Madhav Institute of Technology & Science, Gwalior-474 005

(A Govt. Aided UGC Autonomous & NAAC Accredited Institute Affiliated to RGPV, Bhopal)

Department of Information Technology

Date: 22/12 /2021

Minutes of Meeting of Board of Studies (BoS) in Information Technology

The Meeting of **Board of Studies (BoS)** in **Information Technology** was held on 22nd December 2021 at 11:30 A.M. onwards **through video conferencing**. During the meeting following were present.

1.	Dr. Akhilesh Tiwari, Professor & Head	Chairman
2.	Dr. Surya Prakash Discipline of Computer Science and Engineering, School of Engineering, Indian Institute of Technology Indore Indore-453552, Madhya Pradesh, India	External Member (Academics) *(Nominee of Hon'ble Vice Chancellor RGPV Bhopal)*
3.	Dr. Deepak Garg, Professor& Head, Department of Computer Science Engineering Bennett University. Greater Noida, Uttar Pradesh	External Member (Academics)
4.	Dr. Dinesh Kumar Vishwakarma, Professor, Department of Information Technology, Delhi Technological University (DTU). Delhi	External Member (Academics)
5.	Mr. Abhinav Mishra, Sr. Director, Persistent System Limited	External Member (Industry)
6.	Dr. Nisha Chaurasia, Assistant Professor, Department of Information Technology, Dr. B.R. Ambedkar National Institute of Technology, Jalandhar (Punjab)	External Member (Alumnus)
7.	Dr. Vivek Tiwari, Departmentof Computer Science Engineering, International Institute of Information Technology, Naya Raipur (IIIT-NR)	Invitee Member (Academics)
8.	Dr. Sanjiv Sharma	Member
9.	Mr. Punit Kumar Johri	Member
10.	Mr. Vikas Sejwar	Member
11.	Mr. Abhilash Sonkar	Member
12.	Mr. Rajeev Kumar Singh	Member
13.	Ms. Neha Bhardwaj	Member
14.	Dr. Saumil Maheshwari	Member
15.	Dr. Vikram Rajpoot	Member
16.	Dr. Dhananjay Bisen	Member
17.	Dr. Tej Singh	Member
18.	Dr. Pawan Dudey	Member
19.	Dr. Yogeshwar Singh	Member

| 20. | Mr. Abhishek Dixit | Member |
| 21. | Dr. Bhagat Singh Raghuwansi | Member |

In addition to above, faculty members under contractual engagement were also present.
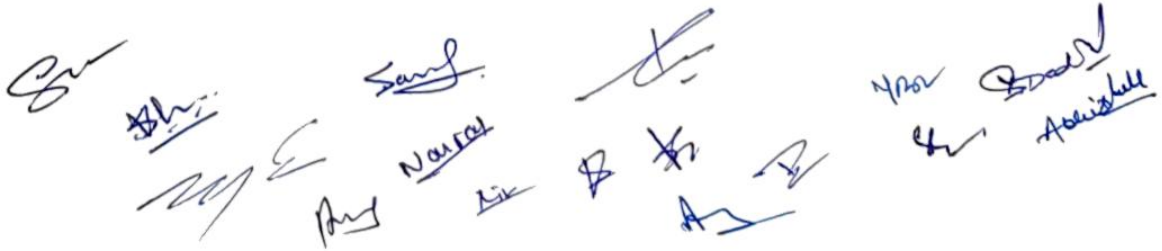The following student members/ representatives were also present in the meeting.

| 1. | Amrit Kaur (0901EC191020) | B. Tech IT Third year |
| 2. | HarshitaVishwakarma (0901IT191026) | B. Tech IT Third year |

The following deliberation took place in the meeting:

