



# UNIVERSITY OF JAMMU

(NAAC ACCREDITED 'A' GRADE' UNIVERSITY)  
Baba Sahib Ambedkar Road, Jammu-180006 (J&K)

Academic Section

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## NOTIFICATION (23/June/Adp./51)

It is hereby notified for the information of all concerned that the Vice-Chancellor, in anticipation of the approval of the Academic Council, is pleased to authorize the adoption of the revised Syllabi and Courses of Studies in the subject of **Electronics** for Master Degree Programme of **Semester Ist, IInd, IIrd and IVth** under the **Choice Based Credit System (as given in the annexure)** for the examinations to be held in the years as per the details given below:

Subject	Semester	For the examinations to be held in the year	% of Change
Electronics	Semester-I	Dec. 2022, 2023 and 2024	Less than 20%
	Semester-II	May 2023, 2024 and 2025	
	Semester-III	Dec. 2023, 2024 and 2025	
	Semester-IV	May 2024, 2025 and 2026	

The Syllabi of the courses is also available on the University website: [www.jammuuniversity.ac.in](http://www.jammuuniversity.ac.in).

Sd/-  
DEAN ACADEMIC AFFAIRS

No. F. Acd/II/23/5698-5708,  
Dated: 23-6-2023

Copy for information and necessary action to:

1. Dean Faculty of Science
2. HOD/Convener, Board of Studies **Electronics**
3. All members of the Board of Studies
4. C.A. to the Controller of Examinations
5. Director, Computer Centre, University of Jammu
6. Deputy Registrar/Asst. Registrar (Conf. /Exams. PG)
- ✓ 7. Incharge University Website for necessary action please

*Sumitasharma*  
20/6/23  
Deputy Registrar (Academic)  
*S* *M*  
19/6/23

REVISED SYBALLABI in the subject of Electronics of Master Degree Programme M. Sc. (Electronics) for semester 1 under **Choice Based Credit System** for the examinations to be held in the years mentioned below:

Semester-I: Validity December 2022, 2023 and 2024		
Course Title	Course Code	Credits
1. <i>Network Analysis</i> (4 Credits)	PSELTC111	24
2. <i>Digital System Design</i> (4 Credits)	PSELTC112	
3. <i>Electronic Materials and Semiconductor Devices</i> (4 Credits)	PSELTC113	
4. <i>Computational Techniques in Electronics</i> (4 Credits)	PSELTC114	
5. <i>Lab course on Network Analysis</i> (2 Credits)	PSELPC115	
6. <i>Lab course on Digital System Design</i> (2 Credits)	PSELPC116	
7. <i>Lab course on Electronic Material &amp; Semiconductor Devices</i> (2 Credits)	PSELPC117	
8. <i>Lab course on Computational Techniques in Electronics</i> (2 Credits)	PSELPC118	






**M. Sc. Electronics**  
**1<sup>st</sup> Semester (CBCS)**  
**(for the examinations to be held in the years 2022, 2023 and 2024)**  
**Course No: PSELTC111**

Course No: PSELTC111 (Core Course)  
Title: *Network Analysis*  
Credits: 4  
Minor I & Minor II: 40 Marks  
Validity: 2022, 2023, and 2024 December Exams

Duration of Examination: 3 Hrs  
Max. Marks: 100  
Major Test: 60 Marks

**Course Objectives:**

To equip the students with rigorous theoretical and practical knowledge to analyze electrical networks.

**Course Outcomes: At the end of the course the students should be able to**

- Learn basic circuit laws and network theorems for simplification of electrical networks.
- Perform time domain analysis of networks using differential equations and Laplace transform.
- Describe different types, configurations, two port network parameters and interrelations between them.
- Evaluate network functions and determine network stability.

**Unit I: Network Theorems**

Nodal and Mesh analysis; Thevenin's theorem, Norton's theorem, Superposition theorem, Maximum power transfer theorem, Millman's theorem, Reciprocity theorem, Compensation theorem, Numerical problems.

**Unit II: Graph theory and Time Domain Analysis of Networks**

Graph Theory: Graph tree, Link branches, Tie and Cut set matrices, Duality and Dual networks. Differential equation approach (first, second and higher order differential equations), Initial conditions in networks; Laplace transformation, Properties of Laplace transforms, Partial fraction expansion, Heaviside's expansion theorem, State variable analysis: State variable approach, state space representation, transfer function.

**Unit III: Two Port Network Parameters**

Network elements; Classification of networks; Network configurations; Impedance parameters; Admittance parameters; Transmission parameters; Inverse transmission parameters; Hybrid and Inverse hybrid parameters; Interrelation of different parameters; Interconnection of two port networks.

