

**VIGNAN'S**

Foundation for Science, Technology & Research

(Deemed to be University)

Established under the UGC Act 1956

DEPARTMENT OF ADVANCED COMPUTER SCIENCE & ENGINEERING

Date: 15-03-2026

The department of ACSE is conducting a Board of Studies (BoS) meeting to review the B. Tech CSE Data Science program curriculum on 18.03.2026 from 02:00 PM in blended mode. (Physical meeting: ACSE Department, room number 603, 6th floor, Nagarjuna Block, VFSTR and virtual meeting link:

Invitation for B.Tech CSE-Data Science; B.S(Data Science) and M.S (Data Science) BoS meeting-reg

Wednesday, March 18 · 2:00 – 4:00pm

Time zone: Asia/Kolkata

Google Meet joining info

Video call link: <https://meet.google.com/jor-zibp-ppx>

All the members of B. Tech- CSE Data Science Board of Studies are requested to make it convenient to attend the meeting.

S.No	Name of the Member	Designation and Affiliation	Role	Signature
1	Dr. Venkatesulu Dondeti	Professor & Addl. Dean, Department of ACSE, VFSTR Deemed to be University Contact : 9840850744 Mail : dean_addl_acse@vignan.ac.in	Chair Person	
2	Prof. J. Balasubramaniam	Professor Department of Mathematics IIT, Hyderabad Contact: 8008441461 Mail: jbala@math.iith.ac.in	External member	
3	Prof. R.B.V Subramanyam	Professor Department of CSE, NIT, Warangal, Telengana Contact: 949 134 6969, 9441 434 454 Mail : rhvs66@gmail.com	External member	
4	Prof. P Tirupathi Rao	Dean & Professor Department of Statistics Pondicherry Central University Kalapet Puducherry Contact: 9629862241 Mail: drtrpadi@gmail.com	Invited member	

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5	Dr. Vinay Kumar N	AIML Delivery Lead, SC.AI, Standard Chartered Global Business Services, Bangalore-66. Mobile: 9632454934 Email: vinaykumar.natraj@gmail.com	Invited member	Online
6	Dr. Deevi Radha Rani	Associate Professor & Head, Department of ACSE, VFSTR Deemed to be University Contact : 91 9676354404 Mail : hod_acse@vignan.ac.in	Internal member	
7	Dr. Eva Patel	Professor, Department of ACSE, VFSTR Deemed to be University Contact: 8085575111 Mail : drop_acse@vignan.ac.in	Internal Member	
8	Dr. Britto Manoj	Assistant Professor, Department of ACSE, VFSTR Deemed to be University Contact: +91 9550367172 Mail: drbr_acse@vignan.ac.in	Internal member	
9	Dr. U.V.Manoj Kumar	Assistant Professor Department of Mathematics & Statistics, VFSTR Deemed to be University Contact : 9885532198 Mail: uvmk_sh_@vignan.ac.in	Internal Member	
10	Dr. Jyotsna Devi Bodapati	Associate Professor, Department of ACSE, VFSTR Deemed to be University, Contact: +91 7358209553 Mail: bjd_acse@vignan.ac.in	Internal member (School nominee)	
11	Dr. Javed Ahmed Dar	Assistant Professor, Department of ACSE, VFSTR Deemed to be University Contact : 7006157037 Mail : drjad_acse@vignan.ac.in	Internal Member (Nominee - Dean R&D)	
12	Dr. S. Hanumantha Rao	Associate Professor, Department of ACSE, VFSTR Deemed to be University Contact: +91 9441536410 Mail: sama.hanumantharao@gmail.com	Member Secretary	



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Agenda of the BoS Meeting:

1. To Discuss and finalize the curriculum structure and credits distribution of B.Tech. Data Science Programme for the regulation 2025 (R25-C25).
2. To Discuss and finalize the elective courses list (Department/ Open/ Minor / Honour) and stream of B.Tech. Data Science Programme for the regulation R25-C25.
3. To Discuss about the SDG and IKS components in the syllabus.
4. To approve the R25-C25 curriculum, syllabus and assessment schemes of B.Tech. Data Science Programme and recommend to the Academic council.
5. Percentage of syllabus revision from R22C24 to R25
6. Approval of SWAYAM/NPTEL courses
7. Leverage in taking advantage in assigning 4 credits for the NPTEL courses.
8. Approval of L-T-P structure change or any credit change courses, if any
9. Any other points with the permission of Chairperson

