

**Minutes of the Meeting of Board of Studies (BoS) of Artificial Intelligence, was held on 04<sup>th</sup> September, 2023 at 9.30 AM on Microsoft Teams platform.**

The following members were present:

1. Dr Alka Mahajan, Dean, MPSTME, NMIMS University.
2. Dr Manjunath Joshi, Professor, DA-IICT Ahmedabad, Academic expert.
3. Mr Jitendra Mudhol, Founder and CEO, CollaMeta Sunnyvale, California
4. Dr Vaishali Kulkarni, Professor and HoD Artificial Intelligence department, MPSTME, Mumbai.
5. Dr Radhika Chapaneri, Assistant Professor, MPSTME, Mumbai.
6. Dr Monika Sharma, Assistant Professor, MPSTME, Navi Mumbai.
7. Prof Suraj Patil, Assistant Professor, MPSTME, Shirpur.

Leave of absence was granted to the following members:

1. Mr Sujay Madbhavi, Data Scientist, General Mills, Mumbai, Industry expert.
2. The members of BoS confirmed the minutes of a meeting of the Board of Studies in Artificial Intelligence held on 12<sup>th</sup> December 2022.
3. The members of BoS considered and deliberated upon the revision in the curricula of B Tech/MBA Tech programs and approved the following -
  - A. Revision in the Teaching & Examination scheme and Syllabi of the course "Project" for the Students of B Tech (all branches), semester VIII admitted in AY 2020 - 21 onwards. (Encl.-I).
    - Since it is a practice and project based course, the Teaching and Examination scheme is changed from ICA + TEE to ICA only. As per the approved project policy, there will be two mid-term evaluations and an external final viva-voce at the end of the term.
  - B. Minor revision in the Teaching and Examination scheme and syllabi of the following courses of B Tech Artificial Intelligence, Semester VI. This will be applicable for the students admitted in academic year 2021 - 22 onwards. (Encl.-II)
    - i. Intelligent Systems - II
      - a. Remove topics on 'Probabilistic Reasoning' as these are covered in other courses.
      - b. Added the topics on 'Fuzzy logic' and 'Evolutionary Computing'.
    - ii. Robotic Process Automation
      - a. Sub topics are added to each unit for more clarity.
  - C. Introduction of Teaching and Examination Scheme and syllabus of a course "Intelligent Systems - II" for the MBA Tech Artificial Intelligence, semester VI for the students admitted in academic year 2021-22 onwards. (Encl.-III)
    - i. Intelligent Systems - II
    - ii. Robotics (Approved course of B Tech AI)
    - iii. Software Engineering (Approved course of B Tech IT)
    - iv. Interpersonal Skills (Approved course of Basic Science and Humanities)
    - v. Department Elective - III
    - vi. Department Elective - IV
    - vii. Open Elective - III
    - viii. Open Elective - IV
    - A common basket of courses will be used for all the department electives I - VI. (Encl.-IV)

D. Minor revision in Course structure and Introduction of Teaching & Examination Scheme of B Tech Artificial Intelligence and Machine Learning (Shirpur Campus), semester VI. This is applicable for the students admitted in AY 2021-22 onwards. **(Encl.-V)**

- i. Intelligent System-II (Approved by the BOS of AI department)
- ii. Big Data Analytics (Approved course of B Tech Data Science)
- iii. Software Engineering (Approved course of B Tech IT)
- iv. Interpersonal Skills (Approved course of Basic Science and Humanities)
- v. Department Elective - III
- vi. Department Elective - IV
- vii. Open Elective - III
- viii. Open Elective - IV

- A common basket of courses will be used for all the department electives I – VI. **(Encl.-VI)**

E. Minor revision in Course structure and Introduction of Teaching & Examination Scheme of B Tech Artificial Intelligence and Data Science (Navi Mumbai Campus), semester VI. This is applicable for the students admitted in AY 2021-22 onwards. **(Encl.-VII)**

- i. Artificial Intelligence (Approved course of B Tech Computer Engineering)
- ii. Software Engineering (Approved course of B Tech IT)
- iii. Deep Learning (Approved course of B Tech AI)
- iv. Interpersonal Skills (Approved course of Basic Science and Humanities)
- v. Department Elective - III
- vi. Department Elective - IV
- vii. Open Elective - III
- viii. Open Elective - IV

- A common basket of courses will be used for all the department electives I – VI. **(Encl.-VIII)**

#### **BoS Committee Suggestions -**

Dr Manjunath Joshi suggested the following:

- i. Explore the option of including the elective courses like 'Generative AI' and 'Large Language models' to bridge gap of industry and academia.
- ii. Add 1 credit course on AI ethics
- iii. On the agenda of offering a common basket of electives, the suggestion was to offer electives with relevant prerequisite for a particular semester.


