



MANAV RACHNA
UNIVERSITY

Declared as State Private University vide Haryana Act 26 of 2014



et **elektronika**
times

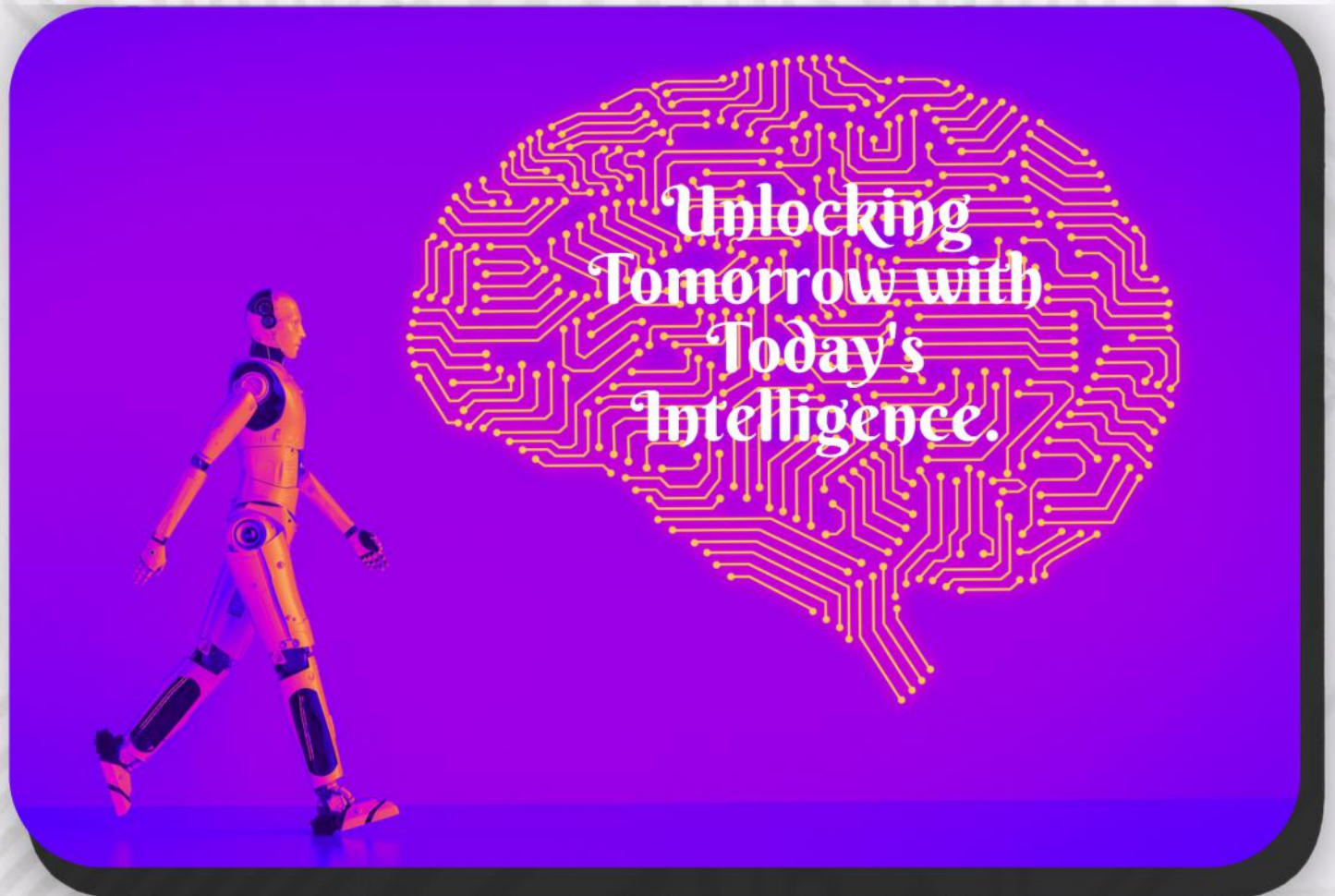
VOLUME 01

ISSUE 03

JAN-MAR 2024

SCHOOL OF ENGINEERING

Department of Electronics and Communication Engineering



*Electronics power our world, from
circuits to screen.*

9

INDUSTRY, INNOVATION
AND INFRASTRUCTURE



Message From the Associate HOD

In our quest to stay at the forefront of technological advancements, our faculty members have been actively engaged in cutting-edge research across various domains of Electronics and Communication Engineering. From next-generation communication systems to innovative circuit designs, our researchers are making significant contributions to the field.

Moreover, our commitment to provide hands-on learning experiences to our students remains unwavering. Through state-of-the-art laboratories, industry collaborations, and experiential learning initiatives, we are equipping our students with the skills and knowledge necessary to thrive in a rapidly evolving technological landscape.

I am also delighted to share that our students continue to excel both academically and professionally. Their achievements in national and international competitions, internships, and placements are a testament to their dedication and hard work. We take pride in nurturing the next generation of engineers and innovators who will shape the future of the electronics and communication industry.

As we look ahead, I encourage all members of our department to continue pushing the boundaries of knowledge and innovation. Let us collaborate, inspire, and support each other as we embark on this exciting journey together.

Thank you for your continued dedication and contributions to the Department of Electronics and Communication Engineering. Together, we will continue to achieve new heights of excellence.