Chair Person
(Dr. Venkatesulu Dondeti)

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VIGNAN'S FOUNDATION FOR SCIENCE, TECHNOLOGY AND RESEARCH
Department of Advanced Computer Science & Engineering

Date: 12.03.2026

The Department of ACSE is delighted to invite you to the Department Academic Advisory Committee (DAAC) meeting scheduled to review the B.Tech CSE – DS program curriculum. The meeting will be held on 16.03.2026, from 02:00 PM onwards. Venue: HoD ACSE Office Room, Sixth floor, N Block, VFSTR. We request all members to make it convenient to attend, your presence and valuable inputs are essential for the success of this meeting.

The members are:

1. Dr. Venkatesulu Dondeti, Professor and Head – Chairman
2. Dr. D. Radha Rani, Associate Professor & HoD – Member
3. Dr. Eva Patel, Professor – Member
4. Dr. B. Jyostna Devi, Associate Professor & Content Training Head– Member
5. Dr. Britto Manoj, Assistant Professor- Member
6. Dr. U. V. Manoj Kumar, Assistant Professor- Member
7. Dr. Javed Ahmed Dar, Assistant Professor- Member
8. Dr. S Hanumantha Rao, Associate Professor & DS Co-ordinator – Member

Agenda of the Department Academic Advisory Committee Meeting:

1. Review the proposed course structure for the R25 regulation for the B. Tech CSE Data Science program
2. Finalize the course structure for the remaining courses of the B. Tech CSE DS program
3. Review the allocation of the faculty for preparation of R25 courses.
4. Analysis of the feedback collected from various stakeholders such as Alumni, Employers, Faculty, Parents and Students during the academic year 2025-26.
5. Discussion of results- FA, SA, grades
6. Discussion of attainments process, rubrics, CO/PO/PSO and SO values.

Chairperson

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VIGNAN'S FOUNDATION FOR SCIENCE, TECHNOLOGY AND RESEARCH
Department of Advanced Computer Science & Engineering

Date: 17.03.2026

Minutes of Department Academic Advisory Committee (DAAC) Meeting

Department Academic Advisory Committee meeting of B.Tech., CSE-DS programme was conducted on 16.03.2026 in HoD ACSE Office Room, Sixth floor, N Block, VFSTR, from 02:00 PM onwards. Agenda of the Department Academic Advisory Committee Meeting:

1. Review the proposed course structure for the R25 regulation for the B. Tech CSE DS program
2. Finalize the course structure for the remaining courses of the B. Tech CSE DS program
3. Analysis of the Feedback collected from various stakeholders such as Alumni, Employers, Faculty, Parents and Students during the academic year 2025-26.
4. Discussion of results-FA, SA, grades
5. Review the allocation of the faculty for preparation of R25 courses.
6. Discussion of the attainment process, rubrics, CO/PO/PSO and SO values.
7. Any other points with the permission of the Chairperson.

The following members were present

SNO	Name and designation of the Member	Position	Signature
1	Dr. Venkatesulu Dondeti Professor and Additional Dean	Chairperson	
2	Dr. Eva Patel Associate Professor	Member	
3	Dr. D. Radha Rani, Associate Professor & Head	Member	
4	Dr. S Hanumantha Rao, Associate Professor & DS Co-ordinator	Member and Convener	
5	Dr. B. Jyostna Devi, Associate Professor & Content Training Head- Member	Member	
6	Dr. Britto Manoj Assistant Professor	Member	
7	Dr. Javed Ahmed Dar Assistant Professor	Member	
8	Dr. U. V. Manoj Kumar, Assistant Professor	Member	

Chairperson Dr. Venkatesulu Dondeti, Professor and Additional Dean, initiated the meeting and presented the R25 course structure and major difference between R25 and R22 followed by the list of faculties involved in preparing the Data Science programme syllabus contents and finalization of course contents with the concerned subject assigned faculties

The following points were discussed in the Department Academic Advisory Committee meeting:
1. The following faculty are involved in preparation of the R25 courses.

