

GUDLAVALLERU ENGINEERING COLLEGE

(An Autonomous Institute with Permanent Affiliation to JNTUK, Kakinada)

Seshadri Rao Knowledge Village, GUDLAVALLERU – 521 356

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Minutes of the 15th Meeting of the Academic Council held on 24-04-2021, Saturday through online.

Members Joined:

Sl. No.	Name of the Member	Designation	User Action	Timestamp
1	Dr. G.V.S.N.R.V. Prasad Principal	Chairman	Joined	4/24/2021, 1:28:58 PM
2	Dr. A. Sreenivasulu Professor & HoD (i/c), Dept. of CE	Member	Joined	4/24/2021, 1:35:33 PM
3	Dr. B. Dasu Associate Professor & HoD (i/c), Department of EEE	Member	Joined	4/24/2021, 1:37:21 PM
4	Dr. A. Jawahar Babu Professor & HoD of ME	Member	Joined	4/24/2021, 1:51:51 PM
5	Dr. Y. Rama Krishna Professor & HoD of ECE	Member	Joined	4/24/2021, 1:53:11 PM
6	Dr. M. Babu Rao Professor & HoD of CSE	Member	Joined	4/24/2021, 2:00:17 PM
7	Dr. Ch. Kavitha Professor & HoD of IT	Member	Joined	4/24/2021, 2:00:29 PM
8	Dr. Ch. Nirmal Chand Professor & HoD of MBA	Member	Could not Joined	--
9	Dr. S. Suresh Sr. Gr. Assistant Professor of Physics & HoD (i/c), Department of BS&H	Member	Joined	4/24/2021, 1:49:13 PM
10	Dr. B. Karuna Kumar HoD of English	Member	Joined	4/24/2021, 1:49:48 PM
11	Dr. P. Ravindra Babu Professor of ME & Advisor to the Management (<i>Principal's Nominee</i>)	Member	Joined	4/24/2021, 1:56:07 PM
12	Dr. B. Karuna Kumar Professor of ME, Director (AS&A) and HoD of English, (<i>Principal's Nominee</i>)	Member	Joined	4/24/2021, 1:49:48 PM
13	Dr. P. Nageswara Reddy Professor of ME & Director (PG Studies, Consultancy & Testing and R&D) (<i>Principal's Nominee</i>)	Member	Joined	4/24/2021, 1:58:19 PM
14	Dr. Y. Adi Lakshmi Associate Professor of CSE (<i>Principal's Nominee</i>)	Member	Joined	4/24/2021, 1:42:40 PM
15	Mr. B. V. S. Raghu Vamsi Sr.Gr.Asst.Professor of ME (<i>Principal's Nominee</i>)	Member	Joined	4/24/2021, 1:54:26 PM

16	Dr. K. Lal Kishore Director, R&D, CVR College of Engineering, Hyderabad, Former Vice – Chancellor, JNTUA, Ananthapur, Former Rector, JNTUH, Hyderabad (<i>Governing Body Nominee</i>)	Member	Joined	4/24/2021, 1:56:41 PM
17	Dr. D. V. L. N. Somayajulu Professor of CSE & Director, IIIT, Karnool (<i>Governing Body Nominee</i>)	Member	Joined	4/24/2021, 1:58:29 PM
18	Mr. Sailendra Meduri Technical Lead and Program Manager, L&T Technology Services, Chennai (<i>Governing Body Nominee</i>)	Member	Joined	4/24/2021, 1:59:25 PM
19	Dr. Ramanujam Parthasarathy Professor of English, G3, Sreeja Apartments, Srinivasa Nagar Bank Colony, Vijayawada. (<i>Governing Body Nominee</i>)	Member	Joined	4/24/2021, 1:58:13 PM
20	Mr. J. S. R. K. Prasad CEO, Better Castings Pvt. Limited, JRD Tata Industrial Estate, Gantivari Street, Christurajapuram, Kanuru, Vijayawada – 520 007. (<i>Governing Body Nominee</i>)	Member	Could not Joined	--
21	Dr. R. Srinivasa Rao Professor of EEE, and Director, Academic & Planning, JNTUK, Kakinada (<i>Affiliating University Nominee</i>)	Member	Joined	4/24/2021, 2:10:53 PM
22	Dr. L. Sumalatha Professor of CSE, UCEK, Kakinada Director of Evaluation, JNTUK, Kakinada, (<i>Affiliating University Nominee</i>)	Member	Joined	4/24/2021, 2:06:14 PM
23	Dr. P. Subba Rao Professor of CE, University College of Engineering Kakinada, JNTUK, Kakinada, (<i>Affiliating University Nominee</i>)	Member	Joined	4/24/2021, 2:18:12 PM
24	Dr. M. R. Ch. Sastry Professor of ME & Vice Principal – Academics	Member Secretary	Joined	4/24/2021, 1:40:17 PM
Invitee:				
25	Dr. K. Syam Sundar	Member	Joined	4/24/2021, 2:00:09 PM

15.1 To confirm the minutes of the last Meeting of the Academic Council held on 24-12-2020.

Resolution: The Minutes of the 14th Academic Council meeting held on 24-12-2020 have been confirmed.

15.2 To present the action taken report on the minutes of the 14th Academic Council Meeting.

The following suggestions were made by the Members of the Academic Council

Suggestion	Action Taken
Constitution of separate Boards of Studies (BoS) for UG and PG programs.	Since the BoS have already been constituted, the suggestion will be implemented in the formation of next BoS.

Formation of a common BoS for Chemistry and Environmental Studies.	For the subjects of Chemistry and Environmental Studies, a common BoS is constituted.
Consideration of one faculty from IITs and one from NITs with different specializations on BoS.	Since the BoS have already been constituted, the suggestion will be taken care of in the constitution of next BoS.
Design a proper methodology for the delivery of instruction in tough subjects like Engineering Mechanics, Engineering Drawing, etc. so as to improve the understanding of students and produce the good pass percentage.	Appropriate measures have been initiated.

15.3 To discuss and finalize the course structures of II, III & IV B.Tech UG programs of R20 regulations and amendments in R20 academic regulations (as per the common academic regulations for all autonomous colleges of JNTUK).

Resolution:The Academic Council discussed the course structures of II, III & IV B.Tech UG programs of R20 regulations and approved the proposed course structure for R20 Regulations. The approved Course Structure are given as *Annexure – I*.

Further, it is resolved to introduce Honors/Minor degree in R20 Regulations.

The council has reviewed the amendments to be made in R20 regulations as per the circular (common academic regulations for all autonomous colleges of JNTUK) received from JNTUK. It is resolved to change the academic regulations as per the guidelines received from JNTUK. The approved amendments are given as *Annexure – II*.

15.4 To discuss and finalize the Honor / Minor degree for R17 Regulations.

Members Academic Council discussed the introduction of Honors/Minor degree in R17 regulations and resolved to introduce Honors/Minor degree in R20 regulations only.

15.5 To review and ratify the Semester End Examination results for the academic year 2020-21.

The Academic Council reviewed the semester end examination results (Regular & Supplementary) of B.Tech, M.Tech and MBA for the academic year 2020-21 and ratified.

UG – B.Tech Programs: Regular

II B.Tech 1st Semester (R17) Regular Examinations, March 2021

Subject	Reg.	App.	Passed	Failed	Reg. Pass %	App. Pass %
Civil Engineering	170	164	101	63	59.41	61.59
Electrical and Electronics Engineering	114	112	77	35	67.54	68.75
Mechanical Engineering	178	169	81	88	45.51	47.93
Electronics and Communication Engineering	277	271	187	84	67.51	69.00
Computer Science and Engineering	281	275	232	43	82.56	84.36
Information Technology	140	138	103	35	73.57	74.64
Overall Pass Percentage	1160	1129	781	348	67.33	69.18



III B.Tech 1st Semester (R17) Regular Examinations, March 2021

Subject	Reg.	App.	Passed	Failed	Reg. Pass %	App. Pass %
Civil Engineering	162	161	114	47	70.37	70.81
Electrical and Electronics Engineering	161	159	116	43	72.05	72.96
Mechanical Engineering	178	170	124	46	69.66	72.94
Electronics and Communication Engineering	260	260	203	57	78.08	78.08
Computer Science and Engineering	260	257	229	28	88.08	89.11
Information Technology	122	122	100	22	81.97	81.97
Overall Pass Percentage	1143	1129	886	243	77.52	78.48

IV B.Tech 1st Semester (R17) Regular Examinations, February 2021

Subject	Reg.	App.	Passed	Failed	Reg. Pass %	App. Pass %
Civil Engineering	185	179	128	51	69.19	71.51
Electrical and Electronics Engineering	177	173	124	49	70.06	71.68
Mechanical Engineering	183	182	161	21	87.98	88.46
Electronics and Communication Engineering	282	279	254	25	90.07	91.04
Computer Science and Engineering	252	251	233	18	92.46	92.83
Information Technology	105	105	93	12	88.57	88.57
Overall Pass Percentage	1184	1169	993	176	83.87	84.94

PG – MBA & M.Tech Programs: Regular

MBA 3rd Semester (R17) Regular Examinations, March 2021

Subject	Reg.	App.	Passed	Failed	Reg. Pass %	App. Pass %
Master of Business Administration	72	72	68	4	94.44	94.44

M.Tech 3rd Semester (R17) Regular Examinations, March 2021

Subject	Reg.	App.	Passed	Failed	Reg. Pass %	App. Pass %
Structural Engineering	15	15	14	1	93.33	93.33
Power Electronics and Electric Drives	5	5	4	1	80.00	80.00
Machine Design	7	7	6	1	85.71	85.71
Embedded Systems	1	1	1	0	100.00	100.00
Computer Science and Engineering	4	4	4	0	100.00	100.00
Overall Pass Percentage	32	32	29	3	90.63	90.63



UG – B.Tech Programs: Supplementary

R17 :

I B.Tech 1st Semester (R17) Supple Examinations, November 2020

Subject	Reg.	App.	Passed	Failed	Reg. Pass %	App. Pass %
Civil Engineering	59	52	9	43	15.25	17.31
Electrical and Electronics Engineering	40	36	5	31	12.50	13.89
Mechanical Engineering	67	60	14	46	20.90	23.33
Electronics and Communication Engineering	38	33	17	16	44.74	51.52
Computer Science and Engineering	73	66	14	52	19.18	21.21
Information Technology	58	52	23	29	39.66	44.23
Overall Pass Percentage	335	299	82	217	24.48	27.42

II B.Tech 1st Semester (R17) Supple Examinations, November 2020

Subject	Reg.	App.	Passed	Failed	Reg. Pass %	App. Pass %
Civil Engineering	75	68	20	48	26.67	29.41
Electrical and Electronics Engineering	48	38	7	31	14.58	18.42
Mechanical Engineering	66	54	15	39	22.73	27.78
Electronics and Communication Engineering	101	91	49	42	48.51	53.85
Computer Science and Engineering	25	23	7	16	28.00	30.43
Information Technology	19	18	9	9	47.37	50.00
Overall Pass Percentage	334	292	107	185	32.04	36.64

