



DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

CIRCULAR

Date: 4.12.2023

Department of CSE is planning to conduct Board of Studies (BoS) meeting for the B.Tech. CSE programme on 18.12.2023 from 10.00 AM

Venue: CSE Conference Hall, NB-302, Third floor, Nagarjuna Block, VFSTR

All the following members are requested to make it convenient to join the meeting.


Members to attend the meeting:

S. No	Name of the Member	Designation	Role
1	Dr. K.V. Krishna Kishore	Dean SoC&I, Professor & HoD	Chairperson
2	Dr. S. Deva Kumar	Assistant Professor, Board of Academics	Secretary (Ex-officio)
Internal Experts			
1	Dr. S. V. Phani Kumar	Associate Professor & Programme Coordinator	Member
2	Dr. M. Umadevi	Associate Professor	Member
3	Dr. D. Yakobu	Assistant Professor	Member
4	Dr. S.Satish Kumar	Assistant Professor	Member
5	Ms. B.Suvarna	Assistant Professor	Invited Member (Nominee – Dean R&D)
External Experts			
1	Prof. R.B.V.Subramanyam Professor, Dept. of CSE, NIT Warangal. rbvs66@gmail.com, rbvs66@nitw.ac.in, +91 949 134 6969	Professor	Member
2	Dr.B.Venkata Ramana Associate Professor, HoD-CSE, IIT, Tirupathi. ramana@iittp.ac.in +91 963 621 3350	Associate Professor	Member
3	Prof. C.R.Rao Professor, SCIS, University of Hyderabad. crres@uohyd.ernet.in +91 924 746 5125	Professor	Invited Member
4	Dr. Nagesh Bhattu Sristy	Assistant	Invited Member

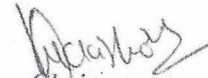
Asst. Professor Department of CSE, NIT AP, nageshbhattu@nitandhra.ac.in +91 94419 55120	Professor	
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Agenda of the BoS Meeting:

1. Revision of B.Tech. CSE Course Curriculum for 2021-22 and 2022-23 batches.
2. Approval of Revised Programme Educational Objectives.
3. Review on Results Analysis for the academic year 2022-23 II Sem.
4. Review on quality of question paper standard as per Bloom's Taxonomy for the academic year 2022-23 II Sem.
5. Finalization of NPTEL courses for Department Elective Stream of 2021-22 admitted students.
6. Discussion of attainment values of PO's, PSO's and SO's for the 2019-23 batch students.
7. Any other point with the permission of chair.


Member Secretary

Dr. S. Deva Kumar
Asst. Professor, Department of CSE,
VFSTR Deemed to be University,
Vadlamudi.


Chairperson

Dr. K.V. Krishna Kishore
Dean, School of Computing and Informatics,
Professor & Head, Dept. of CSE,
VFSTR Deemed to be University, Vadlamudi.



VIGNAN'S

Foundation for Science, Technology & Innovation

(Deemed to be University)

Autonomous Institutions

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Date: 19.12.2023

Minutes of Board of Studies Meeting

Board of Studies (BoS) meeting for the B.Tech. - CSE programme was conducted at 10.00 AM on 18.12.2023. Venue: CSE Conference Hall, NB-302, Third floor, Nagarjuna Block, VFSTR

Agenda of the BoS Meeting:

1. Revision of B.Tech. CSE Course Curriculum for 2021-22 and 2022-23 batches.
2. Approval of Revised Programme Educational Objectives.
3. Review on Results Analysis for the academic year 2022-23 II Sem.
4. Review on quality of question paper standard as per Bloom's Taxonomy for the academic year 2022-23 II Sem.
5. Finalization of NPTEL courses for Department Elective Stream of 2021-22 admitted students.
6. Discussion of attainment values of PO's, PSO's and SO's for the 2019-23 batch students.
7. Any other point with the permission of chair.

The following members were present either thorough offline or online.

