MVJ COLLEGE OF ENGINEERING
An Autonomous Institution
Scheme of Teaching and Examinations – 2023 – 2024
M. Tech. Electronics and Communication Engineering (Advanced Communication Technology)
Choice Based Credit System(CBCS) and Outcome-Based Education(OBE)

ISEMESTER

Sl.No	Course	Course Code	Course Title	Teaching Hours per Week				Examination				Credits
				Theory lecture	Tutorials	Practical / Drawing	Self-Study Components	Duration in hours	CIE Marks	SEE Marks	Total Marks	
				L	T	P	S					
1	BSC	MVJ22XXX11	Advanced Engineering Mathematics	03	00	00	-	03	50	50	100	3
2	IPCC	MVJ22LAC12	Advanced Digital Signal Processing	03	00	02	-	03	50	50	100	4
3	PCC	MVJ22LAC13	Advanced Communication Systems – 1	03	00	00	Y	03	50	50	100	4
4	PCC	MVJ22LAC14	Advanced Engineering Electromagnetics	03	00	00	-	03	50	50	100	3
5	PCC	MVJ22LAC15	Advanced Communication Networks	03	00	00	-	03	50	50	100	3
6	MCC	MVJ22RM16	Research Methodology and IPR	03	00	00	-	03	50	50	100	3
7	PCCL	MVJ22LACL17	Advanced Digital Signal Processing Laboratory	00	00	02	-	03	50	50	100	2
8	AUD/ AEC	MVJ22AUD18/ MVJ22AEC18 B	BOS recommended ONLINE course on 5G		Classes and evaluation procedures are as per the policy of the online course providers.							P P
			TOTAL	18	00	02	-	21	350	350	700	22

Note: BSC-Basic Science Courses, PCC: Professional core. IPCC-Integrated Professional Core Courses, MCC- Mandatory Credit Course, AUD/AEC –Audit Course / Ability Enhancement Course (A pass in AUD/AEC is mandatory for the award of the degree), PCCL-Professional Core Course lab, L-Lecture, P-Practical, T/SDA-Tutorial/Skill Development Activities (Hours are for Interaction between faculty and students)

	Integrated Professional Core Course (IPCC): Refers to Professional Theory Core Course Integrated with practical of the same course. The theory part of the IPCC shall be evaluated both by CIE and SEE. The practical part shall be evaluated by only CIE (no SEE).However, questions from the practical part of IPCC shall be included in the SEE question paper.

Audit Courses /Ability Enhancement Courses Suggested by BOS (ONLINE courses): Audit Courses: These are prerequisite courses suggested by the concerned Board of Studies. Ability Enhancement Courses will be suggested by the BoS if prerequisite courses are not requ ired for the programs. **Ability Enhancement Courses**:

- These courses are prescribed to help students to enhance their skills in in fields connected to the field of specialization as well allied fields that leads to employable skills. Involving in learning such courses are impetus to lifelong learning.
- The courses under this category are online courses published in advance and approved by the concerned Board of Studies.
- Registration to Audit /Ability Enhancement Course shall be done in consultation with the mentor and is compulsory during the concerned semester.
- In case a candidate fails to appear for the proctored examination or fails to pass the selected online course, he/she can register and appear for the same course if offered during the next session or register for a new course offered during that session, in consultation with the mentor.
- The Audit Ability Enhancement Course carries no credit and is not counted for vertical progression. However, a pass in such a course is mandatory for the award of the degree.

Skill development activities: Under Skill development activities in a concerning course, the students should

1. Interact with industry (small, medium, and large).
2. Involve in research/testing/projects to understand their problems and help creative and innovative methods to solve the problem.
3. Involve in case studies and field visits/fieldwork.
4. Accustom to the use of standards/codes etc., to narrow the gap between academia and industry.
5. Handle advanced instruments to enhance technical talent.
6. Gain confidence in modeling of systems and algorithms for transient and steady-state operations, thermal study, etc.
7. Work on different software/s (tools) to simulate, analyze and authenticate the output to interpret and conclude.

All activities should enhance student's abilities to employment and/or self-employment opportunities, management skills, Statistical analysis, fiscal expertise, etc.

Students and the course instructor/s to involve either individually or in groups to interact together to enhance the learning and application skills of the study they have undertaken. The students with the help of the course teacher can take up relevant technical –activities which will enhance their skill. The prepared report shall be evaluated for CIE marks.

