

6.5.1: Internal Quality Assurance Cell (IQAC) has contributed significantly for institutionalizing the quality assurance strategies and processes by constantly reviewing the teaching learning process, structures & methodologies of operations and learning outcomes at periodic intervals.

Link for Additional Information



6.5.1: Internal Quality Assurance Cell (IQAC) has contributed significantly for institutionalizing the quality assurance strategies

Practice 1: Student Performance Card: Al Concept



Student Performance Card: Al Concept

Screen Shots of Module







Faculty Dashboard























AI CARDS STUDENTS

No	CrNo	Student Name	Aca.Year	Stream	Semester	Class	Subject	Mid(%)	Base(%)	Base Exam
	•		•	•	•	•	•]•[
1	116004	TWISHA ROHITKUMAR GOL	2223	CE-FOTI (MU)	1	TC1	BEEE	70	58.46	HSC
2	116016	YUVRAJ	2223	CE-FOE1(MU)	1	EC1	BEEE	80	75.4	HSC
3	116039	RAHEELKHAN MANSURAHMEDKHAN LOHANI	2223	CE-FOTI (MU)	1	TC1	BEEE	80	56	HSC
4	116052	MILAN BHARATBHAI TETAR	2223	CE-FOT1 (MU)	1	TC1	BEEE	60	56.3	HSC

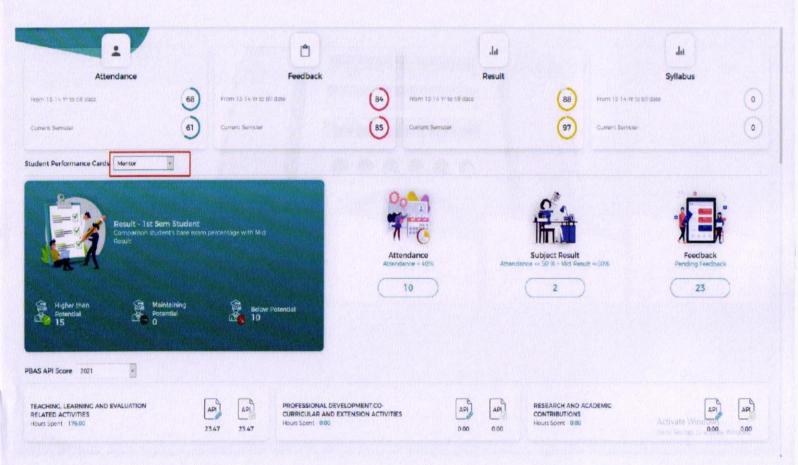






Mentor Dashboard





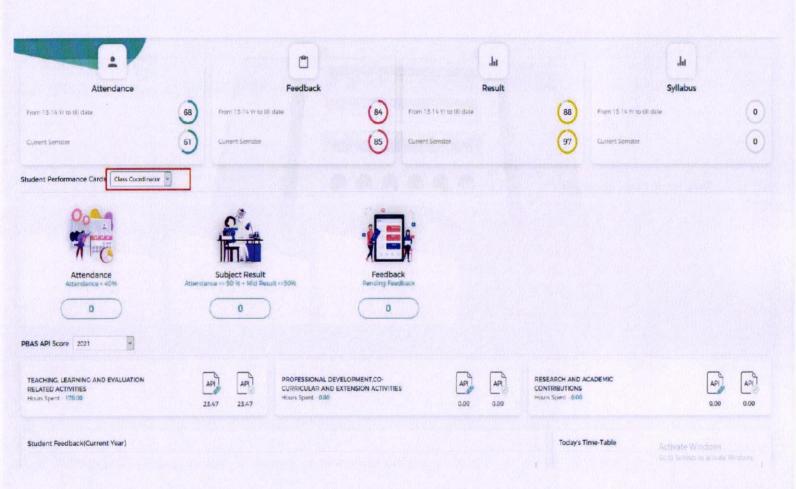






Class Coordinator Dashboard





MARIA

PAJKO

UNIL



Student Dashboard



12:44 ...

