VIGNAN'S
FOUNDATION FOR SCIENCE, TECHNOLOGY & RESEARCH
(Deemed to be University) - Estd. u/s 3 of UGC Act 1956

Annexure – IV

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

CIRCULAR

Date: 30.04.2025

Department of CSE is going to conduct Board of Studies (BoS) meeting for the B.Tech and M.Tech programmes on **15.05.2025** from 10.00 AM in blended mode. With the Zoom meeting link https: //us06web.zoom.us/j/86045799470?pwd=yb7iSVomldOaxVQK9PcKbls24ZwtQE.1). All the members are requested to make it convenient to attend the meeting.

The members are

S.No.	Name and Designation of the Member	Position
1.	Dr. K.V. Krishna Kishore, Professor and Dean SOC&I	Member
2.	Dr. S. V. Phani Kumar, HOD, Dept. of CSE, VFSTR	Chairperson
3.	Prof. R.B.V.Subramanyam, Professor, Dept. of CSE, NIT Warangal	External Member (Academia)
4.	Mr.Bala Prasad Peddigari, Chief Innovation Officer, TCS	External Member (Industry)
5.	Prof. C.R.Rao, Professor, SCIS, University of Hyderabad	Invited Member(Academia)
6.	Dr.B.Venkata Ramana, Associate Professor, HoD-CSE, IIT, Tirupathi.	Invited Member(Academia)
7.	Mr.Sai Kumar Jadam, Quality Engineering Manager, DASSAULT SYSTEMES Solutions Lab	Invited Member(Industry)
8.	Dr. M. Umadevi, Associate Professor.	Internal Member(R&D nominee)
9.	Dr. D. Yakobu Associate Professor.	Internal Member(School nominee)
10.	Dr. S. Deva Kumar, Associate Professor.	Internal Member(Programme Coordinator)
11.	Dr. S. Satish Kumar, Assistant Professor	Internal member
12.	Dr.S.Manikandan, Assistant Professor	Off Campus, Hyderabad
13.	Dr. P. Siva Prasad, Associate Professor, (BOA)	Member Secretary

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Agenda of the BoS Meeting:

1. Approval of B.Tech. and M.Tech. CSE Programs under the R-25 and C-25 Regulations
2. To Discuss and finalize the elective courses list (Department/ Open/ Minor / Honour) and stream of B.Tech.,& M.Tech Programme for the regulation R25-C25.
3. Academic Performance Review of B.Tech and M.Tech Programs – I Semester, Academic Year 2024–25.
4. Assessment of Question Paper Standards based on Bloom's Taxonomy for the II Semester, Academic Year 2024–25.
5. Recommendation of NPTEL Courses for Students Admitted in 2022-23 and 2023-24 Years.
6. Approval of Vision, Mission, and Program Educational Objectives (PEOs) of the B.Tech. CSE Program.
7. Any other matter with the permission of the Chair.

P.S.P
[Dr.P.Siva Prasad]
Member Secretary

Chairperson

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Annexure – V

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Date: 16.05.2025

Minutes of Board of Studies Meeting

Board of Studies (BoS) meeting of B.Tech & M.Tech degree programmes were conducted on 15.05.2025 in blended mode from 10.00 AM to 11.30 A.M. in blended mode. With the Zoom meeting link https://us06web.zoom.us/j/86045799470?pwd=yb7iSVomldOaxVQK9PcKbls24ZwtQE.1). All the members are requested to make it convenient to attend the meeting).

Agenda of the BoS Meeting:

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3. Academic Performance Review of B.Tech and M.Tech Programs – I Semester, Academic Year 2024–25.
4. Assessment of Question Paper Standards based on Bloom's Taxonomy for the II Semester, Academic Year 2024–25.
5. Recommendation of NPTEL Courses for Students Admitted in 2022-23 and 2023-24 Years.
6. Approval of Vision, Mission, and Program Educational Objectives (PEOs) of the B.Tech. CSE Program.
7. Any other matter with the permission of the Chair.

The following members were present either thorough offline or online.