MVJ COLLEGE OF ENGINEERING
An Autonomous Institution
Scheme of Teaching and Examinations – 2023 – 2024
M. Tech. Electronics and Communication Engineering (Advanced Communication Technology)
Choice Based Credit System(CBCS) and Outcome-Based Education(OBE)

II SEMESTER

Sl.	Cours	Course Code	Course Title	Teaching Hours/Week				Examination				Credi
				Theory lecture	Tutorials	Practical/ Drawing	Self-Study Components	Duration in hours	CIE Marks	SEE Marks	Total Marks	
				L	T	P	S					
1	PCC	MVJ22LAC21	Advanced Communication System2	03	00	00	-	03	50	50	100	3
2	IPCC	MVJ22LAC22	Antenna Theory and Design	03	00	02	Y	03	50	50	100	4
3	PEC	MVJ22LAC23x	*Professional elective1*	03	00	00	-	03	50	50	100	3
4	PEC	MVJ22LAC24x	*Professional elective2*	03	00	00	-	03	50	50	100	3
5	MPS	MVJ22LAC25	Mini Project with Seminar	00	00	04	-	--	100	--	100	3
6	PCCL	MVJ22LACL26	Advanced Communication Lab	00	00	02	-	03	50	50	100	02
7	AUD/ AEC	MVJ22AUD27	BOS recommended ONLINE courses on Introduction to machine learning		Classes and evaluation procedures are as per the policy of the online course providers.							PP
TOTAL				12	00	08	-	15	350	250	600	18

Note: PCC: Professional core courses, PEC: Professional Elective Courses, IPCC-Integrated Professional Core Courses. MPS-Mini Project With Seminar; AUD/AEC; Audit Courses /Ability Enhancement Courses (Mandatory),PCCL-Professional Core Course lab ,L-Lecture, P-Practical, T/SDA-Tutorial/Skill Development Activities(Hours are for Interaction between faculty and students)

Professional Elective 1		Professional Elective 2	
Course Code under MVJ22LAC23x	Course title	Course Code under MVJ22LAC24x	Course title
MVJ22LAC231	Wireless Sensor Networks	MVJ22LAC241	Optical Communication and Networking
MVJ22LAC232	Nano electronics	MVJ22LAC242	Statistical Signal Processing
MVJ22LAC233	Biomedical Signal Processing	MVJ22LAC243	MATLAB for Advanced Applications

Note:

1 Mini Project with Seminar: This may be hands-on practice, survey report, data collection and analysis, coding, mobile app development, field visit and report preparation, modeling of system, simulation, analyzing and authenticating, case studies, etc.

CIE marks shall be awarded by a committee comprising of H.O.D as Chairman, Guide/co-guide, if any, and a senior faculty of the department. Students can present the seminar based on the completed mini-project. Participation in the seminar by all post graduate students of the program shall be mandatory.

The CIE marks awarded for Mini-Project work and Seminar shall be based on the evaluation of Mini Project work and Report, Presentation skill and performance in Question-and-Answer session in the ratio 50:25:25. Mini-Project with Seminar shall be considered as a head of passing and shall be considered for vertical progression as well as for the award of degree. Those, who do not take-up/complete the Mini Project and Seminar shall be declared as fail in that course and have to complete the same during the subsequent semester. There is no SEE for this course.

2. Internship: All the students shall have to undergo a mandatory internship of 6 weeks during the vacation of II and III semesters. A University examination shall be conducted during III semester and the prescribed internship credit shall be counted in the same semester. The internship shall be considered as ahead of passing and shall be considered for vertical progression as well as for the award of degree. Those, who do not take-up / complete the internship shall be declared as fail in the internship course and have to complete the same during the subsequent University exam after satisfying the internship requirements.

MVJ COLLEGE OF ENGINEERING
An Autonomous Institution
Scheme of Teaching and Examinations – 2023 – 2024
M.Tech. Electronics and Communication Engineering (Advanced Communication Technology)
Choice Based Credit System(CBCS) and Outcome-Based Education(OBE)

IIISEMESTER

Sl. No	Course	Course Code	Course Title	Teaching Hours/Week				Examination				Credits
				Theory lecture	Tutorials	Practical/ Drawing	Self-Study Components	Duration in hours	CIE Marks	SEE Marks	Total Marks	
				L	T	P	S					
1	PCC	MVJ22LAC31	Microwave devices and its applications	03	00	00	Y	03	50	50	100	4
2	PEC	MVJ22LAC32x	Professional elective 3	03	00	00	-	03	50	50	100	3
3	PEC	MVJ22LAC33x	Professional elective 4	03	00	00	-	03	50	50	100	3
4	PROJ	MVJ22LAC34	ProjectWorkphase-1	00	00	06	-	--	100	--	100	3
5	SP	MVJ22LAC35	Societal Project	00	00	06	-	--	100	--	100	3
6	INT	MVJ22LACI36	Internship		(06 weeks Internship Completed during the Intervening vacation of II and III semesters.)			03	50	50	100	6
TOTAL				09	00	12	-	12	400	200	600	22

