, and sharing. Each team was assigned a specific task, encompassing gathering information on medicinal plant species, documenting butterfly sightings, assessing bird diversity, and analyzing land use patterns. The teams collected GPS coordinates, captured photographs, and provided detailed descriptions of observed flora, fauna, and land use characteristics using the Epicollect5 app.

All team members received training in using the app for data collection, ensuring standardized data formats and GPS accuracy. Following data

collection, they uploaded the information to a GitHub repository for organized and collaborative data management. Despite challenges such as GPS accuracy, data synchronization, and varying field conditions, the teams effectively mitigated these issues.

The GIS field visit successfully gathered significant data, now serving as a valuable resource for ecological research, conservation planning, and future GIS analysis. The collected data will contribute to understanding the dynamics of the ecosystem, its components, and their interactions. This information can be instrumental in developing strategies for the conservation and management of the ecosystem.

Fig: Data collection using MobileGIS at Bird Park

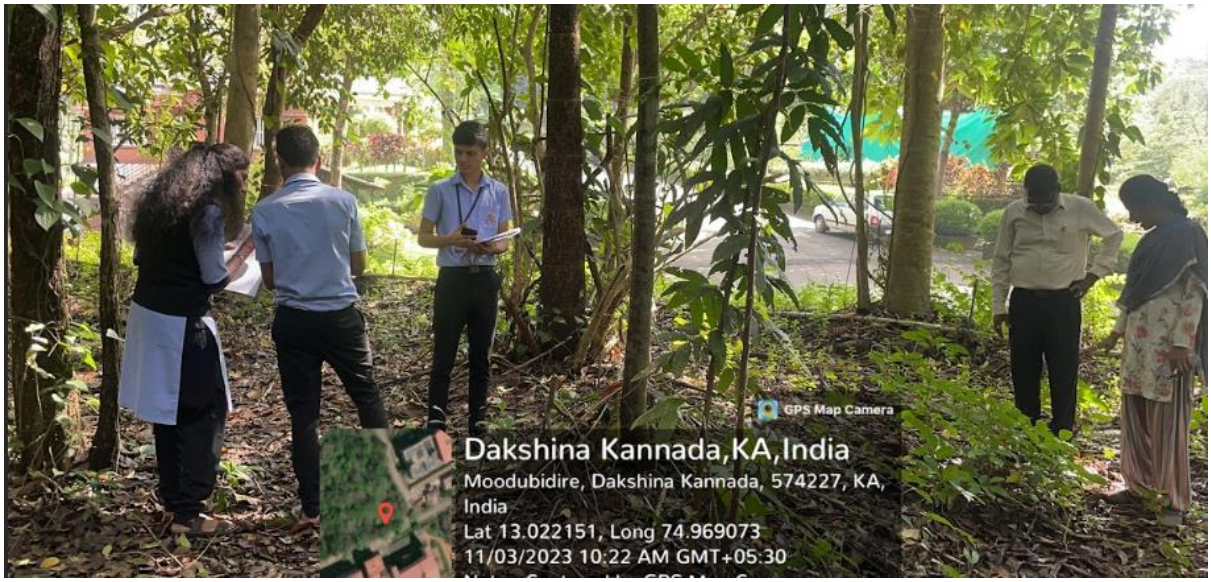

Fig: Data collection using MobileGIS at Shobhavana

Expert Lecture – Dr. Prakash P S

During the afternoon session, Dr. Prakash, a distinguished speaker from Irish Centre for High-End Computing ICHEC, delivered an informative presentation on the multidisciplinary field of remote sensing and geospatial technologies. He explained the process of remote sensing and highlighted the crucial role of sensors in capturing remote sensing images. The presentation showcased remote sensing images obtained through ISRO and detailed a wide range of remote sensing applications, from environmental monitoring to natural resource exploration.

Dr. Prakash also discussed related technologies such as photogrammetry, drones, GPS, and GIS. He emphasized the interplay of geospatial technologies in relation with new age tools viz., AI and ML, depicting how they contribute to terrain modeling, high-resolution mapping, accurate positioning, and data integration and analysis.

Fig: Guest Lecture by Dr. Prakash

Day 5

GRASS GIS - Hands on

During the hands-on session hosted by Dr. Vinay S., participants learned how to utilize GRASS GIS (Geographic Resources Analysis Support System) for the importation, processing, and analysis of satellite data. The session encompassed various tasks, including importing vector boundaries, converting vectors to rasters, integrating folders into the GIS system, importing satellite imagery, developing signatures, and performing supervised classification.

The session commenced with the importation of vector boundaries into GRASS, followed by their conversion into a raster format suitable for subsequent analysis. Participants acquired skills in organizing and importing

diverse datasets from local directories into GRASS, as well as incorporating and visualizing satellite images within the GIS platform. The latter part of the session focused on developing signatures from the imported satellite data. Participants were instructed in the process of identifying and extracting significant features or classes from the imagery. Additionally, they were introduced to supervised classification techniques, demonstrating how to classify or categorize different land cover types within the satellite imagery.

Overall, this hands-on session provided participants with practical exposure to various functionalities of GRASS GIS. It equipped them with the skills required to manipulate and extract meaningful information from satellite data, enhancing their ability to conduct geospatial analyses and land cover classifications within the GRASS GIS platform.

Fig: Participants working with GRASS GIS

Valedictory Session

The IEEE-organized workshop marked a significant milestone in the field of Geographic Information Systems (GIS) at AIET. The event featured certificate distribution to participants, along with speeches from Dr. Dattathreya, the chief guest, and Dr. Vinay S, the resource person. Both speakers emphasized the importance of GIS in the modern technological landscape and its pivotal role in decision-making processes.

In his speech, Dr. Dattathreya spoke about the advancements and potential applications of GIS in various industries, highlighting its significance in

diverse domains, from urban planning to environmental monitoring. Dr. Vinay S, the distinguished resource person, demonstrated the practical aspects of GIS, showcasing its implementation in real-world scenarios. His presentation illustrated how GIS technologies aid in spatial analysis, cartography, and data visualization, unveiling the power of geographic information in solving complex problems.

The ceremony also recognized the efforts of participants who completed workshops in GIS by distributing certificates. It served as a platform for knowledge sharing and recognition of the dedication and commitment of the participants in advancing their GIS proficiency.

Fig: Valedictory Session

Workshop Outcomes

The workshop focused on introducing the students to concepts of Remote Sensing, Digital Image Processing, AI and ML with both theory and hands on session. The participants were able to Develop Indices for extracting natural features. The use of Google Colab opened a new dimension in the thought processes for the participants. The participants were able to work on the basic steps for evaluating Land use of Moodbidri using Landsat 9 data. The participants had a flavor of Remote Sensing using classical and advanced methods using FOSS.

Acknowledgement

We would like to thank the efforts made by the young IEEE brains for organizing and conducting the workshop. We would like to express out sincere gratitude to the resource persons Mr. Vedant, Mr. Satyam, Mr. Neerav, Dr. Prakash for introducing them to diverse topic beyond the syllabi. We are extremely thankful to the Management, Principal, Deans, Heads and faculties for their kind support.

Dr. Vinay S
IEEE Member
Geoinformatics Research Lab
Associate Professor,
Dept of Civil
AIET, Mijar

Dr. Manjunath Kotari
IEEE Member
Professor, Dept of CSE
AIET, Mijar

Dr. Dattathreya
Dean Planning
IQAC Main Coordinator
Professor, Dept of ECE
AIET, Mijar

Dr. Peter Fernandes
Principal &
IQAC Chairman
AIET, Mijar

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ANNEXURE

ALVA'S INSTITUTE OF ENGINEERING & TECHNOLOGY

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Ref.No.: AIET/IQAC/2022-23/ 13/10/2023

Internal Quality Assurance Cell (IQAC)
Geoinformatics Research Lab
IEEE Student Branch Chapter, AIET (STB60215368)
Institution's Innovation Council

To,

Dr. Peter Fernandes
IQAC Chairman
AIET, MIJAR

Subject: Request permission to conduct Hands on Workshop on Satellite Image Processing

Respected Sir,

We are pleased to inform you that AIET-IQAC, Geoinformatics Research Lab, IEEE student branch chapter (STB60215368) & IIC, AIET are planning to organize a hands-on workshop between 30th October to 4th November 2023. The meeting will be conducted focusing on innovative tools and methods for analysis of Satellite images using Digital Image Processing techniques (AI/ML) with focus on Western Ghats and Coastal Ecosystems. Target audience would be interested students and teaching fraternity across all Engineering branches from AIET (2nd, 3rd and 4th year) and Degree College with an upper limit of 50 participants. The workshop will be conducted at Machine Learning Lab.

We would request you to kindly permit us to proceed with the activities planned. Your valuable suggestions and support in this endeavor would be greatly appreciated.

Thank you for your consideration.

