BEST PRACTICE -1

1. **Title: Establishment of a Modular Object-oriented Dynamic Learning Environment (MOODLE) for digital teaching-learning.**

2. **Objectives of the practice:** The idea was to establish an effective **learning management systems** (LMS) which supports digital learning, provides a student-centric teaching learning environment by permitting **'any-time, any-where'** format of learning. The major goals were:
   - To address the challenge of providing trustworthy and accurate content to the digital savvy new generation of students
   - To provide a digital interactive learning platform providing support for multiple academic activities
   - To facilitate all learners to learn as per their learning abilities and capacities of assimilation
   - To enable learners to learn at their own pace
   - To assist the faculty members in consolidating their courses at one digital space
   - To make available all academic data, conduction of all activities related to teaching-learning-evaluation

   With the above objectives, **The MITS-MOODLE** was **launched on 15th August 2017** for providing an e-learning environment for interactive teaching-learning-evaluation

3. The Context:

- As students were getting more and more familiar with e-content, sometimes they referred to non-standard and non-authentic material
- The institute decided to take an initiative for digitization and easy access of all academic learning material for the benefit all stakeholders
- It was noticed that students were not able to take notes in the classes and therefore a lot of their valuable time was wasted in searching relevant content on the internet.
- Need for a user friendly institutional learning management platform was felt for hassle free conduction of courses and for dissemination of learning material.

4. The Practice:

- Numerous sessions were conducted for creating awareness about effectiveness of MOODLE in learning/blended teaching/flipped classes etc.
- MOODLE coordinators were nominated to motivate their colleagues/peers for integrating MOODLE into their teaching.
- However, in spite of this, many faculty members were still not making sufficient efforts.
- In the present learner centric education, the students need flexibility of learning in their own time, at their own place. But without full faculty participation this objective was not being met completely.
- **The Moodle Working Index (MWI)** was then launched to make faculty members more organized and better prepared for usage of new teaching aids and tools.(Sample Enclosed)
- At the beginning of the semester the course mentors start their respective course pages, enter the course name(s) being taught, add the syllabus, Course Outcomes (COs) and other learning material such as notes, question banks etc.
- Then the faculty members add the students for completing the academic interaction circle so that the course mentor gets connected with all students and vice versa through the MOODLE.
- Ten activities related to each course were identified for monitoring and computation of MWI. The activities are

- To create the course page on MOODLE
- To create course wise student groups & mark attendance
- To enter Course Outcomes (COs) for all courses
- To enter syllabus for all courses
- To enter detailed lecture plan
- To prepare and upload course wise Question Banks
- To prepare & upload course files (consisting of PPT, Lecture Notes, tutorial questions, Study material, names of Reference Books etc)
- To prepare and conduct on-line Quiz
- To prepare & upload assignments/open ended questions
- To collect on-line feedback for course outcomes for indirect assessment & course content for curriculum development exercise, before the Board of Studies meeting

— **The MWI is computed department wise by taking a weighted average of the performance in following 3 categories**
  - **Poor** (number of faculty using three or less out of the above listed ten features)
  - **Good** (number of faculty using more than three but less than eight out of the ten features) and
  - **Excellent** (number of faculty using more than five out of the ten features).

— **For computing MWI, the three categories, Poor, Good & Excellent were assigned weights of zero, five and ten respectively.**

— For example, if there are Z number of total faculty members in a department out of which A are in category 'Poor', B are in category 'Good' and C are in category 'Excellent', based on their usage of the ten MOODLE features, then the MWI can be calculated as

MWI= {(A x zero) + (B x 5) + (Cx10)}/Z.

— The MWI for each department is computed and circulated to the faculty/departments/HoDs/MOODLE coordinators three times in a semester.

— **The results are displayed and discussed in the meeting of the HoDs and also in the IQAC as shown in enclosures.**

— **The MWI is computed out of ten and is designed to reflect the comprehensive MOODLE usage for a department**.

