



COURSE OUTLINE

HUMAN BIOLOGY – ATAR YEAR 11: 2021

UNIT 1 AND UNIT 2



Term	Week	Topic and key teaching points	Syllabus content	Assessment
1	1	<p><u>Science Inquiry Skills</u></p> <p>Ch 1.1 Studying Human Biological Science</p> <p>Ch 1.2 Scientific method</p> <p>Ch 1.3 Investigating humans</p> <p>Act 1.1 Hypothesising</p> <p>Act 1.2 Investigating how pollen causes hay fever</p> <p>Act 1.3 Designing controlled experiments</p> <p>Act 1.4 Testing a hypothesis</p> <p>Act 1.5 Testing the product claims for Hairnu</p> <p>Act 1.6 Tabulating data</p> <p>Act 1.6 Graphing</p>	<p>Course orientation</p> <p>Course documents and class expectations</p> <p>Assessment and absence procedures</p> <p>Resources and equipment</p> <p>Science Inquiry Skills – SIS1, SIS4, SIS5</p> <p>Identify, research and construct questions for investigation; propose hypotheses; and predict possible outcomes</p> <p>Represent data in meaningful and useful ways; organise and analyse data to identify trends, patterns and relationships; qualitatively describe sources of measurement error, and uncertainty and limitations in data; and select, synthesise and use evidence to make and justify conclusions</p> <p>Interpret a range of scientific and media texts, and evaluate processes, claims and conclusions by considering the quality of available evidence; and use reasoning to construct scientific arguments</p>	<p>HOMEWORK</p> <p>Chapter 1 review questions</p>
1	2	<p><u>Cells and tissues</u></p> <p>Ch 2.1 Cells</p> <p>Ch 2.2 Cell structure</p> <p>Act 2.1 Observing cells</p> <p>Act 2.5 What size is it?</p>	<p>Cells and tissues – SU1, SU2</p> <p>The human body is comprised of cells, tissues and organs within complex systems that work together to maintain life</p> <p>Cell organelles maintain life processes and require the input of materials and the removal of wastes to support efficient functioning of the cell</p> <p>Science Inquiry Skills – SIS4, SIS6</p> <p>Conduct investigations, including using microscopy techniques, competently and methodically for the collection of valid and reliable data</p>	<p>HOMEWORK</p> <p>Chapter 2 review questions</p> <p>TASK ONE SIS</p> <p>Second-hand data analysis</p> <p>SIS1, SIS4, SIS5</p> <p>WEIGHTING 6.5%</p>

COURSE OUTLINE

HUMAN BIOLOGY – ATAR YEAR 11: 2021

UNIT 1 AND UNIT 2

1	2		Select, construct and use appropriate representations, including labelled diagrams of various cells, tissues and organ systems, to communicate conceptual understanding, solve problems and make predictions	
1	3	<p style="text-align: center;"><u>Cells and tissues</u></p> <p>Ch 2.3 Cell requirements</p> <p>Act 2.4 Investigating diffusion through a differentially permeable membrane</p> <p>STAWA EGGSperimenting with osmosis</p>	<p>Cells and tissues – SU1, SU2, SU3</p> <p>The human body is comprised of cells, tissues and organs within complex systems that work together to maintain life</p> <p>Cell organelles maintain life processes and require the input of materials and the removal of wastes to support efficient functioning of the cell</p> <p>The cell membrane separates the cell from its surrounding with a structure, described by the fluid mosaic model, which allows for the movement of materials into and out of the cell by;</p> <ul style="list-style-type: none"> ○ Diffusion ○ Facilitated diffusion ○ Osmosis ○ Active transport ○ Vesicular transport (endocytosis and exocytosis) <p>Science Inquiry Skills – SIS3</p> <p>Conduct investigations, including monitoring body functions; use microscopy techniques; and perform real or virtual dissection safely, competently and methodically for the collection of valid and reliable data</p>	<p style="text-align: center;">HOMEWORK</p> <p>Chapter 2 review questions</p>

