MEDHAVI SKILLS UNIVERSITY
Skill • Empower • Liberate

REPORT ON SUSTAINABLE DEVELOPMENT



9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



GOAL 9

Introduction

Industry, innovation and infrastructure play a vital role in promoting sustainable economic development, strengthening technological capabilities and creating opportunities for inclusive growth. Medhavi Skills University (MSU), Sikkim, recognises the importance of industry-oriented education, applied learning, research and innovation in preparing learners to meet the evolving needs of the economy. Established under the Medhavi Skills University, Sikkim Act, 2021, the University focuses on integrating higher education with practical skills, industry exposure and employability-oriented learning. Its educational approach emphasises the development of a skilled workforce equipped to contribute to technological advancement, industrial development and sustainable progress.

Through its skill-integrated academic programmes, industry collaborations, specialised laboratories and work-integrated learning model, MSU provides opportunities for students to connect theoretical knowledge with practical applications. The University's engagement with industry partners supports the development of relevant skills, professional competencies and industry-aligned learning experiences. Its technology-enabled teaching and learning environment, together with practical training facilities, creates opportunities for experiential learning and the application of knowledge across different professional sectors. These initiatives reflect the University's emphasis on strengthening the relationship between higher education, innovation and industry requirements.

List of Courses

The University offers programmes across health sciences, management, computer applications and engineering-related disciplines. The courses listed below cover research methodology, scientific principles, artificial intelligence, computer networks, cloud computing, software development, data analytics, cybersecurity and project-based learning.

These subjects are relevant to SDG 9 because they provide opportunities for students to develop research capabilities, technological knowledge, problem-solving skills and practical competencies. Research projects, capstone projects, internships and applied laboratory courses can also help students connect academic learning with industry requirements and technological innovation.

Name of School	Programme	Relevant Courses / Subjects
School of Health Science and Technology	Medical and Allied Health Programmes	Research Methodology, Research Project, Biophysics, Physics, Chemistry, Artificial Intelligence
School of Management and Commerce	MBA	Research Methodology, Data Analysis, Power BI, Tableau, Field Project, Capstone Project
School of Computer Science & Engineering	BCA	AI, Programming, Data Structures, Cloud Computing, Cybersecurity, Web Technologies, Software Engineering, Capstone Project
School of Computer Science & Engineering	DCSE	Mathematics, Applied Physics, Chemistry, Computer Programming, Python, Computer Networks, Algorithms, Internship
School of Computer Science & Engineering	B.Tech	AI, Machine Learning, Computer Networks, Programming, Data Analytics, Software Engineering, Design Thinking
School of Computer Science & Engineering	MCA	Programming, Full Stack Development, Computer Networks, Information Security, Blockchain, DevSecOps, Projects

Research Contribution

The University recognises research and scholarly publications as important contributions to **SDG 9: Industry, Innovation and Infrastructure**. The university's research publications address emerging areas such as cybersecurity, decentralised computing, medical imaging, Internet of Things (IoT), artificial intelligence, and secure digital systems. These research areas advance technological knowledge, digital innovation, and solutions relevant to industry and society.

The publications listed below demonstrate faculty research in areas that support innovation, technological development, and resilient digital infrastructure. The work includes a systematic review of cybersecurity quality metrics for decentralized computational ecosystems, research on medical imaging and IoT-based healthcare devices, and studies on defensive techniques against adversarial attacks. This research reflects higher education institutions' role in advancing knowledge, strengthening research capacity, and supporting the development of innovative technologies.

The publication records include the paper title, faculty author, department, school, year of publication, journal or publication source, links to the published work, and available indexing information.

Publications Listed under SDG 9

1. **A Systematic Review of Cybersecurity Quality Metrics for Decentralized Computational Ecosystems** — authored by Raghavendra Prasad, School of Computing and Software Engineering (SoCSE), published in *Array* in 2026. The paper focuses on cybersecurity quality metrics in decentralised computational environments and is reported as indexed in Web of Science and Scopus.

   https://doi.org/10.1016/j.array.2026.100859.

2. **Data Acquisition and Preprocessing Techniques for Medical Imaging and IoT Healthcare Devices** — authored by Divya Chettri, RIT, School of Health Science and Technology (SoHST), published in 2025. The publication addresses data acquisition and preprocessing in medical imaging and IoT-enabled healthcare technologies. The supplied record identifies it as peer reviewed.