SLNo	Name of the Faculty	Program me	Responsible	Supporting Faculty
1	Ms P.Seethalakshmi	DS	Deep Learning, Generative AI	T. Bala Krishna
2	Dr. S Hanumantha Rao	DS	Optimization Techniques	
3	Dr. Eva Patel	DS	Machine Learning, Federated Machine Learning	Gunakala Archana
4	Dr. P.M. Benson Mansingh	DS	Computer Networks, Cloud Computing and Analytics	Dr. B. Sudha Rani
5	Dr. B. Sudha Rani	DS	Computer Architecture and Organization	
6	Mr. D.S. BhupalNaik	DS	Cryptography and Network Security, Big Data Analytics	
7	Ms. S. Radha Rani	CORE	Database Management Systems	
8	Mr. J. Amar	DS	Data Warehousing and Data Mining	Ms. Syed Reshma
9	Dr. Arnab De	DS	Fundamentals of Image Processing	
10	Dr. Chennapradaga Amarendra	CORE	Full Stack Development	
11	Dr. G. Kalaiaarasi	CORE	DLCO	
12	Mr.Brundavanam Satya Sai	DS	Data Handling and Visualization, Computer Vision	
13	Dr. Jawad Ahmad Dar	DS	Artificial Intelligence, Reinforcement Learning, Soft Computing	Dr. G. Kalaiaarasi

14	Dr.Jyoshna Devi	DS	Intelligent Application Development	Dr. G. Kalaiarasi
15	Mrs. I.Leela Priya	CORE	Object Oriented Programming, Operating Systems	Ms. G. Mahalakshmi
16	Mr.Bharadwaja Chepuri	CORE	Data Structures, Design and Analysis of algorithms	
17	Ms. Syed Reshma	CORE	Mobile Application Development	
18	Mr. Gunakala Archana	DS	Business Analytics	
19	Mr. Manoj Kumar	DS	Speech Processing and Analytics	
20	Dr. Sivadi Balakrishna	DS	Multi-modal Data Processing & Learning Security aspects of Data and Machine Learning Models Social, Web and Mobile Analytics Text Analytics and Natural Language Processing Graph Neural Networks	

- The II year first semester course "Computer Architecture and Organization" has been replaced with "Digital Logic and Computer Organization" to provide foundational knowledge in digital systems and computer architecture. This change is essential for a better understanding of Operating Systems and for optimizing CPU/GPU architectures used in deep learning model training.
- Draft version of the curriculum is finalized based on the revised curriculum for the B.Tech Data Science. The outcomes of the meeting will be placed before the BoS for further discussion and recommendations.

Chairperson

DEPARTMENT OF ADVANCED COMPUTER SCIENCE & ENGINEERING

Date: 26-03-2026

Minutes of Board of Studies Meeting

Board of Studies (BoS) meeting of B.Tech. Data Science programme was conducted on 18.03.2026 in blended mode from 2 PM to 4 PM. (Physical meeting: ACSE Department, room number 603, 6th floor, Nagarjuna Block, VFSTR and virtual meeting link: Invitation for B.Tech CSE-Data Science; B.S(Data Science) and M.S (Data Science) BoS meeting- reg

Wednesday, March 18 · 2:00 – 4:00pm

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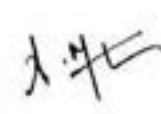
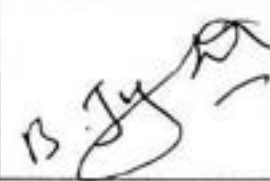
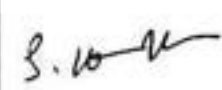
Video call link: <https://meet.google.com/jor-zibp-ppx>

Agenda of the BoS Meeting:

1. To Discuss and finalize the curriculum structure and credits distribution of B.Tech. Data Science Programme for the regulation 2025 (R25-C25).
2. To Discuss and finalize the elective courses list (Department/ Open/ Minor / Honour) and stream of B.Tech. Data Science Programme for the regulation R25-C25.
3. To Discuss about the SDG and IKS components in the syllabus.
4. To approve the R25-C25 curriculum, syllabus and assessment schemes of B.Tech. Data Science Programme and recommend to the Academic council.
5. Percentage of syllabus revision from R22C24 to R25
6. Approval of SWAYAM/NPTEL courses
7. Leverage in taking advantage in assigning 4 credits for the NPTEL courses.
8. Approval of L-T-P structure change or any credit change courses, if any
9. Any other points with the permission of Chairperson

The following members were present either thorough offline or online.