Dr. Dattathreya
IQAC Main Coordinator
AIET, MIJAR, Moodbidri

13/10/2023
Dr. Vinay S
Geoinformatics Research Lab,
AIET, MIJAR, Moodbidri

13/10/23
Dr. Manjunath Kotari
IEEE Faculty Counselor
AIET, MIJAR, Moodbidri

PRINCIPAL
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Ref.No.: AIET/IQAC/2022-23/ 13/10/2023

CIRCULAR

It is hereby informed that hands on training workshop on Innovative tools and methods for Satellite image processing for monitoring Western Ghats and Coastal Ecosystems is organized by IQAC, Geoinformatics Research Lab & IEEE student branch chapter between 30 October and 4th November 2023, venue being Machine Learning Lab between 9:30 AM and 5:00 PM. In this regards all HOD's (Agri, AIML, Civil, CSE, CSD, ECE, ISE) are requested to kindly be present for the inaugural and depute select faculty and interested students from the department.

Please note: Faculty are required to be present full time once registered

Dr. Peter Fernandes
Principal & IQAC Chairman
AIET Mijar, Moodbidri

To

Principal Alva's Degree College, All Deans and Heads, AIET

M – N.R. Shetty
ISE – N.R.S.
CSE – T. HP
CSD S
AIML S
MBA Sruj L

ECE GLa
ME – T. HP
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AG – Sa
PHY
CHY
Dean (SA) – 13/10/23

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IEEE AIET

Date	9:30 to 11:00	11:00 to 12:30	12:30 to 1:30	1:30 to 3:00	3:30 to 5:00
30 October 2023	Inauguration	Introduction to Remote Sensing (Dr. Vinay)	LUNCH	Digital Image Processing (Mr. Vedant)	Satellite and Data Sources (Dr. Vinay)
31 October 2023	AI and ML for Beginners (Mr. Satyam)			Hands on session – Python for image processing (Mr. Vedant/ Mr. Satyam)	
2 November 2023	Open-Source Tools (Mr. Neerav)	GRASS GIS Hands on (Dr. Vinay)		GRASS GIS Hands on (Dr. Vinay)	
3 November 2023	GRASS GIS Hands on (Dr. Vinay)			Mini Project	
4 November 2023	Mini Project + Presentation	Valedictory and Certificate Distribution			

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Registration List of Week Workshop on Innovative Tools &Techniques in Satellite Image Processing (30th Oct-4th Nov,2023)

Sl No	Name	Member Id	Signature
1.	Akshatha Hebbar	99490549	
2.	Abhishek B K	99496050	
3.	Archana Hublikar	99473663	
4.	Gayatri C Bhagavantnavar	99408977	
5.	Naveesh Kumar	99496077	
6.	Nikisha Krishna Nagesh Poojari	99473931	
7.	Priyanka D	99494027	
8.	Tejaswini Venkatesh Gudigar	99483672	
9.	Kamma Puspuri Madhavi	99494382	
10.	Reshna Nandipi	99474505	
11.	Shetty Balija Deepthi	99494335	
12.	Sansitha Rajesh	99495546	
13.	Toshif Husen Patil	99495745	
14.	Shrishanth S Shetty	-	
15.	Saneesha Prashanth Kadam	-	
16.	Yashwanth R	-	
17.	Gururagavendra Paluri	-	
18.	D Chandan Lagubigi	-	
19.	Bhavish	-	
20.	Jhanavi V	-	
21.	Darshan Rai	-	
22.	Harshith D M	-	
23.	Shetty Yash Chandrashekar	-	
24.	Kagwade Abhishek Shashank	-	
25.	Abhay Gowda M K	-	
26.	Bhagyashree Shyam Naik	-	
27.	Venkatesh Hanamanta Hulasad	-	
28.	Ganesh	-	
29.	Sudarshan T Bhat	-	
30.	Lakshan	-	
31.	Rakshith	-	
32.	Mohammed Rihan	-	
33.	Arvinkanth Suuvarna	-	
34.	Moammed Adil	-	
35.	Anirudh Kamath K	-	
36.	Muhammed Yamin Sharfuddin	-	
37.	Syed Saleha	-	
38.	Krupashree R.	-	
39.	Chaitra S Koddaddi	-	
40.	Vedanth V	-	

41.	Laya R	-	
42.	Abhiram H. A.	-	
43.	Abhishek Pandit	-	
44.	Jyothi B.	-	
45.	Abhishek P.	-	
46.	Varshini K. L.	-	
47.	Mohammed Sharfuddin	-	
48.	Satyam Pawale	-	
49.	Manjunath M. Sajjan	-	
50.	A. Bhoomika Reddy	-	
51.	Chaitra	-	
52.	Dr Bramha Prakash H P	99627377	
53.	Neerav V Patel	99494129	

IEEE Student Branch Chair

IEEE Faculty Councellor

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Vedanth V

In recognition of his/her amazing performance and great efforts during the Workshop on Innovative tools and Methods for Satellite Image Processing

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Sudarshan T Bhat

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Shetty Balija Deepthi

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VEDANTH V

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Syed Saleha

In recognition for his/her active participation and great efforts during the workshop on innovative tools and methods for satellite image processing

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Yash Shetty

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TEJASWINI VENKATESH GUDIGAR

In recognition for his/her active participation and great efforts during the workshop on innovative tools and methods for satellite image processing

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Yashwanth R
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Dr Manjunath Kotari
Faculty councilor
IEEE
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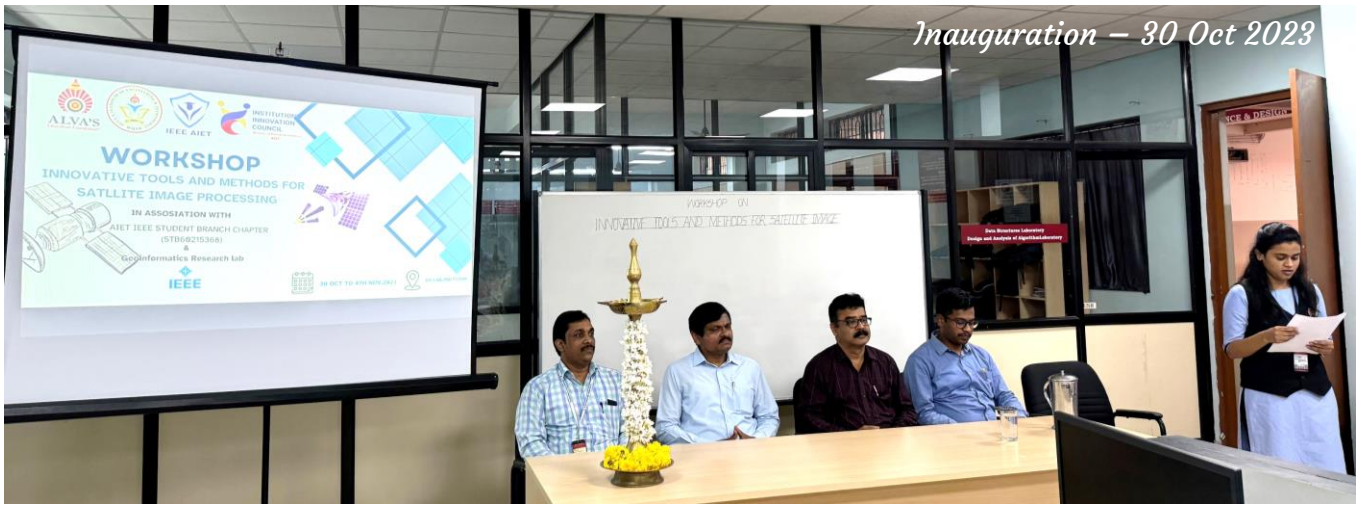
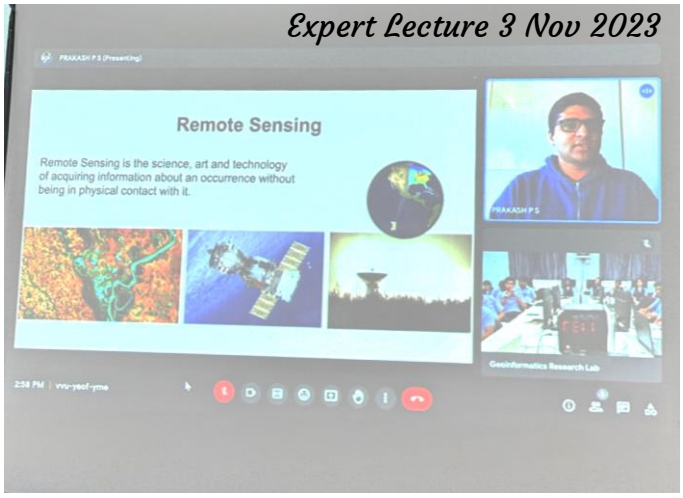


Inauguration – 30 Oct 2023

Expert Lecture 30 Oct 2023

Expert Lecture 31 Oct 2023



Expert Lecture 3 Nov 2023

Valedictory 4 Nov 2023

Alva's Institute of Engineering and Technology,

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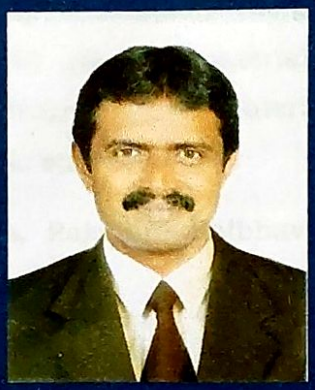
Department of Civil Engineering

A Technical Talk on "An overview on Green Building"

Resource Person



Er. Rajendra Kalbhavi
Executive Director of DK Nirmithi Kendra,Surathkal.