S.No.	Name and Designation of the Member	Position	Signature
1.	Dr. K.V. Krishna Kishore, Professor and Dean SOC&I	Member	
2.	Dr. S. V. Phani Kumar, HOD, Dept. of CSE, VFSTR	Chairperson	
3.	Prof. R.B.V.Subramanyam, Professor, Dept. of CSE, NIT Warangal	External Member (Academia)	Online
4.	Mr.Bala Prasad Peddigari, Chief Innovation Officer, TCS	External Member (Industry)	Online

5.	Prof. C.R.Rao, Professor, SCIS, University of Hyderabad	Invited Member(Academia)	Online
6.	Dr.B.Venkata Ramana, Associate Professor, HoD-CSE, IIT, Tirupathi.	Invited Member(Academia)	Online
7.	Mr.Sai Kumar Jadam, Quality Engineering Manager, DASSAULT SYSTEMES Solutions Lab	Invited Member(Industry)	Online
8.	Dr. M. Umadevi, Associate Professor.	Internal Member(R&D nominee)	
9.	Dr. D. Yakobu Associate Professor.	Internal Member(School nominee)	
10.	Dr. S. Deva Kumar, Associate Professor.	Internal Member(Programme Coordinator)	
11.	Dr. S. Satish Kumar, Assistant Professor	Internal member	
12.	Dr.S.Manikandan, Assistant Professor	Off Campus, Hyderabad	Online
13.	Dr. P. Siva Prasad, Associate Professor, (BOA)	Member Secretary	

Chairperson Dr. S. V. Phani Kumar, Professor and Head, department of CSE, VFSTR initiated the meeting by welcoming and introducing the external members and invitees to the internal members. Chairperson presented about the *NEP 2020 Compliant Regulation - R25-C25* which emphasis on creating *learning centric* (continuous learning and continuous assessment model), offering B.Tech., B.Tech. with Honours / Research Honours / Minor / Add-on Diploma, providing lateral entry and honorable exit, as well as M.Tech degree programs.

The following key points were discussed and approved to be adopted in B.Tech. CSE curriculum of R25C25 during this BoS meeting:

1. Approved the introduction and adoption of **Regulation R25-C25** for the B.Tech. and M.Tech. CSE programs with the following .
   - Self-Learning (SL) as a structured component in the curriculum.
   - Course design consisting of **two modules**:
     1. Module 1: Two fundamental units
     2. Module 2: Three application-oriented units
   - **Assessment methods** encompassing **formative (60%) and summative (40%) evaluations.**
   - **Relative grading system** with clear qualifying criteria and grade point calculations.

- **Departmental Electives and Honors** Courses are well integrated into well-defined streams or pools. **Open Electives and Minor Programs**, allowed for interdisciplinary learning through defined streams/pools.
- Approved the list of updated **Program Outcomes (POs)** as per the latest **NBA** guidelines.
- Recommended to adopt of the **T-Shaped Learning Philosophy** to foster both depth and breadth in student competencies.
- Approved the inclusion of **Creative Work-in-Lieu** credits to support self-directed and project-based learning.
- **Relative grading mechanism** introduced across all courses with transparent standards.
- **Pre-semester bridge courses** planned to strengthen foundational skills prior to semester commencement.
- Revised **credit allocation** assigning **30 out of 160 credits** to Basic Sciences in the first year.
- **Common first-year curriculum** designed to address both MPC and BiPC student backgrounds.
- The **Choice-Based Credit System (CBCS)** now constitutes **47 credits (~29.3%)** of the program.
- Launched of **field-based projects** beginning in the second year and continuing into the third year.
- Mandatory **75% course-wise attendance** requirement for eligibility in assessments.
- Approved comprehensive list of **elective tracks**, including **AI/ML, Data Science, and Cybersecurity**.
- Discussed **embedding SDGs** to nurture ethical, sustainable, and socially responsible engineers. Reinforcement of SDG integration to build **globally conscious and environmentally aware professionals**.
- Proposed to incorporate **Indian Knowledge Systems (IKS)** as a **binary-graded 1-credit course**. Flexibility for departments to decide on **IKS content embedding** in select courses.