   Artificial Intelligence and IoT-Driven Predictive Models for Next-Generation Healthcare Systems

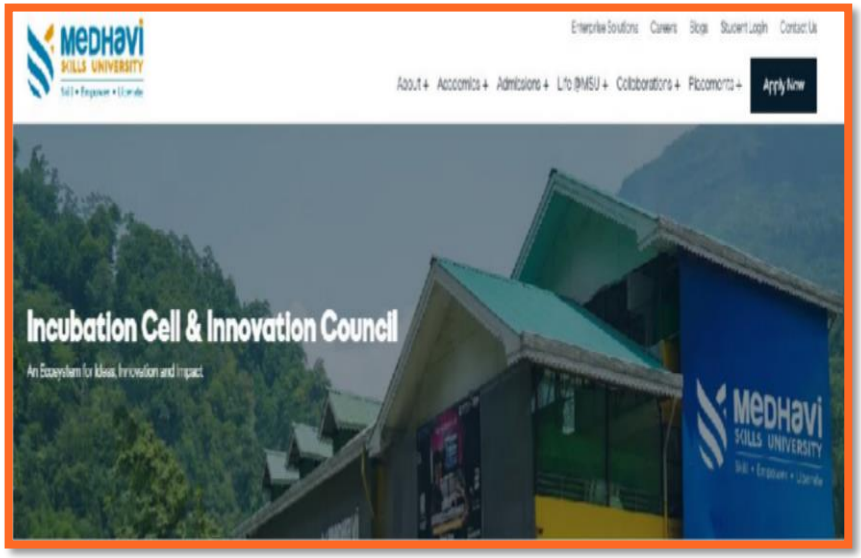
3. **Dynamic Defences Against Adversarial Attacks Using Gradient Distortion** — authored by Yumnam Momojit Singh, SoCSE, published in 2024 in *Computational Intelligence in Pattern Recognition*. The research examines defensive approaches against adversarial attacks, contributing to work on the reliability and security of intelligent computational systems. The supplied record reports indexing in Scopus and Web of Science.

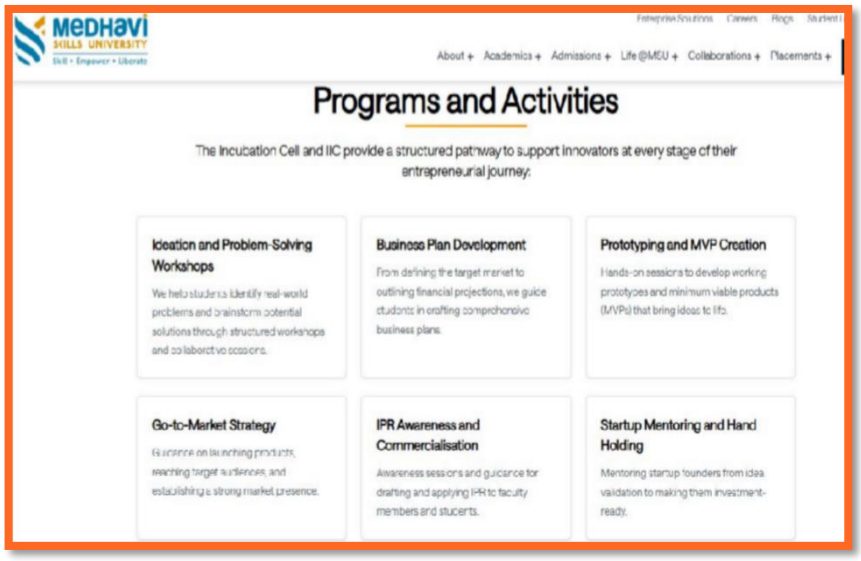
   https://link.springer.com/chapter/10.1007/978-981-97-8093-8_12

Incubation Cell & Innovation Council

Medhavi Skills University fosters a culture of innovation and entrepreneurship through its Incubation Cell and Institution's Innovation Council (IIC). The platform supports students and faculty through ideation workshops, business plan development, prototype creation, startup mentoring, and intellectual property awareness, enabling innovators to transform ideas into viable enterprises and contribute to sustainable industrial development.