ITEM IT-1	The minutes of previous Board of Studies (BoS) meeting held on 10th June 2021 were discussed and confirmed. To propose the scheme structure of VIII Semester with the provision of Two Departmental Electives and One Open Category (OC) Course, to be offered in online mode with credit transfer for the batch admitted in 2018-19. The scheme structure of VIII Semester were discussed, finalized and recommended with the provision of Two Departmental Electives and One Open Category (OC) Course (to be offered in online mode) with credit transfer **The same is Annexed as** Annexure-I.
ITEM IT-2	To propose the list of courses which the students can opt from SWAYAM/NPTEL/ other MOOC Platforms/ Institution (MITS) MOOC, to be offered in *online mode under Departmental Elective (DE) category,* with credit transfer in the *VIII Semester* under the flexible curriculum (*Batch admitted in 2018-19)* The list of Departmental Elective (DE) courses to be offered from SWAYAM/NPTEL/MOOC based learning platform/ Institutional MOOC (in online mode) for B.Tech VIII Semester IT discipline (under flexible curriculum) were discussed and recommended, as per the following detail

DE-5 (B. Tech IT):
• Deep Learning (12 Weeks)
• Blockchain and its Applications (12 Weeks)
• Object Oriented System Development Using UML, Java And Patterns (12 Weeks)

DE-6 (B. Tech IT):
• Ethical Hacking (12 Weeks)
• Advanced Graph Theory (8 Weeks)
• Information Security-5-Secure Systems Engineering (8 Weeks)

In continuation, it is also discussed and recommended that the above mentioned list of Departmental Elective (DE) courses may be kept-dynamic and newly emerging courses may be inducted in line with the industrial need and emerging developments (as and when desired).

ITEM IT-3	To propose the list of courses which the students can opt from SWAYAM/NPTEL/MOOC based Platforms, to be offered in *online mode under the Open Category (OC) Courses*, with credit transfer in the *VIII Semester under the flexible curriculum (Batch admitted in 2018-19)* The list of **Open Category (OC) courses to be offered from SWAYAM/NPTEL/MOOC based learning platforms (in online mode) for B. Tech VIII Semester (other than parent discipline) under the flexible curriculum**, were discussed and recommended, as per the following detail. **Offered by IT Department** OC-4: - Data Science for Engineers - Social Networks *It is further discussed that the Open Category (OC) courses are meant only for the students of other departments; therefore the above list of courses may be kept dynamic (as per the need and demand from other departments and availability of the courses on the SWAYAM/NPTEL/MOOC based learning platforms).*
ITEM IT-4	To propose the course and syllabi of Institution (MITS) MOOC Courses with credit transfer facilitation in the *VIII Semester (Batch admitted in 2018-19)*, along with their Course Outcomes. **The course and syllabi of Institution (MITS) MOOC Courses (with credit transfer facilitation) were discussed and finalized, as per the following** **Introduction to Deep Learning** **Computer Networks** **Data Analytics with Python** **The detailed syllabi along with the Course Outcomes are Annexed as** Annexure-II.
ITEM IT-5	To propose the list of "Additional Courses" which can be opted for getting an (i) **Honours (for students of the host department)** (ii) **Minor Specialization (for students of other departments)** *[These will be offered through SWAYAM NPTEL MOOC based Platforms for the VI semester (for the batch admitted in 2019-20) and for VIII semester students (for the batch admitted in 2018-19)]* **B. Tech VI Semester (2019-20 admitted batch)** **Additional Courses for "Honours" (Parent Department)** - GPU Architectures and Programming (12 Weeks) - Introduction To Soft Computing (8 Weeks) - Introduction to Industry 4.0 and Industrial Internet of Things (12 Weeks)