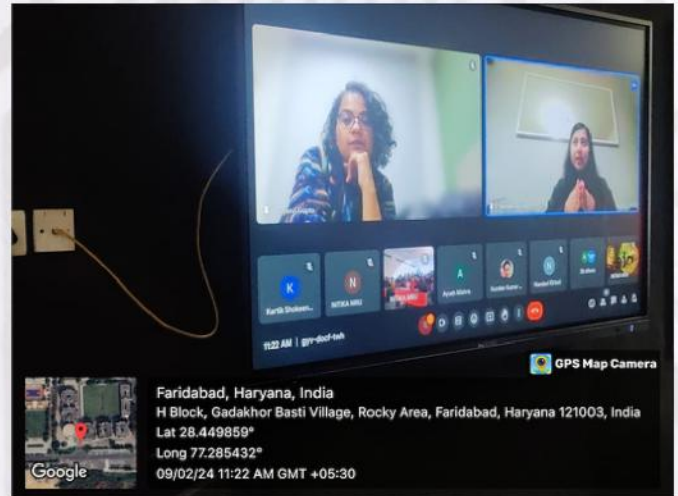


Prof. (Dr.) Meenakshi Gupta
Associate Head Of Department

9th February, 2024

Inspiring Journey Down Memory Lane & Beyond: Alumni Talks

The Department of Electronics and Communication Engineering at MRU recently hosted an enlightening alumni talk focusing on "Navigating Ph.D. and Research Opportunities in Advanced Technology Institutes" on 9 February, 2024. This session aimed to provide valuable insights and guidance to current students interested in pursuing doctoral studies and exploring research avenues within advanced technology institutes.



The session was taken by **Ms. Parnika Gupta** who works as a Researcher at **Tyndall National Institute Ireland**, and works in co-designing and packaging of photonic Integrated circuits, & **Ms. Ojasvi Gupta** who works as a Researcher at **Technical University Dublin** and working in the area of Advanced computing Techniques.

They shared their experience and expertise, shedding light on various aspects crucial for navigating the Ph.D. journey and seizing research opportunities in advanced technology institutes. Their insights proved invaluable in helping attendees understand the intricacies and challenges involved in pursuing advanced studies in this dynamic field.

The speakers emphasized the significance of early engagement in research activities, encouraging students to seek out opportunities such as internships, projects, and mentorship programs within their academic institution or industry partnerships.

They also provided valuable insights into current research areas within ECE and the semiconductor industry and highlighted the importance of staying updated with the latest developments in these areas, as they present significant opportunities for research, innovation, and career growth in this domain.

Following the talk, there was an interactive Q&A session during which students had the opportunity to ask questions and seek further advice. Talk was conducted in Hybrid mode as our speakers joined online. More than 40 students & faculty members attended the event.

Expresses Gratitude

to our
ESTEEMED ALUMNUS

Parnika Gupta

for invaluable talk on "Career Pathways:
Navigating Ph.D. and Research Opportunities in
Advanced Technology Institutes"

FEB 9, 2024



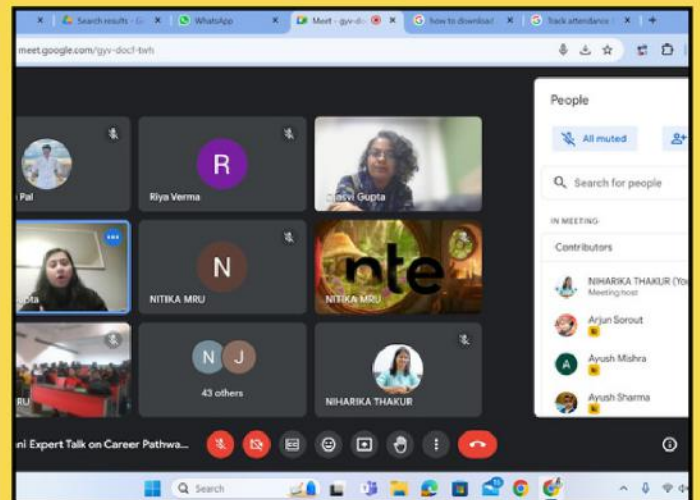
Expresses Gratitude

to our
ESTEEMED ALUMNUS

Ojasvi Gupta

for invaluable talk on "Career Pathways:
Navigating Ph.D. and Research Opportunities in
Advanced Technology Institutes"

FEB 9, 2024



**Encourage students for learning
something new**

13 TH FEBRUARY 2024

Unlock Secrets of Success: Expert Talk



The Department hosted a session on how to crack various competitive exams on February 13th, 2024. Expert for the session was Mr. Varun Yadav, Assistant Professor, Department of ECE, MRU.

The session was to introduce participants to the diverse array of competitive examinations pertinent to the field of Electronics and Communication Engineering. It also included discussions on job opportunities in both the private and government sectors.



During the session, Mr. Varun Yadav provided insights into the structure of various examinations, encompassing both subjective and objective formats. Notably, he elaborated on government-level exams such as UPSC, GATE, and MBA entrance exams, shedding light on their prelims and main exam divisions.

Furthermore, the session highlighted the Graduate Aptitude Test in Engineering (GATE), emphasizing its significance for engineering graduates. Specifically addressing the field of Electronics and Communication Engineering (ECE), Mr. Varun enumerated potential job opportunities in Public Sector Undertakings (PSUs) such as HPCL, NPCIL, NLC, and NTPC. He also delineated the eligibility criteria for PSU recruitment through exams like CSIR NET and UGC NET.