5. Evidence of Success:

— **The circulation of the department wise MWI score thrice a semester was a huge success.**

— The MWI created a healthy competition between departments and previously non-active course mentors too realized that their non-performance was bringing down the MWI of their department.

— Once the initial hesitation was overcome, the faculty started enjoying this experience of e-teaching-learning.

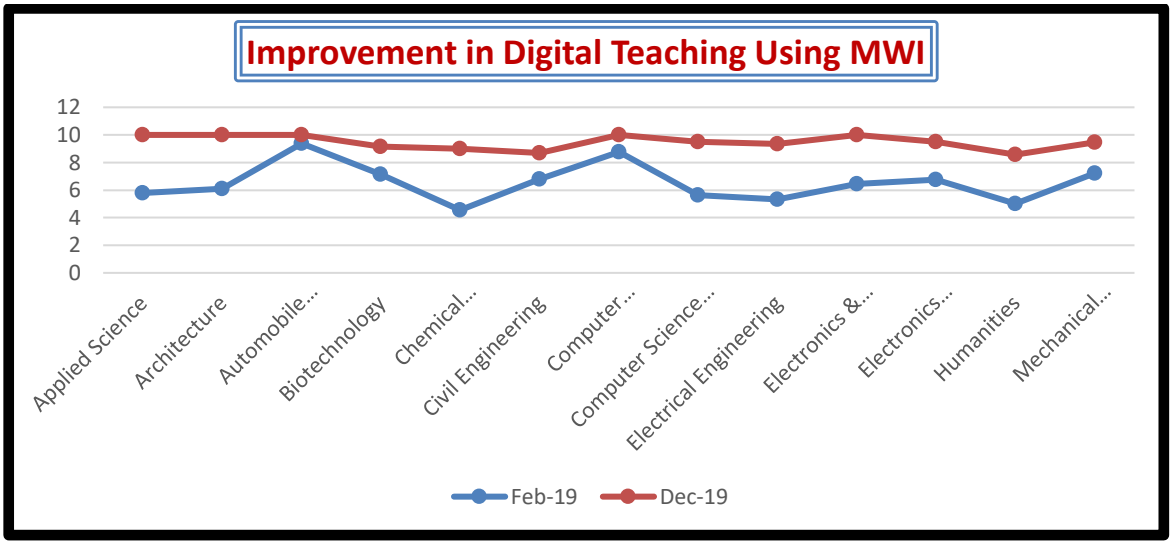
— The students as well as faculty members welcomed this new digital learning platform in the institute for easy access, dissemination, delivery and evaluation.

— **The MWI was found to continuously rise for each department from beginning of the semester to the end as all faculty members strive to reach the 10/10 mark**.

— Except one or two departments, all are recording a near convergence to 10 as shown in the Figure below.

— **This practice produced results which turned out to be very helpful for all faculty/students/staff in maintaining the standards of teaching-learning-assessment, conduction of e-labs, sharing of lecture/lab session links during the challenging lockdown period.**

