



# ST. LAWRENCE HIGH SCHOOL

A JESUIT CHRISTIAN MINORITY INSTITUTION

Syllabus Planner for the year 2018

TERM: PRE-SELECTION

TEACHER'S NAME: Mr. ARNAB PAUL CHOWHDURY & Mr. SUBHAJIT BHATTACHARYA

No. of working days: 50

No. of periods available: 38

Subject: CHEMISTRY

CLASS: 12

SECTION: A1 & A2

MONTH	NO. OF PERIODS	LESSONS	TOPICS COVERED	HOMEWORK	CLASS WORK
MAY	08	Haloalkane, Haloarene, Alcohol, Phenol and Ether.	Synthesis of haloalkane, haloarene, alcohol, phenol and ether, Hunsdicker reaction, Sandmeyer reaction, Hydroboration oxidation, Cumene phenol process, Williamson synthesis etc, Reactions and physical properties, Identification.	Board level conversions, mechanism based problems would be given for homework. The council based Project would be given to them before summer vacation starts. The procedure for doing the project would be explained in detail. PROJECT ASSIGNMENT WILL BE GIVEN BY 8 <sup>TH</sup> MAY, 2018.	The marks distribution of the WBHS council for the relevant chapter and model question- answer would be Discussed. Conversions, Road map problems and conceptual mechanism based questions would be done
JUNE	18	Chemical Kinetics and Electrochemistry	Measurement of reaction rate, Law of mass action, Experimental rate law, Order and molecularity, Integrated rate expressions for zero and first order reactions, Variation of reaction rate with temperature, Arrhenius equation. Electrolysis and Faradays laws, Concept of electrode potential and Nernst equation, Commercial cells, Concept of specific and molar conductances and their variation with concentration, Kohlrausch's law and determination of dissociation constants of weak acids.	Numericals, reasoning questions and mcq would be given for homework MCQ and short answer questions in accordance to WBHS council pattern would be given.	Problems on conductance measurements, determination of electrolysis products, calculation of cell potential would be done. Students should be made aware of the marks distribution for the chapter in WBHS. LAST DATE FOR SUBMISSION OF WBHS COUNCIL PROJECT BY 20 <sup>TH</sup> JUNE, 2018.
JULY	12	Aldehyde, Ketone, Carboxylic acid, Organic compounds containing Nitrogen and P-Block elements. PRE-TEST STARTS FROM 25 <sup>TH</sup> JULY. SYLLABUS: THE TOPICS COVERED UPTO JULY.	Synthesis, Physical properties, Chemical reactions and identification for carbonyl compounds, acids, amines, Aldol and Cannizzaro reaction, Arndt-Eistert synthesis, Gabriel Phtalimide synthesis etc. A comparative study of groups 15/16/17/18, Allotropes of P, Phosphine, Sulphur dioxide and trioxide, Halogens, Interhalogens, Xenon fluorides etc.	Board level conversions, mechanism based problems would be given for homework. Proper MCQ questions must be given as home assignment.	Conceptual mechanism based problems would be done. Students should be made aware of the important synthetic strategy in carbonyl and amine chemistry. Important reasoning type questions should be done and structures of molecules should be stated. Proper balancing of inorganic reactions must be taught.

Teachers are requested to prepare a LESSON PLAN for each Topic to be taught. The Lesson plans are to be submitted along with the monthly planner.

PRINCIPAL

Submitted on: 31.01.18

Signature of Teacher: Subhajit Bhattacharya

VICE PRINCIPAL

ACADEMIC CO-ORDINATOR

31/1/18  
St. Lawrence High School



FOR GOD AND COUNTRY

# ST. LAWRENCE HIGH SCHOOL

A JESUIT CHRISTIAN MINORITY INSTITUTION



Syllabus Planner for the year 2018

TERM: SELECTION

TEACHER'S NAME: Mr. ARNAB PAUL CHOWHDURY &amp; Mr. SUBHAJIT BHATTACHARYA

No. of working days: 57

No. of periods available: 26

Subject: CHEMISTRY

CLASS: 12

SECTION: A1 &amp; A2

MONTH	NO. OF PERIODS	LESSONS	TOPICS COVERED	HOMEWORK	CLASS WORK
AUGUST	10	Solid State, d and f Block elements and Coordination compounds.	Introduction to unit cell and Bravais lattices, Packing fraction for simple cubic, Face centred and Body centred cubic unit cells, Close packing in 2D and 3D, Density calculations, Crystal defects, Radius ratio. Melting points, Electrode potential, Oxidation states, Interstitial compounds, Catalysis and alloys of d-block elements, Potassium dichromate and permanganate, Oxidation states of lanthanides and actinides, Lanthanide contraction. Structure and bonding in coordination compounds, Werners theory, Isomerism and IUPAC nomenclature, Organometallics.	Proper board type questions and MCQ should be given as assignment. Students should be asked to go through the structure and properties of transition metal compounds.	Conceptual questions on unit cell formula calculation (for homo and hetero-atomic systems), Defect percentage calculation would be done. Important structures of coordination complexes should be done. Isomerism exhibited by complexes would be explained. Proper MCQ on colour and paramagnetism of complexes must be done. Students should be made aware of the marks distribution for the chapter in WBHS and model question answer should be discussed.
SEPTEMBER	10	Polymers, Biomolecules, Surface Chemistry and Solutions	Classification of polymers on basis of source, structure and intermolecular forces, monomers and polymeric structures for Nylon family, Polyesters, Resins, Rubbers and polyolefins. Carbohydrates, Structure, mutarotation, disaccharides and polysaccharides, Amino acids, Isoelectric pH and Zwitterions, Comparative study of Physisorption and Chemisorption, Colloids, Hardy-Schultz rule, Peptisation, Gold number, Tyndall effect, Micelles and emulsions. Concept of vapour pressure, Raoult's Law, Ideal solutions, Deviation from ideality, Colligative properties, Relative lowering of vapour pressure, Elevation of boiling point, depression of freezing point and Osmotic pressure, Abnormal colligative property and Van't Hoff factor.	MCQ and short answer questions in accordance to WBHS council pattern would be given..	Students should be made aware of the marks distribution for the chapter in WBHS and model question answer should be discussed. Students should be taught to determine molecular weights of unknown compounds via colligative properties.
OCTOBER	06	General Principles and processes of isolation of elements and Chemistry in everyday life.	Concentration, Roasting/Calcination, Extraction and refining processes in metallurgy, metallurgy of Cu/Ag/Au/Al/Fe/Zn. Examples of common antibiotics, analgesics, artificial sweeteners, soaps, disinfectants and antiseptics.	Proper board type questions and MCQ should be given as assignment. Students should be asked to go through the structure and properties of metals. Students should be asked to go through the structure and properties of common drugs and surfactants.	Short questions on extractive metallurgy would be given in accordance to the WBHS council.
NOVEMBER	NIL	SELECTION EXAM BEGINS ON 1.11.2018			

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PRINCIPAL

Submitted on: 31.01.18

Signature of Teacher: *Subhajit Bhattacharya*

ACADEMIC CO-ORDINATOR

*31/1/18*  
St. Lawrence High School

VICE PRINCIPAL

*Arnab Paul Chowhdury*