MATLAB Workshop

15 February, 2024

4 QUALITY
EDUCATION



Day 1: Introduction and Basics of MATLAB



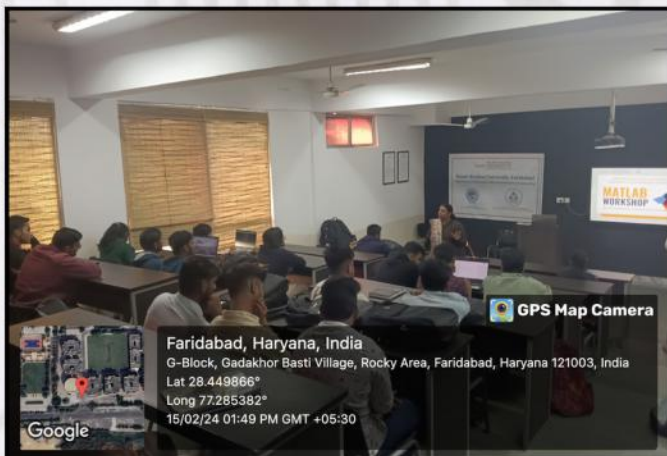
The department organized a three days workshop on MATLAB on dates 15th, 22nd, and 29th February 2024. MATLAB is a versatile platform renowned for its prowess in numerical computing and data visualization. It leverages matrix operations as its core strength, making it particularly efficient for tasks involving linear algebra. Its interactive environment fosters rapid development cycles, allowing users to execute commands and receive immediate feedback, thus streamlining the exploration and refinement of algorithms. Moreover, MATLAB's robust visualization capabilities empower users to create intricate plots and graphs, enhancing the presentation and analysis of data across various domains. MATLAB provides extensive collection of specialized toolboxes that broadens its application spectrum. These toolboxes cover diverse fields such as statistics, signal processing, image processing, and control systems, among others, enabling users to tackle complex problems with ease.

On day 1, the session began with the fundamentals of MATLAB. Prof. (Dr.) Charu Pathak introduced the advantages of MATLAB. The students were explained about the use of MATLAB interface and basic functions using Matrix operations. The students from different branches of Engineering participated and showed enthusiasm in learning the new tool.

22 February, 2024

Day 2: Introduction to Simulink and other Tools for Engineering

On Day 2 of the workshop, students were introduced to **Simulink** and various other engineering tools of **MATLAB**. Students were also introduced to some basic programs including signal generation, plotting of graphs etc. A quiz was conducted at the end of the session. The workshop was conducted by **Mr. Aryan Singh Chauhan** and his team including **Ms. Ishpreet** and **Mr. Shivam**, students of 4th sem ECE under the guidance of **Dr. Charu Pathak**.



Simulink is a powerful simulation and modeling environment tightly integrated with MATLAB. It enables engineers and researchers to design dynamic systems using a graphical interface where blocks represent different components, facilitating intuitive model creation and analysis.



Scan
for more information

29 February, 2024

Day 3: Critical thinking and Problem Solving

The final day of the workshop focused on advanced topics in MATLAB, including signal processing, image processing, and simulation techniques. Practical examples were demonstrated to illustrate the application of MATLAB in these domains. Participants were given challenges to solve using MATLAB, fostering critical thinking and problem-solving skills. A quiz was conducted for the students.

Outcomes:

Enhanced understanding of MATLAB fundamentals among participants.

Improved proficiency in writing MATLAB scripts and functions.

Development of problem-solving abilities through hands-on coding exercises and projects.

Exposure to advanced MATLAB applications in signal and image processing, simulation, etc.

Learning MATLAB improves your problem-solving skills, especially in areas like mathematics, engineering, and data analysis.

"MATLAB is like a high-powered Ferrari: it can take you places, but if you don't know how to drive it, you won't get far."

-Nitin Kumar



Scan
for more information

1 NO POVERTY



11th March, 2024

Namo Drone Didi:

Empowering Women in Villages Through Technology

10 REDUCED INEQUALITIES



The Department of Electronics and Communication Engineering, Manav Rachna University showcased the live webcast of the program “**Namo Drone Didi**”. It showcased the address by Honorable Prime Minister Sri Narendra Modi ji. In the program 1000 agricultural drones were distributed to Women in villages. These women were trained to operate these drones for sowing crops, monitoring crops, spraying pesticides etc. Students were encouraged and inspired to build agricultural drones which are economic and useful for Indian Villages.



Scan
for more information

9

INDUSTRY, INNOVATION
AND INFRASTRUCTURE



13th March, 2024

Chips for Viksit Bharat

Laying the foundation stone of three
semiconductor facilities

11

SUSTAINABLE CITIES
AND COMMUNITIES



Address by Honorable Prime Minister Shri Narendra Modi Chips for Viksit Bharat “Laying of Foundation Stone of Three Semiconductor facilities”

ECE students at Manav Rachna University had the opportunity to watch Honorable Prime Minister Shri Narendra Modi's live address on "Chips for Viksit Bharat," highlighting significant advancements in semiconductor manufacturing. The event marked the foundation stone laying for three semiconductor facilities, a crucial step toward India's technological self-reliance, expected to generate numerous job opportunities. Prime Minister Modi emphasized the government's commitment to skilling initiatives and India's goal to become a global semiconductor hub through sustained efforts in competitiveness, quality, and innovation. A total of 45 students from the department participated in the event along with all faculty members.

