TEACING PLAN

INSTRUMENTATION

SEM -ll

NUTAN ARTS COLLEGE RAJAPUR

TAL - SANGAMNER DIST-A.NAGAR

Teaching plan for the Year -------

Name of the Teacher:- DAROLE.A.S Class :- S.Y.B.Sc
Subject & Course :-Instrumentation
Date:- 18 / 06 /2024 To Date:- 30 / 06 / 2024

Sr.Week	Topics Planned	Topics Covered	Teaching tool/methods used	No.of Lectures planned	No.of Lectures conducted	Remarks (level /extra lecture etc.
4th Week	**1.Fundamental of measurement:** **1.1** Aims of measurement **1.2** Functional elements of typical measurement system (Block diagram and its explanation).	**1.1** Aims of measurement **1.2** Functional elements of typical measurement system (Block diagram and its explanation).	**BBCL**	**04**	**04**	**NA**

5th Week	**1.3** Standards of measurement and its classification. **1.4** Static characteristics: Accuracy, Precision, Sensitivity, Linearity, Resolution, Drift and Hysteresis. **1.5** Dynamic characteristics concepts: First and Second order instruments, Examples of first order:	**1.3** Standards of measurement and its classification. **1.4** Static characteristics: Accuracy, Precision, Sensitivity, Linearity, Resolution, Drift and Hysteresis.	**BBCL** **BBCL**	**04**	**04**	**NA**

Total No.of Lectures Planned during the month 08

Total No of lecturer Conducted during the month 08

Plan checked By HOD **Signature of the Teacher**

NUTAN ARTS COLLEGE RAJAPUR

TAL - SANGAMNER DIST-A.NAGAR

Teaching plan for the Year -------

Name of the Teacher:- DAROLE.A.S Class :- S.Y.B.Sc

Subject & Course :- Optics Date:- 01/ 07/2024 To Date:- 31/ 07/ 2024

Sr.Week	Topics Planned	Topics Covered	Teaching tool/met hods used	No.of Lectures planned	No.of Lectures conducted	Remarks (level /extra lecture etc.
1st Week	Resistance thermometer and thermal element, Example of 2nd order: U–tube Manometer.	**1.5** Dynamic characteristics concepts: First and Second order instruments, Examples of first order:	BBCL	04	04	NA
2nd Week	**1.6** Errors in measurement and its classifications	Resistance thermometer and thermal element, Example of 2nd order: U–tube Manometer.	BBCL BBCL	04	04	NA

3rd Week	**Problem**	**1.6** Errors in measurement and its classifications	**BBCL**	**04**	**03**	**NA**
4th Week	Resistance thermometer and thermal element, Example of 2nd order: U–tube Manometer.	**1.5** Dynamic characteristics concepts: First and Second order instruments, Examples of first order:	**BBCL**	**04**	**04**	**NA**
5th Week	**Problem**	**Problem**	**BBCL**	**03**	**02**	**NA**

Total No.of Lectures Planned during the month :-10
Total No of lecturer Conducted during the month :- 09
C.L - (9/07/2024)

Plan checked By HOD **Signature of the Teacher**

NUTAN ARTS COLLEGE RAJAPUR

TAL - SANGAMNER DIST-A.NAGAR

Teaching plan for the Year -------

Name of the Teacher:- DAROLE.A.S Class :- S.Y.B.Sc

Subject & Course :-Instrumentation
Date:- 01/ 08 /2024 To Date:- 31 / 08 / 2024

Sr.Week	Topics Planned	Topics Covered	Teaching tool/methods used	No.of Lectures planned	No.of Lectures conducted	Remarks (level /extra lecture etc.
1st Week	**2. Transducers: (12L)** 2.1 Classification of Transducers and its characteristics , Variable Reluctance Mutual	**2. Transducers: (12L)** 2.1 Classification of Transducers and its characteristics , Variable Reluctance Mutual	**BBCL**	**03**	**03**	**NA**

