

# LESSON PLAN

SUBJECT: ENGG. CHEMISTRY (THEORY & PRACTICAL)

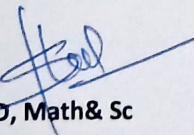
BRANCH: COMMON (MECHANICAL & TEXTILE)

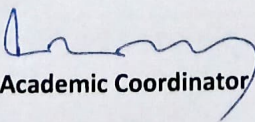
SEMESTER: 2<sup>nd</sup> (2023-24)

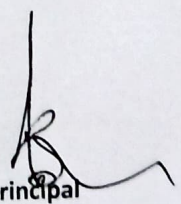
NAME OF THE FACULTY: SATYAJIT DHAL



**GOVERNMENT POLYTECHNIC, BHADRAK**

  
HOD, Math & Sc

  
Academic Coordinator

  
Principal  
Govt. Polytechnic, Bhadrak



# GOVT. POLYTECHNIC, BHADRAK

## LESSON PLAN

<b>DISCIPLINE:</b> Mechanical & Textile	<b>SEMESTER:</b> SECOND	<b>NAME OF THE TEACHING FACULTIES:</b> SRI SATYAJIT DHAL SR. LECT. MATH & SC (CHEMISTRY), AJIT KU. PALLEI (LA CHEMISTRY )
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<b>SUBJECT:</b> ENGG. CHEMISTRY (THEORY & PRACTICALS)	<b>NO. OF. DAYS PER WEEK CLASS ALLOTTED</b>	<b>SEMESTER FROM: 29/01/2024 TO 14/05/2024</b>	
<b>WEEK</b>	<b>CLASS DAY</b>	<b>THEORY</b>	<b>PRACTICAL</b>
<b>1<sup>st</sup></b>	1 <sup>ST</sup>	-Introduction, Matter and its states.	Introduction to chemistry lab, about safety measures, about maintenance of practical records.
	2 <sup>ND</sup>	-Atomic structure: fundamental particles (electron, proton and neutron), their properties.	Introduction to the students about use of different lab equipments and how to handle them safely.
	3 <sup>RD</sup>	-Atomic number and mass no. , definition, examples and properties of isotopes, isotones and isobars. -Definitions of atomic weight, mol. Weight, equivalent weight.	-----
	4 <sup>TH</sup>	-Rutherford's atomic model. -Equivalent weight of acid, bases and salts. -concept of arrhenius theory	-----



		with examples.	
2 <sup>nd</sup>	1 <sup>ST</sup>	-Bohr's atomic model -Molarity and Normality with numericals. -Lowry Bronsted theory with examples.	Dictation of the procedure of exp. 1, preparation and study of properties of CO <sub>2</sub> gas, explanation of theory with equations.
	2 <sup>ND</sup>	Bohr and Bury Scheme and AUFBAU'S Principle. -Molality with examples  -LEWIS theory for Acid and Base with examples.	Checking of rough practical record and demonstration of the experiment.
	3 <sup>RD</sup>	-Hund's rule with examples. -Importance of ph in industry.  -Neutralization.	-----
	4 <sup>TH</sup>	-Electronic configuration. -Ph of solutions with numericals.  -Definition and types of salts.	-----
3 <sup>rd</sup>	1 <sup>ST</sup>	-Numericals	Expt. Conducted by the students.
	2 <sup>ND</sup>	-Correction of class note -clearing of doubts.	Correction of practical records, discussion of viva questions of the expt.
	3 <sup>RD</sup>	-Numericals.	-----
	4 <sup>TH</sup>	-Chemical bonding, definition, cause of bonding -Normal and Acidic salts with examples.	-----
4 <sup>th</sup>	1 <sup>ST</sup>	-Ionic bond: definition, examples. -Basic and Double salts with examples.	Dictation of the procedure of exp. 2. Preparation and study of properties of ammonia gas. Explanation Of Theory With Equations.
	2 <sup>ND</sup>	-Covalent bond: definition with	Checking of rough practical record



		examples. -Complex and Mixed salts with examples.	and demonstration of the experiment.
	3 <sup>RD</sup>	-Coordinate bond: definition with examples. -Numericals.	-----
	4 <sup>TH</sup>	-Electrochemistry: definition of electrolytes, their types, non electrolytes with examples. -Numericals.	-----
5 <sup>th</sup>	1 <sup>ST</sup>	-Electrolysis(principle) -Numericals.	Expt. Conducted by the Students.
	2 <sup>ND</sup>	Electrolysis of molten NACL and Aqueous NACL. -Numericals.	Checking of practical records and discussion of viva questions of expt. 2.
	3 <sup>RD</sup>	-Faraday's laws of electrolysis.  -Numericals on faraday's laws.	-----
	4 <sup>TH</sup>	-Electroplating (zinc plating).	-----
6 <sup>th</sup>	1 <sup>ST</sup>	-Class note correction.	Dictation of the procedure of exp. 3. Crystallization of CuSO <sub>4</sub> . Explanation Of Theory With Equations.
	2 <sup>ND</sup>	-Note checking and numericals.	Checking of rough practical record and demonstration of the experiment.
	3 <sup>RD</sup>	-Corrosion and its types. -Water treatment: sources of water,hard and soft water.	-----
	4 <sup>TH</sup>	-Rusting of iron and water line corrosion. -Hardness, types of hardness.	-----
7 <sup>th</sup>	1 <sup>ST</sup>	-Protection from corrosion by alloying and galvanisation. -Removal of hardness by lime soda method.	Expt. Conducted by the Students.



