



Approved by
AICTE



Affiliated to
JNTUH



Accredited by
National Assessment &
Accreditation Council



Accredited by
National Board of Accreditation
CSE, ECE, IITM

AUTONOMOUS
under Section
2(f) of
University Grants
Commission Act

GURU NANAK INSTITUTE OF TECHNOLOGY

Minutes

of

1st Meeting of Academic Council

Venue:

Board Room

GURU NANAK INSTITUTE OF TECHNOLOGY

On

March 23rd Tuesday, 2021 at 03:00 PM

Academic Council Meeting No.1/2020-2021

Venue: Board Room, Principal Office, GNIT

Date: 23 March 2021 (Tuesday) at 3:00 PM

MINUTES

Meeting of the Academic Council convened in the Board Room, Principal Office, at 3:00 PM, 23 March 2021. Following distinguished members have attended the meeting -

Members Present:

No.	Name and Designation	Position in Academic Council
	Dr. S. Sreenatha Reddy Principal, GNIT	Chairman
	Dr. H. S. Saini Managing Director, GNI	Member (Nominee by BOG)
	Dr. K. M. Lakshman Rao Professor & Director, BICS, JNTUH	Member (University Nominee)
	Dr. A. Damodaram Professor (CSE) & Director SIT, JNTUH	Member (University Nominee)
	Dr. G. Krishna Mohan Professor (Pharmacy) & Director, IST, JNTUH	Member (University Nominee)
	Dr. M. Madhavi Latha Professor (ECE) & Director (Academic & Planning) JNTUH	Member (University Nominee)
	Dr. P Ramesh Babu Professor (ME), Osmania University	Member (Nominee by BOG)
	Prof. Srinivasulu Tadisethy Dean Faculty of Engineering & Technology, KU Principal University College of Engg. & Tech. For Women	Member (Nominee by BOG)
	Mr. Meka Venkata Chalapathy Head, VIRTUSA, Hyderabad	Member (Industry Nominee)
	Dr. B. Vijay Kumar Professor, HOD (ME)	Member (Ex-officio HOD)
	Dr. Deepajothi A Associate Professor & HOD (CSE)	Member (Ex-officio HOD)
	Dr. Shatrughna Prasad Yadav Professor (ECE), HOD (ECE)	Member (Ex-officio HOD)
	Dr. S. M. Subhash Associate Professor, HOD (CE)	Member (Ex-officio HOD)
	Dr. S. Jayanthi Associate Professor, HOD (IT)	Member (Ex-officio HOD)
	Mr. Manidhar Associate Professor, I/C HOD (EEE)	Member (Ex-officio HOD)
	Dr. B. Madhusudhan Reddy Professor, HOD (MBA)	Member (Ex-officio HOD)
	Dr. G. Srinivas Professor, HOD (H&S)	Member (Ex-officio HOD)

Dr. N. Bhasker Professor	Member
Dr. N. Ramesh Assistant Professor	Member
Dr. V. Sesa Sai Kumar Assistant Professor	Member
Mr. B Sudhakar, Examination In charge,	Member (Ex-officio Exam)
Dr. Sanjeev Shrivastava Professor (CSE) & (Dean Academics and R&D), GNIT	Member Secretary

S. Sreenatha Reddy, Chairman, Academic Council, welcomed all the members of the council and introduced the members to the council and briefed about the institute, activities and achievements of the institute. Dr. Sanjeev Shrivastava, Member Secretary presented the points related to academics. S. Sreenatha Reddy, Chairman, Academic Council, presented the agenda of first meeting.

The minutes of the meeting as per the agenda and item, is given below:

Agenda Point No.1 - Approval of UG & PG Course Structure

Aspects of Academics, syllabus, assessment and evaluation pattern of B. Tech for Academic batch 2020-21 to 2023-24 is discussed. The branch-wise course structure for B. Tech M. Tech and MBA is presented and discussed. Course Structure of programs are based upon AICTE model curriculum, UH curriculum, Industry Trends and government initiatives.

The academic council considered and approved with the following suggestions:

- The quorum approved the course structure for B.Tech. with suggestion to add three internships.
- Open electives and professional electives B.Tech. should be included from III/I and III/II instead of IV/I and IV/II, as the students will be busy with their project work and difficult to handle them.
- BOS should incorporate new education policy objectives and emerging areas in upcoming UG & PG Course Structure for Academic batch 2021-22 to 2024-25.

Agenda Point No.2 - Approval of BOS members of various departments/subjects of UG & PG

The council has discussed the proposed academic council nominee for each BOS and approved the members as academic council nominee for each BOS. (Annexure 1)

The Academic Council approved and accepted the BOS of all the faculty. (Annexure 2)

Agenda Point No. 3. Approval of Academic Regulations for 2020-2024 ^{and} for BOS 2021-2025

Chairman put forward the Academic Regulations for the consideration of approval. (Annexure 3)

academic council considered and approved with the following suggestions:

- Initiation of co-curricular and extracurricular activities along with the curriculum was approved.
- Allotment of credits should be 160 for B.Tech.
- Subject code for non-credit course like Gender Sensitization, require to add.
- Allotment of Marks for UG & PG Courses – It is approved to give 30% Marks for Internal and 70% Marks External examinations for theory and lab.

For Theory Subjects (inclusive of Minor Courses), during the Semester, there shall be 2 mid-term examinations for 30 marks each. Each mid-term examination consists of one objective paper for 5 marks, plus one subjective paper for 15 marks, with duration of 80 minutes (20 minutes for objective and 60 minutes for subjective papers). Further, there will be an allocation of 5 marks for Assignment and 5 marks for attendance ($\geq 90\%$ - 5 marks, 86%-90% - 4 marks, 81%-85% - 3marks, 76%-80% - 2 marks, 71%-75% - 1 mark, no marks for $< 75\%$). Objective paper may be set with multiple choice questions, True/ False, fill-in the blanks, matching type questions, etc. Subjective paper shall contain 5 questions, out of which the Student has to answer 3 questions, each for 5 marks.

For Practical Subjects, there shall be a Continuous Internal Evaluation (CIE) during the Semester for 30 internal marks, and 70 marks are assigned for Lab./Practical End Semester Examination (SEE). Out of the 30 marks for internals, day-to-day work in the laboratory shall be evaluated for 20 marks; and for the remaining 10 marks - two internal practical tests (each of 10 marks) shall be conducted by the concerned laboratory teacher and the better of these two tests is taken into account. The SEE for Practical's shall be conducted at the end of the Semester by Two Examiners appointed by Head of the Department.

For the Subjects having Design and/or Drawing, (such as Engineering Graphics, Engineering Drawing, Machine Drawing, Production Drawing Practice, and Estimation), the distribution shall be 30 marks for CIE (20 marks for day-to-day work, and 10 marks for internal tests) and 70 marks for SEE. There shall be two internal tests in a Semester and the better of the two shall be considered for the award of marks for internal tests.

- Induction Program of 4 weeks duration with suitable course credits for first year.

Point No. 4. Any other ^{item} with permission of Chairman

The academic council considered and approved the following suggestions:

- Remedial classes should be conducted on par with the regular academic classes.
- Swayam, NPTEL, MOOCS courses should be included in the core syllabus from B.Tech III year onwards.

The meeting is ended with the vote of thanks to all the members of the academic council.


Dr. S. Sreenatha Reddy
PRINCIPAL

y to:

1. All the members of Academic Council
2. Honorable MD – for information please
3. Honorable VC – for information please

GURU NANAK INSTITUTE OF TECHNOLOGY

ACADEMIC COUNCIL MEMBERS

No.	Members	Designation	Signatures
1	Dr. S. Sreenatha Reddy Principal, GNIT	Chairman	
2	Dr. H. S. Saini, Managing Director, GNI	Member	
3	Dr. K. M. Lakshman Rao Prof. of Transportation Engg. & Director, BICS, JNTUH	Member	
4	Dr. A. Damodaram Prof. of CSE & Director, SIT, JNTUH	Member	
5	Dr. G. Krishna Mohan Prof. of Pharmacy & Director, IST, JNTUH	Member	
6	Dr. M Madhavi Latha Prof. of ECE & Director of Academic & Planning, JNTUH	Member	
7	Dr. P Ramesh Babu Prof. ME, Osmania University	Member	
8	Prof. Srinivasulu Tadisethy Dean Faculty of Engineering & Technology, KU Principal University College of Engg. & Tech. For Women	Member	
9	Mr. Meka Venkata Chalapathy Head, VIRTUSA, Hyderabad	Member	
10	Dr. B. Vijay Kumar Professor, HOD (ME) & Chairman-BOS(ME)	Member	
11	Dr. Deepajothi A Assoc. Prof, HOD (CSE) & Chairman-BOS(CSE)	Member	
12	Dr. Shatrughna Prasad Yadav Professor, HOD (ECE) & Chairman-BOS(ECE)	Member	
13	Dr. S. M. Subhash Assoc. Prof, HOD (CE) & Chairman-BOS(CE)	Member	
14	Dr. S. Jayanthi, Assoc. Prof, HOD (IT) & Chairman-BOS(IT)	Member	
15	Mr. T Manidhar, Assoc. Prof, HOD(EEE) & Chairman-BOS(EEE)	Member	
16	Dr. B. Madhusudhan Reddy Professor, HOD (MBA) & Chairman-BOS(MBA)	Member	
17	Dr. G. Srinivas Professor, HOD (H&S) & Chairman-BOS(Mathematics)	Member	
18	Dr. N. Bhasker, Professor & Chairman-BOS(Chemistry)	Member	
19	Dr. N. Ramesh, Assistant Professor & Chairman-BOS(English)	Member	
20	Dr. V. Sessa Sai Kumar Assistant Professor & Chairman-BOS(Physics)	Member	
21	Mr. B Sudhakar, Examination In-charge, GNIT	Member	
22	Dr. Sanjeev Shrivastava Dean Academics and R&D, GNIT	Member Secretary	

City Office: B2, 2nd Flr, Above Bata, Vikramপুরi Colony, Karkhana Road, Secunderabad - 500 009, Telangana, India.

Ph: +91 - 40 - 6632 3294, 6517 6117, Fax +91 - 40 - 2789 2633

Campus: Ibrahimpatnam, R. R. District, Hyderabad - 501 506, Telangana, India. Ph: (0/95) 8414 - 2021 20/21

DEPARTMENT OF CIVIL ENGINEERING (CE) R 20
Effective from Academic Year 2020 -21 Admitted Batch
COURSE STRUCTURE

I Year I Semester

Sl. No	Group	Course Code	Course Title	L	T	P	C
1	BSC	20BSOMA01	Mathematics – I	3	1	0	4
2	BSC	20BSOPH01	Engineering Physics	3	1	0	4
3	ESC	20ESOCS01	Programming for Problem Solving	3	1	0	4
4	ESC	20ESOME01	Engineering Graphics	1	0	4	3
5	BSC	20BSOPH02	Engineering Physics Lab	0	0	3	1.5
6	ESC	20ESOCS02	Programming for Problem Solving Lab	0	0	3	1.5
7			Induction Program				
TOTAL				10	3	10	18

I Year II Semester

Sl. No.	Group	Course Code	Course Title	L	T	P	C
1	BSC	20BSOMA02	Mathematics – II	3	1	0	4
2	BSC	20BSOCH01	Chemistry	3	1	0	4
3	ESC	20ESOME03	Engineering Mechanics	3	1	0	4
4	ESC	20ESOME02	Engineering Workshop	1	0	3	2.5
5	HSC	20HSOEN01	English	2	0	0	2
6	ESC	20BSOCH02	Engineering Chemistry Lab	0	0	3	1.5
7	HSC	20HSOEN02	English Language and Communication Skills Lab	0	0	2	1
8	PCC	20INOCE01	Summer Internship - I (Evaluated in II-I and Credits will be allotted in II-I)	0	0	2	0
TOTAL				12	3	10	19

(K.M. Kishore)
Ch...

