

## **BEST PRACTICE-2**

### **1. Title: Integration of on-line courses in the curriculum: Model developed Using SWAYAM/NPTEL Platform**

#### **2. Objectives of the practice**

- To provide students with opportunities to acquire self-learning skill which is one of the most important qualities needed for a successful career, particularly in the present disruptive technological scenario
- To inculcate life-long learning skills among students so that they can update themselves throughout their career path
- To provision credit-transfer from online MOOCs
- To allow students to learn in their own time, at their own place and at their own pace
- To allow learning through mentors from premier institutes of the country/world
- To integrate choice and flexibility
- The objective was also to develop confidence in the students, encourage interactive group learning, generate team spirit, improve communication and presentation skills and at the same time equip them with latest knowledge available in the discipline.

#### **3. The Context**

- Since the last few years, there is a complete paradigm shift in education, from the traditional teacher centric system to learner centric one.
- The ownership of education is with students now and the role of teacher has become that of a facilitator.
- Mentorship and interaction with students are now more important than the actual content delivery.
- The focus is on what is '*learnt*' rather than on what is '*taught*'.
- In this environment, it was vital that a more active role be assigned to the students to make them independent and active learners.
- The affiliating technical university of the institute had yet to come out with a policy for credit transfer through MOOCs.
- Therefore, MITS being autonomous, developed its own curricular model and guidelines for conducting the on-line courses.
- to accommodate self-learning through MOOCs for 5-elective courses, initially for the UG students, and later students of PG and Ph.D. course work were also provided with on-line courses.

- NPTEL platform was selected for this initiative due to its popularity, availability of large number of courses, ease of credit transfers to students' transcripts
- The NPTEL provision of a proctored end-term exam in locations all over India was also found to be attractive and credible as compared to some other platforms.
- Soon, the MITS-MOOCs will also join the pool of elective courses.

#### **4. The Practice**

- In September 2017, the Academic Council of the institute, approved in principal the proposal for introducing courses from on-line platforms with credit transfer provision.
- **Local Chapter of NPTEL was started in October 2017 in association with IIT BOMBAY for promoting e-learning through on-line Web and Video courses.**
- **Five elective courses, from VI semester onwards were provisioned in the curriculum from the NPTEL platform, for the students of 2017-2021 batch onwards.**
- **As a preparatory, a unique model was developed for the 'self-study component' of the curriculum. The idea was to induct our students into the on-line learning courses at the earliest.**
- Registration in 01 online course from the NPTEL platform was made mandatory for II & III year students.
- The idea was to prepare our students for MOOCs in advance so that by the time the modalities of the credit transfer (from MOOCs) policy are decided and implemented, our students are ready to take the best advantage of these courses for acquiring credits from on-line courses of their choice.
- For the effective conduction of these courses the institute appointed SWAYAM coordinators from each department and to monitor at institute level, the single point of contact (SPOC) of the NPTEL Chapter was appointed as SWAYAM manager.
- After discussion with students and faculty, the above SWAYAM team identified and finalized suitable courses, from the list available at NPTEL portal for the January-June 2018 session.
- The SWAYAM team motivated and registered students and faculty for the selected NPTEL courses; then institute faculty mentors were also appointed as course instructors for providing support.
- **A total of 2019 students and 60 faculty members (SMEs) were registered for 25 courses in 11 departments, during January-June 2018 session.**

- Each section was divided into 10-12 study groups for the session. Every week, one group was assigned the task to give a presentation on ‘what was delivered during the week in their on-line course’.
- Assignments were also dealt with in this same manner. The course instructors also registered for courses and helped the students whenever they were stuck somewhere.
- This way, the MITS students were trained to become self-learners.
- When they reached VI semester they were ready to learn on their own, by registering in one of the on-line courses, based on their choice, from the courses approved by the Board of Studies.
- A separate slot was created in the examination scheme from VI semester onwards, for the evaluation of MOOCs as shown below:

**B.Tech. VI Semester (Mathematics & Computing)**

S. No.	Subject Code	Category Code	Subject Name	Maximum Marks Allotted							Total Marks	Contact Hours per week			Total Credits	Mode of Teaching (Offline/ Online)	Mode of Exam.		
				Theory Slot		Practical Slot			MOOCs			L	T	P					
				End Sem.		Mid Sem. Exam.	Quiz/ Assignment	End Sem.	Lab Work & Sessional	Skill Based Mini Project								Assignment	Exam
				End Term Evaluation	Proficiency in subject /course														
1.	250601	DC		50	10	20	20	-	-	-			100	3	-	-	4	Blended (2/1)	PP
2.	250602	DC		50	10	20	20	60	20	20			200	3	-	2	4	Blended (2/1)	PP
3.	250603	DE		50	10	20	20						100	3	1	-	4	Blended (2/1)	PP
4.	250604	DE									25	75	100	3	-	-	3	Online	MCQ
5.	250605	OC		50	10	20	20	-	-	-			100	3	-	-	3	Offline(3/0)	MCQ
6.	250606	DLC	Minor Project-II	50	10	20	20						100	-	-	4	2	Online (2/0)	MCQ
7.	200xxx	CLC	Novel Engaging Course	-	-	-	-	60	20	20			100	-	-	2	1	Offline	A+O
<b>Total</b>				<b>250</b>	<b>50</b>	<b>100</b>	<b>100</b>	<b>120</b>	<b>40</b>	<b>40</b>	<b>25</b>	<b>75</b>	<b>800</b>	<b>15</b>	<b>1</b>	<b>8</b>	<b>21</b>		
<b>Summer Internship-III (On Job Training) for Four weeks duration: Evaluation in VII Semester</b>																			
8.	Additional Course for Honours or minor Specialization			50	10	20	20	-					100	2			GRADE	Online	MCQ

## 5. Evidence of Success

- The initiative proved immensely successful. Most of the students developed an instant interest in this model of learning. They were also excited that they were being taught by renowned professors of IITs & NITs. They enjoyed the free learning experience and reversal of role, presenting the course to the class on their turn while the teacher (SME) was sitting and listening. The class was fun and students learned in a light and relaxed atmosphere.

- Though there was no compulsion, many students also opted and registered for the paid on-line examination conducted by NPTEL as they wanted to know their position at the all India level.
- Detailed session-wise reports are available on the MITS web-page (along with links to the NPTEL web page) and the summary of 5-year performance is enclosed below.
- **Due to the enthusiasm, efforts and good performance of the students and faculty in this initiative, the MITS NPTEL Local Chapter ranks among the top 100 local Chapters of the country. In January-June 2018 the Chapter got 87<sup>th</sup> rank, in July-December 2018 session 25<sup>th</sup> rank, in January-June 2019 46<sup>th</sup>, in July-December 2019 31<sup>st</sup>, in January-December 2020 13<sup>th</sup> rank, January-December 2021 the chapter got 5<sup>th</sup> rank and then finally the performance peaked with 2<sup>nd</sup> rank in active chapters of the country in January-June 2022 session and 20123 credits have been transferred from NPTEL-MOOCs, till June 2022.**

