Lesson Plan

Name of Faculty : **Dr.TrilokRanjanMudgal, Assistant Professor**
Discipline : Physics (common for all branches)
Semester : I
Subject : Engineering Physics and Physics Laboratory-I
Lesson Plan Duration: 15 weeks (from August, 2018 to November, 2018)
Work Load (Lecture/Practical) per week (in hours): **Lectures 08 hours**, **Practicals -08 hours**

Week	Theory		Practicals	
	Lecture Day	Topic (Including Assignment/Test)	Practical Day	Topic
1st	1	Division of Wave front ,Biprism, Lloyd mirror	1	DeSauty bridge
	2	Division of amplitude, Newton's rings,	1	DeSauty bridge
	3	Michelsons interferometer, Applications	1	DeSauty bridge
	4	Problems Solutions	1	DeSauty bridge
2nd	5	Fraunhoffe and Fresnel class diffraction	2	Unknown Capacity by Flashing&quench
	6	Single slit, doule slit diffraction	2	Unknown Capacity by Flashing&quench
	7	Plane Transmission Grating	2	Unknown Capacity by Flashing&quench
	8	Problems Solutions	2	Unknown Capacity by Flashing&quench
3rd	9	Dispersive & resolving power of Grating	3	Freq. of AC mains by sonometer
	10	Ploarised light, Brewste law, Malus law	3	Freq. of AC mains by sonometer
	11	Polaroid,Optic axis,Double refraction	3	Freq. of AC mains by sonometer
	12	Problems Solutions	3	Freq. of AC mains by sonometer
4th	13	Nicol Prism, Quarter & Half wave plate	4	Height of an object using Sextant
	14	Biquartz&Laurents half shade polarimeter	4	Height of an object using Sextant
	15	LASER, coherence, LASER Action	4	Height of an object using Sextant
	16	Problems Solutions	4	Height of an object using Sextant
5th	17	Spontaneous and stimulated emission	5	Figure of Merit of Galvanometer
	18	Polpulation inversion, Characteristics of Laser	5	Figure of Merit of Galvanometer
	19	He-Ne & semi conductor LASER, Holography	5	Figure of Merit of Galvanometer
	20	Problems Solutions	5	Figure of Merit of Galvanometer
6th	21	Einstein's A and B coefficient	6	**Viva-Voce-1**
	22	Propagation of light in fibres,	6	**Viva-Voce-1**
	23	Numerical Aperture	6	**Viva-Voce-1**
	24	Problems Solutions	6	**Viva-Voce-1**
7th		**1st Minor Test**		
8th	25	Attenuation, single mode, multi mode fibre	7	Specific rotation of sugar solution
	26	Wave guide & Coaxial cables	7	Specific rotation of sugar solution
	27	applications in optical communications	7	Specific rotation of sugar solution
	28	Problems Solutions	7	Specific rotation of sugar solution
9th	29	Simple Harmonic Motion, Harmonic Oscillator	8	λ by Newton's rings method
	30	Resonance, Quality factor	8	λ by Newton's rings method
	31	Electro Magnetic wave theory	8	λ by Newton's rings method
	32	Problems Solutions	8	λ by Newton's rings method
10th	33	Maxwell's equations	9	λ by Michelson Interferometer
	34	Plane wave equations	9	λ by Michelson Interferometer
	35	Poynting vector, continuity equation	9	λ by Michelson Interferometer
	36	Problems Solutions	9	λ by Michelson Interferometer
11th		**2nd Minor Test**		
12th	37	Einstein Theory of relativity,	10	Resolving power of Grating
	38	Michelson Morley Experiment.	10	Resolving power of Grating
	39	Lorentz transformations	10	Resolving power of Grating
	40	Problems Solutions	10	Resolving power of Grating
13th	41	Variation of mass with velocity	11	λ by fresnel'sBiprism
	42	Mass Energy relation	11	λ by fresnel'sBiprism
	43	Doppler shift	11	λ by fresnel'sBiprism
	44	Problems Solutions	11	λ by fresnel'sBiprism
14th	45	longitudinal and transverse doppler shift	12	**Viva-Voce-2**
	46	Neutron cross section, Fission, Fusion, reactor	12	**Viva-Voce-2**
	47	Moderator, Interaction of radiation with matter	12	**Viva-Voce-2**
	48	Problems Solutions	12	**Viva-Voce-2**
15th	49	Reactor criticality, Ionisation and G.M.Counetr	13	Final Submission of Record
	50	Scintillation & Solid state detector	13	Final Submission of Record
	51	Cloud and Bubble chamber	13	Final Submission of Record
	52	Problems Solutions	13	Final Submission of Record