Web Link: [Medhavi Skills University Incubation Cell & Innovation Council]





Strengthening Innovation and Industrial Growth through Strategic Engagements

These initiatives highlight the University's efforts to strengthening research infrastructure, fostering innovation, and enhancing industry-academia collaboration through research centres, industrial partnerships, and participation in national innovation platforms

Activity/Event	SDG 9 Area	Brief Description	Evidence Link
Medhavi Skills University at Bharat Mobility Global Expo 2025	Industry Collaboration & Innovation	MSU participated in India's largest mobility expo focused on innovation, collaboration, and future automotive value chains, showcasing industry-integrated education and mobility sector engagement.	Medhavi Skills University at Bharat Mobility Global Expo 2025
Aequs Centre for Research in Aerospace Manufacturing Technology	Research Infrastructure & Industrial Innovation	Aequs established a Centre for Research in Aerospace Manufacturing Technology in collaboration with MSU and NSDC, strengthening research capacity and advanced manufacturing innovation.	Aequs and MSU Join Hands for Aerospace Innovation
Industry Collaborations Ecosystem	Industry-Academia Infrastructure	MSU's industry collaboration framework includes state-of-the-art labs, classrooms, conference facilities, industry-integrated curriculum, and partnerships with 650+ industry and skilling organizations.	Industry Collaborations at Medhavi Skills University Partnerships & MoUs



Industry–University Collaboration

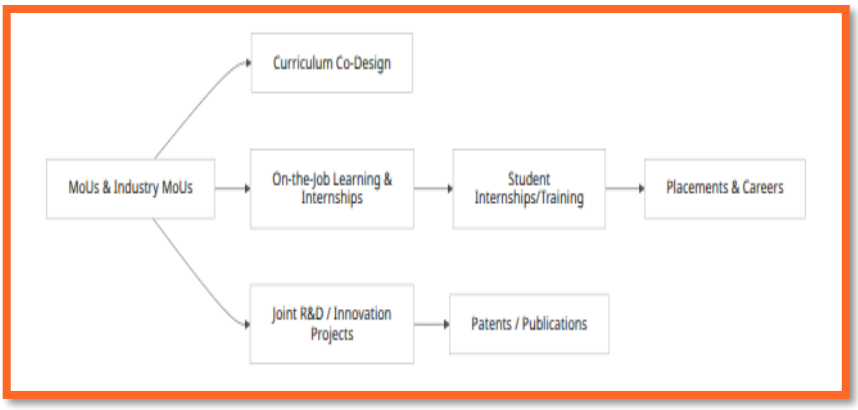
The University emphasises industry integration in its educational model. The University works with industry partners across different sectors to make its curriculum practice-oriented and aligned with workplace requirements. MSU reports partnerships with more than 650 industry and skilling organisations across over 30 sectors, including Apollo Hospitals, Bosch, Polaris, Quess Corp., Chai Point and Barbeque Nation. These collaborations include formal MoUs, joint training programmes, internships and on-the-job learning opportunities. Through its Learn and Earn programmes and curricula aligned with NEP 2020, the University provides students with work-based learning opportunities. The University reports that approximately 70% of its curriculum is practice-based, with more than 700 internships/on-the-job learning opportunities offered, a placement rate of 95% among eligible students, and packages of up to ₹9 LPA.

Through these partnerships, MSU aims to improve students' employability, support skill development and strengthen cooperation between educational institutions and industry.

Collaboration Model Overview

MSU was founded to bridge the gap between academia and industry. Industry experts co-create and mentor MSU programs: stakeholders help shape curricula so that what students learn matches real-world job requirements. The university emphasizes practice-based, outcome-driven pedagogy: about 70% of its curriculum is hands-on. It was the first Indian university to adopt an embedded “Learn & Earn” work program during degree courses, and it integrates National Education Policy (NEP 2020) guidelines with industry, offering students immediate career exposure. MSU provides state-of-the-art labs, mentorship from industry leaders, and strong on-the-job learning linkages.

Partnership Ecosystem: MSU’s partnership ecosystem spans government, corporate and non-profit sectors. It has 650+ industry and skilling partners across 30+ industry sectors. It collaborates with 20+ central/state government agencies, 20+ CSR partners, and 10+ defence partners. These include bodies like NCVET (MSDE, GoI) (MSU is an approved awarding body) and the Defence Ministry.