Mr Jitendra Mudhol suggested the following:

- i. Can add 'Decision science - Decision making and human bias' as an elective course
- ii. Can tie up with industry professionals to teach one module of the course

**Action taken:** The suggestions given by the BoS members will be included in the curriculum from the next academic year.

#### **Reporting Item -**

- A. Addition of a text book in the syllabus of 'Computer Vision', Semester VI/VII/VIII, B Tech and MBA Tech (Electronics and Telecommunication Engineering, Artificial Intelligence and Computer Engineering) for the students admitted from the batch 2020-21 onwards.

  
\_\_\_\_\_  
Dean, MPSTME  
Chairperson, Board of Studies



**Minutes of the Meeting of Board of Studies (BoS) of Artificial Intelligence, was held on 1<sup>st</sup> March, 2024 at 9.30 AM on Microsoft Teams platform.**

The following members were present:

1. Dr. Alka Mahajan, Dean, MPSTME, NMIMS University.
2. Dr. Manjunath Joshi, Professor, DA-IICT Ahmedabad, Academic expert.
3. Mr. Jitendra Mudhol, Founder and CEO, CollaMeta Sunnyvale, California
4. Dr. Vaishali Kulkarni, Professor and HoD Artificial Intelligence department, MPSTME, Mumbai.
5. Dr. Radhika Chapaneri, Assistant Professor, MPSTME, Mumbai.
6. Dr. Preeti Gupta, Associate Professor, MPSTME, Navi Mumbai.
7. Prof Suraj Patil, Assistant Professor, MPSTME, Shirpur.

Leave of absence was granted to the following members:

1. Mr Sujay Madbhavi, Data Scientist, General Mills, Mumbai, Industry expert.

The agenda items for the meeting are as follows:

1. The BoS members confirmed the minutes of meetings of the Board of Studies in Artificial Intelligence held on September 04, 2023.
2. The BoS members considered and deliberated upon the revision in the curricula of B Tech/MBA Tech Artificial Intelligence by way of-
  - A. The following existing courses approved in earlier academic councils by respective departments, which will be offered to MBA Tech Artificial Intelligence, semester VII and VIII along with Course Structure and Teaching & Examination Scheme for the students admitted in AY 2021-22. **(Encl.-I)**
    - I. The course "Human Computer Interaction" to be shifted from semester VIII to the elective basket.
    - II. The elective course "Applied Time Series Analysis" to be made compulsory in semester VIII.

**Justification:-** The course 'Applied time series analysis' crucial in various AI applications such as forecasting, predictive modeling etc. By making it a core course, students gain essential skills that directly apply to real-world AI projects and research. While HCI remains important in designing user-friendly AI systems, offering it as an elective in earlier semester provides students with the flexibility to explore other specialized areas within AI. Benchmarking done with IIT Hyderabad, Carnegie Mellon University for AI programs suggests that Human Computer Interaction can be an elective course.

**Suggestion:** After deliberating on the content of the proposed changes and the thought process for the changes, Dr Manjunath Joshi and Mr Jitendra Mudhol appreciated the changes.

**MBA Tech Semester VII:-**

- i. Computer Vision
- ii. Department Elective - V
- iii. Department Elective - VI
- iv. Open Elective - V
- v. Technical Internship

**MBA Tech Semester VIII:-**

- i. Advanced Topics in Machine Learning
- ii. Applied Time Series Analysis
- iii. Capstone Project

A common basket of courses will be used for all the department electives I - VI. **(Encl.-II)**

B. Minor revision in Course Structure and Teaching & Examination Scheme of B Tech Artificial Intelligence, semester VII for the students admitted in AY 2021-22. The syllabi of all the courses are already approved. (Encl.-III)

- I. The course "Human Computer Interaction" to be shifted in the elective basket.
- II. The elective course "Applied Time Series Analysis" to be made compulsory subject.