Lesson Plan

Name of Faculty : Dr. Wazir Singh, Assistant Professor
Discipline : B.Tech.
Branch : CE, CSE+FT.-1st Sem
Subject : Chemistry (CHY-101-L)
Lesson Plan Duration: 15 weeks (from August, 2018 to November, 2018)
Work Load (Lecture/Practical) per week (in hours): **Lectures 08 hours**

Week	Theory		Lesson Plan covered	
	Lecture Day	Topic (Including Assignment/Test)	CE	CSE+FT
1st	1	**UNIT-I Thermodynamics** : Concept of Entropy		
	2	Concept of Entropy, Problems and Solutions		
	3	Free Energy and Work Functions, Free Energy Change		
	4	Chemical Potential, Gibb's Helmholtz Equation, related numerical problems		
2nd	5	Clausius-Clapeyron Equation related numerical problems		
	6	**Phase Equilibrium :** Phase, Component and degree of freedom		
	7	Gibb's Phase Rule, One Component System : H_2O System		
	8	Problems and Solutions		
3rd	9	Two Components Pb-Ag System		
	10	Two Components Zn-Mg System		
	11	**UNIT-II** Water and its Treatment : Hardness of water, units of Hardness		
	12	Problems and Solutions		
4th	13	Hardness determination (EDTA method) related numerical problems		
	14	Alkalinity of Water and its Determination, related numerical problems		
	15	Methods of prevention of scale and sludge formation		
	16	Problems and Solutions		
5th	17	Treatment of water for domestic use, Potable or drinking water, Quality parameters of drinking water		
	18	Sedimentation, Coagulation		
	19	Filtration and disinfection		
	20	Problems and Solutions Assignment-I		
6th	21	Water softening , Ion-Exchange process		
	22	Problems and Solutions		
	23	Desalination of brackish water by Reverse Osmosis		
	24	Problems and Solutions		
7th		**1st Minor test**		
	25	**UNIT-III Corrosion :**		

8th		Dry corrosion		
	26	Wet Corrosion		
	27	Electrochemical theory of Corrosion		
	28	Problems and Solutions		
9th	29	Types of wet corrosion : Galvanic Corrosion, Differential aeration Corrosion		
	30	Factors affecting Corrosion		
	31	Corrosion preventive measure : Cathodic protection, Protective coatings		
	32	Problems and Solutions		
10th	33	**Batteries :** Introduction about batteries, Characteristics of batteries		
	34	Primary and secondary battery systems		
	35	Lead storage & Lithium batterys		
	36	Problems and Solutions		
11th	37	**Lubricants :** Introduction about lubricants		
	38	Classification of lubricants		
	39	Properties of lubricants		
	40	Problems and Solutions		
12th	41	**UNIT-IV Polymers :** Monomers and polymers, polymerization		
	42	Classification of polymers		
	43	Types of polymerization		
	44	Problems and Solutions Assignment-II		
13th	45	Effect of structure on the properties of polymers		
	46	Preparation, properties and application of thermoplastic PVC, thermoset PF and elastomer SBR		
	47	**Analytical Methods:** Principle and application of Thermo Gravimetric Analysis (TGA) and Differential Thermal Analysis (DTA)		
	48	Problems and Solutions		
14th	**2nd Minor test**			
15th	49	**Spectral analysis :** Electromagnetic radiation, Lambert-Beer's Law		
	50	Principle and applications of UV-VIS spectroscopy		
	51	Principle and applications of IR spectroscopy		
	52	Problems and Solutions		