2. Discussed and thoroughly reviewed the **academic performance review** for the **I-Semester of AY 2024–25 (R22 curriculum)**.
3. Reviewed in detail about the **pass percentages and grade distributions** in major subjects (e.g., Data Structures, DBMS, DLD, Java) and **third-year core courses**, including AI, Compiler Design, and Computer Networks.
4. Approved **NPTEL course recommendations** for student batches admitted in **2022–23 and 2023–24**.
5. Approved the **Vision and Mission of the Department** and **Program Educational Objectives (PEOs)** of the B.Tech. CSE program. BoS also approved the inclusion of **Computer Organization** course to be re-introduced in the II Year II Semester with 2-2-0-3 as LTPC in C24 curriculum and **Theory of Computing** is moved into Department Elective stream. Further, BoS approved for the revision of **DLD LTPC to 3024 respectively.** Revision of **L-T-P-C structures** for key courses such as Object-Oriented

Programming through JAVA, Design and Analysis of Algorithms, Computer Networks, Machine Learning and Cryptography and Network Security. In addition, BoS members also recommended to update the course title of **Privacy and Intrusion Detection** as **Privacy Preserving and Intrusion Detection.**

Board of Studies – Suggestions and Actions Taken

1. **Awareness on Indian Knowledge Systems (IKS)**

   Suggestion: External members recommended conducting departmental or institute-level workshops to enhance faculty awareness and understanding of IKS.
   Action Taken: Plan initiated to organize faculty development workshops on IKS during the upcoming semester.

2. **Web Technology as a major practice course**

   Suggestion: Prof. K.V. Krishna Kishore, Dean – SoCI, suggested offering the Web Technology course purely as a practice course (with additional transactional components).
   Action Taken: Web Technology course adopted as a practice major course with additonal transactional sessions with revised structure: **L-T-P-SL-C: 0-2-2-0-2**.

3. **Machine Learning – Transaction Hour Allocation**

   Suggestion: Dr. S.V. Phani Kumar, Chairman, BoS, recommended assigning one theory (transaction) hour for the Machine Learning course.
   Action Taken: Course retained with one transaction hour in structure **L-T-P-SL-C: 2-2-2-2-4**, pending external review.

4. **Sequencing of DAA and Machine Learning Courses**

   Suggestion: Prof. C.R. Rao advised offering Design and Analysis of Algorithms (DAA) prior to Machine Learning to maintain conceptual continuity.
   Action Taken: Course sequence updated accordingly; DAA precedes Machine Learning in the 3rd Year 1st Semester timetable.

5. **Swapping of DAA and ML Semesters**

   Suggestion: Mr. Sai Kumar Jadam supported swapping DAA and ML offerings to improve learning progression.
   Action Taken: Implemented – DAA moved to **II Year II Semester**, Machine Learning to **III Year I Semester**.

6. **Revision of Parallel and Distributed Computing (PDC) Structure**
7. **Suggestion:** Prof. C.R. Rao proposed reducing lab hours and increasing theory content for advanced conceptual coverage.
   Action Taken: Course structure updated to **L-T-P-SL-C: 3-2-0-3-4**; syllabus revised accordingly.
8. **Department Electives Format Revision**

   Suggestion: Prof. C.R. Rao recommended a standardized format to balance contact hours.
   Action Taken: All departmental electives revised to **L-T-P-SL-C: 3-2-0-3-4**; lab components redistributed into lecture-based delivery.

9. **Course Title Revision – "Computing Ethics"**

   Suggestion: Prof. C.R. Rao advised renaming the course to "Computer Ethics."
   Action Taken: Title changed to "Computer Ethics" across all official curriculum documents.

10. **Clarification: Honors vs. Minor Programs**

    Suggestion: Prof. C.R. Rao highlighted the need to distinguish Honors (research-intensive) from Minors (application-based).
    Action Taken: Clarification added in the curriculum handbook, including structure and credit differences.