COURSE OUTLINE

HUMAN BIOLOGY – ATAR YEAR 11: 2021

UNIT 1 AND UNIT 2

1	4	<p style="text-align: center;"><u>Cells and tissues</u></p> <p>Ch 2.3 Cell requirements Ch 2.4 How cells make a body</p> <p>Act 2.6 Investigating surface area and volume Act 2.7 Looking at tissues</p>	<p>Cells and tissues – SU4, SU5 Factors affecting the exchange of materials across the cell membrane include;</p> <ul style="list-style-type: none"> ○ Surface area to volume ratios ○ Concentration gradients ○ The physical and chemical nature of the materials being exchanged <p>The various tissues of the human body perform specific functions and can be categorised into four basic tissue types:</p> <ul style="list-style-type: none"> ○ Epithelial ○ Connective ○ Muscular ○ Nervous <p>Science Inquiry Skills – SIS3 Conduct investigations, including monitoring body functions; use microscopy techniques; and perform real or virtual dissection safely, competently and methodically for the collection of valid and reliable data</p>	<p style="text-align: center;">HOMEWORK</p> <p>Chapter 2 review questions</p>
1	5	<p style="text-align: center;"><u>Metabolism</u></p> <p>Ch 3.1 Metabolism Ch 3.2 Enzymes and metabolism Ch 3.3 Cellular respiration Ch 3.4 Energy use by the cell</p> <p>Act 3.2 Investigating aerobic and anaerobic respiration during exercise</p>	<p>Metabolism – SU6, SU7, SU8 Biochemical processes, including anabolic and catabolic reactions in the cell, are controlled in the presence of specific enzymes Cellular respiration occurs, in different locations in the cytosol and mitochondria, to catabolise organic compounds, aerobically or anaerobically, to release energy in the form of adenosine triphosphate (ATP) For efficient metabolism, cells require oxygen and nutrients, including carbohydrates, proteins, lipids, vitamins and minerals</p>	<p style="text-align: center;">HOMEWORK</p> <p>Chapter 3 review questions</p>



COURSE OUTLINE
HUMAN BIOLOGY – ATAR YEAR 11: 2021
UNIT 1 AND UNIT 2



1	6	<u>Metabolism</u> Enzyme activity investigation	Metabolism – SU6, SU9 Biochemical processes, including anabolic and catabolic reactions in the cell, are controlled in the presence of specific enzymes Enzyme function can be affected by factors including pH, temperature, presence of inhibitors, co-enzymes and co-factors, and the concentration of reactants and products Science Inquiry Skills – SIS1, SIS2, SIS3, SIS4, SIS7 Identify, research and construct questions for investigation; propose hypotheses; and predict possible outcomes Design investigations, including the procedures to be followed, the materials required, and the type and amount of primary and/or secondary data to be collected; conduct risk assessments; and consider research ethics, including animal ethics Conduct investigations, including monitoring body functions; use microscopy techniques; and perform real or virtual dissection safely, competently and methodically for the collection of valid and reliable data Represent data in meaningful and useful ways; organise and analyse data to identify trends, patterns and relationships; qualitatively describe sources of measurement error, and uncertainty and limitations in data; and select, synthesise and use evidence to make and justify conclusions	HOMEWORK PREPARE FOR TASK TWO TASK TWO SIS Enzyme investigation in-class report SIS1, SIS2, SIS3, SIS4, SIS7, SU6, SU9 WEIGHTING 6.5%