S.No	Name of the Member	Designation and Affiliation	Role	Signature
1	Dr. Venkatesulu Dondeti	Professor & Addl. Dean, Department of ACSE, VFSTR Deemed to be University Contact : 9840850744 Mail : dean_addl_acse@vignan.ac.in	Chair Person	

2	Prof. R.B.V Subramanyam	Professor Department of CSE, NIT, Warangal, Telengana Contact: 949 134 6969, 9441 434 454 Mail : rbvs66@gmail.com	External member	Online
4	Dr. Vinay Kumar N	AIML Delivery Lead, SC.AI, Standard Chartered Global Business Services, Bangalore-66. Mobile: 9632454934 Email: vinaykumar.natraj@gmail.com	Invited member	Online
5	Dr. Deevi Radha Rani	Associate Professor & Head, Department of ACSE, VFSTR Deemed to be University Contact : 91 9676354404 Mail : hod_acse@vignan.ac.in	Internal member	
6	Dr. Eva Patel	Professor, Department of ACSE, VFSTR Deemed to be University Contact: 8085575111 Mail : drop_acse@vignan.ac.in	Internal Member	
7	Dr. Britto Manoj	Assistant Professor, Department of ACSE, VFSTR Deemed to be University Contact: +91 9550367172 Mail: drbr_acse@vignan.ac.in	Internal member	
8	Dr. U.V.Manoj Kumar	Assistant Professor Department of Mathematics & Statistics, VFSTR Deemed to be University Contact : 9885532198 Mail: uvmk_sh_@vignan.ac.in	Internal Member	
9	Dr. Jyotsna Devi Bodapati	Associate Professor, Department of ACSE, VFSTR Deemed to be University, Contact: +91 7358209553 Mail: bjd_acse@vignan.ac.in	Internal member (School nominee)	
10	Dr. Javed Ahmed Dar	Assistant Professor, Department of ACSE, VFSTR Deemed to be University Contact : 7006157037 Mail : drjad_acse@vignan.ac.in	Internal Member (Nominee - Dean R&D)	
11	Dr. S. Hanumantha Rao	Associate Professor, Department of ACSE, VFSTR Deemed to be University Contact: +91 9441536410 Mail: sama.hanumantharao@gmail.com	Member Secretary	

The following members have taken leave of absence:

1. Prof. J. Balasubramaniam
2. Prof. P. Tirupathi Rao

Chairperson Dr. Venkatesulu Dondeti, Professor and Additional Dean, Department of ACSE, VFSTR initiated the meeting by welcoming and introducing the external members, 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 honourable exit. Secretary S. Hanumantha Rao, Associate Professor, Department of ACSE, VFSTR presented the program curriculum along with course content to the board.

The following points were discussed in the BoS meeting:

1. Regulation R25-C25.
2. Curriculum structure with credits, credits distribution (L-T-P-SL).
3. Significance of self-learning (SL)
4. 2 Modules, Module-1 is fundamental with 2 units and Module-2 is fundamental with 2 units.
5. Approval of L-T-P structure change or any credit change courses, if any
6. Approval of Honor/minor/department elective/open elective courses, if any
7. Assessment methods (Formative & Summative).
8. Grading Schemes.
9. Department Elective and Honour courses (streams/pools).
10. Open Elective and Minor courses (streams/pools).
11. Information related to NPTEL courses for the Academic Year 2025-26.
12. Creative work-in-Liu-Course work
13. SDG Mapping and incorporation of IKS components
14. Consideration of new program outcomes (POs) as prescribed by the NBA
15. Percentage of syllabus revision from R22C24 to R25
16. To Discuss about the SDG and IKS components in the syllabus.
17. To approve the R25-C25 curriculum, syllabus and assessment schemes of B.Tech. Datascience Program and recommend to the Academic council.
18. Discussion on addition of additional Department electives, open electives and the fulfillment of pre-requisites for department electives.
19. Approval of SWAYAM/NPTEL courses
20. Leverage in taking advantage in assigning 4 credits for the NPTEL courses.
21. Any other point with the permission of Chair.

