SCHOOL OF ENGINEERING

Dayananda Sagar University

School of Engineering

Devarakaggalahalli, Harohalli Kanakapura Road, Dt, Ramanagara, Karnataka 562112

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

(ARTIFICIAL INTELLIGENCE & MACHINE LEARNING)

31/05/2025

Minutes of Meeting for BOS 2024-2028 Batch Scheme & Syllabus

1. **Welcome Address by Chairperson Dr. Jayavrinda vrindavanam, Professor & Chairperson, Dept. of CSE(AI&ML), SOE, DSU**

Dr. Jayavrinda Vrindavanam, Chairperson of the Board of Studies, warmly welcomed all members — including external experts, industry representatives, alumni, university nominees, and faculty — and expressed appreciation for their valuable time and contributions to the academic development of the department.

In her address, Dr. Jayavrinda highlighted the **importance of aligning the department's curriculum with global standards**, referencing syllabus frameworks and course structures from leading international universities. She emphasized that the team had undertaken a careful review of top-ranked institutions abroad to ensure the department's offerings remain globally competitive and equip students with cutting-edge knowledge and skills.

Dr. Jayavrinda Maam also reflected on the **recent industry conclave** hosted by the department, which brought together thought leaders, industry practitioners, and academic experts to discuss emerging trends, industry needs, and graduate employability. The insights gathered from this conclave have been instrumental in shaping the curriculum revisions proposed for the upcoming academic year, ensuring strong alignment between academic content and industry expectations.

Further, Dr. Jayavrinda proudly announced the **introduction of a new and forward-looking syllabus** for several key programs, which includes the integration of contemporary topics such as [insert examples: Generative AI, Quantum Computing, Sustainability Practices, Cybersecurity, etc.]. She emphasized that the revised syllabus not only meets the National Education Policy (NEP) 2020 directives but also promotes interdisciplinary learning, innovation, and practical skill development. Concluded her welcome remarks by encouraging all members to actively participate in the discussions, provide their expert feedback, and help shape a curriculum that will truly empower students for future challenges and opportunities.

2. **Presentation of BOS Meeting Batch of 2024-2028 Scheme & Syllabus – Dr. Abdul Haq, Associate Professor, Dept. of CSE(AI&ML), SOE, DSU**

Dr. Abdul Haq presented a comprehensive summary of the previous Board of Studies (BOS) meeting, providing a structured recap of the key decisions, discussions, and follow-ups.

He began by highlighting the **approval of previous syllabus revisions** and the notable steps taken to benchmark the department's curriculum against **international standards** by referencing course structures from top global universities. This initiative ensured that the curriculum remains competitive and aligned with emerging technologies, as well as meeting industry expectations.

Dr. Abdul Haq also recalled the discussions on **outcomes of the recent industry conclave**, which had provided valuable feedback on the employability of graduates and the emerging skill demands from sectors such as artificial intelligence, machine learning, cybersecurity, and sustainable technologies. Recommendations from this conclave had influenced the new proposals reviewed at that time.

He summarized the key curriculum improvements from the prior BOS cycle, including:

- **Enhancement of core technical subjects to integrate** hands-on components and project-based learning**.**
- **Introduction of** activity-based learning, flipped classrooms, and collaborative exercises **to strengthen student engagement.**
- **Updates to laboratory components, ensuring students gain experience with** modern tools, open-ended experiments, and mini-projects **aligned with real-world problems.**