8 *600* *2* *0* *10* *0* *19*

Dr. B. S. Srinivas

4

DEPARTMENT OF CIVIL ENGINEERING (CE) R 20
Effective from Academic Year 2020 -21 Admitted Batch
COURSE STRUCTURE

II Year I Semester

Sl. No.	Group	Course Code	Course Title	L	T	P	C
1	PCC	20PCOCE01	Surveying & Geomatics	3	0	0	3
2	PCC	20PCOCE02	Engineering Geology	2	0	0	2
3	PCC	20PCOCE03	Strength of Materials – I	3	1	0	4
4	BSC	20BSOMA05	Probability & Statistics	3	1	0	4
5	PCC	20PCOCE04	Fluid Mechanics	3	1	0	4
6	PCC	20PCOCE05	Surveying Lab	0	0	3	1.5
7	PCC	20PCOCE06	Strength of Materials Lab	0	0	3	1.5
8	PCC	20PCOCE07	Engineering Geology Lab	0	0	2	1
9	PCC	20INOCE01	Summer Internship - I Evaluation	0	0	0	1
10	MC	20MCOEN02	Constitution of India	2	0	0	0
Total Credits				15	3	8	22

II Year II Semester

Sl. No.	Group	Course Code	Course Title	L	T	P	C
1	ESC	20ES0EE03	Basic Electrical and Electronics Engineering	3	0	0	3
2	ESC	20ES0ME04	Basics of Mechanical Engineering	2	0	0	2
3	PCC	20PCOCE08	Building Materials, Construction and Planning	3	0	0	3
4	PCC	20PCOCE09	Strength of Materials – II	2	1	0	3
5	PCC	20PCOCE10	Hydraulics and Hydraulic Machinery	2	1	0	3
6	PCC	20PCOCE11	Structural Analysis – I	2	1	0	3
7	PCC	20PCOCE12	Computer aided Civil Engineering Drawing	1	0	2	2
8	ESC	20ES0EE04	Basic Electrical and Electronics Lab	0	0	2	1
9	PCC	20PCOCE13	Hydraulics & Hydraulic Machinery Lab	0	0	2	1
10	MC	20MCOEN01	Gender Sensitization Lab	0	0	2	0
11	PCC	20INOCE02	Summer Internship – II (Evaluated in III-I and Credits will be allotted in III-I)	0	0	2	0
TOTAL				15	3	10	21

for
 chs -

(Handwritten signatures and marks in blue and green ink)

DEPARTMENT OF CIVIL ENGINEERING (CE) R 20
Effective from Academic Year 2020 -21 Admitted Batch
COURSE STRUCTURE

III Year I Semester							
Sl. No.	Group	Course Code	Course Title	L	T	P	C
1	PCC	20PCOCE14	Structural Analysis-II	2	1	0	3
2	PCC	20PCOCE15	Geotechnical Engineering	2	1	0	3
3	PCC	20PCOCE16	Structural Engineering-I (RCC)	2	1	2	4
4	PCC	20PCOCE17	Transportation Engineering-I	3	0	0	3
5	PEC	20PEOCEXX	Professional Elective-I	3	0	0	3
6	BSC	20SSOMB01	Business Economics and Financial Analysis	2	0	0	2
7	PCC	20PCOCE18	Highway Engineering and Concrete Technology Lab	0	0	3	1.5
8	PCC	20PCOCE19	Geotechnical Engineering Lab	0	0	3	1.5
9	BSC	20PCOCE07	Advanced Communication Lab	0	0	2	1
10	PCC	20INOCE02	Summer Internship – II Evaluation	0	0	0	1
TOTAL				14	3	10	23

III Year II Semester							
Sl. No.	Group	Course Code	Course Title	L	T	P	C
1	PCC	20PCOCE20	Environmental Engineering-I	3	0	0	3
2	PCC	20PCOCE21	Foundation Engineering	3	0	0	3
3	PCC	20PCOCE22	Structural Engineering-II (Steel)	2	1	2	4
4	PCC	20PCOCE23	Hydrology & water resource Engineering	3	0	0	3
5	PEC	20PEOCEXX	Professional Elective-II	3	0	0	3
6	OEC	20OE0XXXX	Open Elective –I	3	0	0	3
7	PCC	20PCOCE24	Environmental Engineering Lab	0	0	2	1
8	PCC	20PCOCE25	Computer Aided Design Lab	0	0	2	1
9	MC	20MCOCE01	Environmental Science	2	0	0	0
10	PCC	20INOCE03	Summer Internship – III (Evaluated in IV-I and Credits will be allotted in IV-I)	0	0	2	0
TOTAL				19	1	6	21

Handwritten signatures and notes in blue and green ink, including the name 'Geer' and 'Bar & Dimpth'.

DEPARTMENT OF CIVIL ENGINEERING (CE) R 20
Effective from Academic Year 2020 -21 Admitted Batch
COURSE STRUCTURE

IV Year I Semester

S.No.	Group	Course Code	Course Title	L	T	P	C
1	PCC	20PC0CE26	Estimation, Costing and Project Management	2	1	0	3
2	PEC	20PE0CEXX	Professional Elective -III	3	0	0	3
3	PEC	20PE0CEXX	Professional Elective -IV	3	0	0	3
4	OEC	20OE0XXXX	Open Elective -II	3	0	0	3
5	BSC	20SS0MB03	Fundamentals of Management for Engineers	2	0	0	2
6	PCC	20INOCE03	Summer Internship - II Evaluation	0	0	0	1
7	PCC	20MINPR01	Mini Project	0	0	8	4
			Total Credits	13	1	8	19

IV Year II Semester

S.No.	Group	Course Code	Course Title	L	T	P	C
1	PEC	20PE0CEXX	Professional Elective-V	3	0	0	3
2	PEC	20PE0CEXX	Professional Elective-VI	3	0	0	3
3	OEC	20OE0XXXX	Open Elective-III	3	0	0	3
4	PCC	20MAJPR01	Major Project	0	0	16	8
			Total Credits	9	0	16	17

Handwritten notes and signatures:
 For E. G. S. L. ~~for~~ ~~for~~ ~~for~~ ~~for~~ ~~for~~ ~~for~~ ~~for~~ ~~for~~ ~~for~~
 Chy... 3x 4

DEPARTMENT OF CIVIL ENGINEERING (CE) R 20
Effective from Academic Year 2020 -21 Admitted Batch
COURSE STRUCTURE

PROFESSIONAL ELECTIVES

Professional Elective -I

20PE0CE1A	Concrete Technology
20PE0CE1B	Elements of Earthquake Engineering
20PE0CE1C	Introduction to offshore structures

Professional Elective-II

20PE0CE2A	Prestressed Concrete
20PE0CE2B	Optimization Techniques in Structural Engineering
20PE0CE2C	Introduction to composite materials

Professional Elective-III

20PE0CE3A	Irrigation and Hydraulic Structures
20PE0CE3B	Geo Environmental Engineering
20PE0CE3C	Transportation engineering-II

Professional Elective-IV

20PE0CE4A	Remote Sensing & GIS
20PE0CE4B	Design & Drawing of Irrigation Structures
20PE0CE4C	Advanced Foundation engineering

NOTE: The Department may offer the above Professional Electives through Swayam MOOCs

Professional Elective -V

20PE0CE5A	Environmental Engineering-II
20PE0CE5B	Theory of Application of Cement composites
20PE0CE5C	Pavement Design

Professional Elective-VI

20PE0CE6A	Ground improvement techniques
20PE0CE6B	Pipe line Engineering
20PE0CE6C	Urban Transportation Engineering

NOTE: The Department may offer the above Professional Electives through Swayam MOOCs



DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING (EEE) R 20

Effective from Academic Year 2020 -21Admitted Batch

COURSE STRUCTURE

I Year I Semester

S. No.	Group	Course Code	Course Title	L	T	P	Credits
1	BSC	20BSOMA01	Mathematics - I	3	1	0	4
2	BSC	20BSOCH01	Chemistry	3	1	0	4
3	ESC	20ES0EE01	Basic Electrical Engineering	3	0	0	3
4	ESC	20ES0ME02	Engineering Workshop	1	0	3	2.5
5	HSC	20HS0EN01	English	2	0	0	2
6	BSC	20BSOCH02	Engineering Chemistry Lab	0	0	3	1.5
7	HSC	20HS0EN02	English Language and Communication Skills Lab	0	0	2	1
8	ESC	20ES0EE02	Basic Electrical Engineering Lab	0	0	2	1
			Induction Program				
			Total Credits	12	2	10	19

I Year II Semester

S. No.	Group	Course Code	Course Title	L	T	P	Credits
1	BSC	20BSOMA02	Mathematics - II	3	1	0	4
2	BSG	20BSOPH03	Applied Physics	3	1	0	4
3	ESC	20ES0CS01	Programming for Problem Solving	3	1	0	4
4	ESC	20ES0ME02	Engineering Graphics	1	0	4	3
5	BSC	20BSOPH04	Applied Physics Lab	0	0	3	1.5
6	ESC	20ES0CS02	Programming for Problem Solving Lab	0	0	3	1.5
7	PCC	20INEE01	Summer Internship – I (Evaluated in II-I and Credits will be allotted in II-I)	0	0	0	0
			Total Credits	10	3	10	18

Handwritten notes and signatures in blue and green ink, including "Chy.", "Gese", "Band to Digital", and various signatures.

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING (EEE) R 20

Effective from Academic Year 2020 -21 Admitted Batch

COURSE STRUCTURE

II Year I Semester

S. No.	Group	Course Code	Course Title	L	T	P	Credits
1	BSC	20BSOMA07	Laplace Transforms, Numerical Methods & Complex variables	3	1	0	4
2	PCC	20PC0EE01	Electrical Circuit Analysis	3	1	0	4
3	PCC	20PC0EC30	Analog Electronics	3	0	0	3
4	PCC	20PC0EE02	Electrical Machines – I	3	1	0	4
5	PCC	20PC0EE03	Electromagnetic Fields	3	0	0	3
6	PCC	20PC0EE04	Electrical Machines Lab – I	0	0	2	1
7	PCC	20PC0EC31	Analog Electronics Lab	0	0	2	1
8	PCC	20PC0EE05	Electrical Circuits Lab	0	0	2	1
9	MC	20MCOEN02	Constitution of India	0	0	2	0
10	PCC	20INEE01	Summer Internship – I Evaluation	0	0	2	1
			Total Credits	15	3	10	22

II Year II Semester

S. No.	Group	Course Code	Course Title	L	T	P	Credits
1	ESC	20ES0ME01	Engineering Mechanics	3	1	0	4
2	PCC	20PC0EE06	Electrical Machines – II	3	1	0	4
3	PCC	20PC0EC32	Digital Electronics	3	0	0	3
4	PCC	20PC0EE07	Control Systems	3	1	0	4
5	PCC	20PC0EE08	Power System - I	3	0	0	3
6	PCC	20PC0EC33	Digital Electronics Lab	0	0	2	1
7	PCC	20PC0EE09	Electrical Machines Lab - II	0	0	2	1
8	PCC	20PC0EE10	Control Systems Lab	0	0	2	1
9	MC	20MCOCE01	Environmental Sciences	3	0	0	0
10	PCC	20IN0EE02	Summer Internship – II (Evaluated in III-I and Credits will be allotted in III-I)	0	0	0	0
			Total Credits	18	3	6	21

Handwritten signatures and notes in blue and green ink, including "Gee", "Cly.", and "Bar D. Smith".

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING (EEE) R 20
Effective from Academic Year 2020 -21Admitted Batch
COURSE STRUCTURE

III Year I Semester

S. No.	Group	Course Code	Course Title	L	T	P	Credits
1	PCC	20PC0EE11	Power Systems-II	3	1	0	4
2	PCC	20PC0EE12	Power Electronics	3	1	0	4
3	PEC	20PE0EEXX	Professional Elective-I	3	0	0	3
4	PCC	20PC0EE13	Measurements and Instrumentation	3	1	0	4
5	HSMC	20SS0MB01	Business Economics and Financial Analysis	3	0	0	3
6	PCC	20PC0EE14	Power Electronics Lab	0	0	2	1
7	PCC	20PC0EE15	Measurements and Instrumentation Lab	0	0	2	1
8	HSMC	20BS0HS03	Advanced English Communication Skills Lab	0	0	2	1
9	PCC	20IN0EE02	Summer Internship – II Evaluation	0	0	2	1
10	MC	20MC0EN01	Gender Sensitization Lab	0	0	2	0
			Total Credits	15	3	10	22

III Year II Semester

S. No.	Group	Course Code	Course Title	L	T	P	Credits
1	OEC	20OE0XXXX	Open Elective-I	3	0	0	3
2	PEC	20PE0EEXX	Professional Elective-II	3	0	0	3
3	PCC	20PC0EE16	Power System Protection	3	0	0	3
4	PCC	20PC0EE17	Power System Operation & Control	3	1	0	4
5	PCC	20PC0EC04	Signals & Systems	3	0	0	3
6	PCC	20PC0EC16	Microprocessors & Microcontrollers	3	0	0	3
7	PCC	20PC0EC19	Microprocessors & Microcontrollers Lab	0	0	2	1
8	PCC	20PC0EC34	Signals & Systems Lab	0	0	2	1
9	PCC	20PC0EE18	Power System Lab	0	0	2	1
10	MC	20IN0EE03	Summer Internship – III (Evaluated in IV-I and Credits will be allotted in IV-I)	0	0	0	0
			Total Credits	18	1	6	22

Handwritten signatures and notes in blue and green ink, including "Chy...", "For & Gea", and "Banshi Singh".

