

MMSU's Commitment

Implement strategies to improve infrastructure, promote inclusive and sustainable industrialization, and foster innovation to make MMSU and its communities resilient and future-ready



MMSU Leads Digitalization in the Region

MMSU has started to transform its document management systems with e-systems to increase efficiency in the delivery of services while simultaneously conserving resources. As of 2023, MMSU has developed 76 electronic systems and are operationalized in the university. This transformation is aligned to MMSU's goal of becoming a Smart Campus. Among the e-systems developed include the smart payroll operations and HR analytics which manages the profile of MMSU employees. These are among the technology developments supported and promoted by MMSU, which was recognized by other agencies in the province. MMSU is now assisting interested agencies for the development of their own e-systems to promote efficient and effective delivery of services.

Highlights

	2019	2020	2021	2022	2023
Number of intellectual property applied for registration	7	16	13	46	28
Number of intellectual property registered	3	0	2	0	4
Number of ICT / e-systems developed and implemented	14	17	22	41	76

Number of research projects implemented	110	133	157	131	221
Faculty involved in research	72	110	148	256	270

Relevant Research and Development Projects in SDG 9: Industry, Innovation and Infrastructure

Title	Researcher/s	Fund Source
Development of a Porous Ceramic-Based Material for Water Softening Applications	AM Ruguian	GAA
Application of Biofloc-Based Culture System for Nile Tilapia in "Tank"	HJ Balauro	GAA
Service Quality Among Mariano Marcos State University Accommodation Establishments	PP Ignacio, Q Savellano, P Muñoz, L Tabili	GAA
Utilization of Waste Plastic for Construction	M Acoba, KCJ Baria, MK Cardona, S Leong, MV Ruiz, JC Tabije, HJ Agngaraygay	GAA
Integration of Low, Medium and High-Fidelity Simulation in Nursing Program: An Educational Innovation	S Pariñas, ME Lorica, ZM Abiva	GAA
D-TRAIL: Development of a Personalized Document Tagging, Repository and Information	B Eclarin, MJ Cudapas	GAA
Development of Automated Class Scheduling System	G Contillo, N Cacanindin	GAA
HEIRIT: Establishment of DOST-MMSU Bannuar Technology Business Incubator for advancing the manufacturing industry in the Ilocos Region	A Sabugo, A Mamuri, RG Barot, A Ruiz	GIA

Key Activities and Accomplishments

- **Research products featured in MMSU techno showcase.** Various innovative agricultural and aquatic technologies and products were showcased at the Mariano Marcos State University Teatro Ilocandia during the opening of the Technology Showcase and Farmers' Forum on January 20. The event featured exhibits from state universities and colleges in Region I, MMSU-assisted micro, small, and medium enterprises (MSMEs) in Ilocos Norte, and five research and development institutions. This platform highlighted the latest advancements and innovations aimed at enhancing agricultural and aquatic industries, promoting collaboration, and supporting the growth of local enterprises and the region's agricultural sector.
- **MMSU inaugurates COASTER building.** A year after its launch, the Coastal Engineering and Management Research and Development Center (COASTER) Building at Mariano Marcos State University was officially inaugurated on January 19, symbolizing a strengthened commitment to disaster-risk reduction and coastal engineering. The two-storey facility, equipped with material testing laboratories, a wave flume control room, fabrication laboratories, a conference room, and offices, is designed to enhance research capabilities and support the center's projects aimed at building resilient communities. Operational since November 2021, COASTER leads the development of technologies to mitigate and manage coastal disasters, particularly in the Ilocos region. The center is funded by the Department of Science and Technology - Philippine

Council for Industry, Energy, and Emerging Technology Research and Development (DOST-PCIEERD) through its Science for Change Program (S4CP).

- **MMSU opens farmers' hub in Badoc town.** Farming communities in Badoc, Ilocos Norte now have greater access to agricultural innovations with the opening of the Farmers' Information and Technology Services (FITS) center on March 3. The center was established through the collaboration of the local government unit of Badoc, Mariano Marcos State University (MMSU), the Ilocos Norte Agriculture, Aquatic and Natural Resources Research and Development Consortium (ILAARRDEC), and the Agricultural Training Institute - Regional Training Center (ATI-RTC) 1. As a partner member-agency, MMSU will oversee and support the operation of the FITS hub, providing valuable information and technology services to empower local farmers and enhance agricultural productivity in the region.
- **International eLearning Congress.** The 5th International Congress on eLearning, hosted by Mariano Marcos State University and organized by the Philippine eLearning Society (PeLS), took place from September 7-9 at the MMSU Center for Flexible Learning, focusing on innovative approaches for inclusive hybrid learning. The event showcased the efforts of educational institutions in championing eLearning and brought together hundreds of higher education leaders and educators from the Philippines and abroad. With over 20 experts serving as resource speakers, the congress highlighted cutting-edge strategies and best practices to enhance digital education, ensuring more accessible and equitable learning experiences.
- **Training on sustainability and futures thinking on the industry 4.0 skills and technologies.** The Philippine Futures Thinking Society (PhilFutures), the Center for Leadership, Communication, and Governance, Inc. (CLCGI), and the University of the Philippines - National College of Public Administration and Governance, in collaboration with Mariano Marcos State University, conducted the University Futures Masterclass from November 9-10, 13-14, and 28-29, 2023 at the Center for Flexible Learning. With the theme *"Advancing Research, Innovation, and Strategic Vision towards New Horizons,"* the masterclass featured five comprehensive modules delivered in a hybrid format. These modules included expert-led lectures, interactive workshops, case studies, and collaborative discussions, focusing on key topics such as (1) Foresight and Futures Thinking: A Briefer and Refining the Focal Agenda for Higher Education, (2) Moonshot Thinking and Transformative University Futures, (3) Scanning the Landscape and Navigating New Horizons, (4) Blueprints of the Future through Scenario Development, and (5) Vision to Reality: Architecting the University Futures Project Proposal. The masterclass aimed to empower leaders and stakeholders in higher education institutions with the requisite tools, insights, and strategies to formulate project proposals aligning with the priority futures agenda of their respective institutions. The training envisioned participants as catalysts for visionary thinking, enhancing strategic focus, anticipating future landscapes, crafting strategic scenarios, and translating vision into action.
- **Conduct on the orientation of the new ticketing system.** The Information Technology Center (ITC) of Mariano Marcos State University (MMSU) conducted an orientation for administrative staff and faculty members on the university's new ticketing system on September 15 at the Center for Flexible Learning. Led by ITC Director Wilben Cristie Pagtaconan, the session aimed to familiarize personnel with the system designed to monitor requests and complaints across MMSU offices. The ticketing system aligns with Executive Order No. 6, series of 2016, which mandates the creation of an 8888 Citizen's Complaint Center for government agencies. During the orientation, Mr. Ralph Perdido discussed the university's 888 CCC policies, while ITC programmer Mr. John Eliezer Galano demonstrated the system portal. Participants were also invited to provide feedback for improving the portal, which is part of MMSU's broader SMART campus initiative that has already developed 76 e-systems.