2nd Week	2.2 Displacement Transducer a) Resistive Type: Linear and Angular (Rotary) Potentiometer, Strain Gauge: Bonded and Unbonded b) Inductive Type: Self inductive: Variable number of turns	2.2 Displacement Transducer a) Resistive Type: Linear and Angular (Rotary) Potentiometer, Strain Gauge: Bonded and Unbonded b) Inductive Type: Self inductive: Variable number of turns	**BBCL**	**04**	**04**	**NA**
3rd Week	Inductive: LVDT c) Piezoelectric Type: Quartz Crystal 2.3 Force Transducer: Cantilever beam, Column type devices	Inductive: LVDT c) Piezoelectric Type: Quartz Crystal 2.3 Force Transducer: Cantilever beam, Column type devices	**BBCL**	**04**	**03**	**NA**
4th Week	2.4 Temperature Measurement Scales for temperature: Celsius, Kelvin and Fahrenheit Temperature Measurement Techniques	2.4 Temperature Measurement Scales for temperature: Celsius, Kelvin and Fahrenheit	**BBCL**	**04**	**04**	**NA**
5th Week	a. Non-electrical: Liquid filled	a. Non-electrical: Liquid filled thermometer and	**BBCL**	**04**	**03**	**NA**

	thermometer and bimetallic thermometer b. Electrical Methods: i. Platinum Resistance Thermometer ii. Thermistor: PTC and NTC with characteristics iii. Thermocouple: Seebeck effect and Peltier effect, iv. Types of Thermocouple	bimetallic thermometer b. Electrical Methods: i. Platinum Resistance Thermometer ii. Thermistor: PTC and NTC with characteristics	**BBCL**			

Total No.of Lectures Planned during the month :- 10
Total No of lecturer Conducted during the month:-08
C.L :- 12/08/2024 & 31/08/2024

Plan checked By HOD **Signature of the Teacher**

NUTAN ARTS COLLEGE RAJAPUR

TAL - SANGAMNER DIST-A.NAGAR

Teaching plan for the Year -------

Name of the Teacher:- DAROLE.A.S Class :- S.Y.B.Sc

Subject & Course :-Instrumentation
Date:- 01/09 /20 To Date:- 30/ 09/2024

Sr.Week	Topics Planned	Topics Covered	Teaching tool/methods used	No.of Lectures planned	No.of Lectures conducted	Remarks (level /extra lecture etc.
2nd Week	**3. Measurement of Pressure: (8L)** 3.1 Unit of pressure, Concept of vacuum, Absolute gauge and differential pressure,	3.1 Unit of pressure, Concept of vacuum, Absolute gauge	**BBCL**	**04**	**04**	**NA**

3rd Week	3.2 Elastic Transducer- Diaphragm, Corrugated Diaphragm, Bellows, Bourdon Tube 3.3 Electric Type- LVDT, Strain gauge	3.2 Elastic Transducer- Diaphragm, Corrugated Diaphragm	**BBCL**	**04**	**04**	**NA**
4th Week	**4. Signal Conditioning and Processing: (8L)** 4.1 Current to voltage, Voltage to current convertors, buffer amplifier, S/H Amplifier and Characteristics,	.1 Current to voltage, Voltage to current convertors, buffer amplifier	**BBCL**	**04**	**02**	**NA**
5th Week	Acquisition time, Aperture time, Drop rate	S/H Amplifier and Characteristics,	**BBCL**	**01**	**01**	**NA**

Total No.of Lectures Planned during the month = 13
Total No of lecturer Conducted during the month = 11
C.L :- 28/09/2024 & 28/09/2024

Plan checked By HOD **Signature of the Teacher**

NUTAN ARTS COLLEGE RAJAPUR

TAL - SANGAMNER DIST-A.NAGAR

Teaching plan for the Year -------

Name of the Teacher:- DAROLE.A.S Class :- S.Y.B.Sc

Subject & Course :-Instrumentation
Date:- / /20 To Date:- / / 20

Sr.Week	Topics Planned	Topics Covered	Teaching tool/methods used	No.of Lectures planned	No.of Lectures conducted	Remarks (level /extra lecture etc.
1st Week	4.2 Filters: First order LPF and HPF with design,	Acquisition time, Aperture time, Drop rate	BBCL	04	04	NA
2nd Week	4.3 Instrumentation Amplifier (Using 3 op-amp)	4.2 Filters: First order LPF and HPF with design,	BBCL	04	04	NA