3. Suggestions and Review of Existing Curriculum (UG Programs) – External BOS.

Sl. No	Sem	Subjects	Suggestions from External BoS Members
1.	III	Probability & Statistics	Title and Content Appropriate
2.	III	Data Structures	Title and Content Appropriate
3.	III	Computer Networks	Title and Content Appropriate
4.	III	Discrete Mathematics and Graph Theory	Title and Content Appropriate
5.	III	Computer Organization and Architecture	Title and Content Appropriate
6.	III	Embedded Systems Design	Title and Content Appropriate
7.	III	Skill Enhancement Course – I	Title and Content Appropriate
8.	III	AI for Renewable Energy Systems	Title and Content Appropriate
9.	III	Cognitive and Technical Skills-I	Title and Content Appropriate
10.	IV	Transform and Numerical Techniques	Title and Content Appropriate
11.	IV	Design and Analysis of Algorithms	Title and Content Appropriate
12.	IV	Database Management System	Title and Content Appropriate
13.	IV	Theory of Computation	Title and Content Appropriate
14.	IV	Artificial Intelligence	Title and Content Appropriate
15.	IV	Full Stack Development	Title and Content Appropriate
16.	IV	Skill Enhancement Course -II	Title and Content Appropriate
17.	IV	Cognitive and Technical Skills-II	Title and Content Appropriate

18.	V	Machine Learning	Title and Content Appropriate
19.	V	Operating Systems	Title and Content Appropriate
20.	V	Natural Language Models	Title and Content Appropriate
21.	V	Compiler Design and System Software	Title and Content Appropriate
22.	V	Innovation and Entrepreneurship	Title and Content Appropriate
23.	V	Skill Enhancement Course -III	Cloud Computing: https://davidstarsilver.wordpress.com/teaching/ Suggested some assignment and content can be used from the above site
24.	V	Professional Elective Course -I	Optimization techniques are essential and should be introduced as a core subject. Additionally, NPTEL courses were recommended as a beneficial resource for students to gain in-depth understanding.
25.	V	Cognitive and Technical Skills-III	
26.	VI	Deep Learning	It was recommended to enrich the content of Module 3 of Deep Learning course by including Graph Neural Networks (GNN) alongside Convolutional Neural Networks (CNN), reflecting advancements in neural network architectures.
27.	VI	Image Processing and Computer Vision	Title and Content Appropriate
28.	VI	Designing MLOps for Enterprises	Title and Content Appropriate
29.	VI	Professional Elective Course – II	Title and Content Appropriate
30.	VI	Professional Elective Course – III	➢ **Fine-tuning LLMs / Generative AI:** It was recommended that topics such as quantized models, which are critical for deploying Large Language Models (LLMs) efficiently, be incorporated into the theoretical Generative AI course. ➢ **GEN AI:** It was recommended to include RLHF as a key topic within the Generative AI course to provide

			students with insights into how models like ChatGPT and other advanced LLMs are fine-tuned for alignment and safety. ➢ **Unsloth.ai** is a platform focused on making Large Language Model (LLM) training and fine-tuning faster and more memory-efficient, especially on consumer hardware (like a single GPU).
31.	VI	Open Elective – I	Title and Content Appropriate
32.	VI	Minor Project	Title and Content Appropriate
33.	VI	Cognitive and Technical Skills-IV	Title and Content Appropriate
34.	VII	Professional Elective Course – IV	Title and Content Appropriate
35.	VII	Professional Elective Course – V/ MOOC	Title and Content Appropriate
36.	VII	Open Elective – II	Title and Content Appropriate
37.	VII	Capstone Project Phase-I	Title and Content Appropriate
38.	VIII	Capstone Project Phase-II	Title and Content Appropriate
39.	VIII	Internship	Title and Content Appropriate

