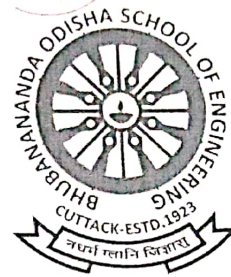


**BHUBANANANDA ODISHA SCHOOL OF ENGINEERING, CUTTACK
DEPARTMENT OF APPLIED ELECTRONICS & INSTRUMENTATION ENGG.**



LESSON PLAN

SUBJECT: ELECTRICAL CIRCUITS & NETWORKS LAB

ACADEMIC SESSION: 2026-27

FACULTY: Er. NIRANJAN NAYAK, LECTURER(STAGE-II)

SEMESTER: 3rd

Sd/-

H O D (AE&I Engg.)



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DEPARTMENT OF APPLIED ELECTRONICS & INSTRUMENTATION ENGINEERING
LESSON PLAN

COURSE OUTCOMES

CO1:- Apply Mesh Analysis and Node Analysis techniques to determine branch currents in electrical networks using measuring instruments such as voltmeter and ammeter.

CO2: - Verify fundamental network theorems including Superposition, Thevenin's, Norton's, and Maximum Power Transfer theorems through practical circuit analysis and experimentation.

CO3: - Verify fundamental network theorems including Superposition, Thevenin's, Norton's, and Maximum Power Transfer theorems through practical circuit analysis and experimentation.

CO4: - Design and analyze Series Resonance, Parallel Resonance, Low Pass Filter, and High Pass Filter circuits based on specified cut-off frequencies and study their frequency responses.

CO5: - Simulate electrical and electronic circuits using circuit simulation software to validate theoretical concepts and compare practical and simulated results.

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LESSON PLAN

Discipline: AE&I Engineering	Semester: 3 rd	Name of the teaching faculty: Er. NIRANJAN NAYAK
Subject: ELECTRICAL CIRCUITS & NETWORKS LAB	No. of Days/ per week class allotted: 04 periods per week.	Semester From Date: 01-07-2026 To Date: 05-11-2026 No. of weeks: 15 weeks
Week	Class Day	Theory Topics
1 st	1 st	Use voltmeter, ammeter to determine current through the given branch of an electric network by applying mesh analysis.
	2 nd	Use voltmeter, ammeter to determine current through the given branch of an electric network by applying mesh analysis.
2 nd	1 st	VIVA
	2 nd	Use voltmeter, ammeter to determine current through the given branch of a electric network by applying node analysis.
3 rd	1 st	Use voltmeter, ammeter to determine current through the given branch of a electric network by applying node analysis.
	2 nd	VIVA
4 th	1 st	Verification of- · Superposition theorem. · Thevenin's theorem. · Norton's theorem. · Maximum power transfer theorem.

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	2 nd	Verification of- · Superposition theorem. · Thevenin's theorem. · Norton's theorem. · Maximum power transfer theorem.
5 th	1 st	VIVA
	2 nd	Observe an AC wave form on CRO and calculate its average & RMS values, frequency, time period
6 th	1 st	Observe an AC wave form on CRO and calculate its average & RMS values, frequency, time period
	2 nd	VIVA
7 th	1 st	Design of series resonance circuit with a particular cut of frequency and to plot frequency response
	2 nd	Design of series resonance circuit with a particular cut of frequency and to plot frequency response
8 th	1 st	VIVA
	2 nd	Design of parallel resonance circuit with a particular cut of frequency and to plot frequency response
9 th	1 st	Design of parallel resonance circuit with a particular cut of frequency and to plot frequency response
	2 nd	VIVA
10 th	1 st	Analysis of charging & discharging of RC circuit with CRO (calculation of time

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LESSON PLAN

		constant, rise time etc.)
	2 nd	Analysis of charging & discharging of RC circuit with CRO (calculation of time constant, rise time etc.)
11 th	1 st	VIVA
	2 nd	Designing of (considering cut-off frequency) Low pass filter and to plot frequency response
12 th	1 st	Designing of (considering cut-off frequency) Low pass filter and to plot frequency response
	2 nd	VIVA
13 th	1 st	Designing of (considering cut-off frequency) High pass filter to plot frequency response
	2 nd	Designing of (considering cut-off frequency) High pass filter to plot frequency response
14 th	1 st	VIVA
	2 nd	Simulate the above circuits using circuit simulation software
15 th	1 st	Simulate the above circuits using circuit simulation software
	2 nd	VIVA


Signature of Faculty


Signature of HOD
AE & I Department
B.O.S.E.C. Cuttack-751005