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Minutes of Meeting Board of Studies for Data Science and Artificial Intelligence

The BOS meeting of Data Science department was held on 11th January 2020 at 09.00 a.m. at Mukesh Patel School of Technology Management and Engineering, Mumbai. This year (2020), we are launching B. Tech Artificial Intelligence, a new branch of Engineering.

Attended by:

1. Dr Archana Bhise, Associate Dean, Research, MPSTME
2. Dr. Shailaja Rego, Associate Professor, Chairperson, MBA-DSA(NMIMS), MS-BAIM (Purdue)
3. Prof. Sarada Samantaray, Associate Dean, HOD, MPSTME
4. Mr. Shreyas Bhargave, SPM, Cap Gemini
5. Dr. Prasad Ramanathan, SPM, Cap Gemini
6. Dr. Ajaya Kumar Panda, Assistant Professor, NITIE
7. Dr. Soumitra Das, Senior Consultant, SAS
8. Dr. Siba Panda, Assistant Professor, Data Science
9. Prof. Jaykrishna Joshi, Assistant Professor, Data Science
10. Prof. Avani Joshi, Assistant Professor, Data Science
11. Prof. Pranav Nerurkar, Assistant Professor, Data Science
12. Prof. Neepa Patel, Assistant Professor, Mechanical Engg.

Leave of absence:

1. Mr. Satish Mittal, Facebook
2. Mr. Dwiraj Bose, Bajaj Allianz
3. Mr. Pankaj Mittal, Axis Bank
4. Mr. Dhananjay Kumar, CEO Shezartech Consulting

Agenda of the meeting: -

1. Introduce a new program of B Tech (Artificial Intelligence) with proposed syllabus and teaching scheme for Semesters I and II.
2. Teaching scheme and syllabus for B. Tech (Data Science) course, 4th year-Semesters VII and VIII.

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3. Minor revision in teaching scheme and syllabus of B. Tech Data Science (second and third year), M. Tech data science (first year) and M. Tech Artificial Intelligence (first year).

The BOS members suggested the following amendments:

B. Tech Data Science:

A. **In B. Tech Data Science, fourth year was introduced for 2020. Board members reviewed all teaching schemes and syllabus for the same. After reviewing it, they gave a confirmation for SEM VII only and suggested SEM VIII should be introduced in next BOS meeting as major changes are required. Agenda no. 2 was presented as below:**

- For SEM- VII below subjects are newly introduced:
  Internship

B. **Minor changes in Teaching scheme and syllabus (Existing) of B. Tech Data Science, the details Agenda no. 3 was presented below:**

- In syllabus of B. Tech Data Science III subject "Data Gathering and Cleaning – ETL process",
  i. Rechristening unit names – Adding Titles according to the contents
  ii. Removal of Clover-ETL

- In syllabus of B. Tech Data Science IV Subject "Internet of Things",
  i. Changed objective, outcomes and text books.
  ii. In unit 1 to added content on Social mobility and cloud
  iii. In unit 6 to added content on Revue latest research papers on IOT

- In syllabus of B. Tech Data Science V Subject "Machine Learning",
  i. In unit 2 to added content on Normal equation
  ii. In unit 3 to added content on Cost function. Back propagation. Activation function.
  iii. In unit 4 to added new content of Machine Learning System Design
  iv. In unit 7 to added content on Principal Components Analysis, Anomaly detection and large scale machine learning.

- In syllabus of B. Tech Data Science VI Subject "Deep Learning",
  Changed objectives, outcomes, text books and reference book.

- In syllabus of B. Tech Data Science VI Subject "Financial Institution and Market",
    i. Removal of lease evaluation and Mortgage instruments.
    ii. In unit 10 to added new content on Mutual Funds.

M. Tech Data Science

A. **Minor changes in Teaching scheme and syllabus (Existing) of M. Tech Data Science, the details Agenda no. 3 was presented below:**

- In M. Tech Data Science SEM I, the teaching scheme and syllabus of subject "Programming for Analytics" is modified as follow:
    i. Theory hours per week changed from 3 to 4 and hence credit also changed accordingly.
    ii. Duration of hours increased from 45 hours to 60 hours

- In M. Tech Data Science SEM II, the teaching scheme and syllabus of subject "Operations Research" is modified as follow:
    i. Theory hours per week changed from 2 to 3 and hence credit also changed accordingly.
    ii. Duration of unit hours increased from 30 hours to 45 hours

- In M Tech (Data Science) SEM – II, audit subjects removed from elective list in teaching scheme.

