basic education
Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

2023/24 ANNUAL TEACHING PLANS: PHYSICAL SCIENCES: GRADE 11 (TERM 1)

TERM 1	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10-11	
CAPS TOPICS (44 HRS)	**MECHANICS: Vectors in two dimensions (2 hrs)**	**MECHANICS: Vectors in two dimensions (4 hrs)**	**MECHANICS: Vectors in two dimensions (2 hrs)** **MECHANICS: Newton's laws (2 hrs)**	**MECHANICS: Newton's laws (4 hrs)**	**MECHANICS: Newton's laws (4 hrs)**	**MECHANICS: Newton's laws (4 hrs)**	**MECHANICS: Newton's Universal Law (4 hrs)**	**ELECTRICTY & MAGNETISM: Electrostatics (4 hrs)**	**ELECTRICTY & MAGNETISM: Electrostatics (4 hrs)**	**ELECTRICTY & MAGNETISM: Electrostatics (4 hrs)**	**CONTROL TEST (2 hrs)**
TOPICS, CONCEPTS, SKILLS AND VALUES	• Define a resultant • Determine the resultant of vectors (maximum four) on a Cartesian plane, using the component method • Sketch the vertical vector (R_y) and the horizontal vector (R_x) on a Cartesian plane	• Calculate the magnitude of the resultant using the theorem of Pythagoras • Determine the direction of the resultant using simple trigonometric ratios • Determine the resultant (R) of two vectors graphically using either the tail-to-head or tail-to-tail method (parallelogram method) as well as by calculation (component method) for a maximum of four vectors in both 1-dimension and 2-dimensions • Explain the meaning of a closed vector diagram	**Vectors in two dimensions** • Resolve a vector R into its horizontal (R_x) and vertical (R_y) components using $R_x = R\cos\theta$ and $R_y = R\sin\theta$ where θ is the angle between r and the x axis **Newton's laws** • Define normal force, N • Define frictional force, f • Know that a frictional force: ○ Is proportional to the normal force ○ Is independent of the area of the surfaces that are in contact with each other	• Define the static frictional force, f_s • Solve problems using $f_s^{max} = \mu_s N$ • Define the kinetic frictional force, f_k • Solve problems using $f_k = \mu_k N$ • Draw force diagrams • Draw free-body diagrams • Resolve a two-dimensional force, e.g. the weight of an object on an inclined plane, into its parallel ($F_{//}$) and perpendicular ($F_\perp$) components • Determine the resultant/ net force of two or more forces • State Newton's first law of motion • Define inertia and state that the mass of an object is a quantitative measure of its inertia • Discuss why it is important to wear seatbelts using Newton's first law of motion	• State Newton's second law of motion In symbols: $F_{net} = ma$ • Draw force diagrams and free-body diagrams for objects that are in equilibrium or accelerating • Apply Newton's second law of motion to a variety of equilibrium and non-equilibrium problems including: ○ A single object: - Moving in a horizontal plane with or without friction - Moving on an inclined plane with or without friction - Moving in the vertical plane (lifts, rockets, etc.)	• Apply Newton's second law of motion to a variety of equilibrium and non-equilibrium problems including: ○ Two-body systems (joined by a light inextensible string): - Both on a flat horizontal plane with or without friction - One in a horizontal plane with or without friction, and a second hanging vertically from a string over a frictionless pulley - Both on an inclined plane with or without friction - Both hanging vertically from a string over a frictionless pulley	• State Newton's third law of motion • Identify Newton III force pairs (action-reaction pairs) and list the properties of the force pairs (action-reaction pairs) • State Newton's law of universal gravitation • Solve problems using $F = G\frac{m_1 m_2}{d^2}$ • Calculate acceleration due to gravity on earth using $g = \frac{GM}{r_E^2}$, and on another planet using $g = \frac{GM_P}{r_P^2}$, where M_P is the mass of the planet and r_P is the radius of the planet • Explain the difference between the terms weight and mass • Calculate weight using the w =mg • Calculate the weight of an object on other planets with different values of gravitational acceleration • Explain the term weightlessness	• State Coulomb's law • Solve problems using $F = \frac{kQ_1Q_2}{r^2}$ for charges in one dimension (1D) – restrict to three charges • Solve problems using $F = \frac{kQ_1Q_2}{r^2}$ for charges in two dimensions (2D) – for three charges in a right-angled formation (limit to charges at the 'vertices of a right-angled triangle')	• Describe an electric field as a region in space in which an electric charge experiences a force • Draw electric field patterns for the following configurations: ○ A single point charge ○ Two-point charges (one negative, one positive OR both positive OR both negative) ○ A charged sphere (Restrict to charges identical in magnitude) • Define the magnitude of the electric field at a point as the force per unit charge $E = \frac{F}{Q}$ $\vec{E}$ and $\vec{F}$ are vectors. • Solve problems using the equation $E = \frac{F}{Q}$	• Calculate the electric field at a point due to a number of point charges, using the equation $E = \frac{kQ}{r^2}$ to determine the contribution to the field due to each charge Restrict to three charges in a straight line	**ONE PAPER (100 marks)** • Vectors in two dimensions • Newton's laws • Electrostatics