14TH MARCH 2024

Expand your knowledge with expert talk: Solar Energy

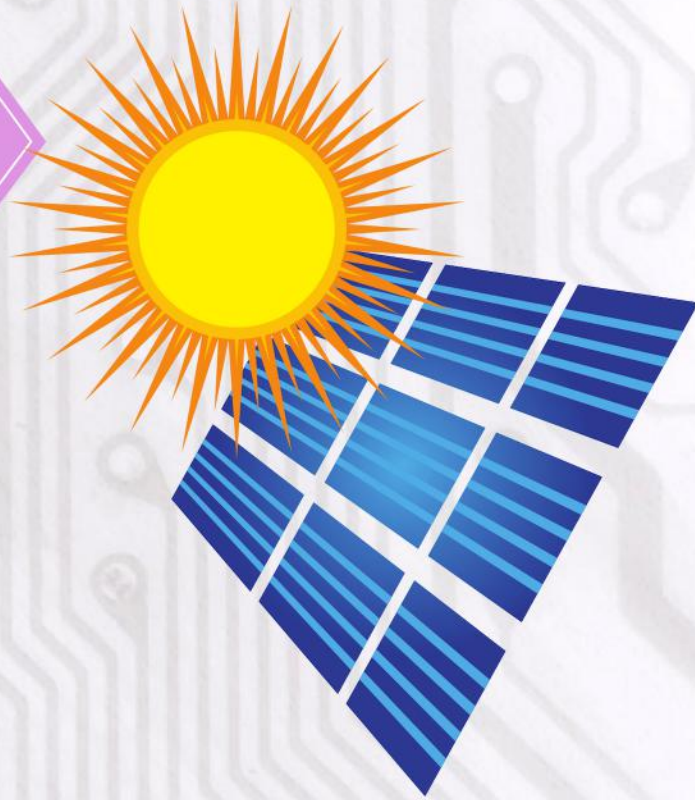
IETE Students Forum, MRU organized a workshop on “**Solar Energy- Technology and Systems**” on **March 14th and 15th, 2024**. The session began with a brief introduction about the workshop and the speaker by the ISF coordinator **Dr. Charu Pathak**. **Dr. Shiv Kumar**, a distinguished expert from the Dept. of Physics, MRU in solar energy, delivered the fundamentals of solar cells and applications of solar power. The workshop focused on various solar cell types, their operational principles, and fabrication techniques. Participants gained valuable insights into the significance of solar energy and discovered promising career avenues within the field.



During the session, **Dr. Shiv Kumar** provided insights into various structures of solar cells. He elaborated on key topics such as Method to Measure Power Conversion Efficiency of Standard Silicon Reference Cell, Absorption and PL Measurements, and N-Type and P-Type Semiconductor Characteristics. The University Instrumentation Centre, MRU has sophisticated instrumentation facilities. The students were given demonstration on relevant instruments and soft wares like **GCMF** (Gas Chromatography Mass Spectrometry), Solar Simulator and RFS pattering system. Students found the workshop useful and highly beneficial introducing them to the latest technology of solar cells in the field of Renewable energy.



Solar Energy- Technology and Systems



“All energy is ultimately derived from the sun, and harvesting it directly through solar power seems to be the best way to transition to renewable energy.”

– Peter Rive



14th March, 2024

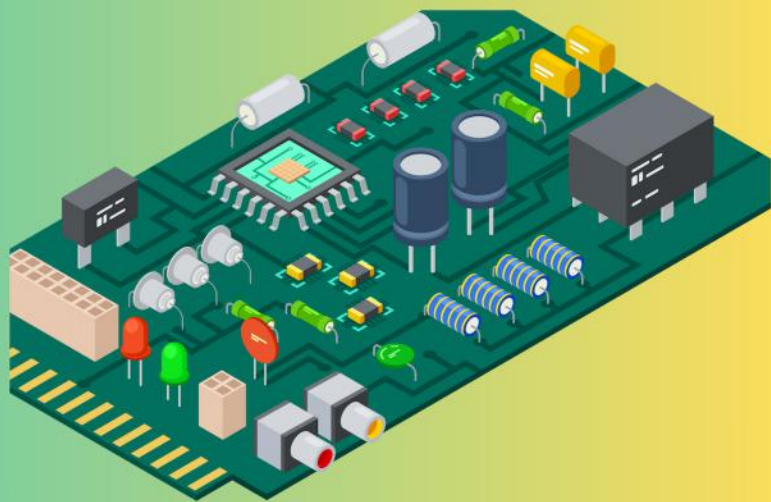
Gain Cutting Edge insights from Pros:

Role of HDL and HVL in ASIC/SoC Design and Verification

Department of ECE, MRU organized an expert talk on the “Role of HDL and HVL in ASIC/SoC Design and Verification” for undergraduate students. The objective of this event was to equip undergraduate students with a comprehensive understanding of the latest trends and methodologies in the industry of digital design, thereby enhancing their academic knowledge and preparing them for future endeavors in the semiconductor industry. The expert talk commenced with a primer on the basics of HDLs and HVLs. Mr. Shashi Kant Sharma, Knowledge Associate, Truechip Solutions Pvt Ltd, Noida explained that HDLs like Verilog and VHDL serve as the language of hardware description, enabling engineers to define the structure and functionality of digital systems. On the other hand,

HVLs such as SystemVerilog and UVM are instrumental in verifying the correctness of these designs through simulation and testing. One of the key takeaways from the talk was the integral role that HDL and HVL methodologies play in the chip design process. Mr. Sharma illustrated how these tools work together seamlessly, aiding in the modeling, simulation, and verification of complex designs. Students gained a deeper understanding of how these methodologies streamline the development cycle and contribute to the reliability of the final product.





Tech Showcase

28th March, 2024



The Department of Electronics and Communication Engineering, Manav Rachna University organized a Project Exhibition "TechShowcase" on 28th March 2024 on H Block third floor which served as a platform for students to showcase their innovative projects. The event commenced with an inaugural ceremony graced by the presence of the Honorable Pro Vice Chancellor, Dr. Sangita Banga and Registrar, Mr. R.K. Arora.



