Product Development Unit
Manav Rachna University

In today's rapidly evolving world, innovation stands as the cornerstone of progress and development. As the boundaries of technology, science, and entrepreneurship continue to expand, educational institutions play a pivotal role in nurturing and harnessing the creative potential of their students. Manav Rachna University, a distinguished hub of academic excellence, recognizes the importance of innovation in the field of engineering. To cultivate this spirit of innovation, Manav Rachna University proudly introduces the Product Development Unit (PDU), a dynamic and transformative initiative aimed at empowering students and enabling them to turn their innovative ideas into real-world solutions.

The Product Development Unit is not just a facility; it's a mindset, a hub for creativity, and a Launchpad for the future. The Unit represents a commitment to innovation, a catalyst for progress, and a testament to Manav Rachna University's dedication to shaping the engineers of tomorrow.

Aim of Product Development Unit

Product Development Unit at Manav Rachna University is dedicated to fostering a culture of innovation, and creativity among its engineering students. Our mission is to:

Nurture Creativity: Provide a stimulating environment that encourages students to think critically, explore new ideas, and push the boundaries of innovation.

Empower Entrepreneurs: Support aspiring student entrepreneurs in developing and refining their innovative products.

Facilitate Collaboration: Forge partnerships with industry leaders and mentors, to create a thriving ecosystem for innovation.

Drive Impact: Transform innovative ideas into tangible solutions that address real-world challenges and contribute to societal and economic advancement.

Key Features of the Product Development Unit

Mentorship and Guidance: Experienced mentors, industry experts, and faculty members provide guidance and mentorship to students, helping them refine their ideas.

Learning Opportunities: Regular workshops, seminars, and training are organized for the students to upgrade their skills as per the Industry standards.

Interdisciplinary Collaborations: Encouraging collaboration across various engineering disciplines and with other faculties, fostering the development of holistic and innovative solutions to complex real-time challenges.

Faculty Team

Name	Designation	Department	Role
Mr. Vijay Kumar Gill	Assistant Professor	ECE, SOE	PDU Coordinator

Student Core Team

Internet of Things Domain

Name	Semester	Roll No.	Email Id	Phone No
Vuyyuru Sriram	6th	2K21ECUN03002	vuyyurusriram@gmail.com	9059918250
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Embedded System Design Domain

Name	Semester	Roll No.	Email Id	Phone No
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Product Development

Name	Semester	Roll No.	Email Id	Phone No
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SOPs for Product Development Unit (PDU)

Purpose of this Standard Operating Procedure Document is to ensure that the activities of Institution Innovation Council (IIC) of Manav Rachna University (MRU) (established in 2018), are executed in accordance with the guidelines specified by Ministry of Education (MoE) Innovation Cell (IC) of Government of India, so as to attain the desired outcome of fostering the innovation culture in the university campus.

1. The Product Development Unit is open to all students, faculty members, and research scholars of Manav Rachna University. The lab promotes and facilitates Trainings, Workshop, innovative projects in thrust areasProduct Development Unit related to engineering domain.
2. The Key domain areas of PDU are Internet of Things (IoT), Embedded System Design and Product Development.
3. Each domain area has its own student coordinators.
4. The student coordinators are responsible for promoting the Vision and Mission of the Product Development Unit.
5. At the beginning of the academic year, PDU Coordinator constitutes the student coordinator team depending on student's performance and interest levels. Roles and responsibilities are defined and assigned to Student coordinators.
6. For each quarter, an activity calendar is prepared by the PDU Coordinator. Student coordinators are given the responsibility for organizing the activities.
7. At the end of the academic year, the Coordinator prepares and submits an Annual Report of various Activities and achievements to the Director of Innovation and Incubation, Dean Research, Registrar and Vice Chancellor of University as per the prescribed template.

Student Achievements

A team of B.Tech students: Rudranand Sahu (ECE), Prajawal Paul (CSE), Chirag Sindhu (CSE), and Vinay Kumar (CSE) won **1st prize in e-Yantra Robotics Competition** (eYRC-2022-23)in the Swachhta Bot theme , organized by IIT Bombay on March 31st – April 1st 2023. A total of 373 teams participated in the National level Competition.