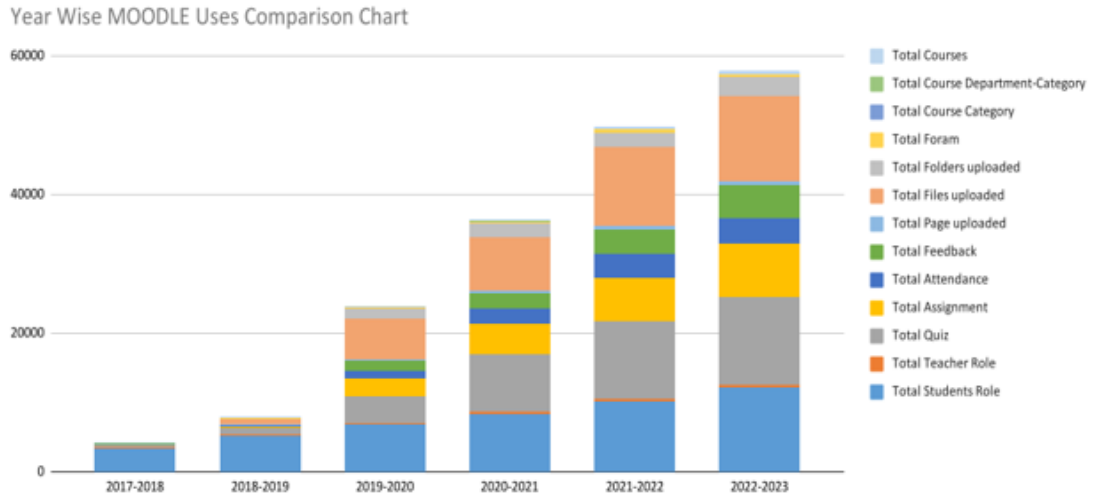
- **Thanks to MWI; MOODLE became an integral part of teaching at MITS by February 2020, as a result when COVID-19 pandemic struck, the institute was already well prepared for 'Digital Teaching-Learning-Evaluation'**
- **MOODLE proved to be backbone of Teaching-Learning during the COVID times.**
- **Thanks to MOODLE, the transition from off-line to on-line classes was very smooth for MITS.**
- **MOODLE was instrumental in the successful implementation of the "Digital Teaching-Learning Action Plan" of the institute, which was later formulated in July 2020.**
- **There are total 12178 active student users on MITS-MOODLE and 376 are faculty & staff members.**



Evidence of Success continued…

Total Count of Activities and Resources

	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023
Total Students Role	3445	5322	6945	8425	10232	12178
Total Teacher Role	97	115	218	290	304	376
Total Quiz	340	930	3725	8224	11230	12729
Total Assignment	57	120	2650	4520	6321	7744
Total Attendance	89	145	1135	2136	3424	3624
Total Feedback	59	175	1356	2215	3545	4752
Total Page uploaded	12	27	232	436	511	536
Total Files uploaded	65	845	5942	7652	11326	12345
Total Folders uploaded	18	26	1354	1954	2112	2641
Total Forams	32	103	213	312	402	494
Total Course Category	4	5	7	7	7	7
Total Course Department-Category	9	11	11	15	17	17
Total Courses	102	106	198	315	412	435



6. Problems Encountered and Resources Required

- There were no problems encountered as the institute had prepared a proper action plan for making digital learning popular among the faculty members.
- The monitoring mechanism through MWI required hard work and regular efforts by the MOODLE administrator and team.
- **But these efforts paid off as there was a smooth transition from traditional face to face teaching to digital teaching for the institute faculty, students and staff who were all already well conversant with the MOODLE; so much so that now there is no need of computing MWI. MOODLE is now integral to teaching-learning-evaluation at MITS.**