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING (EEE) R 20
Effective from Academic Year 2020 -21Admitted Batch
COURSE STRUCTURE

IV Year I Semester

S. No.	Group	Course Code	Course Title	L	T	P	Credits
1	OEC	20OE0XXX	Open Elective-II	3	0	0	3
2	PEC	20PE0EEX	Professional Elective-III	3	0	0	3
3	PEC	20PE0EE4X	Professional Elective-IV	3	0	0	3
4	HSMC	20SS0MB03	Fundamentals of Management for Engineers	3	0	0	3
5	PCC	20PC0EE19	Electrical Simulation Lab	0	0	2	1
6	PCC	20PC0EE20	Electrical & Electronics Design Lab	0	0	2	1
7	MC	20IN0EE03	Summer Internship – III Evaluation	0	0	2	1
8	PROJ-EE	20MINPRO2	Industry Oriented Mini Project	0	0	8	4
Total Credits				12	0	14	19

IV Year II Semester

S. No.	Group	Course Code	Course Title	L	T	P	Credits
1	OEC	20OE0XXX	Open Elective-III	3	0	0	3
2	PEC	20PE0EE5X	Professional Elective-V	3	0	0	3
3	PEC	20PE0EE6X	Professional Elective-VI	3	0	0	3
4	PROJ-EE	20MAJPRO2	Major Project	0	0	16	8
Total Credits				9	0	16	17

Handwritten signatures and initials in blue and green ink, including 'Gee', 'Bar', 'Dyithi', and 'CM'.

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING (EEE) R 20

Effective from Academic Year 2020 -21Admitted Batch

COURSE STRUCTURE

Professional Electives

Professional Elective I

20PE0EE1A	High Voltage Engineering
20PE0EE1B	Computer Architecture
20PE0EE1C	Wind and Solar Energy System

Professional Elective II

20PE0EE2A	Electric Machine Design
20PE0EE2B	Power Semiconductor Drives
20PE0EE2C	Digital Signal Processing

Professional Elective III

20PE0EE3A	Industrial Electrical Systems
20PE0EE3B	Energy Audit and Management
20PE0EE3C	Electrical and Hybrid Vehicles

Note: Department may offer above professional electives through SWAYAM MOOCs.

Professional Electives

Professional Elective IV

20PE0EE4A	HVDC Transmission
20PE0EE4B	Power System Reliability
20PE0EE4C	Optimization Techniques

Professional Elective V

20PE0EE5A	Power Quality and FACTS
20PE0EE5B	Control System Design
20PE0EE5C	AI Techniques in Electrical Engineering

Professional Elective V

20PE0EE6A	Smart Grid Technologies
20PE0EE6B	Electrical Distribution Systems
20PE0EE6C	Utilization of Electrical Energy

Note: Department may offer above professional electives through SWAYAM MOOCs.

Open Electives offered by Department of Electrical and Electronics Engineering

Open Elective I

18OE0EE1A	Reliability Engineering
18OE0EE1B	Renewable Energy Sources
18OE0EE1C	Energy Sources and Applications

Open Elective I

18OE0EE2A	Utilization of Electrical Energy
18OE0EE2B	Electrical Energy Conservation and Auditing
18OE0EE2C	Energy Storage Systems

Open Elective I

18OE0EE3A	Special Electrical Machines
18OE0EE3B	Electrical and Hybrid Vehicles
18OE0EE3C	Industrial Electrical Systems

Note: Department may offer above open electives through SWAYAM MOOCs.

Handwritten signatures and initials in blue and green ink, including "clg", "see", "my", and "A".

DEPARTMENT OF MECHANICAL ENGINEERING (ME) R 20
Effective from Academic Year 2020 -21 Admitted Batch
COURSE STRUCTURE

I YEAR I SEMESTER

S. No.	Group	Course Code	Course Title	L	T	P	Credits
1	BSC	20BSOMA01	Mathematics - I	3	1	0	4
2	BSC	20BSOPH01	Engineering Physics	3	1	0	4
3	ESC	20ES0CS01	Programming for Problem Solving	3	1	0	4
4	ESC	20ESOME01	Engineering Graphics	1	0	4	3
5	BSC	20BSOPH02	Engineering Physics Lab	0	0	3	1.5
6	ESC	20ES0CS02	Programming for Problem Solving Lab	0	0	3	1.5
7			Induction Program	-	-	-	-
Total Credits				10	3	10	18

I YEAR II SEMESTER

S. No.	Group	Course Code	Course Title	L	T	P	Credits
1	BSC	20BSOMA02	Mathematics – II	3	1	0	4
2	BSC	20BSOCH01	Chemistry	3	1	0	4
3	ESC	20ESOME03	Engineering Mechanics	3	1	0	4
4	ESC	20ESOME02	Engineering Workshop	1	0	3	2.5
5	HSC	20HS0EN01	English	2	0	0	2
6	ESC	20BSOCH02	Engineering Chemistry Lab	0	0	3	1.5
7	HSC	20HS0EN02	English Language and Communication Skills Lab	0	0	2	1
8	PCC	20INOME01	Summer Internship – I (Evaluated in II-I and Credits will be allotted in II-I)	0	0	2	0
Total Credits				12	3	10	19

Handwritten notes and signatures:
 Kur & Gess
 Chy...
 Paul
 S. D. Dnyanesh
 My
 A

DEPARTMENT OF MECHANICAL ENGINEERING (ME) R 20
Effective from Academic Year 2020 -21 Admitted Batch
COURSE STRUCTURE

II YEAR I SEMESTER

S. No.	Group	Course Code	Course Title	L	T	P	Credits
1	HSC	20BSOMA06	Probability and Statistics & Complex Variables	3	1	0	4
2	PCC	20PCOME01	Mechanics of Solids	3	1	0	4
3	PCC	20PCOME02	Material Science and Metallurgy	3	0	0	3
4	PCC	20PCOME03	Production Technology	3	0	0	3
5	PCC	20PCOME04	Thermodynamics	3	1	0	4
6	PCC	20PCOME05	Production Technology Lab	0	0	2	1
7	PCC	20PCOME06	Machine Drawing Practice	0	0	2	1
8	PCC	20PCOME07	Material Science and Mechanics of Solids Lab	0	0	2	1
9	MC	20MCOMB02	Constitution of India	3	0	0	0
10	PCC	20INOME01	Summer Internship – I Evaluation	0	0	0	1
Total Credits				18	3	6	22

IIYEAR IISEMESTER

S. No.	Group	Course Code	Course Title	L	T	P	Credits
1	ESC	20ES0EE03	Basic Electrical and Electronics Engineering	3	0	0	3
2	PCC	20PCOME08	Kinematics of Machinery	3	1	0	4
3	PCC	20PCOME09	Thermal Engineering – I	3	1	0	4
4	PCC	20PCOME10	Fluid Mechanics and Hydraulic Machines	3	1	0	4
5	PCC	20PCOME11	Instrumentation and Control Systems	3	0	0	3
6	ESC	20ES0EE04	Basic Electrical and Electronics Engineering Lab	0	0	2	1
7	PCC	20PCOME12	Fluid Mechanics and Hydraulic Machines Lab/Thermodynamics Lab	0	0	2	1
8	PCC	20PCOME13	Instrumentation and Control Systems Lab	0	0	2	1
9	MC	20MCOMB01	Gender Sensitization Lab	0	0	2	0
10	PCC	20INOME02	Summer Internship – II (Evaluated in III-I and Credits will be allotted in III-I)	0	0	2	0
Total Credits				15	3	10	21

Handwritten notes and signatures in blue and green ink, including the word 'Chy.' and various scribbles.

DEPARTMENT OF MECHANICAL ENGINEERING (ME) R 20
Effective from Academic Year 2020 -21 Admitted Batch
COURSE STRUCTURE

III YEAR I SEMESTER

S. No.	Group	Course Code	Course Title	L	T	P	Credits
1	PCC	20PCOME14	Dynamics of Machinery	3	1	0	4
2	PCC	20PCOME15	Design of Machine Members-I	3	0	0	3
3	PCC	20PCOME16	Metrology & Machine Tools	3	0	0	3
4	HSC	20SSOMB01	Business Economics & Financial Analysis	3	0	0	3
5	PCC	20PCOME17	Thermal Engineering-II	3	0	0	3
6	PCC	20PE0MEXX	Professional Elective – I	3	0	0	3
7	PCC	20PCOME18	Thermal Engineering Lab	0	0	2	1
8	PCC	20PCOME19	Metrology & Machine Tools Lab	0	0	2	1
9	PCC	20PCOME20	Kinematics & Dynamics Lab	0	0	2	1
10	PCC	20INOME02	Summer Internship – II Evaluation	0	0	0	1
Total Credits				18	1	6	23

III YEAR II SEMESTER

S. No.	Group	Course Code	Course Title	L	T	P	Credits
1	PCC	20PCOME21	Design of Machine Members-II	3	0	0	3
2	PCC	20PCOME22	Heat Transfer	3	1	0	4
3	PCC	20PCOME23	CAD & CAM	3	0	0	3
4	PCC	20PCOME24	Refrigeration & Air Conditioning	3	0	0	3
5	PCC	20PE0MEXX	Professional Elective – II	3	0	0	3
6		20OE0MEXX	Open Elective – I	3	0	0	3
7	PCC	20PCOME25	Heat Transfer Lab	0	0	2	1
8	PCC	20PCOME26	CAD & CAM Lab	0	0	2	1
9	HSC	20HS0EN03	Advanced Communication Skills lab	0	0	2	1
10	PCC	20INOME03	Summer Internship – III (Evaluated in IV-I and Credits will be allotted in IV-I)	0	0	2	0
Total Credits				18	1	8	22

Handwritten notes and signatures:
 King Get of Bar of Dignity
 ch...
 By

DEPARTMENT OF MECHANICAL ENGINEERING (ME) R 20
Effective from Academic Year 2020 -21 Admitted Batch
COURSE STRUCTURE

IV YEAR I SEMESTER

S. No.	Group	Course Code	Course Title	L	T	P	Credits
1	PCC	20PCOME27	Finite Element Methods	3	0	0	3
2	PCC	20PEOMEXX	Professional Elective – III	3	0	0	3
3	PCC	20PEOMEXX	Professional Elective – IV	3	0	0	3
4	PCC	20PCOME28	Composite Materials	2	0	0	2
5	PCC	20OEOMEXX	Open Elective - II	3	0	0	3
6	PCC	20PCOME29	Simulations Lab/Additive Manufacturing Lab	0	0	2	1
7	PCC	20INOME03	Summer Internship – III Evaluation	0	0	0	1
8	PCC	20MINPRO3	Industrial Oriented Mini Project	0	0	4	2
Total Credits				14	0	8	18

IV YEAR II SEMESTER

S. No.	Group	Course Code	Course Title	L	T	P	Credits
1	PCC	20PEOMEXX	Professional Elective – V	3	0	0	3
2	PCC	20PEOMEXX	Professional Elective - VI	3	0	0	3
3	PCC	20OEOMEXX	Open Elective - III	3	0	0	3
4	PCC	20MAJPRO3	Major Project	0	0	16	8
Total Credits				9	0	16	17

Handwritten notes and signatures in green and blue ink:

For Gase & Pan ~~to Dr. Digniti~~ 14

Chy.

