RV College of Engineering®
Mysore Road, RV Vidyaniketan Post,
Bengaluru - 560059, Karnataka, India

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Program Regulations and Curriculum, 2019-2023

Bachelor of Engineering (B.E)

ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

2021 Scheme

Regulations No.: 33rd Academic Council meeting, Dated 21/07/2022, Sub No. 268

2021 Scheme

III SEMESTER													
Sl. No.	Course Code	Course Title	Credit Allocation				BoS	Category	CIE Duration (H)	Max Marks CIE		SEE Duration (H)	Max Marks SEE	
			L	T	P	Total				Theory	Lab		Theory	Lab
1	21MA31D	Mathematics for AI and ML	3	1	0	**4**	MA	Theory	1.5	**100**	****	**3**	**100**	****
2	21BT32A	Environmental Technology	2	0	0	**2**	BT	Theory	1	**50**	****	**2**	**50**	****
3	21AI33	Data Structures and Data Analysis	3	0	1	**4**	AI	Theory + Lab	1.5	**100**	**50**	**3**	**100**	**50**
4	21AI34	Foundations of Cyber Physical Systems	3	0	1	**4**	AI	Theory + Lab	1.5	**100**	**50**	**3**	**100**	**50**
5	21CS35	Operating Systems (Common to CS, IS, AI)	2	0	1	**3**	CS	Theory + Lab	1.5	**100**	**50**	**3**	**100**	**50**
6	21CS36	Discrete Mathematical Structures (Common to CS, IS, AI)	3	0	0	**3**	CS	Theory	1.5	**100**	****	**3**	**100**	****
7	21DCS37*	Bridge Course: C Programming	2(A)	0	0	**AUDIT**	CS	Theory	1.5	**50**	****	****	****	****
8	21AI39	Design Thinking Lab	0	0	2	2	AI	Lab	1	****	50	2	****	50
9	21AII310	Summer Internship- I	0	0	1	**1**	AI	Internship	1	****	**50**	**2**	****	**50**
						23								

* Summer Internship-1 will be done after the II sem for 03 Weeks

V Semester

Sl. No.	Course Code	Course Title	Credit Allocation				BoS	Category	CIE Duration (H)	Max Marks CIE		SEE Duration (H)	Max Marks SEE	
			L	T	P	Total				Theory	Lab		Theory	Lab
1	21HS51A	Intellectual Property Rights & Entrepreneurship	3	0	0	3	HSS	Theory	1.5	100	***	3	100	****
2	21AI52	Artificial Intelligence and Machine Learning (Common to AI, CS, IS)	3	0	1	4	AI	Theory + Lab	1.5	100	50	3	100	50
3	21AI53	Natural Language Processing and Transformers	3	0	1	4	AI	Theory + Lab	1.5	100	50	3	100	50
4	21AI54	Cloud Computing Technology and Architectures	3	1	0	4	AI	Theory	1.5	100	***	3	100	***
5	21AI55BX	Professional Core Elective-I **(Group-B)**	3	0	0	3	AI	Theory	1.5	100	***	3	1000	***
6	21AI56CX	Professional Core Elective-II **(Group C)**	2	0	0	2	AI	**NPTEL**	1.5	50	***	3	50	***
7	21AII57	Summer Internship- II	0	0	2	2	AI	Internship	1.0	****	50	3	***	50
		Total				**22**								

RV College of Engineering®
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Program Regulations and Curriculum, 2019-2023

Bachelor of Engineering (B.E)

AEROSPACE ENGINEERING

2016 Scheme

Regulations No: 23rd Academic Council meeting, Dated 10-July-2018, Sub No. 177

2018 Scheme

Regulations No.: 28th Academic Council meeting, Dated 10/02/2020, Sub No. 220

2021 Scheme

Regulations No.: 33rd Academic Council meeting, Dated 21/07/2022, Sub No. 268

2016 Scheme

SEVENTH SEMESTER CREDIT SCHEME								
Sl. No.	Course Code	Course Title	BOS	Credit Allocation				
				Lecture	Tutorial	Practical	SS	Total Credits
1	16AS71	Control Engineering	AS	3	0	0	0	3
2	16AS72	Aircraft Stability & control	AS	3	0	0	0	3
3	16AS73P	Minor Project**	AS	3	0	0	0	3
4	16AS74	Avionics	AS	3	0	1	0	4
5	16AS7FX	Elective F (PE)	AS	4	0	0	0	4
6	16AS7GX	Elective G(PE)	AS	4	0	0	0	4
7	16G7HXX	Elective H (GE)*	Respective BoS	3	0	0	0	3
Total No. of Credits				**23**	**0**	**1**	**0**	**24**
No. of Hrs.				**23**	**0**	**2**	**0**	**25**

EIGHTH SEMESTER CREDIT SCHEME								
Sl. No.	Course Code	Course Title	BOS	Credit Allocation				
				Lecture	Tutorial	Practical	SS	Total Credits
1	16AS81	Major Project	AS	0	0	16	0	16
2	16AS82	Technical Seminar	AS	0	0	2	0	2
3	16HS83	Innovation and Social Skills	HSS	0	0	2	0	2
Total No. of Credits				**0**	**0**	**20**	**0**	**20**
No. of Hrs.				**0**	**0**	**40**	**0**	**40**

2018 Scheme

SEVENTH SEMESTER CREDIT SCHEME							
Sl. No	Course Code	Course Title	BoS	Credit Allocation			Total Credits
				L	T	P	
1.	18HS71	Constitution of India & Professional Ethics	HSS	3	0	0	**3**
2.	18AS72	Aircraft Performance and Stability	AS	3	0	0	**3**
3.	18AS73	Vibration Engineering (Theory & Practice)	AS	3	0	1	**4**
4.	18AS74	Internship*	AS	0	0	2	**2**
5.	18AS75	Aircraft Systems and Instrumentation (Theory & Practice)	AS	3	0	1	**4**
6.	18AS7FX	Elective F (PE)	AS	3	0	0	**3**
7.	18AS7GX	Elective G (PE)	AS	3	0	0	**3**
8.	18G7HXX	Elective H (GE)**	Res. BoS	3	0	0	**3**
Total Number of Credits				**21**	**0**	**4**	**25**
Total number of Hours/Week				**21**	**0**	**5+5**	

EIGHTH SEMESTER CREDIT SCHEME							
Sl. No.	Course Code	Course Title	BoS	Credit Allocation			Total Credits
				L	T	P	
1	18ASP81	Major Project	AS	0	0	16	16
Total Number of Credits							**16**
Total number of Hours/Week				**0**	**0**	**32**	

2021 Scheme

III SEMESTER													
Sl. No.	Course Code	Course Title	Credit Allocation				BoS	Category	CIE Duration (H)	Max Marks CIE		SEE Duration (H)	Max Marks SEE	
			L	T	P	Total				Theory	Lab		Theory	Lab
1	21MA31B	Linear algebra, Integral transforms and Fourier series	3	1	0	4	MA	Theory	1.5	100	****	3	100	****
2	21ME32	Engineering Materials	2	0	0	2	ME	Theory	1	50	****	2	50	****
3	21AS33	Introduction to Aerospace Engineering	2	0	0	2	AS	Theory	1	50	****	2	50	****
4	21AS34	Thermodynamics	3	0	1	4	AS	Theory+Lab	1.5	100	50	3	100	50
5	21AS35	Mechanics of Fluids	3	0	1	4	AS	Theory+Lab	1.5	100	50	3	100	50
6	21AS36	Structural Mechanics	3	0	0	3	AS	Theory	1.5	100	****	3	100	****
7	21DMA37***	Bridge Course: Mathematics	2(A)	0	0	AUDIT	MA	Theory	1.5	50	****	2	50	****
8	21AS39	Design Thinking Lab	0	0	2	2	AS	Lab	1	****	50	2	****	50
9	21ASI310	Summer Internship- I	0	0	1	1	AS	Internship	1	****	50	1	****	50
						22								

Summer Internship-1 will be done after the II sem for 03 Weeks (will have CIE & SEE)

V SEMESTER														
Sl. No.	Course Code	Course Title	Credit Allocation				BoS	Category	CIE Duration (H)	Max Marks CIE		SEE Duration (H)	Max Marks SEE	
			L	T	P	Total				Theory	Lab		Theory	Lab
1	21HS51B	Principles of Management & Economics	3	0	0	3	HSS	Theory	1.5	100	****	3	100	****
2	21AS52	Aerodynamics and Flight Performance	3	0	1	4	AS	Theory+Lab	1.5	100	50	3	100	50
3	21AS53	Finite Element Methods	3	0	1	4	AS	Theory+Lab	1.5	100	50	3	100	50
4	21AS54	Aircraft Systems & Instrumentation	3	0	1	4	AS	Theory+Lab	1.5	100	50	3	100	50
5	21AS55BX	Professional Core Elective-I (Group-B)	3	0	0	3	AS	Theory	1.5	100	****	3	100	****
6	21AS56CX	Professional Core Elective-II (Group C)	2	0	0	2	AS	NPTEL	1.5	50	****	3	50	****
7	21ASI57	Summer Internship - II	0	0	2	2	AS	Internship	1	****	50	1	****	50
						22								

Program Regulations and Curriculum, 2019-2023

Bachelor of Engineering (B.E)

BIOTECHNOLOGY DEPARTMENT

2016 Scheme

Regulations No: 23rd Academic Council meeting, Dated 10-July-2018, Sub No. 177

2018 Scheme

Regulations No.: 28th Academic Council meeting, Dated 10/02/2020, Sub No. 220

2021 Scheme

Regulations No.: 33rd Academic Council meeting, Dated 21/07/2022, Sub No. 268

M.Tech Program

2018 Scheme

Regulations No: 24th Academic Council Meeting, Dated 9/10/2018, Sub No. 188 &189

2022 Scheme

Regulations No: 35th Academic Council Meeting, Dated 3/1/2023, Sub No. 284

2016 Scheme

EIGHTH SEMESTER CREDIT SCHEME								
Sl. No	Course Code	Course Title	BOS	Credit Allocation				Total Credits
				L	T	P	S	
1.	16BT81	Major Project	BT	0	0	16	0	16
2.	16BT82	Technical Seminar	BT	0	0	2	0	2
3.	16HS83	Innovation and Social Skills	HSS	0	0	2	0	2
Total Number of Credits				**0**	**0**	**20**	**0**	**20**
Total number of Hours/Week				**0**	**0**	**40**	**0**	**40**

2018 Scheme

SIXTH SEMESTER CREDIT SCHEME							
Sl. No.	Course Code	Course Title	BOS	Credit Allocation			Total Credits
				L	T	P	
1	18HEM61	Introduction to Management and Economics***	HSS	3	0	0	3
2	18BT62	Microbial Biotechnology (Theory & Practice)	BT	3	0	1	4
3	18BT63	Plant and Animal Biotechnology (Theory & Practice)	BT	3	1	1	5
4	18BT64	Minor Project**	BT	0	0	2	2
5	18BT6CX	Elective C (PE)	BT	3	0	0	3
6	18BT6DX	Elective D (PE)	BT	3	0	0	3
7	18G6EXX	Elective E (OE)*	Respective BOS	3	0	0	3
8	18HSE68	Professional Practice-II (Employability Skills and Professional Development of Engineers)	HSS	0	0	1	1
Total Number of Credits				**18**	**1**	**5**	**24**
Total number of Hours/Week				**18**	**2**	**8+2**	**30**

SEVENTH SEMESTER CREDIT SCHEME							
Sl. No.	**Course Code**	**Course Title**	**BoS**	**Credit Allocation**			**Total Credits**
				L	T	P	
1	18HS71	Constitution of India and Professional Ethics	HSS	3	0	0	3
2	18BT72	Downstream Process and Product Recovery (Theory and Practice)	BT	4	0	1	5
3	18BT73	Genomics, Proteomics and Nanotechnology	BT	4	1	0	5
4	18BT74	Internship / Course	BT	0	0	2	2
5	18BT7FX	Elective F (PE)	BT	3	0	0	3
6	18BT7GX	Elective G (PE)	BT	3	0	0	3
7	18G7HXX	Elective H (OE)*	Res. BOS	3	0	0	3
Total Number of Credits				**20**	**1**	**3**	**24**
Total number of Hours/Week				**20**	**2**	**7.5**	

EIGHT SEMESTER CREDIT SCHEME							
Sl. No.	**Course Code**	**Course Title**	**BoS**	**Credit Allocation**			**Total Credits**
				L	T	P	
1.	18BTP81	Major Project	BT	0	0	16	16
Total Number of Credits				**0**	**0**	**16**	**16**
Total number of Hours/Week						**32**	

2021 Scheme

III SEMESTER													
Sl. No.	Course Code	Course Title	Credit Allocation				BoS	Category	CIE Duration (H)	Max Marks CIE		SEE Duration (H)	Max Marks SEE	
			L	T	P	Total				Theory	Lab		Theory	Lab
1	21MA31C	Integral Transforms and Advanced Numerical Methods *	3	1	0	4	MA	Theory	1.5	100	****	3	100	****
2	21BT32B	Bioinspired Engineering **	2	0	0	2	BT	Theory	1	50	****	2	50	****
3	21BT33	Cell and Molecular Biology	3	0	1	4	BT	Theory+Lab	1.5	100	50	3	100	50
4	21BT34	Biochemistry	3	0	1	4	BT	Theory+Lab	1.5	100	50	3	100	50
5	21BT35	Bioprocess Calculations	3	1	0	4	BT	Theory	1.5	100	****	3	100	****
6	21BT36	Biochemical Thermodynamics	2	0	0	2	BT	Theory	1	50	****	2	50	****
7	21DCS37***	Bridge Course: Mathematics ***	2(A)	0	0	AUDIT	MA	Theory	1.5	50	****	****	****	****
8	21BT39	Design thinking Lab	0	0	2	2	BT	Lab	1	****	50	2	****	50
9	21BT310	Summer Internship I	0	0	1	1	BT	Internship	1	****	50	2	****	50
						23								

* Summer Internship-1 will be done after the II sem for 03 Weeks

V SEMESTER													
Sl. No.	Course Code	Course Title	Credit Allocation				BoS	Category	CIE Duration (H)	Max Marks CIE		SEE Duration (H)	Max Marks SEE	
			L	T	P	Total				Theory	Lab		Theory	Lab
1	21HS51B	Principles of Management & Economics	3	0	0	3	HSS	Theory	1.5	100	****	3	100	****
2	21BT52	Bioinformatics	3	0	1	4	BT	Theory+Lab	1.5	100	50	3	100	50
3	21BT53	Genetic Engineering	3	0	1	4	BT	Theory+Lab	1.5	100	50	3	100	50
4	21BT54	Microbial Biotechnology	3	0	1	4	BT	Theory+Lab	1.5	100	50	3	100	50
5	21BT55BX	Professional Core Elective-I (Group B)	3	0	0	3	BT	Theory	1.5	100	****	3	100	****
6	21BT56CX	Professional Core Elective-II (Group C)	2	0	0	2	BT	NPTEL	1.5	50	****	2	50	****
7	21BT157	Summer Internship - II	0	0	2	2	BT	Internship	1	****	50	2	****	50
Total						22								

M.Tech in BIOTECHNOLOGY (2018 Scheme)

SECOND SEMESTER CREDIT SCHEME							
Sl. No.	**Course Code**	**Course Title**	**BoS**	**Credit Allocation**			
				L	**T**	**P**	**Total Credits**
1	18MBT21	Upstream Process Technology	BT	4	0	1	5
2	18MBT22	Pharmaceutical Technology	BT	4	0	0	4
3	18IEM23	Research Methodology	IEM	3	0	0	3
4	18MBT2CX	Group -C	BT	3	1	0	4
5	18MBT2DX	Group -D	BT	3	1	0	4
6	18XX2GXX	Global Elective	BT	3	0	0	3
7	18MBT24	Minor Project	BT	0	0	2	2
Total number of Credits				**20**	**2**	**3**	**25**
Total Number of Hours / Week				**20**	**4**	**6**	**30**

THIRD SEMESTER CREDIT SCHEME							
Sl. No.	**Course Code**	**Course Title**	**BoS**	**Credit Allocation**			
				L	**T**	**P**	**Credits**
1	18MBT31	Downstream Process Technology	BT	4	0	1	**5**
2	18MBT32	Internship	BT	0	0	5	**5**
3	18MBT33	Major project Phase I	BT	0	0	5	**5**
4	18MBT3EX	Elective -E	BT	4	0	0	**4**
Total number of Credits				**8**	**0**	**11**	**19**
Total Number of Hours/Week				**8**	**0**	**22**	**30**

FOURTH SEMESTER CREDIT SCHEME							
Sl. No.	**Course Code**	**Course Title**	**BoS**	**Credit Allocation**			
				L	**T**	**P**	**Credits**
1	18MBT41	Major Project Phase II	BT	0	0	20	**20**
2	18MBT42	Technical Seminar	BT	0	0	2	**2**
Total number of Credits				**0**	**0**	**22**	**22**
Total Number of Hours / Week				**0**	**0**	**44**	**44**

M.Tech in BIOTECHNOLOGY (2022 Scheme)

III SEMESTER M.Tech

Sl. No.	Course Code	Course Title	Credit Allocation L	T/SDA	P	Total	BoS	Category	CIE Duration (H)	Max Marks CIE	SEE Duration (H)	Max Marks SEE
1	22MBT31T	Downstream Process Technology	3	1	0	**4**	BT	Theory	1.5	100	3	100
2	22MBT3EXT	Elective E (Professional Elective)	3	1	0	**4**	BT	Theory	1.5	100	3	100
3	22MBT32N	Internship	0	0	6	**6**	BT	Internship	1.5	50	3	50
4	22MBT33P	Minor Project	0	0	6	**6**	BT	Project	1.5	50	3	50

IV SEMESTER M.Tech

Sl. No.	Course Code	Course Title	Credit Allocation L	T/SDA	P	Total	BoS	Category	CIE Duration (H)	Max Marks CIE	SEE Duration (H)	Max Marks SEE
1	22MBT41P	Major Project	0	0	18	**18**	BT	Project	1.5	100	3	100
2	22HSS42	Professional Skills Development-II	2	0	0	**2**	HSS	NPTEL	--	50	ONLINE	50
Student need to submit the certificate for the evaluation of Course code 22HSS42												

M.Tech in BIOINFORMATICS (2018 Scheme)

SECOND SEMESTER CREDIT SCHEME							
Sl. No.	Course Code	Course Title	BoS	Credit Allocation			
				L	T	P	Credits
1	18MBI21	BioPerl and BioPython	BT	4	0	1	5
2	18MBI22	Bio-molecular modelling and simulation	BT	4	0	0	4
3	18MBI23	Research Methodology	BT	3	0	0	3
4	18MBI2CX	Group C: Core Elective	BT	3	1	0	4
5	18MBI2DX	Group D: Core Elective	BT	3	1	0	4
6	18XX2GXX	Global Elective	BT	3	0	0	3
7	18MBI24	Minor Project	BT	0	0	2	2
Total number of Credits				**20**	**2**	**3**	**25**
Total Number of Hours / Week				**20**	**4**	**6**	**30**

THIRD SEMESTER CREDIT SCHEME							
Sl. No.	Course Code	Course Title	BoS	Credit Allocation			
				L	T	P	Credits
1	18MBI31	Next Generation Sequencing Technology	BT	4	0	1	**5**
2	18MBI32	Internship	BT	0	0	5	**5**
3	18MBI33	Major Project Phase I	BT	0	0	5	**5**
4	18MBI3EX	ProfessionalElective -E	BT	4	0	0	**4**
Total number of Credits				**8**	**0**	**11**	**19**
Total Number of Hours/Week				**8**	**0**	**22**	**30**

FOURTH SEMESTER CREDIT SCHEME							
Sl. No.	Course Code	Course Title	BoS	Credit Allocation			
				L	T	P	Credits
1	18MBI41	Major Project Phase II	BT	0	0	20	20
2	18MBI42	Technical Seminar	BT	0	0	2	2
Total number of Credits				**0**	**0**	**22**	**22**
Total Number of Hours / Week				**0**	**0**	**44**	**44**

Program Regulations and Curriculum, 2019-2023

Bachelor of Engineering (B.E)

CHEMICAL ENGINEERING

2016 Scheme

Regulations No: 23rd Academic Council meeting, Dated 10-July-2018, Sub No. 177

2018 Scheme

Regulations No.: 28th Academic Council meeting, Dated 10/02/2020, Sub No. 220

2021 Scheme

Regulations No.: 33rd Academic Council meeting, Dated 21/07/2022, Sub No. 268

M.Tech Program

2018 Scheme

Regulations No: 24th Academic Council Meeting, Dated 9/10/2018, Sub No. 188 &189

2022 Scheme

Regulations No: 35th Academic Council Meeting, Dated 3/1/2023, Sub No. 284

2016 Scheme

EIGTH SEMESTER CREDIT SCHEME								
Sl. No.	Course Code	Course Title	BOS	Credit Allocation				Total Credits
				Lecture	Tutorial	Practical	SS	
4.	16CH81	Major Project	CH	0	0	16	0	**16**
5.	16CH82	Technical Seminar	CH	0	0	2	0	**2**
6.	16HS83	Innovation and Social Skills	HSS	0	0	2	0	**2**
Total No. of Credits				**0**	**0**	**20**	**0**	**20**
No. Of Hrs.				**0**	**0**	**40**	**0**	**40**

2018 Scheme

SIXTH SEMESTER CREDIT SCHEME							
Sl. No.	Course Code	Course Title	BoS	Credit Allocation			Total Credits
				L	T	P	
1.	18HSI61	Intellectual Property Rights and Entrepreneurship	HSS	3	0	0	**3**
2.	18CH62	Chemical Equipment Design and Drawing (Theory & Practice)	CH	3	0	1	**4**
3.	18CH63	Mass Transfer II (Theory & Practice)	CH	4	0	1	**5**
4.	18CH64	Minor Project**	CH	0	0	2	**2**
5.	18CH6CX	Elective C : Professional Electives	CH	3	0	0	**3**
6.	18CH6DX	Elective D: Professional Electives	CH	3	0	0	**3**
7.	18G6EXX	Elective E: Global Elective	Resp .BoS	3	0	0	**3**
8.	18HSE68	Professional Practice-II	HSS	0	0	1	**1**
Total Number of Credits							**24**
Total number of Hours/Week				**18**	**2**	**10+2 .5**	

SEVENTH SEMESTER CREDIT SCHEME							
Sl. No.	Course Code	Course Title	BoS	Credit Allocation			Total Credits
				L	T	P	
1.	18HS71	Constitution of India and Professional Ethics	HSS	3	0	0	3
2.	18CH72	Transport Phenomena	CH	3	0	1	4
3.	18CH73	Process Simulation and Modeling	CH	3	1	1	5
4.	18CH74	Internship	CH	0	0	2	2
5.	18CH7FX	Elective F (PE)	CH	3	0	0	3
6.	18CH7GX	Elective G (PE)	CH	3	0	0	3
7.	18G7HXX	Elective H (GE)	Res. BOS	3	0	0	3
Total Number of Credits				**18**	**01**	**04**	**23**
Total number of Hours/Week				**18**	**02**	**10**	

EIGHT SEMESTER CREDIT SCHEME							
Sl. No.	Course Code	Course Title	BoS	Credit Allocation			Total Credits
				L	T	P	
1.	18CHP81	Major Project	CH	0	0	16	16
Total Number of Credits				**0**	**0**	**16**	**16**
Total number of Hours/Week						**32**	

2021 Scheme

III SEMESTER														
Sl. No.	Course Code	Course Title	Credit Allocation				BoS	Category	CIE Duration (H)	Max Marks CIE		SEE Duration (H)	Max Marks SEE	
			L	T	P	Total				Theory	Lab		Theory	Lab
1	21MA31C*	Integral transforms, Optimization and Numerical Techniques	3	1	0	4	MA	Theory	1.5	100	****	3	100	****
2	21ME32**	Engineering Materials	2	0	0	2	ME	Theory	1	50	****	2	50	****
3	21CH33	Momentum Transfer	3	0	1	4	CH	Theory + Lab	1.5	100	50	3	100	50
4	21CH34	Particulate Technology	3	0	1	4	CH	Theory + Lab	1.5	100	50	3	100	50
5	21CH35	Chemical Process Calculations	3	1	0	4	CH	Theory	1.5	100	****	3	100	****
6	21CH36	Industrial chemistry	2	0	0	2	CH	Theory	1	50	****	2	50	****
7	21DMA37***	Bridge course: Mathematics	2(A)	0	0	Audit	MA	Theory	1.5	100	****	****	****	****
8	21CH39	Design Thinking Lab	0	0	2	2	CH	Lab	1	****	50	2	****	50
9	21CH310	Summer Internship- I	0	0	1	1	CH	Internship	1	****	50	2	****	50
						23								

* Summer Internship-1 will be done after the II sem for 03 Weeks

V SEMESTER														
Sl. No.	Course Code	Course Title	Credit Allocation				BoS	Category	Max Marks CIE		SEE Duration (H)	Max Marks SEE	
			L	T	P	Total			Theory	Lab		Theory	Lab
1	21HS51B	Principles of Management & Economics	3	0	0	3	HSS	Theory	100	****	3	100	****
2	21CH52	Process Dynamics and Control	3	0	1	4	CH	Theory + Lab	100	50	3	100	50
3	21CH53	Design of Water Systems	3	0	1	4	CH	Theory + Lab	100	50	3	100	50
4	21CH54	Mass Transfer-I	3	1	0	4	CH	Theory	100	****	3	100	****
5	21CH55BX	Professional Core Elective-I (Group-B)	3	0	0	3	CH	Theory	100	****	3	100	****
6	21CH56CX	Professional Core Elective-II (Group C)	2	0	0	2	CH	NPTEL	50	****	2	50	****
7	21CHI57	Summer Internship- II	0	0	2	2	CH	Internship	****	50	2	****	50
						22							

