



Date : 01 October 2024



Pre-Conclave Deliberations on B.Tech Curriculum for CS Stream

(Date: 01 October 2024; Venue: Conference Room, III Floor, AB-4)

Event Summary

A day-long event called Chintan: Pre-Conclave Deliberations on B.Tech Curriculum for CS Stream was organized by the office of the Associate Director, Faculty Development and Welfare (FDW) on 01 October 2024. The objective was to facilitate revision of curriculum structure of the five programs under CS Stream, namely, Computer Science & Engineering, Computer Science & Engineering (AI&ML), Information Technology, Computer & Communication Engineering and Data Science & Engineering offered by CSE, ICT and DS&CA Departments. The meeting was attended by a team of 25 members drawn from the internal stakeholders comprising, the leadership at MIT, representation from MAHE and the department curriculum committee members of the above three departments. The main agenda was to discuss and brainstorm the modifications to the 2022 curriculum of the above five B.Tech programs under the computer science stream. The consensus arrived at the end of the deliberations will be presented to the external stakeholders during the curriculum conclave scheduled for 29 October 2024.

The event began with the welcome address by Dr S. N.Bhat, Associate Director (FDW) which also set the context for the day's proceedings.

Dr. Narayana Sabahit, the Pro-Vice-Chancellor (Tech & Science) , MAHE, spoke in his opening remarks presented the expectations of the University and spoke on the need for a good curriculum with flexibility in terms of credits that can be chosen by the students and the importance of good faculty for the enhancement of student learning. He emphasized involving industry experts and academicians from premier institutions in the teaching-learning process. Dr. Sabahit urged to ensure a balanced curriculum for achieving the outcomes. Dr Giridhar Kini, Registrar, MAHE, talked on designing of curriculum with a customer focus, i.e, the students and parents should be focused while revision of the curriculum. Faculty should be encouraged to be up to date with the emerging trends through regular certification and refresher programs. He suggested that the curriculum should be designed in top down approach and working backwards from the higher to lower semesters with minimal disruption to the students. He advised to give



enough emphasis on participation of industry in teaching learning and curriculum design. He also advocated providing orientation to research, promoting startup culture and inclusion of MOOCs in the curriculum for the benefit of students.

Cdr. Dr. Anil Rana, Director, M.I.T. Manipal, narrated his vision on the curricular modifications. He pointed out on the rigidity of the current academic calendar. He also proposed to have options for multiple exits, academic breaks, and learn while earn modes for students. Besides advocating Embedding of micro-credentials into the program, he also suggested that the team check the possibility of industry projects executed by the students on campus. He also wanted to have a stronger partnership with the industry.

Dr. Somashekara Bhat, Joint Director, M.I.T Manipal, mentioned that engineering fundamental subjects should be taught as core subjects and applied courses should be taught as electives in the higher semester. He suggested that the team debate issues like whether specialization is required at the undergraduate level or they get a flavor of all subjects, whether lab and theory should be integrated or delivered separately etc., and arrive at the consensus.

Dr. Vinod V Thomas, Registrar evaluation, MAHE, spoke from the point of view of the new SAR set by NBA, which will be effective January 2025. He discussed the need for having a computer science as a stream with a common pool of faculty in three institutions: Manipal, Bengaluru, and Dubai. He stressed the requirement of common courses until the 2nd year and introduction of specialization in the third and fourth years of the course. Dr. Thomas advised to refer to the model curriculum available in the AICTE, IEEE, and ACM web portals, the importance of capstone projects, self-directed learning, the vision of Education 4.0, and the need for innovation and skill-based education at the undergraduate level.

Dr. Krishnamoorthi Makkithaya, Head of the Department of Computer Science proposed the new CS Curriculum. Reflected on the current curriculum, he pointed out to the strong fundamentals in core subjects and the gaps in the curriculum due to the emerging technologies like AI. He discussed the need to make self-directed learning a part of the courses and conduct faculty development programs to equip the faculty to handle the courses. For the course implementation, he pointed out that the curriculum structure should be in line with the new SAR format of NBA, and taking regular feedback from the industry and stakeholders was required to fine-tune the program. The HoD of the department of Information and Communication Technology, Dr Smitha Pai, reflected on the current curriculum and suggested the introduction of new topics like risk management, sustainability, etc, in the new curriculum. The HoD of the Department of Data



Science and Computer Applications, Dr. Radhika M Pai, presented the course structure of the Data Science program with the six flexible cores for the 3rd year and the minor specializations that could be offered by the department.