II B.Tech 1st Semester (R17) Supple Examinations, March 2021

Subject	Reg.	App.	Passed	Failed	Reg. Pass %	App. Pass %
Civil Engineering	48	43	9	34	18.75	20.93
Electrical and Electronics Engineering	36	32	3	29	8.33	9.38
Mechanical Engineering	47	41	16	25	34.04	39.02
Electronics and Communication Engineering	45	41	7	34	15.56	17.07
Computer Science and Engineering	24	21	5	16	20.83	23.81
Information Technology	11	11	5	6	45.45	45.45
Overall Pass Percentage	211	189	45	144	21.33	23.81

III B.Tech 1st Semester (R17) Supple Examinations, November 2020

Subject	Reg.	App.	Passed	Failed	Reg. Pass %	App. Pass %
Civil Engineering	16	15	1	14	6.25	6.67
Electrical and Electronics Engineering	33	31	10	21	30.30	32.26
Mechanical Engineering	25	23	8	15	32.00	34.78
Electronics and Communication Engineering	18	17	9	8	50.00	52.94
Computer Science and Engineering	25	23	11	12	44.00	47.83
Information Technology	15	14	3	11	20.00	21.43
Overall Pass Percentage	132	123	42	81	31.82	34.15

III B.Tech 1st Semester (R17) Supple Examinations, March 2021

Subject	Reg.	App.	Passed	Failed	Reg. Pass %	App. Pass %
Civil Engineering	17	16	9	7	52.94	56.25
Electrical and Electronics Engineering	24	24	7	17	29.17	29.17
Mechanical Engineering	22	21	16	5	72.73	76.19
Electronics and Communication Engineering	13	11	4	7	30.77	36.36
Computer Science and Engineering	23	21	11	10	47.83	52.38
Information Technology	14	12	8	4	57.14	66.67
Overall Pass Percentage	113	105	55	50	48.67	52.38

R14:

I B.Tech 1st Semester (R14) Supple Examinations, January 2021

Subject	Reg.	App.	Passed	Failed	Reg. Pass %	App. Pass %
Civil Engineering	11	7	5	2	45.45	71.43
Electrical and Electronics Engineering	4	3	1	2	25.00	33.33
Mechanical Engineering	8	7	1	6	12.50	14.29
Electronics and Communication Engineering	1	1	0	1	0.00	0.00
Computer Science and Engineering	9	7	2	5	22.22	28.57
Information Technology	6	6	2	4	33.33	33.33
Overall Pass Percentage	39	31	11	20	28.21	35.48

I B.Tech 2nd Semester (R14) Supple Examinations, January 2021

Subject	Reg.	App.	Passed	Failed	Reg. Pass %	App. Pass %
Civil Engineering	8	7	2	5	25.00	28.57
Electrical and Electronics Engineering	5	4	1	3	20.00	25.00
Mechanical Engineering	12	11	4	7	33.33	36.36
Electronics and Communication Engineering	1	1	0	1	0.00	0.00
Computer Science and Engineering	4	4	0	4	0.00	0.00
Information Technology	4	4	2	2	50.00	50.00
Overall Pass Percentage	34	31	9	22	26.47	29.03

II B.Tech 1st Semester (R14) Supple Examinations, January 2021

Subject	Reg.	App.	Passed	Failed	Reg. Pass %	App. Pass %
Civil Engineering	10	5	3	2	30.00	60.00
Electrical and Electronics Engineering	11	9	4	5	36.36	44.44
Mechanical Engineering	14	11	4	7	28.57	36.36
Electronics and Communication Engineering	9	7	6	1	66.67	85.71
Computer Science and Engineering	9	8	1	7	11.11	12.50
Information Technology	4	3	1	2	25.00	33.33
Overall Pass Percentage	57	43	19	24	33.33	44.19

II B.Tech 2nd Semester (R14) Supple Examinations, January 2021

Subject	Reg.	App.	Passed	Failed	Reg. Pass %	App. Pass %
Civil Engineering	7	5	4	1	57.14	80.00
Electrical and Electronics Engineering	11	10	5	5	45.45	50.00
Mechanical Engineering	10	8	4	4	40.00	50.00
Electronics and Communication Engineering	7	5	4	1	57.14	80.00
Computer Science and Engineering	12	11	3	8	25.00	27.27
Information Technology	5	4	0	4	0.00	0.00
Overall Pass Percentage	52	43	20	23	38.46	46.51

III B.Tech 1st Semester (R14) Supple Examinations, January 2021

Subject	Reg.	App.	Passed	Failed	Reg. Pass %	App. Pass %
Civil Engineering	8	6	6	0	75.00	100.00
Electrical and Electronics Engineering	14	11	6	5	42.86	54.55
Mechanical Engineering	9	8	4	4	44.44	50.00
Electronics and Communication Engineering	5	4	2	2	40.00	50.00
Computer Science and Engineering	6	5	1	4	16.67	20.00
Information Technology	4	4	0	4	0.00	0.00
Overall Pass Percentage	46	38	19	19	41.30	50.00

III B.Tech 2nd Semester (R14) Supple Examinations, January 2021

Subject	Reg.	App.	Passed	Failed	Reg. Pass %	App. Pass %
Civil Engineering	6	3	2	1	33.33	66.67
Electrical and Electronics Engineering	11	10	3	7	27.27	30.00
Mechanical Engineering	5	5	2	3	40.00	40.00
Electronics and Communication Engineering	2	1	1	0	50.00	100.00
Computer Science and Engineering	5	5	2	3	40.00	40.00
Information Technology	6	6	3	3	50.00	50.00
Overall Pass Percentage	35	30	13	17	37.14	43.33

IV B.Tech 1st Semester (R14) Supple Examinations, January 2021

Subject	Reg.	App.	Passed	Failed	Reg. Pass %	App. Pass %
Civil Engineering	7	6	5	1	71.43	83.33
Electrical and Electronics Engineering	8	6	5	1	62.50	83.33
Mechanical Engineering	23	22	12	10	52.17	54.55
Electronics and Communication Engineering	3	2	2	0	66.67	100.00
Computer Science and Engineering	7	7	5	2	71.43	71.43
Information Technology	4	4	2	2	50.00	50.00
Overall Pass Percentage	52	47	31	16	59.62	65.96

15.6 Any other item with the permission of the chair.

- (i) Presented the Annual Quality Assurance Report (AQAR) for the academic year 2019-20 for the submission to NAAC through online is approved.



Annexure - I

II, III & IV Years Course Structures of UG – B.Tech Programs for R20 Regulations

i) Civil Engineering:

Curricular Components

Sl. No.	Course Work-Subject Area	Total no. of credits	Credits as per AICTE	% Range As per UGC	% of credits
1	Basic Sciences (BS)	25	15-20%	24	15.00
2	Humanities and Social Sciences (HSS)	12	10-15%	16	10.00
3	Engineering Sciences (ES)	24	10-20%	29	18.13
4	Professional Core (PC)	48	25-35%	51	31.87
5	Professional Electives (PE)	18	8-12%	15	9.37
6	Open Electives (OE)	18	5-10%	9	5.63
7	Other (Project, Internship, etc.)	15	8-10%	16	10.00
8	Mandatory Non-Credit Courses	-	-	-	-
Total		160		160	

II Year 1st Semester

Sl. No.	Name of the Course / Laboratory		No. of Hours Per Week			Total Credits
			L	T	P	
1	Building Materials and Building Construction	BS	2	-	-	2
2	Basics of Electrical and Mechanical Engineering	ES	3	-	-	3
3	Mechanics of Solids	ES	2	1	-	3
4	Fluid Mechanics	ES	2	1	-	3
5	Surveying	PC	2	1	-	3
6	Engineering Geology & Geo-spatial applications *	ES	2	-	2	3
7	Mechanics of Solids Lab	ES	-	-	2	1
8	Survey Field Work	PC	-	-	2	1
9	Logic Building and Basic Coding Principles (T&P)	ES	-	-	2	1
Total:						20
10	Sports and Games / Cultural (Mandatory Non-Credit Course)	MNC	-	-	2	-

II Year 2nd Semester

Sl. No.	Name of the Course / Laboratory		No. of Hours Per Week			Total Credits
			L	T	P	
1	Numerical & Statistical Methods	BS	2	1	-	3
2	Structural Analysis	PC	2	1	-	3
3	Hydraulics & Hydraulic Machines	PC	2	1	-	3
4	Concrete Technology	PC	3	-	-	3
5	Python Programming*	BS	2	-	2	3
6	Open Elective -I	OE	3	-	-	3
7	Fluid Mechanics & Hydraulic Machines Lab	ES	-	-	2	1
8	Concrete Technology Lab	PC	-	-	2	1
9	Programming for Corporate (T&P)	ES	-	-	2	1
Total :						21
10	NSS / Fine Arts / Yoga / Self Defense (Mandatory Non-Credit Course)	MNC	-	-	2	-

* Integrated theory and practice course

III Year 1st Semester

Sl. No.	Name of the Course / Laboratory		No. of Hours Per Week			Total Credits
			L	T	P	
1	Theory of Structures	PC	2	1	-	3
2	Building Planning and Drawing	PC	2	-	2	3
3	Soil Mechanics	PC	2	-	-	2
4	Water & Wastewater Engineering	PC	3	-	-	3
5	Professional Elective – I (a) Advanced Concrete Technology (b) Project Planning & Control (c) Air Pollution and Control (d) Advanced Surveying Techniques	PE	3	-	-	3
6	Open Elective -II	OE	3	-	-	3
7	Geotechnical Engineering Lab	PC	-	-	2	1
8	Water & Wastewater Engineering Lab	PC	-	-	2	1
9	Problem Solving Enhancement (Training & Placement)	HSS	-	-	2	1
10	Society Impact Project	PRO	-	-	2	1
Total :			15	1	10	21

III Year 2nd Semester

Sl. No.	Course Code	Name of the Course / Laboratory		No. of Hours Per Week			Total Credits
				L	T	P	
1		Foundation Engineering	PC	3	-	-	3
2		Hydrology & Irrigation Engineering	PC	3	-	-	
3		Design and drawing of R.C. Structural Elements**	PC	2	-	2	3
4		Highway Engineering	PC	3	-	-	3
5		Professional Elective – II (a) Finite Element Methods (b) Ground Improvement Techniques (c) Watershed Management (d) Solid Waste Management	PE	3	-	-	3
6		Open Elective – III	OE	3	-	-	3
7		Highway Materials Lab	PC	-	-	2	1
8		Structural Engineering Lab	PC	-	-	2	1
9		Mini Project or Survey Camp / MOOCS	PRO	-	-	4	2
10		Linguistic Competency Building (T&P)	HSS	-	-	2	1
Total :				17	-	12	23