Faridabad, Haryana, India
C7XM+FJC, Gadakhori Basti Village, Sector 43, Faridabad, Haryana 121003, India
Lat 28.448062°
Long 77.284154°

Tech Showcase Project Exhibition witnessed an impressive array of innovative projects presented by students of School of Engineering, MRU, covering a wide area of technology. The projects were evaluated by a distinguished panel of judges, including Dr. Abhiruchi Passi, Professor, ECE, MRIIRS, Mr. Vijay Gill, Assistant Professor, ECE, MRU, and Dr. Jai Prakash Sharma, Associate Professor, MRU. Their expertise and insights played a crucial role in assessing the projects and selecting the winners. The winners were announced amidst much anticipation and excitement. The team "Solar Works" received the cash prize for their outstanding project. The first prize was awarded to team "Proper 12," the second prize to team "Team Explorer," and the third prize to team "Solo Leveling." Each winning team was commended for their creativity, ingenuity, and hard work.

The judges were felicitated for their valuable contribution to the event by Dr. Shruti Vashist, Dean Academics, MRU, and Dr. Meenakshi Gupta, Associate Head, ECE, MRU. Their guidance and support were deeply appreciated by the organizing committee and participants alike. Mr. Bhanu Pratap Chaudhary, Assistant Professor, ECE, MRU, efficiently coordinated the event, ensuring smooth organization and execution. His dedication and efforts were instrumental in the success of the exhibition.



Glimpses of the Event





1st Position

Mark Emmanuel (2K22CSUN01146), a student of the **Department of Computer Science and Technology**, developed an innovative project titled "**Hand Gesture Control of Laptop**" which earned him the first prize in the department. This cutting-edge project utilizes advanced machine learning algorithms and computer vision techniques to enable seamless control of a laptop through intuitive hand gestures. By integrating sophisticated gesture recognition software with the laptop's existing hardware, Mark's project offers a novel approach to human-computer interaction, enhancing accessibility and user experience. His exceptional technical skills and creative problem-solving ability have set a new standard for innovation within the department, securing him the top accolade in the competition.



2nd Position

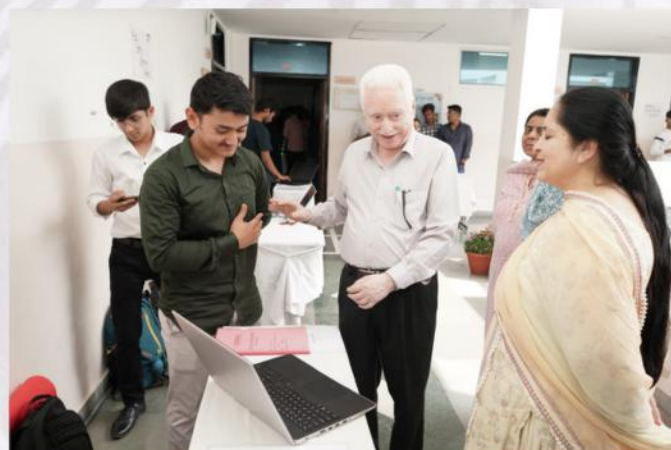
Ujjawal Arora, a talented **B.Tech student specializing in Robotics and Artificial Intelligence**, has achieved remarkable success by securing the prestigious **2nd position** in the recent tech showcase. His innovative project, aptly named the "**River Cleaning Machine**" garnered widespread acclaim for its ingenious design and practical application. Ujjawal's project addresses the pressing issue of environmental pollution by utilizing cutting-edge robotics technology to efficiently clean up river bodies. Through a combination of intelligent algorithms and robotic mechanisms, the River Cleaning Machine autonomously navigates waterways, collecting and disposing of debris and pollutants with precision and effectiveness. Ujjawal's dedication, creativity, and commitment to leveraging technology for the betterment of society have not only earned him recognition but also underscored the immense potential of robotics and AI in addressing real-world challenges.





3rd Position

Aryan's remarkable achievement at the Tech Showcase on the **28th of March 2024** illuminated the prowess of the **Department of Electronic and Communication Engineering**. As a dedicated student within this esteemed department, Aryan's passion for innovation and technology shone brightly through his development of an advanced *image processing tool using MATLAB*. His exemplary work not only highlighted his individual talent but also underscored the department's commitment to nurturing future leaders in the field. Securing the 3rd position in the competition, Aryan's success served as a testament to the department's rigorous academic standards and its ability to foster creative thinking and technical expertise among its students.





Outstanding

Harsh Sharma (2k22CSUN01065), Hrithika Singh (2K22CSUN01067), Kashish Bisht (2K22CSUN01070), and Utkarsh Mehra (2K22CSUN01081), students of the Department of Computer Science and Technology, collaboratively developed an outstanding project titled "Dual Axis Solar Tracker with Solar Monitoring System." This innovative project focuses on optimizing solar energy collection by employing a dual-axis mechanism, enabling solar panels to follow the sun's path throughout the day for maximum efficiency. Integrated with an advanced monitoring system, the project not only tracks solar performance in real-time but also enhances energy output significantly. Their work demonstrates remarkable technical prowess and a commitment to sustainable technology solutions, earning them accolades within the department and a cash prize worth 2000, setting a high benchmark for future projects.