M.Tech Program in CHEMICAL ENGINEERING
(2018 Scheme)

SECOND SEMESTER CREDIT SCHEME							
Sl. No.	Course Code	Course Title	BoS	Credit Allocation			
				L	T	P	Total Credits
1	18MCH 21	Plant Wide Control of Chemical Process	CH	4	0	1	**5**
2	18MCH 22	Heterogeneous Reaction Systems	CH	4	0	0	**4**
3	18IEM 23	Research Methodology	IM	3	0	0	**3**
4	18MCH 24	Minor project	CH	0	0	2	**2**
5	18MCH 2CX	Elective Group-C	CH	4	0	0	4
6	18MCH 2DX	Elective Group-D	CH	4	0	0	4
7	18 XX 2GXX	Global Elective Group-G	R.BoS	3	0	0	3
Total number of Credits				**22**	**0**	**3**	**25**
Total Number of Hours / Week				**22**	**0**	**6**	**28**

THIRD SEMESTER CREDIT SCHEME							
Sl. No.	Course Code	Course Title	BoS	Credit Allocation			
				L	T	P	Credits
1	18MCE31	Operating System Design	CS	4	1	0	**5**
2	18MCE32	Internship	CS	0	0	5	**5**
3	18MCE33	Major Project : Phase-I	CS	0	0	5	**5**
4	18MCE3EX	Professional Elective-E	CS	4	0	0	**4**
Total number of Credits				**8**	**1**	**10**	**19**
Total Number of Hours/Week				**8**	**2**	**20**	**30**

FOURTH SEMESTER CREDIT SCHEME							
Sl. No.	Course Code	Course Title	BoS	Credit Allocation			
				L	T	P	Credits
1	18MCE41	Major Project : Phase-II	CS	0	0	20	**20**
2	18MCE42	Technical Seminar	CS	0	0	2	**2**
Total number of Credits				**0**	**0**	**22**	**22**
Total Number of Hours / Week				**0**	**0**	**44**	**44**

Program Regulations and Curriculum, 2019-2023

Bachelor of Engineering (B.E)

COMPUTER SCIENCE AND ENGINEERING

2016 Scheme

Regulations No: 23rd Academic Council meeting, Dated 10-July-2018, Sub No. 177

2018 Scheme

Regulations No.: 28th Academic Council meeting, Dated 10/02/2020, Sub No. 220

2021 Scheme

Regulations No.: 33rd Academic Council meeting, Dated 21/07/2022, Sub No. 268

M.Tech Program

2018 Scheme

Regulations No: 24th Academic Council Meeting, Dated 9/10/2018, Sub No. 188 & 189

2022 Scheme

Regulations No: 35th Academic Council Meeting, Dated 3/1/2023, Sub No. 284

2016 Scheme

EIGHTH SEMESTER CREDIT SCHEME								
Sl. No.	Course Code	Course Title	BOS	Credit Allocation				Total Credits
				L	T	P	S	
1.	16CS81	Major Project	CS	0	0	16	0	16
2.	16CS82	Technical Seminar	CS	0	0	2	0	2
3.	16HS83	Innovation and Social Skills	HSS	0	0	2	0	2
Total No. of Credits				**0**	**0**	**20**	**0**	**20**
No. Of Hrs.				**0**	**0**	**50**	**0**	**--**

2018 Scheme

SIXTH SEMESTER CREDIT SCHEME							
Sl. No.	Course Code	Course Title	BoS	Credit Allocation			Total Credits
				L	T	P	
1.	18HEM61	Introduction to Management & Economics	HSS	3	0	0	**3**
2.	18CS62	Artificial Intelligence and Machine Learning (Common to CS & IS)	CS	3	1	1	**5**
3.	18CS63	Compiler Design	CS	3	0	1	**4**
4.	18CS64	Minor Project	CS	0	0	2	**2**
5.	18CS6CX	Group C: Professional Electives	CS	3	0	0	**3**
6.	18CS6DX	Group D: Professional Electives	CS	3	0	0	**3**
7.	18G6EXX	Group E: Global Elective	Resp. BoS	3	0	0	**3**
8.	18HS68	Professional Practice-II (Employability Skills and Professional Development of Engineers)	HSS	0	0	1	**1**
Total Number of Credits							**24**
Total number of Hours/Week				**18**	**2**	**10+2.5**	

SEVENTH SEMESTER CREDIT SCHEME							
Sl. No.	**Course Code**	**Course Title**	**BoS**	**Credit Allocation**			**Total Credits**
				L	**T**	**P**	
1.	18HS71	Constitution of India and Professional Ethics	HSS	3	0	0	3
2.	18CS72	Computer Graphics and Virtual Reality	CS	3	0	1	4
3.	18CS73	Parallel Architecture and Distributed Programming	CS	3	1	1	5
4.	18CS74	Internship *	CS	0	0	2	2
5.	18CS7FX	Elective F (PE)	CS	3	0	0	3
6.	18CS7GX	Elective G (PE)	CS	3	0	0	3
7.	18G7HXX	Elective H (GE) **	Res. BOS	3	0	0	3
Total Number of Credits				**18**	**1**	**4**	**23**
Total number of Hours/Week				**18**	**2**	**10**	

EIGHT SEMESTER CREDIT SCHEME							
Sl. No.	**Course Code**	**Course Title**	**BoS**	**Credit Allocation**			**Total Credits**
				L	**T**	**P**	
1.	18CSP81	Major Project	CS	0	0	16	16
Total Number of Credits				**0**	**0**	**16**	**16**
Total number of Hours/Week						**32**	

2021 Scheme

III SEMESTER

Sl. No.	Course Code	Course Title	Credit Allocation				BoS	Category	CIE Duration (H)	Max Marks CIE		SEE Duration (H)	Max Marks SEE	
			L	T	P	Total				Theory	Lab		Theory	Lab
1	21MA31A*	Linear Algebra, Integral Transforms and Number Theory (Common to CS & IS)	3	1	0	4	MA	Theory	1.5	100	****	3	100	****
2	21BT32A**	Environmental Technology	2	0	0	2	BT	Theory	1	50	****	2	50	****
3	21IS33	Data Structures and Applications (Common to CS & IS)	3	0	1	4	IS	Theory+Lab	1.5	100	50	3	100	50
4	21CS34	Foundations of Computer Systems Design	3	0	1	4	CS	Theory+Lab	1.5	100	50	3	100	50
5	21CS35	Operating Systems (Common to CS, IS & AI)	2	0	1	3	CS	Theory+Lab	1.5	100	50	3	100	50
6	21CS36	Discrete Mathematical Structures (Common to CS, IS & AI)	3	0	0	3	CS	Theory	1.5	100	****	3	100	****
7	21DCS37***	Bridge Course: C Programming	2(A)	0	0	AUDIT	CS	Theory	1	50	****	2	****	****
8	21HS38A / 21HS38V	Kannada Course: AADALITHA KANNADA (18HS38A) / VYAVAHARIKA KANNADA (18HS38V)	1	0	0	1	HSS	Theory	1	50	****	2	50	****
9	21HSAE39 A/B/C/D/E	Ability Enhancement course	0	0	1	1	HSS	Lab	1	****	50	2	****	50
10	21CSI310	Summer Internship- I	0	0	1	1	CS	Internship	1	****	50	2	****	50
						23								

* Summer Internship-1 will be done after the II sem for 03 Weeks

V SEMESTER

Sl. No.	Course Code	Course Title	Credit Allocation				BoS	Category	Max Marks CIE		SEE Duration (H)	Max Marks SEE	
			L	T	P	Total			Theory	Lab		Theory	Lab
1	21HS51A	Intellectual Property Rights & Entrepreneurship	3	0	0	3	HSS	Theory	100	****	3	100	****
2	21AI52	Artificial Intelligence and Machine Learning (Common to CS , IS & AI)	3	0	1	4	AI	Theory + Lab	100	50	3	100	50
3	21CS53	Introduction To Database Systems (Common to CS & IS)	3	0	1	4	CS	Theory + Lab	100	50	3	100	50
4	21CS54	Theory of Computation	3	1	0	4	CS	Theory	100	****	3	100	****
5	21CS55BX	Professional Core Elective-I (Group-B)	3	0	0	3	CS	Theory	100	****	3	100	****
6	21CS56CX	Professional Core Elective-II (Group C)	2	0	0	2	CS	NPTEL	50	****	2	50	****
7	21CSI57	Summer Internship- II	0	0	2	2	CS	Internship	****	50	2	****	50
						22							

M.Tech Program in COMPUTER SCIENCE AND ENGINEERING
(2018 Scheme)

SECOND SEMESTER CREDIT SCHEME							
Sl. No.	Course Code	Course Title	BoS	Credit Allocation			
				L	T	P	Total Credits
1	18 MCE 21	Big Data Analytics	CS	3	1	1	5
2	18 MCE 22	Parallel Computer Architecture	CS	3	1	0	4
3	18 IM 23	Research Methodology	IEM	3	0	0	3
4	18 MCE 24	Minor Project	CS	0	0	2	2
5	18 MCE 2CX	Elective Group-C	CS	4	0	0	4
6	18 MCE 2DX	Elective Group-D	CS	4	0	0	4
7	18 XX 2GXX	Global Elective Group-G	R.BoS	3	0	0	3
Total number of Credits				**20**	**2**	**3**	**25**
Total Number of Hours / Week				**20**	**4**	**6**	**30**

THIRD SEMESTER CREDIT SCHEME							
Sl. No.	Course Code	Course Title	BoS	Credit Allocation			
				L	T	P	Credits
1	18MCE31	Operating System Design	CS	4	1	0	5
2	18MCE32	Internship	CS	0	0	5	5
3	18MCE33	Major Project : Phase-I	CS	0	0	5	5
4	18MCE3EX	Professional Elective-E	CS	4	0	0	4
Total number of Credits				**8**	**1**	**10**	**19**
Total Number of Hours/Week				**8**	**2**	**20**	**30**

FOURTH SEMESTER CREDIT SCHEME							
Sl. No.	Course Code	Course Title	BoS	Credit Allocation			
				L	T	P	Credits
1	18MCE41	Major Project : Phase-II	CS	0	0	20	20
2	18MCE42	Technical Seminar	CS	0	0	2	2
Total number of Credits				**0**	**0**	**22**	**22**
Total Number of Hours / Week				**0**	**0**	**44**	**44**

M.Tech Program in COMPUTER SCIENCE AND ENGINEERING

(2022 Scheme)

III SEMESTER M.Tech

Sl. No.	Course Code	Course Title	Credit Allocation L	T/SDA	P	Total	BoS	Category	CIE Duration (H)	Max Marks CIE	SEE Duration (H)	Max Marks SEE
1	22MCE31T	High Performance Computing Architectures	3	1	0	**4**	CS	Theory	1.5	100	3	100
2	22XXX3EXT	Elective E (Professional Elective)	3	1	0	**4**	CS	Theory	1.5	100	3	100
3	22MCE32N	Internship	0	0	6	**6**	CS	Internship	1.5	50	3	50
4	22MCE33P	Minor Project	0	0	6	**6**	CS	Project	1.5	50	3	50

IV SEMESTER M.Tech

Sl. No.	Course Code	Course Title	Credit Allocation L	T/SDA	P	Total	BoS	Category	CIE Duration (H)	Max Marks CIE	SEE Duration (H)	Max Marks SEE
1	22MCE41P	Major Project	0	0	18	**18**	CS	Project	1.5	100	3	100
2	22HSS42	Professional Skills Development-II	2	0	0	**2**	HSS	NPTEL	--	50	ONLINE	50
Student need to submit the certificate for the evaluation of Course code 22HSS42												

M.Tech Program in COMPUTER NETWORK ENGINEERING
(2018 Scheme)

SECOND SEMESTER CREDIT SCHEME							
Sl. No.	Course Code	Course Title	BoS	Credit Allocation			
				L	T	P	Credits
1	18 MCN 21	Wireless Communication Technologies	CS	3	1	1	5
2	18 MCN 22	Advances in Network Management	CS	3	1	0	4
3	18 IM 23	Research Methodology	IEM	3	0	0	3
4	18 MCN 24	Minor Project	CS	0	0	2	2
5	18 MCN 2CX	Elective Group-C	CS	4	0	0	4
6	18 MCN 2DX	Elective Group-D	CS	4	0	0	4
7	18 XX 2GXX	Global Elective Group-G	CS	3	0	0	3
Total number of Credits				**20**	**2**	**3**	**25**
Total Number of Hours / Week				**20**	**4**	**6**	**30**

THIRD SEMESTER CREDIT SCHEME							
Sl. No.	Course Code	Course Title	BoS	Credit Allocation			
				L	T	P	Credits
1	18MCN31	High Speed Networks	CS	4	1	0	**5**
2	18MCN32	Internship	CS	0	0	5	**5**
3	18MCN33	Major Project : Phase-I	CS	0	0	5	**5**
4	18MCN3EX	Professional Elective-E	CS	4	0	0	**4**
Total number of Credits				**8**	**1**	**10**	**19**
Total Number of Hours/Week				**8**	**2**	**20**	**30**

FOURTH SEMESTER CREDIT SCHEME							
Sl. No.	Course Code	Course Title	BoS	Credit Allocation			
				L	T	P	Credits
1	18 MCN41	Major Project : Phase-II	CS	0	0	20	**20**
2	18 MCN42	Technical Seminar	CS	0	0	2	**2**
Total number of Credits				**0**	**0**	**22**	**22**
Total Number of Hours / Week				**0**	**0**	**44**	**44**

M.Tech Program in COMPUTER NETWORK ENGINEERING
(2022 Scheme)

III SEMESTER M.Tech

Sl. No.	Course Code	Course Title	Credit Allocation L	T/SDA	P	Total	BoS	Category	CIE Duration (H)	Max Marks CIE	SEE Duration (H)	Max Marks SEE
1	22MCN31T	Network Routing and Protocols	3	1	0	**4**	CS	Theory	1.5	100	3	100
2	22XXX3EXT	Elective E (Professional Elective)	3	1	0	**4**	CS	Theory	1.5	100	3	100
3	22MCN32N	Internship	0	0	6	**6**	CS	Internship	1.5	50	3	50
4	22MCN33P	Minor Project	0	0	6	**6**	CS	Project	1.5	50	3	50

IV SEMESTER M.Tech

Sl. No.	Course Code	Course Title	Credit Allocation L	T/SDA	P	Total	BoS	Category	CIE Duration (H)	Max Marks CIE	SEE Duration (H)	Max Marks SEE
1	22MCN41P	Major Project	0	0	18	**18**	CS	Project	1.5	100	3	100
2	22HSS42	Professional Skills Development-II	2	0	0	**2**	HSS	NPTEL	--	50	ONLINE	50

Student need to submit the certificate for the evaluation of Course code 22HSS42

Program Regulations and Curriculum, 2019-2023

Bachelor of Engineering (B.E)

CIVIL ENGINEERING

2016 Scheme

Regulations No: 23rd Academic Council meeting, Dated 10-July-2018, Sub No. 177

2018 Scheme

Regulations No.: 28th Academic Council meeting, Dated 10/02/2020, Sub No. 220

2021 Scheme

Regulations No.: 33rd Academic Council meeting, Dated 21/07/2022, Sub No. 268

M.Tech Program

2018 Scheme

Regulations No: 24th Academic Council Meeting, Dated 9/10/2018, Sub No. 188 &189

2022 Scheme

Regulations No: 35th Academic Council Meeting, Dated 3/1/2023, Sub No. 284

2016 Scheme

EIGTH SEMESTER CREDIT SCHEME								
Sl. No.	Course Code	Course Title	BOS	Credit Allocation				Total Credits
				Lecture	Tutorial	Practical	SS	
1.	16CV81	Major Project	CV	0	0	16	0	16
2.	16CV82	Technical Seminar	CV	0	0	2	0	2
3.	16HS83	Innovation and Social Skills	HSS	0	0	2	0	2
Total No. of Credits				**0**	**0**	**20**	**0**	**20**
No. of Hrs.				**0**	**0**	**40**	**0**	**40**

2018 Scheme

SEVENTH SEMESTER CREDIT SCHEME							
Sl. No.	Course Code	Course Title	BoS	Credit Allocation			Total Credits
				L	T	P	
31.	18HS71	Constitution of India and Professional Ethics	HSS	3	0	0	3
32.	18CV72	Geotechnical Engineering	CV	3	1	1	5
33.	18CV73	Extensive Survey project	CV	0	0	4	4
34.	18CV74	Internship*	CV	0	0	2	2
35.	18CV7FX	Elective F (PE)	CV	3	0	0	3
36.	18CV7GX	Elective G (PE)	CV	3	0	0	3
37.	18G7HXX	Elective H (OE)	Res. BOS	3	0	0	3
Total Number of Credits				**15**	**1**	**7**	**23**
Total number of Hours/Week				**15**	**2**	**11.5**	

EIGHT SEMESTER CREDIT SCHEME							
Sl. No.	Course Code	Course Title	BoS	Credit Allocation			Total Credits
				L	T	P	
1.	18CVP81	Major Project	CV	0	0	16	16
Total Number of Credits				**0**	**0**	**16**	**16**
Total number of Hours/Week						**32**	

2021 Scheme

III SEMESTER														
Sl. No.	Course Code	Course Title	Credit Allocation				BoS	Category	CIE Duration (H)	Max Marks CIE		SEE Duration (H)	Max Marks SEE	
			L	T	P	Total				Theory	Lab		Theory	Lab
1	21MA31C*	Integral Transforms, Optimization and Numerical Techniques	3	1	0	4	MA	Theory	1.5	100	****	3	100	****
2	21BT32	Environmental Technology	2	0	0	2	BT	Theory	1	50	****	2	50	****
3	21CV33	Mechanics of Materials	3	0	1	4	CV	Theory+Lab	1.5	100	50	3	100	50
4	21CV34	Surveying	2	0	2	4	CV	Theory+Lab	1	50	50	3	50	50
5	21CV35	Concrete Technology	3	0	1	4	CV	Theory+Lab	1.5	100	50	3	100	50
6	21CV36	Python Programming	2	0	0	2	CV	Theory	1.5	50	****	2	50	****
7	21DMA37	Bridge Course: Mathematics	2(A)	0	0	AUDIT	MA	Theory	1.5	50	****	****	****	****
8	21CV39	Design Thinking Lab	0	0	2	2	CV	Lab	1	****	50	2	****	50
9	21CVI310	Summer Internship- I	0	0	1	1	CV	Internship	1	****	50	2	****	50
						23								

* Summer Internship-1 will be done after the II sem for 03 Weeks

V SEMESTER														
Sl. No.	Course Code	Course Title	Credit Allocation				BoS	Category	CIE Duration (H)	Max Marks CIE		SEE Duration (H)	Max Marks SEE	
			L	T	P	Total				Theory	Lab		Theory	Lab
1	21HS51B	Principles of Management & Economics	3	0	0	3	HSS	Theory	1.5	100	--	3	100	--
2	21CV52	Design and Drawing of RCC Structures	3	0	1	4	CV	Theory + Lab	1.5	100	50	3	100	50
3	21CV53	Highway Engineering	3	0	1	4	CV	Theory + Lab	1.5	100	50	3	100	50
4	21CV54	Hydrology and Irrigation	3	1	0	4	CV	Theory	1.5	100	--	3	100	--
5	21CV55BX	Professional Core Elective-I (Group-B)	3	0	0	3	CV	Theory	1.5	100	--	3	100	--
6	21CV56CX	Professional Core Elective-II (Group C)	2	0	0	2	CV	NPTEL	1.5	50	--	2	50	--
7	21CVI57	Summer Internship- II	0	0	2	2	CV	Internship	1		50	2		50
		Total				22								
Note: Summer Internship-II will be undertaken between IV & V semester for a period of 06 Weeks (this will have both CIE & SEE)														

M.Tech Program in STRUCTURAL ENGINEERING
(2018 Scheme)

SECOND SEMESTER CREDIT SCHEME							
Sl. No.	**Course Code**	**Course Title**	**BoS**	**Credit Allocation**			
				L	**T**	**P**	**Total Credits**
1	18MST 21	Structural Dynamics	CV	4	0	1	**5**
2	18MST 22	Mechanics of Deformable Bodies	CV	4	0	0	**4**
3	18IM 23	Research Methodology	IEM	3	0	0	**3**
4	18MST 24	Minor Project	CV	0	0	2	**2**
5	18MST 2CX	Elective C	CV	4	0	0	**4**
6	18MST 2DX	Elective D	CV	4	0	0	**4**
7	18XX 2G XX	Elective G (Global Elective)	Respective boards	3	0	0	**3**
Total number of Credits				**22**	**0**	**3**	**25**
Total Number of Hours / Week				**22**	**0**	**6**	

THIRD SEMESTER CREDIT SCHEME							
Sl. No.	**Course Code**	**Course Title**	**BoS**	**Credit Allocation**			
				L	**T**	**P**	**Credits**
1	18MST31	Special Construction Materials	CV	4	0	1	**5**
2	18MST32	Internship	CV	0	0	5	**5**
3	18MST33	Major Project: Phase I	CV	0	0	5	**5**
4	18MST3EX	Professional Elective-E	CV	4	0	0	**4**
Total number of Credits				**8**	**0**	**11**	**19**
Total Number of Hours/Week				**8**	**0**	**22**	

FOURTH SEMESTER CREDIT SCHEME							
Sl. No.	**Course Code**	**Course Title**	**BoS**	**Credit Allocation**			
				L	**T**	**P**	**Credits**
1	18 MST41	Major Project : Phase-II	CV	0	0	20	**20**
2	18 MST42	Technical Seminar	CV	0	0	2	**2**
Total number of Credits				**0**	**0**	**22**	**22**
Total Number of Hours / Week				**0**	**0**	**44**	

M.Tech Program in STRUCTURAL ENGINEERING
(2022 Scheme)

III SEMESTER M.Tech

Sl. No.	Course Code	Course Title	Credit Allocation L	T/SDA	P	Total	BoS	Category	CIE Duration (H)	Max Marks CIE	SEE Duration (H)	Max Marks SEE
1	22MST31T	Advanced Construction Materials	3	1	0	**4**	CV	Theory	1.5	100	3	100
2	22MST3EXT	Elective E (Professional Elective)	3	1	0	**4**	CV	Theory	1.5	100	3	100
3	22MST32N	Internship	0	0	6	**6**	CV	Internship	1.5	50	3	50
4	22MST33P	Minor Project	0	0	6	**6**	CV	Project	1.5	50	3	50

IV SEMESTER M.Tech

Sl. No.	Course Code	Course Title	Credit Allocation L	T/SDA	P	Total	BoS	Category	CIE Duration (H)	Max Marks CIE	SEE Duration (H)	Max Marks SEE
1	22MST41P	Major Project	0	0	18	**18**	CV	Project	1.5	100	3	100
2	22HSS42	Professional Skills Development-II	2	0	0	**2**	HSS	NPTEL	--	50	ONLINE	50
Student need to submit the certificate for the evaluation of Course code 22HSS42												

M.Tech in HIGHWAY TECHNOLOGY
(2018) Scheme

SECOND SEMESTER CREDIT SCHEME							
Sl. No.	Course Code	Course Title	BoS	Credit Allocation			
				L	T	P	Total Credits
1	18MHT 21	Pavement Analysis and Design	CV	4	0	1	5
2	18MHT 22	Highway Construction and Maintenance	CV	4	0	0	4
3	18IM 23	Research Methodology	IEM	3	0	0	3
4	18MHT 24	Minor project	CV	0	0	2	2
5	18MHT 2CX	Elective -C	CV	4	0	0	4
6	18MHT/MST 2DX	Elective -D	CV	4	0	0	4
7	18XX2G XX	Elective -G (Global Elective)	Respective boards	3	0	0	3
Total number of Credits				**22**	**0**	**3**	**25**
Total Number of Hours / Week				**22**		**6**	

THIRD SEMESTER CREDIT SCHEME							
Sl. No.	Course Code	Course Title	BoS	Credit Allocation			
				L	T	P	Credits
1	18MHT31	Pavement Deterioration and Evaluation	CV	4	0	1	5
2	18MHT32	Internship	CV	0	0	5	5
3	18MHT33	Major Project : Phase I	CV	0	0	5	5
4	18MHT3EX	Professional Elective-E	CV	4	0	0	4
Total number of Credits				**8**	**0**	**11**	**19**
Total Number of Hours/Week				**8**	**0**	**22**	

FOURTH SEMESTER CREDIT SCHEME							
Sl. No.	Course Code	Course Title	BoS	Credit Allocation			
				L	T	P	Credits
1	18 MHT41	Major Project: Phase II	CV	0	0	20	20
2	18 MHT42	Technical Seminar	CV	0	0	2	2
Total number of Credits				**0**	**0**	**22**	**22**
Total Number of Hours / Week				**0**	**0**	**44**	

M.Tech in HIGHWAY TECHNOLOGY
(2022) Scheme

III SEMESTER M.Tech

Sl. No.	Course Code	Course Title	Credit Allocation L	T/SDA	P	Total	BoS	Category	CIE Duration (H)	Max Marks CIE	SEE Duration (H)	Max Marks SEE
1	22MHT31T	Highway Construction and Maintenance	3	1	0	**4**	CV	Theory	1.5	100	3	100
2	22MHT3EXT	Elective E (Professional Elective)	3	1	0	**4**	CV	Theory	1.5	100	3	100
3	22MHT32N	Internship	0	0	6	**6**	CV	Internship	1.5	50	3	50
4	22MHT33P	Minor Project	0	0	6	**6**	CV	Project	1.5	50	3	50

IV SEMESTER M.Tech

Sl. No.	Course Code	Course Title	Credit Allocation L	T/SDA	P	Total	BoS	Category	CIE Duration (H)	Max Marks CIE	SEE Duration (H)	Max Marks SEE
1	22MHT41P	Major Project	0	0	18	**18**	CV	Project	1.5	100	3	100
2	22HSS42	Professional Skills Development-II	2	0	0	**2**	HSS	NPTEL	--	50	ONLINE	50
Student need to submit the certificate for the evaluation of Course code 22HSS42												