	Note: PCC: Professional core courses, PEC: Professional Elective Courses, IPCC-Integrated Professional Core Courses. MPS-Mini Project With Seminar; AUD/AEC; Audit Courses / Ability Enhancement Courses (Mandatory), PCCL-Professional Core Course lab, L-Lecture, P-Practical, T/SDA-Tutorial / Skill Development Activities(Hours are for Interaction between faculty and students)

Professional elective 3		Professional elective 4	
Course Code under	Course title	Course Code under	Course title
MVJ22LAC321	Pattern Recognition and Machine Learning	MVJ22LAC331	Advances in Image Processing
MVJ22LAC322	RF MEMS	MVJ22LAC332	Wavelet Transforms and Applications
MVJ22LAC323	5G Radio Access Technologies	MVJ22LAC333	VLSI Design for Signal Processing

Note:

1. ProjectWorkPhase-1: The project work shall be carried out individually. However, in case a disciplinary or inter disciplinary project requires more participants, and then a group consisting of not more than three shall be permitted.

Students in consultation with the guide/co-guide (if any) in disciplinary project or guides/co-guides (if any) of all departments in case of multidisciplinary projects, shall pursue a literature survey and complete the preliminary requirements of the selected Project work. Each student shall prep area relevant introductory project document, and present a seminar.

CIE marks shall be awarded by a committee comprising of HoD as Chairman, all Guide/s and co-guide/s(if any) and a senior faculty of the concerned departments. The CIE marks awarded for project work phase -1, shall be based on the evaluation of Project Report, Project Presentation skill, and performance in the Question and Answer session in the ratio of 50:25:25.

2. Societal Project: Students in consultation with the internal guide as well as with external guide (much preferable) shall involve in applying technology to workout/proposing viable solutions for societal problems.

CIE marks shall be awarded by a committee comprising of HoD as Chairman, Guide/co-guide if any, and a senior faculty of the department. The CIE marks awarded shall be based on the evaluation of Project Report, Project Presentation skill, and performance in the Question and Answer session in the ratio of 50:25:25.

Those, who have not pursued /completed the Societal Project, shall be declared as fail in the course and have to complete the same during subsequent semester/s after satisfying the Societal Project requirements. There is no SEE (University examination) for this course.

3. Internship: Those, who have not pursued /completed the internship, shall be declared as fail in the internship course and have to complete the

same during subsequent University examinations after satisfying the internship requirements. Internship SEE (University examination) shall be as per the University norms.

CIE marks shall be awarded by a committee comprising of HoD as Chairman, Guide/co-guide if any, and a senior faculty of the department. The CIE marks awarded for project work phase -1, shall be based on the evaluation of Project Report, Project Presentation skill, and performance in the Question and Answer session in the ratio of 50:25:25.

MVJ COLLEGE OF ENGINEERING
An Autonomous Institution
Scheme of Teaching and Examinations – 2023 – 2024
M.Tech. Electronics and Communication Engineering (Advanced Communication Technology)
Choice Based Credit System(CBCS) and Outcome-Based Education(OBE)

IVSEMESTER

Sl. No	Course	Course Code	Course Title	Teaching Hours /Week		Examination				Credits
				Theory	practical / Field	Duration in hours	CIE Marks	Marks Viva	Total Marks	
				L	P					
1	Project	MVJ 22LAC41	Project work phase-2	--	08	03	100	100	200	18
TOTAL				--	**08**	**03**	**100**	**100**	**200**	**18**

Note:

1.ProjectWorkPhase-2:

Students in consultation with the guide/co-guide (if any) in disciplinary project or guides/co-guides (if any) of all departments in case of multidisciplinary projects, shall continue to work of Project Work phase -1to complete the Project work. Each student / batch of students shall prepare project document, and present a seminar.

CIE marks shall be awarded by a committee comprising of HoD as Chairman, all Guide/s and co-guide/s(if any)and a senior faculty of the concerned departments. The CIE marks awarded for project work phase -2, shall be based on the evaluation of Project Report, Project Presentations kill, and performance in the Question and Answer session in the ratio of50:25:25.

SEE shall beat the end of IV semester. Project work evaluation and Viva-Voce examination (SEE), after satisfying the plagiarism check, shall be as per the University norms.