

BTEC National Extended Certificate in Applied Science SOW 2024/ 25 -Timings may vary slightly

Week	Lesson content
3: 9/9/24	Induction Induction test, practise assignment Intro lesson 1, 2, 3
4: 16/9/24	Library induction, practise assignment Library, lesson 4, 5, 6- book practical apparatus
5: 23/9/24	Assignment 2C: C Undertake chromatographic techniques to identify components in mixtures C1 Chromatographic techniques, polarity practical
6: 30/9/24	Feedback on practise assignment C2 Application of chromatography, C3 Interpretation of a chromatogram, plant pigments paper chromatography
7: 7/10/24	Chemistry 1 Unit introduction A1 Electronic structure (basic). A1 Ionic bonding. A1 Covalent bonding, metallic bonding.
8: 14/10/24	Assignment feedback- compulsory workshops for pass or fail A1 Van der Waals, dipole-dipole, hydrogen bonding, balanced equations. A1 A_r , atomic number, M_r , moles, molar masses, molarities, $n=m/M_r$.
9:21/10/24	Chemistry test 1-A1 Physics 1: C1 Working with waves Periodic time, speed, wavelength, frequency, amplitude, oscillation, transverse and longitudinal waves. C1 Displacement, coherence, path difference, phase difference, superposition
Autumn half term: 28/11/24-1/11/24	
10: 4/11/24	Chem tests Feedback C1 Theory emission spectra, identifying gases, the wave equation, stationary waves: resonance, applications to musical instruments, calculation of wave speed.
11: 11/11/24- inset Fri	Phys test 1-P1 Unit introduction B1 Cell structure and function Cell theory, ultrastructure and function of organelles in prokaryote cells, eukaryotic cells, structure of eukaryotic cells. B1 Cells from electron micrographs, use of electron microscopes, similarities and differences between plant and animal cells.
12: 18/11/24	B1 Cell structure and function Gram positive and negative bacterial cell walls + reactions with antibiotics, magnification and cell drawing practical. B2 Cell specialisation Palisade mesophyll cells in leaves, root hair cells in plants, sperm and egg cells, white and red blood cells.-
13: 25/11/24	B3 Tissue Structure and Function Epithelia tissue Structure and function of epithelial tissue: squamous / alveolar epithelium / gas exchange. B3 Epithelia tissue COPD in smokers, columnar / goblet cells / ciliated cells in lungs and defence against pathogens. B3 Endothelial tissue Structure and function of endothelial tissue: blood vessels, risk factors of atherosclerosis / damage to endothelial cells.
14: 2/12/24	Biology test Assignment B Undertake calorimetry to study cooling curves B1 Thermometers B Undertake calorimetry to study cooling curves B2 Cooling curves
15: 9/12/24	Test feedback Chemistry part 2A1 Vol of sol, conc, $n=cv$, reacting quantities, percentage yield
16: Only 2 days	Assignment 2B feedback and introd to 2A and past passive reminder 2 practicals and demonstrations Assignment 2A A1 Laboratory equipment and its calibration A2 Calibrating a pipette, preparation of standard solution
Christmas holidays:	
17: 6/1/25	A2 Titration of Na_2CO_3 with HCL to standardise the acid, titration of NaOH with HCl to standardise the alkali (demo, practical, calculations, write up
18: 13/1/25	A2 pH curves (calibrate pH meter, practical, curves, calculations

19: 20/1/25	A3 Colorimetry theory A3 Colorimetry practical Assignment A
20: 27/1/25	Chemistry part 2 A2: Periods: 1,2,3 and 4, groups + s, p, d-blocks, electronic configuration using s,p,d notation A2 1 st I.E, trends in I.E and reasons for groups 1, 2, 7, bonding in elements
21: 3/2/25	Feedback on assignment 2A A2 Trends in melting point and boiling point A2 Properties of metals, reactivity of period 2 and 3 elements with oxygen, redox
22: 10/2/25	A2 Variable oxidation states of transition metals, displacement reactions of metals/halogens A2 Reaction of metals with oxygen, water and acids, reactivity series vs periodic table.
Spring half term 17-21 feb	
23: 24/2/25	Biology part 2 B3 Muscular tissue: Muscle types (skeletal, smooth, cardiac) microscopic structure of muscle fibre. Muscle tissues practical B3 Muscular tissue Ultrastructure and function of muscular tissue. Fast/slow twitch muscle fibre differences + relevance to sport.
24: 3/3/25	B3 Tissue structure and function Nervous tissue Non-myelinated and myelinated neurones, nerve impulses, action potentials, saltatory conduction. B3 Nervous tissue Graphical displays of nerve impulses, ECG recordings, synaptic structure, neurotransmitters.
25: 10/3/25	B3 Nervous tissue Parkinson's and depression and drugs used in the treatment of these conditions Biology and chemistry walking talking mock
26: 17/3/25	Physics part 2 C2 Theory Refractive index and calculations, total internal reflection. C2 Practical Refractive index C2 Practical Total internal reflection
27: 24/3/25	C2 Fibre optics in communications (analogue, digital and broadband). C3 Use of electromagnetic waves in communication Electromagnetic waves in a vacuum, inverse square law, Practical Inverse square law C3 Use of electromagnetic waves in communication Inverse square law calculations
28: 31/3/25	C3 Electromagnetic spectrum and frequency, electromagnetic spectrum and communication. Physics recaps and past papers / walking talking mocks
Easter holidays	
29: 22/4/25	Unit 1 Revision- walking talking mocks for each
30: 28/4/25	UNIT 1 MOCKS: Chemistry, Biology, Physics
31: 5/5/25 Bank holiday	UNIT 1 MOCKS: feedback
32: 12/5/25 Probably study leave	Unit 1 Revision
33: 19/5/25 Probably year 1 exams	Unit 1 Revision
Half term	
34: 2/6/25 Probable wex week	Start Unit 2D

35: 9/6/25	Assignment D Review personal development of scientific skills for laboratory work D1 Personal responsibility D2 Interpersonal skills.
36: 16/6/25	D3 Professional practice Assignment D
37: 23/6/25	Intro to Unit 8- sampling
38: 30/6/25 Welcome days	Assignment 2D resub/ Intro to Unit 8
39: 7/7/25 <small>Term ends 10th</small> <small>July for students</small>	