TERM 1		WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10-11	
REQUISITE PRE-KNOWLEDGE		• Vectors and scalars • Representation of vectors	• Vectors and scalars • Force and unit of force	• Vectors and scalars	• Equations of motion • Force and free-body diagrams • Frictional forces	• Equations of motion • Force and free-body diagrams • Frictional forces	• Equations of motion • Force and free-body diagrams • Gravitational acceleration	• Inertia • Forces	• Positive and negative charges • Electrostatic forces • Conservation of charge • Vectors and scalars	• Force, charge, vectors, and scalars	• Electric field • Vectors and scalars • Charges	
RESOURCES (OTHER THAN TEXTBOOK) **TO ENHANCE LEARNING**		• Apparatus for experiment below • Study guides • Previous question papers • Mindset & YouTube videos	• Study guides • Previous question papers • Mindset & YouTube videos • Simulations	• Study guides • Previous question papers • Mindset & YouTube videos • PhET simulations	• Apparatus for experiment below • Study guides • Previous question papers • Mindset & YouTube videos • PhET simulations	• Study guides • Previous question papers • Mindset & YouTube videos • PhET simulations	• Study guides • Previous question papers • Mindset & YouTube videos • PhET simulations	• Study guides • Previous question papers • Mindset & YouTube videos • PhET simulations	• Study guides • Previous question papers • Mindset & YouTube videos • Simulations	• Study guides • Previous question papers • Mindset & YouTube videos • Simulations	• Study guides • Previous question papers • Mindset & YouTube videos • Simulations	
ASSESSMENT	**INFORMAL ASSESSMENT:** REMEDIATION	• Practical: Determine the resultant of three non-linear force vectors • Homework	• Homework • Informal test	• Homework	• Practical: The effect of different surfaces on the maximum static frictional force • Homework	• Homework	• Homework • Informal test	• Homework • Informal test	Homework	• Homework • Informal test	Homework	
	SBA (FORMAL)	None	None	None	None	Formal practical: Newton's second law of motion OR verification of gravitational acceleration	None	None	None	None	None	Control test

2023/24 ANNUAL TEACHING PLANS: PHYSICAL SCIENCES: GRADE 11 (TERM 2)