S. No	Name of the Member	Designation	Role	Signature
1	Dr. K.V. Krishna Kishore	Dean SoC&I. Professor & HoD	Chairperson	
2	Prof. R.B.V.Subramanyam Professor, Dept. of CSE, NIT Warangal. rbvs66@gmail.com, rbvs66@nitw.ac.in +91 949 134 6969	Professor	Member	
3	Dr.B.Venkata Ramana Associate Professor, HoD-CSE, IIT, Tirupathi. ramana@iittp.ac.in +91 963 621 3350	Associate Professor	Member	
4	Prof. C.R.Rao Professor, SCIS, University of Hyderabad. crres@uohyd.ernet.in +91 924 746 5125	Professor	Invited Member	Absent.

5	Dr. Nagesh Bhattu Sristy Asst. Professor, Department of CSE, NIT AP. nageshbhattu@nitandhra.ac.in +91 94419 55120	Assistant Professor	Invited Member	Nagesh Bhattu
6	Dr. S. V. Phani Kumar	Programme Coordinator, Associate Professor	Member	S.P.K
7	Dr. M. Umadevi	Associate Professor	Member	M
8	Dr. D. Yakobu	Assistant Professor	Member	Yakobu
9	Dr. S.Satish Kumar	Assistant Professor	Member	Satish
10	Ms. B.Suvarna	Assistant Professor	Invited Member	B
11	Dr. S. Deva Kumar	Assistant Professor	Secretary (Ex-officio)	S.Deva Kumar

Dr. K.V. Krishna Kishore, Professor and Head CSE, Chairperson of Board of Studies has initiated the meeting with opening remarks and heartily welcomed all the internal and external members of the BoS.

The following resolutions made after the discussion:

Dr. K V Krishna Kishore ,BoS Chairman appreciated the efforts put up by all the Internal and External members in the design of B.Tech. CSE Curriculum as per ACM-2023 model curriculum standards.

Further, Chairperson has shared the glimpses of ABET peer team visit held during October 2023 and proposed few of the corrections to the course contents and structure of R 22.

For 2021-22 admitted students, *Computing Ethics* Course is included in the curriculum and it will be offered in III-II as a major course with two credits.

The revised course structure of B.Tech. CSE for 2021-22 admitted students is attached as Annexure I and Course syllabi of Computing Ethics is included as Annexure II.

For 2022-23 admitted students, in addition to the inclusion of Computing Ethics, the following course contents are revised by the inclusion of Global and Local Impacts of computing, Ethical Considerations, Case Studies of Probability and Statistics and Privacy concerns to the below mentioned courses.

Name of the Course	List of topics included
Introduction to Artificial Intelligence	Ethical implications & privacy issues of AI; Global and Local impact of AI on society;
Web Technologies	Global and local impact of web technologies on modern society; Ethical considerations in Sharing Data between JSP pages;
Computer Networks	Principles of reliable data transfer by considering Privacy, Security accessibility and Transparency

Data Mining Techniques	Discussion on ethical considerations related to collection, analysis, and use of data. Introduction to privacy-preserving in datamining. Global and Local Impact Analysis: Health care and Environmental Sustainability (Ex: Weather forecasting)
Software Engineering	Social impact of software on society; Piracy and Intellectual Property; Privacy concerns in software design, development, and data handling. Professionalism and Codes of Ethics: Adhering to professional codes of ethics in software engineering.
Cryptography and Network Security	Need of data security, privacy, and authentication;
Bigdata Analytics	Discussion on privacy protection, Data ownership and stewardship; Analysis of Big data in local and global applications;
Cloud Computing	CLOUD APPLICATIONS & GLOBAL AND LOCAL IMPACT OF CLOUD COMPUTING ON SOCIETY: Scientific applications in healthcare, biology, geo science; Business applications in- CRM and ERP, productivity, social networking, media applications, multiplayer online gaming. ETHICAL CONSIDERATION FOR CLOUD COMPUTING: Cloud Security Risks, Security: The Top Concern for Cloud Users, Privacy and Privacy Impact Assessment, Trust, Operating System Security, Virtual Machine Security.
Database Management Systems	Legal and ethical constraints in database design
Object Oriented Programming	Access specifiers & data privacy; Apache commons Math package, DescriptiveStatistics Class.