Wednesday, December 20, 2023 at 3.30 PM
Civil Engineering Seminar Hall, AIET

Department of CV
HOD and Faculty Members

Institution Innovation Council
Coordinators

Dr. Peter Fernandes
Principal, AIET

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DEPARTMENT OF CIVIL ENGINEERING

TECHNICAL TALK REPORT

Er. Rajendra Kalbhavi is dedicated to advancing the construction of low-cost buildings using eco-friendly materials, thereby championing the cause of green buildings. These structures not only excel in energy efficiency but also contribute to resource conservation, fostering healthier indoor environments and providing aesthetically pleasing and durable spaces through the use of environmentally suitable materials. The principles of green building encompass integrated design, solar orientation, optimal footprint sizing, mindful glazing, material durability, economic life-cycle analysis, material reuse and salvage, natural material utilization, reliance on locally available resources, and economic sustainability.

In his comprehensive approach, Rajendra Kalbhavi emphasized key strategies for making buildings green:

Sustainable Site Planning with Bioclimatic Architectural Planning:

Integrate bioclimatic architectural planning into site development for sustainable outcomes.

Design Energy-Efficient Lighting and HVAC Systems:

Incorporate designs that optimize energy usage in lighting and HVAC (Heating, Ventilation, and Air Conditioning) systems.

Use Low Energy and Renewable Materials:

Prioritize the selection of materials with low energy requirements and those derived from renewable sources.

Choose Construction Materials and Finishes with Low Emissions: Opt for construction materials and interior finishes that emit zero or low levels of pollutants to enhance indoor air quality.

ALVA'S INSTITUTE OF ENGINEERING & TECHNOLOGY

(Unit of Alva's Education Foundation (R), Moodbidri)

Shobhavana Campus, MIJAR-574225, Moodbidri, D.K., Karnataka, Affiliated to VTU, Belagavi & Approved by AICTE New Delhi, Recognized by Govt. of Karnataka.

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DEPARTMENT OF CIVIL ENGINEERING

Implement Dimensional Planning and Material Efficiency Strategies:

Utilize dimensional planning and other strategies to enhance material efficiency during construction.

Design for Graywater Systems and Dual Plumbing:

Incorporate designs for graywater systems, enabling the recovery of rainwater for site irrigation, and implement dual plumbing systems for the use of recycled water in toilet flushing.

By addressing these facets, Rajendra Kalbhavi aims to mitigate the negative environmental impacts associated with modern construction, thereby promoting a more sustainable and eco-friendly approach to building design and construction.

Resource Person addressing the students on concepts of green building

HOD

H.O.D.
Dept. of Civil Engineering
Alva's Institute of Engg. & Technology
Mijar, Moodbidri - 574 225

IIC President

PRINCIPAL

PRINCIPAL
Alva's Institute of Engg. & Technology
Mijar, MOODBIDRI - 574 225, D.K

ALVA'S INSTITUTE OF ENGINEERING & TECHNOLOGY
(Unit of Alva's Education Foundation (R), Moodbidri)
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Shobhavana Campus, MIJAR-574225, Moodbidri, D.K., Karnataka
Ph: 08258-262725; Mob:722262724,7026262725,mail:principalaiet08@gmail.com

Department of Civil Engineering

Date – 09/12/2023

To

IQAC Chairman

AIET, Mijar

Respected Sir

Sub: To grant Permission for Technical Talk reg:-

We are happy to inform you that department of civil engineering conducting a technical talk on 12/12/2023. The details are mentioned below, kindly request you do the needful.

Resource person details

Name: Er. Rajendra Kalbavi

Designation: Project Director

Company details: Dakshina Kannada Nirmithi Kendra

Date/month/year: 12/12/2023

HOD
H.O.D.
Dept. of Civil Engineering
Alva's Institute of Engg. & Technology
Mijar, Moodbidri - 574 225

PRINCIPAL
Alva's Institute of Engg. & Technology,
Mijar, MOODBIDRI - 574 225, D.K

ALVA'S INSTITUTE OF ENGINEERING & TECHNOLOGY
Shobhavana Campus, Mijar, Moodabidri, Mangalore Taluk, D.K – 574225
Phone: 08258-262725, Fax: 08258-262726
DEPARTMENT OF CIVIL ENGINEERING

From

H Ajith Hebbar
Professor & Head
Dept. of Civil Engineering
AIET, Mijar.

The

The Principal
AIET, Mijar.

Sir,

Sub: - Request for the honorarium for resource persons of the Technical Talk – reg.

I request you to direct the concerned authorities to provide the honorarium for technical talk resource person Er. Rajendra Kalbavi, Project Director Dakshina Kannada Nirmithi Kendra, on Monday, 12 December 2023.
I will be thankful to you for the same.

Resource Persons	Honorarium + T.A
Er. Rajendra Kalbavi, Project Director Dakshina Kannada Nirmithi Kendra, NITK, Surathkal	Rs. 2500/- + T.A

Yours faithfully
(Dr. H Ajith Hebbar)
H.O.D.
Dept. of Civil Engineering
Alva's Institute of Engg. & Technology
Mijar, Moodbidri - 574 225

Date: 9/12/2023

ALVA'S INSTITUTE OF ENGINEERING & TECHNOLOGY
Shobhavana Campus, Mijar, Moodabidri, Mangalore Taluk, D.K – 574225
Phone: 08258-262725, Fax: 08258-262726
DEPARTMENT OF CIVIL ENGINEERING

Ref: AIET /CV/TT 2023-24/05

Date: 09/12/2023

To,

Er. Rajendra Kalbavi
Project Director
Dakshina Kannada Nirmithi Kendra
NITK, Surathkal

Dear Sir,

Sub:-Request for Resourceful Talk – Reg.

I am very much pleased to have the honour of inviting you to our institution as resource person to deliver a technical talk on your expertise, on Tuesday, 12th December 2023 at 3.00 PM, I look forward to meet you at our Campus.

Yours Truly

(Dr H Ajith Hebbar)
H.O.D.
Dept. of Civil Engineering
Alva's Institute of Engg. & Technology
Mijar, Moodbidri - 574 225

A TALK ON

RESEARCH CULTURE & HIGHER EDUCATION OPPORTUNITIES IN JAPAN

Resource person: Dr. Harikrishna Bhat

Designation: Professor & Director International collaboration at NMAMIT, Nitte.

Date: 23/07/2024

Introduction

On 23/07/24/ A talk titled " research culture & higher education opportunities in Japan" was delivered by Dr. Harikrishna Bhat. The presentation provided valuable insights into the Japanese higher education system, focusing on postgraduate studies.

Overview of Japanese Postgraduate Education

The speaker began by outlining the structure of postgraduate education in Japan, which primarily comprises Master's and Doctoral programs. A key emphasis was placed on the research-oriented nature of Japanese universities, with ample opportunities for students to engage in cutting-edge projects.

Key Points

- **Research Focus:** Japan's postgraduate programs are heavily inclined towards research, offering students the chance to contribute to the academic frontier.
- **Rigor and Standards:** The academic environment is highly competitive, requiring dedication and perseverance from students.
- **Industry Collaboration:** Many programs integrate internships and industry partnerships to provide practical experience.
- **Internationalization:** Japan is actively promoting international education with an increasing number of English-taught programs and support services for foreign students.
- **Popular Fields:** Engineering, technology, business, science, medicine, and humanities were highlighted as popular fields of study in Japan.

With many Indians studying abroad, India is the second-largest country in the world in terms of origin for international students. In spite of this, only 0.3 percent of Indian students chose Japan as their study abroad destination, making Japan the 20th most popular country.

In comparison to other South Asian nations and nations where English is an official or semi-official language, this is quite low. It is the case either because people in India may not fully understand the allure of Japan and the advantages of studying there, or because they may have some reservations about the viability of studying there.

The Japanese government started support for international students, to reserve flight tickets outside of the daily immigration limit, students can request the use of this support from their Japanese school.

Admission Process and Funding

The speaker elaborated on the admission process, emphasizing the need for a bachelor's degree, Japanese language proficiency (for most programs), academic transcripts, letters of recommendation, statement of purpose, and entrance exams.

There are a few tests which international students might have to take before they join these colleges/universities in Japan.

The EJU is one of the exam designed for international students who wants to enroll and study (undergraduate program) at Japanese universities. It measures knowledge of basic academic concepts (Science, Japan, and the World, and Mathematics), Scores of EJU are valid for two years.