3rd Week	**Problems**	4.3 Instrumentation Amplifier (Using 3 op-amp)	**BBCL**	**04**	**00**	**NA**
4th Week	**DIWALI HOLIDAY**					
5th Week	**DIWALI HOLIDAY**					

Total No.of Lectures Planned during the month = 12
Total No of lecturer Conducted during the month = 08
C.L :- 18/10/2024

Plan checked By HOD **Signature of the Teacher**

TEACING PLAN:- OPTICS

SEM -ll

NUTAN ARTS COLLEGE RAJAPUR

TAL - SANGAMNER DIST-A.NAGAR

Teaching plan for the Year -------

Name of the Teacher:- DAROLE.A.S Class :- S.Y.B.Sc

Subject & Course :- Optics
Date:- 01/01 /2025 To Date:- 31/ 01/ 2025

Sr.Week	Topics Planned	Topics Covered	Teaching tool/methods used	No.of Lectures planned	No.of Lectures conducted	Remarks (level /extra lecture etc.
2nd Week	**1. Geometrical optics and Lens aberrations: (12L)** **(a) Geometrical optics:** 1.1 Introduction to lenses and sign conventions. 1.2 Thin lenses: Lens equation for single convex lens	**1. Geometrical optics and Lens aberrations:** **(a) Geometrical optics:** 1.1 Introduction to lenses and sign conventions	**BBCL**	**04**	**02**	**NA**

3rd Week	1.3 Lens maker equation 1.4 Concept of magnification, deviation and power of a thin lens 1.5 Equivalent focal length of two thin lens system 1.6 Concept of cardinal points **(b) Lens Aberrations:** 1.8 Introduction to Aberration	1.2 Thin lenses: Lens equation for single convex lens 1.2 Thin lenses: Lens equation for single convex lens 1.5 Equivalent focal length of two thin lens system 1.6 Concept of cardinal points	**BBCL**	**04**	**04**	**NA**
4th Week	1.9 Types of aberration: Monochromatic and Chromatic Aberration (Only discussion) **2. Optical Instruments: (6L)** 2.1 Introduction to optical instruments 2.2 Types of optical instruments: Simple Microscope, Compound Microscope and Astronomical	**(b) Lens Aberrations:** 1.8 Introduction to Aberration 1.9 Types of aberration **2. Optical Instruments: (6L)** 2.1 Introduction to optical instruments 2.2 Types of optical instruments: Simple Microscope,		**04**	**04**	**NA**

	telescope (only construction and working)					
5th Week	2.3 Eyepiece: Ramsden's eye piece (Expression), Huygens eye piece and Gauss's eyepiece (only qualitative discussion) 2.4 Problems	**2. Optical Instruments: (6L)** 2.1 Introduction to optical instruments 2.2 Types of optical instruments: Simple Microscope, 2.3 Eyepiece: Ramsden's eye piece (Expression)		**04**	**03**	**NA**

Total No.of Lectures Planned during the month = 16
.Total No of lecturer Conducted during the month = 13

NSS CAMP = 3 TO 9 JANUARY
M.L =27 TO 29 JANUARY

Plan checked By HOD **Signature of the Teacher**

NUTAN ARTS COLLEGE RAJAPUR

TAL - SANGAMNER DIST-A.NAGAR

Teaching plan for the Year -------

Name of the Teacher:- DAROLE.A.S Class :- S.Y.B.Sc

Subject & Course :- Optics
Date:- 1/02 /2025 To Date:- 28 / 02/2025

Sr.Week	Topics Planned	Topics Covered	Teaching tool/methods used	No.of Lectures planned	No.of Lectures conducted	Remarks (level /extra lecture etc.
1st Week	**3. Interference and Diffraction: (12L)** **(a) Interference:** 3.1 Introduction to interference 3.2 Types of Interference (only discussion) 3.3 Phase change on reflection (Stokes	2.4 Problems **3. Interference and Diffraction: (12L)** **(a) Interference:** 3.1 Introduction to interference	**BBCL**	**02**	**01**	**NA**