11. **Defining Transaction Hours for Electives**

    Suggestion: Dean of SoCI recommended specifying transaction hours for each elective.
    Action Taken: A detailed transaction-hour matrix has been included in the academic handbook.

12. **Inclusion of Communication Skills Electives**

    Suggestion: Prof. C.R. Rao proposed electives such as "Professional Communication" and "Technical Presentation Skills."
    Action Taken: Two new electives approved and scheduled for introduction in the upcoming odd semester.

13. **Research Methodology Placement in M.Tech.**

    Suggestion: Prof. C.R. Rao advised offering Research Methodology in the 1st semester instead of pre-semester.
    Action Taken: Research Methodology course moved to **Semester I** of M.Tech; pre-semester offering discontinued.

14. **Review of M.Tech Course Titles**

Suggestion: Prof. C.R. Rao emphasized the need to update course titles to align with current industry standards.

Action Taken: Title review initiated; changes will reflect in the next academic catalog.

15. **Course-wise and Year-wise Results Analysis**

Suggestion: Prof. C.R. Rao suggested a results dashboard for real-time monitoring and intervention planning.
Action Taken: Result analysis dashboard implemented; faculty training scheduled to enhance data-driven interventions.

16. **Alignment with NPTEL Courses**

Suggestion: Prof. C.R. Rao proposed mapping NPTEL courses to avoid syllabus overlap and redundancy.
Action Taken: Mapping completed; redundant content removed and curriculum updated with complementary material.

17. **Hands-on Java Tools and Applications**

Suggestion: Mr. Sai Kumar Jadam recommended strengthening Java labs with tools such as Apache Ant and SBT.
Action Taken: Java lab sessions enriched with tool-based exercises; Ant/SBT workshops added in Year II.

18. **M.Tech Curriculum Tracks and Objectives**

Suggestion: Mr. Sai Kumar Jadam emphasized creating distinct tracks for research and applied learning in M.Tech.
Action Taken: Curriculum now includes "Research Track" and "Application Track" with respective advising guidelines.

19. **Cyber Security Course Title Update**

Suggestion: Dr. B. Venkata Ramana proposed renaming the course to "Introduction to Cyber Security."
Action Taken: Title updated in the official syllabus and course catalog.

20. **Industry Involvement in Competitive Coding**

Suggestion: Dr. B. Venkata Ramana highlighted the growing mentorship from industry professionals.
Action Taken: "Coding Mentorship Cell" established; industry-led contests and mentorship programs formally launched.

Observations and Key Recommendations Incorporated in the R25-C25 Curriculum

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The following observations and recommendations were made during the curriculum review process, many of which have been implemented in the revised R25-C25 curriculum:

1. **Curriculum Restructuring:**

   A comprehensive restructuring has been carried out to promote continuous learning and assessment. The curriculum is now modular in nature, emphasizing phased learning and evaluation across all courses.

2. **Honors/Specialization and Minor Programs:**

   The curriculum now enables students to pursue an Honors/Specialization degree or a Minor degree through the addition of 16 extra credits via specially designed courses, thereby encouraging academic depth and interdisciplinary exposure.

3. **Curriculum Structure and Course Listings:**

   The complete curriculum structure, including the list of professional core, departmental electives, open electives, Minor, Honors, and NPTEL-integrated courses for both B. Tech. and M.Tech. programs, is presented in **Appendix I**.

4. **Skill-Oriented Course Design:**

   The revised curriculum integrates courses aimed at enhancing employability, entrepreneurial abilities, and skill development. Details are provided in **Appendix II**.

5. **Syllabus Revision Summary:**

   On average, **45%** of the syllabus has been revised when compared to the previous curriculum, as outlined in **Appendix III**.

6. **New Course Framework:**

   Significant content changes across courses have led to their reclassification as new courses, detailed in **Appendix IV**.

7. **Indian Knowledge System (IKS) Integration:**

   Relevant IKS components have been incorporated into applicable courses. A summary of courses with IKS integration is provided in **Appendix V**.

8. **Sustainable Development Goals (SDG) Mapping:**

All courses have been mapped to appropriate SDGs to align with global educational standards and promote responsible engineering practices. Mapping details are in **Appendix VI**.

