**Below you will find detailed information on each of the units for the course.   
The information in each file is taken from the curriculum document from Alberta Education.  
The information on the right hand side is feedback from the diploma exams of the past few years.**

|  |  |  |
| --- | --- | --- |
| **Unit A (Modules 1 and 2)**  This unit is worth **20-25%** of the exam.  [http://www.weebly.com/weebly/images/file_icons/pdf.png](http://lisamcneilatargyll.weebly.com/uploads/5/7/1/8/5718487/unit_a.pdf)   |  | | --- | | **unit\_a.pdf** |   [**Download File**](http://lisamcneilatargyll.weebly.com/uploads/5/7/1/8/5718487/unit_a.pdf) | **Nervous and Endocrine Systems**  **THINGS DONE WELL:** - understanding of the function of the myelin sheath - action potential process and how certain substances change the behaviour of ions in the membrane of the neuron - identifying parts of the brain and their functions - generally good knowledge on the structures of the eye - identifying the glands that secrete the different hormones and the physiological effects of those hormones  **THINGS TO WORK ON:** - differentiating between sensory neuron and motor neuron in a reflex arc - locating sensory receptors in a diagram - applying knowledge of reflex arcs to a specific example - many students have difficulty identifying the choriod layer of the eye and structures at the front of the eye - function of the cornea vs. function of the lens - sequences of structures of the ear that a sound wave passes through, especially middle and inner ear (note: Eustachian tube and semicircular canals are not involved in hearing) - negative feedback loop to control hormone levels - most common confusion for hormones is the functions of ACTH and cortisol - be sure to know "how" insulin affects blood glucose levels, either increase or decrease depending if insulin is absent or present, respectively - the order in which the pituitary hormone and the hormone from its target gland exert functions |

|  |  |  |
| --- | --- | --- |
| **Unit B (Modules 3 and 4)**  This unit is worth **15-25%** of the exam.  (Separated into 10-15% on Module 3 and 5-10% on Module 4)  [http://www.weebly.com/weebly/images/file_icons/pdf.png](http://lisamcneilatargyll.weebly.com/uploads/5/7/1/8/5718487/unit_b.pdf)   |  | | --- | | **unit\_b.pdf** |   [**Download File**](http://lisamcneilatargyll.weebly.com/uploads/5/7/1/8/5718487/unit_b.pdf) | **Reproduction and Development**  **THINGS DONE WELL:** - identifying structures of the female reproductive system - the roles of estrogen and testosterone in the development of secondary sex characteristics - matching statements describing the main events that occur during human development with the time of development during which the event occurs - identifying structures of a developing fetus on a diagram - sequencing of events with associated with fertilization and development  **THINGS TO WORK ON:** - the functions of the female reproductive hormones and the glands that secrete these hormones - identifying structures of the male reproductive system on a diagram - differentiating sperm from supporting structures in a diagram (most common mistake is to confuse Sertoli cells with interstitial cells) - differentiate the functions of FSH, LH, estrogen, and testosterone - know the feedback loop for control of FSH and LH - remember that decreased secretion of GnRH leads to decreased secretion of FSH - identifying the functions of different hormones secreted around the time of parturition |

|  |  |  |
| --- | --- | --- |
| **Unit C (Modules 5, 6, and 7)**  This unit is worth **35-45%** of the exam.  (Separated into 25-30% on Modules 5 & 6 and 10-15% on Module 7)  [http://www.weebly.com/weebly/images/file_icons/pdf.png](http://lisamcneilatargyll.weebly.com/uploads/5/7/1/8/5718487/unit_c.pdf)   |  | | --- | | **unit\_c.pdf** |   [**Download File**](http://lisamcneilatargyll.weebly.com/uploads/5/7/1/8/5718487/unit_c.pdf)  **VERY IMPORTANT:** Be sure that you know the expected ratios for offspring  Single gene, Heterozygous x Heterozygous, Aa x Aa 3:1 ratio of dominant : recessive 1:2:1 ratio of homozygous : heterozygous : homozygous  Two genes, Heterozygous x Heterozygous, AaBb x AaBb 9:3:3:1 ratio  9 both traits dominant 3 dominant/recessive 3 recessive/dominant 1 both traits recessive | **Cell Divison, Genetics and Molecular Biology**  **THINGS DONE WELL:** - identifying events that take place during mitosis - how cell division affects the number of chromosomes - behaviour of chromosomes during various stages of cell division - interpreting diagrams of life cycles, identifying processes that occurred during life cycles, and deducing the ploidy of structures in life cycles - the results of nondisjunction - the ability to compare phenotypes and genotypes - probabilities of outcomes in offspring - identifying structural elements of DNA and RNA and the processes of transcribing and translating a gene  **THINGS TO WORK ON:** - sequencing events of cell division from a list of events - sex-linked inheritance - interpreting information from a pedigree and then identifying the pattern of inheritance illustrated - frequency of cross-overs and gene mapping - be careful when transcribing DNA to mRNA and then translating to amino acids (T replaced with U, a missed base can affect the amino acid chain) - identifying the processes of replication, transcription, and translation from a diagram |

|  |  |  |
| --- | --- | --- |
| **Unit D (Module 8)**  This unit is worth **15-20%** of the exam.  [http://www.weebly.com/weebly/images/file_icons/pdf.png](http://lisamcneilatargyll.weebly.com/uploads/5/7/1/8/5718487/unit_d.pdf)   |  | | --- | | **unit\_d.pdf** |   [**Download File**](http://lisamcneilatargyll.weebly.com/uploads/5/7/1/8/5718487/unit_d.pdf) | **Population and Community Dynamics**  **THINGS DONE WELL:** - identifying factors that could change the diversity of a population's gene pool - most students correctly use the Hardy-Weinberg formulas - making conclusions about relationships between organisms, types of defence mechanisms, types of reproductive strategies, and ecological succession - identifying population growth patterns and growth curves - identifying density-dependent and density-independent factors that affect the growth of populations - calculating growth rate of a population  **THINGS TO WORK ON:** - be careful identifying what you're trying to solve: the frequency of a genetic disorder (*q^2*) or the frequency of the recessive allele (*q*) - identifying the 5 factors required for in Hardy-Weinberg equilibrium - differences between open and closed populations and the related factors that influence population growth  - how environmental resistance affects population growth - how human intervention can affect population growth - be careful not to confuse *natality* and *mortality* (they are quite different) |