Probability and Statistics is needed to be integrated as a case study in the application development of courses include Machine Learning, Data Mining & Techniques, and Cryptography & Network Security.

Further, “*Parallel and Distributed Computing*” and “*Privacy and Intrusion Detection*” courses are included in Major Pool with each of three credits and offered in III-II and IV-I respectively.

The revised Course Structure for 2022-23 admitted students is attached as Annexure III.

- Based on the recommendations of PMAC and views/ feedback collected from various Stakeholders (Faculty/ Employers/ Alumni), the following PEOs are approved for B.Tech. CSE Programme.

Graduates of the B.Tech. Computer Science and Engineering program will:

PEO 1: Work productively as Computer/ Software Engineers, including in leadership and supportive roles/ cadres on diverse teams.

PEO 2: Excel in their professional careers despite of future technological changes, and demonstrate research aptitude to generate innovative engineering solutions by pursuing higher education.

PEO 3: Recognize and address societal needs in their professional endeavors, and practice their profession with high regard to legal and ethical responsibilities.

- The Chairperson of the meeting presented the formative and summative results of the previous semester i.e. 2022-23 II Semester. The correlation between formative and summative results was also presented. After thorough discussions, the members focused on the actions to be taken for the reducing the number of R-grade and I-grade courses. The members have proposed various strategies such as extensive usage of various effective teaching and learning methods, proper mentoring, frequent attendance monitoring, and strengthening the methods.

In the previous BoS meeting, Dr.B.Venkata Ramana has commented that the quality of the summative question papers is very good but he suggested including a few questions in the Bloom's taxonomy of Level 1 and Level 2 to make the student to attempt for at least 30-40% of the marks. Dr. Nagesh Bhattu Sristy is also advised to follow the similar strategy for formative assessments also.

Dr. S Deva Kumar, Member Secretary has confirmed the above suggestion was well taken during the previous assessment and all the summative assessment papers are set accordingly and every student may have possibility to score a 20-30% of the marks with basic remembering and Understanding.

- Mrs. B Suvama, Member has presented a detailed analysis on comments of Summative Assessment Papers Scrutiny by the external reviewers.

List of Experts	List of Courses reviewed
Dr. Suganya Devi, NIT Silchar	Introduction to Artificial Intelligence, Machine Learning and Compiler Design
Dr. M Naresh Babu, IIT Kurnool	Advanced Data Structures, Advanced Java Programming and Data Structures
Dr. Nagesh Bhat, NIT Andhra Pradesh	Database Management Systems (Core/ Minor/ Open Elective)
Dr. Balaji B, NIT Trichy	Digital Image Processing and Problem Solving through Programming - I
Dr. Anil Babu, NIT Calicut	OOP through JAVA, Web Technologies and OOP using C++

Detailed review on assessment paper standards is as follows:

Name of the Course	Whether the Question paper covers breadth & depth of the course	Questions are of Creative / Thought Provocative	Can a student will be able to solve the questions in stipulated time	How well you are satisfied with our course content and	Any other Suggestions

				assessment procedure	
DBMS	Excellent	Excellent	Good	Good	Overall it is Very good
DS	Good	Good	Good	Good	Quality and standard of questions is good.
OOP	Excellent	Good	Good	Excellent	Nil
DLD	Good	Excellent	Good	Excellent	---
IAI	Good	Excellent	Good	Good	Overall Good
CD	Excellent	Excellent	Good	Good	Overall it is very good
WT	Good	Excellent	Good	Excellent	Nil
ADS	Good	Good	Good	Good	All the Questions are as per Blooms Taxonomy
AJP	Good	Good	Good	Good	Suggested to include Question-wise weightage
DIP	Excellent	Good	Good	Excellent	Ok
ML	Good	Average	Good	Good	Nil
DBMS - Minor	Good	Average	Good	Good	Nil
DBS - OE	Good	Good	Good	Good	Nil
PSP - I	Good	Good	Good	Excellent	Overall its Good