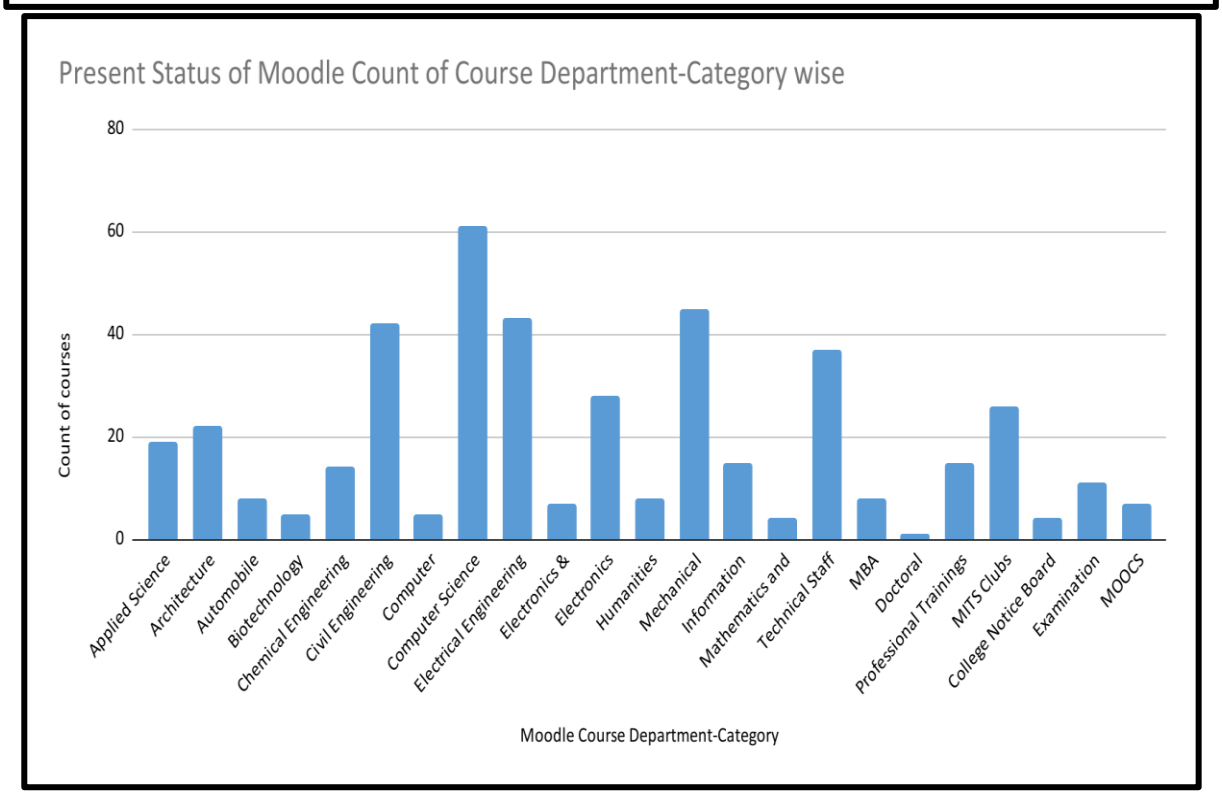
Table: The phenomenal growth of the MITS-MOODLE Initiative

Initiative/Activity	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022
MOODLE launched on 15th August 2017	✓	---	---	---	---
Faculty and staff training	✓	---	✓	✓	✓
Workshop GIAN MITS (Sustainability in the Built Environment)	✓	---	---	---	---
General Enterprising Tendency Test	✓	---	---	---	---
Online Notice Board	---	✓	✓	✓	✓
General office Attendance System	---	---	✓	✓	✓
On-line quiz conduction	✓	✓	✓	✓	✓
OBE Training	✓	✓	✓	---	---
Direct/indirect assessment of course outcomes (COs)	✓	✓	✓	✓	✓
Direct/indirect attainment of programme outcomes (POs)	✓	✓	✓	✓	✓
Course-end CO Feedback and its analysis	✓	✓	✓	✓	✓
On-line assessment of assignments	✓	✓	✓	✓	✓
Uploading lecture notes / Assignments/ Tutorial Sheets / Question Banks	✓	✓	✓	✓	✓
Dissemination of any other academic information	✓	✓	✓	✓	✓
Examination Question Paper Feedback	---	✓	✓	✓	✓
Examination Question paper Solutions	---	✓	✓	✓	✓
A separate new Moodle launched for 2020 admitted students	---	--	✓	✓	✓
Best Practice: Computation of MOODLE WORKING INDEX(MWI)	---	✓	✓	**MWI converged to 10 for all departments meaning that so the practice of Using MOODLE for T-L-E is institutionalized**	

Covid Notice and vaccine status	---	---	✓	✓	✓
Initiative/Activity	**2017-2018**	**2018-2019**	**2019-2020**	**2020-2021**	**2021-2022**
Online Central Library	---	---	✓	✓	✓
Mid-semester examination conduction	---	---	✓	✓	✓
End-semester examination conduction (MCQ based)	---	---	✓	✓	✓
Finishing School Program	---	---	✓	✓	✓
Administrative Staff Feedback	---	---	✓	✓	✓
In-house Interactive Virtual Workshop	---	---	---	✓	---
Students Induction programme	---	---	---	✓	✓
Faculty Induction programme	---	---	---	---	✓