* Integrated theory and Lab. Course

** Project based theory course

IV Year 1st Semester

Sl. No.	Name of the Course / Laboratory		No. of Hours Per Week			Total Credits
			L	T	P	
1	Managerial Economics and Financial Analysis	HSS	2	1	-	3
2	Estimation, Costing & Valuation	PC	2	-	2	3
3	Design & Drawing of Steel Structures	PC	2	-	2	3
4	Construction Technology and Practices	PC	2	-	2	3
5	Professional Elective – III					
	(a) Prestressed Concrete Structures					
	(b) Advanced Foundation Engineering					
	(c) Hydraulic structures					
	(d) Industrial Wastewater Treatment	PE	3	-	-	3
6	Computer Applications in Civil Engineering Lab	PC	-	-	2	1
7	Mini Project or Survey Camp / MOOCs	PRO	-	-	4	2
8	Internship / Industrial Training / Practical Training	PRO	-	-	4	2
Total :			11	1	16	20

IV Year 2nd Semester

Sl. No.	Course Code	Name of the Course / Laboratory		No. of Hours Per Week			Total Credits
				L	T	P	
1		Professional Elective – IV					
		(a) Advanced Design of R.C structures					
		(b) Industrial Steel Structures					
		(c) Earthquake Resistant Design					
		(d) Railways, Harbours & Air Port Engineering	PE	3	-	-	3
2		Professional Elective – V					
		(a) Repairs, Rehabilitation and Rehabilitation of Structures					
		(b) Precast Concrete structures					
		(c) Earth Retaining Structures					
		(d) Design & Drawing of Irrigation structures	PE	3	-	-	3
3		Project Work	PRO	-	-	18	9
Total :				6	-	18	15

Honors Degree: Earthquake Engineering

Courses Offered

Sl. No.	Year and Sem	Name of the Course / Laboratory	No. of Hours per week			No. of Credits
			L	T	P	
1	II Year-II Sem	Introduction to Earthquake Engineering	4	-	-	4
2	III Year-I Sem	Seismic Resistant Design of Structures	4	-	-	4
3	III Year-II Sem	Structural Dynamics*	3	-	2	4
4	IV Year-I Sem	Earthquake Resistant Design of important Structures**	4	-	-	4
5	MOOCs	Applications of Special Concretes	-	-	-	2
6	MOOCs	Soil Structure Interaction	-	-	-	2
Total :			15	-	2	20

* Integrated theory and Lab. Course

** Project based theory course

Minor Degree: Civil Engineering

Courses Offered

Sl. No.	Year and Sem	Name of the Course / Laboratory	No. of Hours per week			No. of Credits
			L	T	P	
1	II Year-II Sem	Mechanics of Solids and Fluids	4	-	-	4
2	III Year-I Sem	Construction Materials*	3	-	2	4
3	III Year-II Sem	Principles of Surveying and Geomatics	4	-	-	4
4	IV Year-I Sem	Basics of Soil Mechanics and Highway Engineering	4	-	-	4
5	MOOCs	Introduction to Civil Engineering Profession	-	-	-	2
6	MOOCs	Safety in Construction	-	-	-	2
Total :			15	-	2	20

* Integrated theory and Lab. Course

ii) Electrical and Electronics Engineering

Curricular Components

Sl. No.	Course Work-Subject Area	Total No. of credits	Credits as per AICTE	% Range As per UGC	% of credits
1	Basic Sciences (BS)	25	25	15-20	15.625
2	Humanities and Social Sciences (HSS)	16	12	10-15	10.000
3	Engineering Sciences (ES)	31	24	10-20	19.375
4	Professional Core (PC)	48	48	25-35	30.000
5	Professional Electives (PE)	15	18	8-12	09.375
6	Open Electives (OE)	09	18	5-10	05.625
7	Other (Project, Internship, etc.)	16	15	8-10	10.000
8	Mandatory Non-Credit Courses				
Total :		160	160		

II Year 1st Semester

Sl. No.	Name of the Course / Laboratory		No. of Hours per week			Total Credits
			L	T	P	
1	Prime Movers	ES	2	-	-	2
2	Circuit Theory-II*	ES	2	-	2	3
3	DC Machines and Transformers	PC	2	1	-	3
4	Electronic Devices and Circuits	PC	2	1	-	3
5	Power Generation Systems	PC	3	-	-	3
6	Engineering Electro Magnetics	ES	2	1	-	3
7	Prime movers Lab	ES	-	-	2	1
8	Electronic Devices and Circuits Lab	PC	-	-	2	1
9	Logic Building and Basic Coding Principles (Skill advanced course/ soft skill course) (Training & Placement)	ES	-	-	2	1
Total:			13	3	8	20
10	NSS /Fine Arts/ Yoga/ Self Defense (Mandatory Non-Credit Course)					

II Year 2nd Semester

Sl. No.	Name of the Course / Laboratory		No. of Hours per week			Total Credits
			L	T	P	
1	Power Transmission Systems	PC	2	1	-	3
2	Induction & Synchronous Machines	PC	2	1	-	3
3	Digital Circuit Design*	PC	2	-	2	3
4	Python Programming*	ES	2	-	2	3
5	Open Elective – I	OE	3	-	-	3
	i) Electrical Materials					
	ii) Control Systems Engineering (Other than EEE & ECE)					
6	Control Systems	ES	2	1	-	3
7	DC Machines and Transformers Lab	PC	-	-	4	2
8	Programming for Corporate (Skill advanced course/ soft skill course) (Training & Placement)	ES	-	-	2	1
Total:			13	3	10	21
9	Sports & Games / Cultural (Mandatory non-credit course)					

III Year 1st Semester

Sl. No.	Name of the Course / Laboratory		No. of Hours per week			Total Credits
			L	T	P	
1	Electrical Measurements	PC	3	-	-	3
2	Numerical Methods with Computer Applications *	BS	2	-	2	3
3	Power Electronics	PC	2	1	-	3
4	Signals and Systems	ES	2	1	-	3
5	Professional Elective – I	PE	3	-	-	3
	1. Electrical Distribution Systems					
	2. Electrical Machine Design					
	3. Advanced control systems					
	4. Data Structures					
6	Open Elective – II	OE	3	-	-	3
	i) Modelling and Simulation of Engineering Systems					
	ii) Power Systems Engineering (Other than EEE)					
7	Control Systems Lab	ES	-	-	2	1
8	Induction & Synchronous Machines Lab	PC	-	-	2	1
9	Problems Solving Enhancement (Skill advanced course/ soft skill course) (Training & Placement)	HSS	-	-	2	1
10	Societal Impact Project	Project				1
Total:			15	2	8	22

III Year 2nd Semester

Sl. No.	Name of the Course / Laboratory		No. of Hours per week			Total Credits
			L	T	P	
1	Microprocessors, Microcontrollers and its Applications **	PC	2	1	-	3
2	Analog and Digital IC Applications	PC	2	1	-	3
3	Power Semiconductor Drives	PC	2	1	-	3
4	Professional Elective - II 1. Switch Gear & Protection 2. Digital Signal Processing 3. Principles of VLSI Design 4. CMOS Digital IC Design	PE	3	-	-	3
5	Open Elective – III i) Electrical and Hybrid Vehicles ii) Instrumentation	OE	3	-	-	3
6	Microprocessors, Microcontrollers and its Applications Lab	PC	-	-	2	1
7	Power Electronics and Drives Lab	PC	-	-	2	1
8	Electrical Measurements Lab	PC	-	-	2	1
9	Mini Project/ MOOCs		-	-	-	2
10	Linguistic Competency Building (Skill advanced course/ soft skill course) (Training & Placement)	HSS	-	-	2	1
Total :			12	3	8	21

IV Year 1st Semester

Sl. No.	Name of the Course / Laboratory		No. of Hours per week			Total Credits
			L	T	P	
1	Power System Analysis**	PC	2	-	2	3
2	Power System Operation and Control	PC	3	-	-	3
3	Probability and Statistics	BS	2	1	-	3
4	Professional Elective – III 1. Digital Control Systems 2. Solar and Wind Energy Systems 3. AI Techniques 4. Data Base Management Systems	PE	3	-	-	3
5	Engineering Economics & Project Management	HSS	3	-	-	3
6	Electrical Systems Simulation Lab	PC	-	-	2	1
7	Power Systems Lab	PC	-	-	2	1
8	Mini Project/ MOOCs	Project	-	-	4	2
9	Internship/Industrial Training/ Practical Training		-	-	4	2
Total:			13	1	14	21



IV Year 2nd Semester

Sl. No.	Name of the Course / Laboratory		No. of Hours per week			Total Credits
			L	T	P	
1	Professional Elective – IV 1. Flexible AC Transmission Systems 2. Big Data Analytics 3. Special Electrical Machines 4. Digital Image Processing	PE	2	1	-	3
2	Professional Elective – V 1. High Voltage Engineering 2. Integration of Renewable Energy Sources 3. Cyber Security 4. Utilization of Electrical Energy	PE	2	1	-	3
3	Project	Project	-	-	18	9
Total :			4	2	18	15

* Integrated theory & practice course

** Project based Theory courses

Honors Degree: Electric Vehicles

Courses Offered

Sl. No.	Year and Sem	Name of the Course / Laboratory	No. of Hours per week			No. of Credits
			L	T	P	
1	II Year-II Sem	Principles of Hybrid Electric Vehicles	3	1	-	4
2	III Year-I Sem	Electric and Hybrid Vehicle Technology	3	1	-	4
3	III Year-II Sem	Motors and Controls for Electric Vehicles and Industrial Applications	3	1	-	4
4	IV Year-I Sem	Design of Hybrid Vehicles	3	1	-	4
5	MOOCs	MOOCs	2	-	-	2
6	MOOCs	MOOCs	2	-	-	2
Total :			16	4	-	20

Minor Degree: Energy Systems

Courses Offered

Sl. No.	Year and Sem	Name of the Course / Laboratory	No. of Hours per week			No. of Credits
			L	T	P	
1	II Year-II Sem	Wind & Biomass Energy Systems	3	1	-	4
2	III Year-I Sem	Solar & Fuel cell Energy Systems	3	1	-	4
3	III Year-II Sem	Utilization of Electrical Energy	3	1	-	4
4	IV Year-I Sem	Energy Conservation & Audit	3	1	-	4
5	MOOCs	MOOCs	2	-	-	2
6	MOOCs	MOOCs	2	-	-	2
Total :			16	4	-	20



iii) Mechanical Engineering

Curricular Components

Sl. No.	Course Work-Subject Area	Total no. of Credits	Percentage of Credits	Credits as per AICTE	Range As per UGC
1	Basic Sciences (BS)	19	11.87	25	15-20%
2	Humanities and Social Sciences (HSS)	16	10.00	12	10-15%
3	Engineering Sciences (ES)	22	13.75	24	10-20%
4	Professional Core (PC)	63	39.3	48	25-35%
5	Professional Electives (PE)	15	9.37	18	8-12%
6	Open Electives (OE)	9	5.63	18	5-10%
7	Other (Project, Internship, etc.)	16	10.00	15	8-10%
8	Mandatory Non-Credit Courses				
		160	100%	160	