Program Regulations and Curriculum, 2019-2023

Bachelor of Engineering (B.E)

ELECTRONICS AND COMMUNICATION ENGINEERING

2016 Scheme

Regulations No: 23rd Academic Council meeting, Dated 10-July-2018, Sub No. 177

2018 Scheme

Regulations No.: 28th Academic Council meeting, Dated 10/02/2020, Sub No. 220

2021 Scheme

Regulations No.: 33rd Academic Council meeting, Dated 21/07/2022, Sub No. 268

M.Tech Program

2018 Scheme

Regulations No: 24th Academic Council Meeting, Dated 9/10/2018, Sub No. 188 &189

2022 Scheme

Regulations No: 35th Academic Council Meeting, Dated 3/1/2023, Sub No. 284

2016 Scheme

SEVENTH SEMESTER CREDIT SCHEME								
Sl. No	Course Code	Course Title	BOS	Credit Allocation				Total Credits
				Lecture	Tutorial	Practical	SS	
1	16EC71	Microwave & Radiating Systems	ECE	4	0	1	0	5
2	16EC72	Broadband Wireless –LTE 4G	ECE	4	0	0	0	4
3	16EC73P	Minor Project**	ECE	0	0	3	0	3
4	16EC7FX	Elective F (PE)	ECE	4	0	0	0	4
5	16EC7GX	Elective G(PE)	ECE	4	0	0	0	4
6	16G7HXX	Elective H (GE)*	Respective BOS	3	0	0	0	3
Total No. of Credits				**19**	**0**	**4**	**0**	**23**
No. Of Hrs/Week				**19**	**0**	**4**	**0**	

EIGTH SEMESTER CREDIT SCHEME								
Sl. No.	Course Code	Course Title	BOS	Credit Allocation				Total Credits
				Lecture	Tutorial	Practical	SS	
1.	16EC81	Major Project	ECE	0	0	16	0	16
2.	16EC82	Technical Seminar	ECE	0	0	2	0	2
3.	16HS83	Innovation and Social Skills	HSS	0	0	2	0	2
Total No. of Credits				**0**	**0**	**20**	**0**	**20**
No. Of Hrs.				**0**	**0**	**40**	**0**	

2018 Scheme

SIXTH SEMESTER CREDIT SCHEME							
Sl. No.	Course Code	Course Title	BoS	Credit Allocation			Total Credits
				L	T	P	
1.	18HEM61	Introduction to Management and Economics	HSS	3	0	0	3
2.	18EC62	Computer Networks and Protocols (Theory & Practice)	EC	3	0	1	4
3.	18EC63	Communication Systems – 2 (Theory & Practice)	EC	3	1	1	5
4.	18EC64	Minor Project**	EC	0	0	2	2
5.	18EC6CX	Elective C: Professional Electives	EC	3	0	0	3
6.	18EC6DX	Elective D: Professional Electives	EC	3	0	0	3
7.	18G6EXX	Elective E: Global Elective Wearable Electronics	EC	3	0	0	3
8.	18HSE68	Professional Practice-II	HSS	0	0	1	1
Total Number of Credits				**18**	**1**	**5**	**24**
Total number of Hours/Week				**18**	**1**	**7+1**	

SEVENTH SEMESTER CREDIT SCHEME							
Sl. No	Course Code	Course Title	BOS	Credit Allocation			Total Credits
				L	T	P	
1.	18HS71	Constitution of India and Professional Ethics	HSS	3	0	0	3
2.	18EC72	Microwave and Radiating Systems	EC	4	0	1	5
3.	18EC73	Broadband Wireless -LTE 4G	EC	3	1	0	4
4.	18EC74	Internship	EC	0	0	2	2
5.	18EC7FX	Elective F (PE)	EC	3	0	0	3
6.	18EC7GX	Elective G (PE)	EC	3	0	0	3
7.	18G7HXX	Elective H (GE)*	Respective BOS	3	0	0	3
Total Number of Credits				**19**	**1**	**3**	**23**
Total Number of Hours/Week				**19**	**2**	**7.5**	

EIGTHSEMESTER CREDIT SCHEME							
Sl. No	Course Code	Course Title	BOS	Credit Allocation			Total Credits
				L	T	P	
1.	18ECP81	Major Project	EC	0	0	16	16
Total Number of Credits				0	0	16	16
Total Number of Hours/Week						**32**	

2021 Scheme

III SEMESTER

Sl. No.	Course Code	Course Title	Credit Allocation				BoS	Category	CIE Duration (H)	Max Marks CIE		SEE Duration (H)	Max Marks SEE	
			L	T	P	Total				Theory	Lab		Theory	Lab
1	21MA31B	Linear algebra, Integral transforms and Fourier series	3	1	0	4	MA	Theory	1.5	100	****	3	100	****
2	21BT32A	Environmental Technology	2	0	0	2	BT	Theory	1	50	****	2	50	****
3	21EC33	Analog Microelectronic Circuits	3	0	1	4	EC	Theory+Lab	1.5	100	50	3	100	50
4	21EC34	Analysis and Design of Digital Circuits (Common with EC/EE/EI/ET)	3	0	1	4	EC	Theory+Lab	1.5	100	50	3	100	50
5	21EC35	Network Analysis and Control Systems	3	0	0	3	EC	Theory	1.5	100	****	3	100	****
6	21EC36	Digital System Design Using Verilog HDL	3	0	0	3	EC	Theory	1.5	100	****	3	100	****
7	21DMA37	Bridge Course: Mathematics	2(A)	0	0	AUDIT	MA	Theory	1	50	****	2	****	****
8	21HS38A / 21HS38V	Kannada Course: AADALITHA KANNADA (18HS38A) / VYAVAHARIKA KANNADA (18HS38V)	1	0	0	1	HSS	Theory	1	50	****	2	50	****
9	21HS39	Ability Enhancement course	0	0	1	1	HSS	Theory	1	****	50	2	****	50
10	21ECI310	Summer Internship-1	0	0	1	1	EC	Lab	1	****	50	2	****	50

2021 SCHEME - CREDITS AND COMPONENTS

V SEMESTER

Sl. No.	Course Code	Course Title	Credit Allocation				BoS	Category	CIE Marks		SEE Duration	SEE Marks	
			L	T	P	Total			Theory	Lab		Theory	Lab
1	21HS51A	Intellectual Property Rights & Entrepreneurship	3	0	0	3	HSS	Theory	100	***	3	100	***
2	21EC52	Principles of Communication and Signal Processing	3	0	1	4	EC	Theory + Lab	100	50	3 + 3	100	50
3	21EC53	Digital VLSI Design (Common to EC and EI)	3	0	1	4	EC	Theory + Lab	100	50	3 + 3	100	50
4	21EC54	Embedded System Design (Common to EC and EI)	3	1	0	4	EC	Theory	100	***	3	100	***
5	21EC55BX	Professional Core Elective-I (Group-B)	3	0	0	3	EC	Theory	100	***	3	100	***
6	21EC56CX	Professional Core Elective-II (Group C)	2	0	0	2	EC	NPTEL	50	***	***	50	***
7	21ECI57	Summer Internship- II	0	0	2	2	EC	Internship	***	50	2	***	50
		Total				22							

M.Tech Program in VLSI DESIGN & EMBEDDED SYSTEMS
(2018) Scheme

SECOND SEMESTER CREDIT SCHEME							
Sl. No.	Course Code	Course Title	BoS	Credit Allocation			
				L	T	P	Credits
1	18MVE21	Analog IC Design	EC	3	1	1	5
2	18MVE22	System Verilog for Design & Verification	EC	3	1	0	4
3	18IM23	Research Methodology	IM	3	0	0	3
4	18MVE24	Minor Project	EC	0	0	2	2
5	18MVE2CX	Elective – C	EC	4	0	0	4
6	18MVE2DX	Elective – D	EC	4	0	0	4
7	18XX2GX	Global Elective-G	Respective boards	3	0	0	3
Total number of Credits				**20**	**2**	**3**	**25**
Total Number of Hours / Week				**20**	**4**	**6**	**30**

THIRD SEMESTER CREDIT SCHEME							
Sl. No.	Course Code	Course Title	BoS	Credit Allocation			
				L	T	P	Credits
1.	18MVE31	Synthesis & Optimization of Digital Circuits	EC	4	1	0	5
2.	18MVE32	Internship	EC	0	0	5	5
3.	18MVE33	Major Project : Phase I	EC	0	0	5	5
4.	18MVE3EX	Professional Elective –E	EC	4	0	0	4
Total number of Credits				**8**	**1**	**10**	**19**
Total Number of Hours / Week				**8**	**2**	**20**	**30**

FOURTH SEMESTER CREDIT SCHEME							
Sl. No.	Course Code	Course Title	BoS	Credit Allocation			
				L	T	P	Credits
1.	18MVE41	Major Project : Phase II	EC	0	0	20	20
2.	18MVE42	Technical Seminar	EC	0	0	2	2
Total number of Credits				**0**	**0**	**22**	**22**
Total Number of Hours / Week				**0**	**0**	**44**	**44**

M.Tech Program in VLSI DESIGN & EMBEDDED SYSTEMS
(2022) Scheme

III SEMESTER M.Tech

Sl. No.	Course Code	Course Title	Credit Allocation				BoS	Category	CIE Duration (H)	Max Marks CIE	SEE Duration (H)	Max Marks SEE
			L	T/ SDA	P	Total						
1	22MVE31T	Algorithms for VLSI Design Automation	3	1	0	**4**	EC	Theory	1.5	100	3	100
2	22MVE3EXT	Elective E (Professional Elective)	3	1	0	**4**	EC	Theory	1.5	100	3	100
3	22MVE32N	Internship	0	0	6	**6**	EC	Internship	1.5	50	3	50
4	22MVE33P	Minor Project	0	0	6	**6**	EC	Project	1.5	50	3	50

IV SEMESTER M.Tech

Sl. No.	Course Code	Course Title	Credit Allocation				BoS	Category	CIE Duration (H)	Max Marks CIE	SEE Duration (H)	Max Marks SEE
			L	T/ SDA	P	Total						
1	22MVE41P	Major Project	0	0	18	**18**	EC	Project	1.5	100	3	100
2	22HSS42	Professional Skills Development-II	2	0	0	**2**	HSS	NPTEL	--	50	ONLINE	50
Student need to submit the certificate for the evaluation of Course code 22HSS42												

M.Tech in COMMUNICATION SYSTEMS
(2018) Scheme

SECOND SEMESTER CREDIT SCHEME							
Sl. No.	Course Code	Course Title	BoS	Credit Allocation			
				L	T	P	Total Credits
1	18MCS21	Advanced Communications Systems-2	EC	3	1	1	5
2	18MCS22	Error Control and Coding	EC	3	1	0	4
3	18IM23	Research Methodology (Common to all programs)	IM	3	0	0	3
4	18MCS24	Minor Project	EC	0	0	2	2
5	18MCS2CX	Elective – C	EC	4	0	0	4
6	18MCS2DX	Elective – D	EC	4	0	0	4
7	18XX2GX	Global Elective	Respective boards	3	0	0	3
Total number of Credit				20	2	3	**25**
Total Number of Hours / Week				**20**	**4**	**6**	**30**

THIRD SEMESTER CREDIT SCHEME							
Sl. No.	Course Code	Course Title	BoS	Credit Allocation			
				L	T	P	Credit
1.	18MCS31	Smart Antenna Array Signal Processing	EC	4	1	0	5
2.	18MCS32	Internship	EC	0	0	5	5
3.	18MCS33	Major Project: Phase I	EC	0	0	5	5
4.	18MCS3EX	Professional Elective-E	EC	4	0	0	4
Total number of Credit				**8**	**1**	**10**	**19**
Total Number of Hours / Week				**8**	**2**	**20**	**30**

FOURTH SEMESTER CREDIT SCHEME							
Sl. No.	Course Code	Course Title	BoS	Credit Allocation			
				L	T	P	Credit
1	18MCS41	Major Project: Phase II	EC	0	0	20	20
2	18MCS42	Technical Seminar	EC	0	0	2	2
Total number of Credit				**0**	**0**	**22**	**22**
Total Number of Hours / Week				**0**	**0**	**44**	**44**

M.Tech in COMMUNICATION SYSTEMS
(2022) Scheme

III SEMESTER M.Tech

Sl. No.	Course Code	Course Title	Credit Allocation L	T/SDA	P	Total	BoS	Category	CIE Duration (H)	Max Marks CIE	SEE Duration (H)	Max Marks SEE
1	22MCS31T	Error Control Coding for Wireless Communication	3	1	0	**4**	EC	Theory	1.5	100	3	100
2	22MCS3EXT	Elective E (Professional Elective)	3	1	0	**4**	EC	Theory	1.5	100	3	100
3	22MCS32N	Internship	0	0	6	**6**	EC	Internship	1.5	50	3	50
4	22MCS33P	Minor Project	0	0	6	**6**	EC	Project	1.5	50	3	50

IV SEMESTER M.Tech

Sl. No.	Course Code	Course Title	Credit Allocation L	T/SDA	P	Total	BoS	Category	CIE Duration (H)	Max Marks CIE	SEE Duration (H)	Max Marks SEE
1	22MCS41P	Major Project	0	0	18	**18**	EC	Project	1.5	100	3	100
2	22HSS42	Professional Skills Development-II	2	0	0	**2**	HSS	NPTEL	--	50	ONLINE	50
Student need to submit the certificate for the evaluation of Course code 22HSS42												

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Program Regulations and Curriculum, 2019-2023

Bachelor of Engineering (B.E)

ELECTRICAL AND ELECTRONICS ENGINEERING

2016 Scheme

Regulations No: 23rd Academic Council meeting, Dated 10-July-2018, Sub No. 177

2018 Scheme

Regulations No.: 28th Academic Council meeting, Dated 10/02/2020, Sub No. 220

2021 Scheme

Regulations No.: 33rd Academic Council meeting, Dated 21/07/2022, Sub No. 268

M.Tech Program

2018 Scheme

Regulations No: 24th Academic Council Meeting, Dated 9/10/2018, Sub No. 188 &189

2022 Scheme

Regulations No: 35th Academic Council Meeting, Dated 3/1/2023, Sub No. 284

2016 Scheme

SEVENTH SEMESTER CREDIT SCHEME								
Sl. No.	Course Code	Course Title	BOS	Credit Allocation				Total Credits
				L	T	P	SS	
1	16EE71	Power Systems Analysis –II	EEE	4	0	1	0	5
2	16EE72	Switch Gear and Protection	EEE	4	0	1	0	5
3	16EE73P	Mini Project **	EEE	0	0	3	0	3
4	16EE7FX	Elective F (PE)	EEE	4	0	0	0	4
5	16EE7GX	Elective G(PE)	EEE	4	0	0	0	4
6	16GH7XX	Elective H (GE)*	Respective BOS	3	0	0	0	3
Total number of Credits				**19**	**0**	**5**	**0**	**24**
Total Number of Hours / Week				**19**	**0**	**10**	**0**	

EIGHTH SEMESTER CREDIT SCHEME								
Sl. No.	Course Code	Course Title	BOS	Credit Allocation				Total Credits
				L	T	P	SS	
1	16EE81	Major Project	EEE	0	0	16	0	16
2	16EE82	Technical Seminar	EEE	0	0	2	0	2
3	16HS83	Innovation and Social Skills	HSS	0	0	2	0	2
4	16EE84	Industrial Tour		**0**	**0**	**1**	**0**	1
Total number of Credits				**0**	**0**	**21**	**0**	**21**
Total Number of Hours / Week				**0**	**0**	**42**	**0**	

2018 Scheme

FIFTH SEMESTER CREDIT SCHEME							
Sl. No.	Course Code	Course Title	BoS	Credit Allocation			Total Credits
				L	T	P	
1.	18HSI51	Intellectual Property Rights and Entrepreneurship	HSS	3	0	0	3
2.	18EE52	Electrical Machines-II (Theory & Practice)	EE	3	1	1	5
3.	18TE53	Digital Signal Processing (common to EE, TE, EI) (Theory & Practice)	TE	3	0	1	4
4.	18EE54	Generation Transmission and Distribution	EE	3	1	0	4
5.	18EE55	Minor Project	EE	0	0	2	2
6.	18EE5AX	Elective A (PE)**	EE	3	0	0	3
7.	18G5BXX	Group B: Global Elective**	Resp. BoS	3	0	0	3
Total Number of Credits							24
Total number of Hours/Week				18	2	10	

SEVENTH SEMESTER CREDIT SCHEME							
Sl. No.	Course Code	Course Title	BoS	Credit Allocation			Total Credits
				L	T	P	
1.	18HS71	Constitution of India and Professional Ethics	HSS	3	0	0	3
2.	18EE72	Power System Analysis –II	EE	3	1	1	5
3.	18EE73	Switchgear & Protection	EE	3	0	1	4
4.	18EE74	Internship *	EE	0	0	2	2
5.	18EE7FX	Elective F (PE)	EE	3	0	0	3
6.	18EE7GX	Elective G (PE)	EE	3	0	0	3
7.	18G7HXX	Elective H (GE) **	Res. BOS	3	0	0	3
Total Number of Credits				18	1	4	23
Total number of Hours/Week				18	2	10	

EIGHTH SEMESTER CREDIT SCHEME							
Sl. No.	Course Code	Course Title	BoS	Credit Allocation			Total Credits
				L	T	P	
1.	18EEP81	Major Project	EE	0	0	16	16
Total Number of Credits				0	0	16	16
Total number of Hours/Week						32	

2021 Scheme

III SEMESTER

Sl. No.	Course Code	Course Title	Credit Allocation				BoS	Category	CIE Duration (H)	Max Marks CIE		SEE Duration (H)	Max Marks SEE	
			L	T	P	Total				Theory	Lab		Theory	Lab
1	21MA31B*	Linear algebra, Integral transforms and Fourier series	3	1	0	4	MA	Theory	1.5	100	****	3	100	****
2	21BT32A	Environmental Technology	2	0	0	2	BT	Theory	1	50	****	2	50	****
3	21EE33	Linear Integrated Circuits (common with EE / ET/ EI)	3	0	1	4	EE	Theory+Lab	1.5	100	50	3	100	50
4	21EC34	Analysis and Design of Digital Circuits (Common with EC/EE/ EI/TE)	3	0	1	4	EC	Theory+Lab	1.5	100	50	3	100	50
5	21EE35	Network Analysis	3	1	0	4	EE	Theory	1.5	100	****	3	100	****
6	21EE36	Measurement and Transducers	2	0	0	2	EE	Theory	1	50	****	2	50	****
7	21DMA37***	Bridge Course: Mathematics	2(A)	0	0	AUDIT	MA	Theory	1.5	50	****	****	****	****
8	21HS38A / 21HS38V	Kannada Course: AADALITHA KANNADA (21HS38A) / VYAVAHARIKA KANNADA (21HS38V)	1	0	0	1	HSS	Theory	1	50	****	2	50	****
	21HSAE39A/ B/C/D/E ***	Ability Enhancement course	0	0	1	1	HSS	Lab	1	****	50	2	****	50
10	21EEI310	Summer Internship- I	0	0	1	1	EE	Internship	1	****	50	2	****	50
						23								

V SEMESTER

Sl. No.	Course Code	Course Title	Credit Allocation				BoS	Category	CIE Duration (H)	Max Marks CIE		SEE Duration (H)	Max Marks SEE	
			L	T	P	Total				Theory	Lab		Theory	Lab
1	21HS51A	Intellectual Property Rights & Entrepreneurship	3	0	0	3	HSS	Theory	1.5	100	****	3	100	****
2	21EE52	Electrical Machines	3	0	1	4	EE	Theory + Lab	1.5	100	50	3	100	50
3	21EE53	Control Systems	3	0	1	4	EE	Theory + Lab	1.5	100	50	3	100	50
4	21EE54	Power Transmission & Distribution	3	1	0	4	EE	Theory	1.5	100	****	3	100	****
5	21EE55BX	Professional Core Elective-I (Group-B)	3	0	0	3	EE	Theory	1.5	100	****	3	100	****
6	21EE56CX	Professional Core Elective-II (Group C)	2	0	0	2	EE	NPTEL	1	50	****	2	50	****
7	21EEI57	Summer Internship- II	0	0	2	2	EE	Internship	1	****	50	2	****	50
						22								

M.Tech in POWER ELECTRONICS
(2018) Scheme

SECOND SEMESTER CREDIT SCHEME							
Sl. No.	Course Code	Course Title	BoS	Credit Allocation			
				L	T	P	Credits
1	18 MPE 21	Power Converters-II	EE	4	0	1	5
2	18 MPE 22	Modelling and Simulation of Power Electronic Systems	EE	4	0	0	4
3	18 IEM 23	Research Methodology	HSS	3	0	0	3
4	18MPE24	Minor Project	EE	0	0	2	2
5	18MPE2CX	Elective Group-C	EE	4	0	0	4
6	18MPE2DX	Elective Group-D	EE	4	0	0	4
7	18XXX2GX	Global Elective-G	RES BoS	3	0	0	3
Total number of Credits				**22**	**0**	**3**	**25**
Total Number of Hours / Week				**22**	**0**	**6**	**28**

THIRD SEMESTER CREDIT SCHEME							
Sl. No.	Course Code	Course Title	BoS	Credit Allocation			
				L	T	P	Credits
1	18MPE31	Programmable Logic Controller and SCADA	EE	4	0	1	5
2	18MPE32	Internship	EE	0	0	5	5
3	18MPE33	Major Project : Phase-I	EE	0	0	5	5
4	18MPE3EX	Professional Elective-E	EE	4	0	0	4
Total number of Credits				**8**	**0**	**11**	**19**
Total Number of Hours/Week				**8**	**0**	**22**	**30**

FOURTH SEMESTER CREDIT SCHEME							
Sl. No.	Course Code	Course Title	BoS	Credit Allocation			
				L	T	P	Credits
1	18MPE41	Major Project : Phase-II	EE	0	0	20	20
2	18MPE42	Technical Seminar	EE	0	0	2	2
Total number of Credits				**0**	**0**	**22**	**22**
Total Number of Hours / Week				**0**	**0**	**44**	**44**

M.Tech in POWER ELECTRONICS
(2022) Scheme

III SEMESTER M.Tech

Sl. No.	Course Code	Course Title	Credit Allocation L	T/SDA	P	Total	BoS	Category	CIE Duration (H)	Max Marks CIE	SEE Duration (H)	Max Marks SEE
1	22MPE31T	Modelling of Power Electronic Circuits	3	1	0	**4**	EE	Theory	1.5	100	3	100
2	22MPE3EXT	Elective E (Professional Elective)	3	1	0	**4**	EE	Theory	1.5	100	3	100
3	22MPE32N	Internship	0	0	6	**6**	EE	Internship	1.5	50	3	50
4	22MPE33P	Minor Project	0	0	6	**6**	EE	Project	1.5	50	3	50

IV SEMESTER M.Tech

Sl. No.	Course Code	Course Title	Credit Allocation L	T/SDA	P	Total	BoS	Category	CIE Duration (H)	Max Marks CIE	SEE Duration (H)	Max Marks SEE
1	22MPE41P	Major Project	0	0	18	**18**	EE	Project	1.5	100	3	100
2	22HSS42	Professional Skills Development-II	2	0	0	**2**	HSS	NPTEL	--	50	ONLINE	50

Student need to submit the certificate for the evaluation of Course code 22HSS42

Program Regulations and Curriculum, 2019-2023

Bachelor of Engineering (B.E)

ELECTRONICS & INSTRUMENTATION ENGINEERING

2016 Scheme

Regulations No: 23rd Academic Council meeting, Dated 10-July-2018, Sub No. 177

2018 Scheme

Regulations No.: 28th Academic Council meeting, Dated 10/02/2020, Sub No. 220

2021 Scheme

Regulations No.: 33rd Academic Council meeting, Dated 21/07/2022, Sub No. 268

M.Tech Program

2018 Scheme

Regulations No: 24th Academic Council Meeting, Dated 9/10/2018, Sub No. 188 &189

2022 Scheme

Regulations No: 35th Academic Council Meeting, Dated 3/1/2023, Sub No. 284

2016 Scheme

SEVENTH SEMESTER CREDIT SCHEME								
Sl. No	Course Code	Course Title	BOS	Credit Allocation				Total Credits
				Lecture	Tutorial	Practical	SS	
1	16EI71	Industrial Automation Technology	EI	4	0	1	0	5
2	16EI72	ARM Processor	EI	4	0	1	0	5
3	16EI73P	Minor Project**	EI	0	0	3	0	3
4	16EI7FX	Elective F	EI	4	0	0	0	4
5	16EI7GX	Elective G	EI	4	0	0	0	4
6	16G7HXX	Elective H (GE)*	Respective BOS	3	0	0	0	3
Total No. of Credits				**19**	**0**	**5**	**0**	**24**
No. Of Hrs.				**19**	**0**	**10**	**0**	**29**

EIGTH SEMESTER CREDIT SCHEME								
Sl. No.	Course Code	Course Title	BOS	Credit Allocation				Total Credits
				Lecture	Tutorial	Practical	SS	
1.	16EI81	Major Project	EI	0	0	16	0	16
2.	16EI82	Technical Seminar	EI	0	0	2	0	2
3.	16HS83	Innovation and Social Skills	HSS	0	0	2	0	2
Total No. of Credits				**0**	**0**	**20**	**0**	**20**
No. Of Hrs.				**0**	**0**	**40**	**0**	**40**