Dashboard

Hello. Sem 1, B.Physio 



Upcoming Holidays UTTARAYAN 14-01-2021





Online Class



TEDX



Herbopedia



Attendance



ISD



Quiz





10:27 1004

Dashboard

Hello,



Upcoming Holidays
DIWALI 14-11-2020





Online Class



Quiz

TED

TEDX



Sport

0000

Attendance



LINGO







6.5.1: Internal Quality Assurance Cell (IQAC) has contributed significantly for institutionalizing the quality assurance strategies

Practice 2: IUCEE Implementations at the University



IUCEE Implementations



IUCEE International Engineering Educators Certification Program

IUCEE International Engineering Educators Certification Program (IIECP) is a flagship program of IUCEE that addresses methodology to bring innovation in engineering education and we are proudly taking part in this program. Our vision is to certify all engineering educators through this program. Following is details about our participation.

Course	No of Educators who have completed respective phase	No of Educators who are undergoing in respective phase	No of Educators who are in pipeline to undergo with respective phase
IUCEE Phase – 1	190		30
IUCEE Phase – 2	160	30	30
IUCEE Phase – 3	85	-	30

Highlights of IUCEE Phase – 1 and Phase – 3 programs at Marwadi University



IUCEE Phase – III at Marwadi University

IUCEE Phase – I at Marwadi University



IUCEE Phase – I at Marwadi University



IUCEE Phase - I at Marwadi University

The Institute has a strong belief and motivates faculty members to complete this blended course that further helps them to bring transformation in their respective courses.

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Innovation in Teaching/Learning Practices

The University has begun transformation in engineering education through IUCEE in various ways while innovating in Teaching/Learning practices such as;

1. Instead of traditional semester-end exams in subjects of Marwadi University, we are evaluating students through a continuous internal evaluation with a set of activities. Practises adopted at the Departments are mentioned below;

Basics of Electronics Engineering – Under this course of study, Prof. C D Parmar faculty at the Department of Electronics and Communication, have implemented Project Based Learning. As an outcome, at the end of the course, students have prepared 35 software based projects and 12 hardware based projects. Project exhibition was organized at the Department, where-in students highlighted their projects which even motivated other students from the Department to work in the same direction.

Computer Programming – Under this course of study, Dr. Amit Lathigara faculty at the Department Computer Engineering engaged students through a set of active learning strategies and thus Project-based learning approach was incorporated. As an outcome, at the end of the course 48 projects were developed by students.



Project Exhibition by Students of First Year



Student Felicitation Program after Project Exhibition

- 2. Instead of typical mid-semester exams, we are evaluating students based on continuous assessment strategies. All such courses are configured in canvas lms and the students have been assessed through a set of activities using planned rubrics. In the following list of subjects, innovative assessment practices have been followed.
 - Vehicle Testing & Homologation
 - Surveying
 - Process Control System
 - Analog Electronics

- Electronic Devices and Circuits
- Structural Analysis-II
- Building Automation

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- Chemical Engineering Process
- o Digital Electronics
- Microcontroller and Interfacing
- Municipal & Industrial Solid waste management
- Cleaner Production & Waste Utilization
- Design of Machine Elements
- Data Structure
- o Manufacturing Process-1
- Computer Aided Manufacturing

- Microprocessor and Microcontroller Architecture & Interfacing
- Switch Gear and Protection
- o Embedded Systems
- Introduction to Computer Programming
- o Industrial Automation
- Mobile Computing and Wireless Communication
- o Irrigation Engineering
- o Automotive manufacturing
- Object-Oriented Programming using JAVA
- 3. The Institute has adopted Canvas, a learning platform that makes teaching and learning easier. It enables the Instructors to teach the way they want to teach and facilitates students to access the learning when, where and how best fits their lifestyle. All such courses are configured in canvas lms and students have been assessed through a set of activities using planned rubrics. Our servers have canvas lms (<u>canvas.marwadiuniversity.ac.in</u>) installed as a local instance and faculties are using canvas lms in respective courses. Following is a summary of its usage:

Courses:	243
Teachers:	218
Students:	4,020
Users:	4,278
File Storage	
Uploaded:	212 GB from 197,306 files

4. The Faculty members at Marwadi University also motivate students to undergo with MOOCs, and as a result, 475+ students have completed MOOCs in various domains, and following is its detailed summary.