COURSE OUTLINE

HUMAN BIOLOGY – ATAR YEAR 11: 2021

UNIT 1 AND UNIT 2

1	6		Communicate to specific audiences, and for specific purposes, using appropriate language, nomenclature, genres and modes, including scientific reports	
1	7	<p style="text-align: center;"><u>Respiratory System</u></p> <p>Ch 4.1 Structure of the respiratory system Ch 4.2 Mechanics of breathing Ch 4.3 Gas exchange Ch 4.4 Some effects of lifestyle and environment on gas exchange</p> <p>Act 4.1 Examining the structure of the lungs</p>	<p>Respiratory System – SU10, SU11 The exchange of gases between the internal and external environments of the body is facilitated by the structure and function of the respiratory system at the cell, tissue and organ levels. The efficient exchanges of gases in the lungs is maintained by the actions of breathing, blood flow, and the structure of the alveoli Science Inquiry Skills – SIS3 Conduct investigations, including monitoring body functions; use microscopy techniques; and perform real or virtual dissection safely, competently and methodically for the collection of valid and reliable data</p>	<p style="text-align: center;">HOMEWORK Chapter 4 review questions</p> <p style="text-align: center;">TASK THREE TEST Cells, tissues and metabolism SU1, SU2, SU3, SU4, SU5, SU6, SU7, SU8, SU9 WEIGHTING 5%</p>
1	8	<p style="text-align: center;"><u>Circulatory System</u></p> <p>Ch 5.1 Blood as a transport medium Ch 5.2 Moving blood through the body</p> <p>Act 5.2 Investigating blood flow during exercise Act 5.3 Observing heart structure</p>	<p>Circulatory System – SU12, SU13 The transport of materials within the internal environment for exchange with cells is facilitated by the structure and function of the circulatory system at the cell, tissue and organ levels The components of blood facilitate the transport of different materials around the body (plasma and erythrocytes), play a role in the clotting of blood (platelets) and the protection of the body (leucocytes) Science Inquiry Skills – SIS3 Conduct investigations, including monitoring body functions; use microscopy techniques; and perform real or virtual dissection safely, competently and</p>	<p style="text-align: center;">HOMEWORK Chapter 5 review questions</p>



COURSE OUTLINE

HUMAN BIOLOGY – ATAR YEAR 11: 2021

UNIT 1 AND UNIT 2



1	8		methodically for the collection of valid and reliable data	
1	9	<p style="text-align: center;"><u>Circulatory System</u></p> <p>Ch 5.1 Blood as a transport medium Ch 5.2 Moving blood through the body</p> <p>Act 5.2 Investigating blood flow during exercise</p>	<p>Circulatory System – SU12, SU13 The transport of materials within the internal environment for exchange with cells is facilitated by the structure and function of the circulatory system at the cell, tissue and organ levels The components of blood facilitate the transport of different materials around the body (plasma and erythrocytes), play a role in the clotting of blood (platelets) and the protection of the body (leucocytes)</p>	<p style="text-align: center;">HOMEWORK</p> <p>Chapter 5 review questions</p>
2	1	<p style="text-align: center;"><u>Circulatory System</u></p> <p>Ch 5.3 Blood groups and transfusions Ch 5.4 The lymphatic system</p> <p>Act 5.6 Investigating blood typing</p>	<p>Circulatory System – SU14 The components of blood facilitate the transport of different materials around the body (plasma and erythrocytes), play a role in the clotting of blood (platelets) and the protection of the body (leucocytes) The lymphatic system functions to return tissue fluid to the circulatory system and to assist in protecting the body from disease Science as a Human Endeavour – SHE1 Blood transfusions rely on determining blood groups and can be used to treat many different diseases and conditions Science Inquiry Skills – SIS3 Conduct investigations, including monitoring body functions; use microscopy techniques; and perform real or virtual dissection safely, competently and methodically for the collection of valid and reliable data</p>	<p style="text-align: center;">HOMEWORK</p> <p>Chapter 5 review questions</p>