TERM 2	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11
CAPS TOPICS	**MARCH CONTROL TEST: Discussion (2 hrs)**	**ELECTRICITY & MAGNETISM: Electromagnetism (4 hrs)**	**ELECTRICITY & MAGNETISM: Electromagnetism (2 hrs)**	**ELECTRICITY & MAGNETISM: Electric circuits (3 hrs)**	**ELECTRICITY & MAGNETISM: Electric circuits (4 hrs)**	**ELECTRICITY & MAGNETISM: Electric circuits (4 hrs)**	**MATTER & MATERIAL: Atomic combinations (4 hrs)**	**MATTER & MATERIAL: Atomic combinations (4 hrs)**	**MATTER & MATERIAL: Intermolecular forces (4 hrs)**	**MATTER & MATERIAL: Intermolecular forces (3 hrs)**	**Control Test (4 hrs)**
TOPICS, CONCEPTS, SKILLS AND VALUES	• Discussion and corrections of March control test	• Magnetic field near a current carrying wire • Use the Right Hand Rule to determine the direction of the magnetic field associated with: (i) A straight current carrying wire (ii) A current carrying loop (single) of wire (iii) A solenoid • Draw the magnetic field lines around: (i) A straight current carrying wire (ii) A current carrying loop (single) of wire (iii) Solenoid ○ Discuss qualitatively the environmental impact of overhead electrical cables • Define: The **Magnetic flux,** (f = BAcosθ, where for a loop of area A in the presence of a uniform magnetic field B, the magnetic flux (Φ) passing through the loop, Φ = BAcosθ, where θ is the angle between the magnetic field B and the normal to the loop of area (A) The induced current flows in a direction so as to set up a magnetic field to oppose the change in magnetic flux	• State Faraday's Law • Use words and pictures to describe what happens when a bar magnet is pushed into or pulled out of a solenoid connected to a galvanometer • Use the Right Hand Rule to determine the direction of the induced current in a solenoid when the north or south pole of a magnet is inserted or pulled out	• State Ohm's Law in words • Interpret data, graphs on the relationship between current, potential difference and resistance at constant temperature • State the difference between ohmic and non-ohmic conductors and give an example of each • Solve problems using $R = \frac{V}{I}$ for circuits containing resistors that are connected in series and, or in parallel (maximum four resistors)	• Define power • Solve problems using $P = \frac{W}{\Delta t}$ • Recall that W = VQ and by substituting Q = IΔt and V = IR, the following are obtained: W = VIΔt, $W = I^2R\Delta t$ $W = \frac{V^2\Delta t}{R}$ • Deduce, by substituting $P = \frac{W}{\Delta t}$ into above equations, the following equations: P = VI, $P = I^2R$ and $P = \frac{V^2}{R}$ • Solve problems using P = VI, $P = I^2R$ and $P = \frac{V^2}{R}$ • Solve circuit problems involving the concepts of power and electrical energy	• Deduce that the kilowatt-hour (kWh) refers to the use of 1 kilowatt of electricity for 1 hour • Know that 1 kWh is an amount of electrical energy known as one unit of electricity • Calculate the cost of electricity usage given the power specifications of the appliances used, the duration and the cost of 1 kWh	• Define a chemical bond • Draw Lewis dot diagrams of elements • Determine the number of valence electrons in an atom • Explain, in terms of electrostatic forces and in terms of energy, why: ○ Two H atoms form an H_2 molecule ○ He does not form He_2 • Interpret the graph of potential energy versus the distance between nuclei for two approaching hydrogen atoms • Define: A covalent bond, a molecule • Draw Lewis diagrams for simple molecules, e g. H_2, F_2, H_2O, NH_3, CH_4, HF, OF_2, HOCℓ and molecules with multiple bonds, e g N_2, O_2 and HCN • Discuss molecular shapes of H_2 (linear) H_2O (angular), NH_3 (pyramidal), CO_2 (linear), CH_4 (tetrahedral) • Describe rules for bond formation • Define a bonding pair and a lone pair • Describe the formation of the dative covalent bond	• Define electro-negativity • Describe, with an example, a non-polar covalent bond • Describe, with an example, a polar covalent bond • Show polarity of bonds using partial charges, e g $H^{\delta+}Cl^{\delta-}$ • Compare the polarity of chemical bonds using a table of electronegativities • Explain that the character of a bond varies from non-polar covalent (ΔEN = 0) to polar covalent (0 < ΔEN <= 1,7) to ionic (ΔEN > 1,7) • Use difference in electronegativity and molecular shape to explain that polar bonds do not always lead to polar molecules • Define bond energy and bond length • Explain the relationship between bond energy and bond length • Explain the relationship between the strength of a chemical bond and bond length, size of bonded atoms and number of bonds	• Describe the difference between intermolecular forces and interatomic forces (intramolecular forces) using a diagram of a group of small molecules & in words • Name and explain the different inter-molecular forces (Van der Waals forces): ○ Mutually induced dipole forces or London forces ○ Dipole-dipole forces ○ Dipole-induced dipole forces ○ Hydrogen bonding • Ion-dipole forces: Forces between ions and polar molecules	• State the relationship between intermolecular forces and molecular mass • Explain the effect of intermolecular forces on boiling point, melting point, vapour pressure & solubility • Consolidation of term 2 work	**ONE PAPER** **100 marks** **(60% Physics, 40% chemistry)** • Atomic combinations • Intermolecular forces • Electric circuit • Electromagnetism