2018 Scheme

SIXTH SEMESTER CREDIT SCHEME							
Sl. No.	Course Code	Course Title	BoS	Credit Allocation			Total Credits
				L	T	P	
1.	18HSI61	IPR & Entrepreneurship	HSS	3	0	0	**3**
2.	18EI62	Automatic Process Control Technology (Theory & Practice)	EI	3	0	1	**4**
3.	18EI63	Advanced Micro-controller & Application (Theory & Practice)	EI	3	1	1	**5**
4.	18EI64	Minor Project**	EI	0	0	2	**2**
5.	18EI6CX	Elective C: Professional Electives	EI	3	0	0	**3**
6.	18EI6DX	Elective D: Professional Electives	EI	3	0	0	**3**
7.	18G6EXX	Elective E: Global Elective Virtual Instrumentation & Applications	EI	3	0	0	**3**
8.	18HSE68	Professional Practice-II	HSS	0	0	1	**1**
Total Number of Credits				**18**	**1**	**5**	**24**
Total number of Hours/Week				**18**	**2**	**10+2.5**	**24**

SEVENTH SEMESTER CREDIT SCHEME

Sl. No.	Course Code	Course Title	BoS	Credit Allocation			Total Credits
				L	T	P	
1.	18HS71	Constitution of India and Professional Ethics	HSS	3	0	0	3
2.	18EI72	Industrial Automation Technologies	EI	4	0	1	5
3.	18EI73	Advanced Image Processing	EI	3	0	1	4
4.	18EI74	Internship	EI	0	0	2	2
5.	18EI7FX	Elective F (PE)	EI	3	0	0	3
6.	18EI7GX	Elective G (PE)	EI	3	0	0	3
7.	18G7HXX	Elective H (GE)*	Res. BOS	3	0	0	3
Total Number of Credits				19	0	4	**23**
Total number of Hours/Week				**19**	**0**	**10**	

EIGHT SEMESTER CREDIT SCHEME

Sl. No.	Course Code	Course Title	BoS	Credit Allocation			Total Credits
				L	T	P	
1.	18EIP81	Major Project	EI	0	0	16	16
Total Number of Credits				**0**	**0**	**16**	**16**
Total number of Hours/Week				**0**	**0**	**32**	**32**

2021 Scheme

III SEMESTER

Sl. No.	Course Code	Course Title	Credit Allocation				BoS	Category	CIE Duration (H)	Max Marks CIE		SEE Duration (H)	Max Marks SEE	
			L	T	P	Total				Theory	Lab		Theory	Lab
1	21MA31B*	Linear Algebra, Integral Transforms and Fourier Series	3	1	0	**4**	MA	Theory	1.5	**100**	****	3	100	****
2	21BT32A	Environmental Technology	2	0	0	**2**	BT	Theory	1	**50**	****	2	**50**	****
3	21EE33	Linear Integrated Circuits (Common with EE/EI/ET)	3	0	1	**4**	EE	Theory +Lab	1.5	**100**	**50**	3	**100**	**50**
4	21EC34	Analysis and Design of Digital Circuits (Common with EC/EE/EI/ET)	3	0	1	**4**	EC	Theory + Lab	1.5	**100**	**50**	3	**100**	**50**
5	21EI35	Data Structures using C	2	0	1	**3**	EI	Theory + Lab	1.5	**100**	**50**	3	**100**	**50**
6	21EI36	Control Engineering	3	0	0	**3**	EI	Theory	1.5	**100**	****	3	**100**	****
7	21DMA37***	Bridge Course Mathematics	2(A)	0	0	**AUDIT**	MA	Theory	1.5	**50**	****	***	****	****
8	21HS38A / 21HS38V	Kannada Course: AADALITHA KANNADA (18HS38A) / VYAVAHARIKA KANNADA (18HS38V)	1	0	0	**1**	HSS	Theory	1	**50**	****	2	**50**	****
	21HSAE39A /B/C/D/E**	Ability Enhancement course	0	0	1	**1**	HSS	Lab	1	****	**50**	2	****	**50**
09	21EII310	Summer Internship- I	0	0	1	**1**	EI	Internship	1	****	**50**	2	****	**50**
						23								

V SEMESTER

Sl. No.	Course Code	Course Title	Credit Allocation				BoS	Category	Max Marks CIE		SEE Duration (H)	Max Marks SEE	
			L	T	P	Total			Theory	Lab		Theory	Lab
1	21HS51A	Intellectual Property Rights & Entrepreneurship	3	0	0	3	HSS	Theory	**100**	****	**3**	**100**	****
2	21EI52	Automatic Process Control and Virtual Instrumentation (Theory and Practice)	3	0	1	4	EI	Theory + Lab	**100**	**50**	**3**	**100**	**50**
3	21EC53	Digital VLSI Design (common to EC & EI) (Theory and Practice)	3	0	1	4	EC	Theory + Lab	**100**	**50**	**3**	**100**	**50**
4	21EC54	Embedded System Design (Common to EC & EI)	3	1	0	4	EC	Theory	**100**	****	**3**	**100**	****
5	21EI55BX	Professional Core Elective-I (Group-B)	3	0	0	3	EI	Theory	**100**	****	**3**	**100**	****
6	21EI56CX	Professional Core Elective-II (Group C)	2	0	0	2	EI	NPTEL	**50**	****	**2**	**50**	****
7	21EII57	Summer Internship- II	0	0	2	2	EI	Internship	****	**50**	**2**	****	**50**
		Total				**22**							

M.Tech Program in BIOMEDICAL SIGNAL PROCESSING & INSTRUMENTATION (2018 Scheme)

SECOND SEMESTER CREDIT SCHEME							
Sl. No.	Course Code	Course Title	BoS	Credit Allocation			
				L	T	P	Total Credits
1	18MBS21	Medical Image Processing	EI	3	1	1	5
2	18MBS22	Bio Medical Sensors & Data Acquisition	EI	3	1	0	4
3	18IM23	Research Methodology	IEM	3	0	0	3
4	18MBS24	Minor Project	EI	0	0	2	2
5	18MBS2CX	Elective Group-C	EI	4	0	0	4
6	18MBS2DX	Elective Group-D	EI	4	0	0	4
7	18MBS2GX	Global Elective Group-G	R.BoS	3	0	0	3
Total number of Credits				**20**	**2**	**3**	**25**
Total Number of Hours / Week				**20**	**4**	**6**	**30**

THIRD SEMESTER CREDIT SCHEME							
Sl. No.	Course Code	Course Title	BoS	Credit Allocation			
				L	T	P	Credits
1	18MBS31	Medical Imaging and Techniques	EI	4	1	0	5
2	18MBS32	Internship	EI	0	0	5	5
3	18MBS33	Major Project : Phase I	EI	0	0	5	5
4	18MBS3EX	Professional Elective-E	EI	4	0	0	4
Total number of Credits				**8**	**1**	**10**	**19**
Total Number of Hours/Week				**8**	**2**	**20**	**30**

FOURTH SEMESTER CREDIT SCHEME							
Sl. No.	Course Code	Course Title	BoS	Credit Allocation			
				L	T	P	Credits
1	18MBS41	Major Project : Phase II	EI	0	0	20	20
2	18MBS42	Technical Seminar	EI	0	0	2	2
Total number of Credits				**0**	**0**	**22**	**22**
Total Number of Hours / Week				**0**	**0**	**44**	**44**

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Program Regulations and Curriculum, 2019-2023

Bachelor of Engineering (B.E)

INDUSTRIAL ENGINEERING AND MANAGEMENT

2016 Scheme

Regulations No: 23rd Academic Council meeting, Dated 10-July-2018, Sub No. 177

2018 Scheme

Regulations No.: 28th Academic Council meeting, Dated 10/02/2020, Sub No. 220

2021 Scheme

Regulations No.: 33rd Academic Council meeting, Dated 21/07/2022, Sub No. 268

2016 Scheme

EIGTH SEMESTER CREDIT SCHEME								
Sl. No.	Course Code	Course Title	BoS	CREDIT ALLOCATION				Total Credits
				Lecture	Tutorial	Practical	SS	
1.	16IM81	Major Project	IM	0	0	16	0	16
2.	16IM82	Technical Seminar	IM	0	0	2	0	2
3.	16HS83	Innovation and Social Skills	HSS	0	0	2	0	2
Total number of Credits				**00**	**00**	**20**	**00**	**20**
Total Number of Hours / Week				**00**	**00**	**50**	**00**	

2018 Scheme

FIFTH SEMESTER CREDIT SCHEME							
Sl. No.	Course Code	Course Title	BoS	Credit Allocation			Total Credits
				L	T	P	
1.	18HEM51	Introduction to Management & Economics	HSS	3	0	0	**3**
2.	18IM52	Decision Sciences - II (Stochastic Models)	IM	3	0	1	**4**
3.	18IM53	Statistical Process Control	IM	3	0	1	**4**
4.	18IM54	Operations Management	IM	3	0	1	**4**
5.	18IM55	Marketing Management	IM	3	0	0	**3**
6.	18IM5AX	Elective A (PE)*	IM	3	0	0	**3**
7.	18G5BXX	Elective B (GE)**	Respective BOS	3	0	0	**3**
8.	18IM56	Internship	IM	0	0	2	**2**
		Total Number of Credits					**26**
		Total number of Hours/Week		**21**	**0**	**13**	

SIXTH SEMESTER CREDIT SCHEME

Sl. No	Course Code	Course Title	BOS	Credit Allocation			Total Credits
				L	T	P	
1.	18HSI61	Intellectual Property Rights & Entrepreneurship	HSS	3	0	0	3
2.	18IM62	Financial Accounting and Costing	IM	3	1	0	4
3.	18IM63	Supply Chain Management	IM	4	0	1	5
4.	18IM64	Minor Project*	IM	0	0	2	2
5.	18IM6CX	Elective C (PE)	IM	3	0	0	3
6.	18IM6DX	Elective D (PE)	IM	3	0	0	3
7.	18G6EXX	Elective E (GE)**	Respective BOS	3	0	0	3
8.	18HSE68	Professional Practice- II (Employability Skills & Professional Development of Engineers)	HSS	0	0	1	1
		Total Number of Credits					**24**
		Total number of Hours / Week		**19**	**2**	**10**	

EIGHT SEMESTER CREDIT SCHEME

Sl. No.	Course Code	Course Title	BoS	Credit Allocation			Total Credits
				L	T	P	
1.	18IMP81	Major Project	IM	0	0	16	16
Total Number of Credits				**0**	**0**	**16**	**16**
Total number of Hours/Week						**32**	

2021 Scheme

III SEMESTER

Sl. No.	Course Code	Course Title	Credit Allocation				BoS	Category	CIE Duration (H)	Max Marks CIE		SEE Duration (H)	Max Marks SEE	
			L	T	P	Total				Theory	Lab		Theory	Lab
1	21MA31C	Integral Transforms, Optimization And Numerical Techniques	3	1	0	**4**	MA	Theory	1.5	**100**	--	**3**	**100**	--
2	21IM32	Mechanics of Materials	3	0	1	**4**	IM	Theory+Lab	1.5	**100**	**50**	**3**	**100**	**50**
3	21IM33	Work System Design	3	0	1	**4**	IM	Theory+Lab	1.5	**100**	**50**	**3**	**100**	**50**
4	21IM34	Manufacturing Processes	3	0	1	**4**	IM	Theory+Lab	1.5	**100**	**50**	**3**	**100**	**50**
5	21DMA37	Bridge Course Mathematics	2 (A)	0	0	**Audit**	MA	Theory	1	**100**	--	--	--	--
6	21IM39	Design Thinking Lab	0	0	2	**2**	IM	Lab	1	--	50	2	--	50
7	21IMI310	Summer Internship - I	0	0	1	**1**	IM	Internship	1	--	**50**	**2**	--	**50**
						19								

* Summer Internship-1 will be done after the II sem for 03 Weeks

V SEMESTER

Sl. No.	Course Code	Course Title	Credit Allocation				BoS	Category	CIE Duration (H)	Max Marks CIE		SEE Duration (H)	Max Marks SEE	
			L	T	P	Total				Theory	Lab		Theory	Lab
1	21HS51B	Principles of Management & Economics	3	0	0	3	HS	Theory	1.5	**100**	****	**3**	**100**	****
2	21IM52	Digital Metrology	3	0	1	4	IM	Theory + Lab	1.5	100	50	3	100	50
3	21IM53	Operations Management	3	0	1	4	IM	Theory + Lab	1.5	100	50	3	100	50
4	21IM54	Operations Research	3	1	0	4	IM	Theory	1.5	100	****	3	100	****
5	21IM55BX	Professional Core Elective I- Group B	3	0	0	3	IM	Theory	1.5	**100**	****	**3**	**100**	****
6	21XX56CX	Professional Core Elective- II Group C	2	0	0	2	IM/ ME/ EE	NPTEL	1	**50**	****	**2**	**50**	****
7	21IMI57	Summer Internship - II	0	0	2	2	IM	Internship	1	****	50	2	****	50
						22								

Program Regulations and Curriculum, 2019-2023

Bachelor of Engineering (B.E)

INFORMATION SCIENCE AND ENGINEERING

2016 Scheme

Regulations No: 23rd Academic Council meeting, Dated 10-July-2018, Sub No. 177

2018 Scheme

Regulations No.: 28th Academic Council meeting, Dated 10/02/2020, Sub No. 220

2021 Scheme

Regulations No.: 33rd Academic Council meeting, Dated 21/07/2022, Sub No. 268

M.Tech Program

2018 Scheme

Regulations No: 24th Academic Council Meeting, Dated 9/10/2018, Sub No. 188 &189

2022 Scheme

Regulations No: 35th Academic Council Meeting, Dated 3/1/2023, Sub No. 284

2016 Scheme

EIGTH SEMESTER CREDIT SCHEME								
Sl. No.	Course Code	Course Title	BOS	Credit Allocation				Total Credits
				Lecture	Tutorial	Practical	SS	
1.	16IS81	Major Project	IS	0	0	16	0	16
2.	16IS82	Technical Seminar	IS	0	0	2	0	2
3.	16HS83	Innovation and Social Skills	HSS	0	0	2	0	2
Total No. of Credits				**0**	**0**	**20**	**0**	**20**
No. Of Hrs.				**0**	**0**	**40**	**0**	

2018 Scheme

SIXTH SEMESTER CREDIT SCHEME							
Sl. No.	Course Code	Course Title	BoS	Credit Allocation			Total Credits
				L	T	P	
1.	18HEM61	Introduction to Management and Economics	HSS	3	0	0	3
2.	18CS62	Artificial Intelligence and Machine Learning (Common to CS & IS)	CS	3	1	1	5
3.	18IS63	Cryptography and Network Security (Theory & Practice)	IS	3	0	1	4
4.	18IS64	Minor Project**	IS	0	0	2	2
5.	18IS6CX	Elective C: Professional Electives	IS	3	0	0	3
6.	18IS6DX	Elective D: Professional Electives	IS	3	0	0	3
7.	18G6EXX	Elective E: Global Elective	IS	3	0	0	3
8.	18HSE68	Professional Practice-II	HSS	0	0	1	1
Total Number of Credits				**19**	**00**	**05**	**24**
Total number of Hours/Week				**19**	**0**	**5+2+1**	

SEVENTH SEMESTER CREDIT SCHEME							
Sl. No.	Course Code	Course Title	BoS	Credit Allocation			Total Credits
				L	T	P	
1.	18HS71	Constitution of India and Professional Ethics	HSS	3	0	0	3
2.	18IS72	Virtual Reality and Augmented Reality (Theory and Practice)	IS	3	0	1	4
3.	18IS73	Cyber Security and Digital Forensics (Theory and Practice)	IS	3	1	1	5
4.	18IS74	Internship	IS	0	0	2	2
5.	18IS7FX	Elective F (PE)	IS	3	0	0	3
6.	18IS7GX	Elective G (PE)	IS	3	0	0	3
7.	18G7HXX	Elective H (OE)*	Res. BOS	3	0	0	3
Total Number of Credits				**18**	**1**	**4**	**23**
Total number of Hours/Week				**18**	**2**	**10**	

2021 Scheme

III SEMESTER

Sl. No.	Course Code	Course Title	Credit Allocation				BoS	Category	CIE Duration (H)	Max Marks CIE		SEE Duration (H)	Max Marks SEE	
			L	T	P	Total				Theory	Lab		Theory	Lab
1	21MA31A	Linear algebra, Integral transforms and Number theory	3	1	0	4	MA	Theory	1.5	100	****	3	100	***
2	21BT32A	Environmental Technology	2	0	0	2	BT	Theory	1	50	****	2	50	****
3	21IS33	Data Structure and Applications (Common to CS & IS)	3	0	1	4	IS	Theory+Lab	1.5	100	50	3	100	50
4	21IS34	Digital Design and Computer Organization	3	1	0	4	IS	Theory	1.5	100	****	3	100	****
5	21CS35	Operating Systems (Common to CS, IS & AI)	2	0	1	3	CS	Theory+Lab	1.5	100	50	3	100	50
6	21CS36	Discrete Mathematical Structures (Common to CS, IS & AI)	3	0	0	3	CS	Theory	1.5	100	****	2	100	****
7	21DCS37*	Bridge Course: C Programming	2(A)	0	0	AUDIT	CS	Theory	1	50	****	-	***	****
8	21HS38A / 21HS38V	Kannada Course: AADALITHA KANNADA / VYAVAHARIKA KANNADA	1	0	0	1	HSS	Theory	1	50	****	2	50	****
9	21HSAE39A/ B/ C/D/E**	Ability Enhancement course	0	0	1	1	HSS	Lab	1	****	50	2	****	50
10	21ISI310	Summer Internship- I	0	0	1	1	IS	Internship	1	****	50	1	****	50
						23								

V SEMESTER

Sl. No.	CourseCode	Course Title	Credit Allocation				BoS	Category	Max Marks CIE		SEE Duration (H)	Max Marks SEE	
			L	T	P	Total			Theory	Lab		Theory	Lab
1	21HS51A	Intellectual Property Rights & Entrepreneurship	3	0	0	3	HSS	Theory	100	****	3	100	****
2	21AI52	Artificial Intelligence and Machine Learning **(Common to CS,IS & AI)**	3	0	1	4	AI	Theory + Lab	100	50	3	100	50
3	21CS53	Introduction To Database Systems **(Common to CS & IS)**	3	0	1	4	CS	Theory + Lab	100	50	3	100	50
4	21IS54	Cryptography and Network Security	3	1	0	4	IS	Theory	100	****	3	100	****
5	21IS55BX	Professional CoreElective-I **(Group-B)**	3	0	0	3	IS	Theory	100	****	3	100	****
6	21IS56CX	Professional CoreElective-II **(Group C)**	2	0	0	2	IS	NPTEL	50	****	2	50	****
7	21ISI57	Summer Internship- II	0	0	2	2	IS	Internship	****	50	2	****	50
						22							

M.Tech Program in SOFTWARE ENGINEERING
(2018) Scheme

SECOND SEMESTER CREDIT SCHEME							
Sl. No.	Course Code	Course Title	BoS	Credit Allocation			
				L	T	P	Credits
1	18MSE 21	Cyber Security & Digital Forensics	IS	4	0	1	5
2	18MSE 22	Human Computer Interaction	IS	3	1	0	4
3	18 IM 23	Research Methodology	HSS	3	0	0	3
4	18 MSE 24	Minor Project	IS	0	0	2	2
5	18MSE 2CX	Elective – C	IS	4	0	0	4
6	18MSE2DX	Elective – D	IS	4	0	0	4
7	18 XX 2GX	Global Elective	Respective BoS	3	0	0	3
Total number of Credits				**21**	**01**	**03**	**25**
Total Number of Hours / Week				**21**	**02**	**06**	**29**

THIRD SEMESTER CREDIT SCHEME							
Sl. No.	Course Code	Course Title	BoS	Credit Allocation			
				L	T	P	Credits
1	18 MSE 31	Social Network Analysis	IS	4	1	0	5
2	18 MSE 32	Internship	IS	0	0	5	5
3	18 MSE 33	Major Project: Phase-I	IS	0	0	5	5
4	18MSE3EX	Professional Elective –E	IS	4	0	0	4
Total number of Credits				**8**	**1**	**10**	**19**
Total Number of Hours/Week				**8**	**2**	**20**	**30**

FOURTH SEMESTER CREDIT SCHEME							
Sl. No.	Course Code	Course Title	BoS	Credit Allocation			
				L	T	P	Credits
1	18 MSE 41	Major Project: Phase- II	IS	0	0	20	20
2	18 MSE 42	Technical Seminar	IS	0	0	2	2
Total number of Credits				**0**	**0**	**22**	**22**
Total Number of Hours / Week				**0**	**0**	**44**	**44**

M.Tech Program in SOFTWARE ENGINEERING
(2022) Scheme

III SEMESTER M.Tech

Sl. No.	Course Code	Course Title	Credit Allocation L	T/SDA	P	Total	BoS	Category	CIE Duration (H)	Max Marks CIE	SEE Duration (H)	Max Marks SEE
1	22MSE31T	Software Quality Testing and Automation	3	1	0	**4**	IS	Theory	1.5	100	3	100
2	22XXX3EXT	Elective E (Professional Elective)	3	1	0	**4**	IS	Theory	1.5	100	3	100
3	22MSE32N	Internship	0	0	6	**6**	IS	Internship	1.5	50	3	50
4	22MSE33P	Minor Project	0	0	6	**6**	IS	Project	1.5	50	3	50

IV SEMESTER M.Tech

Sl. No.	Course Code	Course Title	Credit Allocation L	T/SDA	P	Total	BoS	Category	CIE Duration (H)	Max Marks CIE	SEE Duration (H)	Max Marks SEE
1	22MSE41P	Major Project	0	0	18	**18**	IS	Project	1.5	100	3	100
2	22HSS42	Professional Skills Development-II	2	0	0	**2**	HSS	NPTEL	--	50	ONLINE	50
Student need to submit the certificate for the evaluation of Course code 22HSS42												

M.Tech Program in INFORMATION TECHNOLOGY
(2018) Scheme

SECOND SEMESTER CREDIT SCHEME							
Sl. No.	Course Code	Course Title	BoS	Credit Allocation			
				L	T	P	Credits
1	18MIT21	Cyber Security & Digital Forensics (Theory & Practice)	IS	4	0	1	5
2	18MIT22	Big Data Science & Analytics	IS	3	1	0	4
3	18 IM 23	Research Methodology	IEM	3	0	0	3
4	18 MIT 24	Minor Project	IS	0	0	2	2
5	18 MIT 2CX	Elective – C	IS	4	0	0	4
6	18 MIT 2DX	Elective – D	IS	4	0	0	4
7	18 XX 2GX	Global Elective –G	Respective BoS	3	0	0	3
Total number of Credits				**21**	**01**	**03**	**25**
Total Number of Hours / Week				**21**	**02**	**06**	**29**

THIRD SEMESTER CREDIT SCHEME							
Sl. No.	Course Code	Course Title	BoS	Credit Allocation			
				L	T	P	Credits
1	18 MIT 31	Internet of Things & Cloud Computing	IS	4	1	0	5
2	18 MIT 32	Internship	IS	0	0	5	5
3	18 MIT 33	Major Project : Phase I	IS	0	0	5	5
4	18MIT3EX	Professional Elective -E	IS	4	0	0	4
Total number of Credits				**8**	**1**	**10**	**19**
Total Number of Hours / Week				**8**	**2**	**20**	**30**

FOURTH SEMESTER CREDIT SCHEME							
Sl. No.	Course Code	Course Title	BoS	Credit Allocation			
				L	T	P	Credits
1	18 MIT 41	Major Project: Phase II	IS	0	0	20	20
2	18 MIT 42	Technical Seminar	IS	0	0	2	2
Total number of Credits				**0**	**0**	**22**	**22**
Total Number of Hours / Week				**0**	**0**	**44**	**44**

M.Tech Program in INFORMATION TECHNOLOGY
(2022) Scheme

III SEMESTER M.Tech

Sl. No.	Course Code	Course Title	Credit Allocation L	T/SDA	P	Total	BoS	Category	CIE Duration (H)	Max Marks CIE	SEE Duration (H)	Max Marks SEE
1	22MIT31T	Big Data Analytics	3	1	0	**4**	IS	Theory	1.5	100	3	100
2	22XXX3EXT	Elective E (Professional Elective)	3	1	0	**4**	IS	Theory	1.5	100	3	100
3	22MIT32N	Internship	0	0	6	**6**	IS	Internship	1.5	50	3	50
4	22MIT33P	Minor Project	0	0	6	**6**	IS	Project	1.5	50	3	50

IV SEMESTER M.Tech

Sl. No.	Course Code	Course Title	Credit Allocation L	T/SDA	P	Total	BoS	Category	CIE Duration (H)	Max Marks CIE	SEE Duration (H)	Max Marks SEE
1	22MIT41P	Major Project	0	0	18	**18**	IS	Project	1.5	100	3	100
2	22HSS42	Professional Skills Development-II	2	0	0	**2**	HSS	NPTEL	--	50	ONLINE	50

Student need to submit the certificate for the evaluation of Course code 22HSS42

Program Regulations and Curriculum, 2019-2023

Bachelor of Engineering (B.E)

MECHANICAL ENGINEERING

2016 Scheme

Regulations No: 23rd Academic Council meeting, Dated 10-July-2018, Sub No. 177

2018 Scheme

Regulations No.: 28th Academic Council meeting, Dated 10/02/2020, Sub No. 220

2021 Scheme

Regulations No.: 33rd Academic Council meeting, Dated 21/07/2022, Sub No. 268

M.Tech Program

2018 Scheme

Regulations No: 24th Academic Council Meeting, Dated 9/10/2018, Sub No. 188 &189

2022 Scheme

Regulations No: 35th Academic Council Meeting, Dated 3/1/2023, Sub No. 284

2016 Scheme

SEVENTH SEMESTER CREDIT SCHEME								
Sl No	Course Code	Course Title	BoS	Credit Allocation				Total Credits
				L	T	P	S	
1	16ME71	Mechanical Vibrations	ME	3	0	1	0	4
2	16ME72	Control Engineering	ME	3	0	0	0	3
3	16ME73P	Minor Project	ME	0	0	3	0	3
4	16ME7FX	Elective F (PE)	ME	4	0	0	0	4
5	16ME7GX	Elective G (PE)	ME	4	0	0	0	4
6	16G7HXX	Elective H (GE)	Res.BoS	3	0	0	0	3
Total No of Credits				**17**	**0**	**4**	**0**	**21**
Total number of Hours/Week				**17**	**0**	**8**	**0**	