COURSE OUTLINE

HUMAN BIOLOGY – ATAR YEAR 11: 2021

UNIT 1 AND UNIT 2

2	2	<p style="text-align: center;"><u>Digestive System</u></p> <p>Ch 6.1 Types of digestion Ch 6.2 The alimentary canal</p>	<p>Digestive System – SU15, SU16, SU17 The supply of nutrients in a form that can be used in cells is facilitated by the structure and function of the digestive system at the cell, tissue and organ levels Digestion involves the breakdown of large molecules to smaller ones by mechanical digestion (teeth, bile and peristalsis) and chemical digestion (by enzymes with distinctive operating conditions and functions that are located in different sections of the digestive system) The salivary glands, pancreas, liver and gall bladder produce or store secretions which aid the processes of digestion Science as a Human Endeavour – SHE4 Lifestyle choices, including being active or sedentary, the use of drugs and type of diet, can compromise body functioning in the short term and may have long-term consequences</p>	<p style="text-align: center;">HOMEWORK</p> <p>Chapter 6 review questions</p>
2	3	<p style="text-align: center;"><u>Digestive System</u></p> <p>Ch 6.2 The alimentary canal Ch 6.3 The effect of diet on the alimentary canal</p>	<p>Digestive System – SU18, SU19 Absorption requires nutrients to be in a form that can cross cell membranes into the blood or lymph and occurs at different locations, including the small intestine and large intestine Elimination removes undigested materials and some metabolic wastes from the body, and is a separate process from excretion Science as a Human Endeavour – SHE4 Lifestyle choices, including being active or sedentary, the use of drugs and type of diet, can compromise body functioning in the short term and may have long-term consequences</p>	<p style="text-align: center;">HOMEWORK</p> <p>Chapter 7 review questions</p> <p style="text-align: center;">TASK FOUR TEST Circulatory, respiratory and digestive systems SU10, SU11, SU12, SU13, SU14, SU15, SU16, SU17, SU18, SU19, SHE1, SHE2, SHE4 WEIGHTING 5%</p>

COURSE OUTLINE
HUMAN BIOLOGY – ATAR YEAR 11: 2021
UNIT 1 AND UNIT 2

2	4	<p style="text-align: center;"><u>Excretory System</u></p> <p>Ch 7.1 The organs that process and remove waste Ch 7.2 The liver and skin Ch 7.3 The kidneys Ch 7.4 Effects of lifestyle on excretion</p> <p>Act 7.1 Examining the structure of the kidneys Act 7.2 Looking at nephrons Act 7.3 Investigating kidney output Act 7.4 Investigating urine concentration</p> <p>STAWA A model of a kidney nephron</p>	<p>Excretory System – SU24, SU25, SU26 The excretory system regulates the chemical composition of body fluids by removing metabolic wastes and retaining the proper amounts of water, salts, and nutrients; components of this system include the kidneys, liver, lungs, and skin functioning at the organ level Deamination of amino acids in the liver produces urea, which then is transported to the kidneys for removal The nephrons in the kidney facilitate three basic processes: filtration, reabsorption and secretion during urine formation to maintain the composition of body fluids (hormone control is not required) Science Inquiry Skills – SIS3 Conduct investigations, including monitoring body functions; use microscopy techniques; and perform real or virtual dissection safely, competently and methodically for the collection of valid and reliable data</p>	<p style="text-align: center;">HOMEWORK Chapter 7 review questions</p>
2	5	<p style="text-align: center;"><u>Musculoskeletal system</u></p> <p>Ch 8.1 Types of muscles Ch 8.2 Structure of skeletal muscle Ch 8.3 How muscles work</p> <p>Act 8.1 Investigating fast and slow twitch fibres</p>	<p>Musculoskeletal system – SU20, SU21 The muscular system is organised to maintain posture and produce movement; muscle fibre contraction can be explained using the sliding filament theory Movement results from the actions of paired muscles, with others acting as stabilisers, to produce the required movement</p>	<p style="text-align: center;">HOMEWORK Chapter 8 review questions</p> <p style="text-align: center;">PREPARE FOR TASK FIVE</p>
2	6	<p style="text-align: center;"><u>Musculoskeletal system</u></p> <p>Ch 8.4 Overview of the skeletal system Ch 8.5 Structure of bone and cartilage Ch 8.6 Movement of bones</p>	<p>Musculoskeletal system – SU22, SU23 The skeletal framework of the body consists of bone and cartilage which function to provide body support,</p>	<p style="text-align: center;">TASK FIVE EXT RESP Osteoporosis, osteoarthritis, kidneys and muscles</p>