	Additional Courses for "Minor Specialization" (Other Departments)
	Provision of Domain Specific Courses for minor specialization (as available on the SWAYAM/NPTEL platform), as follows:
	Domain 1: Programming • Database Management System (8 Weeks) • Cloud computing (12 Weeks)
	Domain 2: Systems • Computer Networks and Internet Protocol (12 Weeks) • Introduction to Database Systems (12 Weeks)
	B. Tech VIII Semester (2018-19 admitted batch)
	Additional Courses for "Honours" (Parent Department)
	• Online Privacy (12 Weeks) • User-centric Computing for Human-Computer Interaction (8 Weeks) • Hardware Security (12 Weeks)
	Additional Courses for "Minor Specialization" (Other Departments)
	• Foundations of Cryptography (12 Weeks) • Design and Engineering of Computer Systems (8 Weeks) • Introduction to internet of things (12 Weeks)
	In continuation, it is discussed that the above list must be kept dynamic and additional courses may be inducted (as per the requirement)
ITEM IT-6	To review and finalize the syllabi for all *Departmental Core (DC) Courses* of VI Semester *(for* batch admitted in 2019-20) under the flexible curriculum along with their COs The Syllabi of all the Departmental Core (DC) Courses, to be offered during VI Semester (B. Tech. IT Programme) along with their COs under flexible curriculum were discussed and recommended. The same is Annexed as Annexure-III.
ITEM IT-7	To review and finalize the courses & syllabi to be offered *(for batch admitted in 2019-20)* under *Departmental Elective (DE) Courses* in the *VI Semester* The courses to be offered under Departmental Elective (DE) category (in offline mode) for B. Tech. VI Semester IT discipline (under flexible curriculum) were discussed and recommended, as per the following detail

		DE-1 (B. Tech IT): • Network & Web Security • Cloud Computing • Agile Methodology

It is further discussed that the above mentioned list of courses may be expanded (if required) to accommodate the industrial demand and emerging technological advancements in the field. The syllabi of Courses along with their Course Outcomes (COs) is Annexed as Annexure-IV.

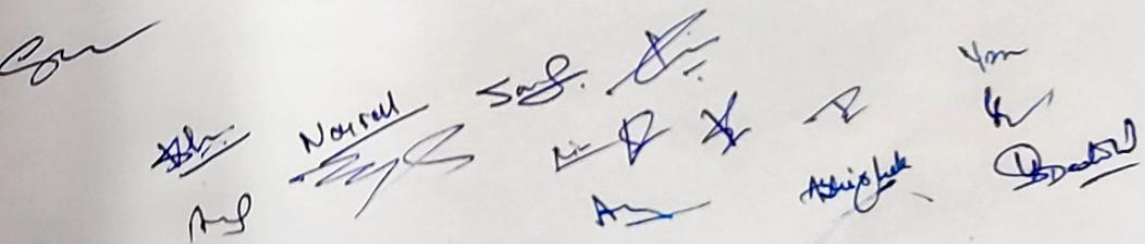|	
ITEM IT-8	To propose the list of courses from SWAYAM/NPTEL/MOOC Platforms to be offered *(for batch admitted in 2019-20)* in online mode under *Departmental Elective (DE) Courses* with credit transfer, in the *VI Semester* The list of Departmental Elective (DE) courses to be offered from SWAYAM/NPTEL/MOOC based learning platforms with credit transfer (in online mode) for B. Tech. VI Semester IT discipline (under flexible curriculum) were discussed and recommended, as per the following detail **DE-2 (B. Tech IT):** • Data Analytics with Python • Introduction to Machine Learning • Artificial Intelligence: Knowledge Representation And Reasoning *In continuation, it is also discussed and recommended that the above mentioned list of Departmental Elective (DE) courses may be kept dynamic and newly emerging courses must be included (as per the need and recent developments).*
ITEM IT-9	To review and finalize the courses & syllabi to be offered *(for batch admitted in 2019-20)* under the *Open Category (OC) Courses* (in traditional mode) for *VI semester* students of other departments along with their COs The courses to be offered under Open Category (OC) Courses for B. Tech. VI Semester (for the students of other departments) were discussed and recommended as per the following detail **Offered by IT Department** **OC-1:** • Software Engineering • Data Mining & Warehousing • Robotics & Vision Control *Further, considering the fact that the Open Category (OC) courses are meant only for the students of other departments, it is discussed and recommended that the above list of courses may be expanded (as per the need and demand from*

