National Engineering College, K.R.Nagar, Kovilpatti – 628 503
(An Autonomous Institution - Affiliated to Anna University, Chennai)
www.nec.edu.in

Department of Computer Science and Engineering
Information Technology &
Artificial Intelligence & Data Science

MINUTES of 21st Meeting of the Board of Studies held on 25th May, 2024 at 10.30 AM

Venue: TECH PARK Seminar Hall, National Engineering College
K.R.Nagar, Kovilpatti – 628 503

21st Board of Studies Meeting in the Departments of
**Computer Science and Engineering
Information Technology &
Artificial Intelligence & Data Science**

Venue: TECH PARK Seminar Hall, National Engineering College

K.R.Nagar, Kovilpatti – 628 503

Date & Time: 25.05.2024 & 10.30 AM

Agenda

BoS / CSE, IT, AI&DS 21.1	:	Confirmation of the Minutes of the 20th meeting of Board of studies in the departments of Computer Science & Engineering, Information Technology, Artificial Intelligence & Data Science held on 25th November 2023 and Action taken report of 20th meeting of Board of studies.
BoS / CSE, IT, AI&DS 21.2	:	Business brought forward by the Chairman, Board of studies 21.2.1. R-2023 B.E. CSE, B.Tech IT and AI&DS programmes - 4th semester curriculum, syllabi and assessment pattern. 21.2.2. Verticals proposed for R-2023 B.E. CSE, B.Tech IT and AI&DS programmes - Elective list, few elective courses content and assessment pattern. 21.2.3. Course design document for 1st to 3rd semester courses of R-2023 B.E. CSE, B.Tech IT and AI&DS programmes - presentation, discussion and approval. 21.2.4. Core and Elective courses for M.E.CSE, M.Tech ISCW degree programmes under R- 2023. 21.2.5. Verticals and Syllabi for R-2019 B.Tech IT and AI&DS programmes.
BoS / CSE, IT, AI&DS 21.3	:	Any other items.
BoS / CSE, IT, AI&DS 21.4	:	Suggestions given by the BoS Members

F. No. 1-1/NEC/CSE, IT, AI&DS

25th May, 2024

Dear Sir/Madam,

Sub: *Minutes of the 21st Meeting of the Board of studies in the Computer Science and Engineering, Information Technology, Artificial Intelligence & Data Science -Reg.*

Kindly find attached herewith the Minutes of the 21st Meeting of Board of studies of the Computer Science and Engineering, Information Technology and Artificial Intelligence & Data Science of the National Engineering College, K.R.Nagar, Kovilpatti – 628 503 held on 25th May 2024 at 10.30 AM in the TECH PARK Seminar hall of National Engineering college. Hard copy of the Minutes is also being sent to you by speed post.

It is requested that comments on the Minutes, if any, may please be sent by emails at hodcse@nec.edu.in / hodit@nec.edu.in / hodai@nec.edu.in or by post, at the earliest. If no comments are received, within ten days, the minutes shall be taken as confirmed.

Yours Sincerely,

Dr.V.Gomathi
Chairman/ BoS-CSE

Dr.K.G.Srinivasagan
Chairman/ BoS-IT

Dr.V.Kalaivani
Chairman/BoS-AI&DS

Department of Computer Science and Engineering,
Information Technology &
Artificial Intelligence & Data Science

MINUTES OF THE MEETING

The 21st Meeting of the Board of studies of the Computer Science and Engineering, Information Technology and Artificial Intelligence & Data Science was held on 25th May, 2024 at 10.30 AM in the TECH PARK Seminar hall of National Engineering College.

The following members were present in the TECH PARK Seminar hall

1.	**Dr.V.Gomathi** Professor & Head/ CSE	Chairman BoS/ CSE
2.	**Dr.K.G.Srinivasagan** Professor & Head/ IT	Chairman BoS/ IT
3.	**Dr.V.Kalaivani** Professor & Head/ AI & DS	Chairman BoS/ AI & DS
	Experts attended the Meeting	
4.	**Dr.G.Madhupriya** Associate Professor, Dept. of Computer Science and Engineering Thiagarajar College of Engineering, Madurai.	Anna University Nominee
5.	**Dr.V.Masilamani** Professor, Dept. of Computer Science and Engineering, Indian Institute of Information Technology, Design and Manufacturing, Kancheepuram.	Academic Experts Nominated by the Academic Council
6.	**Dr.C.Mala** Professor, Dept. of Computer Science and Engineering, National Institute of Technology, Tiruchirappalli.	
7.	**Dr. B.L. Velammal** Associate Professor, Department of CSE, Anna university, Chennai. Mobile No: 9486452241	