COURSE OUTLINE

HUMAN BIOLOGY – ATAR YEAR 11: 2021

UNIT 1 AND UNIT 2



2	6	Ch 8.7 Effects of aging on the musculoskeletal system Act 8.2 Studying a long bone	protection and movement, and is facilitated by the structure and function at cell and tissue levels Articulations of joints of the skeleton are classified according to their structure or the range of movements permitted Science Inquiry Skills – SIS3 Conduct investigations, including monitoring body functions; use microscopy techniques; and perform real or virtual dissection safely, competently and methodically for the collection of valid and reliable data Science as a Human Endeavour – SHE3 Osteoporosis and osteoarthritis are diseases, primarily of ageing, that cause disability; increased understanding of the causes of these conditions leads to improved practices for management and prevention	SU20, SU21, SU22, SU23, SU24, SU25, SU26, SHE2, SHE3 WEIGHTING 5% HOMEWORK Chapter 8 review questions
2	7	EXAM REVISION Targeted revision of key topics Practice analysing and constructing extended responses Exam strategy	UNIT ONE CONTENT	
2	8	EXAM PERIOD	UNIT ONE CONTENT	TASK SIX EXAM UNIT ONE WEIGHTING 15%
2	9	EXAM PERIOD	UNIT ONE CONTENT	TASK SIX EXAM UNIT ONE WEIGHTING 15%

COURSE OUTLINE
HUMAN BIOLOGY – ATAR YEAR 11: 2021
UNIT 1 AND UNIT 2

2	10	<p style="text-align: center;"><u>DNA</u></p> <p>Ch 9.1 DNA, genes and chromosomes</p> <p>Act 9.1 Modelling DNA structure and replication Act 9.2 Extracting DNA</p>	<p>DNA – SU1, SU2, SU3</p> <p>DNA occurs bound to proteins in chromosomes in the nucleus and as unbound DNA in the mitochondria DNA stores the information for the production of protein that determines the structure and function of the cells The structural properties of the helical DNA molecule, include double stranded, nucleotide composition and weak bonds involved in base pairing between the complementary strands, allow for its replication.</p>	<p style="text-align: center;">HOMEWORK</p> <p>Chapter 9 review questions</p>
2	11	<p style="text-align: center;"><u>DNA</u></p> <p>Ch 9.2 Protein synthesis</p> <p>Genetic Science Learning Centre activities and website research http://learn.genetics.utah.edu/content/</p>	<p>DNA – SU4</p> <p>Protein synthesis involves the transcription of a gene on DNA into messenger ribonucleic acid (mRNA) in the nucleus, and translation into an amino acid sequence at the ribosome with the aid of transfer</p> <p>Science Inquiry Skills – SIS6</p> <p>Select, construct and use appropriate representations of DNA replication, transcription and translation to communicate conceptual understanding, solve problems and make predictions</p>	<p style="text-align: center;">HOMEWORK</p> <p>Chapter 9 review questions</p>
3	1	<p style="text-align: center;"><u>DNA</u></p> <p>Ch 9.3 Epigenetics</p> <p style="text-align: center;"><u>Cell Reproduction</u></p> <p>Ch 10.1 The cell cycle</p> <p>Act 10.1 Modelling mitosis and cytokinesis Act 10.2 Observing mitosis</p>	<p>DNA – SU5</p> <p>Epigenetics is the study of phenotypic expression of genes, which depends on the factors controlling transcription and translation during protein synthesis, the products of other genes and the environment</p> <p>Cell Reproduction – SU6, SU7, SU8</p> <p>Mitosis forms part of the cell cycle producing new cells with the same genetic content The sequence of DNA replication, chromosome duplication and chromosome separation are important</p>	<p style="text-align: center;">HOMEWORK</p> <p>Chapter 9 review questions</p> <p style="text-align: center;">TASK SEVEN SIS</p> <p>Transcription, Translation and Epigenetics</p> <p>SU1, SU2, SU3, SU4, SU5, SIS6, SHE2</p> <p style="text-align: center;">WEIGHTING 7%</p>

