



# UNIVERSITY OF JAMMU

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

Academic Section

Email: [academicsectionju14@gmail.com](mailto:academicsectionju14@gmail.com)

## NOTIFICATION

(23/June/Adp./44)

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 Syllabi and Courses of Studies in the subject of **Physics of Semester IIIrd and IVth for Four Year Under Graduate Programme (FYUGP) under the Choice Based Credit System** as per **NEP-2020 (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
Physics	Semester-III Semester-IV	December 2023, 2024 and 2025 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/23/4838-4877

Dated: 12-6-2023.

Copy for information and necessary action to:

1. Dean Faculty of Science
2. HOD/Convener, Board of Studies Physics
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. UG )
- ✓ 7. Incharge University Website for necessary action please

*Sumita Sharma*  
Deputy Registrar (Academic)  
12/6/23.

*SS*  
12/6/23  
*ADP*  
12/6  
*H*  
12/6/23

**UNIVERSITY OF JAMMU**

**SYLLABII OF PHYSICS FOR FOUR YEAR UNDERGRADUATE  
PROGRAMME (FYUGP) UNDER CBCS AS PER NEP-2020  
W.E.F.ACADEMIC SESSION 2023**

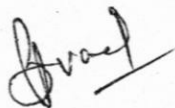
List of Major, Minor, Multi-disciplinary and Skill Enhancement Courses in Physics for 3rd semester and Major, Minor Courses for 4<sup>th</sup> Semester of FYUGP (Four Year Undergraduate Program) as per NEP-2020

**SEMESTER-III**

S. No	Course Type	Course No.	Course Title	Credits	Marks				Total Marks
					Theory		Practical / Tutorial		
					Mid Semester	End Semester	Assessment	Exam	
1.	Major	UMJPYT301	Electronics-I	3Th+1P	15	60	10	15	100
2.	Major	UMJPYT302	Heat and Thermodynamics	3Th+1T	15	60	10	15	100
3.	Minor	UMIPYT303	Basic Electronics	3Th+1P	15	60	10	15	100
4.	Multi-disciplinary	UMDPYT304	Fundamentals of Modern Physics	3Th	15	60	-----	-----	75
5.	Skill Enhancement	USEPYT305	Photography and video –audiography	2	25	25	-----	-----	50

**SEMESTER-IV**

S. No	Course Type	Course No.	Course Title	Credits	Marks				Total Marks
					Theory		Practical / Tutorial		
					Mid Semester	End Semester	Assessment	Exam	
1.	Major	UMJPYT401	Electronics-II	3Th+1P	15	60	10	15	100
2.	Major	UMJPYT402	Mathematical Physics-I	3Th+1T	15	60	10	15	100
3.	Major	UMJPYT403	Atomic Physics	3Th+1T	15	60	10	15	100
4.	Major	UMJPYT404	Waves and Optics	3Th+1P	15	60	10	15	100
5.	Minor	UMIPYT405	Optics	3Th+1P	15	60	10	15	100



## UNIVERSITY OF JAMMU

### SYLLABUS OF PHYSICS FOR 3<sup>RD</sup> SEMESTER OF FYUGP UNDER CBCS AS PER NEP-2020 FOR THE EXAMINATION TO BE HELD IN DECEMBER 2023, 2024, 2025

B.Sc.- Physics			
<b>Semester:</b>	III	<b>Type:</b>	Major
<b>Course Name:</b>	Electronics-I	<b>Course Code:</b>	UMJPYT301
<b>Credits:</b>	4	<b>L T P:</b>	3-0-1
<b>Contact Hours</b>	45 (Theory) + 30 (Practicals)	<b>Academic Session</b>	
<b>Duration of Exam</b>	3 Hours (Theory) 2 ½ Hours (Practicals)		
<b>For Theory :</b> End Semester Exam : 60 Marks Mid Term Exam: 15 Marks		<b>For Practicals :</b> Final Exam : 15 Marks Continuous Assessment: 10 Marks	

#### Syllabus for Theory (3 Credits)

*Note: The Mid Semester Examination shall be conducted after completing 50% of Syllabus.*

#### **Course learning outcomes:**

After completing this course content, student will be able to understand:

- Basic components and Circuit analysis
- Basics of Semiconductors and semiconductor diode as device and its applications

#### **Unit-I**

#### **Basic concepts and components:**

Concepts of electrical signal: analog, digital and their graphical and mathematical representation; signal sources: independent sources (voltage and current sources), dependent sources; discrete and integrated circuits, Circuit components: Resistors, Inductors and Capacitors (purpose in the electrical circuit, materials, and equivalent circuit) potentiometers.

#### **Unit-II**

**Networks and theorems:** DC and AC Circuit analysis of RC, RL circuits and RLC series and resonant circuits. (DC Transient analysis: RC Circuit- charging and discharging with initial charge, RL circuit with initial charge, Time constant, DC response of series RLC circuits; AC circuit analysis: LCR circuits- series and parallel resonance, condition of resonance, resonant frequency, bandwidth and Q- factor.)

Circuit Analysis: Superposition, Thevenin's, Norton's Maximum power transfer and Reciprocity theorems, Kirchhoff's Laws (KCL and KVL). Node analysis, Mesh analysis.