The following are the observations:

1. Dr. S. Hanumantha Rao, secretary, B. Tech CSE- Data Science program, initiated the meeting by welcoming and introducing the board members and presenting the program curriculum along with course content to the board. The External Board members expressed their opinion that the overall course structure of the program and the content of the courses are well-designed and sufficient for the program at under graduate level. They provided a few suggestions to improve the quality of the existing curriculum further.
2. Prof. R.B.V Subramanyam has suggested to use Full Stack Development course and Computer Networks course as electives and replace with Core courses like Image Analytics, Video Analytics, Social Media Analytics, and Text Analytics etc. However, the internal board members given the importance of Full Stack Development course and Computer Networks and used the same.
3. In the meeting, Dr. Vinay Kumar suggested adding Prompt Engineering as a practical-oriented course in the final year to meet industry requirements and to enhance hands-on experience. The internal board has
4. Prof. R.B.V Subramanyam enquired about the Algorithm Design and Analysis (ADA) syllabus and suggested that the content in Module-1 Unit-2 and Module-2 Unit-3 is heavy. They recommended reducing the syllabus in these units. The internal BOS members agreed to reduce this.
5. The BOS members enquired about the DBMS Module-1 and Module-2 syllabus, and the internal BOS members clarified the details of the syllabus.
6. The BOS members enquired about the Operating Systems syllabus and suggested including the topic I/O Management Systems.
7. Prof. R.B.V Subramanyam and Dr. Vinay Kumar suggested changing the title of the course from "Introduction to Data Analytics" to "Data Analytics". The Internal BOS members agreed to change the course title.
8. The BOS members suggested including additional topics such as Heap Sort after AVL Trees, Articulation Points, Bi-connected Components, Topological Graphs, and the Bellman-Ford Algorithm in the Data Structures course. The internal BOS members stated that the feasibility of including these proposed topics needs to be discussed, as this course is common to all branches in the university.
9. Major restructuring has taken place in the curriculum which is oriented towards continuous learning and assessment based on the module structure.
10. Major reformation has taken place in the curriculum by offering Honours/Specialization degree or Minor degree thorough 16 more credits with additional courses.
11. In the meeting, the external board members reviewed the program elective courses, Honors courses, and SWAYAM-NPTEL courses chosen by the Data Science students. They expressed their opinion that the overall curriculum and course content are well-designed and adequate for an undergraduate-level program.

12. There was a discussion regarding the credit allocation for NPTEL courses offered under the Department Elective/Open Elective category. It was noted that, as per the curriculum structure, all Department/Open elective courses carry 4 credits. The NPTEL courses under this category are 12-week duration courses, which, according to NPTEL guidelines, are offered with 4 credits based on institutional requirements. In this context, the following NPTEL courses previously approved by the Board of Studies as Department/Open electives for the R22 curriculum will continue to be offered as 4-credit courses.

List of NPTEL (Dept. Elective/Open Elective/Honor) Courses

S.No	Course Name
1.	Medical Image Analysis
2.	Responsible & Safe AI Systems
3.	Introduction to Large Language Models(LLMs)
4.	Learning Analytics Tools
5.	Business Analytics and data mining modelling using R
6.	Computer Vision and Image Processing- Fundamentals and Applications
7.	Modern Computer Vision
8.	Deep Learning for Computer Vision
9.	Applied Accelerated Artificial Intelligence
10.	GPU Architecture and Programming
11.	Human Computer Interaction
12.	Deep Learning for Natural Language Processing
13.	Algorithms in Computational Biology and Sequence Analysis
14.	Business Intelligence and Analytics
15.	Pattern recognition and applications

The approved NPTEL courses will be offered to students under the (Dept. Elective/Open Elective/Honor) category in the R22 curriculum.

13. The Board of studies approved the following NPTEL courses as Department Electives/Open Elective and Honors for inclusion in the R25 curriculum, each carrying 4 credits.