Sr. No	Activity	No of Students Benefitted	Course	Description
1	Gyanification	80	Computer Graphics	Gamification of course Computer Graphics. For reference www.gyanification.com



2	MOOC blending	60	Cybersecurity	MOOC is blending in the classroom. Cyber security course taught with the help of Open Learn, UK based course
3	MOOC blending	60	Cybersecurity	Cyber security course taught with the help of UdemyMooc platform
4	MOOC Blending	50	Data Mining and Business Intelligence	Data Mining taught with the help of blending MOOCs using IBMS+A1'S Cognitive Classes earlier known as Big Data University
5	MOOC Blending	30	Data Mining and Business Intelligence	Data Mining taught with the help of blending MOOCs using IBMS+A1'S Cognitive Classes earlier known as Big Data University
6	MOOC Blending	40	Analysis and Design of Algorithm	Using Microsoft massively empowered classroom taught and improved result to 100%
7	MOOC Blending	40	Computer Programming And Utilization	Using hour of code making programming fun for students in the laboratories.
8	ACM Presentation	13	-	The student panel was provided with the list of the topics from the ACM Newsletter and was supposed to select a topic of their choice. After that, every student was supposed to perform a detailed and thorough study of the same topic and they can refer any reference material from the library or can take the help of internet and prepare a summary of their presentation.

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9	Oracle Academy	80	Database management system	-
10	Cyberoam Certification	25	Information and Network Security	Improving cybersecurity and information security implementation as well getting them industry certification



Group of students attending MOOC on Database Management System

Faculties also participate in MOOCs, and the following is a summary

Sr. No	Title of the Course	Organized by	
1	The Internet of Things	King's College London (via Futurelearn)	
2	Software Processes and Agile Practices	University Of Alberta	
3	Introduction to Cyber Security	Open University, UK (via Futurelearn)	
4	Hadoop 101	Big Data University	
5	Algorithms: Design and Analysis, Part 1	Stanford University	
6	Introduction to Linux	Linux Foundation (Via Edx.)	
7	Computer Networks	Microsoft's Massively Empowered Classrooms	
8	Design and Analysis of Algorithm	Microsoft's Massively Empowered Classrooms	
	Certfied C coder: Lite Edition	IgneusTechnlogies	
9	Hour of Code	Code.org	
10	SQL	Stanford University	
11	Cyber Security	Devry University	
12	Cryptography I	Stanford University	
13	Linux command line basics	Udemy	
14	Installing Wordpress, DomainRegistrar, and Web Hosting	Udemy	
15	Big Data Fundamentals	Big Data University	
16	Introduction to theInternet of Everything.	Cisco	
17	Mobility Fundamental Series: Wireless Technology & Standards Course	Cisco	

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18	Introduction to Linux Cent OS – 7	Udemy
19	Cisco CCNA Network Fundamentals	Udemy
20	Introduction to Linux	Edx
21	Cable & Connectors Basic Course	Udemy
22	Linux Command Line Basic	Udemy
23	Linux Alternatives to Windows Application	Udemy
24	Advance Power Searching with Google.	Google



Prof. Navjyot accepting certificate in train the trainer workshop to implement mini MOOC through Royal Academy of Engineering



IUCEE EPICS

Marwadi University has enrolled in Engineering Projects in Community Service (EPICS) program through IUCEE since 2017 to involve students and staff members, to understand the needs of society and provide effective solution through engineering projects. Institute has also introduced EPICS program in engineering curriculum.

Teams from Marwadi University participated in the IEEE International MYOSA (Make Your Own Sensor Application) Students Contest held at New Delhi on October 28th, 2018. Project details as below:

Project Name: Driver Drowsiness, Detection and Safe Distance Alarm System.

Abstract: Driver drowsiness detection and safe alarm system is a project in which live detection of drowsy state of the driver is measured. On the basis of mathematical calculations the system also keeps the driver aware about safe distance required while driving. If driver does not take any action the system will apply auto break.





8 posters prepared and exhibited by faculties of Marwadi University through IUCEE EPICS at Thiagarajar College of Engineering, Madurai during ICTIEE 2018



Dr. William Oakes is delivering talk related to EPICS with students of Marwadi University



IUCEE Virtual Academy

The faculty members at Marwadi University are leveraging benefits of IUCEE virtual academy by attending weekly webinars offered by renowned experts through IUCEE network. This activity has enhanced the experience of teaching among the faculty members.

Dr. Amit Lathigara, faculty at Computer Engineering Department of Marwadi University has delivered a webinar on Activity Based Programming (https://youtu.be/LjlFprqiOjY) through IUCEE Virtual Academy.

