Karmaveer Bhaurao Patil University, Satara

Faculty of Science and Technology

M. Sc. (Electronics)

Programme and Credit Structure as per NEP2020

Title: The degree shall be titled as **'Master of Science (Electronics)** under the Faculty of Science and Technology.

M.Sc. Sem. I & II: To be implemented from Academic Year 2024-25

M.Sc. Sem. III & IV: To be implemented from Academic Year 2025-26

Programme Outcomes for M. Sc. (Electronics)

PO. NO.	Programme Outcomes After completing M.Sc. programme the students will be able to..
PO-1	Understand the fundamentals and advancements of subject
PO-2	Study, plan, and conduct experiments in the labs to validate the ideas principles, and theories acquired in the classrooms
PO-3	Enhance scientific knowledge of the subject
PO-4	Define their area of focus in academia, research, and development.
PO-5	Pursue careers in various fields such as science, engineering, education, banking, business, public services, etc. or become an entrepreneur with precision, analytical thinking, innovative ideas, clarity thought, expression, and systematic approach.

PSO. NO.	Programme Specific Outcomes After completing M.Sc. (Electronics) programme the students will be able to..
PSO-1	understand and remember basic and advanced topics of Electronics.
PSO-2	will apply their knowledge to plan and perform experiments in the labs to prove the ideas, values and theories learned in the classrooms.
PSO-3	Enhance Scientific Expertise in Electronics to Analyze and Troubleshoot Advanced Circuits for Optimal Performance.
PSO-4	create new and advanced electronic devices or systems that meet industry needs.
PSO-5	evaluate existing electronic technologies and contribute to their advancement by

	proposing and implementing improvements.

Semester, Credit Framework NSQF Level and Exit Points

Sr. No	Semester	Year	Year	Credits	Level	Exit Points &Award
1	Sem. I & II	2024-25	1 Year	44	6	**PG Diploma (Electronics)**
2	Sem. III & IV	2025-26	2 Year	44	6.5	**PG Degree (Electronics)**
			Total	**88**		**Master of Science (Electronics)**

Credit Distribution

Sr. No	Components	1 Year Master's Degree Programme			2 Year Master's Degree Programme		
		Courses	Credits	%	Courses	Credits	%
	Mandatory Courses	06	24	54.55	12	48	54.55
	Elective Courses	02	04	9.09	04	08	9.09
	Mandatory Practical	02	04	9.09	04	08	9.09
	Elective Practical	02	04	9.09	03	06	6.82
	Research Methodology	01	04	9.09	01	04	4.55
	Research Project	01	04	9.09	02	10	11.36
	OJT	--	--	--	01	04	4.55
	Total (Mandatory)-(A)	**09**	**32**	**72.73**	**19**	**70**	**79.55**
	Elective	04	08	18.18	07	14	15.91
	RM	01	04	9.09	01	04	4.55
	Total - (B)	**05**	**12**	**27.27**	**01**	**04**	**4.55**
	Grand Total (A+B)	**14**	**44**	**100**	**27**	**88**	**100**

Duration:

- The program shall be a full-time program.
- The duration of the program shall be One Year / Two years.
- Students will have to exit option with: - First Year (44 Credits) - PG Diploma

Number of Students: A batch shall consist of not more than 20 students. An additional 20% of seats will be allotted as per Karmaveer Bhaurao Patil University, Satara Norms.

Eligibility of the Students:
- Bachelor of Science with specialization in Electronics, Instrumentation, Physics, Computer Science.
- Any other eligibility prescribed by UGC, Government of Maharashtra, Karmaveer Bhaurao Patil University, Satara.

Medium of Instruction: The medium of instruction shall be in English.

Eligibility of the Core Faculty:
- **Assistant Professor:** Master of Science with specialization in Electronics /Electronic Science and NET/ SET/ Ph.D.
- Associate Professor: Master of Science in Electronics /Electronic Science with NET/ SET/Ph.D.
- Professor: Master of Science in Electronics /Electronic Science with NET/ SET/Ph.D.