	treatment).					
2nd Week	3.4 Interference due to reflected light 3.5 Interference due to transmitted light. 3.6 Newton's ring (to calculate wavelength) 3.7 Problems	3.2 Types of Interference (only discussion) 3.3 Phase change on reflection (Stokes treatment).	**BBCL**	**04**	**04**	**NA**
3rd Week	**(b) Diffraction:** 3.8 Introduction to diffraction 3.9 Types of diffraction (only discussion) 3.10 Fraunhoffer's diffraction due to single slit and double slit (only qualitative discussion)	3.4 Interference due to reflected light 3.5 Interference due to transmitted light. 3.6 Newton's ring (to calculate wavelength)	**BBCL**	**04**	**04**	**NA**
4th Week	3.11 Plane transmission grating and grating equation (only principal maxima) 3.12 Rayleigh criterion for	**(b) Diffraction:** 3.8 Introduction to diffraction 3.9 Types of diffraction (only discussion)	**BBCL**	**04**	**04**	**NA**

	resolution (only qualitative discussion) **3.13** Problems					
5th Week		3.10 Fraunhoffer's diffraction due to single slit and double slit (only qualitative discussion) 3.11 Plane transmission grating and grating equation (only principal maxima)	**BBCL**	**04**	**02**	**NA**

Total No.of Lectures Planned during the month =18
Total No of lecturer Conducted during the month = 15
C.L :- 24/02/2025
D.L :- 25/02/2025

Plan checked By HOD **Signature of the Teacher**

NUTAN ARTS COLLEGE RAJAPUR

TAL - SANGAMNER DIST-A.NAGAR

Teaching plan for the Year -------

Name of the Teacher:- DAROLE.A.S Class :- S.Y.B.Sc

Subject & Course :- Optics
Date:- 01/ 03/2025 To Date:- 31/ 03/ 2025

Sr.Week	Topics Planned	Topics Covered	Teaching tool/methods used	No.of Lectures planned	No.of Lectures conducted	Remarks (level /extra lecture etc.
1st Week		**3.13** Problems	BBCL	02	01	NA
2nd Week	**4. Polarization: (6L)** 4.1 Introduction to polarization	**4. Polarization: (6L)** 4.1 Introduction to polarization	BBCL	04	03	NA

	4.2 Brewster's law 4.3 Malus's Law	4.2 Brewster's law				
3rd Week	**INTERNAL EXAM**					
4th Week	4.4 Polarization by double refraction 4.5 Nicol Prism 4.6 Application of polarization	4.4 Polarization by double refraction 4.5 Nicol Prism 4.6 Application of polarization	**BBCL**	**04**	**04**	**NA**
5th Week	4.7 Problems	4.7 Problems		**02**	**01**	**NA**

Total No.of Lectures Planned during the month = 12
Total No of lecturer Conducted during the month = 09
C.L = 3/3/2025

Plan checked By HOD **Signature of the Teacher**

NUTAN ARTS COLLEGE RAJAPUR

TAL - SANGAMNER DIST-A.NAGAR

Teaching plan for the Year -------

Name of the Teacher:- DAROLE.A.S Class :- S.Y.B.Sc

Subject & Course :- Optics Date:- / /20 To Date:- / / 20

Sr.Week	Topics Planned	Topics Covered	Teaching tool/methods used	No.of Lectures planned	No.of Lectures conducted	Remarks (level /extra lecture etc.
1st Week						

2nd Week						
3rd Week						
4th Week						
5th Week						

Total No.of Lectures Planned during the month .....Total No of lecturer Conducted during the month.....

Plan checked By HOD **Signature of the Teacher**