

8.0 COURSE CONTENT

Week	Section	Contents	Remarks
Week 1 11/10/2022 - 14/10/2022	Briefing	Introduction <ul style="list-style-type: none"> Syllabus Coursework Assessment 	
Week 2 17/10/2022 - 21/10/2022 Week 3 24/10/2022 - 28/10/2022	Chapter 1	Chapter 1: Chemistry The Study of Change <ul style="list-style-type: none"> Introduction Classifications of matter Physical & chemical properties of matter Measurement (SI Units, mass & weight, volume, density, temperature scales) Handling numbers (Scientific notation, significant figures) Factor label method of solving problems 	Lab 1 (Week 2) <i>Deepavali</i> Lab 2 (Week 3)
Week 4 31/10/2022 - 04/11/2022 Week 5 07/11/2022 - 11/11/2022	Chapter 2	Chapter 2: Atom, Molecules and Ions <ul style="list-style-type: none"> The structure of the atom Atomic number, mass number and isotopes, molecules and ions Chemical formulas Naming compounds (Ionic compound, molecular compound, acids and bases, and organic compounds) 	Lab 3 (Week 4) Quiz 1 (Chapter 1 - 2) Lab 4 Lab Test (Week 5)

Week 6 14/11/2022 - 18/11/2022 Week 7 21/11/2022 - 25/11/2022	Chapter 3	Chapter 3: Chemical Reaction <ul style="list-style-type: none"> • Atomic mass, molar mass of an element and molecular • Avogadro's number • Percent composition of compounds • Empirical and molecular formulas • Chemical reactions and chemical equation • Amount of reactants and products • Limiting reagents and reaction yield • Reaction in aqueous solution, concentration of solution • Gravimetric analysis, acid-base titrations 	Online Lecture (Week 7) Tutorial 1 (Chapter 1- 3) (Week 7)
Week 8 26/11/2022 - 04/12/2022		MID SEMESTER BREAK	
Week 9 05/12/2022 - 09/12/2022 Week 10 12/12/2022 - 16/12/2022	Chapter 4	Chapter 4: Structure of Atoms and Periodic Table <ul style="list-style-type: none"> • Model of the atom, quantum numbers • Atomic orbital, electron configuration and building up principle (Aufbau's, Hund's, Pauli's) • Periodic table • Periodic classification of the elements • Electron configurations of ions and transition Metal • Trends in physical and chemical properties such as atomic radii, effective nuclear charge, ionization energies electron affinities and electronegativity 	Mid Semester Test (Chapter 1 - 3) Lab 5 (Week 10)
Week 11 19/12/2022 - 23/12/2022	Chapter 5	Chapter 5: Chemical Bonding <ul style="list-style-type: none"> • Ionic bonding, covalent bonding • Electronegativity and polarity, molecular geometry • Intermolecular forces and effect of polarisation (Dipole dipole forces, Ion dipole forces, Dispersion Forces, Hydrogen Bond) 	Tutorial 2 (Chapter 4 - 5) (Week 11)

Week 12 26/12/2022 - 30/12/2022 Week 13 02/01/2023 - 06/01/2023	Chapter 6	Chapter 6: Properties of Matter <ul style="list-style-type: none"> • Three states of matter, phase changes • The gas laws (Boyle's, Charles' & Guy Lussac's, Avogadro's, Ideal gas equation) • Gas stoichiometry • Liquids properties (Surface tension, cohesion, adhesion, viscosity) • Solids (Crystalline and amorphous solid), unit cell (cubic cells) • Characterization of materials (SEM, Nitrogen adsorption analysis, XRD) 	Christmas Day Quiz 2 (Chapter 4 - 5) New Year 2023
Week 14 09/01/2023 - 13/01/2023 Week 15 16/01/2023 - 20/01/2023	Chapter 7	Chapter 7: Thermochemistry <ul style="list-style-type: none"> • Energy in chemical reaction, system and surrounding • Exothermic and endothermic process, enthalpy • Thermochemistry equation • Calorimetric, heat capacity, specific heat capacity • Standard enthalpy of formation, standard enthalpy of reaction • Hess Law 	Tutorial 3 (Chapter 6 - 7) (Week 15)
Week 16 21/01/2023 - 29/01/2023		REVISION WEEK	Chinese New Year
Week 17-18 30/01/2023 - 16/02/2023		EXAMINATION WEEK	