MADHAV INSTITUTE OF TECHNOLOGY AND SCIENCE, GWALIOR – 474005
(A Govt. Aided UGC Autonomous & NAAC Accredited Institute Affiliated to R.G.P.V. Bhopal, M.P.)

BOARD OF STUDIES (BoS) PROCEEDING
IN
INFORMATION TECHNOLOGY
(Meeting Dated – 10ᵗʰ June, 2021)

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: 10th June 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 10th June, 2021 at 11:00 A.M. onwards **through video conferencing**. During the meeting following were present.

1.	Dr. Akhilesh Tiwari, Professor & Head	Chairman
2.	Dr. Deepak Garg, Professor & Head, Department of Computer Science Engineering Bennett University, Greater Noida. Uttar Pradesh	External Member (Academics)
3.	Dr. Ritu Tiwari, Professor, Indian Institute of Information Technology (IIIT), Pune	External Member (Academics)
4.	Dr. Dinesh Kumar Vishwakarma, Professor, Department of Information Technology, Delhi Technological University (DTU), Delhi	External Member (Academics)
5.	Dr. Vivek Tiwari, Assistant Professor, Department of Computer Science Engineering, International Institute of Information Technology, Naya Raipur (IIIT-NR)	External Member (Academics)
6.	Mr. Abhinav Mishra, Sr. Director, Persistent System Limited	External Member (Industry)
7.	Dr. Nisha Chaurasia, Assistant Professor, Department of Information Technology, Dr. B.R. Ambedkar National Institute of Technology, Jalandhar (Punjab)	External Member (Alumnus)
8.	Dr. Sanjiv Sharma, Assistant Professor	Member
9.	Mr. Punit Kumar Johari, Assistant Professor	Member
10.	Mr. Vikas Sejwar, Assistant Professor	Member
11.	Mr. Abhilash Sonker, Assistant Professor	Member
12.	Mr. Rajeev Kumar Singh, Assistant Professor	Member
13.	Dr. Saumil Maheshwari, Assistant Professor	Member

In addition to above, faculty members engaged under TEQIP-III Project and contract faculty were also present.

The following internal member could not attend the meeting.

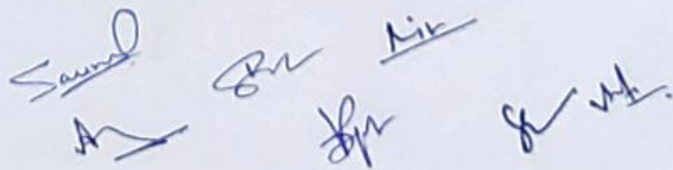| 1.	Ms. Neha Bhardwaj, Assistant Professor	Member

The following deliberation took place in the meeting:

The minutes of previous Board of Studies (BoS) meeting held on 28th November, 2020 were confirmed, followed by item-wise discussion (as per the agenda of present BoS meeting), as follows

ITEM **IT-1:**	To propose the list and syllabi for all *Departmental Elective (DE)* Courses of *VII Semester* under the flexible curriculum along with their COs (Batch admitted in 2018-19) **The courses to be offered under Departmental Elective (DE-3) category (in offline**

	mode) for B.Tech VII Semester, IT discipline (under flexible curriculum) were discussed and finalized, as per the following detail. The detailed syllabi (along with their COs) is Annexed as Annexure-I. **DE-3 (B.Tech IT):** • Data Mining & Predictive Modelling • Soft Computing • Mobile Computing
ITEM IT-2:	To propose the list of courses which the students can opt from SWAYAM/NPTEL/MOOC Platform, to be offered in *online mode under Departmental Elective (DE) category*, with credit transfer in the *VII Semester (Batch admitted in 2018-19)* The list of Departmental Elective (DE-4) courses to be offered from SWAYAM/NPTEL/MOOC based learning platform (in online mode) for B.Tech VII Semester IT discipline (under flexible curriculum) were discussed and finalized, as per the following detail **DE-4 (B.Tech IT):** • Social Networks • Scalable Data Science • Reinforcement Learning *In continuation, it is also discussed and recommended that the above mentioned list of Departmental Elective (DE) course 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 and syllabi for all *Open Category(OC) Courses of VII Semester* under the flexible curriculum along with their COs *(Batch admitted in 2018-19)* The courses to be offered under Open Category (OC) Courses for B.Tech VII Semester (for the students of other departments) under flexible curriculum, were discussed and finalized, as per the following detail **OC-2:** **OC-3:** • Soft Computing • R Programming • Network Security • Computer 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).* The detailed syllabi (along with their COs) is Annexed as Annexure-II.
ITEM IT-4:	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 V semester (for the batch admitted in 2019-20) and for VII semester students (for the batch admitted in 2018-19)]*

The courses available on SWAYAM/NPTEL/MOOC based learning platforms for Honours and Minor Specialization were discussed and identified. The same has been listed, as mentioned below

B.Tech V Semester (2019-20 admitted batch)
Additional Courses for "Honours" (Parent Department)
• Introduction to internet of things • Data Science for Engineers • The Joy of Computing using Python
Additional Courses for "Minor Specialization" (Other Departments)
• Data Base Management System • Object Oriented Analysis and Design • Operating System Fundamentals

