K-1

Maharashtra State Board of Technical Education, Mumbai

TEACHING PLAN (TP)

Academic Year: **2025-26 (EVEN)**

Institute Code and Name: 0078- K. K. Wagh Polytechnic, Nashik **Semester**: Second
Programme and Code: Information Technology (IF) **Course Index: CO202**
Course and Code: Basic Electrical & Electronics Engineering (BEE) **Course Code:** 312302
Scheme: K **Allocated Hrs. 30** **Name of Faculty:** Mr.Shinde R.J.
CLASS: FYIF (PARAM)

COURSE LEVEL LEARNING OUTCOMES (COS)

- CO4 - Use relevant diode in different electronic circuits.s
- CO5 - Use BJT and FET in various electronic circuits.
- CO6 - Use various types of sensors and transducers.

TEACHING-LEARNING & ASSESSMENT SCHEME

Course Code	Course Title	Abbr	Course Category	Learning Scheme					Credits	Paper Duration	Assessment Scheme										Total Marks
				Actual Contact Hrs./Week			SLH	NLH			Theory				Based on LL & TSL Practical				Based on SL		
											FA-TH	SA-TH	Total		FA-PR		SA-PR		SLA		
				CL	TL	LL					Max	Max	Max	Min	Max	Min	Max	Min	Max	Min	
312302	BASIC ELECTRICAL AND ELECTRONICS ENGINEERING	BEE	AEC	4	-	4	2	10	5	1.5	30	70*#	100	40	50	20	50 @	20	50	20	250

Total IKS Hrs. for Sem.: 0 Hrs.

Abbreviations: CL- Classroom Learning , TL- Tutorial Learning, LL-Laboratory Learning, SLH-Self Learning Hours, NLH-Notional Learning Hour FA -Formative Assessment, SA -Summative assessment, IKS - Indian Knowledge System, SLA - Self Learning Assessment Legends: @ Internal Assessment, # External Assessment, *# On Line Examination , @$ Internal Online Examination

SUGGESTED COS - POS MATRIX FORM

Course Outcomes (COs)	Programme Outcomes (POs)							Programme Specific Outcomes (PSOs)	
	PO-1 Basic and Discipline Specific Knowledge	PO-2 Problem Analysis	PO-3 Design/ Development of Solutions	PO-4 Engineering Tools	PO-5 Engineering Practices for Society, Sustainability and Environment	PO-6 Project Management	PO-7 Life Long Learning	PSO-1	PSO-2
CO4	3	-	-	1	-		2		
CO5	3	-	-	1	-		2		
CO6	2	-	-	2	2		3		
Legends :- High:03, Medium:02,Low:01, No Mapping: -									

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Unit No. (Allocated Hrs.)	CO	TLO aligned to COs	Title/ Details	Plan (No. of Lectures) From	Plan (No. of Lectures) To	Actual Execution (From-To & No. of Lectures) From	Actual Execution (From-To & No. of Lectures) To	Pedagogy used (Teaching method /Media)	Remark
4 (10)	CO -4	TLO 4.1	**Unit - IV Special purpose diodes and their applications.**					Chalk, Board, PPT+ LCD, Videos, Google Classroom, MKCL ERA	
			4. Introduction to subject & Unit 4.1 Zener diode: working, symbol, applications.	03 **Lectures**					
				15/12/2025	22/12/2025				
		TLO 4.2, TLO 4.3	4.2 LED: working, symbol, applications. 4.3 Filters: Need for filters, circuit diagram and working of L, C and CLC filter.	03 **Lectures**					
				27/12/2025	03/01/2026				
		TLO 4.4	4.4 Working principle and block diagram of regulated power supply.	02 **Lectures**					
				05/01/2026	10/01/2026				
			4.5 UPS: Block diagram of Online and Offline UPS.	02 **Lectures**					
				12/01/2026	17/01/2026				
5(12)	CO -5		**Unit - V Transistors**					Chalk, Board, PPT+ LCD, Videos, Google Classroom, MKCL ERA	
		TLO 5.1	5.1 BJT: Types, symbol, construction and working principle of NPN transistor.	**02 Lectures**					
				19/01/2026	24/01/2026				
		TLO 5.2	5.2 Transistor configurations: CB, CE, CC 5.3 Characteristics of transistor in CE configuration.	**03 Lectures**					
				24/01/2026	02/02/2026				
		TLO 5.3	5.4 Transistor parameters: alpha, beta and derive relation between them. 5.5 Applications-Transistor as a switch and as an amplifier.	**03 Lectures**					
				07/02/2026	14/02/2026				
		TLO 5.4	5.6 FET: Types, symbol, construction and working principle of n channel JFET.	**02 Lectures**					
				16/02/2026	21/02/2026				
			5.7 Characteristics of JFET: Drain and Transfer characteristics.	**02 Lectures**					
				23/02/2026	28/02/2026				