29th March, 2024

4 QUALITY
EDUCATION



GYAN DAAN

Shiksha Ki Pragati Mein Ek Kadam

10 REDUCED
INEQUALITIES



The "Gyan Daan" Book Donation Drive was organized by the **ECE Department** at **Manav Rachna University** with the noble aim of promoting the culture of sharing knowledge and providing educational resources to students. The initiative aimed to donate books to students to enhance their learning experience and encourage a love for reading. A wide variety of books, including textbooks and reference books were donated during the drive.

The donated books served as valuable supplements to their academic studies, enabling them to explore diverse topics, broaden their knowledge, and enhance their learning experience.

Gyan Daan, the act of imparting knowledge, transcends boundaries, enriching lives and shaping destinies. It's a timeless exchange, where wisdom flows freely, empowering individuals and communities alike. In this noble endeavor, each contribution becomes a stepping stone towards a brighter, more enlightened future for all.

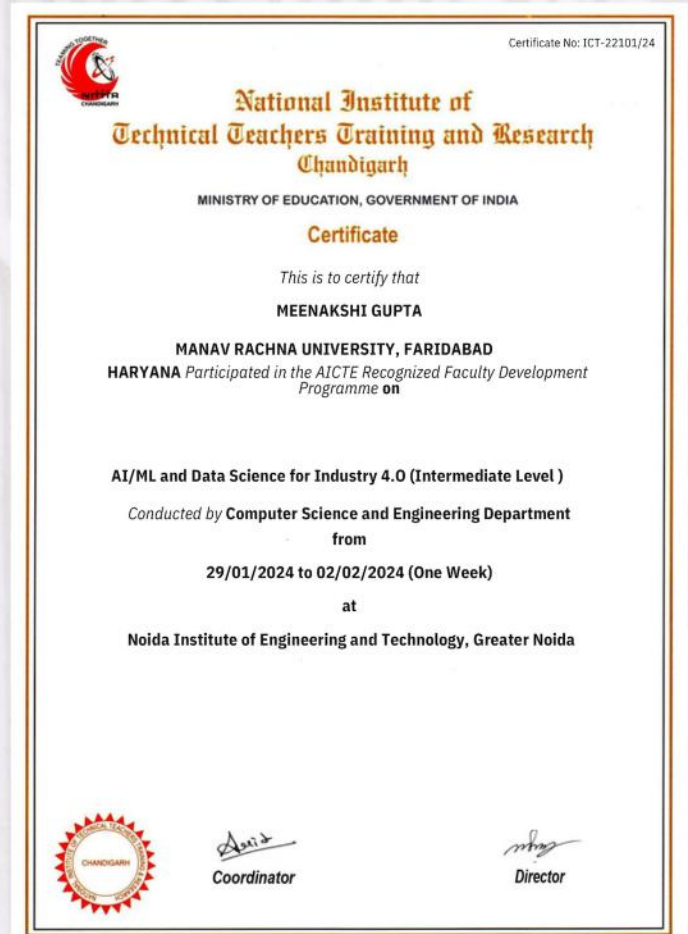
Knowledge shared is a legacy earned,
illuminating minds and igniting futures—a
gift of enlightenment, a beacon of
progress.

-Nitin Kumar

Faculty Accolades

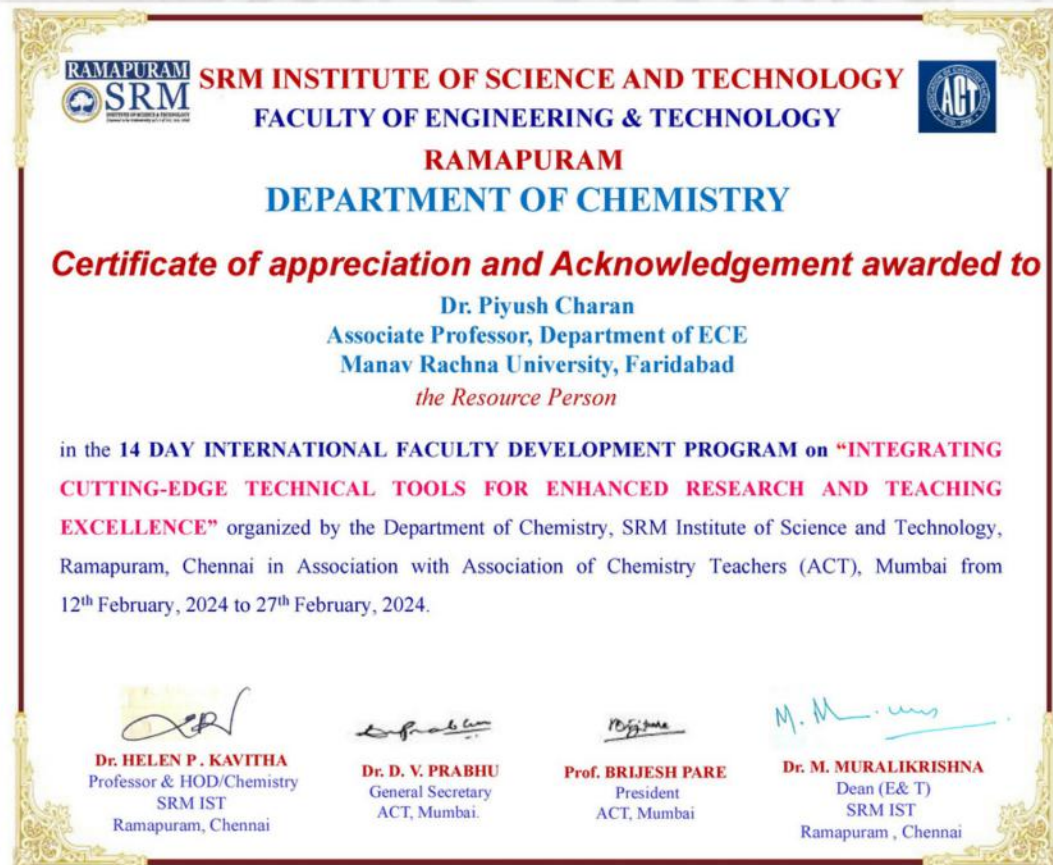
Explore the remarkable achievements of
faculty members