II Year 1st Semester

S. No.	Name of the Course / Laboratory		No. of Hours per week			No. of Credits
			L	T	P	
1	Numerical & Statistical Methods	BS	2	1	-	3
2	Elements of Electrical & Electronics Engineering	ES	3	-	-	3
3	Engineering Thermodynamics	PC	2	1	-	3
4	Kinematics of Machines	PC	2	1	-	3
5	Mechanics of Solids	PC	2	1	-	3
6	Materials Engineering	PC	3	-	-	3
7	Electrical & Electronics Engineering Lab	ES	-	-	2	1
8	Materials and Testing Lab	PC	-	-	2	1
9	Numerical & Statistical Methods Lab	PC	-	-	2	1
10	Logic Building and Basic Coding Principles (Training & Placement)	ES	-	-	2	1
Total:			14	4	10	22
11	Sports and Games / Cultural		-	-	2	0

II Year 2nd Semester

S. No.	Name of the Course / Laboratory		No. of Hours per week			No. of Credits
			L	T	P	
1	Manufacturing Science	PC	3	-	-	3
2	Python Programming*	ES	2	-	2	3
3	Applied Thermodynamics	PC	2	1	-	3
4	Dynamics of Machines	PC	2	1	-	3
5	Fluid Mechanics & Hydraulic Machines	PC	2	1	-	3
6	Open Elective – I	OE	3	-	-	3
7	Thermal Engineering Lab	PC	-	-	2	1
8	Manufacturing Processes Lab	PC	-	-	2	1
9	Theory of Machines Lab	PC	-	-	2	1
10	Programming for Corporate (Training & Placement)	ES	-	-	2	1
Total:			14	3	12	22
11	NSS /Fine Arts / Yoga / Self Defense		-	-	2	0

*Integrated Theory and Practice course

III Year 1st Semester

S. No.	Name of the Course / Laboratory		No. of Hours per week			No. of Credits
			L	T	P	
1	Steam and Gas Turbines	PC	2	1	-	3
2	Machine Tools & Metrology	PC	3	-	-	3
3	Design of Machine elements	PC	2	1	-	3
Professional Elective – I						
4	i) Automobile Engineering	PE	3	-	-	3
	ii) Non Destructive Testing & Evaluation					
	iii) Composite Materials					
	iv) Finite Element Methods					
5	Open Elective – II	OE	3	-	-	3
6	Fluid Mechanics and Hydraulic machines Lab	PC	-	-	2	1
7	Machine Tools & Metrology Lab	PC	-	-	2	1
8	Computer Aided Machine Drawing Lab	PC	-	-	4	2
9	Problems Solving Enhancement (Training & Placement)	HSS	-	-	2	1
10	Society Impact Project	PRO	-	-	2	1
Total :			13	2	12	21

III Year 2nd Semester

S. No.	Name of the Course / Laboratory		No. of Hours per week			No. of Credits
			L	T	P	
1	Engineering Economics & Accountancy	HSS	3	-	-	3
2	Measurements & Mechatronics	PC	3	-	-	3
3	Design of Transmission Elements**	PC	2	1	-	3
Professional Elective – II						
4	i) Tribology	PE	3	-	-	3
	ii) Computational Fluid Dynamics					
	iii) Additive Manufacturing					
	iv) Mechanical Vibrations					
5	Open Elective – III	OE	3	-	-	3
6	Measurements Lab and Mechatronics Lab	PC	-	-	2	1
7	Simulation Lab	PC	-	-	2	1
8	Mini Project / MOOCs	PRO	-	-	4	2
9	Linguistic Competency Building (Training & Placement)	HSS	-	-	2	1
Total:			14	1	10	20

IV Year 1st Semester

Sl. No.	Name of the Course / Laboratory		No. of Hours per week			No. of Credits
			L	T	P	
1	Industrial Management	PC	3	-	-	3
2	Machining Science	PC	3	-	-	3
3	Heat Transfer	PC	2	1	-	3
4	Digital Manufacturing	PC	2	1	-	3
Professional Elective – III						
5	i) Robotics**	PE	3	-	-	3
	ii) Refrigeration & Air Conditioning**					
	iii) Optimization Techniques**					
	iv) Design and optimization of Thermal Systems **					
6	Heat Transfer Lab	PC	-	-	2	1
7	Internship / Industrial Training / Practical Training	PRO	-	-	4	2
8	Mini Project / MOOCs	PRO	-	-	4	2
Total:			13	2	10	20

IV Year 2nd Semester

Sl. No.	Name of the Course / Laboratory		No. of Hours per week			No. of Credits
			L	T	P	
Professional Elective – IV						
1	i) Production Planning and Control	PE	3	-	-	3
	ii) Power Plant Engineering					
	iii) Data Base Management Systems					
	iv) Condition Monitoring					
Professional Elective – V						
2	i) Automation in Manufacturing	PE	3	-	-	3
	ii) Fluid Power and Control systems					
	iii) Big Data Analytics					
	iv) Design for Manufacturing and Assembly					
3	Project Work	PRO	-	-	18	9
Total:						15

Honors Degree: Robotics

Courses Offered

Sl. No.	Year and Sem	Name of the Course / Laboratory	No. of Hours per week			No. of Credits
			L	T	P	
1	II Year-II Sem	Design of Mechanism and Manipulators	4	-	-	4
2	III Year-I Sem	Drives and Control Systems for Automation	4	-	-	4
3	III Year-II Sem	Sensors Applications in Manufacturing	4	-	-	4
4	IV Year-I Sem	Machine Vision and Image Processing	4	-	-	4
5	MOOCs		2	-	-	2
6	MOOCs		2	-	-	2
Total :			20	-	-	20

Minor Degree: Mechanical Engineering

Courses Offered

Sl. No.	Year and Sem	Name of the Course / Laboratory	No. of Hours per week			No. of Credits
			L	T	P	
1	II Year-II Sem	Engineering Mechanics	4	-	-	4
2	III Year-I Sem	Basics of Thermal Engineering	4	-	-	4
3	III Year-II Sem	Basics of Manufacturing Processes	4	-	-	4
4	IV Year-I Sem	Fundamentals of Engineering Design	4	-	-	4
5	MOOCs		2	-	-	2
6	MOOCs		2	-	-	2
Total :			20	-	-	20

iv) Electronics and Communication Engineering

Curricular Components

Sl. No.	Course Work-Subject Area	Total no. of Credits	Percentage of Credits	Credits as per AICTE	Range As per UGC
1	Basic Sciences (BS)	19	11.87	25	15-20%
2	Humanities and Social Sciences (HSS)	16	10.00	12	10-15%
3	Engineering Sciences (ES)	22	13.75	24	10-20%
4	Professional Core (PC)	63	39.3	48	25-35%
5	Professional Electives (PE)	15	9.37	18	8-12%
6	Open Electives (OE)	9	5.63	18	5-10%
7	Other (Project, Internship, etc.)	16	10.00	15	8-10%
8	Mandatory Non-Credit Courses				
		160	100%	160	

II Year - 1st Semester

Sl. No.	Name of the Course / Laboratory		No. of Hours per week			Total No. of Credits
			L	T	P	
1	Probability Theory and Stochastic Processes	ES	2	1	-	3
2	Electronic Devices	PC	3	-	-	3
3	Signals and Systems	PC	2	1	-	3
4	Numerical Methods & Complex Analysis	BS	2	1	-	3
5	Electromagnetic Field Theory	PC	3	-	-	3
6	Digital Circuit Design	PC	3	-	-	3
7	Signals and Systems Lab	PC	-	-	2	1
8	Electronic Devices Lab	PC	-	-	2	1
9	Linear Electrical Networks Lab	ES	-	-	2	1
10	Logic Building and Algorithmic Programming	ES	-	-	2	1
Total :			15	3	8	22
11	NSS /Fine Arts / Self Defense/ Yoga (Mandatory Non-Credit Course)		-	-	2	-

II Year - 2nd Semester

Sl. No.	Name of the Course / Laboratory		No. of Hours per week			Total No. of Credits
			L	T	P	
1	Transmission Lines and Waveguides	PC	3	-	-	3
2	Analog Circuits	PC	3	-	-	3
3	Analog Communications	PC	3	-	-	3
4	Python Programming *	ES	1	-	4	3
5	VLSI Design	PC	3	-	-	3
6	Open Elective – I	OE	3	-	-	3
7	Analog Circuits Lab	PC	-	-	2	1
8	Digital Circuit Design Lab	PC	-	-	2	1
9	Analog Communications Lab	PC	-	-	2	1
10	Programming for Corporate	ES	-	-	2	1
Total :			16	-	12	22
11	Sports and Games / Cultural (Mandatory non-credit course)		-	-	2	-

* Integrated theory and practice course

III Year - 1st Semester

Sl. No.	Name of the Course / Laboratory		No. of Hours per week			Total No. of Credits
			L	T	P	
1	Linear Integrated Circuits Applications	PC	3	1	-	4
2	Digital Communications	PC	3	-	-	3
3	Antennas and Wave Propagation	PC	3	-	-	3
4	Professional Elective – I	PE	3	-	-	3
	i) Control Systems					
	ii) CAD for VLSI					
	iii) Bio-Medical Engineering iv) Computer Networks and Network Security					
5	Open Elective – II	OE	3	-	-	3
6	Linear Integrated Circuits Applications Lab	PC	-	-	2	1
7	Digital Communications Lab	PC	-	-	2	1
8	VLSI Design Lab	PC	-	-	2	1
9	Competitive Coding	HSS	-	-	2	1
10	Society Impact Project	OTH	-	-	2	1
Total :			15	1	10	21

III Year - 2nd Semester

Sl. No.	Name of the Course / Laboratory		No. of Hours per week			Total No. of Credits
			L	T	P	
1	Digital Signal Processing	PC	3	-	-	3
2	Microprocessors, Microcontrollers and Applications**	PC	2	-	2	3
3	Microwave and Optical Communications	PC	3	-	-	3
4	Open Elective – III	OE	3	-	-	3



5	Professional Elective – II	PE	3	-	-	3
	i) Satellite Communications ii) Digital IC Design iii) Information Theory & Coding iv) Low Power VLSI Circuits					
6	Microprocessors and Microcontrollers Interfacing Lab	PC	-	-	2	1
7	Digital Signal Processing Lab	PC	-	-	2	1
8	Linguistic Competency Building	HSS	-	-	2	1
9	Mini project/MOOCs	OTH	-	-	4	2
Total :			14	-	12	20