Provision of Domain Specific Courses for minor specialization (as available on the SWAYAM/NPTEL platform), as follows:

Domain 1: Programming
- Programming, Data Structures and Algorithms using Python
- Programming in Java

Domain 2: Systems
- Operating System Fundamentals
- Introduction to Internet of Things

In continuation, it is discussed that the department can decide regarding the course offering from the above concluded courses (either from domain specific courses or generalized list) under the minor specialization for the B.Tech V Semester (for 2019-20 admitted batch)

B.Tech VII Semester (2018-19 admitted batch)
Additional Courses for "Honours" (Parent Department)
• Computer Vision • Big Data Computing • Distributed Systems
Additional Courses for "Minor Specialization" (Other Departments)
• Introduction to Machine Learning • Cloud computing • Big Data Computing

ITEM IT-5:

To review and update the syllabi for all *Departmental Core (DC) Courses* of *V Semester (for* batches admitted in 2019-20) under the flexible curriculum along with their COs

The Syllabi of all Departmental Core (DC) Courses which are to be offered during V Semester (B.Tech IT Programme) along with their COs under flexible curriculum were discussed, finalized and recommended. The same is annexed as Annexure-III.
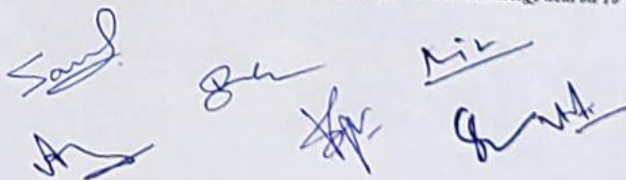
| ITEM IT-6: | To propose the list of courses which the students can opt from SWAYAM/NPTEL/MOOC based Platforms for *Seminar / Self Study Courses* in B. Tech. III Semester (Batch admitted in 2020-21) & B. Tech. V Semester (Batch admitted in 2019-20)

The courses to be offered under Seminar / Self Study through SWAYAM / NPTEL based learning platform for B. Tech. III semester (2020-21 admitted batch) (IT / IoT/ AIR) and B. Tech. V Semester (2019-20 admitted batch) (IT), under flexible curriculum were discussed and finalized, as per the following |
|---|---|

B. Tech. III Semester	B. Tech. V Semester
• Programming, Data Structures and Algorithms Using Python • Introduction to Quantum Computing: Quantum Algorithms and Qiskit	• Python for Data Science • Demystifying networking

To promote the self learning, it is mandatory to register for one online course (as per above list) from the SWAYAM / NPTEL platform under the Seminar / Self Study Courses. Further, the evaluation will be based on attendance, assignments and presentations, etc.

| ITEM IT-7: | To prepare and recommend the *Scheme & Syllabi (along with the Course Outcomes) of III & IV semester* of the newly started B. Tech. Programme(s) in the emerging areas [Internet of Things (IoT) and Information Technology (AI & Robotics)] (started from 2020-21 Session)

The Scheme & Syllabi (along with the Course Outcomes) of B. Tech. III & IV semester [Internet of Things (IoT)] (batch admitted 2020-21 onwards), were discussed and finalized. (annexed as Annexure- IV)

The Scheme & Syllabi (along with the Course Outcomes) of B. Tech. III & IV semester [Information Technology (AI & Robotics)] (batch admitted 2020-21 onwards), were discussed and finalized. (annexed as Annexure- V)

The Scheme & Syllabi of B. Tech Information Technology (III & IV Semetser) (batch admitted 2020-21 onwards) were discussed and finalized. (annexed as Annexure- VI)

To promote accessibility and flexibility, the scheme structure was finalized and recommended as per the newly adopted structure, which mentions the "provision for different modes of teaching" such as offline (face to face/in class), online & blended; as per the nature of the course (as also recommended by UGC). Moreover, to promote the creativity and innovation; the concept of skill through the provisioning of "Skill Based Mini Project" and to promote the Holistic Education and Informal Learning, the provision of "Novel Engaging Course", as recommended by the National Education Policy (NEP) 2020, were also included in the scheme structure (for the batch 2020-21 onwards).

The recommended scheme structure also contains the detail pertaining to the |
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	"mode of examination" for each course (under the Multiple Mode Logical Pattern Examination System).