	Email id: velammalbl@annauniv.edu	
8.	**Dr. A.D.Dileep,** Associate Professor & Head, Department of CSE, Indian Institute of Technology, Dharwad, Karnataka Mobile No: 9459477409 Email id: addileep@iitmandi.ac.in	Academic Experts from Central Institutions
9.	**Dr. B.Surendiran,** Associate Professor, Dept. of CSE, National Institute of Technology, Puducherrv. Mobile No: 9942761363 Email id:surendiran@gmail.com	
10.	**Mr.Roy Antony Arnold,** Lead-Education and Research, Infosys Private Ltd., Chennai. Mobile No: 8754444910 Email id: RoyAntony_G@infosys.com	Experts from Industries
11.	**Mr.K.Sujeeth** Senior Technical Lead – Data Analyst, Mercedes Benz R&D India, Brigate Tech Gargen, Kundanahalli, Bangalore. Mobile No: 7022850738 Email id: sujeeth.kumaravel@mercedes-benz.com	
12.	**Mr. S R.Dhinesh Khanna,** Global Head-Customer Success, Zoho Corporation, Chennai Mobile No: 96001 44793 Email id: dhinesh@zohocorp.com	
13.	**Mr.Sivaram Sundaram,** Senior Director, Comcast India Engineering Centre, Thoraipakkam, Chennai Mobile No: 9884480095 Email id: Sivaram_sundaram@comcast.com	
14.	**Mr. Sudeesh Sankaravel,** Associate fellow, Data Science, Verizon, Chennai Mobile No: 91764 33113 Email id: ssudeesh2000@yahoo.com	
15.	**Dr.Sujesh Sreedharan (R&D),** Engineer-G, Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum Mobile No: 0471 2520310 Email id: sujeshs@sctimst.ac.in	Scientists from Research & Development Laboratories

16.	Dr.V. Natarajan (R&D), Scientist, Quantum Security Research Group, SETS Chennai. Mobile No: 9943195161 Email id:natarajan@setsindia.net	
17.	Dr.Shajulin Benedict, Associate Professor, Indian Institute of Information Technology, Kottavam, Kerala Mobile No: 9443543746 Email id: shajulin@iiitkottayam.ac.in	Alumni Member
18.	Dr.D.Manimegalai, Professor & COE	Internal Members
19.	Dr.K.Mohaideen Pitchai, Professor/ CSE	
20.	Dr.S.Kalaiselvi, Associate Professor/ CSE	
21.	Dr.J.Naskath, Associate Professor/ CSE	
22.	Dr.R.Rajakumari, Assistant Professor (SG) / CSE	
23.	Dr.G.Sivakamasundari, Assistant Professor (SG) / CSE	
24.	Dr.B.Shunmugapriya, Assistant Professor (SG) / CSE	
25.	Dr.S.Dheenathayalan, Assistant Professor (SG) / CSE	
26.	Ms.D.Thamarai Selvi, Assistant Professor/ CSE	
27.	Mr.J.Karthikeyan, Assistant Professor/ CSE	
28.	Ms.R.Vazhan Arul Santhiya, Assistant Professor/ CSE	
29.	Dr.B.Paramasivan, Professor/ IT	
30.	Dr.R.Muthukkumar, Professor/ IT	
31.	Dr.S.Chidambaram, Associate Professor/ IT	
32.	Dr.S.Rajagopal, Assistant Professor (SG)/ IT	
33.	Ms.V.Anitha, Assistant Professor/ IT	
34.	Ms.N.Gowthami, Assistant Professor/ IT	

35.	Ms.S.Santhi, Assistant Professor/ IT	
36.	Ms.V.Veera Anusuya Assistant Professor / AI&DS	
37.	Ms.K.Poorani, Assistant Professor / AI&DS	
38.	Ms.P.Rampriya, Assistant Professor / AI&DS	
39.	Ms.G.Dhivya, Assistant Professor / AI&DS	
40.	Mr.A.Asir Praveen, III year/ CSE	
41.	Ms.N.Padmavathi, III year/ CSE	
42.	Ms.S.Girija, IV year/ IT	Student Members Nominated by concern HODs
43.	Mr.S.Alex, III year/ IT	
44.	Mr.E.Vignesh, III year / AI&DS	
45.	Ms.M.Shriya, III year / AI&DS	

Mr.Arun Rajkumar, Co-Founder & CTO, Atoa Payment, Bengaluru could not attend the meeting due to his prior commitments and unavoidable reasons and was granted leave of absence.