Major Industry Partners & Sectors

MSU's partnerships cover healthcare, technology, manufacturing, hospitality, finance, food services, social development, and more. Key partners (with formal MoUs) include:

- **Apollo Hospitals (Healthcare)** – Medical training and hospital administration programs.



- **Polaris (Automotive)** – Co-developed programs in automotive technology/innovation.



- **Bosch (Technology/Manufacturing)** – Collaboration on technical curricula and Bosch training center.



- **Quess Corp (Staffing/Services)** – Workforce development and placements.



- **Chai Point, Barbeque Nation (Hospitality/F&B)** – Industry-led hospitality and culinary programs.



- **Futred Innovation Studios (Design/Manufacturing)** – Joint accredited skill programs in innovation.



MoU with Futred Innovation Studios

- **ITD Education (EduTech)** – National Skill Qualification Framework programs.



MoU with ITD Education Pvt. Ltd.

- **Nexus Select Trust (Social/Facilities)** – Launching a first-of-its-kind Mall Management degree.



- **Patanjali Japan Foundation (Health/Wellness)** – Global skill exchange programs.



- **Steward Healthcare (Healthcare)** – Pathways for healthcare careers and training.



- **Others: IGJA/IGJ (Gem & Jewellery),** B4M (technical institute), and Exedy (automotive parts) are visible from MSU's partnerships gallery.



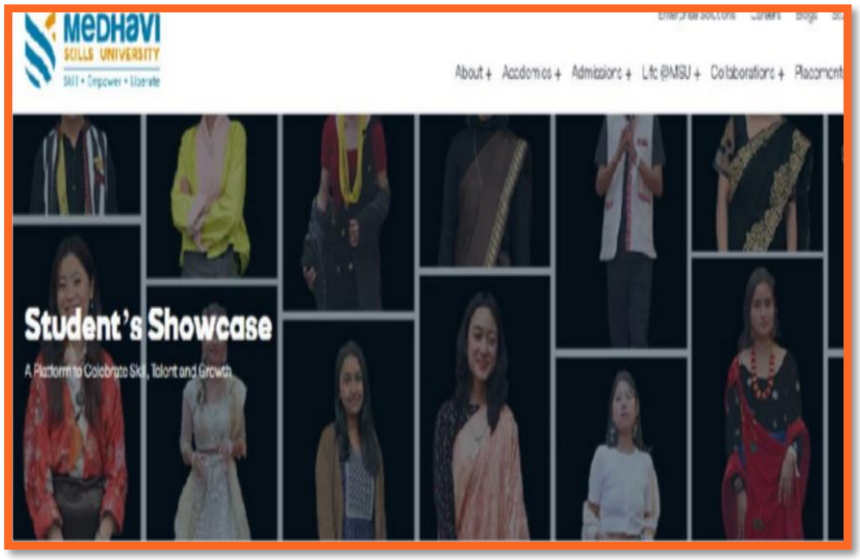


These partners represent diverse sectors. For example, Apollo and Steward strengthen MSU's healthcare programs, while Polaris, Bosch and Exedy bolster its engineering and automobile curricula. Hospitality/F&B sectors are covered via Chai Point and Barbeque Nation. Social and inclusion domains are addressed via Nexus Select (disability-friendly mall ops), and technology with IT firms.

University Spin-Offs and Student Innovation and Project Showcase Supporting Industry and Innovation

The University promotes a culture of innovation, creativity, and applied learning through its Students' Showcase platform, where students present projects, ideas, and practical solutions developed as part of their academic and skill-based learning journey. The showcase serves as a platform for demonstrating industry-relevant competencies, problem-solving abilities, and innovative thinking developed through experiential and project-based education.

Web Link: Student's Showcase - Medhavi Skills University



By encouraging students to develop and exhibit innovative projects, the university strengthens its innovation ecosystem and supports the translation of knowledge into practical outcomes. The initiative provides students with opportunities to gain visibility for their work, engage with industry and academic stakeholders, and cultivate entrepreneurial and innovation-oriented mindsets that contribute to sustainable industrial and technological development. This aligns with the objectives of SDG 9: Industry, Innovation and Infrastructure by fostering innovation capacity and promoting the development of practical solutions to real-world challenges.