My &

DEPARTMENT OF MECHANICAL ENGINEERING (ME) R 20
Effective from Academic Year 2020 -21 Admitted Batch
COURSE STRUCTURE

Professional Elective – I

20ME0PE1A	Operations Research
20ME0PE1B	Industrial Robotics
20ME0PE1C	Mechanical Vibrations

Professional Elective – II

20ME0PE2A	Unconventional Machining Processes
20ME0PE2B	Machine Tool Design
20ME0PE2C	Production Planning & Control

Professional Elective – III

20ME0PE3A	Additive Manufacturing
20ME0PE3B	Automation in Manufacturing
20ME0PE3C	MEMS

Professional Elective – IV

20ME0PE4A	Power Plant Engineering
20ME0PE4B	Automobile Engineering
20ME0PE4C	Renewable Energy Sources

Professional Elective – V

20ME0PE5A	Computational Fluid Dynamics
20ME0PE5B	Turbo Machinery
20ME0PE5C	Fluid Power Systems

Professional Elective – VI

20ME0PE6A	Industrial Management
20ME0PE6B	Production and Operations Management
20ME0PE6C	Tribology

Note: The Department may offer the above Professional Electives through SWAYAM MOOCs

for GATE & Post of IIT Delhi
Chy.
By

Open Electives Offered by Department of Mechanical Engineering for other Branches of Engineering

Open Electives - I

20ME00E1A	Optimization Techniques
20ME00E1B	Computer Graphics
20ME00E1C	Introduction to Mechatronics
20ME00E1D	Fundamentals of Mechanical Engineering

Open Electives - II

20ME00E2A	World Class Manufacturing
20ME00E2B	Fundamentals of Robotics
20ME00E2C	Fabrication Processes
20ME00E2D	Automation in Manufacturing

Open Electives - III

20ME00E3A	Total Quality Management
20ME00E3B	Industrial Safety, Health, and Environmental Engineering
20ME00E3C	Basics of Thermodynamics
20ME00E3D	Reliability Engineering

Note: The Department may offer the above Open Electives through SWAYAM MOOCs

Handwritten signatures and initials in blue and green ink, including "K. S. Geor", "A. Bay", "S. D. D. D.", "Chy.", "By", and a checkmark.

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING (ECE) R 20
Effective from Academic Year 2020 -21 Admitted Batch
COURSE STRUCTURE

I YEAR I SEMESTER

S. No.	Group	Course Code	Course Title	L	T	P	Credits
1	BSC	20BSOMA01	Mathematics - I	3	1	0	4
2	BSC	20BSOPH03	Applied Physics	3	1	0	4
3	ESC	20ES0CS01	Programming for Problem Solving	3	1	0	4
4	ESC	20ES0ME01	Engineering Graphics	1	0	4	3
5	BSC	20BSOPH04	Applied Physics lab	0	0	3	1.5
6	ESC	20ES0CS02	Programming for Problem Solving Lab	0	0	3	1.5
			Induction Program	0	0	0	0
			Total Credits	10	3	10	18

I YEAR II SEMESTER

S. No.	Group	Course Code	Course Title	L	T	P	Credits
1	BSC	20BSOMA02	Mathematics - II	3	1	0	4
2	BSC	20BSOCH01	Chemistry	3	1	0	4
3	ESC	20ES0EE01	Basic Electrical Engineering	3	1	0	4
4	ESC	20ES0EE02	Basic Electrical Engineering Lab	1	0	3	2.5
5	HSC	20HS0EN01	English	2	0	0	2
6	BSC	20BSOCH02	Engineering Chemistry Lab	0	0	3	1.5
7	HSC	20HS0EN02	English Language and Communication Skills Lab	0	0	2	1
8	PCC	20IN0EC01	Summer Internship - I (Evaluated in II-I and Credits will be allotted in II-I)	0	0	2	0
			Total Credits	12	3	10	19

Handwritten signatures and initials in blue and green ink, including names like 'K. R. Geeta', 'D. Dnyanesh', and 'Chy'.

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING (ECE) R 20
Effective from Academic Year 2020 -21 Admitted Batch
COURSE STRUCTURE

II YEAR I SEMESTER

S. No.	Group	Course Code	Course Title	L	T	P	Credits
1	PCC	20PC0EC01	Electronic Devices and Circuits	3	1	0	4
2	PCC	20PC0EC02	Network Analysis and Transmission Lines	3	0	0	3
3	PCC	20PC0EC03	Switching Theory and Logic Design	3	0	0	3
4	PCC	20PC0EC04	Signals and Systems	3	1	0	4
5	PCC	20PC0EC05	Probability Theory and Stochastic Processes	3	0	0	3
6	PCC	20PC0EC06	Electronic Devices and Circuits Lab	0	0	2	1
7	PCC	20PC0EC07	Digital Logic Design Lab	0	0	2	1
8	PCC	20PC0EC08	Basic Simulation Lab	0	0	2	1
9	MC	20MCOEN02	Constitution of India	3	0	0	0
10	PCC	20INOEC02	Summer Internship-I Evaluation	0	0	0	1
Total Credits				18	2	6	21

II YEAR II SEMESTER

S. No.	Group	Course Code	Course Title	L	T	P	Credits
1	BS	20BS0MA07	Laplace Transforms, Numerical Methods & Complex Variables	3	1	0	4
2	PCC	20PC0EC09	Electromagnetic Fields and Waves	3	0	0	3
3	PCC	20PC0EC10	Analog and Digital Communications	3	1	0	4
4	PCC	20PC0EC11	Linear IC Applications	3	0	0	3
5	PCC	20PC0EC12	Electronic Circuit Analysis	3	1	0	4
6	PCC	20PC0EC13	Analog and Digital Communications Lab	0	0	2	1
7	PCC	20PC0EC14	IC Applications Lab	0	0	2	1
8	PCC	20PC0EC15	Electronic Circuit Analysis Lab	0	0	2	1
9	MC	20MCOEN01	Gender Sensitization Lab	0	0	2	0
10	PCC	20INOEC01	Summer Internship – II (Evaluated in III-I and Credits will be allotted in III-I)	0	0	2	0
Total Credits				15	3	10	21

Handwritten notes and signatures:
 The E-Code of each course is given by the Department of Electronics and Communication Engineering.
 Chy...
 S. D. Singh
 Any

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING (ECE) R 20
Effective from Academic Year 2020 -21 Admitted Batch
COURSE STRUCTURE

III YEAR I SEMESTER

S. No.	Group	Course Code	Course Title	L	T	P	Credits
1	PCC	20PC0EC16	Microprocessors & Microcontrollers	3	1	0	4
2	PCC	20PC0EC17	Data Communications and Networks	3	1	0	4
3	PCC	20PC0EC18	Control Systems	3	1	0	4
4	MS	20MSSM02	Business Economics & Financial Analysis	3	0	0	3
5	PE	20PE0ECXX	Professional Elective – I	3	0	0	3
6	PCC	20PC0EC19	Microprocessors & Microcontrollers Lab	0	0	2	1
7	PCC	20PC0EC20	Data Communications and Networks Lab	0	0	2	1
8	BS	20BS0HS03	Advanced English Communication Skills Lab	0	0	2	1
9	MC	20MC0MP01	Intellectual Property Rights	3	0	0	0
10	PCC	20IN0EC02	Summer Internship-II Evaluation	0	0	0	1
Total Credits				18	3	6	22

III YEAR II SEMESTER

S. No.	Group	Course Code	Course Title	L	T	P	Credits
1	PCC	20PC0EC21	Antennas and Propagation	3	1	0	4
2	PCC	20PC0EC22	Digital Signal Processing	3	1	0	4
3	PCC	20PC0EC23	VLSI Design	3	1	0	4
4	PE	20PE0ECXX	Professional Elective – II	3	0	0	3
5	OE	20OE0ECXX	Open Elective – I	3	0	0	3
6	PCC	20PC0EC24	Digital Signal Processing Lab	0	0	2	1
7	PCC	20PC0EC25	e – CAD Lab	0	0	2	1
8	PCC	20PC0CS0	Scripting Languages Lab	0	0	2	1
9	MC	20MC0CE01	Environmental Science	3	0	0	0
10	PCC	20IN0EC02	Summer Internship – III (Evaluated in IV-I and Credits will be allotted in IV-I)	0	0	2	0
Total Credits				18	3	8	21

Handwritten signatures and initials in blue and green ink, including names like 'K', 'G', 'P', 'D', 'S', 'M', 'C', 'V'.

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING (ECE) R 20
Effective from Academic Year 2020 -21 Admitted Batch
COURSE STRUCTURE

IV YEAR I SEMESTER

S. No.	Group	Course Code	Course Title	L	T	P	Credits
1	PCC	20PC0EC26	Microwave and Optical Communications	3	0	0	3
2	PEC	20PE0ECXX	Professional Elective – III	3	0	0	3
3	PEC	20PE0ECXX	Professional Elective – IV	3	0	0	3
4	OEC	20OE0ECXX	Open Elective – II	3	0	0	3
5	MS	20MSSM04	Professional Practice, Law & Ethics	2	0	0	2
6	PCC	20PC0EC27	Microwave and Optical Communications Lab	0	0	2	1
7	PCC	20PC0EC28	Summer Internship-III Evaluation	0	0	0	1
8	PCC	20MINPRO4	Industrial oriented Mini Project	0	0	10	5
			Total Credits	14	0	12	21

IV YEAR II SEMESTER

S. No.	Group	Course Code	Course Title	L	T	P	Credits
1	PEC	20PE0ECXX	Professional Elective – V	3	0	0	3
2	PEC	20PE0ECXX	Professional Elective – VI	3	0	0	3
3	OEC	20OE0ECXX	Open Elective – III	3	0	0	3
4	PCC	20MAJPRO4	Major Project	0	0	16	8
			Total Credits	9	0	16	17

Handwritten notes and signatures:
 The E Case of Mr. S. D. Singh
 ch...
 M
 A

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING (ECE) R 20
Effective from Academic Year 2020 -21 Admitted Batch
COURSE STRUCTURE

PROFESSIONAL ELECTIVES

Professional Elective – I

ZOPEOCS1	Computer Organization & Operating Systems
ZOPEOCS2	Object Oriented Programming through Java
ZOPEOEC1	Electronic Measurements and Instrumentation

Professional Elective – II

ZOPEOCS3	Programming with Python
ZOPEOEC2	Mobile Communications and Networks
ZOPEOCS4	Scripting Languages

Professional Elective – III

ZOPEOEC3	Artificial Neural Networks
ZOPEOEC4	Embedded System Design
ZOPEOEC5	Digital Image Processing

Professional Elective -IV

ZOPEOEC6	Biomedical Instrumentation
ZOPEOSM1	Database Management Systems
ZOPEOCS5	Network Security and Cryptography

Professional Elective -V

ZOPEOEC7	Satellite Communications
ZOPEOEC8	Radar Systems
ZOPEOEC9	Wireless Sensor Networks

Professional Elective –VI

ZOPEOEC10	System on Chip Architecture
ZOPEOEC11	Test and Testability
ZOPEOEC12	Low Power VLSI Design

Note: The department may offer the above Professional Electives through Swayam MOOCs

for E *Case* *of* *Bar* *of* *Digital* *4* *h*
By *4*

OPEN ELECTIVES BY DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Open Elective - I

18OE0EC1A	Electronic Measurements and Instrumentation
18OE0EC1B	Bio-Medical Electronics

Open Elective -II

18OE0EC2A	Embedded Systems
18OE0EC2B	Principles of Electronic Communications

Open Elective -III

18OE0EC3A	Cellular and Mobile Communications
18OE0EC3B	Digital Image Processing

Note: The department may offer the above Open Electives through Swayam MOOCs.