BoS / CSE, IT, AI&DS 21.1	:	**TO CONFIRM** THE MINUTES OF 20th BOS MEETING HELD ON 25th NOVEMBER, 2023 The minutes of the **20th Board of Studies meeting** held on 25th November 2023 were communicated to the members. The comments received have been incorporated and placed for confirmation. The same was approved by the 20th Academic council. ➤ **Action Taken Report** (Enclosed in Annexure I)
BoS / CSE, IT, AI&DS 21.2.1	:	**TO CONFIRM** R-2023 B.E. CSE/ B.Tech IT and AI&DS programmes - 4th semester curriculum, syllabi and assessment pattern.

		RESOLVED R-2023 B.E. CSE/ B.Tech IT and AI&DS programmes - 4th semester curriculum, syllabi and assessment pattern.
BoS / CSE, IT, AI&DS 21.2.2	:	**TO CONFIRM** Verticals proposed for R-2023 B.E. CSE/ B.Tech IT and AI&DS programmes - Elective lists, few elective courses content and assessment pattern. **RESOLVED** Verticals proposed for R-2023 B.E. CSE/ B.Tech IT and AI&DS programmes - Elective lists, few elective courses content and assessment pattern.
BoS / CSE, IT, AI&DS 21.2.3	:	**TO CONFIRM** Course design document for 1st to 3rd semester courses of R-2023 B.E. CSE/ B.Tech IT and AI&DS programmes - Presentation, discussion and approval. **RESOLVED** Course design document for 1st to 3rd semester courses of R-2023 B.E. CSE/ B.Tech IT and AI&DS programmes - Presentation, discussion and approval
BoS / CSE, IT, AI&DS 21.2.4	:	**TO CONFIRM** Core and Elective courses for M.E.CSE/ M.Tech ISCW degree programmes under R- 2023 **RESOLVED** Core and Elective courses for M.E.CSE/ M.Tech ISCW degree programmes under R- 2023
BoS / CSE, IT, AI&DS 21.2.5	:	**TO CONFIRM** Verticals and Syllabi for R-2019 B.Tech IT and AI&DS programmes. **RESOLVED** Verticals and Syllabi for R-2019 B.Tech IT and AI&DS programmes.
BoS / CSE, IT, AI&DS 21.3	:	**ANY OTHER ITEMS, IF ANY, WITH THE PERMISSION OF THE CHAIRMANS OF THE BOS (CSE, IT and AI&DS)** On the whole, this new initiative was very much appreciated by all members. The challenges faced by the students (if any) should be periodically discussed with them. They also congratulated the faculty members for their team efforts

		towards framing curriculum structure and syllabi for new regulations 2023.
BoS / CSE, IT, AI&DS 21.4	:	**SUGGESTIONS GIVEN BY THE BOS MEMBERS**
BoS / CSE, IT, AI&DS 21.4.1	:	**For R2023 – UG Programmes (B.E.(CSE), B.Tech. (IT and AI&DS)** In 23CS41C / 23IT41C - Java Programming, advised to change the title as "Java for Developers"; informed to refine CO3, CO4 and to remove JavaFX portions.
BoS / CSE, IT, AI&DS 21.4.2	:	In 23CS42C - Cryptography and Cyber Security, informed to reduce the contents and to include the basics of number theory and group theory.
BoS / CSE, IT, AI&DS 21.4.3	:	In 23CS43C / 23IT44C - Design and Analysis of Algorithm, recommended to change the LTPEC from 3 0 0 2 4 to 3 0 2 0 4, for engaging the students on various algorithmic practices.
BoS / CSE, IT, AI&DS 21.4.4	:	In 23CS44C / 23IT45C - Database Management Systems, recommended to remove the JDBC connectivity and to rearrange the design concepts followed by DML and PL/SQL.
BoS / CSE, IT, AI&DS 21.4.5	:	In 23CS45C / 23IT46C - Java Programming Laboratory informed to eliminate sample exercises from syllabi.
BoS / CSE, IT, AI&DS 21.4.6	:	In verticals, recommended to include courses on emerging technologies such as, NeoForge, Ethics in AI, Prompt Engineering, Edge Computing, Digital Asset Modeling Language, Quantum Engineering, Recent Trends in Deep Learning, Digital Marketing, Graph Neural Network.
BoS / CSE, IT, AI&DS 21.4.7	:	In 23IT42C - Business Process Modeling, concepts related to model simulation for real world scenario may be included.
BoS / CSE, IT, AI&DS 21.4.8	:	In verticals, Intelligent Information Systems, Pattern Recognition may be offered as a separate course.
BoS / CSE, IT, AI&DS 21.4.9	:	In verticals, mobile computing course may be removed.
BoS / CSE, IT, AI&DS 21.4.10	:	In verticals, Recent trends in Deep Learning course title may be changed as Deep Learning.