In continuation, the scheme structure of B. Tech. I & II Semester (IT, IT-IoT and IT-AIR) for the Batch 2020-21, as per the newly adopted provisions/structure was presented and discussed with the consent of the house for further ratification in the coming Academic Council. *(annexed as Annexure- VII)*

Further, the scheme structure of B. Tech. I & II Semester (IT, IT-IoT and IT-AIR) (for the batch 2021-22 Session onwards) was also discussed and finalized. The course and syllabi will remain same, as for the batch 2020-21. *(annexed as Annexure- VIII)* |
| ITEM IT-8: | To review and finalize the Experiment list/ Lab manual for Laboratory Courses to be offered in B. Tech. V and B. Tech. VII semester (Batches admitted in 2018-19 & 2019-2020)

The experiment list / lab manual for the Laboratory Courses for V Semester and VII semester were discussed and finalized. The same is annexed as Annexure-IX. |
| ITEM IT-9: | To propose a suggestive list of projects which can be assigned under the 'Skill based mini-project' category in various laboratory courses to be offered in July-December 2021 Semester

The list of "skill based mini project" for the Laboratory Courses of B. Tech. III & 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-X. |
| ITEM IT-10: | To review the CO attainments for July-December 2020 semester and December - April 2021 Semester, to identify gaps and to suggest corrective measures for the improvement in the CO attainment levels

The attainment levels of Course Outcomes (COs) for all the courses pertaining to July-Dec. 2020 semester and December - April 2021 Semester were presented and reviewed. The house appreciated the same and observed the achievement of target attainment levels for almost all the courses. The same is enclosed as Annexure-XI. |
| ITEM IT-11: | To review the 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 the July-Dec. 2020 semester and December 2020 - April 2021 semester) was presented and discussed. This was based on various considered parameters. The house was of opinion that that this practice will certainly work as a basis for further improvement of curriculum. The same is annexed as Annexure-XII. |
| ITEM IT-12: | 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 (for the July - Dec. 2020 semester and Dec. 2020 - April 2021 semester) was presented and discussed.
The same is enclosed as Annexure -XIII. |

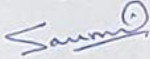| ITEM IT-13:	To present matters (if any) related to new curriculum/structure of PG Programme (Batch admitted in 2020-21) needing ratification in the forthcoming Academic Council meeting
	Regarding the syllabus of Open Category course for M. Tech (IT) - II Semester
	Due to COVID 19 pandemic, the academic session 2020-21 was delayed, which resulted in a situation where the course "Introduction to Internet of Things" under the Open Category (OC) [for the M. Tech (IT) - II Semester], needs to be offered during the April 2021 to July 2021 Semester. Considering the emergent need, the course syllabus was prepared and offered. The syllabus was reviewed and recommended (in its present form) by the house for further ratification in the forthcoming Academic Council meeting. Moreover, the
	The same is annexed as Annexure-XIV.
	Regarding the finalization of list of courses to be offered under MOOC Course (through SWAYAM/NPTEL/ other MOOCs platforms) for III Sem. M.Tech. IT during July-Dec. 2021 semester
	It is decided to offer following courses-
	- Introduction to Industry 4.0 and Industrial Internet of Things
	- Big Data Computing

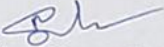## Suggestions by External Experts / Members:

- It was suggested to replace the course "Networking with TCP/IP" (under the Departmental Elective category), with other suitable course for the B. Tech. VII semester (2018-19 admitted batch).
- It was also suggested to include the courses, Predictive Analytics & Data Mining, Soft Computing, Wireless Networks etc. under the Departmental Elective category courses (2018-19 admitted batch).
- It was advised that the courses related to Cloud technologies or some industry oriented courses such as automation testing, agile methodology should be included under the Departmental Elective courses at appropriate level for B.Tech. Students.
- It was suggested that the list of Departmental Electives at any level for UG Engineering should include the courses, as per following categorization, so that the student can opt as per his/her interest
  (a) Industry Oriented (b)Latest Trend (c) Research Oriented
- It was suggested that the courses must also be included from other MOOC platforms such as Coursera, Edx as a part of MOOC Electives for the purpose of credit transfer.
- It was suggested to create and offer a basket of courses as prerequisite for opting "Minor Specialization", offered by the department of IT.
- It was also suggested to include Laboratory component (if necessary, as per the nature of the course) for the courses under Departmental Electives/ Open Category.
- It was suggested to remove the keyword "Arduino" from the Departmental Laboratory Course "*Design and Thinking Lab*", to be offered in B.Tech. III semester.
- It was advised to include the course "Machine Learning" in the IV semester of IT-AIR discipline. The house was of opinion that the "Optimization Algorithms" and "Machine Learning" courses can be merged and accordingly, the course "Machine Learning and Optimization" can be offered.

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

The deliberations recorded in the minutes of meeting have been circulated electronically and consented by the external experts.

(Dr. Saumil Maheshwari)   (Mr. Rajeev Kumar Singh)   (Mr. Abhilash Sonker)

(Mr. Vikas Sejwar)   (Mr. Punit Kumar Johari)   (Dr. Sanjiv Sharma)

Present online

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

present online

(Mr. Abhinav Mishra)
Sr. Director, Persistent System Limited

Present online

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

Present online

(Dr. Dinesh Kumar Vishwakarma)
Professor, Delhi Technological University,
Delhi

Present online

(Dr. Ritu Tiwari)
Professor,
Indian Institute of Information Technology (IIIT),
Pune*

Present online

(Dr. Deepak Garg)
Professor & Head
Department of CSE
Bennett University, Greater Noida, Uttar Pradesh

10.06.2021

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

27/7/2021

DEAN (ACADEMICS)
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