COURSE OUTLINE

HUMAN BIOLOGY – ATAR YEAR 11: 2021

UNIT 1 AND UNIT 2

3	1		<p>processes in the production of identical daughter cells by mitosis for growth, repair and replacement of tissues within the body</p> <p>Stem cells have the ability to divide by mitosis and differentiate into many different tissues, depending on the level of cell potency</p> <p>Science Inquiry Skills – SIS6</p> <p>Select, construct and use appropriate representations of DNA replication, transcription and translation to communicate conceptual understanding, solve problems and make predictions</p> <p>Science as a Human Endeavour – SHE2</p> <p>Discoveries made through the use of modern biotechnological techniques have increased understanding of DNA and gene expression</p>	
3	2	<p style="text-align: center;"><u>Cell Reproduction</u></p> <p>Ch 10.2 Producing gametes</p> <p>Ch 10.3 Variation in daughter cells</p> <p style="text-align: center;">Act 10.3 Modelling meiosis</p>	<p>Cell Reproduction – SU10, SU11, SU12, SU13</p> <p>Meiosis produces gametes for reproduction and involves DNA replication, chromosome pairing, and two successive nuclear divisions distributing haploid sets of chromosomes to each gamete</p> <p>Crossing over, non-disjunction and random assortment of chromosomes during meiosis will produce gametes with different genetic content</p> <p>Differences between mitosis and meiosis reflect their roles in the body</p> <p>Variations in the genotypes of offspring, including gender, arise as a result</p>	<p style="text-align: center;">HOMEWORK</p> <p>Chapter 10 review questions</p>
3	3	<p style="text-align: center;"><u>Cell Reproduction</u></p> <p>Ch 10.4 Cancer</p>	<p>Cell Reproduction – SU9</p> <p>Uncontrolled division of cells can result in the development of a tumour</p> <p>Science as a Human Endeavour – SHE4</p>	<p style="text-align: center;">HOMEWORK</p> <p>Chapter 10 review questions</p>

COURSE OUTLINE
HUMAN BIOLOGY – ATAR YEAR 11: 2021
UNIT 1 AND UNIT 2

3	3	Act 10.4 Investigating the incidence of cancer in Australia	New technologies, including Pap smear, breast screening and blood tests for prostate cancer, have made early detection of cancers possible	
3	4	<u>Human Reproduction</u> Ch 11.1 Structure of the reproductive systems Ch 11.2 Production of gametes	Human Reproduction – SU14, SU16 The production of offspring is facilitated by the structure and function of the male and female reproductive systems in producing and delivering gametes for fertilisation and providing for the developing embryo and foetus Human gametes are produced through spermatogenesis and oogenesis, which are specific forms of meiosis, but varying significantly in process and products	TASK EIGHT TEST Cellular reproduction and human reproduction SU6, SU7, SU8, SU9, SU10, SU11, SU12, SU13, SU14, SU15, SU16, SU17 WEIGHTING 7.5% HOMEWORK
3	5	<u>Human Reproduction</u> Ch 11.3 Hormonal control	Human Reproduction – SU15 Both male and female reproductive systems are regulated by hormones, including the regulation of the menstrual and ovarian cycles	HOMEWORK Chapter 11 review questions
3	6	<u>Human Reproduction</u> Ch 12.1 Fertilisation Ch 12.2 Early embryonic development and implantation	Cell Reproduction – SU8 Stem cells have the ability to divide by mitosis and differentiate into many different tissues, depending on the level of cell potency Human Reproduction – SU17, SU18 For the establishment of a pregnancy, conception requires the union of viable sperm and ovum at the optimal time in the ovarian cycle The development of the embryo after implantation involves the differentiation of cells into three different germ layers that will eventually produce specific systems in the body and the placenta	HOMEWORK Chapter 11 review questions