Lesson Plan

Name of Faculty : Dr. Wazir Singh, Assistant Professor
Discipline : B.Tech.
Branch : CE, CSE+FT.-1st Sem
Subject : Chemistry Lab (CHY-101-P)
Lesson Plan Duration: 15 weeks (from August, 2018 to November, 2018)
Work Load (Lecture/Practical) per week (in hours): **Practical -08 hours**

Week	Lesson plan Practical		Lesson plan covered
	Practical Day	Topic	Date and Branch
1st	1	To prepare standard oxalic acid solution from crystalline oxalic acid. Determination of dissolved oxygen (DO) in the given water sample	
	1	To prepare standard oxalic acid solution from crystalline oxalic acid. Determination of dissolved oxygen (DO) in the given water sample	
	1	To prepare standard oxalic acid solution from crystalline oxalic acid. Determination of dissolved oxygen (DO) in the given water sample	
	1	To prepare standard oxalic acid solution from crystalline oxalic acid. Determination of dissolved oxygen (DO) in the given water sample	
2nd	2	Determination of viscosity of lubricant by Red Wood viscometer (No. 1 and No. 2)	
	2	Determination of viscosity of lubricant by Red Wood viscometer (No. 1 and No. 2)	
	2	Determination of viscosity of lubricant by Red Wood viscometer (No. 1 and No. 2)	
	2	Determination of viscosity of lubricant by Red Wood viscometer (No. 1 and No. 2)	
3rd	3	To determine flash point and fire point of an oil by Pensky – Marten's flash point apparatus.	
	3	To determine flash point and fire point of an oil by Pensky – Marten's flash point apparatus.	
	3	To determine flash point and fire point of an oil by Pensky – Marten's flash point apparatus.	
	3	To determine flash point and fire point of an oil by Pensky – Marten's flash point apparatus.	
4th	4	To prepare Phenol-formaldehyde and Urea formaldehyde resin.	
	4	To prepare Phenol-formaldehyde and Urea formaldehyde resin.	
	4	To prepare Phenol-formaldehyde and Urea formaldehyde resin.	
	4	To prepare Phenol-formaldehyde and Urea formaldehyde resin.	

5th	5	Determination of strength of HCI solution by titrating it against NaOH solution conductometrically.	
	5	Determination of strength of HCI solution by titrating it against NaOH solution conductometrically.	
	5	Determination of strength of HCI solution by titrating it against NaOH solution conductometrically.	
	5	Determination of strength of HCI solution by titrating it against NaOH solution conductometrically.	
6th	6	**Viva-Voce-1**	
	6	**Viva-Voce-1**	
	6	**Viva-Voce-1**	
	6	**Viva-Voce-1**	
7th	1st Minor test		
8th	7	Determination of strength of strong acid by titrating it against weak base conductometrically.	
	7	Determination of strength of strong acid by titrating it against weak base conductometrically.	
	7	Determination of strength of strong acid by titrating it against weak base conductometrically.	
	7	Determination of strength of strong acid by titrating it against weak base conductometrically.	
9th	8	Determination of concentration of $KMnO_4$ solution spectrophotometrically.	
	8	Determination of concentration of $KMnO_4$ solution spectrophotometrically	
	8	Determination of concentration of $KMnO_4$ solution spectrophotometrically	
	8	Determination of concentration of $KMnO_4$ solution spectrophotometrically	
10th	9	To determine the surface tension of given liquid by means of stalagmometer by drop number method.	
	9	To determine the surface tension of given liquid by means of stalagmometer by drop number method.	
	9	To determine the surface tension of given liquid by means of stalagmometer by drop number method.	
	9	To determine the surface tension of given liquid by means of stalagmometer by drop number method.	
11th	10	Determination of Ca^{++} and Mg^{++} hardness of water using EDTA solution.	
	10	Determination of Ca^{++} and Mg^{++} hardness of water using EDTA solution.	
	10	Determination of Ca^{++} and Mg^{++} hardness of water using EDTA solution.	