Handwritten notes:
 For *Geoc* ✓ *Open* ✓ *Dr. D. D. D. D.* ✓
Chy... ✓

DEPARTMENT OF COMPUTER SCIENCE ENGINEERING (CSE) R 20
Effective from Academic Year 2020 -21 Admitted Batch
COURSE STRUCTURE

I Year I Semester

S. No.	Group	Course Code	Course Title	L	T	P	Credits
1	BSC	20BS0MA01	Mathematics – I	3	1	0	4
2	BSC	20BS0CH01	Chemistry	3	1	0	4
3	ESC	20ES0EE01	Basic Electrical Engineering	3	0	0	3
4	ESC	20ES0ME02	Engineering Workshop	1	0	3	2.5
5	HSC	20HS0EN01	English	2	0	0	2
6	BSC	20BS0CH02	Engineering Chemistry Lab	0	0	3	1.5
7	HSC	20HS0EN02	English Language and Communication Skills Lab	0	0	2	1
8	ESC	20ES0EE02	Basic Electrical Engineering Lab	0	0	2	1
9			Induction Program				
			Total Credits	12	2	10	19

I Year II Semester

S. No.	Group	Course Code	Course Title	L	T	P	Credits
1	BSC	20BS0MA02	Mathematics – II	3	1	0	4
2	BSC	20BS0PH03	Applied Physics	3	1	0	4
3	ESC	20ES0CS01	Programming for Problem Solving	3	1	0	4
4	ESC	20ES0ME02	Engineering Graphics	1	0	4	3
5	BSC	20BS0PH04	Applied Physics Lab	0	0	3	1.5
6	ESC	20ES0CS02	Programming for Problem Solving Lab	0	0	3	1.5
7	PCC	20IN0CS01	Summer Internship – I (Evaluated in II-I and Credits will be allotted in II-I)	0	0	2	0
			Total Credits	10	3	10	18

Handwritten signatures and notes in blue and green ink, including 'Gae', 'Digniti', and 'By'.

DEPARTMENT OF COMPUTER SCIENCE ENGINEERING (CSE) R 20
Effective from Academic Year 2020 -21 Admitted Batch
COURSE STRUCTURE

II Year I Semester

Group	Course Code	Course Title	L	T	P	Credits
PCC	20PC0EC35	Analog and Digital Electronics	3	0	0	3
PCC	20PC0CS01	Data Structures	3	1	0	4
BSC	20BS0MA03	Computer Oriented Statistical Methods	3	1	0	4
PCC	20PC0CS02	Computer Organization and Architecture	3	0	0	3
PCC	20PC0CS03	Object Oriented Programming using C++	2	0	0	2
PCC	20PC0EC36	Analog and Digital Electronics Lab	0	0	2	1
PCC	20PC0CS04	Data Structures Lab	0	0	3	1.5
PCC	20PC0CS05	IT Workshop Lab	0	0	3	1.5
PCC	20PC0CS06	C++ Programming Lab	0	0	2	1
MC	20MCOEN01	Gender Sensitization Lab	0	0	2	0
PCC	20IN0CS01	Summer Internship – I Evaluation	0	0	0	1
		Total Credits	14	2	12	22

II Year II Semester

Group	Course Code	Course Title	L	T	P	Credits
PCC	20PC0CS07	Discrete Mathematics	3	0	0	3
HSMC	20SS0MB01	Business Economics & Financial Analysis	3	0	0	3
PCC	20PC0CS08	Operating Systems	3	0	0	3
PCC	20PC0CS09	Database Management Systems	3	1	0	4
PCC	20PC0CS10	Java Programming	3	1	0	4
PCC	20PC0CS11	Operating Systems Lab	0	0	3	1.5
PCC	20PC0CS12	Database Management Systems Lab	0	0	3	1.5
PCC	20PC0CS13	Java Programming Lab	0	0	2	1
MC	20MCOEN02	Constitution of India	3	0	0	0
PCC	20IN0CS02	Summer Internship – II (Evaluated in III-I and Credits will be allotted in III-I)	0	0	2	0
		Total Credits	18	2	10	21

Handwritten notes and signatures in blue and green ink:
 for GSC & Bar
 by S. D. Singh
 By A

DEPARTMENT OF COMPUTER SCIENCE ENGINEERING (CSE) R 20
Effective from Academic Year 2020 -21 Admitted Batch
COURSE STRUCTURE

III YEAR I Semester

No.	Group	Course Code	Course Title	L	T	P	Credits
	PCC	20PCOCS14	Formal Languages & Automata Theory	3	0	0	3
	PCC	20PCOCS15	Software Engineering	3	0	0	3
	PCC	20PCOCS16	Computer Networks	3	0	0	3
	PCC	20PCOCS17	Design and Analysis of Algorithms	3	0	0	3
	PEC	-	Professional Elective-I	3	0	0	3
	PEC	-	Professional Elective -II	3	0	0	3
	PCC	20PCOCS18	Software Engineering Lab	0	0	3	1.5
	PCC	20PCOCS19	Computer Networks Lab	0	0	3	1.5
	HSC	20BS0HS03	Advanced English Communication Skills Lab	0	0	2	1
	MC	20MCOB01	Intellectual Property Rights	3	0	0	0
	PCC	20INOCS02	Summer Internship – II Evaluation	0	0	0	1
			Total Credits	21	0	10	23

III Year II Semester

No.	Group	Course Code	Course Title	L	T	P	Credits
1	PCC	20PCOCS20	Machine Learning	3	1	0	4
2	PCC	20PCOCS21	Compiler Design	3	1	0	4
3	PCC	20PCOCS22	Web Technologies	3	1	0	4
4	PEC	-	Professional Elective – III	3	0	0	3
5	OEC	-	Open Elective-I	3	0	0	3
6	PCC	20PCOCS23	Machine Learning Lab	0	0	3	1.5
7	PCC	20PCOCS24	Compiler Design & Web Technologies Lab	0	0	3	1.5
8	PEC	-	Professional Elective-III Lab	0	0	2	1
9	MC	20MCOCE01	Environmental Science	3	0	0	0
10	PCC	20INOCS03	Summer Internship – III (Evaluated in IV-I and Credits will be allotted in IV-I)	0	0	2	0
			Total Credits	18	3	10	22

Environmental Science – Should be Registered by Lateral Entry Students Only.

Handwritten notes and signatures:
 For E CSE ✓ Ben ✓ S. D. Singh ✓
 ch. ✓

DEPARTMENT OF COMPUTER SCIENCE ENGINEERING (CSE) R 20
Effective from Academic Year 2020 -21 Admitted Batch
COURSE STRUCTURE

IV Year I Semester

No.	Group	Course Code	Course Title	L	T	P	Credits
	PCC	20PCOCS25	Information Security	3	0	0	3
	PCC	20PCOCS26	Data Mining	2	0	0	2
	PEC	-	Professional Elective -IV	3	0	0	3
	PEC	-	Professional Elective -V	3	0	0	3
	OEC	-	Open Elective – II	3	0	0	3
	PCC	20PCOCS27	Data Mining Lab	0	0	2	1
	PCC	20MINPRO5	Industrial Oriented Mini Project	0	0	4	2
	PCC	20INOC503	Summer Internship – III Evaluation	0	0	0	1
			Total Credits	14	0	06	18

IV Year II Semester

No.	Group	Course Code	Course Title	L	T	P	Credits
	HSMC	20SSOMB03	Management Fundamentals for Engineers	3	0	0	3
	PEC	-	Professional Elective - VI	3	0	0	3
	OEC	-	Open Elective – III	3	0	0	3
	PCC	20MAJPRO5	Major Project	0	0	16	8
			Total Credits	9	0	16	17

Handwritten notes and signatures in blue and green ink:
 For case ✓ Paul ✓ S. Dnyanesh ✓
 chy. ✓
 By ✓

DEPARTMENT OF COMPUTER SCIENCE ENGINEERING (CSE) R 20
Effective from Academic Year 2020 -21 Admitted Batch
COURSE STRUCTURE

Professional Electives

Professional Elective – I

20PE0CS1A	Information Theory & Coding
20PE0CS1B	Advanced Computer Architecture
20PE0CS1C	Big Data Analytics
20PE0CS1D	Image Processing
20PE0CS1E	Principles of Programming Languages

Professional Elective-II

20PE0CS2A	Computer Graphics
20PE0CS2B	Advanced Operating Systems
20PE0CS2C	Informational Retrieval Systems
20PE0CS2D	Advanced Databases
20PE0CS2E	Natural Language Processing

Professional Elective-III

20PE0CS3A	Concurrent Programming
20PE0CS3B	Network Programming
20PE0CS3C	Scripting Languages
20PE0CS3D	Mobile Application Development
20PE0CS3E	Software Testing Methodologies

Professional Elective-IV

20PE0CS4A	Graph Theory
20PE0CS4B	Embedded Systems
20PE0CS4C	Symantec Web
20PE0CS4D	Cloud Computing
20PE0CS4E	Ad-hoc & Sensor Networks

Professional Elective-V

20PE0CS5A	Advanced Algorithms
20PE0CS5B	Mobile Computing
20PE0CS5C	Soft Computing
20PE0CS5D	Internet of Things
20PE0CS5E	Software Process & Project Management

Professional Elective-VI

20PE0CS6A	Computational Complexity
20PE0CS6B	Distributed Systems
20PE0CS6C	Neural Networks & Deep Learning
20PE0CS6D	Software Metrics & Measures
20PE0CS6E	Cyber Forensics

Note: The department may offer the above professional elective through Swayam MOOCs

Handwritten signatures and initials in blue and green ink, including names like 'Geel', 'Dijithi', and 'Chy'.

OPEN ELECTIVES BY DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
OPEN ELECTIVE-I

20OE0CS1A	Data Structure
20OE0CS1B	Database Management System
20OE0CS1C	Fundamentals to Artificial Intelligence

OPEN ELECTIVE-II

20OE0CS2A	Java Programming
20OE0CS2B	Software Engineering
20OE0CS2C	Computer Forensics

OPEN ELECTIVE-III

20OE0CS3A	Linux Programming
20OE0CS3B	Introduction to Python Programming
20OE0CS3C	Software Process & Project Management

Note: The department may offer the above open electives through Swayam MOOCs

Handwritten notes in blue and green ink:
K... Gase ✓ ... ✓ ... ✓ ... ✓ ... ✓
Chy .

DEPARTMENT OF INFORMATION TECHNOLOGY (CSE) R 20
Effective from Academic Year 2020 -21 Admitted Batch
COURSE STRUCTURE

I YEAR I SEMESTER

S. No.	Group	Course Code	Course Title	L	T	P	Credits
1	BSC	20BSOMA01	Mathematics – I	3	1	0	4
2	BSC	20BSOCH01	Chemistry	3	1	0	4
3	ESC	20ES0EE01	Basic Electrical Engineering	3	0	0	3
4	ESC	20ES0ME02	Engineering Workshop	1	0	3	2.5
5	HSC	20HSOEN01	English	2	0	0	2
6	BSC	20BSOCH02	Engineering Chemistry Lab	0	0	3	1.5
7	HSC	20HSOEN02	English Language and Communication Skills Lab	0	0	2	1
8	ESC	20ES0EE02	Basic Electrical Engineering Lab	0	0	2	1
			Induction Program				
			Total Credits	12	2	10	19

I YEAR II SEMESTER

S. No.	Group	Course Code	Course Title	L	T	P	Credits
1	BSC	20BSOMA02	Mathematics – II	3	1	0	4
2	BSC	20BSOPH03	Applied Physics	3	1	0	4
3	ESC	20ES0CS01	Programming for Problem Solving	3	1	0	4
4	ESC	20ES0ME02	Engineering Graphics	1	0	4	3
5	BSC	20BSOPH04	Applied Physics Lab	0	0	3	1.5
6	ESC	20ES0CS02	Programming for Problem Solving Lab	0	0	3	1.5
7	PCC	20IN0IT01	Summer Internship – I (Evaluated in II-I and Credits will be allotted in II-I)	0	0	2	0
			Total Credits	10	3	12	18

Handwritten notes and signatures in blue and green ink, including the word 'clg...' and various scribbles.