Eligibility for Professor of Practice or Professional Trainer:

Any other eligibility as per the Guidelines and Regulations Passed by the Board of Concerned Studies, Academic Council of the College / University and Rules and Regulations of Karmaveer Bhaurao Patil University, Satara, Government of Maharashtra, and UGC norms.

Eligibility for Adjunct Professor of Practice or Professional Trainer:

As per eligibility prescribed by UGC.

Scheme of Examination & Standard of Passing: (ESE and CCE)

End Semester Exam (ESE): 60 Marks (Min 24 Marks for Passing)

Continuous Comprehensive Evaluation (CCE): 40 Marks (Min 16 Marks for Passing)

Total Marks: 100 Marks for **DSC mandatory courses**.

End Semester Exam (ESE): 30 Marks (Min 12 Marks for Passing)

Continuous Comprehensive Evaluation (CCE): 20 Marks (Min 08 Marks for Passing)

Total Marks: 50 Marks for **DSE elective courses**.

Minimum 40% Marks Required for Passing and there is a separate head of passing as per the decision of the concerned Board of Studies or Competent Authority.

Evaluation of OJT and RP:

i. OJT: Total 100 marks for 4 credits

(Rubrics: Certificate = max 60 marks, Report = 20 marks, Viva = 20 marks)

ii. RP: Total 100 marks for 4 credits

(Rubrics: Decertation = 60 marks, Presentation & Viva = 40 marks)

Sr. No.	Components	Course Code	Course (Subject)	Credits
M.Sc. (Electronics) Part -I Semester –I				
1	Mandatory	MET411	Foundation of Semiconductor Devices	4
2	Mandatory	MET412	Measurement Techniques	4
3	Mandatory	MET413	Computer Organization	4
4	Electives	MET414	Advanced Digital System Design – E-I or Advances in Digital Communication – E-II	2
5	RM	MET415	Research Methodology	4
6	Mandatory Lab	MEP416	Electronics Practical Course I	2
7	Electives Lab	MEP417	Electronics Practical Course II	2
		-	**Total**	**22**
Semester –II				
Sr. No.	Components	Course Code	Course (Subject)	Credits
1	Mandatory	MET421	Power Electronics	4
2	Mandatory	MET422	Applied Electromagnetics and Microwaves	4
3	Mandatory	MET423	8-bit Microcontrollers and Applications	4
4	Electives	MET424	HDL and MOS Technology – E-I or Computer Networks – E-II	2
5	RP	MEP425	Research Project	4
6	Mandatory Lab	MEP426	Electronics Practical Course III	2
7	Electives Lab	MEP427	Electronics Practical Course IV	2
			Total	**22**

EXIT OPTION: PG Diploma with **44 Credits** after Three Year UG Degree.

M.Sc. (Electronics) Part -II
Semester –III

Sr. No.	Components	Course Code	Course (Subject)	Credits
1	Mandatory	MET531	Antennas	4
2	Mandatory	MET532	Control Systems	4
3	Mandatory	MET533	Microcontroller System Design and ARM Architecture	4
4	Electives	MET534	Wireless Sensor Networks- E-I or Analog Circuit Design- E-II	2
5	Mandatory Lab	MEP535	Electronics Practical Course V	2
7	RP	MEP536	Research Project	6
			Total	**22**

Semester –IV

Sr. No.	Components	Course Code	Course (Subject)	Credits
1	Mandatory	MET541	Digital Image Processing	4
2	Mandatory	MET542	Industrial Automation	4
3	Mandatory	MET543	ARM Programming and Embedded Communication Protocols	4
4	Electives	MET544	Automotive Electronics- E-I or Advanced Microcontroller and RTOS- E-II	2
5	Mandatory Lab	MEP545	Electronics Practical Course VI	2
6	Electives Lab	MEP546	Electronics Practical Course VII	2
7	OJT	MEP547	On Job Training	4
			Total	**22**

**** PG Degree with **88 credits** after Three Year UG Degree.

Chairman   Secretary   Chairman
BoS in Electronics   Academic Council   Academic Council