	10	Determination of Ca^{++} and Mg^{++} hardness of water using EDTA solution.	
12th	11	Determination of alkalinity of water sample.	
	11	Determination of alkalinity of water sample.	
	11	Determination of alkalinity of water sample.	
	11	Determination of alkalinity of water sample.	
13th	12	**Viva-Voce-2**	
	12	**Viva-Voce-2**	
	12	**Viva-Voce-2**	
	12	**Viva-Voce-2**	
14th	2nd Minor test		
15th	13	Final Submission of Record	
	13	Final Submission of Record	
	13	Final Submission of Record	
	13	Final Submission of Record	

Lesson Plan

Name of Faculty : Gaurav Singh Sisodia
Discipline : Mathematics
Semester : I
Subject : Maths-I (MAT-101-L)
Lesson Plan Duration: 15 weeks (from August, 2018 to November, 2018)
Work Load (Lecture/Practical) per week (in hours): **Lectures 05 hours**.

Week	Theory	
	Lecture Day	**Topic (Including Assignment/Test)**
1st	1	Taylor's series
	2	Maclaurin's series
	3	Asymptotes Def., asymptotes parallel to coordinate axes
	4	Oblique asymptotes
	5	Asymptotes by Inspection method, Intersection of curve and its asymptotes
2nd	6	Asymptotes of Polar curves
	7	Problems and solutions
	8	Curvature, Radius and curvature for Intrinsic and Cartesian curves
	9	Radius of curvature of Pedal and polar equations
	10	Radius of curvature at origin, Newton's Method, Method of expansion
3rd	11	Centre of curvature, evolutes and involutes
	12	Problems and solutions
	13	Functions of two or more variables, Partial derivatives and differentiability
	14	Total differential and derivatives of composite functions and implicit functions
	15	Problems and solutions
4th	16	Higher order partial derivatives, Homogeneous functions, Euler's Theorem
	17	Taylor's series for functions of two variables
	18	Jacobians
	19	Problems and solutions
	20	Maxima and minima of functions of two variables
5th	21	Lagrange's method of undetermined multipliers
	22	Differentiation under the integral sign
	23	Problems and solutions
	24	Applications of single integration to find volume of solids
	25	Applications of single integration to find surface area of solids or revolution
6th	26	Problems and Solutions
	27	Double integral
	28	Change of order of double integration
	29	Double integral in polar coordinates
	30	Problems and Solutions
7th		----------**Ist Minor Test**----------
8th	31	Applications of double integral to find area enclosed by plane curves
	32	Applications of double integral to find volumes enclosed by plane surfaces
	33	Triple integral
	34	Change of variables
	35	Problems and solutions
9th	36	Beta function
	37	Properties of Beta function
	38	Gamma function
	39	Properties of Gamma function
	40	Relation between Beta and Gamma function
10th	41	Problems and Solutions
	42	Differentiation of vectors
	43	Scalar and vector point functions
	44	Gradient of a scalar field
	45	Physical interpretation of gradient
11th	46	Directional derivatives
	47	Problems and Solutions
	48	Divergence of a vector field
	49	Physical interpretation of divergence
	50	Curl of a vector field
12th	51	Physical interpretation of curl
	52	Properties of divergence and curl
	53	Problems and solutions
	54	Integration of vectors
	55	Line integral
13th	56	Problems and Solutions
	57	Surface integral
	58	Volume integral
	59	Problems and Solutions
	60	Green's theorem
14th		----------**2nd Minor Test**----------
15th	61	Applications of Green's theorem
	62	Stoke's theorem,
	63	Applications of Stoke's theorem
	64	Gauss divergence theorem
	65	Applications of Gauss theorem

Lesson Plan

Name of faculty : Dr. Meena Kumari
Discipline : Applied Sciences and Humanities
Semester : 1st
Subject : Essentials of Communication-I
Lesson plan duration : 15 weeks (from August 2018 to December 2018)

Work Load (Lectutre/Practical) per week (in hours): **Lectures 03 hours**.