EIGHTH SEMESTER CREDIT SCHEME								
Sl. No.	Course Code	Course Title	BoS	Credit Allocation				Total Credits
				L	T	P	S	
1	16MEP 81	Major Project	ME	0	0	16	0	16
2	16MES 82	Technical Seminar	ME	0	0	2	0	2
3	16HSS 83	Innovation and Social Skills	HSS	0	0	2	0	2
Total No of Credits				**0**	**0**	**20**	**0**	**20**
No. Of Hrs.				**0**	**0**	**40**	**0**	

2018 Scheme

SIXTH SEMESTER CREDIT SCHEME							
Sl. No.	Course Code	Course Title	BoS	Credit Allocation			Total Credits
				L	T	P	
1.	18HSI61	Intellectual Property Rights & Entrepreneurship	HSS	3	0	0	3
2.	18ME62	Turbo Machinery	ME	3	1	1	5
3.	18ME63	Design of Machine Elements-II	ME	3	0	1	4
4.	18ME64	Minor Project*	ME	0	0	2	2
5.	18ME6CX	Elective C (PE)	ME	3	0	0	3
6.	18ME6DX	Elective D (PE)	ME	3	0	0	3
7.	18G6EXX	Elective E **	Respective BOS	3	0	0	3
8.	18HS68	Professional Practice- II (Employability skills and Professional development of Engineers)	HSS	0	0	1	1
Total Number of Credits				**18**	**1**	**5**	**24**
Total number of Hours/Week				**18**	**2**	**10**	**30**

SEVENTH SEMESTER CREDIT SCHEME							
Sl. No	Course Code	Course Title	BoS	Credit Allocation			Total Credits
				L	T	P	
1.	18HSC71	Constitution of India and Professional Ethics	HSS	3	0	0	3
2.	18ME72	Vibration and Control Systems	ME	3	0	1	4
3.	18ME73	Finite Element Methods	ME	2	1	1	4
4.	18ME74	Internship	ME	0	0	2	2
5.	18ME7FX	Elective F (PE)	ME	3	0	0	3
6.	18ME7GX	Elective G (PE)	ME	3	0	0	3
7.	18G7HXX	Elective H (GE) - Robotics and Automation	Res. Dept.	3	0	0	3
Total Number of Credits				**17**	**1**	**4**	**22**
Total number of Hours/Week				**17**	**2**	**5**	

EIGHTH SEMESTER CREDIT SCHEME							
Sl. No.	Course Code	Course Title	BoS	Credit Allocation			Total Credits
				L	T	P	
1.	18MEP81	Major Project	ME	0	0	16	16
Total Number of Credits				**0**	**0**	**16**	**16**
Total number of Hours/Week				**0**	**0**	**32**	

2021 Scheme

III SEMESTER													
Sl. No.	Course Code	Course Title	Credit Allocation				BoS	Category	CIE Duration (H)	Max Marks CIE		SEE Duration (H)	Max Marks SEE	
			L	T	P	Total				Theory	Lab		Theory	Lab
1	21MA31C*	Integral Transforms, Optimization and Numerical Techniques	3	1	0	**4**	MA	Theory	1.5	**100**	****	**3**	**100**	****
2	21ME32**	Engineering Materials	2	0	0	**2**	ME	Theory	1	**50**	****	**2**	**50**	****
3	21ME33	Solid Mechanics	3	0	1	**4**	ME	Theory+Lab	1.5	**100**	**50**	**3**	**100**	**50**
4	21ME34	Engineering Thermodynamics	3	0	1	**4**	ME	Theory+Lab	1.5	**100**	**50**	**3**	**100**	**50**
5	21ME35	Metrology and Machine Drawing	2	0	1	**3**	ME	Theory+Lab	1.5	**100**	**50**	**3**	**100**	**50**
6	21ME36	Python for Mechanical Engineers	2	0	0	**2**	ME	Theory	1	**50**	****	**2**	**50**	****
7	21DMA37***	Bridge Course: Mathematics	2(A)	0	0	**AUDIT**	MA	Theory	1	**50**	****	-	****	****
8	21ME39	Design Thinking Lab	0	0	2	**2**	ME	Lab	1	****	**50**	**2**	****	**50**
9	21MEI310	Summer Internship- I	0	0	1	**1**	ME	Lab	1	****	**50**	**1**	****	**50**
						22								

V SEMESTER														
Sl. No.	Course Code	Course Title	Credit Allocation				BoS	Category	CIE Duration (H)	Max Marks CIE		SEE Duration (H)	Max Marks SEE	
			L	T	P	Total				Theory	Lab		Theory	Lab
1	21HS51B	Principles of Management & Economics	3	0	0	3	HSS	Theory	1.5	100	****	3	100	****
2	21ME52	Design of Machine Elements – I	3	1	0	4	ME	Theory	1.5	100	****	4	100	****
3	21ME53	Flexible Manufacturing Systems	3	0	1	4	ME	Theory & Lab	1.5	100	50	3	100	50
4	21ME54	Heat Transfer	3	0	1	4	ME	Theory & Lab	1.5	100	50	3	100	50
5	21ME55BX	Professional Core Elective-II (Group-B)	3	0	0	3	ME	Theory	1.5	100	****	2	100	****
6	21ME56CX	Professional Core Elective-III (Group C)	2	0	0	2	ME	NPTEL	1.5	50	****	3	50	****
7	21MEI57	Summer Internship- II	0	0	2	2	ME	Internship	1	****	50	2	****	50
						22								

M.Tech in PRODUCT DESIGN AND MANUFACTURING (2018) Scheme

SECOND SEMESTER CREDIT SCHEME							
Sl. No.	Course Code	Course Title	BoS	Credit Allocation			
				L	T	P	Total Credits
1	18 MPD 21	Robust Design	ME	4	0	1	5
2	18 MPD 22	Product Life Cycle Management	ME	3	1	0	4
3	18 IM 23	Research Methodology	IEM	3	0	0	3
4	18MPD24	Minor Project	ME	0	0	2	2
5	18XXX2CX	Elective – C	ME	4	0	0	4
6	18XXX2DX	Elective – D	ME	4	0	0	4
7	18XXX2GXX	Global Elective	Respective boards	3	0	0	3
Total number of Credits				**21**	**1**	**3**	**25**
Total Number of Hours / Week				**21**	**2**	**6**	**29**

THIRD SEMESTER CREDIT SCHEME							
Sl. No.	Course Code	Course Title	BoS	Credit Allocation			
				L	T	P	Credits
1	18MCE31	Operating System Design	ME	4	1	0	5
2	18MPD31	Advanced Materials & Processes	ME	0	0	5	5
3	18MPD32	Internship	ME	0	0	5	5
4	18MPD33	Major Project : Phase I	ME	4	0	0	4
Total number of Credits				8	1	10	19
Total Number of Hours/Week				8	2	20	30

FOURTH SEMESTER CREDIT SCHEME							
Sl. No.	Course Code	Course Title	BoS	Credit Allocation			
				L	T	P	Credits
1	18MPD41	Major Project : Phase-II	CS	0	0	20	20
2	18MPD42	Technical Seminar	CS	0	0	2	2
Total number of Credits				0	0	22	22
Total Number of Hours / Week				0	0	44	44

M.Tech in PRODUCT DESIGN AND MANUFACTURING
(2022) Scheme

III SEMESTER M.Tech

Sl. No.	Course Code	Course Title	Credit Allocation				BoS	Category	CIE Duration (H)	Max Marks CIE	SEE Duration (H)	Max Marks SEE
			L	T/ SDA	P	Total						
1	22MPD31TL	Industrial IoT	3	0	1	4	ME	Theory+Lab	1.5	100	3	100
2	22MPD3EXT	Elective E (Professional Elective)	3	1	0	4	ME	Theory	1.5	100	3	100
3	22MPD32N	Internship	0	0	6	6	ME	Internship	1.5	50	3	50
4	22MPD33P	Minor Project	0	0	6	6	ME	Project	1.5	50	3	50

IV SEMESTER M.Tech

Sl. No.	Course Code	Course Title	Credit Allocation				BoS	Category	CIE Duration (H)	Max Marks CIE	SEE Duration (H)	Max Marks SEE
			L	T/ SDA	P	Total						
1	22MPD41P	Major Project	0	0	18	18	ME	Project	1.5	100	3	100
2	22HSS42	Professional Skills Development-II	2	0	0	2	HSS	NPTEL	--	50	ONLINE	50
Student need to submit the certificate for the evaluation of Course code 22HSS42												

M.Tech Program in COMPUTER INTEGRATED MANUFACTURING
(2018) Scheme

SECOND SEMESTER CREDIT SCHEME							
Sl. No.	Course Code	Course Title	BoS	Credit Allocation			
				L	T	P	Total Credits
1	18MCM21	Mechatronics in Manufacturing Systems	ME	4	0	1	**5**
2	18MCM22	Tooling for Manufacturing in Automation	ME	3	1	0	**4**
3	18IM23	Research Methodology	IEM	3	0	0	**3**
4	18MCM24	Minor Project	ME	0	0	2	**2**
5	18XXX2CX	Elective C	ME	4	0	0	**4**
6	18XXX2DX	Elective D	ME	4	0	0	**4**
7	18XXX2GXX	Global Elective	Respective Boards	3	0	0	**3**
Total number of Credits				**21**	**01**	**03**	**25**
Total Number of Hours / Week				**21**	**2**	**6**	**29**

THIRD SEMESTER CREDIT SCHEME							
Sl. No.	Course Code	Course Title	BoS	Credit Allocation			
				L	T	P	Credits
1	18MCM31	Digital Manufacturing	ME	4	1	0	**5**
2	18MCM32	Internship	ME	0	0	5	**5**
3	18MCM3	Major Project : Phase-I	ME	0	0	5	**5**
4	18MCM3EX	Professional Elective-E	ME	4	0	0	**4**
Total number of Credits				**8**	**1**	**10**	**19**
Total Number of Hours/Week				**8**	**2**	**20**	**30**

FOURTH SEMESTER CREDIT SCHEME							
Sl. No.	Course Code	Course Title	BoS	Credit Allocation			
				L	T	P	Credits
1	18MCM41	Major Project : Phase-II	CS	0	0	20	**20**
2	18MCM42	Technical Seminar	CS	0	0	2	**2**
Total number of Credits				**0**	**0**	**22**	**22**
Total Number of Hours / Week				**0**	**0**	**44**	**44**

M.Tech Program in Machine Design
(2018) Scheme

SECOND SEMESTER CREDIT SCHEME							
Sl. No.	Course Code	Course Title	BoS	Credit Allocation			
				L	T	P	Total Credits
1	18MMD21	Advanced Solid Mechanics	ME	4	0	1	5
2	18MMD22	Advance Theory of Vibrations	ME	3	1	0	4
3	18IM23	Research Methodology	IEM	3	0	0	3
4	18MMD24	Minor Project	ME	0	0	2	2
5	18XXX2CX	Elective C	ME	4	0	0	4
6	18XXX2DX	Elective D	ME	4	0	0	4
7	18XXX2GXX	Global Elective	Respective Boards	3	0	0	3
Total number of Credits				**21**	**01**	**03**	**25**
Total Number of Hours / Week				**21**	**02**	**06**	**29**

THIRD SEMESTER CREDIT SCHEME							
Sl. No.	Course Code	Course Title	BoS	Credit Allocation			
				L	T	P	Credits
1	18MMD31	Fracture Mechanics	ME	4	1	0	5
2	18MMD32	Internship	ME	0	0	5	5
3	18MMD33	Major Project: Phase-I	ME	0	0	5	5
4	18MMDEX	Professional Elective-E	ME	4	0	0	4
Total number of Credits				**8**	**1**	**10**	**19**
Total Number of Hours/Week				**8**	**2**	**20**	**30**

FOURTH SEMESTER CREDIT SCHEME							
Sl. No.	Course Code	Course Title	BoS	Credit Allocation			
				L	T	P	Credits
1	18MMD41	Major Project : Phase-II	ME	0	0	20	20
2	18MMD42	Technical Seminar	ME	0	0	2	2
Total number of Credits				**0**	**0**	**22**	**22**
Total Number of Hours / Week				**0**	**0**	**44**	**44**

M.Tech Program in Machine Design
(2022) Scheme

III SEMESTER M.Tech

Sl. No.	Course Code	Course Title	Credit Allocation L	T/SDA	P	Total	BoS	Category	CIE Duration (H)	Max Marks CIE	SEE Duration (H)	Max Marks SEE
1	22MPD31TL	Industrial IoT	3	0	1	**4**	ME	Theory+Lab	1.5	100	3	100
2	22XXX3EXT	Elective E (Professional Elective)	3	1	0	**4**	ME	Theory	1.5	100	3	100
3	22MMD32N	Internship	0	0	6	**6**	ME	Internship	1.5	50	3	50
4	22MMD33P	Minor Project	0	0	6	**6**	ME	Project	1.5	50	3	50

IV SEMESTER M.Tech

Sl. No.	Course Code	Course Title	Credit Allocation L	T/SDA	P	Total	BoS	Category	CIE Duration (H)	Max Marks CIE	SEE Duration (H)	Max Marks SEE
1	22MMD41P	Major Project	0	0	18	**18**	ME	Project	1.5	100	3	100
2	22HSS42	Professional Skills Development-II	2	0	0	**2**	HSS	NPTEL	--	50	ONLINE	50
Student need to submit the certificate for the evaluation of Course code 22HSS42												

Program Regulations and Curriculum, 2019-2023

Bachelor of Engineering (B.E)

ELECTRONICS AND TELECOMMUNICATION ENGINEERING

2016 Scheme

Regulations No: 23rd Academic Council meeting, Dated 10-July-2018, Sub No. 177

2018 Scheme

Regulations No.: 28th Academic Council meeting, Dated 10/02/2020, Sub No. 220

2021 Scheme

Regulations No.: 33rd Academic Council meeting, Dated 21/07/2022, Sub No. 268

M.Tech Program

2018 Scheme

Regulations No: 24th Academic Council Meeting, Dated 9/10/2018, Sub No. 188 &189

2022 Scheme

Regulations No: 35th Academic Council Meeting, Dated 3/1/2023, Sub No. 284

2016 Scheme

SEVENTH SEMESTER CREDIT SCHEME								
Sl. No	Course Code	Course Title	BoS	Credit Allocation				Total Credits
				Lecture	Tutorial	Practical	SS	
1	16TE71	Wireless and Mobile Communication	TE	4	0	1	0	5
2	16TE72	Optical Fiber Communication	TE	4	0	1	0	5
3	16TE73P	Minor Project	TE	0	0	3	0	3
4	16TE7FX	Elective F	TE	4	0	0	0	4
5	16TE7GX	Elective G	TE	4	0	0	0	4
6	16GH7XX	Elective H (GE)*	TE	3	0	0	0	3
Total No. of Credits				19	0	5	0	24
No. of Hrs.				19	0	10	0	

EIGTH SEMESTER CREDIT SCHEME								
Sl. No.	Course Code	Course Title	BoS	Credit Allocation				Total Credits
				Lecture	Tutorial	Practical	SS	
1.	16TE81	Major Project	TE	0	0	16	0	16
2.	16TE82	Technical Seminar	TE	0	0	2	0	2
3.	16HS83	Innovation and Social Skills	HSS	0	0	2	0	2
Total No. of Credits				0	0	20	0	20
No. of Hrs.				0	0	40	0	40

2018 Scheme

SIXTH SEMESTER CREDIT SCHEME							
Sl. No.	Course Code	Course Title	BoS	Credit Allocation			Total Credits
				L	T	P	
1.	18HEM61	Introduction to Management and Economics	HSS	3	0	0	3
2.	18TE62	Antenna & Propagation (Theory & Practice)	TE	4	0	1	5
3.	18TE63	Computer Communication Networks (Theory & Practice)	TE	3	0	1	4
4.	18TE64	Minor Project	TE	0	0	2	2
5.	18TE6CX	Group C (PE)	TE	3	0	0	3
6.	18TE6DX	Group D (PE)	TE	3	0	0	3
7.	18G6EXX	Group E (GE)	Respective BoS	3	0	0	3
8.	18HS68	Professional Practice-II Employability Skills and Professional Development of Engineers	HSS	0	0	1*	1
Total Number of Credits				19	0	5	24
Total number of Hours/Week				19	0	10+2*	29+2*

SEVENTH SEMESTER CREDIT SCHEME

Sl. No.	Course Code	Course Title	BoS	Credit Allocation			Total Credits
				L	T	P	
1.	18HSC71	Constitution of India & Professional Ethics	HSS	3	0	0	3
2.	18TE72	Wireless Communication	TE	3	1	1	5
3.	18TE73	Optical Fiber Communication	TE	3	0	1	4
4.	18TE74	Internship *	TE	0	0	2	2
5.	18TE7FX	Elective F (PE)	TE	3	0	0	3
6.	18TE7GX	Elective G (PE)	TE	3	0	0	3
7.	18G7HXX	Elective H (GE)**	Res. BoS	3	0	0	3
Total Number of Credits				**18**	**1**	**4**	**23**
Total number of Hours/Week				**18**	**2**	**10**	

EIGHTH SEMESTER CREDIT SCHEME

Sl. No.	Course Code	Course Title	BoS	Credit Allocation			Total Credits
				L	T	P	
1.	18TEP81	Major Project	TE	0	0	16	16
Total Number of Credits				**0**	**0**	**16**	**16**
Total number of Hours/Week						**32**	

2021 Scheme

III SEMESTER													
Sl. No.	Course Code	Course Title	Credit Allocation				BoS	Category	CIE Duration (H)	Max Marks CIE		SEE Duration (H)	Max Marks SEE	
			L	T	P	Total				Theory	Lab		Theory	Lab
1	21MA31B*	Linear algebra, Integral transforms and Fourier series	3	1	0	4	MA	Theory	1.5	100	****	3	100	****
2	21BT32A	Environmental Technology	2	0	0	2	BT	Theory	1	50	****	2	50	****
3	21EE33	Linear Integrated Circuits (common with EE / ET/ EI)	3	0	1	4	EE	Theory +Lab	1.5	100	50	3	100	50
4	21EC34	Analysis and Design of Digital Circuits (Common with EC/EE/EI/ET)	3	0	1	4	EC	Theory +Lab	1.5	100	50	3	100	50
5	21ET35	Signal Processing - I	3	1	0	4	ET	Theory	1.5	100	****	3	100	****
6	21ET36	Circuit Analysis	2	0	0	2	ET	Theory	1	50	****	2	50	****
7	21DMA37	Bridge Course: Mathematics	2(A)	0	0	AUDIT	MA	Theory	1.5	50	****	****	****	****
8	21HS38A / 21HS38V	Kannada Course: AADALITHA KANNADA / VYAVAHARIKA KANNADA	1	0	0	1	HSS	Theory	1	50	****	2	50	****
9	21HSAE39 A/B/C/D/E **	Ability Enhancement course	0	0	1	1	HSS	Lab	1	****	50	2	****	50
10	21ETI310	Summer Internship- I	0	0	1	1	ET	Internship	1	****	50	2	****	50
						23								

V SEMESTER														
Sl. No.	Course Code	Course Title	Credit Allocation				BoS	Category	CIE Duration (H)	Max Marks CIE		SEE Duration (H)	Max Marks SEE	
			L	T	P	Total				Theory	Lab		Theory	Lab
1	21HS51A/61A	Intellectual Property Rights & Entrepreneurship	3	0	0	3	HSS	Theory	1.5	100	****	3	100	****
2	21ET52	Communication Engineering II	3	0	1	4	ET	Theory + Lab	1.5	100	50	3	100	50
3	21ET53	Signal Processing II	3	0	1	4	ET	Theory + Lab	1.5	100	50	3	100	50
4	21ET54	RF Circuits	3	1	0	4	ET	Theory	1.5	100	****	3	100	****
5	21ET55BX	Professional Core Elective-I (Group-B)	3	0	0	3	ET	Theory	1.5	100	****	3	100	****
6	21ET56CX	Professional Core Elective-II (Group C)	2	0	0	2	ET	NPTEL	1	100	****	3	100	****
7	21ETI57	Summer Internship- II	0	0	2	2	ET	Internship	1.5	50	50	3	50	50
						22								

M.Tech in DIGITAL COMMUNICATION ENGINEERING
(2018) Scheme

SECOND SEMESTER CREDIT SCHEME							
Sl. No.	Course Code	Course Title	BoS	Credit Allocation			
				L	T	P	Credits
1.	18MDC21	Optical Communication & Networks	TE	3	1	1	05
2.	18MRM22	Antenna Theory & design	TE	3	1	0	04
3.	18IEM23	Research Methodology	IEM	3	0	0	03
4.	18MDC24	Minor Project	TE	0	0	2	02
5.	18MDC2CX	Elective-C	TE	4	0	0	04
6.	18MDC2DX	Elective-D	TE	4	0	0	04
7.	18MDC2GX	Global Elective-G	Respective BoS	3	0	0	03
Total number of Credits				**20**	**2**	**3**	**25**
Total Number of Hours/Week				**20**	**4**	**6**	**30**

THIRD SEMESTER CREDIT SCHEME							
Sl. No.	Course Code	Course Title	BoS	Credit Allocation			
				L	T	P	Credits
1	18MDC31	Wireless Communication	TE	4	1	0	**5**
2	18MDC32	Internship	TE	0	0	5	**5**
3	18MDC33	Major Project : Phase-I	TE	0	0	5	**5**
4	18MDC3EX	Professional Elective-E	TE	4	0	0	**4**
Total number of Credits				**8**	**1**	**10**	**19**
Total Number of Hours/Week				**8**	**2**	**20**	**30**

FOURTH SEMESTER CREDIT SCHEME							
Sl. No.	Course Code	Course Title	BoS	Credit Allocation			
				L	T	P	Credits
1	18MDC41	Major Project : Phase-II	TE	0	0	20	**20**
2	18MDC42	Technical Seminar	TE	0	0	2	**2**
Total number of Credits				**0**	**0**	**22**	**22**
Total Number of Hours / Week				**0**	**0**	**44**	**44**

M.Tech in DIGITAL COMMUNICATION ENGINEERING
(2022) Scheme

III SEMESTER M.Tech

Sl. No.	Course Code	Course Title	Credit Allocation L	T/SDA	P	Total	BoS	Category	CIE Duration (H)	Max Marks CIE	SEE Duration (H)	Max Marks SEE
1	22MDC31T	5G and Beyond	3	1	0	**4**	ET	Theory	1.5	100	3	100
2	22MDC3EXT	Elective E (Professional Elective)	3	1	0	**4**	ET	Theory	1.5	100	3	100
3	22MDC32N	Internship	0	0	6	**6**	ET	Internship	1.5	50	3	50
4	22MDC33P	Minor Project	0	0	6	**6**	ET	Project	1.5	50	3	50

IV SEMESTER M.Tech

Sl. No.	Course Code	Course Title	Credit Allocation L	T/SDA	P	Total	BoS	Category	CIE Duration (H)	Max Marks CIE	SEE Duration (H)	Max Marks SEE
1	22MDC41P	Major Project	0	0	18	**18**	ET	Project	1.5	100	3	100
2	22HSS42	Professional Skills Development-II	2	0	0	**2**	HSS	NPTEL	--	50	ONLINE	50
Student need to submit the certificate for the evaluation of Course code 22HSS42												

M.Tech in RF AND MICROWAVE ENGINEERING
(2018) Scheme

SECOND SEMESTER CREDIT SCHEME							
Sl. No.	Course Code	Course Title	BoS	Credit Allocation			
				L	T	P	Credits
1.	18MRM21	RF Circuits-II	TE	3	1	1	05
2.	18MRM22	Antenna theory and Design	TE	3	1	0	04
3.	18IEM23	Research Methodology	IEM	3	0	0	03
4.	18MRM24	Minor Project	TE	0	0	2	02
5.	18MRM2CX	Elective-C	TE	4	0	0	04
6.	18MRM2DX	Elective-D	TE	4	0	0	04
7.	18MRM2GX	Global Elective – G	Respective BoS	3	0	0	03
Total number of Credits				**20**	**2**	**3**	**25**
Total Number of Hours/Week				**20**	**4**	**6**	**30**

THIRD SEMESTER CREDIT SCHEME							
Sl. No.	Course Code	Course Title	BoS	Credit Allocation			
				L	T	P	Credits
1	18MDC31	Wireless Communication	TE	4	1	0	5
2	18MRM32	Internship	TE	0	0	5	5
3	18MRM33	Major Project : Phase-I	TE	0	0	5	5
4	18MDC3EX	Professional Elective-E	TE	4	0	0	4
Total number of Credits				**8**	**1**	**10**	**19**
Total Number of Hours/Week				**8**	**2**	**20**	**30**

FOURTH SEMESTER CREDIT SCHEME							
Sl. No.	Course Code	Course Title	BoS	Credit Allocation			
				L	T	P	Credits
1	18MRM41	Major Project : Phase-II	TE	0	0	20	20
2	18MRM42	Technical Seminar	TE	0	0	2	2
Total number of Credits				**0**	**0**	**22**	**22**
Total Number of Hours / Week				**0**	**0**	**44**	**44**