Present Status of Total Count of Courses Department-Wise

Moodle Course Department-Category	Count of courses
Applied Science	19
Architecture	22
Automobile Engineering	8
Biotechnology	5
Chemical Engineering	14
Civil Engineering	42
Computer Applications	5
Computer Science and Engineering	61
Electrical Engineering	43
Electronics & Telecommunication	7
Electronics Engneering	28
Humanities	8
Mechanical Engineering	45
Information Technology	15
Mathematics and Computing	4
Technical Staff	37
MBA	8
Doctoral	1
Professional Trainings	15
MITS Clubs	26
College Notice Board	4
Examination	11
MOOCS	7
	435



Gradual Improvement in MOODLE Usage due to monitoring MWI

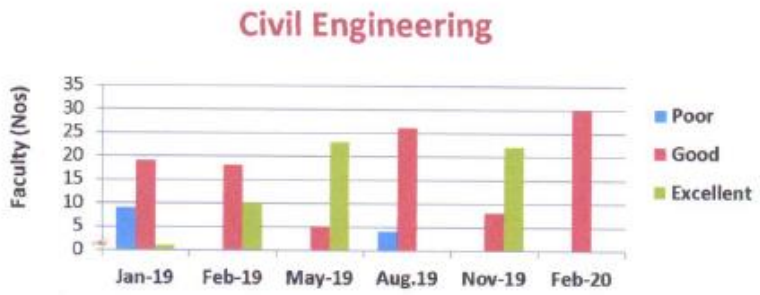
The Objective of the Practice: MOODLE Working Index (MWI) was computed to motivate the faculty members for using MOODLE.

Ten basic activities were identified for computing the MWI as follows

1. *Starting the Course page by Faculty (Course code & name)*
2. *Adding students & marking attendance*
3. *Availability of the Course Outcomes (COs) on faculty page*
4. *Availability of the Syllabus*
5. *Availability of the Lecture Plan*
6. *Question Bank*
7. *Course files (PPT, Lecture Notes ,Study material, Reference books , Unit wise Quiz and Assignment) Unit -1 , Unit- 2,..... Unit -N*
8. *Conduction of Quiz*
9. *Giving & checking Assignments*
10. *Taking Feedback*

For MWI computation:

- Faculty members completing 10 to 6 activities are grouped under "Excellent
- Faculty members completing 5 to 1 activities are grouped under "Good"
- Faculty members who are not working on MOODLE are grouped under "Poor"

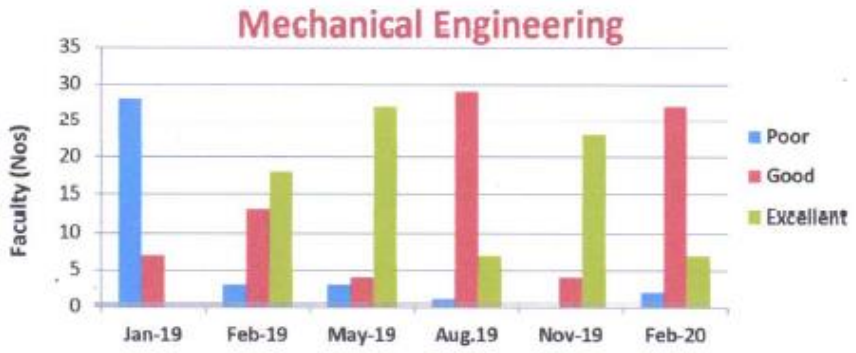


Civil Engineering

	Poor	Good	Excellent
Jan-19 (Semester Beginning)	9	19	1
Feb-19	0	18	10
May-19 (Semester End)	0	5	23
Aug.19 (Semester Beginning)	4	26	0
Nov-19	0	8	22
Feb-20 (Semester End)	0	30	0