Week	Theory	
	Lecture Day	Topic (Including Assignment/Test)
1st	1	Antonyms, Synonyms, Homophones, Homonyms
	2	Form and Function of words
	3	Form and Function of words
2nd	4	Problem Solving
	5	Sentence Structure
	6	Verb Patterns and Usage
3rd	7	Phonetics: Symbols and Structure
	8	Phonetics: Symbols and Structure
	9	Phonetics: Symbols and Structure
4th	10	Problem Solving
	11	Note Taking
	12	Reviewing
5th	13	Precis Writing, Summaring
	14	Practice of Precis Writing, Summaring
	15	Comprehention, Paraphrasing, Interpretation
6th	16	Descriptive and Explanatory Writing
	17	Descriptive and Explanatory Writing
	18	Problem Solving
7th		----------**Ist Minor Test**----------
8th	19	Analytical and Argumentative Writing
	20	Debate
	21	Group Discussion
9th	22	Group Discussion
	23	Presentation
	24	The Year 2050
10th	25	The Year 2050
	26	The Year 2050
	27	Question Answers
11th	28	The Mushroom of Death
	29	The Mushroom of Death
	30	The Mushroom of Death
12th	31	Question Answers
	32	The Discovery
	33	The Discovery
13th	34	The Discovery
	35	Question Answers
	36	Problem Solving
14th		----------**2nd Minor Test**----------
15th	37	Remedial Teaching
	38	Remedial Teaching
	39	Remedial Teaching

Lesson Plan

Name of faculty : Dr. Meena Kumari
Discipline : Applied Sciences and Humanities
Semester : 1st
Subject : Essentials of Communication-I (Lab).
Lesson plan duration : 15 weeks (from August 2018 to December 2018)
Work Load (Practical) per week (in hours): **Lab. 01hour with one group** of a class

Week	Theory	
	Lab. Day	Topic (Including Assignment/Test)
1	1	Introduction to Phonemic Alphabet
2	2	Introduction to Phonemic Alphabet
3	3	Practice of Correct Pronunciation of English Words
4	4	Transcription of English Words
5	5	Description and Identification of Consonants and Vowel Sounds
6	6	Viva Voce I
7	7	Minor Test I
8	8	Tenses
9	9	Change the Voice
10	10	Articles
11	11	Capitalisation
12	12	Grammar Rules
13	13	Viva Voce II
14	14	Minor Test II
15	15	Revision and Final Submission of Lab. Record

Lesson Plan

Name of Faculty : **Dr. Shyam Sunder, Assistant Professor**
Discipline :
Semester : 1st Sem
Subject : Physics-I (PHY-101L)
Lesson Plan Duration: 15 weeks (from August, 2018 to November, 2018)
Work Load (Lecture/Practical) per week (in hours): **Lectures 08 hours**, **Practicals -08 hours**