Program Regulations and Curriculum, 2019-2023

MASTER OF COMPUTER APPLICATIONS

2018 Scheme

Regulations No: 24th Academic Council Meeting, Dated 9/10/2018, Sub No. 188 &189

2020 Scheme

Regulations No: 29th Academic Council Meeting, Dated 27/7/2020, Sub No. 237

2022 Scheme

Regulations No: 36th Academic Council Meeting, Dated 20/7/23, Sub No. 295

MASTER OF COMPUTER APPLICATIONS
(2018) Scheme

FOURTH SEMESTER CREDIT SCHEME

Sl.No.	Course Code	Course Title	BoS	Credit Allocation			Total credits
				Lecture	Tutorial	Practice	
1	18MCA41	Software Testing	MCA	3	0	1	4
2	18MCA42	Modern Application Development	MCA	3	0	1	4
3	18MCA43X	Elective III	MCA	3	0	0	3
4	18MCA44X	Elective – IV	MCA	3	0	0	3
5	18MCA45X	Elective – V (with Practice)	MCA	3	1	1	5
6	18MCA46	Minor Project– I	MCA	0	0	3	3
		Total		**15**	**1**	**6**	**22**
Contact (Hrs./week)+ Counselling+ Placement Activities				**15**	**2**	**12**	**31 (29+2)**

FIFTH SEMESTER CREDIT SCHEME

Sl. No.	Course Code	Course Title	BoS	Credit Allocation			Total Credits
				L	T	P	
1	18MCA51	Software Project Management	MCA	3	0	0	3
2	18MCA52	Big Data Analytics	MCA	3	1	1	5
3	18MCA53X	Elective – VI	MCA	3	0	0	3
4	18MCA54X	Elective – VII (with Practice)	MCA	3	1	1	5
5	18MCA55	Seminar-1	MCA	0	0	2	2
6	18MCA56	Minor Project – II	MCA	0	0	4	4
		Total Number of Credits		**12**	**2**	**8**	**22**
		Total number of Hours/Week + Counselling		**12**	**4**	**16**	**32**

SIXTH SEMESTER CREDIT SCHEME

Sl. No	Course Code	Course Title	BOS	Credit Allocation			Total Credits
				L	T	P	
1.	18MCA61	Major Project	MCA	-	-	20	20
2.	18MCA62	Seminar-2	MCA	-	-	2	2
		Total Number of Credits				**22**	**22**
		Total number of Hours/Week					

MASTER OF COMPUTER APPLICATIONS
(2020) Scheme

THIRD SEMESTER CREDIT SCHEME							
Sl. No.	**Course Code**	**Course Title**	**BoS**	**Credit Allocation**			**Total Credits**
				L	**T**	**P**	
1.	20MCA31	Project Management	MCA	4	-	-	**4**
2.	20MCA32	Modern Application Development	MCA	4	-	1	**5**
3.	20MCA33X	Elective-IV	MCA	4	1	-	**5**
4.	20MCA34X	Elective-V	MCA	4	1	-	**5**
5.	20MCA35X	Elective–VI (with practice)	MCA	4	-	1	**5**
6.	20MCA36	Minor Project	MCA	-	-	2	**2**
Total number of Credits				**20**	**2**	**4**	**26**
Total Number of Hours/Week				**20**	**4**	**8**	

FOURTH SEMESTER CREDIT SCHEME							
Sl. No.	**Course Code**	**Course Title**	**BoS**	**Credit Allocation**			**Total Credits**
				L	**T**	**P**	
1.	20MCA41	Major Project	MCA	-	-	20	20
2.	20MCA42	Technical Seminar	MCA	-	-	2	2
Total number of Credits				-	-	**22**	**22**

MASTER OF COMPUTER APPLICATIONS
(2022) Scheme

III SEMESTER MCA												
			Credit Allocation									
SL No	Course Code	Course Title	L	T	P	Total Credits	BoS	Category	CIE Duration (H)	Max Marks CIE	SEE Duration (H)	Max Marks SEE
1.	MCA161T	Software Engineering	3	0	0	3	MCA	Theory	1.5	100	3	100
2.	MCA261I	Modern Application Development	4	0	1	5	MCA	Theory + Lab	1.5 + 3	150	3 + 3	150
3.	MCA361I	Cloud Native Fullstack Application Development-II	3	0	1	4	MCA	Theory + Lab	1.5 + 3	150	3 + 3	150
4.	MCA262CX	Professional Elective-III	3	1	0	4	MCA	Theory	1.5	100	3	100
5.	MCA263DX	Professional Elective-IV	3	0	0	3	MCA	Theory	1.5	100	3	100
6.	MCA461P	Minor Project	0	0	4	4	MCA	Lab	3	100	3	100
7.	MCA462N	Internship*	0	0	6	6	MCA	Lab	3	100	3	100
						29						

**Six Weeks Internship to be completed during the intervening Vacation of II and III semesters*

IV SEMESTER MCA												
			Credit Allocation									
SL No	Course Code	Course Title	L	T	P	Total Credits	BoS	Category	CIE Duration (H)	Max Marks CIE	SEE Duration (H)	Max Marks SEE
1.	MCA491P	Major Project	0	0	15	15	MCA	Lab	1.5	100	3	100
2.	MCA492L	Technical Seminar	0	0	2	2	MCA	Lab	1.5	50	2	50
3.	MHS102T	Ability Enhancement Course-II	0	0	2	2	MCA	Lab	-	50	ONLINE	50
						19						

RV COLLEGE OF ENGINEERING®

NAAC - 1.3.3.2

Course Contents having elements of field project program
BE in Civil Engineering

Course Code	Course Title	Scheme
16CV74	Extensive Survey Camp	2016
18CV73	Extensive Survey Project	2018
21CV34	Surveying	2021

Course Contents having elements of Research Projects and Internship for all 13 UG programs and 19 PG programs

Semester: VII						
EXTENSIVE SURVEY CAMP (Practice)						
Course Code	**:**	**16CV74**		**CIE**	**:**	**100**
Credits: L:T:P:S	**:**	**0:0:3:0**		**SEE**	**:**	**100**
Total Hours	**:**	**36**		**SEE Duration**	**:**	**3 Hrs**

Course Learning Objectives: The students will be able to	
1	Describe the types of surveys and use of surveying tools and equipments required for civil engineering projects.
2	Address the field problems and challenges in surveying.
3	Evaluation, interpretation and communication the field data.
4	Design and develop solutions to meet societal needs.

36 Hrs

New Tank Project ;

1. Survey and preparation of drawing for longitudinal and Cross section of bund
2. Survey and preparation of drawing for Block levels at waste Weir Site.
3. Survey and preparation of drawing for Capacity Contours.
4. Survey and preparation of drawing for Initial Alignment of Channel.
5. Survey and preparation of drawing for Final Alignment of Channel.

Water Supply & Sanitary Project - conduction of survey, preparation of drawings ;

1. Water Supply Project.
   a. Survey and preparation of maps for water supply to the village
   b. Longitudinal and cross sections along the alignment of pipeline
   c. Calculation of cutting and filling along the alignment of pipeline
2. Sanitary Project.

Village survey & preparation of drawings for waste water drainage

Highway Project ;

1. Initial Alignment of Highway.
2. Final Alignment of Highway.

Preparation of finalized drawings and related calculations of cutting and filling for the following projects

1. New Tank Project
2. Water Supply & Sanitary Project
3. Highway Project

Course Outcomes: After completing the course, the students will be able to	
CO1:	Understand the different surveys required for various Civil Engineering projects
CO2:	Apply the various equipments and methods of survey for different civil engineering projects
CO3:	Analyze the field data and prepare the drawings based on the survey field work
CO4:	Evaluate and calculate the bill of quantities for various works based on the survey and drawings prepared

Continuous Internal Examination (CIE):

Evaluation will be carried out under three Phases .CIE consists of preliminary survey, survey field work and preparation of preliminary drawings. The total marks for CIE shall be **100** out of which 20% for preliminary survey, 50% for field work and 30% for preparation and submission of drawings.

Scheme of Evaluation for SEE:

Based on performance in the viva voce examination out of **100**

CO-PO Mapping												
CO/PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**
CO1	-	-	-	-	-	-	-	-	3	2		2
CO2	-	-	-	-	-	-	3	-	2	-	-	-
CO3	-	-	-	-	-	-	2	-	3	-	1	1
CO4	-	-	-	-	-	3	2	1	2	1	1	2

Low-1 Medium-2 High-3

Semester: VII						
Course Title: EXTENSIVE SURVEY PROJECT						
Course Code	**:**	**18CV73**		**CIE Marks**	**:**	**100**
Credits: L:T:P	**:**	**0:0:4**		**SEE Marks**	**:**	**100**
Total Hours	**:**	**52**		**SEE Duration**	**:**	**3Hrs**

Course Learning Objectives: The students will be able to	
1	Describe the types of surveys and use of surveying tools and equipments required for civil engineering projects.
2	Address the field problems and challenges in surveying.
3	Evaluation, interpretation and communication the field data.
4	Design and develop solutions to meet societal needs.

New Tank Project ;

1. Survey and preparation of drawing for longitudinal and Cross section of bund
2. Survey and preparation of drawing for Block levels at waste Weir Site.
3. Survey and preparation of drawing for Capacity Contours.
4. Survey and preparation of drawing for Initial Alignment of Channel.
5. Survey and preparation of drawing for Final Alignment of Channel.

Water Supply & Sanitary Project - conduction of survey, preparation of drawings ;

1. Water Supply Project.
   a. Survey and preparation of maps for water supply to the village
   b. Longitudinal and cross sections along the alignment of pipeline
   c. Calculation of cutting and filling along the alignment of pipeline
2. Sanitary Project.

Village survey & preparation of drawings for waste water drainage

Highway Project ;

1. Initial Alignment of Highway.
2. Final Alignment of Highway.

Preparation of finalized drawings and related calculations of cutting and filling for the following projects

1. New Tank Project
2. Water Supply & Sanitary Project

Highway Project

Course Outcomes: After completing the course, the students will be able to	
1	Understand the different surveys required for various Civil Engineering projects
2	Apply the various equipments and methods of survey for different civil engineering projects
3	Analyze the field data and prepare the drawings based on the survey field work
4	Evaluate and calculate the bill of quantities for various works based on the survey and drawings prepared

Scheme of Continuous Internal Examination (CIE):

Evaluation will be carried out under three Phases:

Scheme of Evaluation for CIE:

CIE consists of preliminary survey, survey field work and preparation of preliminary drawings. The total marks for CIE shall be **100** out of which 20% for preliminary survey, 50% for field work and 30% for preparation and submission of drawings.

Scheme of Evaluation for SEE:

Based on performance in the viva voce examination out of **100**

CO-PO Mapping												
CO/PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**
CO1	-	-	-	-	-	-	-	-	3	2		2
CO2	-	-	-	-	-	-	3	-	2	-	-	-
CO3	-	-	-	-	-	-	2	-	3	-	1	1
CO4	-	-	-	-	-	3	2	1	2	1	1	2

Low-1 Medium-2 High-3

Semester: III						
SURVEYING (Theory & Practice)						
Course Code	**:**	**21CV34**		**CIE**	**:**	**50Marks+ 50Marks**
Credits: L:T:P		**2+0+2**		**SEE**	**:**	**50 Marks + 50Marks**
Total Hours	**:**	**30L+60P**		**SEE Duration**	**:**	**3.00 Hours + 3.00 Hours**

Unit-I	**06 Hrs**
Fundamentals of Maps: Maps - types; scales-types; measuring distance; finding direction and use of symbols. Map projection - Latitude, Longitude and time, Topographical survey – Toposheets and Principles of topo sheet numbering, Analysis of landforms using maps. **History of Surveying**: Definition of Surveying, Uses of Surveying, Basic principles of surveying, Classification of Surveys. Introduction to Chain surveying, Compass surveying, Plane table surveying and Theodolite surveying. Booking of chain survey work - Field book entries. Calculation of land area using data collected through chain survey.	
Unit – II	**06Hrs**
Leveling: Principles and basic definitions, Fundamental axes and parts of a dumpy level, types of adjustments and objectives, temporary adjustments of a dumpy level, Types of leveling – Simple leveling, Profile leveling, fly leveling and cross sectioning. Booking of levels 1. Rise and fall method 2. Height of instrument method – comparison, Arithmetic checks. Numerical problems.	
Unit –III	**06 Hrs**
Contour Survey: Contours and their characteristics, Methods of contouring – direct and indirect methods (Grid and Cross section method), Uses of contours. **Total Station:** Introduction - Parts of a Total Station – Accessories – Advantages - Limitations and Applications, Complete procedure for total station survey, data transfer, preparation of maps.	
Unit –IV	**06 Hrs**
Modern surveying: GPS, DGPS, Drone surveying and LiDAR. **Photogrammetry:** Principles of Photogrammetry, Types – Terrestrial and Aerial Photogrammetry, Advantages over ground survey methods - geometry of vertical photographs, scales of vertical photographs. Flight planning.	
Unit –V	**06 Hrs**
Remote Sensing and GIS: Introduction, Principles, Types and Applications of Remote Sensing. Introduction to GIS, functions and advantages, sources of data for GIS. Geographical Information System, Key Components of GIS, Functions of GIS, Data Management and Transformation. Data input methods, data analysis. Overlay operations, Network analysis and Spatial analysis.	

Laboratory
The topics and the numerical problems covered in practical sessions will be included in the Theory CIE and SEE.
I. Chain Surveying 1. To conduct a chain survey of flat area with details including field book entry, perpendicular and oblique offsets. Survey book entry and prepare a plan by converting to an appropriate scale.
II. Levelling 2. To determine difference in elevation between two points using differential levelling technique, using height of the instrument method and rise and fall methods. With at least one point above the line of sight. 3. To perform profile levelling and to draw the longitudinal section and cross section to determine the depth of cut and height of filling for a given formation level.

III. Total station 4. Study of Total Station: Basic accessories, basic operations, creating a file, orientation, back sight and accuracy. 5. To determine the elevation, distance and gradient between two inaccessible points using total station. 6. Traversing using total station: Data collection, data transfer, area calculation and map preparation. 7. Contour surveying using total station: Data collection, data transfer, area calculation and map preparation.
IV. Curves 8. To set out simple curves using linear methods-perpendicular offsets from long chord and Rankine's deflection angles method (Only the directions of forward tangent and backboard tangent is provided and deflection angle needs to be measured in the field). 9. To set out compound curve using Rankine's deflection angles method. (Only the directions of forward tangent and backboard tangent is provided and deflection angle needs to be measured in the field)
V. GIS (Using open source software QGIS) 10. Geo-referencing the hard copy maps. 11. To generate thematic maps using GIS Software. (Including rectifying and mosaicing)
VI. Differential Global Positioning System (DGPS) - Demonstration 12. RTK (Real Time Kinematics) survey for location data gathering and establishing ground control point using DGPS.

Course Outcomes: After completing the course, the students will be able to	
CO1:	Describe fundamental concepts of Surveying, Levelling, Total station and application of Remote Sensing, GIS and DGPS.
CO2:	Discuss components of all types of surveying.
CO3:	Apply the concepts of measurements in engineering problems.
CO4:	Demonstrate the applications of Remote Sensing, GIS and DGPS for solving engineering problems.

Reference Books	
1	Punmia B.C, "Surveying" Vol.I and Vol.II, Laxmi Publications, (P) Ltd, New Delhi 2010. ISBN 81-7008-853-4
2	Chandra A.M, "Plane surveying", Newage International (P) Ltd., 2009. ISBN 81-224-1902-X
3	Remote Sensing and GIS by B Bhatia, Oxford University Press, New Delhi.
4	Duggal S.K, "Surveying", Vol.I & II, Tata Mc Graw Hill Publishing Co., 2009, ISBN 978-0-07-015137-6: ISBN 0-07-015137-7.
5	Arora K.R, "Surveying", Vol.I & II, Standard Book House, 2009. ISBN 81-89401-23-8
6	Lillesand and Kiefer, "Principles of Remote sensing and Image Interpretation", (5th Edition) John Wiley Publishers, New Delhi, 2007.

ASSESSMENT AND EVALUATION PATTERN		
WEIGHTAGE	**50%**	**50%**
QUIZZES		
Quiz-I	Each quiz is evaluated for 10 marks adding up to **20 MARKS.**	*****
Quiz-II		
THEORY COURSE (Bloom's Taxonomy Levels: Remembering, Understanding, Applying, Analyzing, Evaluating, and Creating)		
Test – I	Each test will be conducted for 50 Marks adding upto 100 marks. Final test marks will be reduced to **40 MARKS**	*****
Test – II		
EXPERIENTIAL LEARNING	**40**	*****
Case Study-based Teaching-Learning	**10**	*****
Sector wise study & consolidation	**20**	
Video based seminar (4-5 minutes per student)	**10**	
MAXIMUM MARKS FOR THE THEORY	**50 MARKS**	**50 MARKS**
PRACTICALS	**50 MARKS**	**50 MARKS**
TOTAL MARKS FOR THE COURSE	**100**	**100**

VII Semester						
MINOR PROJECT						
Course Code	**:**	**16EC73P**		**CIE**	**:**	**100 Marks**
Credits: L: T: P: S	**:**	**0:0:3:0**		**SEE**	**:**	**100 Marks**
Hrs/week	**:**	**06**		**SEE Duration**	**:**	**3 Hours**

Course Learning Objectives: The students will be able to	
1	Create interest in innovative developments and preferably interdisciplinary field.
2	Work independently, analyze, evaluate and solve the given problem.
3	Inculcate the skills for good presentation and improve the technical report writing skills.
4	Recognize the need for planning, preparation, management and financial budgeting.
5	Acquire collaborative skills through working in a team to achieve common goals.

Mini Project Guidelines:

1. Each project group will have two to four students, they can form their groups amongst their class.
2. Each group has to select a current topic that will use the technical knowledge of their program of study after intensive literature survey.
3. Guides will be allotted by the department based on the topic chosen.
4. The project should result in system/module which can be demonstrated, using the available resources in the college.
5. The CIE evaluation will be done by the committee constituted by the department. The committee shall consist of respective guide & two senior faculty members as examiners. The evaluation will be done for each student separately.
6. The final copy of the report should be submitted after incorporation of any modifications suggested by the evaluation committee

Guidelines for Evaluation:

CIE Assessment:

The following are the weightages given for the various stages of the project:

1. Selection of the topic and formulation of objectives: 10%
2. Design and Development of Project methodology: 30%
3. Execution of Project: 30%
4. Presentation, Demonstration and Discussion: 20%
5. Report Writing:10%

Evaluation will be carried out in three phases:

Phase	Activity	Weightage
I	Synopsis submission, approval of the selected topic, formulation of objectives	20%
II	Mid-term evaluation to review the progress of work and documentation	30%
III	Submission of report, Final presentation and demonstration	50%

SEE Assessment:

The following are the weightages given during SEE Examination:

1. Written presentation of synopsis:10%
2. Presentation/Demonstration of the project: 30%
3. Methodology and Discussion: 30%
4. Technical Report: 10%
5. Viva Voce: 20%

Course Outcomes of Mini Project:	
1	Define Specifications, Conceptualize, Design and implement a project
2	Communicate the work carried out as a technical report and orally
3	Work in a team and contribute to team work
4	Indulge in self-learning and be motivated for life-long learning

Semester: VIII						
MAJOR PROJECT (Common to all Programs)						
Course Code	**:**	16EC81		**CIE**	**:**	**100 Marks**
Credits: L:T:P:S	**:**	0:0:16:0		**SEE**	**:**	**100 Marks**
Hours / Week	**:**	32		**SEE Duration**	**:**	**3.00 Hours**

Course Learning Objectives: The students will be able to	
1	Acquire the ability to make links across different areas of knowledge and to generate, develop and evaluate ideas and information so as to apply these skills to the project task.
2	Acquire the skills to communicate effectively and to present ideas clearly and coherently to a specific audience in both written and oral forms.
3	Acquire collaborative skills through working in a team to achieve common goals.
4	Self-learn, reflect on their learning and take appropriate action to improve it.
5	Prepare schedules and budgets and keep track of the progress and expenditure.

Major Project Guidelines:

1. The project topic, title and synopsis have to be finalized and submitted to their respective internal guide(s) before the beginning of the 8th semester.
2. The detailed Synopsis ***(approved by the department Project Review Committee***) has to be submitted during the 1st week after the commencement of 8th semester.

Batch Formation:

- Students are free to choose their project partners from within the program or any other program;
- Each student in the team must contribute towards the successful completion of the project. The project may be carried out In-house / Industry / R & D Institution;
- ***The project work is to be carried out by a team of two to four students , in exceptional cases where a student is placed in a company and offered an internship through the competitive process or student is selected for internship at national or international level through competitive process,*** the student can work independently.
- ***The students are allowed to do either a project for full 5 days in the industry or full 5 days in the college.***
- ***In case the project work is carried out outside Bengaluru, such students must be available during Project Evaluation process scheduled by the respective departments and they must also interact with their guide regularly through Email / Webinar / Skype etc.***

Project Topic Selection:

The topics of the project work must be in the *field of respective program areas or in line with CoE's (Centre of Excellence) identified by the college* or List of project areas as given by industry/Faculty. The projects as far as possible should have societal relevance with focus on sustainability.

Project Evaluation:

- Continuous monitoring of project work will be carried out and cumulative evaluation will be done.
- The students are required to meet their internal guides once in a week to report their progress in project work.
- **Weekly Activity Report** (WAR) has to be maintained in the form of a diary by the project batch and the same has to be discussed with the Internal Guide regularly.
- In case of ***Industry project***, during the course of project work, the internal guides will have continuous interaction with external guides and will visit the industry at least twice during the project period.

Semester: VI						
Minor Project						
Course Code	**:**	**18EC64**		**CIE**	**:**	**50 Marks**
Credits: L:T:P	**:**	**0:0:2**		**SEE**	**:**	**50 Marks**
Hours	**:**	**26P**		**SEE Duration**	**:**	**02 Hours**
Course Learning Objectives: To enable the students to:						
1	***Knowledge Application:*** Acquire the ability to make links across different areas of knowledge and to generate, develop and evaluate ideas and information so as to apply these skills to the project task.					
2	***Communication:*** Acquire the skills to communicate effectively and to present ideas clearly and coherently to a specific audience in both the written and oral forms.					
3	***Collaboration:*** Acquire collaborative skills through working in a team to achieve common goals.					
4	***Independent Learning:*** Learn on their own, reflect on their learning and take appropriate action to improve it.					

Guidelines for Minor Project

1. The minor project is to be carried out individually or by a team of two-three students.
2. Each student in a team must contribute equally in the tasks mentioned below.
3. Each group has to select a current topic that will use the technical knowledge of their program of study after intensive literature survey.
4. The project should result in system/module which can be demonstrated, using the available resources in the college.
5. The CIE evaluation will be done by the committee constituted by the department. The committee shall consist of respective guide & two senior faculty members as examiners. The evaluation will be done for each student separately.
6. The final copy of the report should be submitted after incorporation of any modifications suggested by the evaluation committee.

The minor-project tasks would involve:

1. Carry out the Literature Survey of the topic chosen.
2. Understand the requirements specification of the minor-project.
3. Detail the design concepts as applicable through appropriate functional block diagrams.
4. Commence implementation of the methodology after approval by the faculty.
5. Conduct thorough testing of all the modules developed and carry out integrated testing.
6. Demonstrate the functioning of the minor project along with presentations of the same.
7. Prepare a project report covering all the above phases with proper inference to the results obtained.
8. Conclusion and Future Enhancements must also be included in the report.

The students are required to submit the report in the prescribed format provided by the department.

Course Outcomes: After completing the course, the students will be able to	
CO 1:	Interpreting and implementing the project in the chosen domain by applying the concepts learnt.
CO 2:	The course will facilitate effective participation by the student in team work and development of communication and presentation skills essential for being part of any of the domains in his / her future career.
CO 3:	Appling project life cycle effectively to develop an efficient product.
CO 4:	Produce students who would be equipped to pursue higher studies in a specialized area or carry out research work in an industrial environment.

Scheme of Evaluation for CIE Marks:

Evaluation will be carried out in three phases:

Phase	**Activity**	**Weightage**
I	Synopsis submission, approval of the selected topic, Problem definition, Literature review, formulation of objectives, methodology	10M
II	Mid-term evaluation to review the progress of implementation, design, testing and result analysis along with documentation	15M
III	Submission of report, Final presentation and demonstration	25M
	Total	**50M**

Scheme of Evaluation for SEE Marks:

Sl. No.	**Evaluation Component**	**Marks**
1.	Written presentation of synopsis: Write up	5M
2.	Presentation/Demonstration of the project	15M
3.	Demonstration of the project	20M
4.	Viva	05M
5.	Report	05M
	Total	**50M**

CO-PO Mapping												
CO/PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**
CO1	**H**	**H**	**H**	**H**	**M**	**M**	**L**	**M**	**M**	**M**	**M**	**M**
CO2	**H**	**H**	**H**	**H**	**M**	**M**	**L**	**M**	**M**	**M**	**M**	**M**
CO3	**H**	**H**	**H**	**H**	**M**	**M**	**L**	**M**	**M**	**M**	**M**	**M**
CO4	**L**	**L**	**L**	**L**	**L**	**L**	**L**	**M**	**L**	**M**	**L**	**L**

SEMESTER: VII						
INTERNSHIP						
Course Code	**:**	**18EC74**		**CIE Marks**	**:**	**50**
Credit L:T:P	**:**	**0:0:2**		**SEE Marks**	**:**	**50**
Hours/week	**:**	**4**		**SEE Duration**	**:**	**3.00 Hours**

GUIDELINES

1) The duration of the internship shall be for a period of 6/8 weeks on full time basis after IV semester final exams and before the commencement of VII semester.
2) The student must submit letters from the industry clearly specifying his / her name and the duration of the internship on the company letter head with authorized signature.
3) Internship must be related to the field of specialization of the respective UG programme in which the student has enrolled.
4) Students undergoing internship training are advised to report their progress and submit periodic progress reports to their respective guides.
5) Students have to present the internship activities carried out to the departmental committee and only upon approval by the committee, the student can proceed to prepare and submit the hard copy of the final internship report. However, interim or periodic reports as required by the industry / organization can be submitted as per the format acceptable to the respective industry /organizations.
6) The reports shall be printed on A4 size with 1.5 spacing and Times New Roman with font size 12, outer cover of the report (wrapper) has to be Ivory color for UG circuit Programs and Light Blue for Non-Circuit Programs.
7) The broad format of the internship final report shall be as follows
    - Cover Page
    - Certificate from College
    - Certificate from Industry / Organization
    - Acknowledgement
    - Synopsis
    - Table of Contents
    - Chapter 1 - Profile of the Organization: Organizational structure, Products, Services, Business Partners, Financials, Manpower, Societal Concerns, Professional Practices,
    - Chapter 2 - Activities of the Department
    - Chapter 3 - Tasks Performed: summaries the tasks performed during 8-week period
    - Chapter 4 – Reflections: Highlight specific technical and soft skills that you acquired during internship
    - References & Annexure

Course Outcomes:

After going through the internship the student will be able to:

CO1: Apply engineering and management principles
CO2: Analyze real-time problems and suggest alternate solutions
CO3: Communicate effectively and work in teams
CO4: Imbibe the practice of professional ethics and need for lifelong learning.