Online courses from IUCEE

The faculty members at Marwadi University are actively taking participation in online courses offered by IUCEE which offers online courses for educators on various domains. 30 faculty members have either completed or are nearing completion of online courses offered by IUCEE. It has immensely helped faculty member to improve their domain knowledge and thus are transferring to students.

Course	Participation Count from Marwadi University
Outcome-Based Education	4
Design Thinking	18
Project Management	4
Engineering Education Research	4



Dr. R.B. Jadeja receiving course certification from Dr. Vijay Kanabar for IUCEE Project Management



IUCEE Clusters

IUCEE clusters is one of the wonderful initiatives from IUCEE. The University has adopted and is proudly associated with five clusters as per following details.

Cluster	Leadership
Teaching and Learning Centers	Dr. Rajendrakumar Joshi
IUCEE International Engineering Educator Certification Program	Dr. Amit Lathigara
Engineering Explorations in First Year	Prof. C. D. Parmar
Outcomes Based Education	Dr. Rajendrasinh Jadeja
Engineering Projects in Community Service	Prof. C. D. Parmar

Outcome Based Education (OBE)

Marwadi University has embarked upon implementation of Outcome Based Education, which shall further enhance and strengthen the joy of learning engineering for its students. Planning and roadmap of implementation along with mapping of Course Outcome (CO) and Program Outcome (PO) have already completed. Training and handholding of faculty members for successful implementation has also been completed. The Institute and its torchbearers are in firm belief that, this initiative shall add more values and ethics to Engineering education.

Paper Presentation in 9th World Engineering Education Forum 2019

World Engineering Education Forum (WEEF), the brainchild of leaders in the global engineering education community who sought to bring together the world's engineering education societies to the same place at one time. WEEF has been an important event in furthering IFEES' (International Federation of Engineering Education Societies) mission to bring together the global community to build excellence in engineering education.

9th World Engineering Education Forum 2019 was held from 13th to 16th November, 2019 at ITC Grand Chola, Chennai, India. The conference focused upon the theme **Disruptive Engineering Education for sustainable development.** A paper under the category Disruptions in Student-centered Learning with a **title Peer Learning and Engineering Transformation in Technical Education and Worthiness: Some Facts based on Implementation** was accepted in the conference proceedings.

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International Conference on Transformations in Engineering Education

Marwadi University has marked its participation in International Conference on Transformations in Engineering Education (ICTIEE) at Bennett University, Gr. Noida on 4th, 5th and 6th January, 2018 and at Thiagarajar College of Engineering, Maduri on 8th and 9th January, 2018 to understand and implement best practices from prominent partners and institutes.



Dr. Amit Lathigara receiving IUCEE Educator Fellow award during ICTIEE 2018 at Thiagarajar College of Engineering, Madurai



Dr. AmarpreetArora receiving IGIP certificate during ICTIEE 2018 at Bennett University, Gr. Noida

IUCEE Leadership Summit 2018

Active participation in annual **IUCEE leadership summit 2018** at Goa on 19thto 21stJuly, 2018 and started implementation of best practices shared by other partner institutes in summit, that helped Marwadi University to be more strong and effective in driving Engineering education.



Mr. Jeet Marwadi, Dr. Y P Kosta, Dr. Rajendra Joshi, Dr. Amit Lathigara at 2nd IUCEE Leadership Summit at Goa

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International Conference on Transformations in Engineering Education (ICTIEE)

The University participated in the International Conference on Transformations in Engineering Education (ICTIEE) at R K University, Rajkot on 9th and 10th January 2017; to understand and implement best practices from prominent partners and institutes.



Dr. Rajendrasinh Jajeja accepting IUCEE plaque for IUCEE consortium membership during ICTIEE 2017 at RK University, Rajkot

IUCEE Leadership Summit 2017

The University actively participated in the annual **IUCEE leadership summit 2017** held in Goa on 21st and 22ndJuly 2017 and started implementation of best practices shared by other partner institutes in summit, which over a period of time has helped us to make our efforts more stronger and effective.



Participation of Marwadi University in IUCEE Leadership Summit 2017 at Goa



Dr. Y. P. Kosta is sharing best practices of Marwadi University with Dr. Krishna Vedula in IUCEE Leadership Summit 2017 at Goa





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IUCEE & Marwadi University Implementations





Inception & Aim



IUCEE & Marwadi University Association since June 2017

Along with IUCEE, Marwadi University is focused towards working effectively in bringing *Change* in *Engineering Education*.







