



# UNIVERSITY OF JAMMU

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

## NOTIFICATION (21/Sept./Cont./42)

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 Continuation of the existing Syllabi and Courses of Study in the subject of **Electronics** for semester **IInd, IIIrd, IVth, Vth and VIth** under the **Choice Based Credit System** at the **Undergraduate level (as given in the Annexure)** for the examinations to be held in the years indicated against each semester as under:-

Subject	Semester	For the examinations to be held in the year
Electronics	Semester-II	May 2021, 2022 and 2023
	Semester-III	December 2021, 2022 and 2023
	Semester-IV	May 2021, 2022 and 2023
	Semester-V	December 2021, 2022 and 2023
	Semester-VI	May 2022, 2023 and 2024

Sd/-  
DEAN ACADEMIC AFFAIRS

No. F.Acd/II/21/7272-7292  
Dated: 28-9-2021

**Copy to:**

- 1) Dean, Faculty of Science
- 2) HOD/Convener, Board of Studies in 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) Asst. Registrar (Conf. /Exams./P.G/ Evaluation Non-Prof.)
- 7) Incharge University Website for necessary action please

*Sumitasharma*  
27/9  
Deputy Registrar (Academic)

*[Signature]*  
24/9  
*[Signature]*  
24/09/2021



# UNIVERSITY OF JAMMU

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

## NOTIFICATION (21/Sept./Adp/27)

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 Study in the subject of **Electronics** for semester Ist under the **Choice Based Credit System** at the **Undergraduate level (as given in the Annexure)** for the examinations to be held in the years December 2020, 2021 and 2022 with less than 20% Change.

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/21/ 7293 - 7308  
Dated: 28-9-2021

Copy for information and necessary action to:

1. Dean Faculty of Science
2. HOD/Convener, Board of Studies ~~Physics~~ *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. U.G/Eval. Non-Prof.)
7. Incharge University Website for necessary action please

*Sumitasharma*  
Deputy Registrar (Academic) 27/9  
*[Signature]* 24/9  
*[Signature]* 24/09/2021  
*[Signature]* 24/9/21



**Courses in B.Sc. Electronics**

Sem	Course Code	Title	Credits	% Change	Validity
1 <sup>st</sup>	UELTC101	ELECTRONIC CIRCUIT ANALYSIS	04	<20%	Dec 2020, 2021, 2022
	UELPC102	ELECTRONIC CIRCUITS LAB	02	< 20%	
2 <sup>nd</sup>	UELTC201	ELECTRONIC DEVICES AND CIRCUITS	04	0%	May 2021, 2022, 2023
	UELPC202	ELECTRONIC DEVICES AND CIRCUITS LAB	02	0%	
3 <sup>rd</sup>	UELTC301	DIGITAL ELECTRONICS	4	0%	Dec 2021, 2022, 2023
	UELPC302	DIGITAL CIRCUIT LAB	2	0%	
	UELTS303	RENEWABLE ENERGY AND ENERGY HARVESTING (Skill Enhancement Course)	4	0%	
4 <sup>th</sup>	UELTC401	LINEAR INTEGRATED CIRCUITS	4	0%	May 2021, 2022, 2023
	UELPC402	LINEAR INTEGRATED CIRCUIT LAB	2	0%	
	UELTS403	ELECTRICAL CIRCUITS AND NETWORK SKILLS (Skill Enhancement Course)	4	0%	
5 <sup>th</sup>	UELTE501	COMMUNICATION ELECTRONICS (Discipline Specific - Elective 1)	4	0%	Dec 2021, 2022, 2023
	UELPE502	ELECTRONICS COMMUNICATION LAB	2	0%	
	UELTE 503	MICROPROCESSOR AND INTERFACING – 8085 (Discipline Specific - Elective II)	4	0%	
	UELPE504	MICROPROCESSOR LAB	2	0%	
	UELTE 505	ELECTRONIC INSTRUMENTATION (Discipline Specific -Elective III)	4	0%	
	UELPE506	ELECTRONIC INSTRUMENTATION LAB	2	0%	
	UELTS507	ANTENNA THEORY AND WIRELESS NETWORKS (Skill Enhancement Course)	4	0%	
6 <sup>th</sup>	UELTE601	MICROPROCESSOR 8086 FAMILY (Discipline Specific - Elective 1)	4	0%	May 2022, 2023, 2024
	UELPE602	MICROPROCESSOR 8086 LAB	2	0%	
	UELTE603	PHOTONIC AND POWER ELECTRONIC DEVICES (Discipline Specific - Elective II)	4	0%	

*Dr. D. S. R. R. Rocket*

*Chauhan*

UELPE604	PHOTONIC AND POWER ELECTRONIC DEVICES LAB	2	0%	
UELTE605	C- PROGRAMMING (Discipline Specific -Elective III)	4	0%	
UELPE606	C PROGRAMMING LAB	2	0%	
UELTS607	C++ PROGRAMMING (Skill Enhancement Course)	4	0%	

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Syllabi and courses of studies in the subject of Electronics under CBCS at UG level for the examinations to be held in the years – 2020, 2021, and 2022.