1. Dr. S Satish Kumar, Member has presented the probable list of SWAYAM-NPTEL courses to be offered for III B. Tech (2021-22 Admitted) CSE students. Dr. Satish also noted that our University Local Chapter stood in Top 100 Chapters in National-wide with "AA" rating in students' participation and course completion in SWAYAM platform. The attached list of courses could be chosen under Department elective stream to encourage students towards self-learning and life-long learning. After discussing the matter, the members

approved the attached list of SWAYAM-NPTEL courses and appreciated the efforts of the Students and Faculty Community. The list is attached in Annexure-V.

The external and internal members agreed the list of NPTEL courses under Open elective stream.

2. The Chairperson elaborated the procedures and presented the Web Application for the computation of CO, PO and PSO attainment calculations and presented the CO, PO and PSO attainment of 2019-23 batch for ratification. Members have suggested the department undertake proper actions for non-attained COs and POs.
3. Finally, the Chairperson appreciated the suggestions of both Internal and External members and he also mentioned that the revised curriculum and syllabi will be sent to the Academic Council for approval.

Chairperson appreciated the active participation of all the BoS members and then the meeting was adjourned.

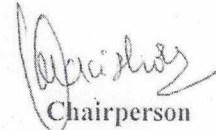


Member Secretary

Dr. S. Deva Kumar

Asst. Professor, Department of CSE,

VFSTR Deemed to be University.



Chairperson

Dr. K.V. Krishna Kishore

Dean, SoCI, Professor & Head, CSE,

VFSTR Deemed to be University.



DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Annexure I
B.Tech. CSE Programme: Curriculum Structure
(Applicable to 2021-22 Admitted Students)

I Year I Semester

Sl. No.	Course Title	L	T	P	C
1	Linear Algebra and Ordinary Differential Equations	3	2	0	4
2	Semiconductor Physics and Electromagnetics	3	0	2	4
3	Basics of Electrical and Electronics Engineering	2	0	2	3
4	Engineering Chemistry	3	0	2	4
5	Problem Solving through Programming I	2	2	2	4
6	English Proficiency and Communication Skills	0	0	2	1
7	Constitution of India	0	2	0	1
8	Physical Fitness, Sports and Games – I	0	0	3	1
	Sub-Total	13	6	13	22
	Total		32		22

I Year II Semester

Sl. No.	Course Title	L	T	P	C
1	Algebra	3	2	0	4
2	Discrete Mathematical Structures	3	2	0	4
3	Engineering Graphics	2	0	2	3
4	Problem Solving through Programming II	1	2	2	3
5	Technical English Communication	2	0	2	3
6	Numerical Methods	3	2	0	4
7	Orientation Session	0	0	6	3
8	Physical Fitness, Sports and Games – II	0	0	3	1
	Sub-Total	14	8	15	25
	Total		34		25

II Year I Semester

Sl. No.	Course Title	L	T	P	C
1	Probability and Statistics.	3	0	2	4
2	Data Structures	2	2	2	4
3	Management Science	2	2	0	3
4	Database Management Systems	2	2	2	4
5	Digital Logic Design	2	0	2	3
6	Object-Oriented Programming through JAVA	2	0	2	3
7	Environmental Studies	2	1	0	2
8	Life Skills - I	0	0	2	1
	Sub-Total	15	7	12	24
	Total		34		24