** Project based theory course

IV Year - 1st Semester

Sl. No.	Name of the Course / Laboratory		No. of Hours per week			Total No. of Credits
			L	T	P	
1	Digital Image Processing	PC	3	-	-	3
2	Embedded Systems and IoT	PC	3	-	-	3
3	Sensors and Instrumentation	ES	3	-	-	3
4	Engineering Economics & Accountancy	HSS	3	-	-	3
5	Professional Elective – III	PE	3	-	-	3
	i) ASIC Design ii) DSP Processors and Architectures iii) Cyber Physical Systems iv) Cellular Mobile Communications					
6	Microwave and Optical Communications Lab	PC	-	-	2	1
7	Internship/Industrial/Training / Practical Training	OTH	-	-	4	2
8	Mini Project / MOOCs	OTH	-	-	4	2
Total :			15	-	10	20

IV Year - 2nd Semester

Sl. No.	Name of the Course / Laboratory		No. of Hours per week			Total No. of Credits
			L	T	P	
1	Professional Elective – IV	PE	3	-	-	3
	i) RADAR Engineering ii) System on Chip Design iii) Multi rate Signal Processing iv) Digital TV Engineering					
2	Professional Elective – V	PE	3	-	-	3
	i) Wireless Sensor Networks ii) Mixed Signal IC Design iii) VLSI Signal Processing iv) Industrial Internet of Things					
3	Project Work	OTH	-	-	18	9
Total :			6	-	18	15



Honors Degree: Internet of Things

Courses Offered

Sl. No.	Year and Sem	Name of the Course / Laboratory	No. of Hours per week			No. of Credits
			L	T	P	
1	II Year-II Sem	Advanced Embedded Systems	4	-	-	4
2	III Year-I Sem	Internet of Things	4	-	-	4
3	III Year-II Sem	Advanced Wireless Broadband Communications	4	-	-	4
4	IV Year-I Sem	RF and Mixed Signals Circuits	4	-	-	4
5	MOOCs*		2	-	-	2
6	MOOCs*		2	-	-	2
Total :			20	-	-	20

Minor Degree: Electronics and Communication Engineering

Courses Offered

Sl. No.	Year and Sem	Name of the Course / Laboratory	No. of Hours per week			No. of Credits
			L	T	P	
1	II Year-II Sem	Computer Architecture	4	-	-	4
2	III Year-I Sem	CAD for VLSI Design	4	-	-	4
3	III Year-II Sem	Cellular Communications	4	-	-	4
4	IV Year-I Sem	Speech Signal Processing	4	-	-	4
5	MOOCs**		2	-	-	2
6	MOOCs**		2	-	-	2
Total :			20	-	-	20

v) Computer Science and Engineering

Curricular Components

Sl. No.	Course Work-Subject Area	Credits as per AICTE	% of Range as per UGC	Total No. of Credits	% of Credits
1	Humanities and Social Sciences (HSS)	12	10-15%	15	9.375
2	Basic Sciences (BS)	25	15-20%	20	12.5
3	Engineering Sciences (ES)	24	10-20%	29	18.125
4	Professional Core (PC)	48	25-35%	56	35
5	Professional Electives (PE)	18	8-12%	15	9.375
6	Open Electives (OE)	18	5-10%	9	5.625
7	Other (Project, Internship etc.)	15	8-10%	16	10
8	Mandatory Non-Credit Courses	-	-	-	-
Total :		160		160	

II Year - 1st Semester

Sl. No.	Name of the Course / Laboratory		No. of Hours per week			Total Credits
			L	T	P	
1	Managerial Economics and Financial Analysis	HSS	3	-	-	3
2	Probability and Statistics	BS	2	1	-	3
3	Digital Logic Design	ES	2	1	-	3



4	Object Oriented Programming through Java	ES	3	-	-	3
5	Operating Systems	PC	3	-	-	3
6	Statistics using R Lab	BS	-	-	4	2
7	Java Programming Lab	ES	-	-	4	2
8	Operating Systems Lab	PC	-	-	2	1
9	Logic Building and Algorithmic Programming	ES	-	-	2	1
Total :			13	2	14	21
	Sports and Games (Mandatory Non-credit course)	MC	2	-	-	0

II Year - 2nd Semester

Sl. No.	Name of the Course / Laboratory		No. of Hours per week			Total Credits
			L	T	P	
1	Discrete Mathematics	BS	2	1	-	3
2	Computer Organization and Architecture	PC	3	-	-	3
3	Formal Languages and Automata Theory	PC	2	1	-	3
4	Database Management Systems	PC	3	-	-	3
5	Software Engineering*	PC	3	-	2	4
6	Open Elective – I	OE	3	-	-	3
7	Database Management Systems Lab	PC	-	-	4	2
8	Programming for Corporate	ES	-	-	2	1
Total :			16	2	6	22
	Fine Arts / Yoga / Self Defense/ Cultural (Mandatory Non-Credit Course)	MC	2	-	-	0

III Year - 1st Semester

Sl. No.	Name of the Course / Laboratory		No. of Hours per week			Total Credits
			L	T	P	
1	Compiler Design	PC	2	1	-	3
2	Data Science	PC	2	1	-	3
3	Web Technologies	PC	3	-	-	3
4	Open Elective – II	OE	3	-	-	3
5	Professional Elective-I i) UML and Design Patterns ii) Distributed Systems iii) C#.Net iv) Advanced Data Structures	PE	3	-	-	3
6	Web Technologies Lab	PC	-	-	4	2
7	Mini Project/MOOCs	PRO	-	-	4	2
8	Society Related Project	PRO	-	-	2	1
9	Competitive Coding	ES	-	-	2	1
Total :			14	1	14	21

III Year - 2nd Semester

Sl. No.	Name of the Course / Laboratory		No. of Hours per week			Total Credits
			L	T	P	
1	Data Warehousing and Data Mining	ES	3	-	-	3
2	Computer Networks	PC	3	-	-	3

3	Design and Analysis of Algorithms	PC	3	-	2	3
4	Open Elective – III	OE	3	-	-	3
5	Professional Elective-II i) Software Testing Methodologies ii) Computational Biology and Bio-Informatics iii) Embedded Systems and Internet of Things iv) Scripting Languages	PE	3	-	-	3
6	Computer Networks Lab	PC	-	-	2	1
7	Data Mining Lab	PC	-	-	4	2
8	Mini Project/MOOCs	PRO	-	-	4	2
9	Linguistic Competency Building	HSS	-	-	2	1
Total :			14	-	10	21

IV Year - 1st Semester

Sl. No.	Name of the Course / Laboratory		No. of Hours per week			Total Credits
			L	T	P	
1	Artificial Intelligence	ES	3	-	-	3
2	Big Data Analytics	PC	3	-	-	3
3	Information Security	PC	3	-	-	3
4	Machine Learning**	PC	3	-	-	3
5	Professional Elective – III i) Blockchain Technologies ii) Web Mining iii) Software Project Management iv) NoSQL Databases	PE	3	-	-	3
6	Artificial Intelligence Lab	PC	-	-	2	1
7	Big Data Analytics Lab	PC	-	-	4	2
8	Internship/Industrial Training / EDP	PRO	-	-	4	2
Total :			14	1	10	20

**** Project Based Theory Course**

IV Year - 2nd Semester

Sl. No.	Name of the Course / Laboratory		No. of Hours per week			Total Credits
			L	T	P	
1	Professional Elective – IV i) Cloud Computing ii) Agile Software Development Process iii) Quantum Computing iv) Image Processing	PE	3	-	-	3

2	Professional Elective – V i) Recommender Systems ii) Deep Learning iii) DevOps iv) Virtual and Augmented Reality	PE	3	-	-	3
3	Project Work	PRO	-	-	18	9
Total :			06	-	18	15

Honors Degree: Data Science

Courses Offered

Sl. No.	Year and Sem	Name of the Course / Laboratory	No. of Hours per week			No. of Credits
			L	T	P	
1	II Year-II Sem	Data Predictive Analytics	3	1	-	4
2	III Year-I Sem	Machine Learning Techniques	3	1	-	4
3	III Year-II Sem	Artificial Neural Networks	3	1	-	4
4	IV Year-I Sem	Recommender Systems	3	1	-	4
5	MOOCs	Natural Language Processing	-	-	-	2
6	MOOCs	Introduction to Soft Computing	-	-	-	2
Total :			12	4	-	20

Minor Degree: Computer Science and Engineering

Courses Offered

Sl. No.	Year and Sem	Name of the Course / Laboratory	No. of Hours per week			No. of Credits
			L	T	P	
1	II Year-II Sem	Operating Systems	3	1	-	4
2	III Year-I Sem	Software Engineering	3	1	-	4
3	III Year-II Sem	Advanced Data Structures	3	1	-	4
4	IV Year-I Sem	Machine Learning	3	1	-	4
5	MOOCs	Data Analytics with Python	-	-	-	2
6	MOOCs	Cloud Computing	-	-	-	2
Total :			12	4	-	20

vi) Information Technology

Curricular Components

Sl. No.	Course Work-Subject Area	Total no. of Credits	Percentage of Credits	Credits as per AICTE	Range As per UGC
1	Basic Sciences (BS)	24	15	25	15-20%
2	Humanities and Social Sciences (HSS)	15	9.37	12	10-15%
3	Engineering Sciences (ES)	26	16.25	24	10-20%
4	Professional Core (PC)	57	33.75	48	25-35%
5	Professional Electives (PE)	15	9.37	18	8-12%
6	Open Electives (OE)	9	5.63	18	5-10%
7	Other (Project, Internship, etc.)	14	8.70	15	8-10%
8	Mandatory Non-Credit Courses	(08)			
		160	100%	160	

II Year - I semester

Sl. No.	Name of the Course / Laboratory		No. of Periods per week			No. of Credits
			L	T	P	
1	Discrete Mathematical Structures	BS	3	-	-	3
2	Object Oriented Programming through Java	ES	3	-	-	3
3	Digital Logic Design	ES	3	-	-	3
4	Database Management Systems	PC	3	-	-	3
5	Principles of Software Engineering	PC	3	-	-	3
6	Object Oriented Programming Lab	ES	-	-	4	2
7	Database Management Systems Lab	PC	-	-	4	2
8	Unified Modeling Language Lab	PC	-	-	2	1
9	Logic Building & Algorithmic Programming	ES	-	-	2	1
Total :			15	-	12	21
10	NSS / Fine Arts / Yoga / Self Defense (Mandatory Non-Credit Course)	MC	-	-	2	-

II Year - II semester

Sl. No.	Course Code	Name of the Course / Laboratory		No. of Periods per week			No. of Credits
				L	T	P	
1		Probability and Statistics	BS	3	-	-	3
2		Web Technologies	PC	3	-	-	3
3		Computer Organization	ES	3	-	-	3
4		Python Programming	ES	3	-	-	3
5		Theory of Computation	PC	2	-	-	2
6		Open Elective –I	OE	3	-	-	3
7		Web Technologies Lab	PC	-	-	4	2
8		Python Programming Lab	PC	-	-	4	2
9		Programming for Corporate	ES	-	-	2	1
Total :				17	-	10	22
9		Sports and Games / Cultural (Mandatory Non-Credit Course)	MC	-	-	2	-