BoS / CSE, IT, AI&DS 21.4.11	:	In 23AD42C- Data mining, R tool may be replaced with R programming; include the reprint edition of the text books; and CO3 statement may be rephrased.
BoS / CSE, IT, AI&DS 21.4.12	:	In 23AD43C- Machine learning, the syllabus contents may be reduced; applications may be mentioned as generic, dimensionality reduction technique and factor analysis may be included in CO5; and CO7 statement may be rephrased.
BoS / CSE, IT, AI&DS 21.4.13	:	Reinforcement learning may be offered as a separate course.
BoS / CSE, IT, AI&DS 21.4.14	:	23AD32C - Computer networks course in 3rd semester may be swapped with 23AD42C –Data Mining course in 4th semester.
BoS / CSE, IT, AI&DS 21.4.15		Program Elective Course I may be moved to V semester.
BoS / CSE, IT, AI&DS 21.4.16		In 23AD45C- Data Science may be changed as Data analytics and Introduction to Data Science and AI may be offered as one credit course.
BoS / CSE, IT, AI&DS 21.4.17		Verticals may be offered commonly by integrating CSE, IT and AI&DS. ·
BoS / CSE, IT, AI&DS 21.4.18		Board of study members appreciated the new initiative on course design document for ensuring uniformity in content delivery and CO assessment to attain PO's and PSO's
BoS / CSE, IT, AI&DS 21.4.19		For R2023-Open Elective Course, 23CS02N-Foundation of Object oriented programming, advised to reduce the course content in CO5
BoS / CSE, IT, AI&DS 21.4.20	:	**For R2023 – PG Programmes (M.E.(CSE) & M.Tech(ISCW))** In 23CT03E - Introduction to Intelligent Systems, advised to change title as Intelligent Systems.
BoS / CSE, IT, AI&DS 21.4.21	:	In 23CT14E- Cellular Automata Paradigm, advised to change title as Cellular Automata and its Applications.
BoS / CSE, IT, AI&DS 21.4.22	:	For M.Tech (ISCW) informed to follow the syllabus template as per R2023.

The members had a brainstorming discussion and interaction among themselves. After discussion, fruitful suggestions were incorporated appropriately in the Curriculum and the Syllabi of R-2023.
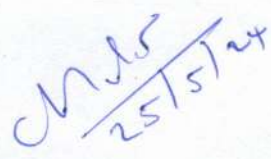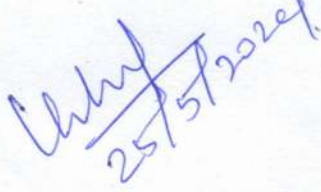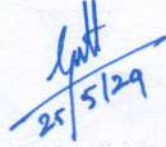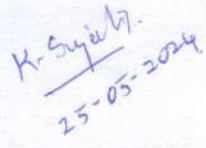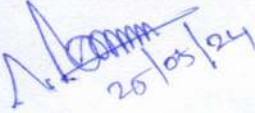
Based on the suggestions given by the members, BOS resolved to recommend the following to the Academic Council for further approval.

a. R-2023 B.E. CSE, B.Tech IT and AI&DS programmes - 4th semester curriculum, syllabi and assessment pattern

b. Verticals proposed for R-2023 B.E. CSE, B.Tech IT and AI&DS programmes - Elective list, few elective courses content and assessment pattern

c. Course design document for 1st to 3rd semester courses of R-2023 B.E. CSE, B.Tech IT and AI&DS programmes - Presentation, discussion and approval

d. Core and Elective courses for M.E.CSE, M.Tech ISCW degree programmes under R- 2023