List of NPTEL (Dept. Elective/Open Elective/Honor) Courses

S.No	Course Name
1.	Medical Image Analysis
2.	Responsible & Safe AI Systems
3.	Introduction to Large Language Models(LLMs)
4.	Learning Analytics Tools
5.	Business Analytics and data mining modelling using R
6.	Computer Vision and Image Processing- Fundamentals and Applications
7.	Modern Computer Vision
8.	Deep Learning for Computer Vision
9.	Applied Accelerated Artificial Intelligence

10.	GPU Architecture and Programming
11.	Human Computer Interaction
12.	Deep Learning for Natural Language Processing
13.	Algorithms in Computational Biology and Sequence Analysis
14.	Business Intelligence and Analytics
15.	Pattern recognition and applications

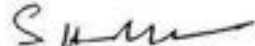
14. R25-C25 curriculum structure including list of professional core, department elective, open elective, Minor, Honour, NPTEL courses of B.Tech., Data Science programme. **(Appendix - I)** ✓
15. The curriculum is encompassing the courses that enable employability or entrepreneurship or skill development, provided in **Appendix - II**. ✓
16. Total average percentage of syllabus revised was 25% compared to previous curriculum provided in **Appendix - III**. ✓
17. The significant changes are made in the content of all courses and hence the courses are considered as new courses provided in **Appendix - IV**. ✓
18. **Indian Knowledge System (IKS)** components are incorporated in the relevant courses and the details are mentioned in **Appendix - V**. ✓
19. The courses in the curricula are mapped with the **Sustainable Development Goals (SDG)** and the mapping details are provided in **Appendix - VI**. ✓
20. Feedback from various stakeholders are incorporated appropriately in the R25-C25 curriculum.
21. At the end, there was a discussion on Course Outcomes (CO), Program Outcomes (PO), Program Specific Outcomes (PSO), Formative Assessment results, Summative Assessment results, and the target values for CO-PO-PSO-PEO. ✓

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. Data Science programmes and it follows based on the NEP 2020.
2. The details of elective courses (Department/ Open/ Minor / Honour) of B.Tech. Data Science 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.

Based on the suggestions given by the members, the Chairperson of BoS said that these fruitful suggestions would be considered in the curriculum and syllabi of the R25 Regulation.

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


Member Secretary


Chairperson

B.TECH. CSE-DATASCIENCE PROGRAM

MAJOR REVISION - R25 & C25

COURSE STRUCTURE – C25

Induction program

Course Title	L	T	P	SL	C	Course category
Orientation program (Induction Program)					1	Binary graded
Total					1	

Pre - semester

Course Title	L	T	P	SL	C	Course category
Mathematics					1	Basic Sciences
English Communication					1	Humanities
Aptitude & Logical Reasoning					1	Humanities
IT Tools					1	Basic Engineering
					1	Binary graded
					1	Binary graded
Total					6	

I Year I Semester

Course Title	L	T	P	SL	C	Course category
Mathematics	3	2	0	3	4	Basic Sciences
Physics / Chemistry	3	0	2	3	4	Basic Sciences
Basic of Electrical & Electronics Engineering/ Engineering Graphics	2	0	2	2	3	Basic Engineering
Programming in C	2	0	4	2	4	Basic Engineering
English Proficiency & Communication Skills (PET)	0	0	2	0	1	Humanities
Environmental Studies / Management Studies	2	2	0	2	3	Basic Sciences / Humanities
					1	Binary graded
					1	Binary graded
					1	Binary graded
Total					22	

I Year II Semester

Course Title	L	T	P	SL	C	Course category
Mathematics					4	Basic Sciences
Physics / Chemistry					4	Basic Sciences
Basic of Electrical & Electronics Engineering/Engineering Graphics					3	Basic Engineering
Problem Solving through Python					3	Basic Engineering
Technical English Communication					2	Humanities
Environmental Studies / Management Studies					3	Basic Sciences / Humanities
Cyber security					1	Basic Engineering
					1	Binary graded
					1	Binary graded
					1	Binary graded
					1	Binary graded
Total					24	

II Year I Semester

Course Title	L	T	P	SL	C	Course category
Probability and Statistics	3	0	2	3	4	Basic Sciences
Introduction to Data Science	3	0	0	3	3	Basic Sciences
Data Structures	2	2	2	2	4	Basic Engineering
Design Thinking and Engineering Orientation	0	2	0	0	1	Basic Engineering
Data Handling and Visualization	2	2	2	2	4	Professional Core-1
Database Management Systems	2	2	2	2	4	Professional Core-2
Operating Systems	2	0	2	2	3	Professional Core-3
Total	14	8	10	14	23	