Scheme of Continuous Internal Evaluation (CIE):

The evaluation committee shall consist of Guide, Professor/Associate Professor and Assistant Professor. The committee shall assess the presentation and the progress reports in two reviews.

The evaluation criteria shall be as per the rubrics given below:

Reviews	Activity	Weightage
Review-I	Explanation of the application of engineering knowledge in industries, ability to comprehend the functioning of the organization/ departments,	45%
Review-II	Importance of resource management, environment and sustainability presentation skills and report writing	55%

Scheme for Semester End Evaluation (SEE):
The SEE examination shall be conducted by an external examiner (domain expert) and an internal examiner. Evaluation shall be done in batches, not exceeding 6 students per batch.

Semester VIII						
MAJOR PROJECT						
Course Code	**:**	**18ECP81**		**CIE**	**:**	**100 Marks**
Credits: L:T:P	**:**	**0:0:16**		**SEE**	**:**	**100 Marks**
Total Hours	**:**	**32**		**SEE Duration**	**:**	**3.00 Hours**
Course Learning Objectives: The students will be able to						
1.	Acquire the ability to make links across different areas of knowledge and to generate, develop and evaluate ideas and information so as to apply these skills to the project task.					
2.	Acquire the skills to communicate effectively and to present ideas clearly and coherently to a specific audience in both written and oral forms.					
3.	Acquire collaborative skills through working in a team to achieve common goals.					
4.	Self-learn, reflect on their learning and take appropriate action to improve it.					
5.	Prepare schedules and budgets and keep track of the progress and expenditure.					

Major Project Guidelines:

1. The project topic, title and synopsis have to be finalized and submitted to their respective internal guide(s) before the beginning of the 8th semester.
2. The detailed Synopsis (approved by the department ***Project Review Committee***) has to be submitted during the 1st week after the commencement of 8th semester.

Batch Formation:

- Students are free to choose their project partners from within the program or any other program.
- Each student in the team must contribute towards the successful completion of the project. The project may be carried out In-house / Industry / R & D Institution.
- ***The project work is to be carried out by a team of two to four students , in exceptional cases where a student is placed in a company and offered an internship through the competitive process or student is selected for internship at national or international level through competitive process***, the student can work independently.
- ***The students are allowed to do either a project for full 5 days in the industry or full 5 days in the college.***
- ***In case the project work is carried out outside Bengaluru, such students must be available during Project Evaluation process scheduled by the respective departments and they must also interact with their guide regularly through Email / Webinar / Skype etc.***

Project Topic Selection:

The topics of the project work must be in the ***field of respective program areas or in line with CoE's(Centre of Excellence) identified by the college*** or **List of project areas as given by industry/Faculty. The projects as far as possible should have societal relevance with focus on sustainability.**

Students can select courses in ***NPTEL*** from the discipline of ***Humanities and Social Sciences, Management, Multidisciplinary and Design Engineering.*** The course chosen could be either of ***4w/8w/12w*** duration. The students need to enrol for a course, register for the exam and submit the e-certificate to the department, as and when it is released by NPTEL. ***The same will be considered as one of the components during project evaluation of phase 2 and phase 5.***

Project Evaluation:

- Continuous monitoring of project work will be carried out and cumulative evaluation will be done.

- The students are required to meet their internal guides once in a week to report their progress in project work.
- **Weekly Activity Report** (WAR) has to be maintained in the form of a diary by the project batch and the same has to be discussed with the Internal Guide regularly.
- In case of ***Industry project***, during the course of project work, the internal guides will have continuous interaction with external guides and will visit the industry at least twice during the project period.
- For CIE assessment the project groups must give a final seminar with the draft copy of the project report.
- The presentation by each group will be for 20-30 minutes and every member of the team needs to justify the contributions to the project.
- The project team is required to submit Hard copies of the detailed Project Report in the prescribed format to the department.
- For CIE 50% weightage should be given to the project guide and 50% weightage to the project evaluation committee.
- Before the final evaluations the project group is required to produce a No dues certificate from Industry, Central Library and Department.

Course Outcomes of Major Project:	
1	Apply knowledge of mathematics, science and engineering to solve respective engineering domain problems.
2	Design, develop, present and document innovative/multidisciplinary modules for a complete engineering system.
3	Use modern engineering tools, software and equipment to solve problem and engage in life-long learning to follow technological developments.
4	Function effectively as an individual, or leader in diverse teams, with the understanding of professional ethics and responsibilities.

CIE Assessment:

The following are the weightings given for the various stages of the project.

1.	Selection of the topic and formulation of objectives	10%
2.	Design and Development of Project methodology	25%
3.	Execution of Project	25%
4.	Presentation, Demonstration and Results Discussion	30%
5.	Report Writing & Publication	10%

SEE Assessment:

The following are the weightages given during Viva Examination.

1.	Written presentation of synopsis	10%
2.	Presentation/Demonstration of the project	30%
3.	Methodology and Experimental Results & Discussion	30%
4.	Report	10%
5.	Viva Voce	20%

Calendar of Events for the Project Work:

Week	Event
Beginning of 7th Semester	Formation of group and approval by the department committee.
7th Semester	Problem selection and literature survey
Last two weeks of 7th Semester	Finalization of project and guide allotment

II Week of 8th Semester	Synopsis submission and preliminary seminar
III Week	First visit of the internal guides to industry (In case of project being carried out in industry)
III to VI Week	Design and development of project methodology
VII to IX Week	Implementation of the project
X Week	Submission of draft copy of the project report
XI and XII Week	Second visit by guide to industry for demonstration. Final seminar by Department project Committee and guide for internal assessment. Finalization of CIE.

Evaluation Scheme for CIE and SEE

Scheme of Evaluation for CIE		**Scheme of Evaluation for SEE**	
Particulars	**%Marks**	**Particulars**	**%Marks**
Project Evaluation I	10%	Project Synopsis (Initial Write up)	10%
Project Evaluation II	25%	Project Demo / Presentation	30%
Project Evaluation III	25%	Methodology and Results Discussion	30%
Project Evaluation Phase-IV (Submission of Draft Project Report for Verification)	30%	Project Work Report	10%
Project Evaluation Phase-V (Project Final Internal Evaluation)	10%	Viva-voce	20%
Total	100	Total	100

Course Code	**:**	**21XXI310**	**SUMMER INTERNSHIP - I**	**CIE Marks**	**:**	**50**
Credits L-T-P	**:**	**0:00:01**	***(Practical)***	**SEE Marks**	**:**	**50**
Duration	**:**	**3 Weeks**		**SEE Durations**	**:**	**2 Hours**

1. A minimum of 1 credit of internship after I year may be counted towards B.E. degree program.
2. During II semester to III semester transition, Three weeks of internship is mandatory.
3. Internship report and certificate need to be submitted at the end of the internship to the concerned department for the evaluation.
4. Internship evaluation will be done during III semester for 1 credit in two phases.

Students can opt the internship with the below options	**3 Weeks**

A. **Within the respective department at RVCE (Inhouse)** Departments may offer internship opportunities to the students through the available tools so that the students come out with the solutions to the relevant societal problems that could be completed within THREE WEEKS.

B. **At RVCE Center of Excellence/Competence**

RVCE hosts around 16 CENTER OP EIXCELLENCE in various domains and around 05 CENTER OP COMPETENCE. The details of these could be obtained by visiting the website https:/ /rvce.edu.in / rvce-center-excellence. Each center would be providing the students relevant training/internship that could be completed in three weeks.

C. **At Intern Shala**

Intern Shala is India's no.1 internship and training platform with 40000+ paid internships in Engineering. Students can opt any internship for the duration of three weeks by enrolling on to the platform through https: / /internsha1a.com

D. **At Engineering Colleges nearby their hometown**

Students who are residing out of Bangalore, should take permission from the nearing Engineering College of their hometown to do the internship. The nearby college should agree to give the certificate and the letter/email stating the name of the student along with the title of the internship held with the duration of the internship in their official letter head.

E**. At Industry or Research Organizations**

Students can opt for interning at the industry or research organizations like BEL, DRDO, ISRO, BHEL, etc.. through personal contacts. However, the institute/industry should provide the letter of acceptance through hard copy/email with clear mention of the title of the work assigned along with the duration and the name of the student.

Procedures for the Internship:

1. Request letter/Email from the office of respective departments should go to Places where internships are intended to be carried out with a clear mention of the duration of Three Weeks. Colleges/Industry/ CoEs/CoCs will confirm the training slots and the number of seats allotted for the internship via confirmation letter/ Email.
2. Students should submit a synopsis of the proposed work to be done during internship program. Internship synopsis should be assessed or evaluated by the concerned Colleges/Industry/CoEs/CoC. Students on joining internship at the concerned Colleges/Industry/ CoEs/CoCs submit the Daily log of student's dairy from the joining date.
3. Students will submit the digital poster of the training module/project after completion of internship.
4. Training certificate to be obtained from industry.

Course Outcomes:

After going through this course the student will be able to:

CO1	:	Develop communication, interpersonal,critical skills, work habits and attitudes necessary for employement.
CO2	:	Assess interests,abilities in their field of study, integrate theroy and practice and explore career opportunities prior to graduation.
CO3	:	Explore and use state of art modern engineering tools to solve the societal problems with affininity towards environment and involve in ethical professional practice.
CO4	:	Compile, document and communiate effectively on the intersnship activities with the engineering community.

Semester: V						
SUMMER INTERNSHIP – II (Practical)						
Course Code	**:**	**21ECI57**		**CIE**	**:**	**50 Marks**
Credits: L: T: P	**:**	**0:0:2**		**SEE**	**:**	**50 Marks**
Total Hours	**:**	**4 Weeks**		**SEE Duration**	**:**	**02 Hrs**
Students can opt the internship with the below options						**04 Weeks**

A. Within the respective department at RVCE (Inhouse) Departments may offer internship opportunities to the students through the available tools so that the students come out with the solutions to the relevant societal problems that could be completed within THREE WEEKS.

B. At RVCE Center of Excellence/Competence

RVCE hosts around 16 CENTER OF EXCELLENCE in various domains and around 05 CENTER OF COMPETENCE. The details of these could be obtained by visiting the website https:/ /rvce.edu.in / rvce-center- excellence. Each centre would be providing the students relevant training/internship that could be completed in three weeks.

C. At Intern Shala

Intern Shala is India's no.1 internship and training platform with 40000+ paid internships in Engineering. Studentscan opt any internship for the duration of three weeks by enrolling on to the platform through https: //internshala.com

D. At Engineering Colleges nearby their hometown

Students who are residing out of Bangalore, should take permission from the nearing Engineering College of theirhometown to do the internship. The nearby college should agree to give the certificate and the letter/email statingthe name of the student along with the title of the internship held with the duration of the internship in their officialletter head.

E. At Industry or Research Organizations

Students can opt for interning at the industry or research organizations like BEL, DRDO, ISRO, BHEL, etc.. through personal contacts. However, the institute/industry should provide the letter of acceptance through hard copy/email with clear mention of the title of the work assigned along with the duration and the name of the student.

Procedures for the Internship:

1. Request letter/Email from the office of respective departments should go to Places where internships are intended to be carried out with a clear mention of the duration of Three Weeks. Colleges/Industry/ CoEs/CoCs will confirm the training slots and the number of seats allotted for the internship via confirmation letter/ Email.
2. Students should submit a synopsis of the proposed work to be done during internship program. Internship synopsis should be assessed or evaluated by the concerned Colleges/Industry/CoEs/CoC. Students on joininginternship at the concerned Colleges/Industry/ CoEs/CoCs submit the Daily log of student's dairy from the joining date.
3. Students will submit the digital poster of the training module/project after completion of internship.
4. Training certificate to be obtained from industry.

Course Outcomes: After completing the course, the students will be able to	
CO1	Develop interpersonal, critical skills, work habits and attitudes necessary for employment.
CO2	Assess interests, abilities in their field of study, integrate theory and practice and explore career opportunities prior to graduation.
CO3	Explore and use state of art modern engineering tools to solve the societal problems with affinity towards environment and involve in ethical professional practice.

CO4	Compile, document and communicate effectively on the internship activities with the engineering community.

RUBRICS FOR THE CONTINUOUS INTERNAL EVALUATION		
#	**COMPONENTS**	**MARKS**
1.	**REVIEW I:** Explanation of the application of engineering knowledge in industries, abilityto comprehend the functioning of the organization/ departments, exhibiting professional and ethical practice, communication skills (oral and body language).	**20**
2.	**REVIEW II**: Presentation in the form digital poster, report writing, exhibiting ethics inreport writing, oral presentation.	**30**
MAXIMUM MARKS FOR THE CIE		**50**

RUBRICS FOR SEMESTER END EXAMINATION		
The SEE examination shall be conducted by an external examiner (domain expert) and an internal examiner.		
Q.NO.	**CONTENTS**	**MARKS**
1	Write Up	**10**
2	Conduction of the Experiments	**20**
3	Viva	**20**
	TOTAL	**50**

SEMESTER : II						
MINOR PROJECT						
Course Code	**:**	**18MCN24**		**CIE Marks**	**:**	**100**
Credits L: T: P	**:**	**0:0:2**		**SEE Marks**	**:**	**100**
Hours/Week	**:**	**4**		**SEE Duration**	**:**	**3 Hrs**

GUIDELINES

1. Each project group will consist of maximum of two students.
2. Each student / group has to select a contemporary topic that will use the technical knowledge of their program of study after intensive literature survey.
3. Allocation of the guides preferably in accordance with the expertise of the faculty.
4. The number of projects that a faculty can guide would be limited to four.
5. The minor project would be performed in-house.
6. The implementation of the project must be preferably carried out using the resources available in the department/college.

Course Outcomes
After completing the course, the students will be able to:

CO1	Conceptualize, design and implement solutions for specific problems.
CO2	Communicate the solutions through presentations and technical reports.
CO3	Apply resource managements skills for projects.
CO4	Synthesize self-learning, team work and ethics.

Scheme of Continuous Internal Examination
Evaluation will be carried out in 3 phases. The evaluation committee will comprise of 4 members: Guide, Two Senior Faculty Members and Head of the Department.

Phase	Activity	Weightage
I	Synopsys submission, Preliminary seminar for the approval of selected topic and objectives formulation	20%
II	Mid term seminar to review the progress of the work and documentation	40%
III	Oral presentation, demonstration and submission of project report	40%

** Phase wise rubrics to be prepared by the respective departments

CIE Evaluation shall be done with weightage / distribution as follows:

- Selection of the topic & formulation of objectives 10%
- Design and simulation/ algorithm development/ experimental setup 25%
- Conducting experiments/ implementation / testing 25%
- Demonstration & Presentation 15%
- Report writing 25%

Scheme of Semester End Examination (SEE):

The evaluation will be done by ONE senior faculty from the department and ONE external faculty member from Academia / Industry / Research Organization. The following weightages would be given for the examination. Evaluation will be done in batches, not exceeding 6 students.

- Brief write up about the project 05%
- Presentation / Demonstration of the Project 20%
- Methodology and Experimental results & Discussion 25%
- Report 20%
- Viva Voce 30%

SEMESTER: III						
INTERNSHIP						
Course Code	**:**	**18MVE32**		**CIE Marks**	**:**	**100**
Credit L:T:P	**:**	**0:0:5**		**SEE Marks**	**:**	**100**
Hours/week	**:**	**10**		**SEE Duration**	**:**	**3 Hrs**

GUIDELINES

1) The duration of the internship shall be for a period of 8 weeks on full time basis after II semester final exams and before the commencement of III semester.
2) The student must submit letters from the industry clearly specifying his / her name and the duration of the internship on the company letter head with authorized signature.
3) Internship must be related to the field of specialization of the respective PG programme in which the student has enrolled.
4) Students undergoing internship training are advised to report their progress and submit periodic progress reports to their respective guides.
5) Students have to present the internship activities carried out to the departmental committee and only upon approval by the committee, the student can proceed to prepare and submit the hard copy of the final internship report. However, interim or periodic reports as required by the industry / organization can be submitted as per the format acceptable to the respective industry /organizations.
6) The reports shall be printed on A4 size with 1.5 spacing and Times New Roman with font size 12, outer cover of the report (wrapper) has to be Ivory color for PG circuit Programs and Light Blue for Non-Circuit Programs.
7) The broad format of the internship final report shall be as follows
    - Cover Page
    - Certificate from College
    - Certificate from Industry / Organization
    - Acknowledgement
    - Synopsis
    - Table of Contents
    - Chapter 1 - Profile of the Organization: Organizational structure, Products, Services, Business Partners, Financials, Manpower, Societal Concerns, Professional Practices,
    - Chapter 2 - Activities of the Department
    - Chapter 3 - Tasks Performed: summaries the tasks performed during 8-week period
    - Chapter 4 – Reflections: Highlight specific technical and soft skills that you acquired during internship
    - References & Annexure

Course Outcomes:

After going through the internship the student will be able to:

CO1: Apply engineering and management principles
CO2: Analyze real-time problems and suggest alternate solutions
CO3: Communicate effectively and work in teams
CO4: Imbibe the practice of professional ethics and need for lifelong learning.

Scheme of Continuous Internal Evaluation (CIE):

The evaluation committee shall consist of Guide, Professor/Associate Professor and Assistant Professor. The committee shall assess the presentation and the progress reports in two reviews.

The evaluation criteria shall be as per the rubrics given below:

Reviews	Activity	Weightage
Review-I	Explanation of the application of engineering knowledge in industries, ability to comprehend the functioning of the organization/ departments,	45%
Review-II	Importance of resource management, environment and sustainability presentation skills and report writing	55%

Scheme for Semester End Evaluation (SEE):
The SEE examination shall be conducted by an external examiner (domain expert) and an internal examiner. Evaluation shall be done in batches, not exceeding 6 students per batch.

SEMESTER: III						
MAJOR PROJECT: PHASE-I						
Course Code	**:**	**18MVE33**		**CIE Marks**	**:**	**100**
Credit L:T:P	**:**	**0:0:5**		**SEE Marks**	**:**	**100**
Hours/week	**:**	**10**		**SEE Duration**	**:**	**3 Hrs**

GUIDELINES

1. The Major Project work comprises of Phase-I and Phase-II. Phase-I is to be carried out in third semester and Phase-II in fourth semester.
2. The total duration of the Major project Phase-I shall be for 16 weeks.
3. Major project shall be carried out on individual student basis in his/her respective PG programme specialization. Interdisciplinary projects are also considered.
4. The allocation of the guides shall be preferably in accordance with the expertise of the faculty.
5. The project may be carried out on-campus/industry/organization with prior approval from Internal Guide, Associate Dean and Head of the Department.
6. Students have to complete Major Project Phase-I before starting Major Project Phase-II.
7. The reports shall be printed on A4 size with 1.5 spacing and Times New Roman with font size 12, outer cover of the report (wrapper) has to be Ivory color for PG circuit Programs and Light Blue for Non-Circuit Programs.

Course Outcomes :

After going through this course the students will be able to:

CO1: Conceptualize, design and implement solutions for specific problems.
CO2: Communicate the solutions through presentations and technical reports.
CO3: Apply project and resource managements skills, professional ethics, societal concerns
CO4: Synthesize self-learning, sustainable solutions and demonstrate life-long learning

Scheme of Continuous Internal Examination (CIE)

Evaluation shall be carried out in two reviews. The evaluation committee shall consist of Guide, Professor/Associate Professor and Assistant Professor.

The evaluation criteria shall be as per the rubrics given below:

Reviews	Activity	Weightage
Review-I	Selection of the topic, Literature Survey, Problem Formulation and Objectives	45%
Review-II	Methodology and Report writing	55%

Scheme for Semester End Evaluation (SEE):

Major Phase-I evaluation shall be done by an external examiner (domain expert) and respective guide as per the schedule. Maximum of four candidates per batch shall be allowed to take examination. The batches are to be formed based on specific domain of work.

SEMESTER : IV						
MAJOR PROJECT : PHASE-I						
Course Code	**:**	**18MVE41**		**CIE Marks**	**:**	**100**
Credit L:T:P	**:**	**0:0:20**		**SEE Marks**	**:**	**100**
Hours/Week	**:**	**40**		**SEE Duration**	**:**	**3 Hrs**

GUIDELINES

1. Major Project Phase-II is continuation of Phase-I.
2. The duration of the Phase-II shall be of 16 weeks.
3. The student needs to complete the project work in terms of methodology, algorithm development, experimentation, testing and analysis of results.
4. It is mandatory for the student to present/publish the work in National/International conferences or Journals
5. The reports shall be printed on A4 size with 1.5 spacing and Times New Roman with font size 12, outer cover of the report (wrapper) has to be Ivory color for PG circuit Programs and Light Blue for Non-Circuit Programs.

Course Outcomes

After going through this course the students will be able to:

CO1: Conceptualize, design and implement solutions for specific problems.
CO2: Communicate the solutions through presentations and technical reports.
CO3: Apply project and resource managements skills, professional ethics, societal concerns
CO4: Synthesize self-learning, sustainable solutions and demonstrate life-long learning

Scheme of Continuous Internal Examination (CIE)

Evaluation shall be carried out in three reviews. The evaluation committee shall consist of Guide, Professor/Associate Professor and Assistant Professor.

The evaluation criteria shall be as per the rubrics given below:

Reviews	Activity	Weightage
Review-I	Review and refinement of Objectives, Methodology and Implementation	20%
Review-II	Design, Implementation and Testing	40%
Review-III	Experimental Result & Analysis, Conclusions and Future Scope of Work, Report Writing and Paper Publication	40%

Scheme for Semester End Evaluation (SEE):

Major Project Phase-II SEE shall be conducted in two stages. This is initiated after fulfilment of submission of project report and CIE marks.

Stage-1 Report Evaluation

Evaluation of Project Report shall be done by guide and an external examiner.

Stage-2 Project Viva-voce

Major Project Viva-voce examination is conducted after receipt of evaluation reports from guide and external examiner.

Both Stage-1 and Stage-2 evaluations shall be completed as per the evaluation formats.

SEE procedure is as follows:

	Internal Guide	External Examiner	TOTAL	
SEE Report Evaluation	100 marks	100 marks		200 marks
			(A)	(200/2) = 100 marks

Viva-Voce	Jointly evaluated by Internal Guide & External Evaluator	(B)	100 marks
		Total Marks	**[(A)+(B)]/2 = 100**

SEMESTER : IV						
TECHNICAL SEMINAR						
Course Code	**:**	**18MVE42**		**CIE Marks**	**:**	**50**
Credit L:T:P	**:**	**0:0:2**		**SEE Marks**	**:**	**50**
Hours/Week	**:**	**4**		**SEE Duration**	**:**	**30 Mins**

GUIDELINES

1. The presentation shall be done by individual students.
2. The seminar topic shall be in the thrust areas of respective PG programme.
3. The seminar topic could be complementary to the major project work
4. The student shall bring out the technological developments with sustainability and societal relevance.
5. Each student must submit both hard and soft copies of the presentation along with the report.
6. The reports shall be printed on A4 size with 1.5 spacing and Times New Roman with font size 12, outer cover of the report (wrapper) has to be Ivory color for PG circuit Programs and Light Blue for Non-Circuit Programs.

Course Outcomes

After going through this course the student will be able to:

CO1: Identify topics that are relevant to the present context of the world
CO2: Perform survey and review relevant information to the field of study.
CO3: Enhance presentation skills and report writing skills.
CO4: Develop alternative solutions which are sustainable

Scheme of Continuous Internal Evaluation (CIE): Evaluation shall be carried out in two reviews. The evaluation committee shall consist of Guide, Professor/Associate Professor and Assistant Professor.

The evaluation criteria shall be as per the rubrics given below:

Reviews	Activity	Weightage
Review-I	Selection of Topic, Review of literature, Technical Relevance, Sustainability and Societal Concerns, Presentation Skills	45%
Review-II	Technological Developments, Key Competitors, Report writing	55%

Scheme for Semester End Evaluation (SEE):

The SEE examination shall be conducted by an external examiner and an internal examiner. Evaluation shall be done in batches, not exceeding 6 students per batch.

SEMESTER III							
Course Code	:	22MVE32N	**INTERNSHIP**	CIE Marks	:	50
Credits L-T-P	:	0 - 0 - 6		SEE Marks	:	50
Hours/Week	:	12		SEE Durations	:	3 Hrs

Guidelines:

1. The duration of the internship shall be for a period of 6 weeks on full time basis after II semester final exams and before the commencement of III semester.
2. The student must submit letters from the industry clearly specifying his / her name and the duration of the internship on the company letter head with authorized signature.
3. Internship must be related to the field of specialization of the respective PG programme in which the student has enrolled.
4. Students undergoing internship training are advised to report their progress and submit periodic progress reports to their respective guides.
5. Students have to present the internship activities carried out to the departmental committee and only upon approval by the committee, the student can proceed to prepare and submit the hard copy of the final internship report. 6. The reports shall be printed on A4 size with 1.5 spacing and Times New Roman with font size 12, outer cover of the report (wrapper) has to be softbound in Ivory color for PG circuit Programs and Light Blue for Non-Circuit Programs.