9. **Web Technology Course Format:**

   Based on the recommendation of the Dean, School of Computing and Informatics, the Web Technology course is now offered as a purely transactional (theory-based) subject.

10. **Transaction Hours in Machine Learning:**

    The Machine Learning course includes one theory (transaction) hour in its **L-T-P-SL** structure, as advised by the Dean.

11. **Sequencing of Core Courses – DAA and Machine Learning:**

    Based on Prof. C.R. Rao's recommendation, Machine Learning has been positioned after Design and Analysis of Algorithms (DAA) in the curriculum to maintain conceptual continuity.

12. **Course Swap – DAA and Machine Learning:**

    The DAA course is now scheduled for **II Year II Semester**, while Machine Learning has been shifted to **III Year I Semester** to enhance learning progression.

13. **Revision of Parallel and Distributed Computing (PDC):**

    The structure of the PDC course has been modified from **L-T-P-SL-C: 2-2-2-2-4** to **3-2-0-3-4**, as suggested by Prof. C.R. Rao, to increase theoretical depth.

14. **Department Elective Course Structure:**

    All departmental electives now follow a uniform structure of **L-T-P-SL-C: 3-2-0-3-4**, based on suggestions to streamline instructional hours.

15. **Course Title Revision – Privacy and Intrusion Detection:**

    The course title has been revised to **"Privacy Preserving and Intrusion Detection"**, aligning better with the evolving subject scope.

16. **Course Title Revision – Computing Ethics:**

    As per expert suggestion, the course title has been updated to **"Computer Ethics"** for consistency and relevance.

17. **Clarification – Honors vs. Minor Programs:**

    A distinction has been added in the curriculum guide: **Honors** programs are research-focused and advanced, while **Minors** focus on application of core technical subjects.

18. **Defined Transaction Hours for Electives:**

    Each elective now includes clearly defined transaction hours, as recommended by the Dean. A comprehensive table is available in the academic handbook.

19. **Communication Skills Electives:**

New electives such as **"Professional Communication"** and **"Technical Presentation Skills"** have been introduced to strengthen soft skills.

20. **Revised C24 Course Structure:**

The C24 course structure has undergone revision as recommended by Prof. C.R. Rao, with detailed changes captured in **Appendix VII**.

21. **M.Tech – Research Methodology Placement:**

The **Research Methodology** course has been moved to the **First Semester** of the M.Tech program, replacing the earlier pre-semester module.

22. **Review of M.Tech Course Titles:**

Titles of several M.Tech courses are under review for alignment with industry trends and academic relevance. Updates will reflect in the next academic cycle.

23. **Course-wise and Year-wise Results Dashboard:**

A dashboard system is being implemented to present and analyze academic results by course and year. Faculty intervention plans will be developed accordingly.

24. **Alignment with NPTEL Curriculum:**

Redundant content between NPTEL and internal curriculum (e.g., overlap between **Advanced Business Decision Support Systems** and **Big Data Analytics**) has been audited and addressed through syllabus revisions.

25. **Hands-On Java Development and Tools:**

Enhanced focus on practical Java applications, including tools such as **Apache Ant** and **SBT**, has been implemented in lab components, per Mr. Sai Kumar Jadam's suggestion.

26. **Importance of Documentation Practices:**

Emphasis has been placed on maintaining robust academic documentation. **Computer Ethics** now explicitly addresses ethical practices in documentation and teaching.

27. **M.Tech Curriculum Design Objectives:**

As articulated by Mr. Sai Kumar Jadam, the curriculum offers two tracks:

- A **Research Track** to prepare students for Ph.D. pursuits
- An **Application Track** aligned with project-based academic or professional outcomes

28. **Course Title Revision – Cyber Security:**

Based on Prof. B. Venkata Ramana's suggestion, the course title has been revised to **"Introduction to Cyber Security"** in the I Year I Semester.

29. **Industry Support for Competitive Coding:**

Notable industry mentorship and collaboration have been formalized through the establishment of a **Coding Mentorship Cell** and a structured calendar of coding contests.