Week	Theory	
	Lecture Day	**Topic (Including Assignment/Test)**
1st	1	Division of Wave front , Bi-prism,
	2	Division of amplitude, Newton's rings,
	3	Michelson's interferometer and Lloyd mirror, Applications
	4	Problems Solutions
2nd	5	Fraunhoffer and Fresnel class diffraction
	6	Single slit, double slit diffraction
	7	N-Slit and Plane Transmission diffraction grating Grating
	8	Problems Solutions
3rd	9	Dispersive & resolving power of Grating
	10	Polarised light, Brewster law, Malus law
	11	Polaroid,Optic axis,Double refraction
	12	Problems Solutions
4th	13	Nicol Prism, Quarter & Half wave plate
	14	Biquartz & Laurent's half shade polarimeter
	15	LASER, coherence, LASER Action
	16	Problems Solutions
5th	17	Spontaneous and stimulated emission
	18	Population inversion, Characteristics of Laser
	19	He-Ne & semi conductor LASER, Holography
	20	Problems Solutions
6th	21	Einstein's A and B coefficient
	22	Propagation of light in fibres,
	23	Numerical Aperture
	24	Problems Solutions
7th		
8th	25	Attenuation, single mode, multi mode fibre
	26	Wave guide & Coaxial cables
	27	applications in optical communications
	28	Problems Solutions
9th	29	Simple Harmonic Motion, Harmonic Oscillator
	30	Resonance, Quality factor
	31	Electro Magnetic wave theory
	32	Problems Solutions
10th	33	Maxwell's equations
	34	Plane wave equations
	35	Poynting vector, continuity equation
	36	Problems Solutions
11th		
12th	37	Einstein Theory of relativity,
	38	Michelson Morley Experiment.
	39	Lorentz transformations

	40	Problems Solutions
13th	41	Variation of mass with velocity
	42	Mass Energy relation
	43	Doppler shift
	44	Problems Solutions
14th	45	longitudinal and transverse Doppler shift
	46	Neutron cross section, Fission, Fusion, reactor
	47	Moderator, Interaction of radiation with matter
	48	Problems Solutions
15th	49	Reactor criticality, Ionisation and G. M. Counter
	50	Scintillation & Solid state detector
	51	Cloud and Bubble chamber
	52	Problems Solutions

Lesson Plan

Name of Faculty : **Dr. Shyam Sunder, Assistant Professor**
Discipline :
Semester : 1st Sem
Subject : Physics Lab-I (PHY-101P)
Lesson Plan Duration: 15 weeks (from August, 2018 to November, 2018)
Work Load (Lecture/Practical) per week (in hours): **Lectures 08 hours**, **Practicals -08 hours**

Practicals	
Practical Day	Topic
1	De-Sauty bridge
1	De-Sauty bridge
1	De-Sauty bridge
1	De-Sauty bridge
2	Unknown Capacity by Flashing & quench
2	Unknown Capacity by Flashing &quench
2	Unknown Capacity by Flashing & quench
2	Unknown Capacity by Flashing & quench
3	Freq. of AC mains by sonometer
3	Freq. of AC mains by sonometer
3	Freq. of AC mains by sonometer
3	Freq. of AC mains by sonometer
4	Height of an object using Sextant
4	Height of an object using Sextant
4	Height of an object using Sextant
4	Height of an object using Sextant
5	Figure of Merit of Galvanometer
5	Figure of Merit of Galvanometer
5	Figure of Merit of Galvanometer
5	Figure of Merit of Galvanometer
6	**Viva-Voce-1**
6	**Viva-Voce-1**
6	**Viva-Voce-1**
6	**Viva-Voce-1**
1st Minor Test	
7	Specific rotation of sugar solution
7	Specific rotation of sugar solution
7	Specific rotation of sugar solution
7	Specific rotation of sugar solution
8	λ by Newton's rings method
8	λ by Newton's rings method
8	λ by Newton's rings method
8	λ by Newton's rings method
9	λ by Michelson Interferometer
9	λ by Michelson Interferometer
9	λ by Michelson Interferometer
9	λ by Michelson Interferometer
2nd Minor Test	
10	Resolving power of Grating
10	Resolving power of Grating
10	Resolving power of Grating
10	Resolving power of Grating

11	λ by fresnel'sBiprism
11	λ by fresnel'sBiprism
11	λ by fresnel'sBiprism
11	λ by fresnel'sBiprism
12	**Viva-Voce-2**
12	**Viva-Voce-2**
12	**Viva-Voce-2**
12	**Viva-Voce-2**
13	Final Submission of Record
13	Final Submission of Record
13	Final Submission of Record
13	Final Submission of Record