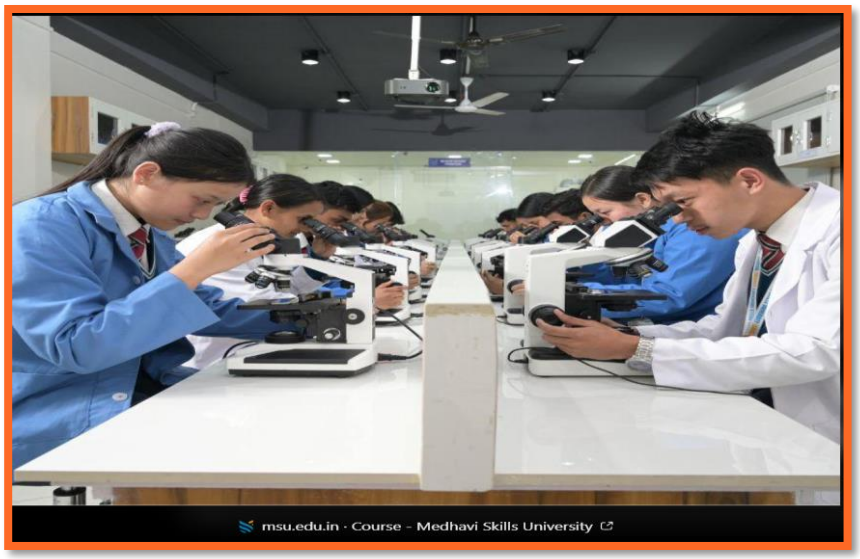
Advanced Research Infrastructure and Laboratories

The University provides specialized laboratory facilities and practical learning infrastructure to support applied education, technical skill development and research-oriented activities. The University reports having more than 16 specialized laboratories across different disciplines, including Allied Health Sciences, Food Production, Computing and other skill-based areas. These laboratories provide students and faculty members with opportunities to apply theoretical knowledge through practical sessions, experiments, demonstrations and hands-on training.

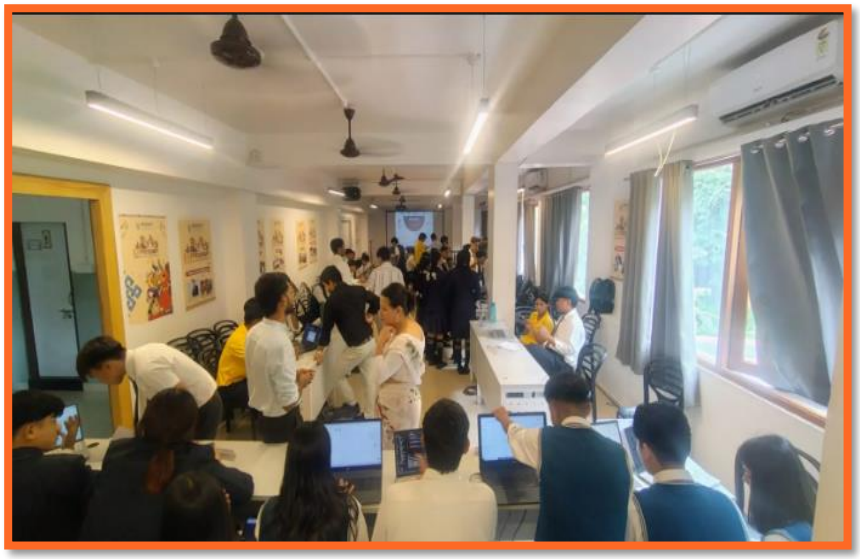
The Allied Health Laboratories support practical exposure to diagnostics and patient care, while Food Production Laboratories provide facilities for culinary training and food technology. Computer laboratories offer hardware and software resources for computing-related learning and innovation. The University also promotes experiential learning through industry-linked training and practical skill development. These facilities contribute to strengthening technical competencies, applied knowledge and the academic environment for innovation and research.