Trainings /Workshops Organized

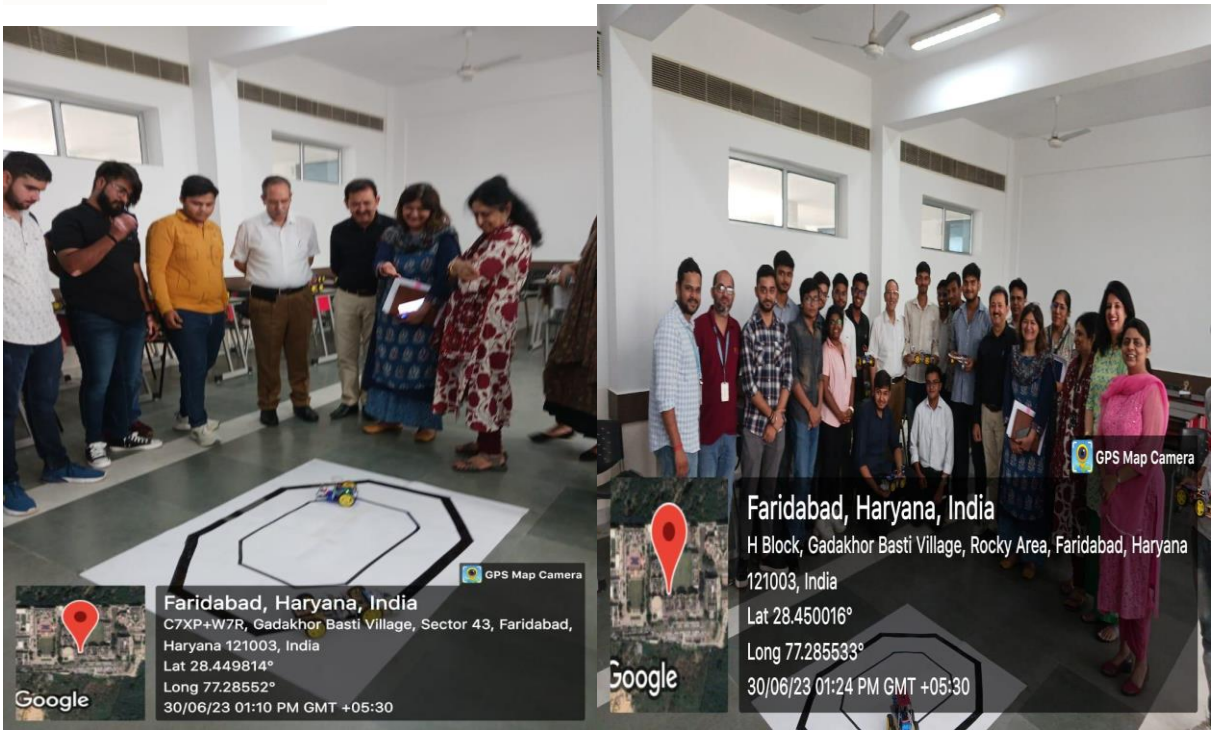
Internal Hackathon, AVISHKAR 2023

Internal Hackathon AVISHKAR 2023 Event of Smart India Hackathon (SIH) 2023 was conducted at Manav Rachna University on 20th September 2023 by the IIC team. As per MoE Innovation Cell-AICTE directive, a team of technical experts from the industry was invited as judges to MRU to evaluate the idea solution and its implementation and other parameters to specific problem statements demonstrated by several competing teams of our Engineering students and select the teams to be nominated for SIH 2023 registration for final competition at National level. Each team had 6 students with at least one female student in each group. 18 teams participated in the internal Hackathon held at Manav Rachna University @ HB-02. Students participated enthusiastically and presented their solutions to the Jury members.

Mr. Pranav Chauhan (Technical Manager, Design Tech Pvt. Ltd), Dr. Kiran Khattar (Associate professor at BML University) and Dr. Devnajali (Associate professor at BML University) were the three judges invited from industry. The evaluation process was done with a solution presentation as per the SIH 2023 format and students demonstrated the basic functionalities of their solutions in both hardware and software category. The rigorous evaluation process and feedback done by all the jury members were constructive for the teams to understand their shortcomings and solution improvement. Jury members congratulated all the team members and gave them best wishes for the national level (Smart India Hackathon 2023) event.

Workshop on "Idea Generation and Prototype Building with Arduino Uno and Sensor Integration" from 26th June- 30th June 2023

The five-day workshop on "Idea Generation and Prototype Building" aimed to equip first-year engineering students with hands-on experience in creating innovative projects using Arduino Uno microcontroller boards and various sensors like ultrasonic, moisture, infrared sensors etc. Additionally, students were introduced to the concept of 3D printing to enhance their prototyping skills. The hands-on approach allowed participants to gain confidence in building working prototypes and nurtured their creativity and problem-solving skills. The workshop successfully instilled a sense of enthusiasm for electronics and prototyping among the students, inspiring them to pursue further exploration in the field of engineering and technology.