DEPARTMENT OF INFORMATION TECHNOLOGY (CSE) R 20
Effective from Academic Year 2020 -21 Admitted Batch
COURSE STRUCTURE

II YEAR I SEMESTER

S. No.	Group	Course Code	Course Title	L	T	P	Credits
1	PCC	20PC0EC35	Analog and Digital Electronics	3	0	0	3
2	PCC	20PC0IT01	Data Structures	3	1	0	4
3	BSC	20BS0MA03	Computer Oriented Statistical Methods	3	1	0	4
4	PCC	20PC0EC37	Computer Organization and Microprocessor	3	0	0	3
5	PCC	20PC0IT02	Object Oriented Programming using C++	2	0	0	2
6	PCC	20PC0EC36	Analog and Digital Electronics Lab	0	0	2	1
7	PCC	20PC0IT03	Data Structures Lab	0	0	3	1.5
8	PCC	20PC0IT04	IT Workshop and Microprocessor Lab	0	0	3	1.5
9	PCC	20PC0IT05	C++ Programming Lab	0	0	2	1
10	MC	20MCOEN01	Gender Sensitization Lab	0	0	2	0
11	PCC	20IN0IT01	Summer Internship – I Evaluation	0	0	0	1
			Total Credits	14	2	12	22

II YEAR II SEMESTER

S. No.	Group	Course Code	Course Title	L	T	P	Credits
1	PCC	20PC0IT06	Discrete Mathematics	3	0	0	3
2	MSC	20SS0MB01	Business Economics & Financial Analysis	3	0	0	3
3	PCC	20PC0IT07	Operating Systems	3	0	0	3
4	PCC	20PC0IT08	Database Management Systems	3	1	0	4
5	PCC	20PC0IT09	Java Programming	3	1	0	4
6	PCC	20PC0IT10	Operating Systems Lab	0	0	3	1.5
7	PCC	20PC0IT11	Database Management Systems Lab	0	0	3	1.5
8	PCC	20PC0IT12	Java Programming Lab	0	0	2	1
9	MC	20MCOEN02	Constitution of India	3	0	0	0
10	PCC	20IN0IT02	Summer Internship – II (Evaluated in III-I and Credits will be allotted in III-I)	0	0	2	0
			Total Credits	18	2	10	21

Handwritten signatures and notes in green and blue ink, including the word 'class' and various scribbles.

DEPARTMENT OF INFORMATION TECHNOLOGY (CSE) R 20
Effective from Academic Year 2020 -21 Admitted Batch
COURSE STRUCTURE

III YEAR I SEMESTER

S. No.	Group	CourseCode	Course Title	L	T	P	Credits
1	PCC	20PCOIT13	Formal Languages & Automata Theory	3	0	0	3
2	PCC	20PCOIT14	Software Engineering	3	0	0	3
3	PCC	20PCOIT15	Data Communication & Computer Networks	3	1	0	4
4	PCC	20PCOIT16	Web Programming	2	0	0	2
5	PEC	-	Professional Elective – I	3	0	0	3
6	PEC	-	Professional Elective – II	3	0	0	3
7	PCC	20PCOIT17	Software Engineering Lab	0	0	3	1.5
8	PCC	20PCOIT18	Computer Networks & Web Programming Lab	0	0	3	1.5
9	HSC	20HSOEN03	Advanced Communication Skills Lab	0	0	2	1
10	MC	20MCOMB01	Intellectual Property Rights	3	0	0	0
11	PCC	20INOIT02	Summer Internship – II Evaluation	0	0	0	1
			Total Credits	20	1	8	23

III YEAR II SEMESTER

S. No.	Group	CourseCode	Course Title	L	T	P	Credits
1	PCC	20PCOEC38	Introduction to Embedded Systems	3	0	0	3
2	PCC	20PCOIT19	Principles of Compiler Construction	3	0	0	3
3	PCC	20PCOIT20	Algorithm Design and Analysis	3	0	0	3
4	PCC	20PCOEC39	Internet of Things	3	0	0	3
5	PEC	-	Professional Elective –III	3	0	0	3
6	OEC	-	Open Elective-I	3	0	0	3
7	PCC	20PCOEC40	Embedded Systems & Internet of Things Lab	0	0	3	1.5
8	PCC	20PCOIT21	Compiler Construction Lab	0	0	3	1.5
9	PEC	-	Professional Elective-III Lab	0	0	2	1
10	MC	20MCOCE01	Environmental Science	3	0	0	0
11	PCC	20INOIT03	Summer Internship – III (Evaluated in IV-I and Credits will be allotted in IV-I)	0	0	2	0
			Total Credits	21	0	10	22

for the case of Bal... [Handwritten signatures and notes in blue and green ink]

DEPARTMENT OF INFORMATION TECHNOLOGY (CSE) R 20
Effective from Academic Year 2020 -21 Admitted Batch
COURSE STRUCTURE

IV YEAR I SEMESTER

S.No.	Group	Course Code	Course Title	L	T	P	Credits
1	PCC	20PC0IT22	Information Security	3	0	0	3
2	PCC	20PC0IT23	Data Mining	2	0	0	2
3	PEC	-	Professional Elective -IV	3	0	0	3
4	PEC	-	Professional Elective -V	3	0	0	3
5	OEC	-	Open Elective-II	3	0	0	3
6	PCC	20PC0IT24	Information Security Lab	0	0	2	1
7	PCC	20INOIT03	Summer Internship - III Evaluation	0	0	0	1
8	PCC	20MINPR12	Mini Project	0	0	4	2
			Total Credits	14	0	10	18

IV YEAR II SEMESTER

S.No.	Group	Course Code	Course Title	L	T	P	Credits
1	MSC	20SS0MB04	Organizational Behaviour	3	0	0	3
2	PEC	-	Professional Elective -VI	3	0	0	3
3	OEC	-	Open Elective-III	3	0	0	3
4	PCC	20MAJPR12	Major Project	0	0	16	8
			Total Credits	9	0	12	17

Handwritten signatures and initials in blue and green ink, including names like 'Gee', 'Bee', 'Dipika', and 'Cly'.

DEPARTMENT OF INFORMATION TECHNOLOGY (CSE) R 20
Effective from Academic Year 2020 -21 Admitted Batch
COURSE STRUCTURE

PROFESSIONAL ELECTIVES

Professional Elective - I

20PEOIT1A	Biometrics
20PEOIT1B	Advanced Computer Architecture
20PEOIT1C	Data Analytics
20PEOIT1D	Image Processing
20PEOIT1E	Principles of Programming Languages

Professional Elective – II

20PEOIT2A	Database Security
20PEOIT2B	Advanced Operating Systems
20PEOIT2C	Machine Learning
20PEOIT2D	Pattern Recognition
20PEOIT2E	Computer Graphics

Professional Elective – III

20PEOIT3A	Ethical Hacking
20PEOIT3B	Network Programming
20PEOIT3C	Scripting Languages
20PEOIT3D	Mobile Application Development
20PEOIT3E	Software Testing Methodologies

Professional Elective – III Lab

20PEOIT3F	Ethical Hacking Lab
20PEOIT3G	Network Programming Lab
20PEOIT3H	Scripting Languages Lab
20PEOIT3I	Mobile Application Development Lab
20PEOIT3J	Software Testing Methodologies Lab

Courses in PE - III and PE - III Lab must be in 1-1 correspondence.

Professional Elective -IV

20PEOIT4A	Web Security
20PEOIT4B	High Performance Computing
20PEOIT4C	Artificial Intelligence
20PEOIT4D	Cloud Computing
20PEOIT4E	Ad-hoc & Sensor Networks

Professional Elective -V

20PE0IT5A	Intrusion Detection Systems
20PE0IT5B	Real Time Systems
20PE0IT5C	Soft Computing
20PE0IT5D	Distributed Databases
20PE0IT5E	Software Process & Project Management

Professional Elective -VI

20PE0IT6A	Natural Language Processing
20PE0IT6B	Distributed Systems
20PE0IT6C	Neural Networks & Deep Learning
20PE0IT6D	Human Computer Interaction
20PE0IT6E	Cyber Forensics

Note: The department may offer the above Professional Electives through Swayam MOOCs

OPEN ELECTIVES BY DEPARTMENT OF INFORMATION TECHNOLOGY

Open Elective -I

20OE0IT1A	Web Technologies
20OE0IT1B	Mobile Computing
20OE0IT1C	Cyber Law & Ethics

Open Elective -II

20OE0IT2A	E Commerce
20OE0IT2B	Software Testing Methodologies
20OE0IT2C	Operating System

Open Elective -III

20OE0IT3A	Android Application Development
20OE0IT3B	R Programming
20OE0IT3C	PHP Programming

Note: The department may offer the above Open Electives through Swayam MOOCs.

[Handwritten signatures and initials in green and blue ink]

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING (CYBER SECURITY) R 20
Effective from Academic Year 2020-21 Admitted Batch
COURSE STRUCTURE

I YEAR I SEMESTER

S. No.	Group	Course Code	Course Title	L	T	P	Credits
1	BSC	20BSOMA01	Mathematics – I	3	1	0	4
2	BSC	20BSOCH01	Chemistry	3	1	0	4
3	ESC	20ES0EE01	Basic Electrical Engineering	3	0	0	3
4	ESC	20ES0ME02	Engineering Workshop	1	0	3	2.5
5	HSC	20HS0EN01	English	2	0	0	2
6	BSC	20BSOCH02	Engineering Chemistry Lab	0	0	3	1.5
7	HSC	20HS0EN02	English Language and Communication Skills Lab	0	0	2	1
8	ESC	20ES0EE02	Basic Electrical Engineering Lab	0	0	2	1
			Induction Program				
			Total Credits	12	2	10	19

I YEAR II SEMESTER

S. No.	Group	Course Code	Course Title	L	T	P	Credits
1	BSC	20BSOMA02	Mathematics – II	3	1	0	4
2	BSC	20BSOPH03	Applied Physics	3	1	0	4
3	ESC	20ES0CS01	Programming for Problem Solving	3	1	0	4
4	ESC	20ES0ME02	Engineering Graphics	1	0	4	3
5	BSC	20BSOPH04	Applied Physics Lab	0	0	3	1.5
6	ESC	20ES0CS02	Programming for Problem Solving Lab	0	0	3	1.5
7	PCC	20INOCY01	Summer Internship – II (Evaluated in III-I and Credits will be allotted in III-I)	0	0	2	0
			Total Credits	10	3	12	18

Handwritten signatures and initials in blue and green ink, including 'Gee', 'Chy.', and various initials.

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING (CYBER SECURITY) R 20
Effective from Academic Year 2020-21 Admitted Batch
COURSE STRUCTURE

II YEAR I SEMESTER

Group	Course Code	Course Title	L	T	P	Credits
PCC	20PCOEC35	Analog and Digital Electronics	3	0	0	3
PCC	20PCOCY01	Data Structures	3	1	0	4
BSC	20BS0MA04	Mathematical and Statistical Foundations	3	1	0	4
PCC	20PCOCY02	Computer Organization and Architecture	3	0	0	3
PCC	20PCOCY03	Python Programming	2	0	0	2
ESC	20PCOEC36	Analog and Digital Electronics Lab	0	0	2	1
PCC	20PCOCY04	Data Structures Lab	0	0	3	1.5
PCC	20PCOCY05	IT Workshop Lab	0	0	3	1.5
PCC	20PCOCY06	Python Programming Lab	0	0	2	1
MC	20MCOEN01	Gender Sensitization Lab	0	0	2	0
PCC	20INOCY01	Summer Internship – I Evaluation	0	0	0	1
		Total Credits	14	2	12	22

II YEAR II SEMESTER

Group	Course Code	Course Title	L	T	P	Credits
PCC	20PCOCY07	Discrete Mathematics	3	0	0	3
HSMC	20SS0MB01	Business Economics & Financial Analysis	3	0	0	3
PCC	20PCOCY08	Operating Systems	3	0	0	3
PCC	20PCOCY09	Computer Networks	3	1	0	4
PCC	20PCOCY10	Object Oriented Programming using Java	3	1	0	4
PCC	20PCOCY11	Operating Systems Lab	0	0	3	1.5
PCC	20PCOCY12	Computer Networks Lab	0	0	3	1.5
PCC	20PCOCY13	Java Programming Lab	0	0	2	1
MC	20MCOEN02	Constitution of India	3	0	0	0
PCC	20INOCY02	Summer Internship – II (Evaluated in III-I and Credits will be allotted in III-I)	0	0	2	0
		Total Credits	18	2	10	21

Handwritten notes and signatures:
 K. E. Gae
 A. Balaji
 S. Dignithi
 Chy...
 (Other illegible signatures and marks)

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING (CYBER SECURITY) R 20
Effective from Academic Year 2020-21 Admitted Batch
COURSE STRUCTURE

III YEAR I SEMESTER

S. No.	Group	Course Code	Course Title	L	T	P	Credits
1	PCC	20PCOCY14	Design and Analysis of Algorithm	3	0	0	3
2	PCC	20PCOCY15	Software Engineering	3	0	0	3
3	PCC	20PCOCY16	Python Programming for Cyber Security	3	0	0	3
4	PCC	20PCOCY17	Network Security	3	0	0	3
5	PEC	-	Professional Elective-I	3	0	0	3
6	PEC	-	Professional Elective -II	3	0	0	3
7	PCC	20PCOCY18	Python Programming for Cyber Security Lab	0	0	3	1.5
8	PCC	20PCOCY19	Network Security Lab	0	0	3	1.5
9	HSC	20BS0HS03	Advanced English Communication Skills Lab	0	0	2	1
10	MC	20MCOMB01	Intellectual Property Rights	3	0	0	0
11	PCC	20INOCY02	Summer Internship – II Evaluation	0	0	0	1
			Total Credits	21	0	8	23

III YEAR II SEMESTER

S. No.	Group	Course Code	Course Title	L	T	P	Credits
1	PCC	20PCOCY20	Web Technologies	3	1	0	4
2	PCC	20PCOCY21	Compiler Design	3	1	0	4
3	PCC	20PCOCY22	Database Security	3	1	0	4
4	PEC	-	Professional Elective – III	3	0	0	3
5	OEC	-	Open Elective-I	3	0	0	3
6	PCC	20PCOCY23	Database Security Lab	0	0	3	1.5
7	PCC	20PCOCY24	Compiler Design & Web Technologies Lab	0	0	3	1.5
8	PEC	-	Professional Elective-III Lab	0	0	2	1
9	MC	20MCOCE01	Environmental Science	3	0	0	0
10	PCC	20INOCY03	Summer Internship – III (Evaluated in IV-I and Credits will be allotted in IV-I)	0	0	2	0
			Total Credits	18	3	10	22

*Environmental Science – Should be Registered by Lateral Entry Students Only.