This test held twice per year mainly in June and November in more than 14 countries and different cities across the world.

At least 60% of Japanese universities, including national universities require the submission of EJU scores as part of the application. There are other benefits of the EJU, some schools offer “pre-arrival admission” where students can be admitted to the school before arriving in Japan, and scholars are awarded with the honors scholarship who achieve the highest scores on the EJU.

The other test in the list includes the JLPT, it assesses non-native Japanese speakers’ ability to understand Japanese words, vocabulary, and syntax, as well as communication in Japanese. The levels range from N1 to N5, with N1 being the highest. The N5 and N4 levels assess students’ basic understanding of the language.

Funding opportunities were discussed, including government scholarships, university scholarships, and private scholarships.

Conclusion

The talk offered a comprehensive overview of post-graduation studies in Japan. The speaker's insights into the academic environment, research opportunities, and challenges were particularly valuable. The presentation generated significant interest among the audience, indicating a growing appeal of pursuing higher education in Japan.

TECHNICAL FEST

MECHXTROME

Every academic year Department of Mechanical Engineering organizes an intra-college technical fest for the aspirants assembling from various engineering colleges with a very high competitive spirit to participate and with a strong determination to include their achievements & accomplishments to their resumes.

These fests are organized every year to provide a platform for the students to showcase their talent with a competitive spirit. The event was successful enough to attract as many as 150 registrations across the region for a two-day state-level fest which includes all the events. The event was held on03/05/2024 & 04/05/2024.

Students actively participated in all the events and presented their work. The fest was executed with 09 events planned and organized at its best quality. Focusing on the types of events to include in the fest was decided consideration, with little emphasis on the fun full events behind the scene.

The events like paper presentations, poster presentations, project expo, Automobile quiz, caed modelling and many more events were equally planned, and executed and have managed to gather maximum response

<table>
<tr><th colspan="5">TECHNICAL FEST –03/05/2024
SCHEDULE</th></tr>
<tr><th>9:30 AM- 10:30 AM</th><th>10:30 AM -11:30 AM</th><th></th><th>2:00 PM- 3:00 PM</th><th>3: 30PM-4:30 PM</th></tr>
<tr><td>AUTOMOBILE QUIZ
Staff: Mr. Hemanth
Mr. Praveen K C

Venue: 401 (mech block)</td><td>TECHNICAL PAPER PRESENTATION
Staff: Dr. Satyanarayan
Dr. Suresh P S
Dr. Kumarswamy M C
Venue: CAMD LAB</td><td rowspan="3">LUNCH BREAK</td><td>GREEN SAND MOULDING
Staff: Mr. Ganesh M R
Mr. Deepak Kothari
Venue: Foundry & FORGING LAB</td><td>WATER ROCKET
Staff: Mr. Hemanth

Venue: Basket Ball Court</td></tr>
<tr><th colspan="2">10:30 AM-12:30 AM</th><th>2:00PM- 3:00 PM</th><th>3: 30PM-4:30 PM</th></tr>
<tr><td colspan="2">CAD Drawing
Staff: Dr. G B Vaggar
Mr. Srinivas C S
Venue: CAMD LAB</td><td>POSTER MAKING
Staff: Mr. Pramod V B
Student: Mr. Anvesh
Mr. Samarth
Venue: 401 (mech block)</td><td>AUTOMOBILE PARTS IDENTIFICATION
Staff: Mr. Kiran C H
Venue: AUTO CLUB</td></tr>
</table>

TECHNICAL FEST –04/05/2024 SCHEDULE	
9:30 AM- 10:30 AM	**10:30 AM -11:30 AM**
CLAY MODELLING Staff: Mr.Ganesh M R **Venue: FOUNDRY FORGING LAB**	**TECHNICAL PICK & SPEAK** Staff: Mr. Sharatchandra Prabhu **Venue: 401 (mech block)**
9:30 AM-12:30 AM	
TECHNICAL TREASURE HUNT **Staff: Mr. Pramod Kumar N** **Venue: AIET CAMPUS**	

CAED MODELLING EVENT

Venue: CAMD LAB

Introduction

The Department of Mechanical Engineering organizing MECHXTROME Tech Fest is an annual event that brings together students, and enthusiasts to showcase innovations, engage in competitions, and discuss advancements in mechanical engineering. One of the key highlights of this event is the CAED (Computer-Aided Engineering Design) Modeling competition, which emphasizes the integration of technology in engineering design and problem-solving.

Objectives

The primary objectives of the CAED Modeling competition are:

To encourage participants to utilize computer-aided design software for engineering applications.

To foster creativity and innovation in design.

To provide a platform for demonstrating proficiency in CAED tools.

Event Structure

The CAED Modeling competition is structured in several stages:

Preliminary Round: Participants submit initial design concepts based on given criteria. These submissions are evaluated on creativity, feasibility, and adherence to specifications.

Final Round: Shortlisted participants from the preliminary round compete in a live modeling challenge. They are given a design problem and a fixed time to create a detailed model using CAED software.

Participation

Participants in the CAED Modeling competition come from various backgrounds, including:

Undergraduate students in mechanical engineering. Enthusiasts with a keen interest in CAED.

Software Tools

Commonly used CAED software tools in the competition include:

Solid Edge: Known for its powerful simulation capabilities and intuitive interface.

Evaluation Criteria

The designs are evaluated based on:

Accuracy and Precision: How well the model adheres to the given specifications and dimensions.

Innovation and Creativity: The uniqueness and originality of the design.

Presentation: Clarity and professionalism in presenting the final model.

Complexity: The level of detail and complexity handled in the design.

Highlights

Innovative Designs: Participants showcased groundbreaking designs, including advanced mechanical systems and novel engineering solutions.

Conclusion

The CAED Modeling competition at the Mechanical Engineering Tech Fest successfully highlighted the importance of computer-aided design in modern engineering. It provided a platform for participants to demonstrate their skills.

Photo: 1


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TECHNICAL PAPER PRESENTATION

Overview

The technical paper presentation competition was held on May 3, 2024, with the aim of providing a platform for students to showcase their research, critical thinking, and communication skills. A diverse range of papers were presented, covering various technical domains.

Event Highlights

Participation: Around 30 participants have participated, representing different departments . The presented papers encompassed a wide spectrum of technical areas, including [mention some key topics].

Presentations: The presentations were well-structured, informative, and delivered with confidence. The students demonstrated a deep understanding of their research topics and were able to effectively convey their key findings and insights.

Judging Criteria: The presentations were evaluated based on [mention the judging criteria, such as clarity, originality, technical content, and presentation skills].

Winners: The [mention the winners] team was declared the overall winner, impressing the judges with their exceptional paper and presentation.

Key Takeaways

Student Engagement: The competition fostered a strong sense of engagement among the students, who were eager to share their research and learn from their peers.

Skill Development: The event provided an excellent opportunity for students to develop their technical writing, public speaking, and critical thinking skills.

Overall, the technical paper presentation competition was a resounding success, providing a valuable learning experience for all participants.

TECHNICAL TREASURE HUNT REPORT

The Department of Mechanical Engineering at AIET organized an engaging and challenging Technical Treasure Hunt for the students on May 4, 2024. The event aimed to foster teamwork, critical thinking, and technical knowledge among the participants. A total of 10 teams, each comprising 4 members, participated in the hunt.

Objective

The primary objective of the Technical Treasure Hunt was to engage students in a series of technical challenges and puzzles that required both theoretical knowledge and practical skills to solve. The event was designed to**:**

- Encourage collaboration and teamwork.
- Enhance problem-solving abilities.
- Apply technical knowledge in practical scenarios.
- Develop time management and strategic planning skills.

Event Structure

Registration and Briefing:

The event commenced with the registration of participants at 9:30 AM, followed by a detailed briefing session. The rules and instructions for the treasure hunt were explained to all teams.

Distribution of Clues:

Each team was given the first clue at 10:00 AM.

The clues were technical in nature, requiring the application of engineering principles to decode and find the next location.

Hunt Progression:

Teams followed a sequence of clues, with each clue leading them to a specific location on the AIET campus. At each location, teams encountered a task or puzzle that needed to be completed to receive the next clue

Completion and Time Tracking:

The time taken by each team to complete the treasure hunt was recorded.The first and second teams to find the final treasure were determined based on their completion time.

Clue Details and Challenges

The treasure hunt included a variety of technical challenges, such as: Mechanical Puzzles: Requiring knowledge of mechanical systems and principles.Circuit Assembly: Tasks involving basic electronics and circuit design. Engineering Problems: Situations that required the application of mechanical engineering concepts to solve practical problems. Each clue was carefully designed to test the participants' technical knowledge and problem-solving skills, ensuring a balanced mix of difficulty levels to keep the competition engaging and fair.

Winners and Prizes

The performance of each team was assessed based on the time taken to complete the treasure hunt. The first and second prize winners were as follows:

First Prize-Team

Second Prize:Team

The winning teams were awarded prizes during a concluding ceremony held at 4:30 PM.