Idea Pitching Session held on 11th May, 2023

"The Government of India declared May 11 as National Technology Day in the year 1999 and since then the day holds a special significance for the entire Nation. With India progressing at a fast pace in the field of Science, Technology, Innovation and Entrepreneurship, the theme for this year's National Technology Day is School to Start-ups - Igniting Young Minds".

Product Development Unit, celebrated and organised an Idea pitching session for start-up and projects for funding on 11th May, 2023 at HB-01 at 2:00 pm onwards. The event was coordinated by Mr. Vijay Kumar Gill and Dr. Prashant Bhardwaj. The students devised their original maxims or catchphrases on the theme mentioned above. 26 students in 11 Teams participated in the event and shared idea ranging from web development for services, improving Bluetooth device, Home Automation, Home Intruder Alarm System, Solar Grass Cutter, Automatic Fire Extinguisher, high-speed Quadcopter, Medical Transcription, and Electronic Device made from recycling other Electronic Device etc. Dr. Susmita Ray and Dr. Parneeta Dhaliwal interacted with students and suggested some inputs for their Ideas and thoughts.

Workshop on "Upgrading Skills for Sustainable Innovation and Entrepreneurship using IoT"

Manav Rachna University in association with SmarDen Technologies conducted a 6-week workshop starting from 31st Jan., 2023 for upgrading skills for sustainable Innovation and Entrepreneurship using IoT to give hands-on experience to the Engineering students organized by Dr. Yogita Gupta, IIC Convener, Manav Rachna University. The resource person Mr. Shrey is the co-founder of SmarDen has vast Experience in IoT domain and also as an Entrepreneur.

The focus on upgrading skills for sustainable innovation and entrepreneurship using IoT is particularly relevant in today's world, where there is a growing demand for solutions that are both technologically advanced and environmentally friendly.

This initiative provides hands-on experience to their students, especially when it comes to emerging technologies like IoT. The association with SmarDen Technologies also suggests that the workshop was able to provide students with industry-relevant insights and practical knowledge. The student response was tremendous and the session.

Workshop on YUKTI Innovation Repository and YUKTI Innovation Challenge, 2023

On April 24, 2023, a workshop on the YUKTI Innovation Repository and YUKTI Innovation Challenge was organized by the Product development Unit for the students. The workshop aimed to introduce students to exciting initiatives and encourage them to participate and contribute to innovation in various fields. The workshop on the YUKTI Innovation Repository and YUKTI Innovation Challenge was highly informative and inspiring for the participating students. It succeeded in raising awareness about these valuable platforms, encouraging students to think innovatively, and motivating them to participate actively. The workshop concluded with an invitation for all students to submit their innovative ideas and projects to the YUKTI Innovation Repository and take part in the YUKTI Innovation Challenge.

Field Visit to Vihaan Networks Limited (VNL), India

Institution Innovation Council (IIC) of Manav Rachna University organized a field visit to manufacturing unit of **Vihaan Networks Limited (VNL), Sector 5, IMT Manesar, Gurugram** on 17th February 2023. IIC Faculty members of the Department of Electronics and Communication Engineering, Manav Rachna University took the initiative of organizing this Industrial Visit for the IIC students. The visit was facilitated by **Mr. Alok Sharma**, Vice President of VNL, and coordinated by **Mr. Manish Kumar Goyal**, GM- Manufacturing and SCM, VNL.

During the visit, the students were given a detailed tour of the manufacturing unit of VNL and were provided with an overview of all their products. Mr. Goyal explained the workings of each department of the manufacturing unit and provided insight into the various stages of the manufacturing process.

Toy Tinker 23- 24 February, 2023

Institution Innovation Council of Manav Rachna University organized the Toy Tinker event in collaboration with Smartivity Labs from 23rd February to 24th February, 2023. It started off with a competition with the Series Rapid Talk. The competition was designed to challenge the students' creativity and innovation by building models from the models provided by Smartivity Labs. The event was organized by Dr. Yogita Gupta and Dr. Niharika Thakur, and the resource person for the competition was Ms. Jasreen Kaur from Smartivity Labs. The purpose of the event was to encourage engineering students to utilize their creativity and problem-solving skills while also providing them with hands-on experience.

The competition was open to students of 1st year Manav Rachna University for various streams. The participants were given random partners to make a team of two. The participants were provided with kits from Smartivity Labs, which included all the necessary materials to create the models. The participants had to build models using these kits within the given time frame. The competition was judged based on the models' creativity, innovation, and presentation.

MANAV RACHNA UNIVERSITY
Declared as State Private University vide Haryana Act 26 of 2014

INNOVATION & INCUBATION CENTER
MANAV RACHNA UNIVERSITY