30. **Stakeholder Feedback Integration:**

Feedback received from faculty, students, alumni, and industry experts has been appropriately incorporated into the final R25-C25 curriculum design.

Curriculum Enhancement: Action Points and Implementation Summary (R25-C25 Curriculum)

The following key improvements and refinements have been suggested by internal and external academic experts, reviewed by the Board of Studies, and implemented as appropriate in the revised R25-C25 curriculum:

Parallel and Distributed Computing (PDC) Structure

- **Suggestion:** Prof. C.R. Rao advised increasing lecture hours for deeper theoretical coverage.
- **Action Taken:** Course structure updated to **L-T-P-SL-C: 3-2-0-3-4**; lab components reduced accordingly.

Department Electives Restructuring

- **Suggestion:** Prof. C.R. Rao recommended a uniform format for all electives to avoid contact hour overload.
- **Action Taken:** All department electives now follow **L-T-P-SL-C: 3-2-0-3-4** structure.

Course Title Revisions

- **Suggestions:** Prof. C.R. Rao recommended renaming *"Computing Ethics"* to *"Computer Ethics"*. He also clarified the distinction between **Honors** (research-intensive) and **Minor** (application-oriented) programs.
- **Action Taken:** Titles and curriculum documentation have been updated; a clarification section on Honors vs. Minors has been added.

Defined Transaction Hours for Electives

- **Suggestion:** Dean – SoCI suggested providing clear transaction hour details for all elective courses.
- **Action Taken:** A comprehensive elective structure with transaction hour details is included in the academic handbook.

Communication Skills Electives

- **Suggestion:** Prof. C.R. Rao proposed the inclusion of electives focused on soft skills.
- **Action Taken:** Two new electives – *"Professional Communication"* and *"Technical Presentation Skills"* – have been introduced for odd-semester offerings.

Placement of Research Methodology in M.Tech.

- **Suggestion:** Prof. C.R. Rao recommended shifting Research Methodology to the **first semester**.
- **Action Taken:** Implemented as suggested; pre-semester modules discontinued.

M.Tech Course Title Revisions

- **Suggestion:** Prof. C.R. Rao urged a comprehensive review of M.Tech. course titles to reflect industry and academic relevance.
- **Action Taken:** Titles are under review; updates will be reflected in the next academic catalog.

Course-wise and Year-wise Results Analysis

- **Suggestion:** Prof. C.R. Rao suggested a results dashboard for real-time academic performance monitoring.
- **Action Taken:** Dashboard implemented; faculty workshop scheduled to develop data-driven improvement strategies.

Alignment with NPTEL Courses

- **Suggestion:** Prof. C.R. Rao highlighted overlaps (e.g., *Advanced Business Decision Support Systems* vs. *Big Data Analytics*) and recommended reducing redundancy.
- **Action Taken:** Audit completed; overlapping content pruned and complemented with new modules.

Java Applications and Tool Usage

- **Suggestion:** Mr. Sai Kumar Jadam recommended strengthening Java labs with tool-based instruction using **Apache Ant** and **SBT**.
- **Action Taken:** Labs revised; workshops on Ant and SBT integrated into the 2nd-year curriculum.

M.Tech Curriculum Design Objectives

- **Suggestion:** Mr. Sai Kumar Jadam proposed structuring the M.Tech. program to support two tracks:
    - **Research Track** (for Ph.D. aspirants)
    - **Application Track** (for academic and practical project roles)
- **Action Taken:** Curriculum documentation updated to reflect these dual objectives.

Cyber Security Course Title

- **Suggestion:** Dr. B. Venkata Ramana recommended renaming the course to *"Introduction to Cyber Security."*
- **Action Taken:** Title revised in both syllabus and official catalog.

Industry Support for Competitive Coding

- **Suggestion:** Dr. B. Venkata Ramana noted strong mentorship support from industry professionals.
- **Action Taken:** *Coding Mentorship Cell* formalized; mentorship events and contest calendar launched.