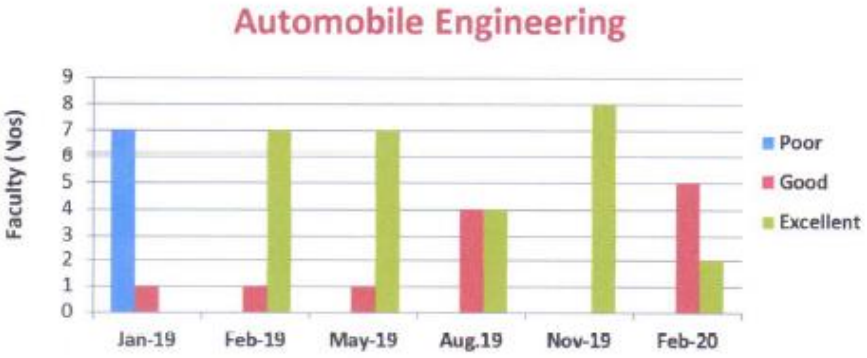
M Pandit 10/2/2021.
(Dr. M. Pandit)
Dean Academics.

Dr R.K. Pandit 10.2.23
(Director)



Mechanical Engineering

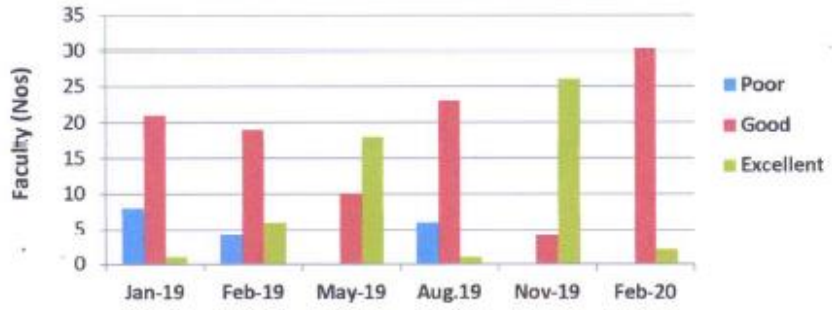
	Poor	Good	Excellent
Jan-19 (Semester Beginning)	28	7	0
Feb-19	3	13	18
May-19(Semester End)	3	4	27
Aug.19 (Semester Beginning)	1	29	7
Nov-19	0	4	23
Feb-20(Semester End)	2	27	7



Automobile Engineering

	Poor	Good	Excellent
Jan-19 (Semester Beginning)	7	1	0
Feb-19	0	1	7
May-19(Semester End)	0	1	7
Aug.19 (Semester Beginning)	0	4	4
Nov-19	0	0	8
Feb-20(Semester End)	0	5	2

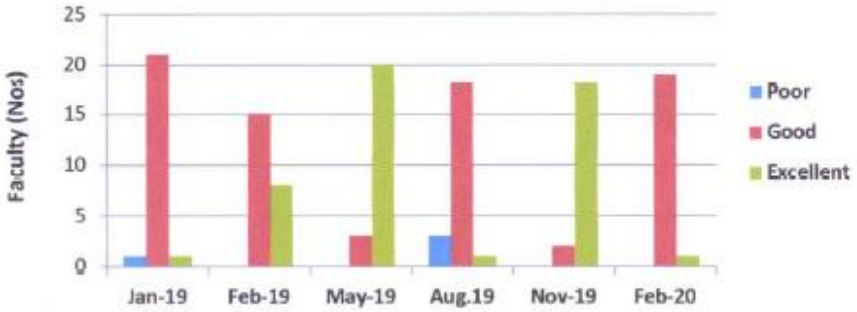
Electrical Engineering



Electrical Engineering

	Poor	Good	Excellent
Jan-19 (Semester Beginning)	8	21	1
Feb-19	4	19	6
May-19(Semester End)	0	10	18
Aug.19 (Semester Beginning)	6	23	1
Nov-19	0	4	26
Feb-20(Semester End)	0	30	2