	other departments). The detailed syllabi (along with their COs) is Annexed as Annexure-V.
ITEM IT-10	To review and finalize the Experiment list/ Lab manual for Laboratory Courses to be offered in VI semester *(for batch admitted in 2019-20)*
	The experiment list / lab manual for the Laboratory Courses for VI semester were discussed and finalized. The same is annexed as Annexure-VI.
ITEM IT-11	To review and finalize the scheme and syllabi of B. Tech. *IV Semester (for batch admitted in 2020-21)* under the flexible curriculum along with their COs
	The Scheme Structure and Syllabi of B. Tech. IV Semester [Information Technology / Internet of Things (IoT) / Information Technology (AI & Robotics)] (for batches admitted in 2020-21) under the flexible curriculum were discussed, finalized and recommended. The Scheme Structure & syllabi (along with their COs) is Annexed as Annexure-VII.
ITEM IT-12	To review and finalize the Experiment list/ Lab manual for Laboratory Courses to be offered in IV *(for batch admitted in 2020-21)*
	The experiment list / lab manual for the Laboratory Courses for IV semester were discussed and finalized. The same is annexed as Annexure-VIII
ITEM IT-13	To review and finalize the suggestive list of projects which can be assigned under the 'Skill based mini-project' category in various laboratory courses to be offered during Jan. - June 2022 semester, for B.Tech. IV Semester (all disciplines under IT department) *(for the batch admitted in 2020-21).*
	The list of "skill based mini project" for the Laboratory Courses of B. Tech. IV Semester (for 2020-21 admitted batch) was discussed and finalized. It is also discussed that the list must be treated as dynamic and more projects can be added by the course faculty. The same is annexed as Annexure IX.
ITEM IT-14	To ratify the *Scheme & Syllabi, list of experiments and skill based mini projects of First semester* of the newly started B. Tech. programmes in the emerging areas - Artificial Intelligence & Machine Learning (AI & ML) and Artificial Intelligence & Data Science(AI & DS) (started from 2021-22 Session).
	The Scheme, Syllabi, List of experiments and Skill based mini projects of B. Tech. I semester (AI & ML, AI & DS) was reviewed and recommended in its present form for further ratification in the Academic Council. The same is annexed as Annexure-X.
ITEM IT-15	To ratify the *Scheme & Syllabi, list of experiments and skill based mini projects of First Semester* B. Tech programmes [admitted batch 2021-22 Session]

	The Scheme, Syllabi, List of experiments and Skill based mini projects of B. Tech. I semester (IT/ IoT/ AIR) was reviewed and recommended in its present form for further ratification in the Academic Council. The same is annexed as Annexure-XI.
ITEM IT-16	To prepare and recommend the *Scheme & Syllabi (along with the Course Outcomes) of II semester* of the newly started B. Tech. programmes in the emerging areas (AI & ML, AI & DS) (started from 2021-22 Session) *The Scheme & Syllabi (along with the Course Outcomes) of B. Tech. II semester [AI & ML, AI & DS] (batch admitted 2021-22 session), were discussed and recommended.* The Scheme and detailed syllabi along with their COs, annexed as Annexure-XII
ITEM IT-17	To prepare and recommend the list of experiments and skill based mini projects of *II semester* of the newly started B. Tech. programmes in the emerging areas (AI & ML, AI & DS) (started from 2021-22 Session) The list of experiments and skill based mini projects for B. Tech II semester (AI & ML, AI & DS) were discussed and recommended. The same is annexed as Annexure-XIII
ITEM IT-18	To review and finalize the *Scheme & Syllabi (along with the Course Outcomes) of II semester* B. Tech. programmes (batch admitted 2021-22 Session) *The Scheme & Syllabi (along with the Course Outcomes) of B. Tech. II semester [IT/IoT/AIR] (batch admitted 2021-22 session), were discussed and recommended.* The Scheme and detailed syllabi along with their COs, annexed as Annexure-XIV
ITEM IT-19	To review and finalize the *list of experiments and skill based mini projects of II semester* B. Tech. programmes (batch admitted 2021-22 Session) The list of experiments and skill based mini projects for B. Tech II semester [IT/IoT/AIR] were discussed, finalized and recommended. The same is annexed as Annexure-XV
ITEM IT-20	To review the CO attainments, to identify gaps and to suggest corrective measures for the improvement in the CO attainment levels for (i) I year April–September 2021 Semester (ii) January-June 2021 Session for II to IV year students The attainment level of Course Outcomes (COs) for all the courses pertaining to January - June 2021 Session for II to IV Year and April – September 2021 Semester for I Year was presented. In continuation, it is discussed that the courses (if any) where the set target value has not been attained, should be critically analyzed to identify the difficulty level and other causes. The analysis must be followed by corrective measures, such as arrangement of