SRK

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(Appendix - VIII)

The following recommendations and approvals are made after the discussion:

1. BoS Members approved the revised regulations, curriculum structure, syllabus, assessment schemes of B.Tech., & M.Tech degree programmes and it follows based on the NEP 2020.
2. The details of elective courses (Department/ Open/ Minor / Honour) of B.Tech., CSE Programme for the regulation R25-C25 are approved.
3. NPTEL courses are approved for the Academic Year 2025-26.
4. SDG mapping and incorporation of the IKS components in the syllabus is approved.
5. Curriculum Restructuring and Course Revisions
6. Standardization of Course Structures:
7. Emphasis on Academic and Industry Alignment:
8. Strengthening Research Orientation
9. Enhancement of Communication and Ethical Competency:
10. Result Analysis and Implementation:

There being no further points for discussion, the Chairperson thanks all the external, internal, invited members and announced that the meeting was concluded.

P.S.

Member Secretary

Chairperson

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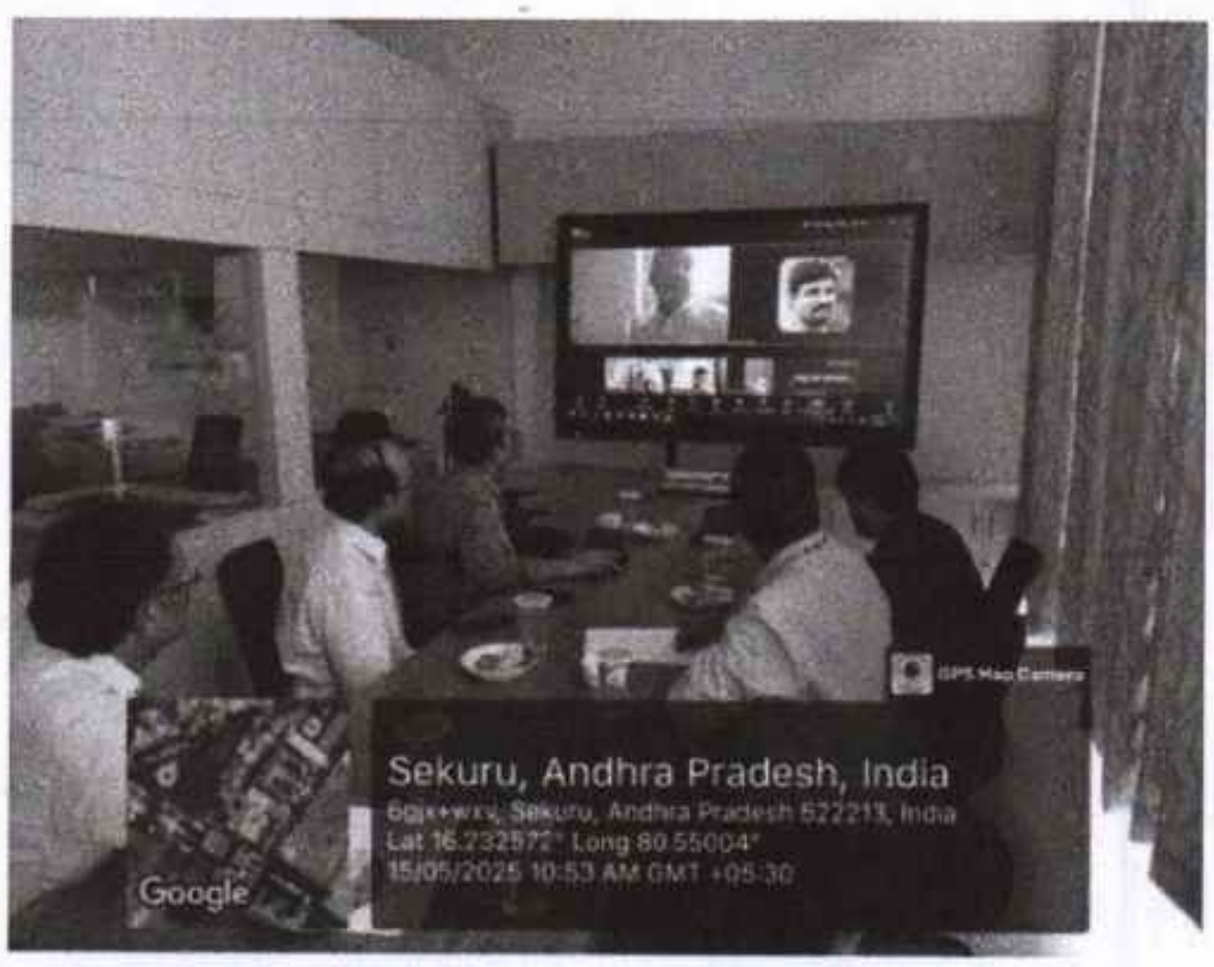