PROF. (DR.) MEENAKSHI GUPTA



Dr. Meenakshi Gupta achieved significant academic milestones by earning certificates in "**AIML and Data Science for Industry 4.0 (Intermediate Level)**" and "**AIML and Data Science for Industry 4.0 (Advanced Level)**" from the **Noida Institute of Engineering and Technology, Greater Noida**. As a distinguished faculty member of **Manav Rachna University**, these certifications underscore her expertise and commitment to advancing her knowledge in the fields of artificial intelligence, machine learning, and data science, particularly as they apply to the evolving landscape of Industry 4.0.

Invited Lecture



View on
YouTube:



Dr. Piyush Charan, a distinguished faculty member of **Manav Rachna University**, delivered an Invited Talk on **"Development of Course on Moodle"** that was streamed Live on YouTube in the **14-Day International Online Faculty Development Program** on **"Integrating Cutting-Edge Technical Tools for Enhanced Research and Teaching Excellence"** organised by the Department of Chemistry, Faculty of Engineering and Technology, SRM Institute of Science and Technology, Ramapuram on 24-Feb-2024.



NPTEL



DR. PIYUSH CHARAN

Elite

NPTEL Online Certification
(Funded by the MoE, Govt. of India)

This certificate is awarded to
PIYUSH CHARAN
for successfully completing the course
Python for Data Science

with a consolidated score of **69** %

Online Assignments	25/25	Proctored Exam	43.62/75
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Total number of candidates certified in this course: 11953

Jan-Feb 2024
(4 week course)

Prof. Devendra Jalihal
Chairperson,
Centre for Outreach and Digital Education, IITM

Prof. Andrew Thangaraj
NPTEL, Coordinator
IIT Madras

Indian Institute of Technology Madras

swayam

Roll No: NPTEL24CS54SS45200183 To verify the certificate No. of credits recommended: 1 or 2

Elite

NPTEL Online Certification
(Funded by the MoE, Govt. of India)

This certificate is awarded to
PIYUSH CHARAN
for successfully completing the course
Teaching And Learning in Engineering (TALE)

with a consolidated score of **68** %

Online Assignments	21.67/25	Proctored Exam	46.5/75
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Total number of candidates certified in this course: 577

Jan-Feb 2024
(4 week course)

Prof. G. L. Sivakumar Babu
Chairman, Center for Continuing Education
IISc Bangalore

Prof. L. Umanand
NPTEL, Coordinator
IISc Bangalore

Indian Institute of Science Bangalore

swayam

Roll No: NPTEL24GE08S645200565 To verify the certificate No. of credits recommended: 1 or 2

Elite

NPTEL Online Certification
(Funded by the MoE, Govt. of India)

This certificate is awarded to
PIYUSH CHARAN
for successfully completing the course
Outcome Based Pedagogic Principles for Effective Teaching

with a consolidated score of **84** %

Online Assignments	23.33/25	Proctored Exam	60.64/75
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Total number of candidates certified in this course: 740

Feb-Mar 2024
(4 week course)

Indian Institute of Technology Kharagpur

Prof. Haimanti Banerji
Coordinator, NPTEL
IIT Kharagpur

swayam

Roll No: NPTEL24GE27S555501134 To verify the certificate No. of credits recommended: 1 or 2

Dr. Piyush Charan, has achieved significant academic accolades by earning certificates from NPTEL in “**Python for Data Science**”, “**Teaching and Learning in Engineering (TALE)**”, and “**Outcome based Pedagogic Principles for Effective Teaching**”. These certifications reflect his dedication to both advancing his technical expertise in data science and enhancing his pedagogical skills. The "Python for Data Science" certificate underscores his proficiency in a critical programming language widely used for data analysis, while the other two certificates highlight his commitment to innovative teaching methodologies in engineering education.



NPTEL



PROF. (DR.) CHARU PATHAK

Elite
NPTEL Online Certification
(Funded by the MoE, Govt. of India)

This certificate is awarded to
CHARU
for successfully completing the course

Teaching And Learning in Engineering (TALE)

with a consolidated score of **77 %**

Online Assignments	21.67/25	Proctored Exam	55.5/75
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Total number of candidates certified in this course: 577

Jan-Feb 2024
(4 week course)

Prof. G. L. Shivakumar Babu
Chairman, Center for Continuing Education
IISc Bangalore

Prof. L. Umanand
NPTEL Coordinator
IISc Bangalore

Indian Institute of Science Bangalore

swayam

Roll No: NPTEL24GE08S545200159 To verify the certificate No. of credits recommended: 1 or 2

Elite
NPTEL Online Certification
(Funded by the MoE, Govt. of India)

This certificate is awarded to
CHARU
for successfully completing the course

Outcome Based Pedagogic Principles for Effective Teaching

with a consolidated score of **77 %**

Online Assignments	18.83/25	Proctored Exam	58.5/75
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Total number of candidates certified in this course: 740

Feb-Mar 2024
(4 week course)

Prof. Haimanti Banerji
Coordinator, NPTEL
IIT Kharagpur

Indian Institute of Technology Kharagpur

swayam

Roll No: NPTEL24GE27S655501426 To verify the certificate No. of credits recommended: 1 or 2