COURSE OUTLINE
HUMAN BIOLOGY – ATAR YEAR 11: 2021
UNIT 1 AND UNIT 2

3	7	<u>Human Reproduction</u> Ch 12.3 Pregnancy Ch 12.4 Changes during birth	Human Reproduction – SU19 The stages of labour include birth, during which there are circulatory system changes in the child	HOMEWORK Chapter 12 review questions PREPARE FOR TASK NINE
3	8	<u>Human reproduction</u> Ch 12.5 Maintaining a healthy pregnancy Ch 13.1 Contraception	Human reproduction – SU20 Contraception methods that reduce the probability of the union of gametes or implantation all have limitations, risks and benefits, and include methods that; <ul style="list-style-type: none"> ○ Use steroid hormones ○ Physical barriers between gametes ○ Use chemical spermicides ○ Use sterilisation (tubal ligation, vasectomy) ○ Function after coitus (Emergency contraceptive pill and IUD's) Science as a Human Endeavour – SHE3, SHE5 Greater understanding of the menstrual cycle, conception and implantation has produced improved methods in the establishment of a pregnancy, along with advances in contraceptive methods; both have ethical considerations Lifestyle choices, including diet, illicit drugs, alcohol and nicotine, may affect foetal development	TASK NINE EXT RESP Conception, pregnancy & birth SU8, SU15, SU18, SU19, SHE3 WEIGHTING 5% HOMEWORK Chapter 12 review questions
3	9	<u>Human reproduction</u> Ch 13.2 Sexually transmitted infections Act 13.3 Understanding the social consequences of vaccines for STIs	Human Reproduction – SU21 Sexually transmitted infections (STI's), diseases transmitted through unprotected sex or genital contact, can be prevented through safe sex methods; early detection and treatment of infection are important and, if left untreated, STI's can lead to serious health consequences	HOMEWORK Chapter 13 review questions PREPARE FOR TASK TEN

COURSE OUTLINE
HUMAN BIOLOGY – ATAR YEAR 11: 2021
UNIT 1 AND UNIT 2

3	10	<p style="text-align: center;"><u>Human reproduction</u></p> <p>Ch 14.1 Treatment of infertility Ch 14.2 Diagnosis of foetal health</p>	<p>Human Reproduction – SU22, SU23 There are a variety of assisted reproductive technologies to help overcome infertility problems, but each has its limitations, risks and benefits. There are a range of techniques available to genetically screen embryos before implantation or during early development, including blood tests, amniocentesis and chorionic villi sampling</p> <p>Science as a Human Endeavour – SHE1 Genetic profiling and genetic screening of adults and embryos both have implicit ethical considerations</p>	<p style="text-align: center;">HOMEWORK</p> <p>Chapter 14 review questions</p> <p style="text-align: center;">TASK TEN EXT RESP Assisted reproductive technologies, contraception and sexually transmitted infections SU20, SU21, SU22, SU23, SHE1, SHE3, SHE5 WEIGHTING 5%</p>
4	1	<p style="text-align: center;"><u>Types of Inheritance</u></p> <p>Ch 15.1 Mendelian inheritance Ch 15.2 Modelling inheritance</p> <p>Act 15.1 Investigating Mendelian genetic principles in Martians Act 15.2 Examining pedigrees Act 15.3 Studying a family with Huntington's disease</p>	<p>Types of Inheritance – SU24, SU25 Probable frequencies of genotype and phenotype of offspring can be predicted using Punnett squares and by taking into consideration patterns of inheritance, including the effects of dominance, co-dominance, autosomal or sex-linked alleles, and multiple alleles: Huntington's disease, phenylketonuria (PKU), ABO blood groups, red–green colour blindness/haemophilia show different inheritance patterns</p> <p>Pedigree charts can be constructed for families with a particular genetic disorder and can be used to reveal patterns of inheritance and assist in determining the probability of inheriting the condition in future generations</p> <p>Science Inquiry Skills – SIS6 Select, construct and use appropriate Punnett squares and pedigrees to communicate conceptual understanding, solve problems and make predictions</p>	<p style="text-align: center;">HOMEWORK</p> <p>Chapter 15 review questions</p>