4. Action taken on the Suggestions and Review Provided by the External BOS Members

S. No	Sem	Subjects	Action taken
1.	III	Probability & Statistics	Title and Content Appropriate
2.	III	Data Structures	Title and Content Appropriate
3.	III	Computer Networks	Title and Content Appropriate
4.	III	Discrete Mathematics and Graph Theory	Title and Content Appropriate
5.	III	Computer Organization and Architecture	Title and Content Appropriate
6.	III	Embedded Systems Design	Title and Content Appropriate
7.	III	Skill Enhancement Course – I	Title and Content Appropriate
8.	III	AI for Renewable Energy Systems	Title and Content Appropriate
9.	III	Cognitive and Technical Skills-I	Title and Content Appropriate
10.	IV	Transform and Numerical Techniques	Title and Content Appropriate
11.	IV	Design and Analysis of Algorithms	Title and Content Appropriate
12.	IV	Database Management System	Title and Content Appropriate
13.	IV	Theory of Computation	Title and Content Appropriate
14.	IV	Artificial Intelligence	Title and Content Appropriate
15.	IV	Full Stack Development	Title and Content Appropriate
16.	IV	Skill Enhancement Course -II	Title and Content Appropriate
17.	IV	Cognitive and Technical Skills-II	Title and Content Appropriate
18.	V	Machine Learning	Title and Content Appropriate

19.	V	Operating Systems	Title and Content Appropriate
20.	V	Natural Language Models	Title and Content Appropriate
21.	V	Compiler Design and System Software	Title and Content Appropriate
22.	V	Innovation and Entrepreneurship	Title and Content Appropriate
23.	V	Skill Enhancement Course -III	Cloud Computing: https://davidstarsilver.wordpress.com/teaching/ Syllabus has been updated with few contents and activities provided in the above link as suggested
24.	V	Professional Elective Course -I	For Present batch of 2024-2028 optimization techniques will be in Professional Elective Course. Batch of 2025-2029 this subject will be moved as core subjects. Along with the Batch 2024-2028 optimization techniques will be provided as Value added course.
25.	V	Cognitive and Technical Skills-III	
26.	VI	Deep Learning	Module 3 is being revised to incorporate GNNs along with CNNs. The updated module will cover basic concepts, applications, and practical case studies of both CNN and GNN. The module 3 will be added with Graph layer techniques, graph models.
27.	VI	Image Processing and Computer Vision	Title and Content Appropriate
28.	VI	Designing MLOPS for Enterprises	Title and Content Appropriate
29.	VI	Professional Elective Course – II	Title and Content Appropriate
30.	VI	Professional Elective Course – III	➢ The syllabus of the Generative AI course is being revised to include modules on quantization techniques, fine-tuning strategies, and practical deployment methods of LLMs. ➢ The Generative AI course is being revised to include a dedicated module on Reinforcement Learning with Human Feedback (RLHF). This will cover the theoretical foundation, architecture,

			and case studies demonstrating how human feedback is used to align model behavior with desired outcomes. Practical sessions or readings may also be introduced to reinforce the concepts.
31.	VI	Open Elective – I	Title and Content Appropriate
32.	VI	Minor Project	Title and Content Appropriate
33.	VI	Cognitive and Technical Skills-IV	Title and Content Appropriate
34.	VII	Professional Elective Course – IV	Title and Content Appropriate
35.	VII	Professional Elective Course – V/ MOOC	Title and Content Appropriate
36.	VII	Open Elective – II	Title and Content Appropriate
37.	VII	Capstone Project Phase-I	Title and Content Appropriate
38.	VIII	Capstone Project Phase-II	Title and Content Appropriate
39.	VIII	Internship	Title and Content Appropriate

5. Introduction of New Courses (if any)

Courses like **AI for Renewable Energy Systems, Designing MLOPs for Enterprises**, concepts of **DEVOPS**, Professional Electives Courses and its domain was appreciated.

6. Incorporation of Industry Trends and Feedback

The department has actively incorporated **industry trends and feedback** into the curriculum to ensure students are equipped with relevant, up-to-date knowledge and skills that meet current and future job market demands.

7. **Discussion on Skill Enhancement Initiatives**

   The Board discussed various **skill enhancement initiatives** aimed at improving students' employability, technical competency, and innovation mindset. Recognizing the evolving demands of the technology sector, the department has proposed and implemented multiple targeted strategies: Like Cloud Computing, Java Programming, Unix Shell Programming, Advanced Java Programming, web development etc.