Electronics Engineering



Electronics Engineering

	Poor	Good	Excellent
Jan-19 (Semester Beginning)	1	21	1
Feb 19	0	15	8
May-19(Semester End)	0	3	20
Aug.19 (Semester Beginning)	3	18	1
Nov-19	0	2	18
Feb-20(Semester End)	0	19	1

MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR

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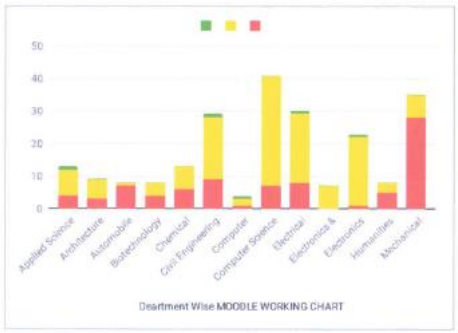
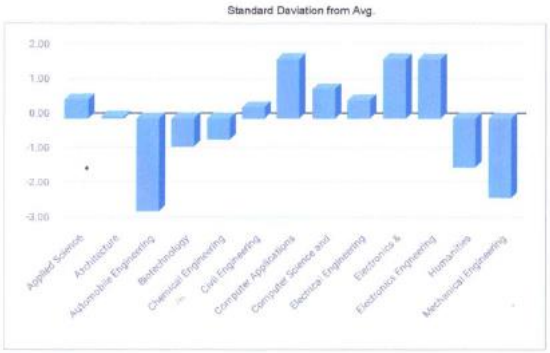
MOODLE WORKING INDEX January last update 31/01/2019

MOODLE Faculty Working Index	MWI											Total Faculty				
Department Name	0	1	2	3	4	5	6	7	8	9	10	Grand Total	Poor	Good	Excellent	weighted Avg.	Std. Dav from Avg.
Applied Science	3	1			1	1	2	4	1			13	4	8	1	3.85	0.56
Architecture		1	1	1	2	2	1	1				9	3	6	0	3.33	0.04
Automobile Engineering	3		2	2			1					8	7	1	0	0.63	-2.66
Biotechnology	2			2	1		2	1				8	4	4	0	2.50	-0.79
Chemical Engineering	5		1			1	5	1				13	6	7	0	2.69	-0.60
Civil Engineering	6		1	2	2		4	13	1			29	9	19	1	3.62	0.33
Computer Applications	1							2			1	4	1	2	1	5.00	1.71
Computer Science and Engineering & IT	5		1	1	12	13	6	3				41	7	34	0	4.15	0.86
Electrical Engineering	4		2	2	6	4	6	5		1		30	8	21	1	3.83	0.54
Electronics & Telecommunication					1		4	2				7	0	7	0	5.00	1.71
Electronics Engneering	1				2	4	9	6			1	23	1	21	1	5.00	1.71
Humanities	4		1		1	1		1				8	5	3	0	1.88	-1.41
Mechanical Engineering	8	1	8	11	3	3	1					35	28	7	0	1.00	-2.29
Grand Total	42	3	17	21	31	29	41	39	2	1	2	228	83	140	5	3.29	