II Year II Semester

Course Title	L	T	P	SL	C	Course category
Advanced Statistical Methods	2	0	2	2	3	Basic Sciences
Industry – Interface (I ²) Course	0	2	0	0	1	Dept. Elective-1
NPTEL					3	Open Elective-1
Artificial Intelligence	2	2	2	2	4	Professional Core-4
Object Oriented Programming	2	0	4	2	4	Professional Core-5
Algorithms Design and Analysis	2	2	2	2	4	Professional Core-6
Digital Logic and Computer Organization	2	2	2	2	4	Professional Core-7
					1	Project
Total	10	8	12	10	24	

III Year I Semester

Course Title	L	T	P	SL	C	Course category
Soft Skills Laboratory	0	2	0	0	1	Humanities
Quantitative Aptitude & Logical Reasoning	0	2	0	0	1	Humanities
Department Elective	2	0	2	2	3	Dept. Elective-2
Data Analytics	2	0	2	2	3	Professional Core-8
Machine Learning	3	0	2	3	4	Professional Core-9
Full Stack Development	2	0	4	2	4	Professional Core-10
Computer Networks	2	0	2	2	3	Professional Core-11
Mobile Application Development	1	0	2	1	2	Professional Core--
Sub-Total	12	0	14	12	21	
Honours/Minors (Add-on)	0	4	4	12	4	Honours/Minors
Total	12	4	18	12	25	

III Year II Semester

Course Title	L	T	P	SL	C	Course category
Professional Communication Skills	0	0	2	0	1	Humanities
Department Elective	3	0	2	3	4	Dept. Elective-3
Department Elective	3	0	2	3	4	Dept. Elective-4
Open Elective	3	0	0	3	3	Open Elective-2
Deep Learning	3	0	2	3	4	Professional Core-12
Big Data Analytics	2	0	2	2	3	Professional Core-13
	0	0	2	0	1	Project
Sub-Total	14	0	12	14	20	
Honours/Minors (Add-on)	0	4	4	0	4	Honours/Minors
Total	14	4	16	14	24	

IV Year I Semester

Course Title	L	T	P	SL	C	Course category
Professional Ethics	1	2	0	1	2	Humanities
Department Elective	3	0	2	3	4	Dept. Elective-5
Department Elective	3	0	2	3	4	Dept. Elective-6
Work-in-Lieu of Course – Research paper publications/patents/presentations/global certifications	0	4	4	0	4*	Dept. Elective-7
Open Elective	3	0	0	3	3	Open Elective-3
Sub-Total	10	2	4	10	17	
Honours/Minors (Add-on)	0	4	4	0	4	Honours/Minors
Total	10	6	8	10	21	

IV Year II Semester

Course Title	L	T	P	SL	C	Course category
Project/Internship	0	2	22	0	12	Project/Internship
Sub-Total	0	2	22	0	12	
Honours/Minors (Add-on)	0	4	4	0	4	Honours/Minors
Total	0	6	26	0	16	