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Major Revision - R25 & C25
Course Structure - C25
M.Tech., CSE Program

M.Tech., CSE Program Curriculum Structure

I Year I Semester						
S.No.	**Course Title**	**L**	**T**	**P**	**SL**	**C**
1	Data Structures and Algorithms	2	2	2	2	4
2	Machine Learning	2	2	2	2	4
3	Internet of Things	2	2	2	2	4
4	DepartmentElective–1	2	0	2	2	3
5	DepartmentElective–2	2	0	2	2	3
6	Cyber Security	1	2	0	1	2
7	Employment Orientation Program	0	2	2	0	2
	Grand Total	11	10	12	11	22
		44				**22**
I Year II Semester						
S.No.	**Course Title**	**L**	**T**	**P**	**SL**	**C**
1	Cloud Computing	2	2	2	2	4
2	Big Data and Analytics	2	2	2	2	4
3	DepartmentElective–3	2	0	2	2	3
4	DepartmentElective–4	2	0	2	2	3
5	Research Methodology & IPR	1	2	0	1	2
6	Inter-Departmental Project	0	1	3	0	2
7	Teaching Activity	0	0	4	0	2
	Total	9	7	15	**9**	**20**
8	Add-oncertificationcourse-1	3	0	2	3	4
	Grand Total	12	7	17	12	24
		48				**24**
II Year I Semester						
S.No.	**Course Title**	**L**	**T**	**P**	**SL**	**C**
1	Project/ Internship	0	2	24	0	13
2	Add-on certification course–2(MOOCs/Self-Study Course)	4	0	0	4	4
	Grand Total	4	2	24	4	17
II Year II Semester						
S.No.	**Course Title**	**L**	**T**	**P**	**SL**	**C**
1	Project/ Internship	0	2	24	0	13
2	Add-on certification course–3(MOOCs/Self-Study Course)	4	0	0	4	4
	Grand Total	4	2	24	**4**	**17**

Department Electives–Stream-wise

Artificial Intelligence and Machine Learning

S.No.	CourseTitle	L	T	P	SL	C
1	Artificial Intelligence	2	0	2	2	3
2	Artificial Neural Networks	2	2	0	2	3
3	Deep Learning	2	0	2	2	3
4	Computer Vision	2	0	2	2	3
5	Pattern Recognition	2	2	0	2	3
6	Digital Image Processing	2	0	2	2	3

Data Science

S.No.	Course Title	L	T	P	SL	C
1	Data Handling and Visualization	2	0	2	2	3
2	Statistical Foundations of Data Science	2	0	2	2	3
3	Natural Language Processing	2	2	0	2	3
4	Deep Learning	2	0	2	2	3
5	Time Series Analysis and Forecasting	2	0	2	2	3
6	Kernel Methods for Pattern Analysis	2	0	2	2	3

Cyber Security

S.No.	Course Title	L	T	P	SL	C
1	Wireless Sensor Networks	2	0	2	2	3
2	Mobile Ad-hoc Networks	2	0	2	2	3
3	Block chain Technologies	2	0	2	2	3
4	Mobile and Wireless Security	2	0	2	2	3
5	Advanced Cryptography	2	0	2	2	3
6	Digital Forensics	2	0	2	2	3

P.S.
[Dr. P. Sive Nagaraju]
Member Secretary

SRK
Chairperson