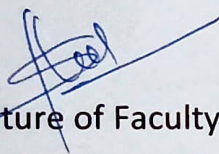
	2 <sup>ND</sup>	-Hydrocarbons: definitions, general formula, examples. -Advantages of hot lime over cold lime process.	Checking of practical records and discussion of viva questions of expt. 3.
	3 <sup>RD</sup>	-Rules for iupac system of nomenclature for alkanes, alcohols, alkyl halides. -Organic ion exchange method.	-----
	4 <sup>TH</sup>	-Rules for IUPAC system of nomenclature for alkenes and alkynes. -Lubricants: definition and types, uses.	-----
8 <sup>th</sup>	1 <sup>ST</sup>	-Rules for writing the structural formula from IUPAC names, bond line notation. -Purpose of lubrication.	Dictation of the procedure of exp. 4. Acid Base Titration. Explanation Of Theory With Equations.
	2 <sup>ND</sup>	-Revision.	Checking of rough practical record and demonstration of the experiment.
	3 <sup>RD</sup>	-Aromatic hydrocarbons and Huckel's rule. -Numericals.	-----
	4 <sup>TH</sup>	-Difference between aliphatic and aromatic hydrocarbons, uses of common aromatic compounds. -Fuel: definition, classification.	-----
9 <sup>th</sup>	1 <sup>ST</sup>	-Metallurgy: minerals, ores with examples. -Uses and composition of diesel, petrol and kerosene.	Expt. Conducted by the Students Acidimetry.
	2 <sup>ND</sup>	-Metallurgical operations. -Producer gas and water gas.	Expt. Conducted by the Students Alkalimetry.
	3 <sup>RD</sup>	-Gravity separation and Magnetic separation of ore	-----



		concentration. -LPG, CNG and Coal gas.	
	4 <sup>TH</sup>	-Froth floatation and Leaching methods of ore concentration. -Class note checking and discussion of questions .	-----
10 <sup>th</sup>	1 <sup>ST</sup>	-Revision.	Checking of practical records and discussion of viva questions of expt. 4.
	2 <sup>ND</sup>	-Numericals and class note correction.	Dictation of the procedure of exp. 5. Test of acid radicals.
	3 <sup>RD</sup>	-Polymers.	-----
	4 <sup>TH</sup>	-Definition of monomer, homopolymer, co-polymer.	-----
11 <sup>th</sup>	1 <sup>ST</sup>	-Degree of polymerization.	Checking of rough practical record and demonstration of the experiment.
	2 <sup>ND</sup>	-Thermosetting, thermoplastic.	Expt. Conducted by the Students.
	3 <sup>RD</sup>	-Revision.	-----
	4 <sup>TH</sup>	-Composition and uses of polythene.	-----
12 <sup>th</sup>	1 <sup>ST</sup>	-Calcination and roasting. -composition and uses of poly vinyl chloride.	Checking of practical records and discussion of viva questions of expt. 5.
	2 <sup>ND</sup>	-Smelting, flux, slag with definitions and examples. -composition and uses of Bakelite.	
	3 <sup>RD</sup>	-Refining of metal.	-----
	4 <sup>TH</sup>	-Alloys and types with examples. -Elastomers.	-----
	1 <sup>ST</sup>	-Correction of assignments.	Dictation of the procedure of exp. 6. Test of basic radicals (known).
	2 <sup>ND</sup>	-Drawbacks of natural rubber.	Checking of rough practical record and demonstration of the experiment.



13 <sup>th</sup>	3 <sup>RD</sup>	-Vulcanisation of rubber.	-----
	4 <sup>TH</sup>	-Advantages of vulcanised rubber over raw rubber.	-----
14 <sup>th</sup>	1 <sup>ST</sup>	-Uses and examples of insecticides.	Expt. Conducted by the Students.
	2 <sup>ND</sup>	-Revision.	Test of unknown acid and basic radicals.
	3 <sup>RD</sup>	-Examples and uses of herbicides and fungicides.	-----
	4 <sup>TH</sup>	-Revision.	-----
15 <sup>th</sup>	1 <sup>ST</sup>	-Note correction.	Test of unknown salt.
	2 <sup>ND</sup>	-Bio fertilizers.	Checking of practical records and viva voice.
	3 <sup>RD</sup>	-Numericals and revision.	-----
	4 <sup>TH</sup>	-Discussion of possible questions for semester exam.	-----



Signature of Faculty