Conclusion

The Technical Treasure Hunt was a resounding success, providing an excellent platform for students to apply their technical skills in a fun and competitive environment. The event not only enhanced the participants' engineering knowledge but also promoted teamwork and strategic thinking.

The Department of Mechanical Engineering at AIET looks forward to organizing similar events in the future to continually engage and challenge its students.

A REPORT ON AUTOMOBILE QUIZ

On May 3, 2024, the Department of Mechanical Engg, Alvas Institute of Engineering & Technology hosted an exciting Automobile Quiz as a part of its annual technical fest. The event saw enthusiastic participation from students across various engineering disciplines, highlighting their knowledge and passion for the automotive industry.

Prof. Hemanth Suvarna was the Staff coordinator & Mr. Nithin was the student Coordinator of the event.

Objective

The primary objective of the quiz was to encourage students to delve deeper into the automotive field, enhancing their understanding of theoretical concepts and practical advancements in automobile technology. The event also aimed to foster participants' competitive spirit while promoting teamwork and collaboration.

Participants

The quiz witnessed the participation of about 25 students. The participants included from inter-branch engineering streams, showcasing the interdisciplinary interest in automotive technologies.

Quiz Structure

The quiz was divided into three rounds:

1. **Preliminary Round**: A written test consisting of multiple-choice questions covering fundamental concepts of automobile engineering, recent technological advancements, and general knowledge about the automotive industry. The top 10 teams from this round advanced to the semi-finals.
2. **Semi-Final Round**: This round involved a buzzer-based quiz where teams had to answer questions related to automotive mechanics, history, and current trends. The top 5 teams from this round progressed to the finals.
3. **Final Round**: The final round was an interactive and intense session with complex questions focusing on advanced automotive technologies, industry case studies, and problem-solving scenarios. This round tested the depth of knowledge, analytical skills, and quick thinking of the participants.

Conclusion

The Automobile Quiz at the Alva's Institute of Engineering & Technology was a grand success, providing a platform for students to showcase their knowledge and passion for the automotive industry. The event not only stimulated intellectual curiosity but also encouraged students to stay updated with the latest developments in the field. The organizing committee received commendable feedback from participants and attendees, ensuring that such events will continue to be a part of the institute's annual technical fest.


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Green Sand moulding Competition

Department of Mechanical engineering was organized Technical fest on 03/05/2024 in AIET campus for all branches of engineering students. Many completions was organized by the department. In those events Green sand moulding competition was organized in Foundry and Forging lab. Students created many casting moulds by using green sand according to given model image and specifications.


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PICK & SPEAK

Venue: CAMD LAB

Introduction

The department of Mechanical Engineering organizing **MECHXTROME** Tech Fest is an annual event that brings together students, enthusiasts to showcase innovations, engage in competitions, and discuss advancements in mechanical engineering. One of the key highlights of this event is the Pick and Speak, which emphasizes the communication skill of student

Objectives

The primary objectives of the Pick and Speak are:

1. To encourage participants to utilize communication skills
2. To foster creativity and innovation in thinking.
3. To provide a platform for analyze and present about the topic requirement.

Event Structure

The Pick and Speak was single stage participants are required to pick a topic from the box and present for tree minutes

Participation

Participants in the Pick and Speak come from various backgrounds, including:

- Undergraduate students in mechanical and Agriculture engineering

Winners and Awards

The competition concluded with an award ceremony where winners were recognized for their outstanding designs.

Conclusion

Pick and Speak competition at the Mechanical Engineering Tech Fest successfully highlighted the importance of communication skill and understanding of technical term. It provided a platform for participants to demonstrate their skills..

APPENDIX

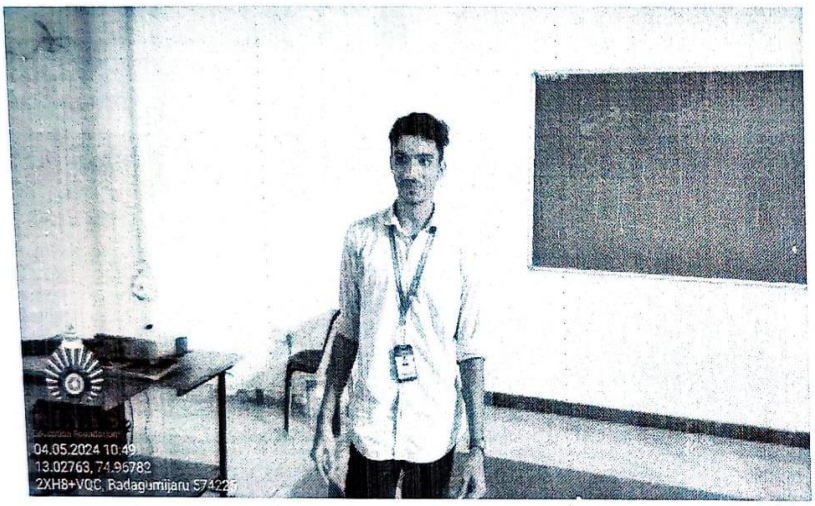


Photo1. Students participation.

LIST OF PRIZE WINNERS

SL. NO.	EVENT	PRIZE WINNER & PLACE	DEPARTMENT
1	TECHNICAL PAPER PRESENTATION	1. Mr. Tejas Kumar	Agriculture Engineering
2	AUTOMOBILE QUIZ	1. Mr. Chiranth H S 2. Mr. Manoj Kumar Karnam	Mechanical engg
3.	CAD Modelling	1. Mr. Manoj S C	Mechanical engg
4	TECHNICAL PICK & SPEAK	1. Mr. Chiranth H S	Mechanical engg
5	GREEN SAND MODELLING	1. Mr. Abhinandan	Computer science department
6	POSTER MAKING	1. Ms.Chaya	Computer science Design engg
7	TREASURE HUNT	**1. TEAM GLADIATORS** a) Sushan b) Nishanth c) Sunil d) Shyamprasad **2. TEAM MIND INDEX** a) Preeti b) Reshma c) Namitha d) Dhanya	MBA

TECHNICAL TALK ON

CUTTING-EDGE INSIGHTS INTO ELECTRICAL VEHICLE BATTERIES

Date: **01/12/2023**

Resource Person : **Dr. Prajof Prabhakaran,**

Designation: **Asst. Professor, NITK Suratkal**

Introduction: In a ground-breaking technical talk held at [Venue], renowned expert Dr. Prajof Prabhakaran shared pivotal insights into the advancements and challenges shaping the future of electric vehicle (EV) batteries. The event drew a diverse audience, including industry professionals, researchers, and enthusiasts eager to stay at the forefront of EV technology.

Key Highlights:

1. **In-Depth Analysis of Battery Chemistry:** Dr. Prabhakaran commenced the talk with an in-depth analysis of the intricate chemistry behind electric vehicle batteries. Attendees gained valuable insights into the latest advancements in battery technologies, including discussions on lithium-ion, solid-state, and other emerging battery types.
2. **Energy Density Breakthroughs:** The talk delved into the critical aspect of energy density and its implications for EV range and efficiency. Dr. Prabhakaran presented

cutting-edge research and breakthroughs aimed at enhancing energy density in electric vehicle batteries.

3. **Charging Infrastructure and Fast-Charging Technologies:** A significant portion of the talk was dedicated to the current state and future projections of EV charging infrastructure. Attendees learned about the latest developments in fast-charging technologies, addressing concerns about accessibility and convenience for EV owners.
4. **Safety Considerations and Innovations:** Dr. Prabhakaran emphasized the paramount importance of safety in electric vehicle batteries. He discussed ongoing research and innovations designed to enhance the safety features of batteries, alleviating concerns associated with overheating and other potential risks.
5. **Environmental Impact and Sustainable Practices:** The environmental impact of electric vehicle batteries was a key topic. Dr. Prabhakaran shed light on sustainable practices in battery production, recycling methods, and the industry's efforts to minimize its ecological footprint.

Conclusion: Dr. Prajof Prabhakaran's technical talk proved to be an enlightening experience, offering attendees a comprehensive overview of the current state and future trends in electric vehicle battery technology. As the world transitions towards cleaner and sustainable transportation, the insights shared during this event will undoubtedly play a crucial role in shaping the future of electric mobility.

A TECHNICAL TALK Report

ON

IMPORTANCE OF PRE-PROCESSOR IN PRODUCT DEVELOPMENT CYCLE

Date: **10/06/2024**
Resource Person**: Mr. Nagananda Upadhyaya**

Designation: **Manager, BETA-CAE Systems India**

Pre-Processor In Product Development Cycle is a critical, yet often overlooked aspect of the product development cycle: the pre-processor. While it may not be the most glamorous component, its significance cannot be overstated.

A pre-processor, in essence, is a software tool that prepares data for further processing. This might involve tasks such as code conversion, macro processing, file inclusion, and conditional compilation. While these may sound technical, their impact on the overall product development process is profound.