- In M. Tech Data Science SEM II, the syllabus of subject "Finance Analytics",
    i. In unit 1 to added content on Corporate finance
    ii. In unit 3 to added new content on Working capital
    iii. In unit 7 to added content on Capital budgeting under risk and uncertainty

- In M. Tech Data Science SEM III the teaching scheme and syllabus of subject "Capstone Project",

    The below subjects are converted from 4 practical hours to 4 theory hours and hence credit also changed accordingly.:
    i. Advanced Financial Analytics
    ii. Advanced Marketing Analytics
    iii. Advanced Operations and Supply Chain Analytics

<u>M. Tech Artificial Intelligence</u>

A. **Minor changes in Teaching scheme and syllabus (Existing) of M. Tech Artificial Intelligence, the details Agenda no. 3 was presented below:**

- In M. Tech Artificial Intelligence SEM I, the teaching scheme and syllabus of subject "Application of Artificial Intelligence – I" replace with "Research Project - I"
- In M. Tech Artificial Intelligence SEM II, the teaching scheme and syllabus of subject "Application of Artificial Intelligence – II" replace with "Research Project - II"

Prof. Sarada Samantaray
HOD, Data Science

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Minutes of Meeting Board of Studies for Artificial Intelligence

The Board of Studies meeting for the B Tech Artificial Intelligence program was conducted by circulation. The proposed changes in the teaching scheme for the first year of the B Tech Artificial Intelligence program to be introduced from the academic year 2020-21 were sent to the BoS members on 15th May 2020 and their approval was taken by mail.

The members of the BoS are

1. Dr Alka Mahajan, Dean, MPSTME (chairperson)
2. Dr. Archana Bhise, Associate Dean, Research and Development, MPSTME, Mumbai
3. Prof. Sarada Samantaray, Associate Dean, HOD, MPSTME
4. Mr. Shreyas Bhargave, SPM, Cap Gemini
5. Dr. Prasad Ramanathan, SPM, Cap Gemini
6. Dr. Ajaya Kumar Panda, Assistant Professor, NITIE
7. Dr. Soumitra Das, Senior Consultant, SAS
8. Dr. Vaishali Kulkarni, Program in charge, B Tech Artificial Intelligence (Invited Member)

Agenda of the meeting: -

1. To approve the structure of B. Tech Artificial Intelligence (AI) program.
2. To approve proposed changes in the teaching scheme for semester I and detailed syllabus for the same, the B Tech AI program to be implemented from academic year 2020-21.
3. To approve proposed changes in the teaching scheme for semester II of B Tech AI program to be implemented from academic year 2020-21.

The teaching scheme and syllabus for the first year of the B. Tech AI program to be introduced from the academic year 2020-21 was earlier approved by the BoS in January 2020. Subsequent to that, there are some changes proposed in the teaching scheme.

The following agenda items were sent to the members:

1. To approve the structure of B Tech Artificial Intelligence (AI) program.

   The broad structure of the B Tech AI program has been prepared and is being presented to the BoS members. This structure is tentative and will be deliberated further in the next BoS meeting.

2. To approve proposed changes in the teaching scheme for semester I and II of B Tech AI program to be launched from academic year 2020-21.

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The B Tech Artificial Intelligence program would fall under the purview of the Computing Accreditation Commission (CAC) of ABET. As per the requirement of CAC, the program needs to have credits for different program criteria as defined by them. The structure of the program was also bench marked with different national and international universities. As a result of this process, some changes are proposed in the teaching scheme of semester I and II.

The overview of the changes proposed are:

1. Introduction of some basic science courses like Physics, Intelligence of Biological systems in semester I and II respectively.
2. Introduction of basic engineering course, Basic electrical and Electronics Engineering in semester I.
3. Shuffling of the courses from semester I of earlier scheme to semester II to accommodate the courses listed in point 1 and 2.
4. Change in name of course, Maths for AI (Applied Calculus) to Applied Calculus.
5. Introduction of the course Critical Thinking in semester II.

The members emphasized the need for the program to offer courses that cater to the interests of the students that is focused on needs of the industry. They also recommended to prioritize and devote more time on advanced subjects of AI in the higher semesters and create value on the mission and vision of the department and for the purpose for which B Tech AI program is made. **They approved the proposed changes in the first year in view of the requirements to satisfy the program criteria.**

2. To approve detailed syllabus for semester I of the B Tech AI program to be implemented from academic year 2020-21.

The detailed syllabus of the semester I of the B Tech program in view of the changes in the teaching scheme as mentioned in agenda item 1 was approved by the members of the BoS.

Dr. Alka Mahajan
Dean MPSTME