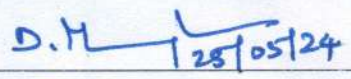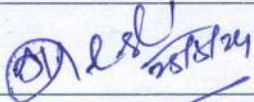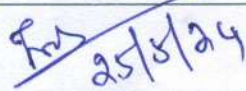e. Verticals and Syllabi for R-2019 B.Tech IT and AI&DS programmes
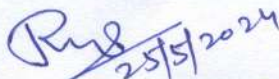
Dr.J.Naskath, Associate Professor, thanked all the members for their valuable suggestions and cooperation and the meeting came to an end.

<u>Members Present</u>

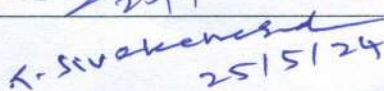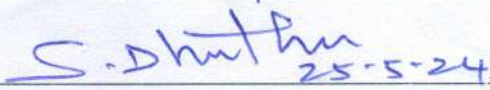|	
Dr.V.Gomathi Professor & Head/ CSE Chairman BoS/ CSE	V.L. 25/5/24
Dr.K.G.Srinivasagan Professor & Head/ IT Chairman BoS/ IT	
Dr.V.Kalaivani Professor & Head/ AI & DS Chairman BoS/ AI & DS	V.Kal 25/5/24
Experts attended the 21st BOS meeting *Expert Nominated by the Anna University, Chennai.*	
Dr. G.Madhupriya Associate Professor, Dept. of Computer Science and Engineering Thiagarajar College of Engineering, Madurai.	G.Madhupriya 25/5/24
Academic Experts Nominated by the Academic Council	
Dr.V.Masilamani, ~~Associate~~ Professor ~~& Head,~~ Dept. of Computer Science and Engineering, Indian Institute of Information Technology, Design and Manufacturing, Kancheepuram.	V. 25/5/24

Dr.C.Mala, Professor, Dept. of Computer Science and Engineering, National Institute of Technology, Tiruchirappalli.	*Mala* 25/5/24
Dr. B.L. Velammal Associate Professor, Department of CSE, Anna university, Chennai. Mobile No: 9486452241 Email id: velammalbl@annauniv.edu	25/5/2024
Academic Experts from Central Institutions	
Dr. A.D.Dileep, Associate Professor, Department of CSE, Indian Institute of Technology, Dharwad, Karnataka Mobile No: 9459477409 Email id: addileep@iitmandi.ac.in	Dileep 25.05.2024
Dr. B.Surendiran, Associate Professor, Dept. of CSE, National Institute of Technology, Puducherrv. Mobile No: 9942761363 Email id:surendiran@gmail.com	25/5/2024
Experts from Industries	
Mr.Roy Antony Arnold, Lead-Education and Research, Infosys Private Ltd., Chennai. Mobile No: 8754444910 Email id: RoyAntony_G@infosys.com	25/5/24
Mr.K.Sujeeth Senior Technical Lead – Data Analyst, Mercedes Benz R&D India, Brigate Tech Gargen, Kundanahalli, Bangalore. Mobile No: 7022850738 Email id: sujeeth.kumaravel@mercedes-benz.com	K.Sujeth. 25-05-2024
Mr.S R.Dhinesh Khanna, Global Head-Customer Success, Zoho Corporation, Chennai Mobile No: 96001 44793 Email id: dhinesh@zohocorp.com	25/5/24
Mr.Sivaram Sundaram, Senior Director, Comcast India Engineering Centre, Thoraipakkam, Chennai Mobile No: 9884480095 Email id: Sivaram_sundaram@comcast.com	25/05/24

Mr.Sudeesh Sankaravel, Associate fellow, Data Science, Verizon, Chennai Mobile No: 91764 33113 Email id: ssudeesh2000@yahoo.com	

Dr.Sujesh Sreedharan (R&D), Engineer-G, Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum Mobile No: 0471 2520310 Email id: sujeshs@sctimst.ac.in	
Dr.V. Natarajan (R&D), Scientist, Quantum Security Research Group, SETS Chennai: Mobile No: 9943195161 Email id:natarajan@setsindia.net	

Alumni Member	

Dr.Shajulin Benedict, Associate Professor, Indian Institute of Information Technology, Kottavam, Kerala Mobile No: 9443543746 Email id: shajulin@iiitkottayam.ac.in	