TERM 2		WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11
			• **Calculate**: Induced emf and induced current, for situations involving a changing magnetic field, use the equation for Faraday's Law, where $\Phi = BA\cos\theta$ is the magnetic flux and where $\varepsilon = -N\frac{\Delta\emptyset}{\Delta t}$									
REQUISITE PRE-KNOWLEDGE		• March question paper	• Positive & negative charges • Electrostatic force • Electric field • Vectors and scalars	• Magnetic field • Current, potential difference	• Magnetic fields around current-carrying conductors • Current, potential difference, resistance	• Current, potential difference, resistance, power • Electric circuits	• Current, potential difference, resistance, power • Electric circuits	• Chemical bonding • Electron configuration • Writing of formulae	• Periodic table • Electron structure • Valence electrons • Electron configuration	• Chemical bonding • Writing of formulae • Valency • Periodic table • Kinetic theory of gases	• Chemical bonding • Molecules • Periodic table • Kinetic molecular theory	• NA Mole concept • Molar mass, molar volume • Concentration • Writing of formulae and balanced equations
RESOURCES (OTHER THAN TEXTBOOK) **TO ENHANCE LEARNING**		• Study guides • Previous question papers • Mindset & YouTube videos • PhET simulations	• Apparatus for experiment listed below • Study guides • Previous question papers • Mindset & YouTube videos • PhET simulations • Practical: Magnetic fields around current-carrying conductors	• Apparatus for experiment listed below • Study guides • Previous question papers • Mindset & YouTube videos • pHET simulations • Practical: Induced current in a coil by moving a magnet in and out of the coil (demo)	• Study guides • Previous question papers • Mindset & YouTube videos • PhET simulations	• Study guides • Previous question papers • Mindset & YouTube videos PhET simulations	• Study guides • Previous question papers • Mindset & YouTube videos • PhET simulations	• Study guides • Previous question papers • Mindset & YouTube videos	• Study guides • Previous question papers • Mindset & YouTube videos • PhET simulations	• Study guides • Previous question papers • Mindset & YouTube videos • Simulations	• Study guides • Previous question papers • Mindset & YouTube videos • Simulations	NA
ASSESSMENT	**INFORMAL ASSESSMENT:** REMEDIATION	• Homework • Informal test	• Homework	• Homework • Informal test	• Homework • Practical: Ohm's Law	• Homework	• Homework	• Homework • Informal test	• Homework	• Homework • Informal test	Homework	NA
	SBA (FORMAL)	None	None	None	None	None	None	None	None	None	None	Control test

2023/24 ANNUAL TEACHING PLANS: PHYSICAL SCIENCES: GRADE 11 (TERM 3)