II Year II Semester

Sl. No.	Course Title	L	T	P	C
1	Advanced Coding Competency	0	0	2	1
2	Professional Communication	0	0	2	1
3	Computer Organization and Architecture	2	2	0	3
4	Design and Analysis of Algorithms	2	2	2	4
5	Operating Systems	2	0	2	3
6	Theory of Computation	3	2	0	4
7	Life Skills - II	0	0	2	1
8	Open Elective – 1	3	0	0	3
	Sub-Total	12	6	10	20
9	Minor / Honours – 1	3	0	2	4
	Sub-Total	15	6	12	24
	Total		33		24

III Year I Semester

Sl. No.	Course Title	L	T	P	C
1	Soft Skills Laboratory	0	0	2	1
2	Introduction to Artificial Intelligence	2	2	0	3
3	Compiler Design	2	2	0	3
4	Web Technologies	2	0	2	3
5	Inter-Disciplinary Project – Phase I	0	0	2	0
6	Industry Interface Course	1	0	0	1
7	Department Elective – 1	3	0	2	4
8	Open Elective – 2	3	0	0	3
	Total	13	4	8	18
10	Minor / Honours – 2	3	0	2	4
	Total	16	4	10	22
	Total		30		22

III Year II Semester

Sl. No.	Course Title	L	T	P	C
1	Quantitative Aptitude and Logical Reasoning	1	2	0	2
2	Computer Networks	3	0	2	4
3	Data Mining Techniques	2	0	2	3
4	Software Engineering	2	0	2	3
5	Computing Ethics	0	2	2	2
6	Inter-Disciplinary Project – Phase II	0	0	2	2
7	Department Elective – 2	3	0	2	4
8	Open Elective – 3	3	0	0	3
	Sub-Total	14	4	12	23
9	Minor / Honours – 3	3	0	2	4
	Sub-Total	17	4	14	27
	Total		35		27

IV Year I Semester

Sl. No.	Course Title	L	T	P	C
1	Cryptography and Network Security	2	0	2	3
2	Big Data Analytics	2	0	2	3
3	Cloud Computing	2	0	2	3
4	Department Elective – 3	3	0	2	4
5	Department Elective – 4	3	0	2	4
	Sub-Total	12	0	10	17
6	Minor / Honours – 4	3	0	2	4
	Sub-Total	15	0	12	21
	Total	27			21

IV Year II Semester

Sl. No.	Course Title	L	T	P	C
1	Project Work	0	2	22	12
	Total	0	2	22	12
2	Minor / Honours – 5	0	2	6	4
	Total	0	4	28	16
	Total	32			16

Department Electives

Sl. No.	Course Code	Course Title	L	T	P	C
1	22CS801	Advanced Data Structures	2	2	2	4
2	22CS802	Advanced JAVA Programming	2	2	2	4
3	22CS803	Computer Graphics	2	2	2	4
4	22CS804	Deep Learning	3	0	2	4
5	22CS805	Digital Forensics	3	0	2	4
6	22CS806	Digital Image Processing	2	2	2	4
7	22CS807	Web and Database Security	3	0	2	4
8	22CS808	Machine Learning	3	0	2	4
9	22CS809	Mobile Ad-hoc Networks	3	0	2	4
10	22CS810	Mobile Application Development	2	0	4	4
11	22CS811	Text Mining	3	0	2	4
12	22CS812	Numerical Algorithms	3	2	0	4
13	22CS813	Operating System Design	3	0	2	4
14	22CS814	Optimization Techniques	3	2	0	4
15	22CS815	Intrusion Detection and Prevention System	3	0	2	4
16	22CS816	Simulation and Modeling	3	0	2	4
17	22CS817	Parallel and Distributed Computing	3	2	0	4

Honours for CSE

Sl. No.	Course Code	Course Title	L	T	P	C
1	22CS951	Advanced Graph Algorithms	3	0	2	4
2	22CS952	Biometrics	3	0	2	4
3	22CS953	Parallel and Distributed Computing	3	2	0	4
4	22CS954	Internet of Things	3	0	2	4
5	22CS955	Wireless Sensor Networks	3	0	2	4
6	22CS956	Capstone Project	0	2	6	4