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6(08)	CO -6		**Unit - VI Sensors and Transducers**					Chalk, Board, PPT+ LCD, Videos, Google Classroom, MKCL ERA	
		TLO 6.1	6.1 Sensors and Transducers: Basic definition, difference, classification.	**02 Lectures**					
				02/03/2026	07/03/2026				
		TLO 6.2	6.2 Thermal, Optical, Electric sensors	**02 Lectures**					
				09/03/2026	14/03/2026				
		TLO 6.3	6.3 Transducers: Need of transducer, types of transducers: Primary, Secondary, Active, Passive, Analog, Digital 6.4 Selection criteria of transducer	**04 Lectures**					
				16/03/2026	28/03/2026				

ASSESSMENT METHODOLOGIES/TOOLS

Formative assessment (Assessment for Learning)

- Continuous assessment based on process and product related performance indicators. Each practical will be assessed considering 1) 60% weightage is to process 2) 40% weightage to product

Summative Assessment (Assessment of Learning)

- End semester examination, Lab performance, Viva voce

SUGGESTED LEARNING MATERIALS / BOOKS

Sr. No	Author	Title	Publisher
1	Jegathesan, V.	Basic Electrical and Electronics Engineering	Wiley India, New Delhi 2014 ISBN : 97881236529513
2	Sedha R.S.	Applied Electronics	S. Chand, New Delhi,2015 ISBN:9788121927833
3	V.K. Mehta	Principles of Electronics	S.Chand and Co Ram Nagar, New Delhi-110055,11th edition 2014 ISBN 9788121924504
4	Boylestad, Robert Nashelsky Louis	Electronic Devices and Circuit Theory	Pearson Education. New Delhi 2014 ISBN:9780132622264
5	Sawhney A.K.	Electrical and Electronic Measurements and Instrumentation	Dhanpat Rai and Sons, New Delhi,2005, ISBN:13-9788177000160
6	Kalsi H.S.	Electronic Instrumentation	McGraw Hill, New Delhi,2010 ISBN:13-9780070702066

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LEARNING WEBSITES & PORTALS

Sr. No	Link / Portal	Description
1	https://www.youtube.com/watch?v=anCnrtjNLQM	LVDT
2	https://qr.page/g/4PABoASTZYW	Transistor as an Amplifier
3	https://youtu.be/XT-UmPviH64?si=MLIZBB5BgOA2SWBk	Electromagnetic Induction
4	https://youtu.be/M-QfX2fvpp4?si=xpZDAiX3-_7xrnnr	Basics of magnetic circuits
5	https://www.tutorialspoint.com/difference-between-bjt-and-fet	BJT's and FET's
6	https://www.tutorialspoint.com/difference-between-sensor-and-transducer	Sensors and Transducers
7	https://www.electrical4u.com/jfet-or-junction-field-effect-transistor/	Junction Field Effect Transistor
8	https://fossee.in/	Open Source Electronics Simulation software
9	https://cloud.scilab.in/	Open Source Scilab Cloud for Electronics Simulation

Mr.Shinde R.J.
(Name & Signature of Staff)

Ms. M. S. Karande
(Name & Signature of HOD)