Supporting Facilities

- 16+ Specialised Laboratories
- Allied Health Laboratories
- Food Production Laboratories
- Advanced Computer Laboratories
- Pathology and Healthcare Practical Labs
- Central Facilities – Classrooms, Library and Seminar Halls
- Research Facilities and Innovation
- Industry-Linked Practical Learning


msu.edu.in · Course - Medhavi Skills University





Skill Development and Industry-Oriented Education at Medhavi Skills University (MSU)

The University focuses on skill development and industry-oriented education by connecting academic learning with practical workplace requirements. The University promotes experiential learning through industry visits, hands-on workshops, expert lectures, internships and On-the-Job Learning (OJL), enabling students to develop professional knowledge and practical competencies.

The University conducts skill-based activities across its academic schools. These include the Triple Craft Workshop conducted by the Department of Hospitality and Hotel Management, which provided practical training to nearly 120 students through expert-led sessions, live demonstrations and experiential learning. Similarly, students participated in a hands-on packaging session with entrepreneurs and Self-Help Group members to understand packaging methods, product safety and market requirements.

MSU also provides students with opportunities to interact with industry professionals and explore career pathways. Its internship and OJL initiatives enable students to gain workplace experience across healthcare, hospitality, technology and management sectors. Industry visits, professional training sessions and guest lectures further help students understand current industry practices, workplace expectations and employment opportunities.

A skills-first philosophy from day one

The annual orientation, PRARAMBH 2026: Beginning a Skills-First Journey was held on 12 August at Manan Kendra, Gangtok. It introduced students and parents to the university's skills-first approach, which centres on experiential learning, industry exposure, community engagement and personal development. The chief guest was Sikkim's DGP, who led a community-policing session called "Building Bonds". A follow-up page, Beyond PRARAMBH, describes a structured orientation programme that continued after the main event.


PRARAMBH




01

Positioning within National Policy

On World Youth Skills Day, MSU hosted the Skills-First India Leadership Dialogue at India Habitat Centre, New Delhi. The dialogue discussed the role of skills and industry collaboration in achieving Viksit Bharat 2047. The page says the discussion centred on closing the education-employment gap through stronger industry collaboration and work-based learning. It also says employability should be the defining outcome of education.





Industry-academia partnerships and placements

- **Healthcare:** The Centre for Career Development & Placements engaged Konnect Diagnostics, Hyderabad, to explore On-the-Job Learning, internships and placements for health-care students. The page says “explore collaboration”, so this reads as an early-stage engagement and not a signed agreement.



- **Defence families:** An MoU with the SSB Wives Welfare Association aims to expand skill-based education and career opportunities for SSB families.

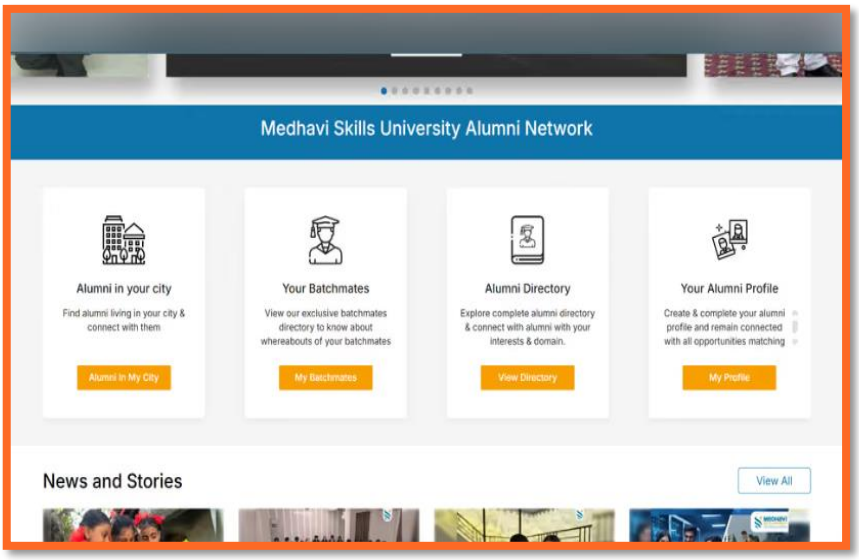


- **Government skilling bodies:** University leadership visited the National Skill Training Institute (Women), Thiruvananthapuram, focused on technical skills opportunities for women.