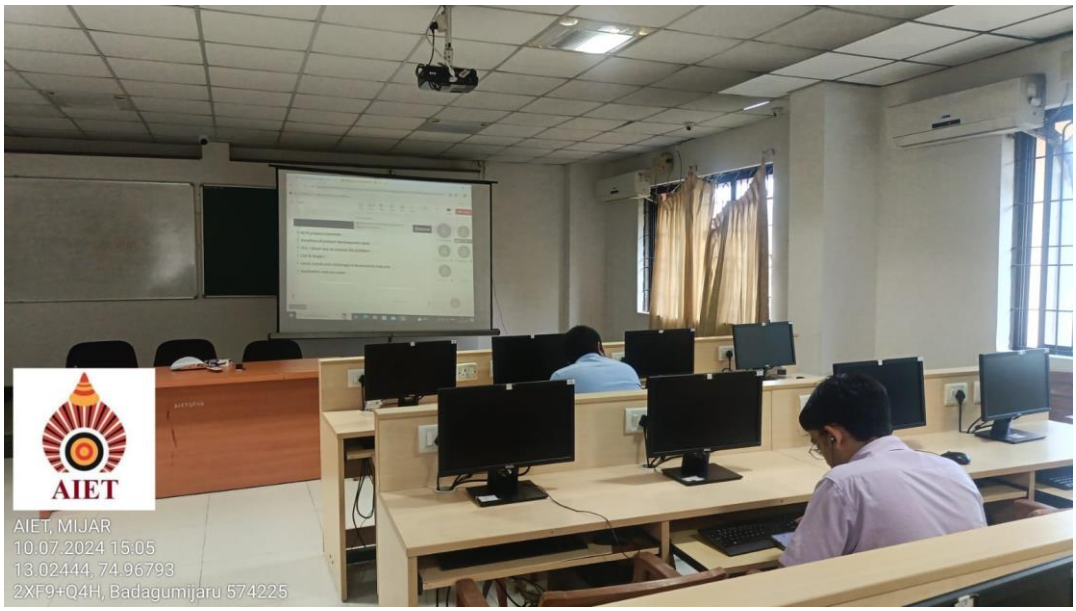
Let's consider the analogy of a chef preparing ingredients before cooking. The pre-processor is like the chef, meticulously cleaning, chopping, and marinating the ingredients to ensure the final dish is perfect. Similarly, the pre-processor transforms raw data into a consumable format, optimizing it for subsequent stages of the development process.

Importance of Pre- processor

- **Efficiency:** By automating routine tasks, pre-processors save developers valuable time and effort. This allows them to focus on core functionalities and problem-solving.
- **Error Reduction:** Pre-processors can identify potential errors or inconsistencies in the data early in the development cycle, preventing costly mistakes down the line.
- **Portability:** They can help to make code more portable across different platforms and environments.
- **Optimization:** By preparing data in an optimal format, pre-processors can enhance the performance of subsequent processes.
- **Abstraction:** They can provide a higher level of abstraction, making the code more readable and maintainable.

In conclusion, pre-processors are indispensable to the product development process. They ensure data accuracy, streamline complex tasks, enhance efficiency, facilitate integration, support decision-making, and enable scalability. Their role, though often behind the scenes, is crucial in transforming innovative concepts into successful products.

As we continue to advance in technology and innovation, let us recognize and appreciate the vital contributions of pre-processors. They are the unsung heroes of product development, paving the way for success and excellence in every stage of the process.

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A Technical Talk Report

on

INTELLECTUAL PROPERTY RIGHTS, TECHNOLOGY TRANSFER, AND STARTUPS

Date: **12/07/2024**

Resource Person: **Dr. Shashikant Karinka**

Designation: **Former HOD, Dept. of Mechanical Engg. NMAMIT, Nitte**

On 12/07/2024 Department of Mechanical Engg has organized a Technical talk by Dr. Shashikant Karinka Former HOD, Dept. of Mechanical Engg. NMAMIT, Nitte , on Intellectual property Rights , technology transfer & start ups. Dr. Karinka, a renowned expert in the field, shared his extensive knowledge and experience, providing valuable insights for entrepreneurs, innovators, and industry professionals.

Overview of Intellectual Property Rights

Dr. Karinka began by defining Intellectual Property (IP) and its various forms, including patents, trademarks, copyrights, and trade secrets. He emphasized the importance of IP in protecting innovations and ensuring that creators can benefit from their inventions. Dr. Karinka explained that strong IP protection encourages innovation by providing a framework for creators to secure economic returns from their work.

Key Points on IP Rights:

- **Patents:** Protect inventions and provide exclusive rights to the inventor for a specific period.
- **Trademarks:** Protect brand names, logos, and symbols that distinguish goods or services.
- **Copyrights:** Protect literary and artistic works, providing exclusive rights to reproduce, distribute, and perform the work.
- **Trade Secrets:** Protect confidential business information that provides a competitive edge.

Technology Transfer

Dr. Karinka highlighted the process of technology transfer, which involves the movement of knowledge, skills, and technologies from research institutions to the marketplace. He discussed the critical role of universities and research organizations in generating innovations that can be commercialized.

Dr. Shashikant Karinka Addressing the gathering

Key Elements of Technology Transfer:

- **Licensing Agreements:** Allowing third parties to use IP in exchange for royalties or other forms of compensation.
- **Spin-offs and Startups:** Creating new companies to commercialize technologies developed within research institutions.
- **Collaborative Research:** Partnering with industry to develop and commercialize new technologies.

Role of IP in Startups

Dr. Karinka stressed the importance of IP for startups, noting that IP assets can be more valuable than physical assets. He explained that a strong IP portfolio can attract investors, provide a competitive edge, and open up revenue streams through licensing and partnerships. He also Addressed the challenges associated with IP and technology transfer. He noted that securing IP rights can be costly and time-consuming. Additionally, navigating the complex landscape of IP law requires specialized knowledge, which may be a barrier for some startups and small businesses. Throughout his talk, Dr. Karinka provided several case studies and real-world examples to illustrate the concepts discussed. He showcased successful startups that

leveraged strong IP portfolios to achieve market success and highlighted the role of technology transfer offices in facilitating these successes.

Conclusion

Dr. Karinka concluded his talk by emphasizing the critical role of IP rights in fostering innovation, facilitating technology transfer, and supporting the growth of startups. He encouraged entrepreneurs and researchers to prioritize IP protection and seek expert advice to navigate the complexities of IP law.

Final Takeaways:

- **Importance of IP:** Essential for protecting and monetizing innovations.
- **Technology Transfer:** Vital for moving innovations from research to the market.
- **Support for Startups:** IP rights provide a foundation for startup growth and success.

Dr. Karinka's presentation provided a comprehensive overview of the intersection of IP rights, technology transfer, and startups, offering valuable insights for all attend.

A TALK ON

RESEARCH CULTURE & HIGHER EDUCATION OPPORTUNITIES IN JAPAN

Resource person: Dr. Harikrishna Bhat

Designation: Professor & Director International collaboration at NMAMIT, Nitte.

Date: 23/07/2024

Introduction

On 23/07/24/ A talk titled " research culture & higher education opportunities in Japan" was delivered by Dr. Harikrishna Bhat. The presentation provided valuable insights into the Japanese higher education system, focusing on postgraduate studies.

Overview of Japanese Postgraduate Education

The speaker began by outlining the structure of postgraduate education in Japan, which primarily comprises Master's and Doctoral programs. A key emphasis was placed on the research-oriented nature of Japanese universities, with ample opportunities for students to engage in cutting-edge projects.

Key Points

- **Research Focus:** Japan's postgraduate programs are heavily inclined towards research, offering students the chance to contribute to the academic frontier.
- **Rigor and Standards:** The academic environment is highly competitive, requiring dedication and perseverance from students.
- **Industry Collaboration:** Many programs integrate internships and industry partnerships to provide practical experience.
- **Internationalization:** Japan is actively promoting international education with an increasing number of English-taught programs and support services for foreign students.
- **Popular Fields:** Engineering, technology, business, science, medicine, and humanities were highlighted as popular fields of study in Japan.

With many Indians studying abroad, India is the second-largest country in the world in terms of origin for international students. In spite of this, only 0.3 percent of Indian students chose Japan as their study abroad destination, making Japan the 20th most popular country.

In comparison to other South Asian nations and nations where English is an official or semi-official language, this is quite low. It is the case either because people in India may not fully understand the allure of Japan and the advantages of studying there, or because they may have some reservations about the viability of studying there.

The Japanese government started support for international students, to reserve flight tickets outside of the daily immigration limit, students can request the use of this support from their Japanese school.

Admission Process and Funding

The speaker elaborated on the admission process, emphasizing the need for a bachelor's degree, Japanese language proficiency (for most programs), academic transcripts, letters of recommendation, statement of purpose, and entrance exams.

There are a few tests which international students might have to take before they join these colleges/universities in Japan.