8. **Discussion on Cognitive and Technical Skills Training for placement readiness.**

The department has taken a proactive approach in strengthening the **placement readiness** of students by introducing specialized training programs on **cognitive and technical skills** delivered directly by seasoned **industry experts organized by DSU placement department**.

These sessions are carefully designed to bridge the gap between academic knowledge and industry expectations, equipping students with both **domain-specific expertise** and **essential problem-solving abilities**. The training modules typically cover:

Cognitive Skills:

- Logical reasoning and analytical thinking
- Problem-solving techniques and decision-making frameworks
- Verbal ability, communication clarity, and comprehension skills
- Time management and task prioritization
- Aptitude preparation, including quantitative reasoning and numerical ability

Technical Skills:

- Core programming proficiency (C, Java, Python, etc.)
- Data structures and algorithms with an emphasis on real-time problem solving
- System design basics and case-based problem-solving
- Web technologies, database management, and cloud fundamentals
- Exposure to tools and platforms widely used in the industry (e.g., Git, Docker, cloud services)

The **industry-led training sessions** are highly interactive, blending lectures with **hands-on workshops, coding sprints, mock interviews, and hackathon-style challenges**.

Furthermore, the trainers provide students with **placement-focused strategies**, such as:

- Resume preparation aligned with current industry hiring trends
- Personal branding tips for LinkedIn and professional networks
- Mock interviews, both technical and HR-focused
- Group discussions and personal interview readiness

Individual Suggestions by External BOS Members

1. **Dr. Mayank Baranwal, Scientist, TCS Research & INNOVATION, & Adjunct Professor, IIT Bombay**
   - Recommended introducing **interdisciplinary electives** combining AI/ML with domains like healthcare, finance, and environmental studies, to encourage broader application of technical knowledge.
   - Emphasized the need to **embed more case studies from real-world industry scenarios** into core and elective courses to improve student understanding of practical challenges.
   - Based on current scenario few subjects can be provided in two tracks based on industry demands to the students concentrating for their placement & training. The second track is for students concentrating on their higher studies.

2. **Dr. Saswati Dana, Advisory Research Engineer, AI Team, IBM Research lab India, Bangalore**
   - **Advised including** project-based assessments and industry-driven mini-projects **in each semester to strengthen students' hands-on learning and portfolio building.**
   - **Stressed the need to integrate** ethical and societal impact discussions **within technical courses, especially when teaching topics like AI, cybersecurity, and data privacy.**

SCHOOL OF ENGINEERING

Dayananda Sagar University
School of Engineering
Devarakaggalahalli, Harohalli Kanakapura Road, Dt, Ramanagara, Karnataka 562112
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
(ARTIFICIAL INTELLIGENCE & MACHINE LEARNING)

31/05/2025

BOS Meeting Attendance

External BOS Meeting		
Sl. No.	Name	Signature
1.	Dr. SASWATI DANA	Saswati Dana.
2	Dr. Mayank Baranwal	<-online ->
3	Dr. Ajin George Joseph	<-online ->
4	Dr. Aruna Rajan	<- Absent ->

Professor & Chairperson		
Sl. No.	Name	Signature
1	Dr. Jayavrinda Vrindavanam	
2	Dr. HANUMANTH SASTRY	
3	Dr. Bahubali Shiragapur	
4	Dr. Prakash S (Pro-VC, DSU	

Internal BOS Members		
Sl. No.	Name	Signature
1.	Dr. Abdul Haq Nalband	
2.	Dr. Joshua Arockia Dhanaj	
3.	Dr. Vegi Fernando A.	
4.	Dr. Vinutha. N.	31/5/25
5.	Prof. Pradeep Kumar. K	

31/5/2025
BOS Coordinator

31/05/2025
CHAIRPERSON
Chairperson
(Artificial Intelligence and Machine Learning)
School of Engineering
Dayananda Sagar University
Devarakaggalahalli, Harohalli Kanakapura Road
Ramanagara-562112

Scanned with OKEN Scanner