## SEMESTER I

### Core Course

Course code:-UELTC101

Course title:- Electronic circuit analysis

Theory Credits: 04

Hours: 60

Internal Exam: 20 Marks

External Exam: 80 Marks

Total Marks: 100

Duration: 2½ Hrs

### Unit I: Analysis of simple circuits

Determination of equivalent resistance for series, parallel, and series-parallel connection of resistances; Kirchhoff's voltage law: Statement, proof, and examples; Kirchhoff's current law: Statement, proof, and examples; Voltage and current sources; Source transformations: voltage to current and current to voltage sources; Transformation of star to delta and delta to star connections with examples; Definition of mesh and node.

### Unit II: Network theorems

Thevenin's theorem; Norton's theorem; Superposition theorem; Maximum power transfer theorem; Millman's theorem; Reciprocity theorem; Compensation theorem.

### Unit III: A.C. circuit analysis

Series resonance: Determination of resonant frequency and bandwidth, relation between bandwidth and quality factor, impedance variation, reactance variation, phase angle; Parallel resonance: Determination of resonant frequency and bandwidth, relation between bandwidth and quality factor, reactance curves; Determination of resonant frequency for tank circuit.

### Unit IV: Analysis of R, L, C circuits

Transient analysis of RC, RL, RLC circuits using differential equations; Laplace transform: Definition, linearity and superposition properties; Determination of Laplace transform of time domain functions: Unit impulse function, unit step function, unit ramp function, unit parabolic function, exponential functions, sine and cosine functions; hyperbolic sine and cosine functions; Transforms of derivatives & integrals; Solution of series RL, RC, RLC circuits using Laplace transform (partial fraction expansion).

### Unit V: Two-port networks

Introduction; Two-port network parameters: Open circuit impedance, short circuit admittance, transmission, inverse transmission, hybrid, and inverse hybrid; Inter-relationship of different parameters; Determination of characteristic impedance of T and  $\pi$  networks.

### Reference books

- Sudhakar and Shyam Mohan, **Network and Circuits: Analysis Synthesis**, Tata McGraw- Hill, NewDelhi
- M.E.VanValkenburg, **Network Analysis**, Prentice-Hall of India, NewDelhi
- Schaum's outline series, **Electric Circuits**, Tata McGraw Hill, NewDelhi
- T.F. Bogart Jr. **Electric Circuits**, Tata McGraw-Hill, NewDelhi

### Scheme of examination

- Each theory paper/ course shall be of 100 marks.
- 20 % of which shall be reserved for internal assessment.
- 80 % of which shall be reserved for external examinations to be conducted by the University/Colleges.
- The external examinations in theory shall consist of the following:
- Five (5) short answers questions representing all units/syllabi i.e. at least one from each unit (without detailed explanation having 70 to 80 words in approximately 6 minutes and having 3 marks for each answer to the question (**All compulsory**)).
- Five (5) medium answers to the questions representing all units/syllabi i.e. at least one from each unit (with explanation having 250 to 300 words in approximately 12 minutes and having 7 marks for each answer to the question (**All compulsory**)).

Syllabi and courses of studies in the subject of Electronics under CBCS at UG level for the examinations to be held in the years – 2020, 2021, and 2022.

- Four/Five (4/5) long answers to the questions (**two to be attempted**) representing whole of syllabi with detailed analysis/explanation/critical evaluation /solution to the stated problems within 500-600 words in approximately 30 minutes and having 15 marks for each answer to the question.
- Duration of the External Examination: 2 ½ hours only.
- Passing marks in each subject: 36%

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Syllabi and courses of studies in the subject of Electronics under CBCS at UG level for the examinations to be held in the years – 2020, 2021, and 2022.

## SEMESTER I

### Core Course

Electronic circuits lab

Practical credits: 02

Internal exam: 25 marks

External exam: 25 marks

Total marks: 50

Course code:- UELPC102

Hours: 60

Duration: 2 ½Hrs

Note: Each student has to perform a minimum of 06 experiments.

1. To determine the value of different resistances using colour coding and verify using multimeter.
2. To determine the equivalent resistance of series connection of resistances.
3. To determine the equivalent resistance of parallel connection of resistances.
4. To determine the equivalent resistance of series-parallel connection of resistances.
5. To verify Kirchhoff's voltage law.
6. To verify Kirchhoff's current law.
7. To verify Thevenin's theorem.
8. To verify Norton's theorem.
9. To verify Superposition theorem.
10. To verify Maximum power transfer theorem.

### Scheme of examination

Examination	Syllabus	Weightage (%) Marks
Internal Examination: Daily evaluation of practical records / Viva voce / Attendance Duration: 3 Hrs	100%	50% 25 Marks=05(Attendance) + 10 (Viva and internal test) + 10 (Day to day performance)
External Examination: Final Practical Performance + Viva voce Duration: 3 Hrs	100%	50% 25 Marks =20 (External written performance) + 05 (Viva)
<b>Total</b>	<b>100%</b>	<b>50 Marks</b> <b>Passing marks: 36%</b>

*Chandrasekhar*

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