TERM 3	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11
CAPS TOPICS	**JUNE CONTROL TEST: Discussion and remedial of control test (3 hrs)**	**CHEMICAL CHANGE: Quantitative aspects of chemical change (4 hrs)**	**CHEMICAL CHANGE: Quantitative aspects of chemical change (4 hrs)**	**CHEMICAL CHANGE: Quantitative aspects of chemical change (3 hrs)**	**CHEMICAL CHANGE: Quantitative aspects of chemical change (4 hrs)**	**CHEMICAL CHANGE: Energy and change (4 hrs)**	**CHEMICAL CHANGE: Type of reactions (4 hrs)**	**CHEMICAL CHANGE: Acids and bases (4 hrs)**	**MATTER & MATERIAL: Ideal gas (4 hrs)**	**MATTER & MATERIAL: Ideal gas (4 hrs)**	**CONTROL TEST (3 hrs)**
TOPICS, CONCEPTS, SKILLS AND VALUES	Discussion and corrections of the June control test	• Describe the mole as the SI unit for amount of substance • Define one mole • Describe Avogadro's number, N_A, as the number of particles (atoms, molecules, formula-units) present in one mole • Define molar mass • Calculate the molar mass of a substance given its formula • State Avogadro's Law • Know the molar gas volume, V_M, at STP is 22,4 $dm^3 \cdot mol^{-1}$ • Do calculations using $n = \frac{m}{M}$, $n = \frac{V}{V_M}$, $n = \frac{\text{number of particles}}{N_A}$	• Interpret balanced equations in terms of volume relationships for gases • Define concentration • Calculate concentration, in $mol \cdot dm^{-3}$, using $c = \frac{n}{V}$ • Determine percentage composition of a compound • Determine the empirical formula and molecular formula of compounds • Do stoichiometric calculations including limiting reagents • Determine the percentage yield of a chemical reaction	• Determine the percentage $CaCO_3$ in an impure sample of seashells (purity or percentage composition)	• Stoichiometric calculations with explosions as reactions e g $2NH_4NO_3 \rightarrow 2N_2(g) + 4H_2O(g) + O_2(g)$ $2C_8H_{18} + 25O_2 \rightarrow 16CO_2 + 18H_2O$ • Stoichiometric calculations using reaction in airbags (sodium azide): $2NaN_3(s) \rightarrow 2Na(s) + 3N_2(g)$	• Define heat of reaction (ΔH) • Define an exothermic reaction • Define and endothermic reaction • Classify, with reason, reactions as exothermic or endothermic • State the sign of ΔH for exothermic and endothermic reactions • Define activation energy • Define an activated complex • Draw or interpret fully labelled sketch graphs (potential energy versus course of reaction graphs) of catalysed and uncatalysed endothermic and exothermic reactions	• Write names and formulae of common acids: Hydrochloric acid, nitric acid, sulphuric acid and ethanoic acid (acetic acid) • Write names and formulae of common bases: Ammonia, sodium carbonate (washing soda), sodium hydrogen carbonate, sodium hydroxide (caustic soda) and potassium hydroxide • Define acids and bases according to the Arrhenius & Bronsted-Lowrey theories • Identify conjugate acid-base pairs for given compounds • Describe the term amphiprotic or ampholyte • Write equations to show how an amphiprotic substance can act as acid or base • Write reaction equations for the dissolution of acids and bases in water • Write the overall equations for the reactions of acids with metal hydroxides, metal oxides and metal carbonates	• Describe an acid-base indicator as a weak acid, or a weak base, which colour changes as the H^+ ion or the OH^- ion concentration in a solution change • Know the colours of litmus, methyl orange, phenolphthalein, and bromothymol blue in acids and in bases	• Describe the motion of individual molecules i.e. - collisions with each other and the walls of the container - molecules in a sample of gas move at different speeds • Explain the idea of 'average speeds' in the context of molecules of a gas • Describe an ideal gas in terms of the motion of molecules • Explain how a real gas differs from an ideal gas • State the conditions under which a real gas approaches ideal gas behaviour	• Describe the relationship between volume and pressure for a fixed amount of gas at constant temperature (Boyle's law): ○ Practically ○ By interpreting table of results ○ Using graphs ○ Using symbols ('∝') and the words 'inversely proportional' ○ Writing a relevant equation • Explain the temperature of a gas in terms of the average kinetic energy of the molecules of the gas • Explain the pressure exerted by a gas in terms of the collision of the molecules with the walls of the container	**ONE PAPER (100 marks)** • Qualitative aspects of chemical change • Ideal gases and thermal properties • Energy and chemical change

TERM 3		WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11
REQUISITE PRE-KNOWLEDGE			• Mole concept • Molar mass, molar volume • Concentration • Writing of formulae	• Mole concept • Molar mass, molar volume • Concentration • Writing of formulae and balanced equations	• Mole concept • Molar mass, molar volume • Concentration • Writing of formulae and balanced equations	• Mole concept • Molar mass, molar volume • Concentration • Writing of formulae and balanced equations	• Chemical reactions	• Molecules • Kinetic molecular theory and phases of matter	• Molecules • Kinetic molecular theory and phases of matter	• Molar volume relationships	• Writing of formulae and balanced equations	
RESOURCES (OTHER THAN TEXTBOOK) **TO ENHANCE LEARNING**		• June control test question paper	• Study guides • Previous question papers • Mindset & YouTube videos	• Study guides • Previous question papers • Mindset & YouTube videos	• Study guides • Previous question papers • Mindset & YouTube videos	• Study guides • Previous question papers • Mindset & YouTube videos	• Study guides • Previous question papers • Mindset & YouTube videos • Simulations	• Study guides • Previous question papers • Mindset & YouTube videos • Simulations	• Study guides • Previous question papers • Mindset & YouTube videos • Phet simulations	• Apparatus: Boyle's law • Study guides • Previous question papers • Mindset & YouTube videos • Simulations	• Study guides • Previous question papers • Mindset & YouTube videos • Simulations	
ASSESSMENT	**INFORMAL ASSESSMENT:** REMEDIATION	• Homework	• Practical: Preparation of a standard solution • Homework	• Homework	• Homework • Informal test	Homework	• Homework • Exothermic and endothermic reactions • Exo- and endothermic reactions Writing formulae	• Homework • Informal test	• Homework • Writing of formulae and balanced equations	Homework	• Homework	
	SBA (FORMAL)	None	None	None	None	None	None	None	Titration	None	Boyle's Law	