The EJU is one of the exam designed for international students who wants to enroll and study (undergraduate program) at Japanese universities. It measures knowledge of basic academic concepts (Science, Japan, and the World, and Mathematics), Scores of EJU are valid for two years.

This test held twice per year mainly in June and November in more than 14 countries and different cities across the world.

At least 60% of Japanese universities, including national universities require the submission of EJU scores as part of the application. There are other benefits of the EJU, some schools offer “pre-arrival admission” where students can be admitted to the school before arriving in Japan, and scholars are awarded with the honors scholarship who achieve the highest scores on the EJU.

The other test in the list includes the JLPT, it assesses non-native Japanese speakers’ ability to understand Japanese words, vocabulary, and syntax, as well as communication in Japanese. The levels range from N1 to N5, with N1 being the highest. The N5 and N4 levels assess students’ basic understanding of the language.

Funding opportunities were discussed, including government scholarships, university scholarships, and private scholarships.

Conclusion

The talk offered a comprehensive overview of post-graduation studies in Japan. The speaker's insights into the academic environment, research opportunities, and challenges were particularly valuable. The presentation generated significant interest among the audience, indicating a growing appeal of pursuing higher education in Japan.

TECHNICAL TALK REPORT

ON

INTRODUCTION TO EPILYSIS -FEA SOLVER

Resource Person: Mr. Puneet Khanagoudra

Designation: Chief Technical Engineer, BETA-CAE Systems India

Date: **10/06/2024**

The EPILYSIS FEA solver, developed by BETA CAE Systems, is a comprehensive tool designed for Finite Element Analysis (FEA), integrating decades of expertise from the CAE community. This solver addresses various engineering disciplines, including Structural, Noise, Vibration, Harshness (NVH), and Optimization, making it a versatile option for various industries It is known for its robustness, versatility, and high performance in solving various types of finite element problems.

Its Core Features includes following aspects

Solver Capabilities:

Linear and Nonlinear Analysis: EPILYSIS can perform both linear static and dynamic analysis as well as nonlinear analysis involving large deformations, plasticity, and hyperelastic materials.

Thermal Analysis: It supports both steady-state and transient thermal analysis.

Coupled Field Analysis: EPILYSIS can handle problems that involve multiple physical phenomena simultaneously, such as thermo-mechanical coupling.

Element Types:

EPILYSIS offers a variety of element types including 1D, 2D, and 3D elements. This includes beam, shell, solid, and hybrid elements, allowing for detailed modeling of different structures and materials.

Solver Algorithms:

Direct Solvers: These include methods like LU decomposition, which provide exact solutions to the system of equations but can be computationally expensive for very large problems.

Iterative Solvers: These are used for larger problems where direct solvers are not feasible. They include methods like Conjugate Gradient (CG) and Generalized Minimal Residual (GMRES) methods.

Mesh Generation:

EPILYSIS includes advanced meshing capabilities that support both automatic and manual mesh generation. It handles structured and unstructured meshes and offers refinement options to ensure accurate results.

Pre-Processing and Post-Processing:

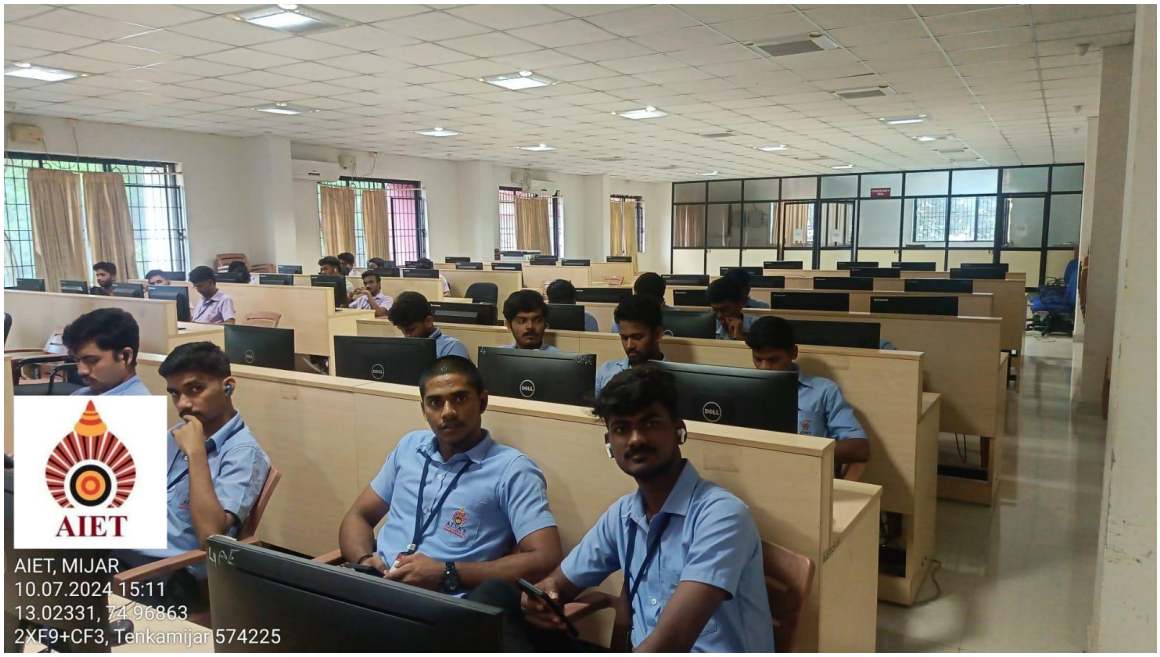
The pre-processing phase involves setting up the model, defining material properties, boundary conditions, and loads. EPILYSIS provides a user-friendly interface for these tasks.

For post-processing, EPILYSIS can visualize results using contour plots, deformed shape plots, and other graphical representations to interpret the results effectively.

Scalability and Performance:

Parallel Computing: EPILYSIS is optimized for parallel processing, leveraging multi-core processors and distributed computing environments to handle large-scale simulations efficiently.

Optimization Techniques: The solver employs various optimization techniques to reduce computational time and memory usage, making it suitable for high-performance computing scenarios.



User Interface and Integration:

Graphical User Interface (GUI): EPILYSIS provides a comprehensive GUI for ease of use. This includes tools for model setup, meshing, and result analysis.

APIs and Scripting: For advanced users, EPILYSIS offers APIs and scripting capabilities to automate tasks and integrate with other software tools.

Applications of EPILYSIS FEA are as follows

EPILYSIS is used in various fields including:

Structural Engineering: For analysing stresses, strains, and displacements in structures such as bridges, buildings, and machinery.

Automotive Industry: To simulate crash tests, fatigue analysis, and vehicle performance.

Advantages

Accuracy and Reliability: EPILYSIS is known for its high accuracy in solving complex problems, which is crucial for critical engineering applications.

Versatility: It supports a wide range of analyses and element types, making it suitable for diverse engineering problems.

Efficiency: The solver's advanced algorithms and parallel processing capabilities ensure that it performs well even with large-scale models.

In summary, EPILYSIS is a powerful FEA solver with a broad range of capabilities designed to handle complex engineering simulations. Its advanced algorithms, user-friendly interfaces, and high-performance features make it a valuable tool for engineers and researchers across various industries. EPILYSIS represents a modern solution in the field of FEA, combining advanced computational techniques with user-friendly interfaces and robust analytical capabilities. Its comprehensive feature set makes it a valuable tool for engineers seeking to enhance their design processes across multiple sectors, from automotive to aerospace and beyond.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Technical Talk on

POWER DISTRIBUTION AUTOMATION & SMART GRIDS

Date :23/11/2023

Venue: MBA Seminar Hall

Resource Person : Dr. Shivakumar Aradhya, Retired Director, CPRI

The Mechanical Engineering Department's Technical Forum, Mech Maestros, orchestrated a profound discourse on "Power Distribution Automation & Smart Grids." The session unfolded at the Engineering seminar hall of AIET Mijar and featured esteemed experts: Dr. Shivakumar Aradhya, Retired Director from CPRI, and Sri Ravikumar, Retired Additional Director.

The event commenced with Mr. Akshar, the Forum President from the 7th semester, extending a warm welcome to the distinguished speakers. His gracious introduction set the tone for an enlightening session. Following this, Dr. GB Vaggar, the Head of the Department, honored the speakers with a floral welcome, acknowledging their invaluable expertise and contributions to the field.

Dr. Shivakumar Aradhya and Sri Ravikumar, possessing extensive knowledge and experience, engaged the audience with their insightful perspectives on Power Distribution Automation & Smart Grids. The speakers adeptly navigated through the intricacies of the subject matter, elucidating the evolving landscape of power distribution systems and the transformative impact of smart grids.

Their discourse was comprehensive, delving into the technical nuances while maintaining accessibility for the diverse audience comprising students and faculty members. The session encapsulated the latest advancements, challenges, and the far-reaching implications of these technologies in shaping the future of energy distribution.

Throughout the session, the atmosphere crackled with intellectual energy as the audience, comprised of budding engineers and seasoned academicians, engaged fervently with the speakers. The interactive segment emerged as the pulsating heart of the event, heralding a dynamic exchange of ideas and perspectives.

