

**ALEXANDRA SECONDARY COLLEGE – SCIENCE 901
COURSE OUTLINE 2018**

Week	Topic	Learning Focus	Victorian Curriculum Strands & Sub strands
1 - 7	Introduction to Year 9 Science & Revision of Safety, Acids & bases, Atomic Structure, Chemical reactions,	<ul style="list-style-type: none"> • Investigate the properties and uses of acids and bases • Use of a variety indicators to identify acids and bases and make an indicator • Explain the structure of the pH scale • Describe chemical reactions using word equations • Investigate the reactions of acids with metals, bases and carbohydrates • Outline the impacts of acid rain • Describe and demonstrate the concept of “Conservation of Matter” • Describe the key characteristics of combustion reactions and give examples of their occurrence in everyday life • Describe the chemical compositional differences between hydrocarbons and alcohols • Provide examples of fuels used in Australia • Make biofuels and explain the advantages and disadvantages of biofuel use 	Chemical reactions, including combustion and the reactions of acids, are important in both non-living and living systems and involve energy transfer VCSSU126
8 - 14	Nervous & endocrine systems, Diseases & Microbes	<ul style="list-style-type: none"> • Describe the broad divisions of the nervous system – Central and Peripheral • Describe the stimulus-response model. • Describe the variety of receptors which detect external stimuli. • Distinguish between the structure and function of the main types of neurons – sensory, interconnecting and motor • Understand and model nervous signalling pathways. 	Multicellular organisms rely on coordinated and interdependent internal systems to respond to changes to their environment VCSSU117 An animal’s response to a stimulus is coordinated by its central nervous system (brain and spinal cord); neurons transmit electrical

		<ul style="list-style-type: none"> • Provide examples of human reflex actions. • Identify functions for different areas of the brain. • Dissect a brain. • Research a disease of the nervous system and present their findings to the class. • Describe the different endocrine glands and the hormones they produce. • Investigate the role of some plant hormones in regulating plant growth. 	<p>impulses and are connected by synapses VCSSU118</p>
15 - 20	Consumer Science	<ul style="list-style-type: none"> • Formulate testable hypotheses • Explain the differences between independent, dependent and controlled variables. • Relate reliability of results to sample size and repetition of the test • Design an experiment to test the claims of a manufacturer of a consumer product according to the scientific methods ensuring safety and ethical standards are met. • Carry out the experiment and present the data in a suitable form • Analyse data trends and draw appropriate conclusions and evaluate their experimental design. • Present their findings in a scientific report with all relevant sections using appropriate scientific language and conventions. 	<p>Formulate questions or hypotheses that can be investigated scientifically, including identification of independent, dependent and controlled variables VCSIS134 Independently plan, select and use appropriate investigation types, including fieldwork and laboratory experimentation, to collect reliable data, assess risk and address ethical issues associated with these investigation types VCSIS135 Communicate scientific ideas and information for a particular purpose, including constructing evidence-based arguments and using appropriate scientific language, conventions and representations VCSIS140</p>