2023/24 ANNUAL TEACHING PLANS: PHYSICAL SCIENCES: GRADE 11 (TERM 4)

TERM 4		WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8-10
CAPS TOPICS		**SEPTEMBER CONTROL TEST: Discussion and remedial work of control test (2 hrs)** **CHEMICAL CHANGE:** **Types of reaction** **(1 hr)**	**CHEMICAL CHANGE:** **Types of reaction** **(4 hrs)**	**CHEMICAL CHANGE:** **Types of reaction** **(4 hrs)**	**CONSOLIDATION AND REVISION** **(4 hrs)**	**CONSOLIDATION AND REVISION** **(4 hrs)**	**CONSOLIDATION AND REVISION** **(4 hrs)**	**CONSOLIDATION AND REVISION** **(4 hrs)**	**FINAL EXAMINATION** **P1: 2 hrs** **P2: 2 hrs**
TOPICS, CONCEPTS, SKILLS AND VALUES		• Discussion and remedial work of control test	**Acid-base reactions** • Identify the acid and the base needed to prepare a given salt and write an equation for the reaction • Write down neutralisation reactions of common laboratory acids and bases **Redox reactions** • Explain the meaning of oxidation number • Assign oxidation numbers to atoms in various ions and molecules, e g H_2O, CH_4, CO_2, H_2O_2, and HOCℓ by using oxidation number guidelines or rules	**Redox reactions** • Describe a redox (oxidation-reduction) reaction as involving an electron transfer • Describe a redox (oxidation-reduction) reaction as always involving changes in oxidation numbers • Identify a redox reaction and apply the correct terminology to describe all the processes i e oxidation, reduction, reducing agent, oxidising agent • Balance redox reactions by using half-reactions from the Table of standard reduction potentials	• All topics	A	All topics	All topics	**Physics Paper 1 (150 marks)** • Vectors in two dimensions • Newton's laws • Electrostatics • Electromagnetism • Electric circuits **Chemistry Paper 2 (150 marks)** • Atomic combinations • Intermolecular forces • Ideal gases and thermal properties • Quantitative aspects of chemical change • Energy and chemical change • Types of reaction
REQUISITE PRE-KNOWLEDGE		Acid and base properties	Writing of formulae and balanced equations	Writing of formulae and balanced equations	NA	NA	NA	NA	NA
RESOURCES (OTHER THAN TEXTBOOK) **TO ENHANCE LEARNING**		• September control test question paper • Acid-base indicators	• Apparatus for practical below • Study guides • Previous question papers, • Mindset & YouTube videos • Simulations	• Table of standard reduction potentials • Study guides • Previous question papers, • Mindset & YouTube videos • Simulations	• Study guides • Previous question papers, • Mindset & YouTube videos • Simulations	• Study guides • Previous question papers, • Mindset & YouTube videos • Simulations	• Study guides • Previous question papers, • Mindset & YouTube videos • PhET simulations	• Study guides • Previous question papers, • Mindset & YouTube videos • PhET simulations	NA
ASSESSMENT	**INFORMAL ASSESSMENT:** REMEDIATION	• Homework	• Practical: Acid-base titration • Homework	• Homework • Informal test	• Homework • Informal test	• Informal test • Homework	• Informal test • Homework	• Informal test • Homework	NA
	SBA (FORMAL)	None	None	None	None	None	None	None	Final examination