During the open discussion on the proposed syllabus, the Associate Directory (Placement) shared the feedback given by the industry stakeholders and mentioned that undergraduate students are expected to focus on general computer science and should have strong fundamentals. He noted that Skill-based hiring requires the student to undertake industry-based certification. Dr. Preetham, the Deputy Registrar MAHE, set the timelines for department curriculum committee meeting, the board of studies meeting and convening of academic council.

In the afternoon session, Dr S N Bhat led an open discussion with the participants. He initiated vital discussion points on designing a curriculum in the age of Artificial Intelligence, rethinking the required while planning the assessments, and the need for using AI tools in academic processes. The group came up with their opinions, which were recorded for further discussion. Dr. Bhat opened a discussion on the need for project work at MIT in addition to the internship and the need for a progressive project assessment. He also suggested the strategic integration of MOOCs into the curriculum. Dr Bhat emphasized the need to align the curriculum with the objectives of NEP 2020 to achieve compliance. He also opined that the departments need to undertake sensitization sessions for faculty members regarding the importance of the National credit framework and the National Education Policy 2020.

In the final session, Dr. Thomas listed the activities that must be completed before the proposed curriculum conclave. Cdr. (Dr.) Anil Rana in his concluding remarks appreciated the efforts of the team and wished that a curriculum that is acceptable to the stakeholders would emerge as the outcome of the conclave.

The event concluded with the vote of thanks delivered by Dr. S.N.Bhat. He also briefed the audience on the next steps and invited the participants to the proposed curriculum conclave on 29 October 2024.



MANIPAL INSTITUTE OF TECHNOLOGY

MANIPAL

(A constituent unit of MAHE, Manipal)

Office of the Associate Director (Faculty Development & Welfare)





MANIPAL INSTITUTE OF TECHNOLOGY

MANIPAL

(A constituent unit of MAHE, Manipal)

Office of the Associate Director (Faculty Development & Welfare)



Compiled by : Dr Rohini Rao, Associate Professor, Dept of DS&CA

Edited by: Dr S N Bhat, Associate Director (FD&W)



MANIPAL INSTITUTE OF TECHNOLOGY

MANIPAL

(A constituent unit of MAHE, Manipal)

Office of the Associate Director (Faculty Development & Welfare)



MANIPAL INSTITUTE OF TECHNOLOGY
MANIPAL
(A constituent unit of MAHE, Manipal)

chintan

Pre-Conclave Deliberations on B.Tech Curriculum for CS Stream
(Date: 01 October 2024; Venue: Conference Room, III Floor, AB-4)

9:30 AM	Invocation
9:32 AM	Welcome (Dr. S N Bhat, Associate Director, FD&W)
9:35 AM	Address by Pro-Vice Chancellor (Tech & Science), MAHE (Dr. Narayana Sabhahit)
9:45 AM	Address by Registrar, MAHE Dr. P Giridhar Kini
9:55 AM	B.Tech Curriculum for CS Stream : My Vision (Cdr. Dr. Anil Rana, Director, M.I.T Manipal)
10:05 AM	CS Stream Curriculum: Emerging Challenges and Opportunities (Dr. Somashekara Bhat, Joint Director, M.I.T Manipal)
10:15 AM	CS Stream Curriculum: Best Practices (Dr. Vinod V. Thomas, Registrar Evaluation, MAHE)
10:35 AM	Tea break
11:00 AM	CS Curriculum - Reflections & Proposals (HoDs – CS stream, M.I.T Manipal)
11:45 AM	Open Discussion on the Proposals
12:45 PM	Lunch break
2:00 PM	Brainstorming (Moderation: Dr. S.N.Bhat, Associate Director, FD&W)
3:30 PM	Tea break
3:45 PM	CS Stream Curriculum 2024 – Revised Model (HoDs CS stream, M.I.T Manipal)
4:00 PM	Open Discussion on Revised Model
4:30 PM	Concluding Remarks (Cdr. Dr. Anil Rana, Director, M.I.T Manipal)
4:40 PM	Vote of Thanks (Dr. S.N.Bhat, Associate Director, FD&W)
4:45 PM	High Tea

Organised by Office of the Associate Director (Faculty Development & Welfare)

Shankaranarayana Bhat
Associate Director
Faculty Development & Welfare
Manipal Institute of Technology
Manipal - 576104