Handwritten notes and signatures:
 K. S. Gose
 A. P. D. Singh
 37
 Chy...
 (Other illegible signatures and marks)

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING (CYBER SECURITY) R 20
Effective from Academic Year 2020-21 Admitted Batch
COURSE STRUCTURE

IV YEAR I SEMESTER

Group	Course Code	Course Title	L	T	P	Credits
PCC	20PC0CY25	Artificial Intelligence	3	0	0	3
PCC	20PC0CY26	Cloud Security	2	0	0	2
PEC	-	Professional Elective -IV	3	0	0	3
PEC	-	Professional Elective -V	3	0	0	3
OEC	-	Open Elective – II	3	0	0	3
PCC	20PC0CY27	Artificial Intelligence Lab	0	0	2	1
PCC	20MINPR62	Industrial Oriented Mini Project	0	0	4	2
PCC	20IN0CY03	Summer Internship –III Evaluation	0	0	0	1
		Total Credits	14	0	06	18

IV YEAR II SEMESTER

Group	Course Code	Course Title	L	T	P	Credits
HSMC	20SS0MB03	Management Fundamentals for Engineers	3	0	0	3
PEC	-	Professional Elective – VI	3	0	0	3
OEC	-	Open Elective – III	3	0	0	3
PCC	20MAJPR62	Major Project	0	0	16	8
		Total Credits	9	0	16	17

Handwritten notes and signatures in blue and green ink, including the name 'D. D. D. D.' and other illegible scribbles.

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING (CYBER SECURITY) R 20
 Effective from Academic Year 2020-21 Admitted Batch
COURSE STRUCTURE

Professional Electives

Professional Elective-I

20PE0CY1A	Wireless Sensor Network Security
20PE0CY1B	Data Mining
20PE0CY1C	Big Data Analytics
20PE0CY1D	Introduction to Cyber Law
20PE0CY1E	Foreign and Incident Response

Professional Elective-II

20PE0CY2A	Computer Graphics
20PE0CY2B	Advanced Operating Systems
20PE0CY2C	Informational Retrieval Systems
20PE0CY2D	Advanced Databases
20PE0CY2E	Expert Systems

Professional Elective-III

20PE0CY3A	Machine Learning
20PE0CY3B	Network Programming
20PE0CY3C	Ethical Hacking
20PE0CY3D	Data Privacy
20PE0CY3E	Software Testing Methodologies

Professional Elective-IV

20PE0CY4A	Graph Theory
20PE0CY4B	Deep Learning
20PE0CY4C	Biometrics
20PE0CY4D	Cloud Computing
20PE0CY4E	Ad-hoc & Sensor Networks

Professional Elective-V

20PE0CY5A	Malware Analysis
20PE0CY5B	Mobile Computing
20PE0CY5C	Information Security and Audit Management
20PE0CY5D	Internet of Things
20PE0CY5E	Software Process & Project Management

Professional Elective-VI

20PE0CY6A	Semantic Web and Social Networks
20PE0CY6B	Distributed Systems
20PE0CY6C	Neural Networks
20PE0CY6D	Software Metrics & Measures
20PE0CY6E	Cyber Forensics

Note: The department may offer the above professional elective through Swayam MOOCs

Handwritten signatures and initials in blue and green ink, including the name 'GSEC' and 'Diyulki'.

OPEN ELECTIVES BY THE DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
(CYBER SECURITY)
OPEN ELECTIVE-1

20OE0CY1A	Data Structure
20OE0CY1B	Database Management System
20OE0CY1C	Cyber Law & Ethics

OPEN ELECTIVE-2

20OE0CY2A	Java Programming
20OE0CY2B	Software Engineering
20OE0CY2C	Operating System

OPEN ELECTIVE-3

20OE0CY3A	Linux Programming
20OE0CY3B	R Programming
20OE0CY3C	Software Process & Project Management

Note: The department may offer the above open electives through Swayam MOOCs

Handwritten signatures and initials in blue and green ink, including the name "D. Digniti" and various scribbles.

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING R 20
(ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING)
Effective From 2020-21 Admitted Batch
COURSE STRUCTURE

I Year I Semester

S. No.	Group	Course Code	Course Title	L	T	P	Credits
1	BSC	20BSOMA01	Mathematics – I	3	1	0	4
2	BSC	20BSOPH03	Applied Physics	3	1	0	4
3	ESC	20ESOCS01	Programming for Problem Solving	3	1	0	4
4	ESC	20ESOME01	Engineering Graphics	1	0	4	3
5	BSC	20BSOPH04	Applied Physics lab	0	0	3	1.5
6	ESC	20ESOCS02	Programming for Problem Solving Lab	0	0	3	1.5
			Induction Program				
			Total Credits	10	3	10	18

I Year II Semester

S. No.	Group	Course Code	Course Title	L	T	P	Credits
1	BSC	20BSOMA02	Mathematics – II	3	1	0	4
2	BSC	20BSOCH01	Chemistry	3	1	0	4
3	ESC	20ESOEE01	Basic Electrical Engineering	3	1	0	4
4	ESC	20ESOEE02	Basic Electrical Engineering Lab	1	0	3	2.5
5	HSC	20HSOEN01	English	2	0	0	2
6	BSC	20BSOCH02	Engineering Chemistry Lab	0	0	3	1.5
7	HSC	20HSOEN02	English Language and Communication Skills Lab	0	0	2	1
8	PCC	20IN0AI01	Summer Internship – I (Evaluated in II-I and Credits will be allotted in II-I)	0	0	2	0
			Total Credits	12	3	10	19

Handwritten signatures and initials in blue and green ink, including names like 'Geet', 'A. Bal', and 'Dignity'.

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING R 20
(ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING)
Effective From 2020-21 Admitted Batch
COURSE STRUCTURE

II Year I Semester

Group	Course Code	Course Title	L	T	P	Credits
PCC	20PC0AI01	Discrete Mathematics	3	0	0	3
PCC	20PC0AI02	Data Structures	3	1	0	4
BSC	20BS0MA04	Mathematical and Statistical Foundations	3	0	0	3
PCC	20PC0AI03	Computer Organization and Architecture	3	0	0	3
PCC	20PC0AI04	Python Programming	3	0	0	3
HSMC	20SS0MB01	Business Economics & Financial Analysis	0	0	2	1
PCC	20PC0AI05	Data Structures Lab	0	0	3	1.5
PCC	20PC0AI06	Python Programming Lab	0	0	3	1.5
MC	20MCOEN01	Gender Sensitization Lab	0	0	2	0
PCC	20IN0AI01	Summer Internship-I Evaluation	0	0	0	1
Total Credits			18	1	10	22

II Year II Semester

Group	Course Code	Course Title	L	T	P	Credits
PCC	20PC0AI07	Formal Language and Automata Theory	3	0	0	3
PCC	20PC0AI08	Software Engineering	3	0	0	3
PCC	20PC0AI09	Operating Systems	3	0	0	3
PCC	20PC0AI10	Database Management Systems	3	1	0	4
PCC	20PC0AI11	Object Oriented Programming using Java	3	1	0	4
PCC	20PC0AI12	Operating Systems Lab	0	0	3	1.5
PCC	20PC0AI13	Database Management Systems Lab	0	0	3	1.5
PCC	20PC0AI14	Java Programming Lab	0	0	2	1
MC	20MCOEN02	Constitution of India	3	0	0	0
PCC	20IN0AI02	Summer Internship – II(Evaluated in III-I and Credits will be allotted in III-I)	0	0	2	0
Total Credits			18	2	10	21

Handwritten signatures and notes in blue and green ink, including "Gere", "B. Digniti", and "Chy..".

**DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING R 20
(ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING)**

Effective From 2020-21 Admitted Batch

COURSE STRUCTURE

III Year I Semester

Group	Course Code	Course Title	L	T	P	Credits
PCC	20PC0AI15	Artificial Intelligence	3	0	0	3
PCC	20PC0AI16	Fuzzy Logic and its Applications	3	0	0	3
PCC	20PC0AI17	Natural Language Processing	3	0	0	3
PCC	20PC0AI18	Design and Analysis of Algorithm	3	0	0	3
PEC		Professional Elective I	3	0	0	3
PEC		Professional Elective II	3	0	0	3
PCC	20PC0AI19	Design and Analysis of Algorithm Lab	0	0	3	1.5
PCC	20PC0AI20	Artificial Intelligence Lab	0	0	3	1.5
HSC	20BS0HS03	Advanced English Communication skills Lab	0	0	2	1
MC	20MCOMB01	Intellectual Property Rights	3	0	0	0
PCC	20IN0AI02	Summer Internship-II Evaluation	0	0	0	1
		Total Credits	21	0	10	23

III Year II Semester

Group	Course Code	Course Title	L	T	P	Credits
PCC	20PC0AI21	Web Technologies	3	1	0	4
PCC	20PC0AI22	Compiler Design	3	1	0	4
PCC	20PC0AI23	Foundations of Machine Learning	3	1	0	4
PEC		Professional Elective-III	3	0	0	3
PEC		Open Elective-I	3	0	0	3
PCC	20PC0AI24	Machine Learning Lab	0	0	3	1.5
PCC	20PC0AI25	Compiler Design & Web Technologies Lab	0	0	3	1.5
PEC		Professional Elective -III Lab	0	0	2	1
MC	20MCOMB01	Environmental Science	3	0	0	0
PCC	20IN0AI03	Summer Internship – III(Evaluated in IV-I and Credits will be allotted in IV-I)	0	0	2	0
		Total Credits	18	3	10	22

Handwritten notes and signatures:
 For E Game
 chs...
 S. Divyitha
 32

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING R 20
(ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING)

Effective From 2020-21 Admitted Batch
COURSE STRUCTURE

IV Year I Semester

No.	Group	Course Code	Course Title	L	T	P	Credits
	PCC	20PC0AI26	Deep Learning Foundation	3	0	0	3
	PCC	20BS0MA27	Cryptography and Network Security	2	0	0	2
	PEC		Professional Elective-IV	3	0	0	3
	PEC		Professional Elective-V	3	0	0	3
	OEC		Open Elective-II	3	0	0	3
	PCC	20PC0AI28	Deep Learning Lab	0	0	2	1
	PCC	20MINPR66	Industrial Oriented Mini Project	0	0	4	2
	PCC	20INOAI03	Summer Internship-III Evaluation	0	0	0	1
			Total Credits	14	0	06	18

IV Year II Semester

No.	Group	Course Code	Course Title	L	T	P	Credits
	HSMC	20SSAYB03	Management Fundamentals for Engineers	3	0	0	3
	PEC		Professional Elective-VI	3	0	0	3
	OEC		Open Elective-III	3	0	0	3
	PCC	20MAJPR66	Major Project	0	0	16	8
			Total Credits	9	0	10	17

Handwritten signatures and notes in blue and green ink.