Open Electives offered to non-computers

Sl.No	Course Code	Course Title	L	T	P	C
1	22CS851	Database Systems	2	0	2	3
2	22CS852	Mobile Application Design and Development	2	0	2	3
3	22CS853	Java Programming	2	0	2	3
4	22CS854	Python Programming	2	0	2	3
5	22CS855	Design and Development of Internet Applications	2	0	2	3

CSE – Minor Courses

Computer Science and Engineering

Sl.No	Course Code	Course Title	L	T	P	C
1	22CS901	Introduction to Python Programming	2	2	2	4
2	22CS902	OOPS through JAVA	2	0	4	4
3	22CS903	Database Management Systems	2	2	2	4
4	22CS904	Web Technologies	2	0	4	4
5	22CS905	Mobile Application Development	2	0	4	4
6	22CS906	Design and Analysis of Algorithms	2	2	2	4
7	22CS907	Operating Systems and Shell Programming	2	2	2	4
8	22CS908	Computer Networks	3	0	2	4
9	22CS909	Capstone Project	0	2	6	4

Chairperson

Dr. K.V.Krishna Kishore
Dean, School of Computing and Informatics,
Professor & Head, Dept. of CSE,
VFSTR Deemed to be University, Vadlamudi.

22CS310 COMPUTING ETHICS

Hours Per Week :

L	T	P	C
0	2	2	2

PREREQUISITE KNOWLEDGE: General awareness on ethical guidelines.**COURSE DESCRIPTION AND OBJECTIVES:**

The course will provide students with an understanding on Engineering Ethics and the nature of moral issues and dilemmas faced by Computer Science and engineers in their professional lives. It will give them an awareness on professional rights and responsibilities of an engineer and acquaint them on the Code of Conduct and Ethics prescribed by professional bodies like IEEE, ACM etc. for its members.

MODULE - 1**UNIT-1****0L+8T+8P=16 Hours****INTRODUCTION****Introduction to Sociotechnical Computer Ethics**

Introduction: Why Computer Ethics? The Sociotechnical Systems Perspective, Sociotechnical Computer Ethics, Micro- and Macro-Level Analysis.

Ethics and Information Technology

Introduction: Doing Ethics, Ethical Theories and Concepts.

UNIT-2**0L+8T+8P=16 Hours****Ethics in IT Configured Societies**

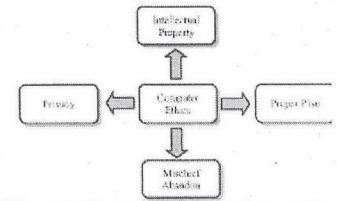
Technology as the Instrumentation of Human Action, Three Features of IT-Configured Activities, IT Configured Domains of Life, Democracy and the Internet.

Information Flow, Privacy and Surveillance

Introduction: Information Flow with and without Information Technology, why care about Privacy, Is Privacy over? Strategies for shaping Personal Information Flow.

PRACTICES:

- Surprises about Social Networking
- RFID and caring for the Elderly People
- Turing does not need to know
- Turnitin Dot Com
- Email Privacy and Advertising
- Workplace Spying
- Data Mining and e-Business



Source: Figure 2
from Computer and
Information Security
Ethics -- Models |
Semantic Scholar

MODULE - 2**UNIT-1****0L+8T+8P=16 Hours****Digital Intellectual Property**

The complexities of Digital Property, Protecting Property rights in Software, The Philosophical Basis of Property, Free and Open Source Software, PS Versus FOSS.

Introduction: Law and Order in the Internet, Sociotechnical Order, Online Crime, Hackers and Hacker Ethic, Sociotechnical Security.

UNIT-2**0L+8T+8P=16 Hours****Professional Ethics**

Introduction: Why Professional Ethics, The Paradigm of Professions, Characteristics of Professions, Sorting out Computing and its Status as a Profession, Codes of Ethics, Professional Relationships, A Legal perspective on professionalism in Computing.