A common basket of courses will be used for all the department electives I - VI. (Encl.-II)

C. Minor revision in Course Structure and Teaching and Examination schemes of

- B Tech and MBA Tech Artificial Intelligence, semester VI,
- B Tech Artificial Intelligence, semester VII and
- MBA Tech Artificial Intelligence, semester VIII

for the students admitted in the academic year 2022-23 & 2023-24. The syllabi of all courses except "Generative AI" and "Agile Product Development with DevOps" are already approved. (Encl.-IV)

- I. The course "Intelligent Systems - II" to be shifted from semester VI to the elective basket.
- II. The course "Advanced Topics in Machine Learning" to be shifted from semester VII to VI for B Tech and semester VIII to VI for MBA Tech

**Justification:-** The course "Advanced topics in Machine learning", which covers the concepts of Generative adversarial networks (GANs) and transformers are helpful for the students for their capstone project in the subsequent semester. Benchmarking with reputed institutions like IIT Hyderabad and CMU done to validate the thought process.

III. The course, "Software Engineering" in semester VI to be renamed and revised as "Agile Product Development with DevOps" (Syllabus will be placed in the next BoS)

**Justification:-** The syllabus for the course, "Software Engineering" will be revised to include the concepts of DevOps which are more relevant to AI programs. Integration of CI/CD pipelines along with Agile development is important for working on a large scale projects. Inputs for this have been taken from industry professionals and Virginia Tech faculty members.

- IV. The course "Human Computer Interaction" of B Tech, semester VII and MBA Tech, semester VIII to be shifted in the elective basket.
- V. The elective course "Applied Time Series Analysis" to be made compulsory for B Tech semester VII and MBA Tech semester VIII.
- VI. Introduction of the course, "Generative AI" in B Tech, semester VII and MBA Tech, semester VIII. (Syllabus will be placed in the next BoS)

**Justification:-** This course will include the recent advances in AI such as large language models, GPT, Responsible AI etc., which are required for AI programs as per the recent advancement in this field.

**Suggestion:-** The proposed changes were accepted and appreciated by Dr Manjunath Joshi and Mr Jitendra Mudhol.

A common basket of courses will be used for all the department electives I - VI. (Encl.-V)

D. Minor revision in the syllabi of the following courses of B Tech Artificial Intelligence and MBA Tech Artificial Intelligence for the students admitted in academic year 2022-23 onwards. (Encl.-VI)

I. Natural Language Processing (Semester V) - Syllabus is common with B Tech & MBA Tech programs [AI/EXTC/CE/ CS/IT/ AI and ML/ AI and DS]

**Justification:-** The contents of the course have been structured according to the stages/phases/levels - word, syntactic, semantic, pragmatic and discourse level analysis.

II. Recommendation Systems (Elective Course) - Syllabus is common with B Tech & MBA Tech programs [AI/ AI and ML/ AI and DS]

**Justification:-** The details of the sub topics to be covered in the units on 'Model-Based Collaborative Filtering' and 'Evaluating Recommender Systems' has been mentioned in the syllabus.

E. The following existing courses approved in earlier academic councils by respective departments, which will be offered to B Tech Artificial Intelligence and Machine Learning (Shirpur Campus), semester VII along with Course Structure and Teaching & Examination Scheme for the students admitted in AY 2021-22 onwards. (Encl.-VII)

I. The course "Business Visualization" to be replaced by the course "Data Handling and Visualization".

**Justification:-** The course has been revised to emphasize on open source software for visualization.

II. The course "Human Computer Interaction" to be shifted to the elective basket.

III. Introduction of the course "Applied Time Series Analysis" as a compulsory subject.

**Semester VII:-**

- i. Applied Time Series Analysis
- ii. Computer Vision
- iii. Data Handling and Visualization
- iv. Distributed Computing
- v. Department Elective - V
- vi. Open Elective - V
- vii. Capstone Project

F. The following existing courses approved in earlier academic councils by respective departments, which will be offered in the common elective basket for the B Tech Artificial Intelligence and Machine Learning (Shirpur Campus), for semester V to VII along with Course Structure and Teaching & Examination Scheme for the students admitted in AY 2021-22 onwards. (Encl.-VIII)

- i. Reinforcement Learning
- ii. Cyber Forensics
- iii. Evolutionary Computing
- iv. Advanced Web Programming
- v. Software Quality Assurance
- vi. Human Computer Interaction