III Year – I semester

Sl. No.	Name of the Course / Laboratory		No. of Periods per week			No. of Credits	
			L	T	P		
1	Numerical Methods & Optimization Techniques		BS	2	-	-	2
2	Operating Systems		PC	3	-	-	3
3	Compiler Design		PC	3	-	-	3
4	Artificial Intelligence		PC	3	-	-	3
5	Open Elective-II		OE	3	-	-	3
6	Professional Elective – I		PE	3	-	-	3
	1) Biometrics						
	2) Neural Networks and Fuzzy Systems						
	3) Advanced Data Structures						
7	AI Tools & Techniques Lab		PC	-	-	2	1
8	Operating Systems Lab		PC	-	-	2	1
9	Society Impact Project		PR	-	-	2	1
10	Competitive Coding(T&P)		HSS	-	-	2	1
Total :				17	-	8	21

III Year – II semester

Sl. No.	Name of the Course / Laboratory		No. of Periods per week			No. of Credits
			L	T	P	
1	Design and Analysis of Algorithms	PC	3	-	-	3
2	Data Warehousing and Data Mining	PC	3	-	-	3
3	Computer Networks	PC	3	-	-	3
4	Open Elective-III	OE	3	-	-	3
5	Professional Elective – II	PE	3	-	-	3
	1) Mobile Computing					
	2) Data Science Using R					
	3) Software Project Management					
4) Image Processing						
6	Computer Networks & Data Mining Lab	PC	-	-	4	2
7	Mobile Application Development Lab	PC	-	-	2	1
8	MOOCs/Mini Project	PC	-	-	4	2
9	Linguistic Competency Building(T&P)	HSS	-	-	2	1
Total :			15	-	12	21

IV Year - I semester

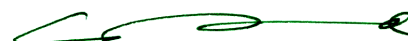
Sl. No.	Name of the Course / Laboratory		No. of Periods per week			No. of Credits
			L	T	P	
1	Cryptography & Network Security*	PC	2	-	2	3
2	Machine Learning**	PC	2	-	2	3
3	Bigdata Analytics	PC	3	-	-	3
4	Industrial Organization	HSS	2	-	-	2
5	Professional Elective – III	PE	3	-	-	3
	1) Cloud Computing					
	2) M-Commerce					
	3) Software Testing Methodologies					
4) Game Theory						
6	Bigdata Analytics lab	PC	-	-	4	2
7	Internship/Industrial Training/Practical Training	PR	-	-	-	2
8	Mini Project / MOOCs	PR	-	-	4	2
Total :			13	-	12	20

* Integrated Theory and Lab Course

** Project based Theory Course

IV Year - II semester

Sl. No.	Name of the Course / Laboratory		No. of Periods per week			No. of Credits
			L	T	P	
1	Professional Elective – IV	PE	3	-	-	3
	1) Quantum Computing					
	2) Internet of Things					
	3) Agile software Development					
4) Multimedia Tools						
2	Professional Elective – V	PE	3	-	-	3
	1) Block Chain Technologies					
	2) Deep Learning					
	3) DevOps					
4) Virtual and Augmented Reality						
3	Project work	PR	-	-	9	9
Total :			6	-	9	15



Honors Degree: Artificial Intelligence

Courses Offered

Sl. No.	Year and Sem	Name of the Course / Laboratory	No. of Hours per week			No. of Credits
			L	T	P	
1	II Year-II Sem	Information Retrieval System	4	-	-	4
2	III Year-I Sem	Genetic Algorithms	4	-	-	4
3	III Year-II Sem	Recommender Systems	4	-	-	4
4	IV Year-I Sem	Reinforcement Learning	4	-	-	4
5	MOOCs	Any Course related to AI & Data Sciences	-	-	-	2
6	MOOCs	Any Course related to AI & Data Sciences	-	-	-	2
Total			16	0	0	20

Minor Degree: Information Technology

Courses Offered

Sl. No.	Year and Sem	Name of the Course / Laboratory	No. of Hours per week			No. of Credits
			L	T	P	
1	II Year-II Sem	Object Oriented Programming through Java	4	-	-	4
2	III Year-I Sem	Data Structures using Python	4	-	-	4
3	III Year-II Sem	Operating Systems	4	-	-	4
4	IV Year-I Sem	Web Technologies	4	-	-	4
5	MOOCs	Any Course related to Database Management Systems	-	-	-	2
6	MOOCs	Any Course related to Software Engineering	-	-	-	2
Total			16	0	0	20

vii) Artificial Intelligence and Data Science

Curricular Components

Sl. No.	Course Work-Subject Area	Credits as per AICTE	% of Range as per UGC	Total No. of Credits	% of Credits
1	Humanities and Social Sciences (HSS)	12	10-15%	14	8.75
2	Basic Sciences (BS)	25	15-20%	24	15
3	Engineering Sciences (ES)	24	10-20%	27	16.875
4	Professional Core (PC)	48	25-35%	55	34.375
5	Professional Electives (PE)	18	8-12%	15	9.375
6	Open Electives (OE)	18	5-10%	9	5.625
7	Other (Project, Internship etc.)	15	8-10%	16	10
8	Mandatory Non-Credit Courses	-	-	-	-
Total		160		160	

II Year - I Semester

Sl. No.	Name of the Course / Laboratory		No. of Hours per week			Total Credits
			L	T	P	
1	Managerial Economics and Financial Analysis	HSS	3	-	-	3
2	Advanced Statistics	BS	3	-	-	3
3	Discrete Mathematics	BS	2	1	-	3
4	Object Oriented Programming through Java	ES	3	-	-	3
5	Digital Logic Design	ES	3	-	-	3
6	Artificial Intelligence	PC	2	1	-	3
7	Artificial Intelligence Lab	PC	-	-	2	1
8	Java Programming Lab	ES	-	-	4	2
9	Logic Building and Algorithmic Programming	ES	-	-	2	1
Total :			16	2	8	22
	Sports and Games / Cultural (Mandatory Non-credit course)	MC	2	-	-	0

II Year - II Semester

Sl. No.	Name of the Course / Laboratory		No. of Hours per week			Total Credits
			L	T	P	
1	Computer Organization and Architecture	PC	3	-	-	3
2	Database Management Systems	PC	3	-	-	3
3	Formal Languages and Automata Theory	PC	2	1	-	3
4	Operating Systems	PC	3	-	-	3
5	Software Engineering*	PC	3	-	-	3
6	Open Elective – I	OE	3	-	-	3
7	Database Management Systems Lab	PC	-	-	4	2
8	Operating Systems Lab	PC	-	-	2	1
9	Programming for Corporate	ES	-	-	2	1
Total :			17	1	8	22
	Fine Arts / Yoga / Self Defense (Mandatory Non-Credit Course)	MC	2	-	-	0

* Integrated Theory and Practice course

III Year - I Semester

Sl. No.	Name of the Course / Laboratory		No. of Hours per week			Total Credits
			L	T	P	
1	Compiler Design	BS	2	1	-	3
2	Data Science	ES	3	-	-	3
3	Web Designing and Development**	PC	3	-	2	3
4	Open Elective – II	OE	3	-	-	3
5	Professional Elective-I i) Principles of Data Mining ii) Computer Vision iii) Parallel Computing iv) Information Retrieval Systems	PE	3	-	-	3
6	Web Designing and Development Lab	PC	-	-	2	1
7	Mini Project/MOOCs	PRO	-	-	4	2



8	Society Impact Project	PRO	-	-	2	1
9	Competitive Coding	HSS	-	-	2	1
Total :			14	1	12	20

** Project Based Theory Course

III Year - II Semester

Sl. No.	Name of the Course / Laboratory		No. of Hours per week			Total Credits
			L	T	P	
1	Computer Networks and Network Security	PC	3	-	-	3
2	Design and Analysis of Algorithms	PC	2	1	-	3
3	Machine Learning	PC	3	-	-	3
4	Open Elective – III	OE	4	-	-	3
5	Professional Elective-II	PE	4	-	-	3
	i) Optimization Techniques					
	ii) Object Oriented Software Engineering					
	iii) Internet of Things					
	iv) Human Computer Interaction					
6	Computer Networks and Network Security Lab	PC	-	-	2	1
7	Machine Learning Lab	PC	-	-	4	2
8	Mini Project/MOOCs	PRO	-	-	4	2
9	Linguistic Competency Building	HSS	-	-	2	1
Total :			16	1	10	21

IV Year - I Semester

Sl. No.	Name of the Course / Laboratory		No. of Hours per week			Total Credits
			L	T	P	
1	Soft Computing Techniques	ES	2	1	-	3
2	Big Data Analytics	PC	3	-	-	3
3	Deep Learning	PC	3	-	2	4
4	Natural Language Processing	PC	3	-	-	3
5	Professional Elective – III	PE	3	-	-	3
	i) Blockchain Technologies					
	ii) Cloud Computing					
	iii) NoSQL Databases					
	iv) Pattern Recognition					
6	Soft Computing Lab	PC	-	-	4	2
7	Internship/Industrial Training /Practical Training	PRO	-	-	-	2
Total :			14	1	6	20



IV Year - II Semester

Sl. No.	Name of the Course / Laboratory		No. of Hours per week			Total Credits
			L	T	P	
1	Professional Elective – IV i) Health Care Data Analytics ii) Web Services iii) Robotic Process Automation iv) Cyber Security and Digital Forensics	PE	3	-	-	3
2	Professional Elective – V i) DevOps ii) Quantum Computing iii) Image and Video Analytics iv) Distributed Systems	PE	3	-	-	3
3	Project Work	PRO	-	-	16	9
Total :			6	-	16	15

Honors Degree: Information Security

Courses Offered

Sl. No.	Year and Sem	Name of the Course / Laboratory	No. of Hours per week			No. of Credits
			L	T	P	
1	II Year-II Sem	Principles of Information Security	3	1	-	4
2	III Year-I Sem	Firewall and VPN Security	3	1	-	4
3	III Year-II Sem	Wireless Network Security	3	1	-	4
4	IV Year-I Sem	Database and Web Application Security	3	1	-	4
5	MOOCs	Cyber Security	-	-	-	2
6	MOOCs	Privacy and Security in Online Social Media	-	-	-	2
Total :			12	4	-	20