For e Gov d Bal ~~2. Dijihi~~ *Handwritten signature*

Ch...

Handwritten signature

Handwritten signature

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING R 20
(ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING)
Effective From 2020-21 Admitted Batch
COURSE STRUCTURE

Professional Electives

Professional Elective – I

20PE0CS1A	Software Engineering
20PE0CS1B	Advanced Computer Architecture
20PE0CS1C	Data Analytics
20PE0CS1D	Mobile Application Development
20PE0CS1E	Principles of Programming Languages

Professional Elective-II

20PE0CS2A	Computer Graphics
20PE0CS2B	Advanced Operating Systems
20PE0CS2C	Informational Retrieval Systems
20PE0CS2D	Distributed Databases
20PE0CS2E	Image Processing

Professional Elective-III

20PE0CS4A	Concurrent Programming
20PE0CS4B	Network Programming
20PE0CS4C	Scripting Languages
20PE0CS4D	Reinforcement Learning
20PE0CS4E	Software Testing Methodologies

Professional Elective-IV

20PE0CS5A	Graph Theory
20PE0CS5B	Introduction to Embedded Systems
20PE0CS5C	Human Computer Interaction
20PE0CS5D	Cloud Computing
20PE0CS5E	Ad-hoc & Sensor Networks

Professional Elective-V

20PE0CS6A	Advanced Algorithms
20PE0CS6B	Real Time Systems
20PE0CS6C	Soft Computing
20PE0CS6D	Internet of Things
20PE0CS6E	Software Process & Project Management

Professional Elective-VI

20PE0CS6A	Computational Complexity
20PE0CS6B	Distributed Systems
20PE0CS6C	Pattern and Anomaly Detection
20PE0CS6D	Linux Programming
20PE0CS6E	Cyber Forensics

Note: The department may offer the above professional elective through Swayam MOOCs

Handwritten signatures and initials in blue and green ink, including the name "Dr. D. D. D. D. D." and other illegible marks.

OPEN ELECTIVES BY DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING (AI & ML)

OPEN ELECTIVE-I

20OE0CS1A	Data Structure
20OE0CS1B	Database Management System
20OE0CS1C	Fundamentals to Artificial Intelligence

OPEN ELECTIVE-II

20OE0CS2A	Java Programming
20OE0CS2B	Software Engineering
20OE0CS2C	Computer Forensics

OPEN ELECTIVE-III

20OE0CS3A	Linux Programming
20OE0CS3B	Introduction to Python Programming
20OE0CS3C	Software Process & Project Management

Note: The department may offer the above open electives through Swayam MOOCs

Handwritten signatures and initials in blue and green ink, including "GAL", "Bal", "Dipatti", "Chy-", and "37".

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
COURSE STRUCTURE
Applicable From 2020-21 Admitted Batch

I Year I Semester

No.	Group	Course Code	Course Title	L	T	P	Credits
	PCC	20PC1CS01	Mathematical Foundations of Computer Science	3	0	0	3
	PCC	20PC1CS02	Advanced Data Structures	3	0	0	3
	PEC	PEC	Professional Elective – I	3	0	0	3
	PEC	PEC	Professional Elective – II	3	0	0	3
	PCC	20PC1CS03	Advanced Data Structures Lab	0	0	4	2
	PCC	20PC1CS04	Machine Learning Lab	0	0	4	2
	PCC	20CC1MB18	Research Methodology & IPR	2	0	0	2
	PCC	---	Audit Course – I	2	0	0	0
			Total Credits	16	0	8	18

I Year II Semester

No.	Group	Course Code	Course Title	L	T	P	Credits
	PCC	20PC1CS05	Advanced Algorithms	3	0	0	3
	PCC	20PC1CS06	Advanced Computer Architecture	3	0	0	3
	PEC	PEC	Professional Elective – III	3	0	0	3
	PEC	PEC	Professional Elective – IV	3	0	0	3
	PCC	20PC1CS07	Advanced Algorithms Lab	0	0	4	2
	PCC	20PC1CS08	Data Science Lab	0	0	4	2
	PROJ	PROJ	Mini Project with Seminar	0	0	4	2
	PCC	---	Audit Course – II	2	0	0	0
			Total Credits	14	0	12	18

II Year I Semester

No.	Group	Course Code	Course Title	L	T	P	Credits
	PEC	PEC	Professional Elective – V	3	0	0	3
	OEC	OEC	Open Elective	3	0	0	3
	PROJ	PROJ	Dissertation Work Review – I	0	0	12	6
			Total Credits	6	0	12	12

II Year II Semester

No.	Group	Course Code	Course Title	L	T	P	Credits
	PROJ	PROJ	Dissertation Work Review – II	0	0	12	6
	PROJ	PROJ	Dissertation Viva-Voce	0	0	28	14
			Total Credits	0	0	40	20

Handwritten signatures and initials in blue and green ink are present at the bottom of the page, including names like "Garc", "D. Singh", and others.

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
COURSE STRUCTURE
Applicable From 2020-21 Admitted Batch
Audit Course

20PC1AU01	English for Research Paper Writing
20PC1AU02	Disaster Management
20PC1AU03	Sanskrit for Technical Knowledge
20PC1AU04	Value Education
20PC1AU05	Constitution of India
20PC1AU06	Pedagogy Studies
20PC1AU07	Stress Management by yoga
20PC1AU08	Ability Development Through Life Enlightenment Skills

Professional Electives

Professional Elective – I

20PE1CS1A	Information Security
20PE1CS1B	Mobile Application Development
20PE1CS1C	Machine Learning

Professional Elective – II

20PE1CS2A	Network Security
20PE1CS2B	Cloud Computing
20PE1CS2C	Data Mining

Professional Elective – III

20PE1CS3A	Web and Database Security
20PE1CS3B	Internet of Things
20PE1CS3C	Data Science

Professional Elective – IV

20PE1CS4A	Cyber Security
20PE1CS4B	Advanced Computer Networks
20PE1CS4C	Big Data Analytics

Professional Elective – V

20PE1CS5A	Digital Forensics
20PE1CS5B	High Performance Computing
20PE1CS5C	Deep Learning

Note: The department may offer the above Professional Electives through Swayam MOOCs

OPEN ELECTIVES BY DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

20OE1CS1A	Advance Operating System
20OE1CS1B	Advance Data Structures
20OE1CS1C	Advance Software Engineering

Note: The department may offer the above open electives through Swayam MOOCs

Handwritten signatures and initials in green and blue ink are present below the note, including names like 'Gur', 'D. Dignthi', and 'Ch'.

COURSE STRUCTURE

MBA I YEAR

MASTER OF BUSINESS ADMINISTRATION (MBA) R20

Effective from Academic Year 2020 -21Admitted Batch

COURSE STRUCTURE

I Semester

Sl. No	Group	Course Code	Course Title	L	T	P	C
1	PCC	20CC1MB01	Management and Organizational Behaviour	3	1	0	4
2	PCC	20CC1MB02	Business Economics	3	1	0	4
3	PCC	20CC1MB03	Financial Accounting & Analysis	3	1	0	4
4	BSC	20CC1MB04	Research Methodology and Statistical Analysis	3	1	0	4
5	PCC	20CC1MB05	Legal and Business Environment	3	1	0	4
6	PCC	20OE1MB01A	Business Ethics and Corporate Governance	3	0	0	3
		20OE1MB01B	Project Management				
		20OE1MB01C	Technology Management				
		20OE1MB01D	Cross Cultural Management				
7	HSC	20CC1MB06	Business Communication Lab	0	0	2	2
8	BSC	20CC1MB07	Statistical Data Analysis Lab	-	-	-	2
TOTAL				18	5	4	27

for the GSC reference Paul 4/24

Chy.

my

Dr. Dnyanti

MASTER OF BUSINESS ADMINISTRATION (MBA) R20

Effective from Academic Year 2020 -21Admitted Batch

COURSE STRUCTURE

II Semester

Sl. No.	Group	Course Code	Course Title	L	T	P	C
1	PCC	20CC1MB08	Human Resource Management	3	1	0	4
2	PCC	20CC1MB09	Marketing Management	3	1	0	4
3	PCC	20CC1MB10	Financial Management	3	1	0	4
4	BSC	20CC1MB11	Quantitative Analysis for Business Decisions	3	1	0	4
5	PCC	20CC1MB12	Entrepreneurship	3	1	0	4
6	PCC	20CC1MB13	Logistics & Supply Chain Management	3	1	0	4
7	PCC	20OE1MB02A	Total Quality Management	3	0	0	3
		20OE1MB02B	Marketing Research				
		20OE1MB02C	International Business				
		20OE1MB02D	Rural Marketing				
8	PCC	20FW1MB01	Summer Internship-(Evaluated in III-I and Credits will be allotted in III-I)	0	0	0	0
TOTAL				21	6	0	27

for *Chy.* *2020* *2021* *2022* *2023* *2024* *2025* *2026* *2027* *2028* *2029* *2030* *2031* *2032* *2033* *2034* *2035* *2036* *2037* *2038* *2039* *2040* *2041* *2042* *2043* *2044* *2045* *2046* *2047* *2048* *2049* *2050* *2051* *2052* *2053* *2054* *2055* *2056* *2057* *2058* *2059* *2060* *2061* *2062* *2063* *2064* *2065* *2066* *2067* *2068* *2069* *2070* *2071* *2072* *2073* *2074* *2075* *2076* *2077* *2078* *2079* *2080* *2081* *2082* *2083* *2084* *2085* *2086* *2087* *2088* *2089* *2090* *2091* *2092* *2093* *2094* *2095* *2096* *2097* *2098* *2099* *2100*

COURSE STRUCTURE
MBA II YEAR

MASTER OF BUSINESS ADMINISTRATION (MBA) R20

Effective from Academic Year 2020 -21 Admitted Batch

COURSE STRUCTURE

III Semester

Sl. No.	Group	Course Code	Course Title	L	T	P	C
1	PCC	20CC1MB14	Production & Operations Management	3	1	1	4
2	PCC	20CC1MB15	Management Information Systems	3	1	1	4
3	PCC	20CC1MB16	Data Analytics	3	1	1	4
4	PCC	20MK1MB01	Digital Marketing	3	1	0	4
		20FM1MB01	Security Analysis and Portfolio Management				
		20HR1MB01	Performance Management Systems				
		20EN1MB01	Start-up Management				
5	PCC	20MK1MB02	Advertising and Sales Management	3	1	0	4
		20FM1MB02	Financial Institutions, Markets & Services				
		20HR1MB02	Learning and Development				
		20EN1MB02	MSME Management				
6	PCC	20MK1MB03	Consumer Behaviour	3	1	0	4
		20FM1MB03	Strategic Management Accounting				
		20HR1MB03	Management of Industrial Relations				
		20EN1MB03	Family Business Management				
7	PCC	20FW1MB01	Summer Internship-Evaluation	0	0	0	2
TOTAL				18	6	3	26

Handwritten signatures and initials in blue and green ink, including "Gru", "Bar", and "D. Singh".

MASTER OF BUSINESS ADMINISTRATION (MBA) R20
Effective from Academic Year 2020 -21 Admitted Batch

COURSE STRUCTURE

IV Semester

Sl. No.	Group	Course Code	Course Title	L	T	P	C
1	PCC	20CC1MB17	Strategic Management	3	1	0	4
2	PCC	20MK1MB04	Customer Relationship Management	3	1	0	4
		20FM1MB04	International Financial Management				
		20HR1MB04	International Human Resource Management				
		20EN1MB04	Entrepreneurial Finance				
3	PCC	20MK1MB05	International Marketing	3	1	0	4
		20FM1MB05	Strategic Investment and Financing Decisions				
		20HR1MB05	Leadership and Change Management				
		20EN1MB05	Entrepreneurial Marketing				
4	PCC	20MK1MB06	Services Marketing	3	1	0	4
		20FM1MB06	Risk Management and Financial Derivatives				
		20HR1MB06	Talent and Knowledge Management				
		20EN1MB06	Creativity Innovation and Entrepreneurship				
5	PCC	20PJ1MB01	Pre-submission project Seminar	0	0	2	2
6	PCC	20PJ1MB02	Main Project Viva-Voce	0	2	4	4
TOTAL				12	6	6	22

for reference by case
ch...
By
5. April
4
Shree