### Summary of performance of MITS-NPTEL Local Chapter For the period 2017-2022

A Summary of NPTEL Local Chapter Since Establishment											
When it comes to the overall development of students, Madhav Institute of Technology & Science leaves no stone unturned. The Institute has started NPTEL local Chapter on 30th Oct 2017 in association with IIT BOMBAY to provide e-learning through on line Web and Video courses in Engineering, Sciences, and Technology among students.											
Points	2017-2018		2018-2019		2019-2020		2020-2021		2021-2022		
Enrolment/Registration Details	July-Dec 2017	Jan-June 2018	July-Dec 2018	Jan-June 2019	July-Dec 2019	Jan-June 2020	July-Dec 2020	Jan-June 2021	July-Dec 2021	Jan-June 2022	
Enrolment	Establishment of NPTEL Local Chapter on 30 <sup>th</sup> October 2017	2019	2021	3380	6679	4975	7049	11080	7203	9763	
Exam Registration		138	484	436	954	1294	1495	3000	1847	4272	
Appeared in Exam		130	452	366	770	---	1439	2136	1745	4167	
Achievements		Achievements									
Toppers		Not Applicable	Not Applicable	26	24	Due to Covid-19		60	138	89	275
Elite + Gold		03	10	25	14	Modified Pass Certificate (MPC) has been issued to students		22	61	13	128
Elite + Silver		Not Applicable	80	52	135			232	566	209	617
Elite		80	107	91	235			561	940	596	1486
Successfully Qualified		36	215	149	160			381	374	504	1082
Total Students Qualified		<b>119</b>	<b>412</b>	<b>317</b>	<b>544</b>			<b>1196</b>	<b>1941</b>	<b>1322</b>	<b>3313</b>
Credit Transfer											
Credits Earned Through MOOCs	2017 Admitted	Not Applicable					1470	1228	2664	12025	
	2018 Admitted	Not Applicable					222	132	2382		
National Rank											
Among 5000+ Local Chapters across Country	---	<b>87<sup>th</sup></b>	<b>25<sup>th</sup></b>	<b>46<sup>th</sup></b>	<b>31<sup>st</sup></b>	<b>13<sup>th</sup></b>	<b>5<sup>th</sup></b>	<b>2<sup>nd</sup></b>			
Web Link of Rank View		<a href="#">View</a>	<a href="#">View</a>	<a href="#">View</a>	<a href="#">View</a>	<a href="#">View</a>	<a href="#">View</a>	<a href="#">View</a>	<a href="#">View</a>	<a href="#">View</a>	
National Rank in Special Category											
LC with Maximum number of NPTEL Star	Not applicable						<b>2<sup>nd</sup></b>	<a href="#">Click Here</a>	<b>1<sup>st</sup></b>	<a href="#">Click Here</a>	
Best Certified Count Improvement	Not applicable						<b>3<sup>rd</sup></b>	<a href="#">Click Here</a>	<b>---</b>		

## MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR

(A GOVT. AIDED UGC AUTONOMOUS & NAAC ACCREDITED INSTITUTE AFFILIATED TO RGPV, BHOPAL)

**MITS-NPTEL LOCAL CHAPTER SECURED 2<sup>ND</sup> RANK IN JANUARY -APRIL 2022 SESSION AMONG THE 100 ACTIVE LOCAL CHAPTERS OF NPTEL.**

**"CONGRATULATIONS TO ALL THE FACULTY, SWAYAM COORDINATORS AND STUDENTS OF MITS"**

**TOP 100 SWAYAM-NPTEL LOCAL CHAPTERS (JAN 2022)**  
**TOP 100 LOCAL CHAPTERS WILL BE CONSIDERED AS ACTIVE LOCAL CHAPTERS**

### Criteria for ratings:

RATING POINTS, R =

{0.1\*NUMBER OF LEARNERS PRESENT} (VALUE CAPPED TO 10)

+ {1\* SUCCESSFULLY COMPLETED} (VALUE CAPPED TO 100)

+ {2\*ELITE}+{5\*SILVER}+{8\*GOLD}+{10\*TOPPERS}


BASED ON THE RATING POINTS CALCULATED USING THE ABOVE FORMULA:

THE TOP 10 LOCAL CHAPTERS (WITH MAXIMUM RATING POINTS) WILL BE AWARDED 'AAA' RATING

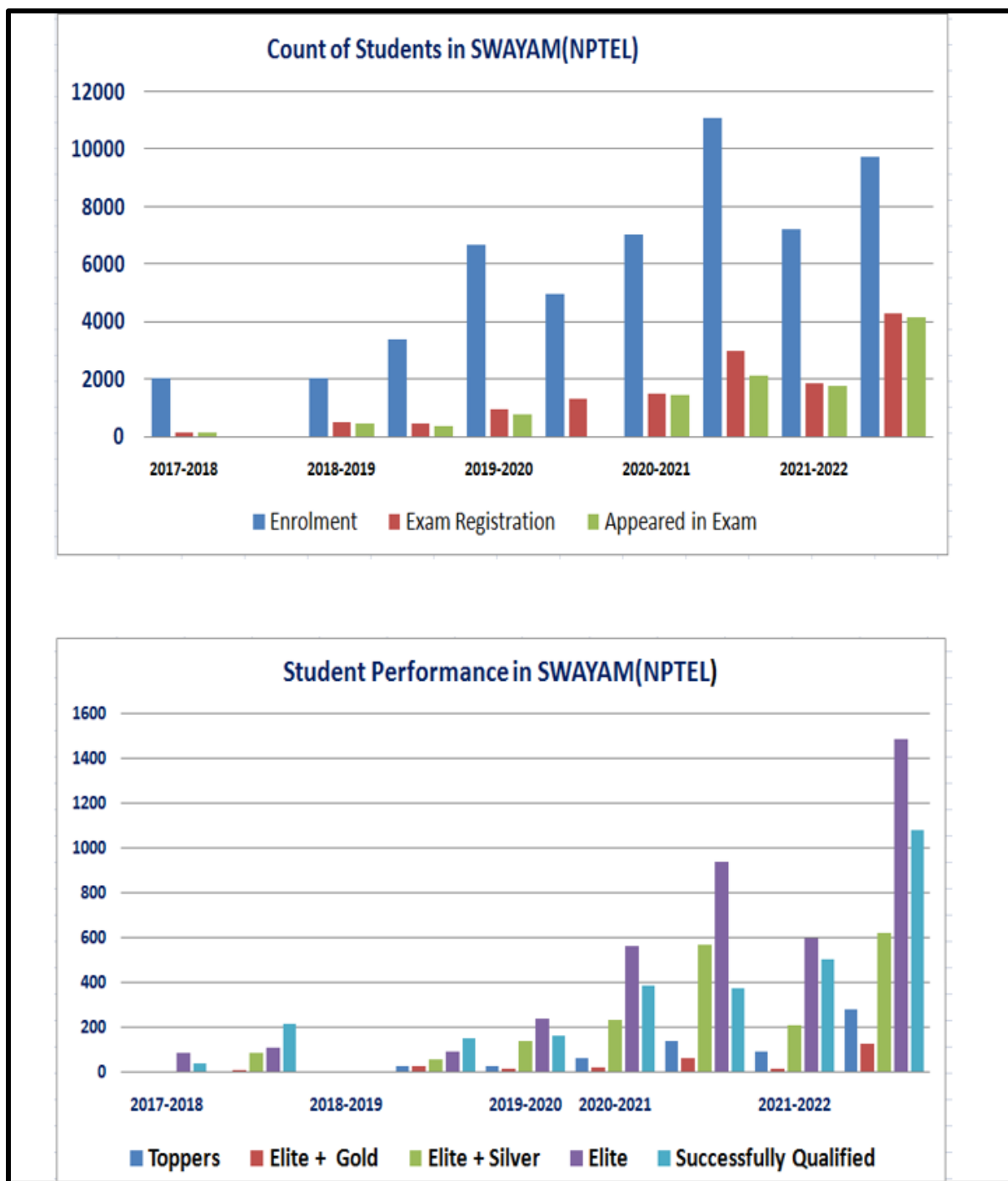
THE NEXT 40 LOCAL CHAPTERS (WITH MAXIMUM RATING POINTS) WILL BE AWARDED 'AA' RATING

THE NEXT 50 LOCAL CHAPTERS (WITH MAXIMUM RATING POINTS) WILL BE AWARDED 'A' RATING

Lc Id	College Name	City	State	Present	Elite	Silver	Gold	Successfully Completed	Toppers	Rating
4103	Netaji Subhas University Of Technology	Delhi	New Delhi	4160	1538	1269	654	494	458	AAA
1361	Madhav Institute Of Technology & Science	Gwalior	Madhya Pradesh	4227	1506	636	133	1095	288	AAA

  
Prof. Raveesh Bansal  
SPOC, Local Chapter

## Evidence of Growth & Success of MITS-NPTEL Local Chapter



### 6. Problems Encountered and Resources Required

—As was expected, there was some resistance from faculty as well as students for registering in NPTEL courses. Some students felt that an additional burden was being put on them.

- Finalizing the list of courses to be run also required a lot of effort as the expertise available at the institute was to be mapped with the available courses on the portal first and then with diverse student interests.
- Another problem was that the students and faculty were tuned to the traditional model of teaching-learning where students are passive listeners most of the time. Therefore, students were reluctant at first to study from the NPTEL lectures on their own and then deliver/present it in class.
- Later, however they were quite happy with the ‘learn at your own place, at your own time, at your own pace’ model of NPTEL. Faculty instructors also realized the importance of the interactive model as they too got to learn many things from the students during the class.
- Motivating the students to register for the final on-line test was very challenging.
- Additional efforts were required for developing an alternate mechanism for students who either failed in the proctored examination or could not register due to some constraints.