Program Electives

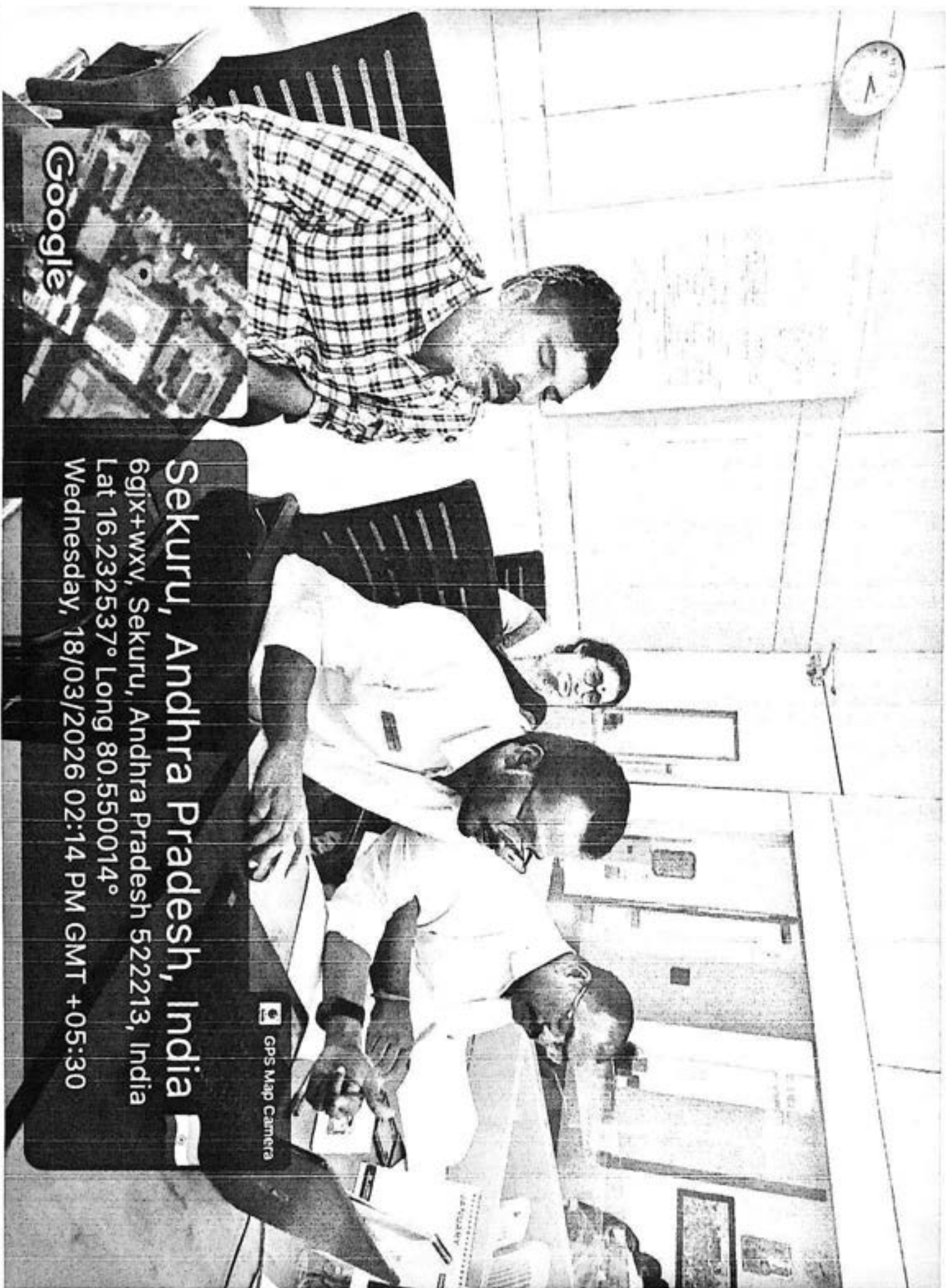
Sl. No.	Course Code	Course Title	L	T	P	C
1		Fundamentals of Image Processing	2	0	2	3
2	22DS802	Multi-modal Data Processing & Learning	3	0	2	4
3	22DS804	Security aspects of Data and Machine Learning Models	3	0	2	4
4		Social, Web and Mobile Analytics	3	0	2	4
5		Cloud Computing and Analytics	3	0	2	4
6	22CS806	Text Analytics and Natural Language Processing	3	0	2	4
7	22DS304	Computer Vision	3	0	2	4
8		Graph Neural Networks	3	0	2	4
9		Generative AI	3	0	2	4
10		Cryptography and network security	3	0	2	4
11		Data warehousing and data mining	3	0	2	4
12		Federated Machine Learning	3	0	2	4
13	22AM401	Reinforcement Learning	3	0	2	4
14		Soft computing	3	0	2	4
15		Time series analysis and forecasting	3	0	2	4
16		Business Analytics	3	0	2	4
17		Speech Processing and Analytics	3	0	2	4

Honours for CSE - DS

Sl. No	Course Code	Course Title	L	T	P	C
1	22CS815	Optimization Techniques	3	2	0	4
2	22AM960	Intelligent Application Development	0	4	4	4
3	22AM963	Web and Sequence Data Mining	0	4	4	4
4	22DS951	Multi-Variate Analysis	0	4	4	4
5	22DS952	Visual Analytics	0	4	4	4
6	22DS953	Data Clustering	0	4	4	4
7	22DS954	Kernel Methods for Pattern Analysis	0	4	4	4
8	22CS909	Capstone Project	-	2	6	4

List of SWAYAM/NPTEL Courses

S.No	Course Id	Course Name
1	noc24_ge57	Learning Analytics tools
2	noc24_cs132	Responsible & Safe AI Systems
3		Medical Image Analysis
4		Algorithms in Computational Biology and Sequence Analysis
5		Introduction to Large Language Models (LLMs)



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