Elite
NPTEL Online Certification
(Funded by the MoE, Govt. of India)

This certificate is awarded to
CHARU
for successfully completing the course

Experimental Robotics

with a consolidated score of **78 %**

Online Assignments	17.5/25	Proctored Exam	60/75
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Total number of candidates certified in this course: 373

Feb-Mar 2024
(4 week course)

Prof. Haimanti Banerji
Coordinator, NPTEL
IIT Kharagpur

Indian Institute of Technology Kharagpur

swayam

Roll No: NPTEL24GE31S1055504502 To verify the certificate No. of credits recommended: 1 or 2

Prof. Charu Pathak, a distinguished faculty member of Manav Rachna University, has achieved a significant academic milestone by earning certificates from NPTEL in “**Teaching and Learning in Engineering (TALE)**”, “**Outcome-based Pedagogic Principles for Effective Teaching**”, and “**Experimental Robotics**”. These certifications underscore her commitment to enhancing her pedagogical skills and adopting innovative teaching methodologies in engineering education. Dr. Charu's commitment to professional growth not only enhances her qualifications but also strengthens her capacity to provide top-tier education.



MR. VARUN YADAV

Elite
NPTEL Online Certification
(Funded by the MoE, Govt. of India)



This certificate is awarded to
VARUN YADAV
 for successfully completing the course
Teaching And Learning in Engineering (TALE)
 with a consolidated score of **70 %**

Online Assignments	21.67/25	Proctored Exam	48/75
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Total number of candidates certified in this course: 577

Jan-Feb 2024
(4 week course)


Prof. G. L. Sivakumar Babu
Chairman, Center for Continuing Education
 IISc Bangalore

Prof. L. Umanand
NPTEL Coordinator
 IISc Bangalore

Indian Institute of Science Bangalore

Roll No: NPTEL24GE08S645200566 To verify the certificate No. of credits recommended: 1 or 2

NPTEL-AICTE
Faculty Development Programme
(Funded by the MoE, Govt. of India)



This certificate is awarded to
VARUN YADAV
 for successfully completing the course
Teaching And Learning in Engineering (TALE)
 with a consolidated score of **70 %**

Prof. Andrew Thangaraj
NPTEL Coordinator
 IIT Madras

Roll No: NPTEL24GE08S645200566 Duration of NPTEL course : 4 Weeks

The candidate has studied the above course through MOOCs mode, has submitted online assignments and passed proctored exams. This certificate is therefore acceptable for promotions under CAS as per AICTE notifications dated 18th Nov, 2023, similar to other refresher / orientation courses. F.No. AICTE / RFD / FDP through MOOCs / 2023

Elite
NPTEL Online Certification
(Funded by the MoE, Govt. of India)



This certificate is awarded to
VARUN YADAV
 for successfully completing the course
Python for Data Science
 with a consolidated score of **61 %**

Online Assignments	24.17/25	Proctored Exam	36.74/75
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Total number of candidates certified in this course:11953

Jan-Feb 2024
(4 week course)


Prof. Devendra Jalihal
Chairperson,
 Centre for Outreach and Digital Education, IITM

Prof. Andrew Thangaraj
NPTEL Coordinator
 IIT Madras

Indian Institute of Technology Madras

Roll No: NPTEL24CS54S545200369 To verify the certificate No. of credits recommended: 1 or 2

NPTEL-AICTE
Faculty Development Programme
(Funded by the MoE, Govt. of India)



This certificate is awarded to
VARUN YADAV
 for successfully completing the course
Python for Data Science
 with a consolidated score of **61 %**

Prof. Andrew Thangaraj
NPTEL Coordinator
 IIT Madras

Roll No: NPTEL24CS54S545200369 Duration of NPTEL course : 4 Weeks

The candidate has studied the above course through MOOCs mode, has submitted online assignments and passed proctored exams. This certificate is therefore acceptable for promotions under CAS as per AICTE notifications dated 18th Nov, 2023, similar to other refresher / orientation courses. F.No. AICTE / RFD / FDP through MOOCs / 2023

Mr. Varun Yadav, a distinguished faculty member of **Manav Rachna University**, has earned notable certifications from NPTEL in "**Python for Data Science**" and "**Teaching and Learning in Engineering (TALE)**." These certifications underscore his dedication to both advancing his technical expertise and enhancing his teaching methodologies. The "Python for Data Science" certificate highlights his proficiency in a crucial programming language essential for data analysis and research, while the "TALE" certificate reflects his commitment to adopting innovative approaches in engineering education.

Research and Development

P u b l i c a t i o n s



Conference Publications

[1] D. P. Singh, **Piyush Charan**, D. Pasrija, D. S. Shyamal, K. Suresh and V. V. Priya, "**An Energy Efficient Naïve Bayes-based Clustering Protocol for Wireless Sensor Network**," 2024 IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI), Gwalior, India, 2024, pp. 1-6. doi: [10.1109/IATMSI60426.2024.10502529](https://doi.org/10.1109/IATMSI60426.2024.10502529).

[2] **Meenakshi Gupta**, Sarthak Negi, "**Terahertz (THz) Communication Systems for Beyond 5G and 6G Networks**", Hinweis Second International Conference on Advanced Research in Engineering and Technology (ARET), Feb 2024.

[3] Ankita Singh, **K.Deepa**, "**IoT based Communications in Smart grid**", International Conference on Demystifying Emerging Trends in Green Technology ICDETGT-2023.

Journal Publications

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