PRACTICES:

Laboratory session of this course is designed in such a way that the student should complete three projects of the given type by performing the below experiments.

- Obtaining pirated Software Abroad
- Free Software that follows Proprietary Software
- Using Public Domain Software in Proprietary Software
- Wiki Warfare
- Yahoo and Nazi Memorabilia
- Bot Roast
- Software Safety
- Conflicts of Interest
- Security in a Custom Database

COURSE OUTCOMES:

Upon successful completion of this course, students will have the ability to:

CO No.	Course Outcomes	Blooms Level	Module No.	Mapping with POs
1	Engage in an informed critical reflection on the nature of professionalism and ethical challenges inherent in engineering profession	2	1	8
2	Understand the role of professional bodies, and the code of ethics and industrial standards prescribed for engineers	2	2	8
3	Apply awareness of professional rights and responsibilities of an engineer to conduct themselves ethically within an organization	3	1	8
4	Apply understanding of safety norms to highlight ethical issues in risky situation	3	2	8

TEXT BOOKS:

1. Deborah G. Johnson, Keith W. Miller and Prentice Hall, "Computer Ethics", 4th Edition, Pearson, 2009.

REFERENCE BOOKS:

1. Charles E. Harris, Michael S. Pritchard and Michael J. Rabins, "Engineering Ethics: Concepts and Cases", 4th edition, Wadsworth Thompson Learning, 2009.
2. M. Govindarajan, S.Natarajan and V. S. Senthil Kumar, "Engineering Ethics", Prentice Hall of India, Reprint 2013.



DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Annexure III

**B.Tech. CSE Programme: Curriculum Structure
(Applicable to 2022-23 Admitted Students onwards)**

I Year I Semester

Sl. No.	Course Title	L	T	P	C
1	Linear Algebra and Ordinary Differential Equations	3	2	0	4
2	Semiconductor Physics and Electromagnetics	3	0	2	4
3	Basics of Electrical and Electronics Engineering	2	0	2	3
4	Engineering Chemistry	3	0	2	4
5	Problem Solving through Programming I	2	2	2	4
6	English Proficiency and Communication Skills	0	0	2	1
7	Constitution of India	0	2	0	1
8	Physical Fitness, Sports and Games – I	0	0	3	1
	Sub-Total	13	6	13	22
	Total		32		22

I Year II Semester

Sl. No.	Course Title	L	T	P	C
1	Algebra	3	2	0	4
2	Discrete Mathematical Structures	3	2	0	4
3	Engineering Graphics	2	0	2	3
4	Problem Solving through Programming II	1	2	2	3
5	Technical English Communication	2	0	2	3
6	Numerical Methods	3	2	0	4
7	Orientation Session	0	0	6	3
8	Physical Fitness, Sports and Games – II	0	0	3	1
	Sub-Total	14	8	15	25
	Total		37		25

II Year I Semester

Sl. No.	Course Title	L	T	P	C
1	Probability and Statistics	3	0	2	4
2	Data Structures	2	2	2	4
3	Management Science	2	2	0	3
4	Database Management Systems	2	2	2	4
5	Digital Logic Design	2	0	2	3
6	Object-Oriented Programming through JAVA	2	0	2	3
7	Environmental Studies	2	1	0	2
8	Life Skills - I	0	0	2	1
	Sub-Total	15	7	12	24
	Total	34			24

II Year II Semester

Sl. No.	Course Title	L	T	P	C
1	Advanced Coding Competency	0	0	2	1
2	Professional Communication	0	0	2	1
3	Computer Organization and Architecture	2	2	0	3
4	Design and Analysis of Algorithms	2	2	2	4
5	Operating Systems	2	0	2	3
6	Theory of Computation	3	2	0	4
7	Life Skills - II	0	0	2	1
8	Open Elective – 1	3	0	0	3
	Sub-Total	12	6	10	20
9	Minor / Honours – 1	3	0	2	4
	Sub-Total	15	6	12	24
	Total	33			24