Minor Degree: Artificial Intelligence and Data Science

Courses Offered

Sl. No.	Year and Sem	Name of the Course / Laboratory	No. of Hours per week			No. of Credits
			L	T	P	
1	II Year-II Sem	Artificial Neural Networks	3	1	-	4
2	III Year-I Sem	Soft Computing	3	1	-	4
3	III Year-II Sem	Natural Language Processing	3	1	-	4
4	IV Year-I Sem	Social Network Analysis	3	1	-	4
5	MOOCs	Design and Analysis of Algorithms	-	-	-	2
6	MOOCs	Data Analytics with Python	-	-	-	2
Total :			12	4	-	20

viii) Internet of Things

Curricular Components

Sl. No.	Course Work-Subject Area	Total No. of Credits	Percentage of Credits	Credits as per AICTE	Range As per UGC
1	Basic Sciences (BS)	19	11.87	25	15-20%
2	Humanities and Social Sciences (HSS)	16	10.00	12	10-15%
3	Engineering Sciences (ES)	22	13.75	24	10-20%
4	Professional Core (PC)	63	39.3	48	25-35%
5	Professional Electives (PE)	15	9.37	18	8-12%
6	Open Electives (OE)	9	5.63	18	5-10%
7	Other (Project, Internship, etc.)	16	10.00	15	8-10%
8	Mandatory Non-Credit Courses				
		160	100%	160	

II Year - 1st Semester

Sl. No.	Name of the Course / Laboratory		No. of Hours per week			Total No. of Credits
			L	T	P	
1	Analog Devices and Circuits	PC	3	-	-	3
2	Digital Circuit Design	PC	3	-	-	3
3	Statistics and Probability	PC	2	1	-	3
4	Data Structures and Algorithms	ES	3	-	-	3
5	Electronic Instrumentation and Measurement Principles	PC	3	-	-	3
6	Numerical Methods & Complex Analysis	BS	2	1	-	3
7	Electronic Devices Lab	PC	-	-	2	1
8	Digital Circuit Design Lab	PC	-	-	2	1
9	Data Structures Lab	ES	-	-	2	1
10	Logic Building and Algorithmic Programming	ES	-	-	2	1
	Total :		16	2	8	22
11	NSS /Fine Arts / Self Defense/ Yoga (Mandatory Non-Credit Course)		-	-	2	-

II Year - 2nd Semester

Sl. No.	Name of the Course / Laboratory		No. of Hours per week			Total No. of Credits
			L	T	P	
1	Signal Analysis and Processing	PC	3	-	-	3
2	OOPS through JAVA*	ES	2	-	2	3
3	Analog and Digital Communications	PC	3	-	-	3
4	Computer Organization and Microprocessors	PC	3	-	-	3
5	Principles of Sensors and Data Acquisition	PC	3	-	-	3
6	Open Elective – I	OE	3	-	-	3
7	Analog Communications Lab	PC	-	-	2	1
8	Signal Processing Lab	PC	-	-	2	1
9	Microprocessors Interfacing Lab	PC	-	-	2	1
10	Programming for Corporate	ES	-	-	2	1
	Total :		16	-	8	22
11	Sports and Games / Cultural (Mandatory non-credit course)		-	-	2	-

* Integrated theory and practice course



III Year - 1st Semester

Sl. No.	Name of the Course / Laboratory		No. of Hours per week			Total No. of Credits
			L	T	P	
1	Embedded Systems Design**	PC	3	-	2	4
3	Transducers and Signal Conditioning	PC	3	-	-	3
4	Artificial Intelligence using Python	ES	3	-	-	3
5	Professional Elective – I	PE	3	-	-	3
	i) Computer Networks ii) Optimization techniques iii) Digital Signal Processing iv) IoT Applications and Web development					
6	Open Elective – II	OE	3	-	-	3
7	Sensors and Data Acquisition Lab	PC	-	-	2	1
8	Python Programming Lab	PC	-	-	2	1
9	Analog Communications Lab	PC	-	-	2	1
10	Competitive Coding	ES	-	-	2	1
11	Socially Relevant Project	OTH	-	-	2	1
Total :			13	-	10	21

III Year - 2nd Semester

Sl. No.	Name of the Course / Laboratory		No. of Hours per week			Total No. of Credits
			L	T	P	
1	VLSI System Design	PC	3	-	-	3
2	IoT System Architecture	PC	3	-	-	3
3	Machine Learning	PC	3	-	-	3
5	Open Elective – III	OE	3	-	-	3
6	Professional Elective – II	PE	3	-	-	3
	i) Control Systems & Actuators ii) Artificial Neural Networks iii) Microcontrollers for IoT Prototyping iv) Wireless Sensor Networks and IoT					
7	Machine Learning Lab	PC	-	-	2	1
8	Embedded Systems Lab	PC	-	-	2	1
9	Linguistic Competency Building	HSS	-	-	2	1
10	Mini project/MOOCs	OTH	-	-	4	2
Total :			15	-	10	20



IV Year - 1st Semester

Sl. No.	Name of the Course / Laboratory		No. of Hours per week			Total No. of Credits
			L	T	P	
1	Engineering Economics & Accountancy	HSS	3	-	-	3
2	IoT Communication Protocols and Communication Standards	PC	3	-	-	3
3	Cloud Computing	PC	3	-	-	3
4	Measurements & Mechatronics	ES	3	-	-	3
5	Professional Elective – III	PE	3	-	-	3
	i) RFID and Flexible Sensors ii) Digital Twin (Design, Build, Operate) iii) Analytical and IoT Platforms iv) ASIC Design					
6	IoT Lab	PC	-	-	2	1
7	Internship/Industrial Training / Practical Training	OTH	-	-	4	2
8	Mini Project / MOOCs	OTH	-	-	4	2
Total :			15	-	10	20

IV Year - 2nd Semester

Sl. No.	Name of the Course / Laboratory		No. of Hours per week			Total No. of Credits
			L	T	P	
1	Professional Elective – IV	PE	3	-	-	3
	i) IoT Edge Nodes and its Applications ii) System-on-Chip Design iii) Business Analytics iv) Data Science					
2	Professional Elective – V	PE	3	-	-	3
	i) Smart Sensors ii) Data Mining iii) Event Driven Architecture iv) Industrial IoT					
3	Project Work	OTH	-	-	18	9
Total :			6	-	18	15

Honors Degree: Artificial Intelligence based IoT

Courses Offered

Sl. No.	Year and Sem	Name of the Course / Laboratory	No. of Hours per week			No. of Credits
			L	T	P	
1	II Year-II Sem	Computer Vision	4	-	-	4
2	III Year-I Sem	Soft Computing Techniques	4	-	-	4
3	III Year-II Sem	Deep Learning	4	-	-	4
4	IV Year-I Sem	Natural Language Processing	4	-	-	4
5	MOOCs*		2	-	-	2
6	MOOCs*		2	-	-	2
Total :			20	-	-	20

Minor Degree: Internet of Things

Courses Offered

Sl. No.	Year and Sem	Name of the Course / Laboratory	No. of Hours per week			No. of Credits
			L	T	P	
1	II Year-II Sem	Electronic Instrumentation and Measurement Principles	4	-	-	4
2	III Year-I Sem	Principles of Sensors and Data Acquisition	4	-	-	4
3	III Year-II Sem	IoT System Architecture	4	-	-	4
4	IV Year-I Sem	IoT Communication Protocols and Communication Standards	4	-	-	4
5	MOOCs**		2	-	-	2
6	MOOCs**		2	-	-	2
Total			20	-	-	20

Open Electives

Open Elective – I

Sl. No.	Title of the Subject	Dept. offering the Subject	No. of Periods per week			No. of Credits
			L	T	P	
1	Elements of Civil Engineering (Other than CE)	CE	3	-	-	3
2	Environment Laws and Policies (All branches)	CE	3	-	-	3
3	Electrical Materials	EEE	3	-	-	3
4	Control Systems Engineering (Other than EEE & ECE)	EEE	3	-	-	3
5	Elements of Mechanical Transmission (Other than ME)	ME	3	-	-	3
6	Material Handling Equipment	ME	3	-	-	3
7	Introduction to MPMC (Other than ECE/EEE/CSE/IT)	ECE	3	-	-	3
8	Principles of Communications (other than ECE)	ECE	3	-	-	3
9	Programming Language Pragmatics (Other than CSE & IT)	CSE	3	-	-	3
10	Ethical Hacking	CSE	3	-	-	3
11	Massive Graph Analysis	CSE	3	-	-	3
12	MEAN Stack Technologies	CSE	3	-	-	3
13	Data communications	IT	3	-	-	3
14	ICT for Development	IT	3	-	-	3

Open Elective – II

Sl. No.	Title of the Subject	Dept. offering the Subject	No. of Periods per week			No. of Credits
			L	T	P	
1	Remote Sensing & GIS (Other than CE)	CE	3	-	-	3
2	Green Building Technology (All branches)	CE	3	-	-	3
3	Modelling and Simulation of Engineering Systems	EEE	3	-	-	3
4	Power Systems Engineering (Other than EEE)	EEE	3	-	-	3
5	Material Science (Other than ME)	ME	3	-	-	3
6	Renewable Energy Sources (Other than ME)	ME	3	-	-	3
7	Automotive Electronics	ECE	3	-	-	3
8	Introduction to MEMS	ECE	3	-	-	3
9	Object Oriented Analysis and Design (Other than CSE & IT)	CSE	3	-	-	3
10	Social Network Analysis	CSE	3	-	-	3

11	Intelligent Systems	CSE	3	-	-	3
12	Social Network Analysis	CSE	3	-	-	3
13	Information Theory and Coding	IT	3	-	-	3
14	Open Source Software	IT	3	-	-	3

Open Elective – III

Sl. No.	Title of the Subject	Dept. offering the Subject	No. of Periods per week			No. of Credits
			L	T	P	
1	Traffic Engineering (Other than CE)	CE	3	-	-	3
2	Disaster Preparedness, Planning & Management (All branches)	CE	3	-	-	3
3	Electrical and Hybrid Vehicles	EEE	3	-	-	3
4	Instrumentation	EEE	3	-	-	3
5	Green Engineering	ME	3	-	-	3
6	Non Destructive Evaluation (Other than ME)	ME	3	-	-	3
7	Assistive Technologies (other than ECE)	ECE	3	-	-	3
8	Bio-Medical Engineering (other than ECE and EEE)	ECE	3	-	-	3
9	Web Intelligence (Other than CSE & IT)	CSE	3	-	-	3
10	Real Time Systems	CSE	3	-	-	3
11	UI/UX Design	CSE	3	-	-	3
12	Bio-Informatics (Other than CSE)	CSE	3	-	-	3
13	Cyber Security	IT	3	-	-	3
14	Scripting Languages	IT	3	-	-	3



Annexure - II

The following amendments in R20 academic regulations:

Amendments in Approved R20 Regulations

Criterion	Previous Approved Regulations	Amendments in Approved Regulations	Remarks
Award of B.Tech	The candidate shall register for 160 credits and secure all the 160 credits	The candidate shall register for 160 credits and secure all the 160 credits	----No change----
Award of B.Tech Honor Degree / B.Tech Minor Degree	-----	<p>B. Tech. with Honors or a B. Tech. with a Minor will be awarded if the student earns 20 additional credits as per the regulations /guidelines.</p> <p>The regulations / guidelines will be separately provided.</p> <p>Registering for an Honors / Minor degree is optional.</p>	
Attendance Regulations	<p>A student shall be eligible to appear for the Semester End Examinations if he acquires the attendance with a minimum aggregate of 75% in all the subjects.</p> <p>Condonation of shortage of attendance in aggregate up to 10% (65% and above, and below 75%) may be granted by the College Academic Committee.</p> <p>A student shall be eligible to claim for condonation of attendance shortage for a maximum of two times during the four year (eight semesters) course work of B.Tech / three year (six semesters) course work of B.Tech, Lateral Entry.</p> <p>However, an additional, one time condonation exclusively during the IV Year shall be considered on genuine reasons.</p>	<p>A student is eligible to write the University examinations if he acquires a minimum of 40% in each subject and 75% of attendance in aggregate of all the subjects.</p> <p>Condonation of shortage of attendance in aggregate up to 10% (65% and above, and below 75%) may be granted by the College Academic Committee</p> <p>However, this condonation concession is applicable only to any two semesters during the entire programme.</p> <p>Shortage of Attendance below 65% in aggregate shall not be condoned.</p>	<p>➤ Minimum attendance of 40% in each subject is included.</p> <p>➤ Condonation of shortage of attendance is allowed for two times instead of three times during the four year (eight semesters) course work of B.Tech /three year (six semesters) course work of B.Tech, Lateral Entry</p>
Division of marks(for theory /integrated/project based courses)	<ul style="list-style-type: none"> ➤ Continuous Internal Examination-30 Marks ➤ Semester End Examination - 70 Marks 	<ul style="list-style-type: none"> ➤ Continuous Internal Examination-30 Marks ➤ Semester End Examination - 70 Marks 	----No change----

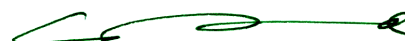


Division of marks(for practical courses)	<ul style="list-style-type: none"> ➤ Continuous Internal Examination - 30 Marks ➤ Semester End Examination - 70 Marks 	<ul style="list-style-type: none"> ➤ Continuous Internal Examination - 15 Marks ➤ Semester End Examination - 35 Marks 	
Division of marks(for summer internships/job oriented skill courses)	<ul style="list-style-type: none"> ➤ Continuous Internal Examination - 30 Marks ➤ Semester End Examination - 70 Marks 	<ul style="list-style-type: none"> ➤ Semester End Examination - 50 Marks (no internal examination) 	
Division of marks(for project work)	<ul style="list-style-type: none"> ➤ Continuous Internal Examination - 30 Marks ➤ Semester End Examination - 70 Marks 	<ul style="list-style-type: none"> ➤ Continuous Internal Examination - 60 Marks ➤ Semester End Examination - 140 Marks 	
Division of Internal Marks(for theory courses)	<p>Online Quiz - 10 Marks(two online quizzes - average marks of the two quizzes)</p> <p>Mid Examination - 20 Marks(two mid examinations - sum of the 75% marks of better scored mid exam and 25% marks of less scored mid exam)</p>	<p>Two mid-term examinations. Each mid-term examination consists of (i) one online objective examination (20 multiple choice questions) for 10 marks for a duration of 20 minutes (ii) one descriptive examination (3 full questions for 5 marks each) for 15 marks for a duration of 90 minutes and (iii) one assignment for 5 marks.</p> <p>I mid exam shall be conducted from first 50% of the syllabi and II mid exam shall be conducted from the remaining 50% of syllabi.</p> <p>Internal marks can be calculated with 80% weightage for better of the two mid exams and 20% Weightage for other mid exam.</p> <p>For the subject having <i>design and / or drawing, (such as Engineering Graphics, Engineering Drawing, Machine Drawing) and estimation</i>, the distribution shall be 15 marks for continuous assessment (day-to-day work) and 15 marks for mid exam.</p> <p>For <i>integrated courses</i>, 15 marks for lab component and 15 marks for mid exams.</p> <p>For <i>project based courses</i>, 15 marks for project and 15 marks for mid exam.</p>	<ul style="list-style-type: none"> ➤ Online quiz shall be conducted along with the mid exam ➤ Assignment component is included ➤ 80% and 20% weightage is given for best scored and least scored respectively.



Division of Internal Marks(for practical courses)	Day to day work - 15 marks, Record-5 marks and the remaining 10 marks to be awarded by conducting an internal laboratory test.	Day to day work - 5 marks, Record-5 marks and the remaining 5 marks to be awarded by conducting an internal laboratory test.	
Division of Internal Marks(for project work)	Two seminars each carries 15 marks and shall be evaluated by a committee consisting of a supervisor and a senior faculty of the department	The supervisor assesses the student for 30 marks (Report: 15 marks, Seminar: 15 marks). Project Review Committee consisting of supervisor, a senior faculty and HoD shall assess for the remaining 30 marks.	
Semester End Examination(for theory /integrated/project based courses)	Semester End Examination will be conducted for 70 marks consisting of five internal choice questions (i.e “either” “or” choice), carrying 14 marks each. There will be two questions from each unit and the student should answer either of the two questions. There will be no external assessment for lab/project component.	Semester End Examination will be conducted for 70 marks consisting of five internal choice questions (i.e “either” “or” choice), carrying 14 marks each. There will be two questions from each unit and the student should answer either of the two questions. There will be no external assessment for lab/project component.	----No change----
Semester End Examination(for lab /summer internship/job oriented skill courses)	Semester end examination for <i>lab courses / skill courses</i> shall be conducted by the teacher concerned and an external examiner. In case of <i>summer internship</i> , the final Viva–Voce examination shall be conducted by the committee consisting of an External Examiner and the Head of the Department / Senior faculty in the department.	Semester end examination for lab courses shall be conducted for 35 marks by the teacher concerned and an external examiner. Student shall appear for an oral presentation before the departmental committee consists of an external examiner; Head of the Department; supervisor of the internship and a senior faculty member of the department. In case of job oriented skill course,the course will be evaluated at the end of the semester for 50 marks (record: 15 marks and viva-voce: 35 marks) along with laboratory end examinations in the presence of external and internal examiner (course instructor or mentor).	

Semester End Examination(for project work)	Semester end Viva–Voce shall be conducted by the committee consisting of an External Examiner, Head of the Department and the supervisor of the project.	The external evaluation of Project Work is a Viva-Voce Examination conducted in the presence of internal examiner and external examiner and is evaluated for 140 marks.	
Mandatory Non-Credit Courses	A student is required to score 40 marks out of 100 marks despite putting up a minimum of 75% attendance to be declared satisfactory in each mandatory non-credit course.	<p>A minimum of 75% attendance is mandatory in these subjects.</p> <p>There shall be an external examination for 70 marks and it shall be conducted by the college internally.</p> <p>Two internal examinations shall be conducted for 30 marks and a student has to secure at least 40% of the marks for passing the course.</p> <p>There is no online internal exam for mandatory courses.</p> <p>No marks or letter grade shall be printed in the transcripts for all mandatory non-credit courses, but only Completed (Y)/Not-completed (N) will be specified.</p>	
MOOCs	<p>A Student shall register for MOOCs offered by NPTEL, CISCO, MICROSOFT and SAYLOR or any other agency with a prior approval from the departmental committee.</p> <p>The courses should be other than those offered under regular curriculum and are to be approved by the Departmental Committee consisting of the Head of the department, mentor and one/two senior faculty members before the commencement of each semester.</p> <p>The duration of the course shall be 8 - 12 weeks/50-70 hrs (maximum).</p> <p>The schedule of the course must be in line with the academic schedule of that semester.</p>	<p>There shall be a Discipline Centric Elective Course through Massive Open Online Course (MOOC) as Program Elective course.</p> <p>The student shall register for the course (Minimum of 12 weeks) offered by SWAYAM/NPTEL through online with the approval of Head of the Department.</p> <p>The Head of the Department shall appoint one mentor for each of the MOOC subjects offered.</p> <p>The student needs to register the course in the SWAYAM/NPTEL portal. During the course, the mentor monitors the student's assignment submissions given by SWAYAM/NPTEL.</p> <p>The student needs to submit all the assignments given and needs to take final exam at the</p>	



	The required credits shall be awarded on submission of certificate from the approved agency.	proctor center. The student needs to earn a certificate by passing the exam. The student will be awarded the credits given in curriculum only by submission of the certificate. In case if student does not pass subjects registered through SWAYAM/NPTEL, the same or alternative equivalent subject may be registered again through SWAYAM/NPTEL in the next semester with the recommendation of HOD and shall be pass.	
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Earning of Credit:

A student shall be considered to have completed a course successfully and earned the credits if he/she secures an acceptable letter grade in the range A+ to E as given below. Letter grade 'F' in any course implies failure of the student in that course and no credits earned. Absent is also treated as no credits earned. For project same % percentages will be followed for grading.

Marks Range Theory (Max – 100)	Marks Range Lab (Max – 50)	Level	Letter Grade	Grade Points
≥ 90	≥ 45	Outstanding	A+	10
≥ 80 & ≤ 89	≥ 40 & ≤ 44	Excellent	A	9
≥ 70 & ≤ 79	≥ 35 & ≤ 39	Very Good	B	8
≥ 60 & ≤ 69	≥ 30 & ≤ 34	Good	C	7
≥ 50 & ≤ 59	≥ 25 & ≤ 29	Fair	D	6
≥ 40 & ≤ 49	≥ 20 & ≤ 24	Satisfactory	E	5
< 40	< 20	Fail	F	0
		Absent	AB	

Award of Class:

After a student has satisfied the requirements prescribed for the completion of the program and is eligible for the award of B. Tech. Degree, he shall be placed in one of the following four classes:

Class Awarded	CGPA to be Secured	Remarks
First Class With Distinction	≥ 7.75 (Without any supplementary appearance)	From the CGPA secured from 160 Credits
First Class	≥ 6.75	
Second Class	≥ 5.75 & < 6.75	
Pass Class	≥ 5.00 & < 5.75	



Promotion Rules:

The following academic requirements have to be satisfied in addition to the attendance requirements for promotion to higher classes

- a) A student shall be promoted from first year to second year if he fulfills the minimum attendance requirement as per college norms.
- b) A student will be promoted from II year to III year if he fulfills the academic requirement of 40% of credits up to either II year I-Semester or II year II-Semester from all the examinations, whether or not the candidate takes the examinations and secures prescribed minimum attendance in II year II semester.
- c) A student shall be promoted from III year to IV year if he fulfills the academic requirements of 40% of the credits up to either III year I semester or III year II semester from all the examinations, whether or not the candidate takes the examinations and secures prescribed minimum attendance in III year II semester.