Implementations...



- Participation in *International Engineering Educators Certification Program* (IIECP), a flagship program of IUCEE.
- Innovation in Teaching-Learning Practices.
- Marwadi University has enrolled in *Engineering Projects in Community Service* (EPICS) program through IUCEE.
- IUCEE Virtual Academy.
- IUCEE Clusters.
- Outcome Based Education (OBE).
- Participation & Paper presentations in International Conferences & Leadership Summits.







International Engineering Educators Certification Program (**IIECP**)



Course	No of Educators who have completed	No of Educators who are undergoing	No of Educators who are in Pipeline
IUCEE Phase – 1	190		30
IUCEE Phase – 2	160	30	30
IUCEE Phase – 3	85		30

85 Faculty Members
Completed
Certification









Innovation in Teaching-Learning Practices.



Adoption of Continuous Internal Evaluation System.

Project Based Learning's

83 Software Based Projects

12 Hardware Based Projects









Innovation in Teaching-Learning Practices Cont..



Evaluating students based on Continuous Assessment Strategies:

Courses are configured in *Canvas Ims* and the students have been assessed through a set of activities using planned rubrics.

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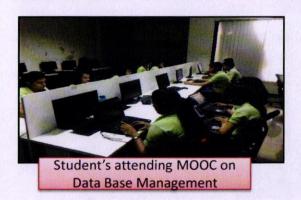


Innovation in Teaching-Learning Practices Cont..



Implementing MOOCs: Faculty Members motivate students to undergo with MOOC's.

475+ Students have completed MOOC's in various domains









IUCEE - Engineering Projects in Community Service (EPICS)



- The University has involved Students & Staff members, to understand the needs of the society and provide effective solution through Engineering Projects.
- Implemented EPICS Program in Engineering Curriculum.

Project Name: Driver Drowsiness, Detection and Safe Distance Alarm System.











IUCEE - Virtual Academy



- Leveraging benefits of Virtual Academy: Faculty members attend weekly webinars offered by renowned experts through IUCEE network.
- Dr. Amit Lathigara, Faculty at CE Department delivered a webinar on Activity Based Programming (https://youtu.be/LjIFprqiOjY)
- Dr. Nitul Datta, Faculty at CE Department delivered a webinar on Significance of Course Outcomes in realizing OBE (http://iucee.org/iucee/iucee-marwadi-u-webinar-series-significance-of-course-outcomes-cos-in-realizing-obe/)
- Dr. R B Jadeja, Dean-Faculty of Engineering delivered a webinar on OBE in Higher Education (http://iucee.org/iucee/iucee-marwadi-u-webinar-series-obe-in-higher-education/)
- Participation in Online Courses by Faculty Members.

Course	Faculty Participation
Outcome Based Education	4
Design Thinking	18
Project Management	4
Engineering Education Research	4







IUCEE – Clusters



The University has adopted and is proudly associated with five Clusters.

Cluster	Leadership
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Outcomes Based Education	Dr. Rajendrasinh Jadeja
Engineering Projects in Community Service	Prof. C. D. Parmar

 Outcome Based Education: Marwadi University has implemented OBE from Academic Year 2019-20.







Participation & Paper presentations in International Conferences & Leadership Summits.



 9th World Engineering Education Forum 2019: Paper title - Peer Learning and Engineering Transformation in Technical Education and Worthiness: Some Facts based on Implementation.











Participation & Paper presentations in International Conferences & Leadership Summits Cont....



Marwadi University Participated in International Conference on Transformations in Engineering Education (ICTIEE) to understand and implement best practices from prominent partners and institutes.



Officials at ICTIEE



Dr. R B Jadeja accepting IUCEE Plaque







Participation & Paper presentations in International Conferences & Leadership Summits Cont....





Dr. Amit Lathigara receiving IUCEE Educator Fellow award during ICTIEE 2018 (8^{th} - 9^{th} Jan) at Thiagarajar College of Engineering, Madurai



Dr. Amarpreet Arora receiving IGIP certificate during ICTIEE 2018 (4^{th} - 6^{th} Jan) at Bennett University, Gr. Noida