III Year I Semester

Sl. No.	Course Title	L	T	P	C
1	Soft Skills Laboratory	0	0	2	1
2	Introduction to Artificial Intelligence	2	2	0	3
3	Compiler Design	2	2	0	3
4	Web Technologies	0	0	2	1
5	Computer Networks	2	0	2	3
6	Data Mining Techniques	2	0	2	3
7	Department Elective – 1	3	0	2	4
8	Open Elective – 2	3	0	0	3
	Total	14	4	10	21
10	Minor / Honours – 2	3	0	2	4
	Total	17	4	12	25
	Total		33		25

III Year II Semester

Sl. No.	Course Title	L	T	P	C
1	Quantitative Aptitude and Logical Reasoning	0	2	0	1
2	Cryptography and Network Security	2	0	2	3
3	Parallel and Distributed Computing	2	2	0	3
4	Software Engineering	2	0	2	3
5	Computing Ethics	0	2	2	2
6	Inter-Disciplinary Project	0	0	2	1
7	Department Elective – 2	3	0	2	4
8	Open Elective – 3	3	0	0	3
	Sub-Total	12	6	10	20
9	Minor / Honours – 3	3	0	2	4
	Sub-Total	15	6	12	24
	Total		33		24

IV Year I Semester

Sl. No.	Course Title	L	T	P	C
1	Privacy and Intrusion Detection	2	0	2	3
2	Big Data Analytics	2	0	2	3
3	Cloud Computing	2	0	2	3
4	Department Elective – 3	3	0	2	4
5	Department Elective – 4	3	0	2	4
	Sub-Total	12	0	10	17
6	Minor / Honours – 4	3	0	2	4
	Sub-Total	15	0	12	21
	Total		27		21

IV Year II Semester

Sl. No.	Course Title	L	T	P	C
1	Project Work	0	2	22	12
	Total	0	2	22	12
2	Minor / Honours – 5	0	2	6	4
	Total	0	4	28	16
	Total		32		16

Department Electives

Sl. No.	Course Title	L	T	P	C
1	Advanced Data Structures	2	2	2	4
2	Advanced JAVA Programming	2	2	2	4
3	Computer Graphics	2	2	2	4
4	Deep Learning	3	0	2	4
5	Digital Forensics	3	0	2	4
6	Digital Image Processing	2	2	2	4
7	Web and Database Security	3	0	2	4
8	Machine Learning	3	0	2	4
9	Mobile Ad-hoc Networks	3	0	2	4
10	Mobile Application Development	2	0	4	4
11	Text Mining	3	0	2	4
12	Operating System Design	3	0	2	4
13	Optimization Techniques	3	2	0	4
14	Simulation and Modeling	3	0	2	4

Honours for CSE

S. No.	Course Title	L	T	P	C
1	Advanced Graph Algorithms	3	0	2	4
2	Biometrics	3	0	2	4
3	Internet of Things	3	0	2	4
4	Wireless Sensor Networks	3	0	2	4
5	Capstone Project	0	2	6	4

Open Electives offered to Non-CSE/ IT

S. No.	Course Title	L	T	P	C
1	Database Systems	2	0	2	3
2	Mobile Application Design and Development	2	0	2	3
3	Java Programming	2	0	2	3
4	Python Programming	2	0	2	3
5	Design and Development of Internet Applications	2	0	2	3

CSE – Minor Courses

S. No.	Course Title	L	T	P	C
1	Introduction to Python Programming	2	2	2	4
2	OOPS through JAVA	2	0	4	4
3	Database Management Systems	2	2	2	4
4	Web Technologies	2	0	4	4
5	Mobile Application Development	2	0	4	4
6	Design and Analysis of Algorithms	2	2	2	4
7	Operating Systems and Shell Programming	2	2	2	4
8	Computer Networks	3	0	2	4
9	Capstone Project	0	2	6	4