Students, brimming with curiosity, animatedly raised thought-provoking queries that reverberated within the hall. Their questions, laced with a hunger for knowledge, spanned the spectrum of power distribution and smart grid technologies. Each query was a gateway to exploration, inviting the speakers to unravel the complexities and intricacies of these domains.

Dr. Shivakumar Aradhya and Sri Ravikumar, adorned with a wealth of expertise, welcomed these inquiries with open arms. With a blend of erudition and approachability, they embarked on a journey of enlightenment, meticulously addressing each query. Their responses were not mere explanations but illuminating narratives that painted a vivid picture of the technical landscape, enriching the tapestry of understanding for every attendee.

The success of the event was a testament to Mech Maestros' commitment to providing a platform for intellectual discourse and knowledge dissemination. The session not only expanded the horizons of attendees but also highlighted the critical role of such forums in fostering learning and innovation within the academic community.

The Department Technical Forum continues to stand as a beacon of knowledge and collaboration, ensuring a seamless integration of theoretical concepts with practical insights, thereby empowering future engineers to navigate the evolving landscape of technology.

A TALK ON

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Resource person: Dr. Harikrishna Bhat

Designation: Professor & Director International collaboration at NMAMIT, Nitte.

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TECHNICAL TALK ON
RESEARCH FACILITIES FOR EXPLOSIVE PHENOMENA AND THEIR APPLICATIONS

Date: **22/02/2024**

Resource Person : **Dr . Daisuke inao ,**

Designation : **Technical Faculty , Institute Of Industrial Nanomaterials, Kumamoto University, Japan**

Explosive phenomena have significant implications across various fields, including defense, mining, engineering, and scientific research. Understanding the behaviour of explosives and their applications requires sophisticated research facilities equipped with state-of-the-art instrumentation and methodologies. This report delves into the advancements made in research facilities dedicated to studying explosive phenomena and their diverse applications.

Explosive phenomena have long captivated the attention of scientists, engineers, and innovators due to their immense potential and profound impact across numerous fields. From military applications to industrial processes and scientific research, the study of explosives and their behavior is paramount for advancing technology and ensuring safety. To delve deeper into the complexities of explosive phenomena and harness their applications, specialized research facilities have emerged as crucibles of innovation and discovery.

These research facilities serve as hubs of exploration, equipped with cutting-edge instrumentation, state-of-the-art laboratories, and interdisciplinary expertise. Their mission extends beyond mere observation, aiming to unravel the underlying mechanisms governing explosive reactions, optimize performance, and explore novel applications. As such, they play a pivotal role in shaping our understanding of explosives and driving advancements that transcend traditional boundaries.

In this introductory exploration, we embark on a journey through the diverse landscape of research facilities dedicated to explosive phenomena and their applications. From high-speed imaging laboratories capturing split-second events to expansive computational centers simulating complex detonation processes, each facility represents a nexus of scientific inquiry and technological innovation. By shedding light on these facilities, we aim to uncover the essential infrastructure driving advancements in explosives research and pave the way for transformative applications in the realms of defense, industry, and beyond.

Research facilities dedicated to explosive phenomena and their applications have evolved significantly, driven by advancements in technology and interdisciplinary collaboration. High- speed imaging, shock physics laboratories, computational modeling centers, explosives chemistry laboratories, field test sites, and collaborative research networks collectively contribute to advancing our understanding of explosives and enhancing their diverse applications across various industries. Continued investment in research infrastructure and collaborative efforts will further propel innovations in this critical field.

A TECHNICAL TALK ON

ROLE OF MECHANICAL ENGINEERING IN CONSTRUCTION INDUSTRY

Date: **05/06/2024**

Resource Person: **Mr. Jagadish**

Designation: **Zonal Manager L&T Constructions**

Mechanical Engineers plays a pivotal role in the construction industry. While often overlooked, the contributions of mechanical engineers are the bedrock upon which the modern built environment stands tall.

From the towering skyscrapers that pierce the skyline to the humble homes that shelter us, mechanical engineering is the unseen force that ensures comfort, safety, and efficiency. It is the discipline that transforms lifeless structures into vibrant, functional spaces.

Mechanical engineers are the architects of the building's inner workings. They design, install, and maintain the intricate systems that regulate temperature, purify air, transport people, and safeguard lives. The heating, ventilation, and air conditioning systems that create a pleasant atmosphere, the plumbing that ensures clean water supply and waste disposal, the fire protection systems that provide a safety net, and the elevators that defy gravity – all are the brainchild of mechanical engineers.

Beyond comfort and safety, mechanical engineers are at the forefront of sustainable construction. They innovate to reduce energy consumption, minimize environmental impact, and maximize resource efficiency. By incorporating renewable energy sources and optimizing system performance, they contribute to a greener and more sustainable future.

Core Responsibilities:

- **Design and Optimization of Mechanical Systems:** Mechanical engineers design and optimize systems like HVAC (heating, ventilation, and air conditioning), plumbing, fire protection, and elevators. They ensure these systems are efficient, safe, and integrated seamlessly into the building design.
- **Project Planning and Management:** They are involved in project planning, analyzing mechanical aspects, ensuring compliance with regulations, and overseeing the installation and maintenance of mechanical equipment.
- **Energy Efficiency and Sustainability:** Mechanical engineers play a vital role in designing energy-efficient systems, reducing the environmental impact of buildings, and incorporating sustainable technologies.
- **Problem-Solving and Innovation:** They address challenges related to mechanical systems, find innovative solutions, and improve the overall performance of buildings.

Specific Areas of Focus:

- **HVAC Systems:** Designing and implementing heating, ventilation, and air conditioning systems to maintain optimal indoor air quality and comfort.
- **Plumbing Systems:** Designing and installing water supply and drainage systems, ensuring proper sanitation and water efficiency.
- **Fire Protection Systems:** Designing and installing fire suppression systems, emergency exits, and other safety measures to protect occupants.
- **Elevators and Escalators:** Designing, installing, and maintaining elevators and escalators for safe and efficient vertical transportation.

The construction industry is undergoing a digital transformation, and mechanical engineers are leading the charge. They are harnessing the power of technology to develop smart buildings that optimize energy usage, enhance occupant comfort, and improve overall building performance.

In conclusion, mechanical engineering is an indispensable component of the construction industry. The expertise and innovation of mechanical engineers are essential for creating buildings that are not only structurally sound but also comfortable, efficient, and sustainable.

REPORT ON

FIRE SAFETY TRAINING

Date: **25/11/2023**

Alva's Institute of Engineering & Technology Enhances Campus Safety with Successful Fire Safety Training. Department of Mechanical Engineering Conducts Comprehensive Training on November 25, 2023

Fire is considered the most common threat for workplace accidents & incidents. Any industry can experience an unsuspected fire at their workplace which may lead to multiple fatalities, property loss, legal complications, fines & imprisonment. To avoid these consequences, an organization should design proper fire control mechanisms at their facilities & create awareness among the workers through training.

Fire safety training educates a set of practices & procedures to minimize the destruction caused by fire hazards. The skill & knowledge acquired through these trainings equip the learners, to combat fire in any unanticipated fire breakout. Also, enable the delegate to recognize the workplace fire hazards prior & ensure adequate control measures are in place.

In a proactive move to ensure the safety and well-being of its campus community, Alvas Institute of Engineering & Technology organized a thorough Fire Safety Training on November

25, 2023. The training, spearheaded by the Department of Mechanical Engineering, aimed to equip faculty, staff, and students with essential knowledge and skills for effective fire prevention and emergency response.

Overview: The Fire Safety Training, held at various locations within the campus, covered a wide range of topics crucial for maintaining a safe and secure environment. Led by certified fire safety experts, the sessions addressed fire prevention measures, emergency evacuation procedures, proper usage of firefighting equipment, and communication protocols during crises.

Active Participation: The training saw active participation from diverse groups, including faculty members, administrative staff, and students from various departments. Interactive discussions, hands-on exercises, and practical demonstrations kept the participants engaged throughout the sessions.

Key Highlights:

- **Fire Prevention Measures:** Participants received insights into identifying potential fire hazards and adopting best practices to prevent fires in an academic setting.
- **Emergency Evacuation Procedures:** Detailed explanations of evacuation routes and assembly points were provided, accompanied by practical demonstrations of fire drill procedures.
- **Usage of Fire Safety Equipment:** The attendees gained hands-on experience in the proper use of fire extinguishers, fire blankets, and other firefighting equipment, with a focus on understanding different types of fire extinguishers and their applications.
- **Communication Protocols:** The importance of establishing effective communication channels during emergencies was emphasized, along with the roles of designated personnel in coordinating evacuation efforts.

Feedback and Future Initiatives: A feedback session at the conclusion of the training revealed positive responses from the participants. Many expressed appreciation for the practical approach to learning and suggested regular follow-up sessions and drills to reinforce the acquired knowledge.