Assigned Weights
Poor =0
Good = 5
Excellent = 10





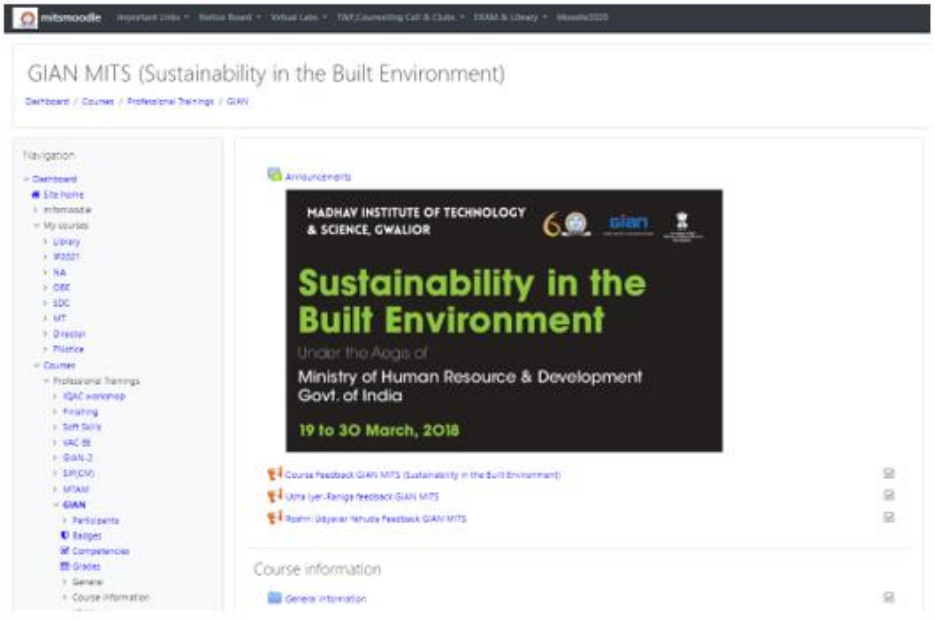
10/2/2021.

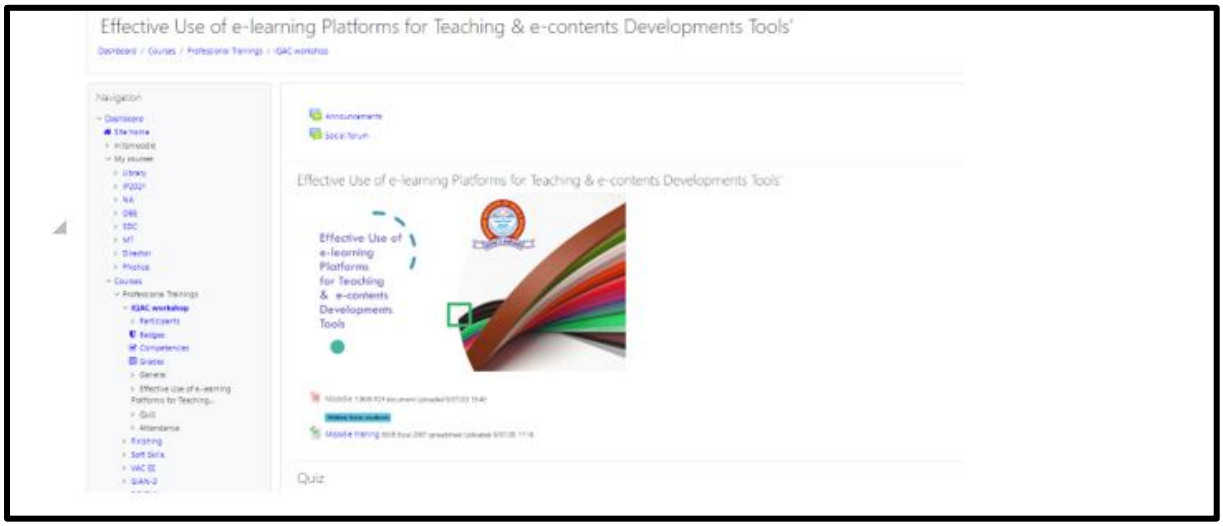
DIRECTOR 10.2.23

Samples of important activities conducted through MOODLE

(Detailed reports available on MOODLE webpage)

Workshop GIAN MITS (Sustainability in the Built Environment)




Effective Use of e-learning Platforms for Teaching & e-contents Developments Tools'
Dashboard / Courses / Professional Trainings / IQAC workshop
Navigation
Announcements
Social forum
Effective Use of e-learning Platforms for Teaching & e-contents Developments Tools'
Effective Use of e-learning Platforms for Teaching & e-contents Developments Tools
Quiz