Internal BoS Members	
Dr.D.Manimegalai, Professor & COE	
Dr.K.Mohaideen Pitchai, Professor/ CSE	
Dr.S.Kalaiselvi, Associate Professor/ CSE	
Dr.J.Naskath, Associate Professor/ CSE	
Dr.R.Rajakumari, Assistant Professor (SG) / CSE	
Dr.G.Sivakamasundari, Assistant Professor (SG) / CSE	
Dr.B.Shunmugapriya, Assistant Professor (SG) / CSE	
Dr.S.Dheenathayalan, Assistant Professor (SG) / CSE	
Ms.D.Thamarai Selvi, Assistant Professor/ CSE	

Mr.J.Karthikeyan, Assistant Professor/ CSE	*J. Karthikeya 25/5/24*
Ms.R.Vazhan Arul Santhiya, Assistant Professor/ CSE	*25/05/2024*
Dr.B.Paramasivan, Professor/ IT	*25/5/24*
Dr.R.Muthukkumar, Professor/ IT	*25.5.24*
Dr.S.Chidambaram, Associate Professor/ IT	*25/5/24*
Dr.S.Rajagopal, Assistant Professor (SG)/ IT	*25/5/24*
Ms.V.Anitha, Assistant Professor/ IT	*25/5/24*
Ms.N.Gowthami, Assistant Professor/ IT	*25/5/24*
Ms.S.Santhi, Assistant Professor/ IT	*25/5/24*
Ms.V.VeeraAnusuya Assistant Professor / AI&DS	*V.Ve 25/5/24*
Ms.K.Poorani, Assistant Professor / AI&DS	*25/05/24*
Ms.P.Rampriya, Assistant Professor / AI&DS	*P.@ 25/5/24*
Ms.G.Dhivya, Assistant Professor / AI&DS	*G.Dhya 25/5/24*
A.Asir Praveen, III year/ CSE	*A. Asir 25/5/24*
N.Padmavathi, III year/ CSE	*N.Padmavathi 25/5/24*
Ms.S.Girija, IV year/ IT	*S.Girija 25/5/24*
Mr.S.Alex, III year/ IT	*S.Alex 25/5/24*
E.Vignesh, III year / AI&DS	*E.Vignesh 25/5/24*
M.Shriya, III year / AI&DS	*Shriya.M 25/5/24*

CHAIRMAN
 BOS / CSE   **CHAIRMAN**
 BOS / IT   **CHAIRMAN**
 BOS / AI & DS

Annexure I

Action Taken Report for Minutes of 20th BOS

As per BOS committee suggestions,

1. R2023 UG Curriculum was reframed

2. For few Core Laboratory Courses contact hours have been increased

3. In Deep Learning course (R2023 – PG) CO4 contents were refined

4. The course titled Digital logic circuits is changed as Semiconductor Physics and Digital Electronics and also the topics on memory is removed.

5. In the course titled, 23IT31C- Software Engineering, Rajesh kumar's "Software Engineering – Concepts and Implementation" book is included in references.

6. In the course titled, 23IT33C - Computer Organization, pipelining and parallel processing topics is moved to CO5. Swap the contents of CO in that order. Also, the course is renamed as Computer Organization and Architecture.

7. The course titled,23IT35C-Computer Networksis moved to previous Semester.

8. In the course titled, 23IC21C - Cyber Attacks Detection and Prevention System, books on recent years are added.

9. In the course titled, 23IC24C - Cloud Security and Privacy, AWS Security related concepts is added.

10. In 23AD21C - Computer Organization and Architecture, course contents are reduced.

11. In 23AD23C - Probability and Statistics and in 23AD35C - Data Structures, text books are revised.

12. In 23AD35C - Data Structures, polynomial manipulation topic is removed and complexity analysis is included.

13. In 23AD32C - Computer Networks, error correction is included and course contents are reduced.

14. In 23AD34C- Object Oriented Programming with Java, contents are reduced.

15. In 23AD36C - Artificial Intelligence, mini project CO may be combined with CO5.

CHAIRMAN
BOS / CSE

CHAIRMAN
BOS / IT

CHAIRMAN
BOS / AI & DS

21st BOARD OF STUDIES MEETING - DEPARTMENT OF CSE, IT

&

3rd BOARD OF STUDIES MEETING - DEPARTMENT OF AI&DS ON 25.05.2024