A common basket of courses will be used for all the department electives I - VI. (Encl.-VIII)

G. The following existing courses approved in earlier academic councils by respective departments, which will be offered to B Tech Artificial Intelligence and Machine Learning (Shirpur Campus), semester VI along with Course Structure and Teaching & Examination Scheme for the students admitted in AY 2022-23 onwards. (Encl.-IX)

- I. The course "Intelligent Systems - II" to be shifted from semester VI to the elective basket.
- II. Introduction of the course "Advanced Topics in Machine Learning" as a compulsory subject.
- III. The course, "Software Engineering" in semester VI to be renamed and revised as "Agile Product Development with DevOps" (Syllabus will be placed in the next BoS)

A common basket of courses will be used for all the department electives I - VI. **(Encl.-VIII a)**

- H. The following existing courses approved in earlier academic councils by respective departments, which will be offered to B Tech Artificial Intelligence and Data Science (Navi Mumbai Campus), semester VII along with Course Structure and Teaching & Examination Scheme for the students admitted in AY 2021-22. **(Encl.-X)**
  - I. The core course "Human Computer Interaction" to be shifted in the elective basket.
  - II. Introduction of the course "Applied Time Series Analysis" as a compulsory subject.

**Semester VII:-**

- i. Applied Time Series Analysis
  - ii. Natural Language Processing
  - iii. Big Data Analytics
  - iv. Department Elective - V
  - v. Department Elective - VI
  - vi. Open Elective - V
  - vii. Capstone Project
- I. The following existing courses approved in earlier academic councils by respective departments, which will be offered in the common elective basket for B Tech Artificial Intelligence and Data Science (Navi Mumbai Campus) for semester V to VII along with Course Structure and Teaching & Examination Scheme for the students admitted in AY 2021-22 onwards. **(Encl.-XI)**
    - i. Reinforcement Learning
    - ii. DevOps
    - iii. Blockchain Technology
    - iv. Cyber Forensics
    - v. Advanced Web Programming
    - vi. Advanced Topics in Machine Learning
    - vii. Human Computer Interaction

A common basket of courses will be used for all the department electives I - VI. **(Encl.-XI)**

- J. Minor revision in Course Structure and Teaching and Examination Scheme for the B Tech Artificial Intelligence and Data Science (Navi Mumbai & Indore Campus), semester VI and VII for the students admitted in AY 2022-23 onwards. **(Encl.-XII)**
  - I. The elective course "Computer Vision" to be made compulsory in semester VI.
  - II. The course, "Big Data Analytics" to be shifted from semester VI to VII
  - III. The course, "Software Engineering" to be shifted from semester VII to VI, renamed and revised as "Agile Product Development with DevOps" (Syllabus will be placed in the next BoS)

- IV. The course “Human Computer Interaction” to be shifted to the elective basket.
- V. Introduction of the course “Applied Time Series Analysis” as a compulsory subject in semester VII.

A common basket of courses will be used for all the department electives I - VI. (Encl.-XIII)

**Suggestion:-** After deliberating on the content of the proposed changes and the thought process for the changes, Dr Manjunath Joshi and Mr Jitendra Mudhol appreciated the changes.

**Reporting Item: -**

- A. Minor change in the text and reference books of the following courses of semester III to VII for B Tech and MBA Tech Artificial Intelligence from AY 2024-25 onwards. (Encl.-XIV)

**Semester III:**

- i. Random Processes and Estimation Techniques
- ii. Computer Architecture

**Semester IV:**

- i. Statistical Methods
- ii. Machine Learning
- iii. Database Management Systems

**Semester V:**

- i. Computer Networks
- ii. Deep Learning

**Semester VI:**

- i. Intelligent Systems - II
- ii. Robotics

**Semester VII:**

- i. Computer Vision
- ii. Advanced Topics in Machine Learning

**Department Elective - I to VI (Semester V to VII)**

- i. Mobile Application Development
- ii. Web Programming
- iii. Cryptography and Network Security
- iv. Evolutionary Computing

**Justification: -** The text books and reference books have been revised/changed to include the latest editions.

**Action taken:** All the above changes are accepted by the BoS members and incorporated in the curriculum.



Dean, MPSTME  
Chairperson, Board of Studies