Course Outcomes: After going through the internship the student will be able to

CO1: Apply Engineering and Management principles to solve the problems
CO2: Analyze real-time problems and suggest alternate solutions
CO3: Communicate effectively and work in teams
CO4: Imbibe the practice of professional ethics and lifelong learning

Scheme of Continuous Internal Evaluation (CIE):

The evaluation committee shall consist of Guide, Professor, Associate Professor/Assistant Professor. The committee shall assess the presentation and the progress reports.

The evaluation criteria shall be as per the rubrics given below:

Reviews	Activity	Weightage
I	Application of Engineering knowledge in industries, ability to comprehend the functioning of the Organization/ Departments.	40%
II	Importance of Resource Management, Environment and Sustainability. Demonstration and Presentation of Internship work with Report Submission	60%

Scheme for Semester End Evaluation (SEE):

The SEE examination shall be conducted by an external examiner (domain expert) and an internal examiner. Evaluation shall be done in batches, not exceeding 6 students per batch.

SEMESTER III							
Course Code	:	22MVE33P	**MINOR PROJECT**	CIE Marks	:	50
Credits L-T-P	:	0 - 0 - 6		SEE Marks	:	50
Hours/Week	:	12		SEE Durations	:	3 Hrs

Guidelines:

1. Each project group will consist of maximum of two students.
2. Each student / group has to select a contemporary topic that will use the technical knowledge of their program of study after intensive literature survey.
3. Allocation of the guides preferably in accordance with the expertise of the faculty.
4. The minor project would be performed in-house.
5. The implementation of the project must be preferably carried out using the resources available in the department/college.

Course Outcomes: After completing the course, the students will be able to

CO1: Conceptualize, design and implement solutions for specific problems.
CO2: Communicate the solutions through presentations and technical reports.
CO3: Apply resource managements skills for projects.
CO4: Synthesize self-learning, team work and ethics.

Scheme of Continuous Internal Examination

Evaluation shall be carried out in three reviews. The evaluation committee shall consist of Guide, Professor and Associate Professor/Assistant Professor.

Phase *	Activity	Weightage
I	Approval of the selected topic, formulation of Problem Statement and Objectives with Synopsis submission	20 %
II	Mid-term seminar to review the progress of the work with documentation	40 %
III	Oral presentation, demonstration and submission of project report	40 %

* Phase wise rubrics to be prepared by the respective departments

CIE Evaluation shall be done with weightage / distribution as follows:

• Selection of the topic & formulation of Problem Statement and Objectives	10 %
• Design and simulation/ Algorithm development/ Experimental setup	25 %
• Conducting experiments/ Implementation / Testing	25 %
• Demonstration & Presentation	25 %
• Report writing	15 %

Scheme of Semester End Examination (SEE):

The evaluation will be done by ONE senior faculty from the department and ONE external faculty member from Academia / Industry / Research Organization. The following weightages would be given for the examination. Evaluation will be done in batches, not exceeding 6 students.

• Brief write up about the project 05%
• Methodology and Experimental Results & Discussion 20%
• Presentation / Demonstration of the Project 25%
• Report 20%
• Viva Voce 30%

SEMESTER IV							
Course Code	:	22MVE41P	**MAJOR PROJECT**	CIE Marks	:	100
Credits L-T-P	:	0 - 0 - 18		SEE Marks	:	100
Hours/Week	:	36		SEE Durations	:	3 Hrs

Guidelines:
1. Major Project is to be carried out for a duration of 18 weeks
2. Students must adhere to the Project Presentation Schedule, report to their guide on a weekly basis and get their Project diary signed by their guide 4. Students must execute the Major Project individually and not in teams.
5. It is mandatory for the students to present/publish their project work in National/International Conferences or Journals
6. The reports shall be printed on A4 size with 1.5 spacing and Times New Roman with font size 12, outer cover of the report (wrapper) has to be soft bound and in Ivory color for PG circuit Programs and Light Blue for Non-Circuit Programs

Course Outcomes: After completing the course, the students will be able to
CO1: Conceptualize, Design and Implement solutions for specific problems.
CO2: Communicate the solutions through presentations and technical reports.
CO3: Apply project and resource managements skills, professional ethics and societal concerns
CO4: Synthesize self-learning, sustainable solutions and demonstrate life-long learning

Scheme of Continuous Internal Examination
Evaluation shall be carried out in three reviews. The evaluation committee shall consist of Guide, Professor, Associate Professor/Assistant Professor.

Phase *	Activity	Weightage
I	Selection of Project Title, Formulation of Problem Statement and Objectives	20 %
II	Design, Implementation and Testing	40 %
II	Experimental Result & Analysis, Conclusions and Future Scope of Work, Report Writing and Paper Publication	40 %

* Phase wise rubrics to be prepared by the respective departments

Scheme for Semester End Evaluation (SEE):
Major Project SEE evaluation shall be conducted in two stages. This is initiated after fulfilment of submission of Project Report and CIE marks.
Stage-1 Report Evaluation: Evaluation of Project Report shall be done by the Guide and an External examiner.
Stage-2 Project Viva-voce: Major Project Viva-voce examination is conducted after receipt of evaluation reports from Guide and External examiner.

SEE procedure is as follows:			
Report Evaluation	Internal Examiner: 100 Marks	**= 200**	
	External Examiner: 100 Marks	200 / 2 = **100**	**A**
Viva-Voce	Jointly evaluated by Internal Guide & External Evaluator	**= 100**	**B**
	Total Marks = (A + B) / 2 =	**100**	

SEMESTER: IV					
MINOR PROJECT – I (Practice)					
Course Code	**:**	**18MCA46**	**CIE Marks**	**:**	**100**
Credits: L:T:P	**:**	**0:0:3**	**SEE Marks**	**:**	**100**
Total Hours	**:**	**78P**	**SEE Duration**	**:**	**3 Hrs (P)**

GUIDELINES

1. Each project group will consist of maximum of two students
   The Student shall undertake minor project- I depending on the electives studied in the previous semesters / Research based / Industry Oriented
   Each student / group has to select a contemporary topic that will use the technical knowledge of their program of study after intensive literature survey
2. Allocation of the guides preferably in accordance with the expertise of the faculty
3. The number of projects that a faculty can guide would be limited to six
4. The minor project would be performed in-house
5. The implementation of the project must be preferably carried out using the resources available in the department/college
6. Students are required to publish project findings in reputed journals/ conferences

Course Outcomes: After completing the course, the students will be able to

CO1:	Conceptualize, design and implement solutions for specific problems
CO2:	Communicate the solutions through presentations and technical reports
CO3:	Apply resource managements skills for projects
CO4:	Synthesize self-learning, team work and ethics

Scheme of Continuous Internal Examination (CIE)

Evaluation of the project work will be done by the committee appointed by the director, Dept of MCA. The student should submit report on the mini project work.

Evaluation will be carried out in THREE Phases.

Phase	Activity	Weightage
I	Synopsis submission, Preliminary seminar for the approval of selected topic and Objectives formulation	10%
II	Mid-term seminar to review the progress of the work and documentation • Design and Simulation/Algorithm development / Experimental Setup • Conducting experiments / Implementation / Testing	20% 25%
III	Oral presentation Demonstration Project report& Paper publication	10% 10% 25%

Scheme for Semester End Examination (SEE)

The evaluation will be done by Internal and External examiners. The following weightage would be given for the examination. Evaluation will be done in batches of 10 students.

1. Project work 40%
2. Presentation 30%
3. Viva-voce 30%

CO-PO Mapping												
CO/PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**
CO1	M	M	H	H	H	-	-	M	-	H	H	
CO2	-	-	-	-	H	-	-	H	H	H	-	
CO3	H	H	M	-	M	M	H	H	-	M	H	
CO4	-	H	-	-	-	H	M	M	M	H	-	

Mapping of Course Outcomes (CO) to Program Specific Outcomes (PSO)		
CO/PSO	**PSO1**	**PSO2**
CO1	H	M
CO2	-	L
CO3	-	M
CO4	M	M

H-High, M-Medium, L-Low

MINOR PROJECT – II					
Course Code	**:**	18MCA56	**CIE Marks**	**:**	100
Credits :L:T:P	**:**	0:0:4	**SEE Marks**	**:**	100
Hrs/Week	**:**	04	**SEE Duration**	**:**	03 Hrs

GUIDELINES

6. Each project group will consist of maximum of two students
   The Student shall undertake minor project- II depending on the electives studied in the previous semesters / Research based / Industry Oriented
   Each student / group has to select a contemporary topic that will use the technical knowledge of their program of study after intensive literature survey
7. Allocation of the guides preferably in accordance with the expertise of the faculty
8. The number of projects that a faculty can guide would be limited to six
9. The minor project would be performed in-house
10. The implementation of the project must be preferably carried out using the resources available in the department/college

Course Outcomes: After going through this course the students will be able to	
CO1:	Conceptualize, design and implement solutions for specific problems
CO2:	Communicate the solutions through presentations and technical reports
CO3:	Apply resource managements skills for projects
CO4:	Synthesize self-learning, team work and ethics

Scheme of Continuous Internal Examination (CIE)
Evaluation of the project work will be done by the committee appointed by the director, Dept. of MCA. The student should submit report on the mini project work. Evaluation will be carried out in THREE Phases.

Phase	Activity	Weightage
I	Synopsis submission, Preliminary seminar for the approval of selected topic and objectives formulation, Literature survey	20%
II	Midterm seminar to review the progress of the work Design and Simulation/Algorithm development / Experimental Setup	40%
III	Conducting experiments / Implementation / Testing - Oral presentation, demonstration and submission of project report	40%

Scheme for Semester End Examination (SEE)
The evaluation will be done by ONE senior faculty from the department and ONE external faculty member from Academia / Industry / Research Organization. The following weightages would be given for the examination. Evaluation will be done in batches, not exceeding 6 students.

Rubrics for SEE evaluation

- Project work 40%
- Presentation 30%
- Viva-voce 30%

Mapping of Course Outcomes (CO) to Program Outcomes (PO)												
CO/PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**
CO1	M	M	H	H	H	-	-	M	-	H	H	
CO2	-	-	-	-	H	-	-	H	H	H	-	
CO3	H	H	M	-	M	M	H	H	-	M	H	
CO4	-	H	-	-	-	H	M	M	M	H	-	

Mapping of Course Outcomes (CO) to Program Specific Outcomes (PSO)		
CO/PSO	**PSO1**	**PSO2**
CO1	H	M
CO2	-	L
CO3	-	M
CO4	M	M
High-3: Medium-2: Low-1		

SEMESTER: VI					
MAJOR PROJECT					
Course Code	**:**	18MCA61	**CIE Marks**	**:**	100
Credits L:T:P	**:**	**0:0:20**	**SEE Marks**	**:**	100
Hrs/Week	**:**	40	**SEE Duration**	**:**	03 Hrs

Course Learning Objectives:

The students shall be able to

1. Understand the method of applying technical knowledge to solve specific problems.
2. Apply software engineering and management principles while executing the project
3. Demonstrate good verbal presentation and technical report writing skills
4. Identify and solve complex application / research oriented problems using professionally prescribed standards

GUIDELINES

1. Major project will have to be done by only one student in his / her area of interest
2. Each student has to select a contemporary topic in the area of application or research that will use the technical knowledge and skill set
3. The project can be carried out on-campus or in an industry or an organization with prior approval from the Director, Department of MCA
4. Students carrying out the Project In house are required to be present in the college every day and report to the Internal Guide
5. The candidate must maintain and submit weekly project work dairy duly signed by the internal and external guide to verify the regularity of the student
6. Internal Evaluation of the project work will be done by the evaluation committee appointed by the Director, Department of MCA.
7. The standard duration of the project is for 5 month duration, however if the evaluation committee of the department, after the assessment feel that the work is insufficient and it has to be extended, then the student will have to continue as per the directions of the committee.
8. Students are mandatorily required to publish in reputed journals/ conferences.

Course Outcomes: After going through this course the students will be able to	
CO1:	Conceptualize, design and implement solutions for specific problem defined
CO2:	Communicate the solutions through presentations and dissertation report
CO3:	Apply project and resource management skills, professional ethics and societal concerns
CO4:	Exhibit self-learning, lifelong learning skills towards sustainable solutions

Scheme of Continuous Internal Examination (CIE)

Evaluation will be carried out in THREE Phases. The evaluation committee will comprise of: guide and members appointed by Director, MCA

Phase	Activity	Weightage
I	Synopsis submission, Preliminary seminar for the approval of selected topic , review and refinement of objectives, Literature survey	20%
II	Mid-term seminars to review the progress of the work and documentation – SRS and algorithm development, Design and simulation/ experimental set up	40%
III	Experimental result & analysis, testing, Conclusions and Future Scope of Work, Dissertation Report	40%

Note -

(a) 50% CIE is the pre requisite to appear for SEE
(b) Two hard bound dissertation reports are to be submitted. The report has to be in light yellow color
(c) Certificate sheet having the signatures of Guide, Director and Principal must be included
(d) Plagiarism report must be <20% and to be included in the report
(e) Technical paper publication in reputed Journals/ National / International Conference is mandatory

Scheme for Semester End Examination (SEE):

The evaluation will be done by ONE Senior faculty / Internal Guide from the department and ONE External member from Academia / Industry / Research Organization. Evaluation will be done in batches not exceeding SIX students per batch and maximum of 12 students per day per examiner.

SEE procedure is as follows

	Internal Examiner	**External Examiner**	**Total**	
SEE Dissertation	100 marks	100 marks		200 marks
			(A)	(200/2) =100 marks
Viva Voce	Jointly Evaluated by Internal and External Examiner		(B)	100 marks
		Total Marks		**[(A)+(B)]/2 = 100**

Final Marks / Grades = (CIE+SEE)/2

Mapping of Course Outcomes (CO) to Program Outcomes (PO)												
CO/PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**
CO1	H	H	H	M	L	M	L	-	-	-	L	L
CO2	-	-	-	-		M	-	M	H	-	-	-
CO3	-	-	-	-	L	M	M		-	H	L	-
CO4	-	-	-	-	L	M	H	M	-	-	H	L

Mapping of Course Outcomes (CO) to Program Specific Outcomes (PSO)		
	PSO1	**PSO2**
CO1	H	H
CO2	L	L
CO3	M	L
CO4	H	H
High-3: Medium-2: Low-1		

SEMESTER III					
MINOR PROJECT (Practice)					
Course Code	**:**	**20MCA36**	**CIE**	**:**	**100 Marks**
Credits: L:T:P	**:**	**0:0:2**	**SEE**	**:**	**100 Marks**
Total Hours	**:**	**52P**	**SEE Duration**	**:**	**3.00 Hours (P)**

GUIDELINES

1. Each project group will consist of maximum of two students
   The Student shall undertake minor project depending on the electives / Research based / Industry Oriented
   Each student / group has to select a contemporary topic that will use the technical knowledge of their program of study after intensive literature survey
2. Allocation of the guides preferably in accordance with the expertise of the faculty
3. The number of projects that a faculty can guide would be limited to six
4. The minor project would be performed in-house
5. The implementation of the project must be preferably carried out using the resources available in the department/college
6. Students are required to publish project findings in reputed journals/ conferences

Course Outcomes: After completing the course, the students will be able to	
CO1	Conceptualize, design and implement solutions for specific problems
CO2	Communicate the solutions through presentations and technical reports
CO3	Apply project and resource management skills, professional ethics and societal concerns
CO4	Synthesize self-learning, team work and ethics

Scheme of Continuous Internal Examination (CIE)

Evaluation of the project work will be done by the committee appointed by the director, Dept of MCA. Evaluation will be carried out in THREE Phases.

Phase	**Activity**	**Weightage**
I	Synopsis submission, Preliminary seminar for the approval of selected topic and Objectives formulation	20%
II	Mid-term seminar to review the progress of the work and documentation	
	• Design and Simulation/Algorithm development / Experimental Setup	20%
	• Conducting experiments / Implementation / Testing	20%
III	Oral presentation	10%
	Demonstration	10%
	Project report& Paper publication	20%

Scheme for Semester End Examination (SEE)

The evaluation will be done by Internal and External examiners. The following weightage would be given for the examination. Evaluation will be done in batches of 10 students.

1. Project work 40%
2. Presentation 30%
3. Viva-voce 30%

IV – SEMESTER					
MAJOR PROJECT (Practice)					
Course Code	**:**	**20MCA41**	**CIE**	**:**	**100 Marks**
Credits L:T:P	**:**	**0:0:20**	**SEE**	**:**	**100 Marks**
Hrs/Week	**:**	**40**	**SEE Duration**	**:**	**3.00 Hours**

GUIDELINES

1. Major project will have to be done by only one student in his / her area of interest
2. Each student has to select a contemporary topic in the area of application or research that will use the technical knowledge and skill set
3. The project can be carried out on-campus or in an industry or an organization with prior approval from the Director, Department of MCA
4. Students carrying out the Project In house are required to be present in the college every day and report to the Internal Guide
5. The candidate must maintain and submit weekly project work dairy duly signed by the internal and external guide to verify the regularity of the student
6. Internal Evaluation of the project work will be done by the evaluation committee appointed by the Director, Department of MCA.
7. The standard duration of the project is for 5-month duration, however if the evaluation committee of the department, after the assessment feel that the work is insufficient and it has to be extended, then the student will have to continue as per the directions of the committee.
8. Students are mandatorily required to publish in reputed journals/ conferences.

Course Outcomes: After going through this course the students will be able to	
CO1	Conceptualize, design and implement solutions for specific problem defined
CO2	Communicate the solutions through presentations and dissertation report
CO3	Apply project and resource management skills, professional ethics and societal concerns
CO4	Exhibit self-learning, lifelong learning skills towards sustainable solutions

Scheme of Continuous Internal Examination (CIE)

Evaluation will be carried out in THREE Phases. The evaluation committee will comprise of: guide and members appointed by Director, MCA

Phase	**Activity**	**Weightage**
I	Synopsis submission, Preliminary seminar for the approval of selected topic , review and refinement of objectives, Literature survey	20%
II	Mid-term seminars to review the progress of the work and documentation – SRS and algorithm development, Design and simulation/ experimental set up	40%
III	Experimental result & analysis, testing, Conclusions and Future Scope of Work, Dissertation Report	40%

Note -

(a) 50% CIE is the pre requisite to appear for SEE
(b) Two hard bound dissertation reports are to be submitted. The report has to be in light yellow color
(c) Certificate sheet having the signatures of Guide, Director and Principal must be included
(d) Plagiarism report must be <20% and to be included in the report

SEMESTER: III					
MINOR PROJECT (Practice)					
Course Code	**:**	**MCA461P**	**CIE**	**:**	**100 marks**
Credits: L:T:P	**:**	**0:0:4**	**SEE**	**:**	**100 marks**
Total Hours	**:**	**52P**	**SEE Duration**	**:**	**3.00 Hours**

GUIDELINES

1. Each project group will consist of a maximum of two students. The student shall undertake minor project depending on the electives / Research based / Industry Oriented Each student / group has to select a contemporary topic that will use the technical knowledge of their program of study after intensive literature survey.
2. Allocation of the guides preferably in accordance with the expertise of the faculty
3. The number of projects that a faculty can guide would be limited to six to eight.
4. The minor project would be performed in-house.
5. The implementation of the project must preferably be carried out using the resources available in the department/college.
6. Students are required to publish project findings in reputed journals/ conferences

Course Outcomes:
After going through this course, the student will be able to

CO1	Conceptualize, design and implement solutions for specific problems
CO2	Communicate the solutions through presentations and technical reports
CO3	Apply project and resource management skills, professional ethics and societal concerns
CO4	Synthesize self-learning, teamwork and ethics

Scheme of Continuous Internal Evaluation (CIE)
Evaluation of the project work will be done by the committee appointed by the Director, Dept of MCA. Evaluation will be carried out in THREE Phases.

Phase	Activity	Weightage
I	Synopsis submission, Preliminary seminar for the approval of selected topic and Objectives formulation	**20%**
II	Mid-term seminar to review the progress of the work and documentation. • Design and Simulation/Algorithm development Experimental Setup • Conducting experiments / Implementation / Testing	 **20%** **20%**
III	Oral presentation Demonstration Project report& Paper publication	**10%** **10%** **20%**

Scheme for Semester End Examination (SEE)
The evaluation will be done by Internal and External examiners. The following weightage would be given for the examination. Evaluation will be done in batches of 10 students.

1. Project work 40%
2. Presentation 30%
3. Viva-voce 30%

SEMESTER: III					
INTERNSHIP (Practice)					
Course Code	**:**	**MCA462N**	**CIE**	**:**	**100 marks**
Credits: L:T:P	**:**	**0:0:6**	**SEE**	**:**	**100 marks**
Total Hours	**:**	**78P**	**SEE Duration**	**:**	**3.00 Hours**

GUIDELINES

1) The duration of the internship shall be for a period of 6 weeks on full time basis after II semesterfinal exams and before the commencement of III semester.
2) The student can take up internship individually or as a team of TWO.
   A. **At Industry or Research Organizations** Students can opt for interning at the industry or research organizations like BEL, DRDO, ISRO, BHEL, etc.. However, the institute/industry should provide the letter of acceptance through hard copy/email with clear mention of the title of the work assigned along with the duration and the name of the student.
   B. **At RVCE Center of Excellence/Competence** RVCE hosts around 16 CENTER OF EXCELLENCE in various domains and around 05 CENTER OF COMPETENCE.
   The details of these could be obtained by visiting the website.
   https://rvce.edu.in/rvce-center-excellence
   C. **Within the respective department at RVCE (In house)** Departments may offer internship opportunities to the students based on societal concern/ research/consultancy works.
3) The student must submit letters from the industry/ CoE/CoC clearly specifying his / her name and the duration of the internship on the company letter head with authorized signature.
4) Students undergoing internship training are required to submit periodic progress reports to their respective guides and a final report at the end of the internship.

Course Outcomes:
After going through this course, the student will be able to

CO1	Understand appropriate operational principles and practices in the real-world scenarios.
CO2	Analyze real-time problems and suggest solutions.
CO3	Communicate effectively and work in teams
CO4	Imbibe the practice of professional ethics and need for lifelong learning.

Scheme of Continuous Internal Evaluation (CIE):
The evaluation committee shall consist of a Guide, Professor/Associate Professor and Assistant Professor. The committee shall assess the presentation and the progress reports in two reviews.

Reviews	Activity	Weightage
Review I	Presentation of the operational principles and practices of internship carried out.	45%
Review II	Presentation of internship experience with suitable methodology, structure and report writing.	55%

Scheme for Semester End Evaluation (SEE): The SEE examination shall be conducted by an external examiner and an internal examiner. Evaluation shall be done in batches, not exceeding 6 students per batch.

SEMESTER: IV					
MAJOR PROJECT (Practice)					
Course Code	**:**	**MCA491P**	**CIE**	**:**	**100 Marks**
Credits L:T:P	**:**	**0:0:15**	**SEE**	**:**	**100 Marks**
Hrs/Week	**:**	**30**	**SEE Duration**	**:**	**3.00 Hours**

GUIDELINES

1. A major project will have to be done by only one student in his / her area of interest.
2. Each student must select a contemporary topic in the area of application or research that will use the technical knowledge and skill set.
3. The project can be carried out on-campus or in an industry or an organization with prior approval from the Director, Department of MCA
4. Students carrying out the Project In house are required to be present in the college every day and report to the Internal Guide
5. The candidate must maintain and submit a weekly project work dairy duly signed by the internal and external guide to verify the regularity of the student.
6. Internal Evaluation of the project work will be done by the evaluation committee appointed by the Director, Department of MCA.
7. The standard duration of the project is for 5-month duration, however if the evaluation committee of the department, after the assessment feel that the work is insufficient and it must be extended, then the student will have to continue as per the directions of the committee.
8. Students are mandatorily required to publish in reputed journals/ conferences.

Course Outcomes:
After going through this course, the students will be able to

CO1	Conceptualize, design and implement solutions for specific problem defined
CO2	Communicate the solutions through presentations and dissertation report
CO3	Apply project and resource management skills, professional ethics, and societal concerns
CO4	Exhibit self-learning, lifelong learning skills towards sustainable solutions

Scheme of Continuous Internal Examination (CIE)

Evaluation will be carried out in THREE Phases. The evaluation committee will comprise of guide and members appointed by Director, MCA

Phase	Activity	Weightage
I	Synopsis submission, Preliminary seminar for the approval of selected topic, review and refinement of objectives, Literature survey	20%
II	Mid-term seminars to review the progress of the work and documentation – SRS and algorithm development, Design and simulation/ experimental set up	40%
III	Experimental result & analysis, testing, Conclusions and Future Scope of Work, Dissertation Report	40%

Note -

(a) 50% CIE is the prerequisite to appear for SEE.
(b) Two hard bound dissertation reports are to be submitted. The report must be in light yellow color.
(c) Certificate sheet having the signatures of Guide, Director and Principal must be included.
(d) Plagiarism report must be <20% and to be included in the report.

Scheme for Semester End Examination (SEE):

The evaluation will be done by ONE Senior faculty / Internal Guide from the department and ONE External member from Academia / Industry / Research Organization. Evaluation will be done in batches not exceeding SIX students per batch.

SEE procedure is as follows.

	Internal Examiner	**External Examiner**	**Total**	
SEE Dissertation	100 marks	100 marks		200 marks
			(A)	(200/2) =100 marks
Viva Voce	Jointly Evaluated by Internal and External Examiner		(B)	100 marks
		Total Marks		**[(A)+(B)]/2 = 100**

Final Marks / Grades = (CIE+SEE)/2