- **Alumni network:** The new Alumni Portal lets graduates build professional networks and look for career and collaboration opportunities.



Entrepreneurship and experiential exposure

- **School outreach:** Workshops for Class XI–XII students were held at PM Shri Biraspati Parsai School, Ranipool, PM Shri School, Singtam (“Idea to Start-up”) and East Point School, Singtam.







- **Competitions:** Five students took part in InspireX 2026, a district-level entrepreneurship event run by the Pakyong District Administration under the PULSE initiative.



- **Field visits:** Twenty-five B.Com, BBA and BA students visited Crafted Fibers in Namthang to see sustainable textile manufacturing.



- **Hospitality:** A Talent Hunt and Alumni Talk involved B.Sc HHM, PDHHO and D.Voc students.



Soft skills and personal development

CRUX MA Psychology students attended a virtual workshop on self-awareness led by an ICF-certified executive coach with about 20 years of corporate experience. It covered emotional intelligence, self-regulation and communication.



Faculty upskilling

Industry-oriented teaching depends on faculty who know current practice, and two entries bear on that:

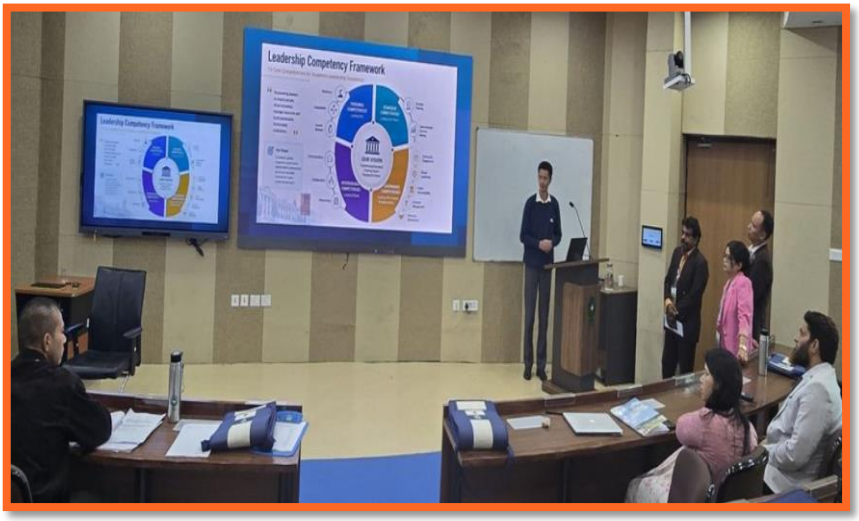
- The School of Management & Commerce joined a five-day NISM/SEBI Faculty Development Programme (29 June to 3 July 2026) at NISM Patalganga and NSE Mumbai. It combined case studies, simulation-based learning and industry exposure.





- The HOD of Computer Science & Engineering attended the Nurturing Future Leadership Programme at IIM Shillong under the Ministry of Education's Malaviya Mission Teacher Training Programme.





Global employability

The Events page's navigation describes the Skill Hub for International Employment (SHINE) as addressing the global skills gap through international programmes. It lists German-language exams (TestDaF, TestAS), Germany Nursing, and work-integrated programmes such as the Work Integrated MBA. A SHINE Gujarat farewell shows the programme running in practice.

https://crux.msu.edu.in/accelerated-work-integrated-mba/

Structural signals

The same navigation lists Industry Co-led UG and PG programmes, the Academic Bank of Credits, NEP Compliance, and Pedagogy. I did not open those pages, so I'm citing them only as listed. They suggest the events sit within a wider academic design, and you should check them before claiming details about it. The site's footer line says every programme is built with industry.

Industry Co-led UG/PG Programmes: https://www.msu.edu.in/industry-co-led-ug-programmes

Academic Bank of Credits (ABC) : https://www.msu.edu.in/academic-bank-of-credits

MSU's NEP 2020 Compliance Framework: https://www.msu.edu.in/nep-compliance

Our Pedagogical Framework: https://www.msu.edu.in/pedagogy

"Innovation begins when knowledge meets imagination and practical skills. Medhavi Skills University connects education with industry and technology, empowering students to think creatively, solve real-world challenges, and contribute to building innovative, resilient, and future-ready industries."

Medhavi Skills University

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