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	extra / remedial classes, proper coverage of COs in the Question Paper and interaction with the students for possible improvement. The same is annexed as Annexure-XVI
ITEM **IT-21**	To review curricula feedback from various stakeholders, its analysis and impact The summarized report of curricula feedback from various stakeholders (students, faculty members and alumni etc.) for January - June 2021 Semester, II to IV Year and April – September 2021 Semester for I Year was presented and discussed. This was based on various considered parameters. The same is annexed as Annexure-XVII
ITEM **IT-22**	To review Course Outcomes (COs) feedback of various courses, its analysis and impact The detailed analysis and impact report of Course Outcomes (COs) feedback of various courses from students (April – September 2021 Semester, I Year and January - June 2021 Semester for II to IV year) was presented and discussed. The same is enclosed as Annexure -XVIII
ITEM **IT-23**	**Any other matter:** To propose the course and syllabi of newly proposed courses, to be run under various Departmental Electives (DEs) / Open Category (OC) courses (for the batch 2019-20 onwards), along with their Course Outcomes. The list of new courses, as per the following were discussed, finalized and recommended. In the near future, MOOCs development may also be initiated for all these courses or some selected courses. • 5G Technology and IoT • Digital Image Processing for Medical Applications • Robotics & Vision Control • Robotic Vision and Machine Learning • Randomized Algorithms in Machine Learning • Fundamentals of Information Retrieval The syllabus of above courses, is Annexed as Annexure- XIX

Suggestions by External Experts / Members:
- Industry expert suggested that the courses related to new technologies such as DevOps, Interoperability, Automation, React.js etc. to be offered in the curriculum.
- It was suggested to remove the keyword "course" from Novel Engaging Courses and further suggested to replace it with practices etc. in the scheme.
- It was also suggested to include the prerequisite in the newly introduced courses to be offered as Departmental Elective and Open Category Courses.

The meeting ended with the vote of thanks to all the members.

Mr. Vishwas Srivastava   Ms. Namrata Agrawal   Dr. Bhagat Singh Raghuwansi   Mr. Abhishek Dixit

Dr. Yogeshwar Singh   Dr. Pawan Dudey   Dr. Tej Singh   Dr. Dhananjay Bisen

Dr. Vikram Rajpoot   Dr. Saumil Maheshwari   Ms. Neha Bhardwaj   Mr. Rajeev Kumar Singh

Mr. Abhilash Sonkar   Mr. Vikas Sejwar   Mr. Punit Kumar Johri   Dr. Sanjiv Sharma

Online Present
Mr. Abhinav Mishra
Sr. Director,
Persistent System Limited

Online Present
Dr. Nisha Chaurasia
Assistant Professor,
Department of Information
Technology, Dr. B. R. Ambedkar
National Institute of Technology,
Jalandhar (Punjab)

Online Present
Dr. Vivek Tiwari, Assistant
Professor,
Department of Computer Science
Engineering,
International Institute of
Information Technology,
Naya Raipur (IIIT-NR)

Online Present
Dr. Dinesh Kumar Vishwakarma
Professor,
Department of Information
Technology,
Delhi Technological University
(DTU), Delhi

Online Present
Dr. Deepak Garg
Professor & Head,
Department of Computer Science
Engineering
Bennett University, Greater Noida,
Uttar Pradesh

Online Present
Dr. Surya Prakash
Professor
Discipline of Computer Science
and
Engineering, School of
Engineering,
Indian Institute of Technology
Indore

(Dr. Akhilesh Tiwari)
Professor & Head,
Department of IT,
MITS Gwalior
[Chairman, BoS]