COURSE OUTLINE
HUMAN BIOLOGY – ATAR YEAR 11: 2021
UNIT 1 AND UNIT 2

4	2	<p>Ch 15.2 Modelling inheritance</p> <p>Act 15.2 Examining pedigrees Act 15.3 Studying a family with Huntington's disease</p>	<p>Types of Inheritance – SU24, SU25 Probable frequencies of genotype and phenotype of offspring can be predicted using Punnett squares and by taking into consideration patterns of inheritance, including the effects of dominance, co-dominance, autosomal or sex-linked alleles, and multiple alleles: Huntington's disease, phenylketonuria (PKU), ABO blood groups, red–green colour blindness/haemophilia show different inheritance patterns Pedigree charts can be constructed for families with a particular genetic disorder and can be used to reveal patterns of inheritance and assist in determining the probability of inheriting the condition in future generations Science Inquiry Skills – SIS6 Select, construct and use appropriate Punnett squares and pedigrees to communicate conceptual understanding, solve problems and make predictions</p>	<p>HOMEWORK Chapter 15 review questions</p>
4	3	<p style="text-align: center;"><u>Types of Inheritance</u> Ch 15.3 Autosomal inheritance of single-gene disorders Ch 15.4 Sex chromosomes</p>	<p>Types of Inheritance – SU24, SU25 Probable frequencies of genotype and phenotype of offspring can be predicted using Punnett squares and by taking into consideration patterns of inheritance, including the effects of dominance, co-dominance, autosomal or sex-linked alleles, and multiple alleles: Huntington's disease, phenylketonuria (PKU), ABO blood groups, red–green colour blindness/haemophilia show different inheritance patterns Pedigree charts can be constructed for families with a particular genetic disorder and can be used to reveal</p>	<p>HOMEWORK Chapter 15 review questions</p>

COURSE OUTLINE

HUMAN BIOLOGY – ATAR YEAR 11: 2021

UNIT 1 AND UNIT 2

4	3		<p>patterns of inheritance and assist in determining the probability of inheriting the condition in future generations</p> <p>Science Inquiry Skills – SIS6</p> <p>Select, construct and use appropriate Punnett squares and pedigrees to communicate conceptual understanding, solve problems and make predictions</p>	
4	4	<p><u>Types of Inheritance</u></p> <p>Ch 15.5 Other types of inheritance</p> <p>Ch 15.6 Genetic counselling</p>	<p>Types of Inheritance – SU24, SU25, SU26</p> <p>Probable frequencies of genotype and phenotype of offspring can be predicted using Punnett squares and by taking into consideration patterns of inheritance, including the effects of dominance, co-dominance, autosomal or sex-linked alleles, and multiple alleles: Huntington's disease, phenylketonuria (PKU), ABO blood groups, red–green colour blindness/haemophilia show different inheritance patterns</p> <p>Pedigree charts can be constructed for families with a particular genetic disorder and can be used to reveal patterns of inheritance and assist in determining the probability of inheriting the condition in future generations</p> <p>DNA profiling identifies the unique genetic make-up of individuals and can be used in determining parentage</p> <p>Science Inquiry Skills – SIS6</p> <p>Select, construct and use appropriate Punnett squares and pedigrees to communicate conceptual understanding, solve problems and make predictions</p> <p>Science as a Human Endeavour – SHE1</p>	<p>HOMEWORK</p> <p>Chapter 15 review questions</p> <p>TASK ELEVEN TEST</p> <p>Inheritance</p> <p>SU24, SU25, SU26, SIS6</p> <p>WEIGHTING 7.5%</p>



COURSE OUTLINE
HUMAN BIOLOGY – ATAR YEAR 11: 2021
UNIT 1 AND UNIT 2



4	4		Genetic profiling and genetic screening of adults and embryos both have implicit ethical considerations	
4	5	Review/ Revision Targeted revision of key topics Practice analysing and constructing extended responses Exam strategy	UNIT ONE AND TWO CONTENT	
4	6	EXAM WEEK	UNIT ONE AND TWO CONTENT	TASK TWELVE EXAM UNIT ONE AND TWO WEIGHTING 25%
4	7	EXAM WEEK	UNIT ONE AND TWO CONTENT	TASK TWELVE EXAM UNIT ONE AND TWO WEIGHTING 25%