Government of **Western Australia**
School Curriculum and Standards Authority

SAMPLE COURSE OUTLINE

PHYSICAL EDUCATION STUDIES

ATAR YEAR 12

Acknowledgement of Country

Kaya. The School Curriculum and Standards Authority (the Authority) acknowledges that our offices are on Whadjuk Noongar boodjar and that we deliver our services on the country of many traditional custodians and language groups throughout Western Australia. The Authority acknowledges the traditional custodians throughout Western Australia and their continuing connection to land, waters and community. We offer our respect to Elders past and present.

Disclaimer

Any resources such as texts, websites and so on that may be referred to in this document are provided as examples of resources that teachers can use to support their learning programs. Their inclusion does not imply that they are mandatory or that they are the only resources relevant to the course. Teachers must exercise their professional judgement as to the appropriateness of any they may wish to use.

Sample course outline

Physical Education Studies – ATAR Year 12

Unit 3 and Unit 4

Week	Syllabus content	Assessment

1	**Developing physical skills and tactics**
	• develop and refine sport specific skills and techniques to enhance performance
	• select and adapt skills and techniques
	• select and apply advanced tactical responses varying in complexity
	  ▪ various environmental conditions
	  ▪ strengths and weaknesses of opposition
	  ▪ responding to opposition
	  ▪ phases/stages of play
	• select and adapt tactics
	Note: the above content areas are ongoing and will be addressed throughout the practical skill development teaching and learning activities.
	Biomechanics
	• impulse–momentum relationship
	• characteristics of the interacting bodies affecting coefficient of restitution in the application to sport
	  ▪ temperature
	  ▪ equipment and surfaces
	  ▪ velocity	

2	**Biomechanics**
	• definition of, application and relationship between the following concepts in sport:
	  ▪ moment of inertia
	  ▪ angular velocity
	  ▪ conservation of angular momentum
	  ▪ third class levers within the body and as applied to sporting contexts
	  ○ resistance arm
	  ○ force arm	

3	**Biomechanics**
	• application of biomechanical principles to analyse physical skills
	  ▪ balance
	  ○ base of support
	  ○ height of centre of gravity
	  ○ line of centre of gravity
	  ○ mass
	  ▪ summation of forces
	  ○ simultaneous
	  ○ sequential/ segmental interaction
	  ▪ optimal projection	

4–5	**Biomechanics**
	• Fluid mechanics
	  ▪ definition of laminar and turbulent flow
	  ▪ definition of pressure drag (form drag/profile), surface drag (skin friction) and wave drag and how they apply to sporting contexts	

Week	Syllabus content	Assessment
6–7	**Biomechanics** • Fluid mechanics ▪ Bernoulli's principle – effect of shape and pressure differential ▪ changes in flight paths in spinning balls – the Magnus effect in relation to ○ top spin ○ back spin ○ side spin	
8	**Motor learning and coaching** • definition of transfer of learning • categories of transfer of learning ▪ skill to skill ▪ theory to practise ▪ training to competition	
9	**Motor learning and coaching** • effects of transfer of learning on skill execution and movement efficiency ▪ positive ▪ negative ▪ zero effects	
10	**Motor learning and coaching** • use of the Knudson and Morrison model through the application of the preparation, observation, evaluation, intervention and re-observation of tasks to improve performance	
11	**Motor learning and coaching** • use of coaching/training activities to improve performance in selected skills, including shaping, chaining and static-dynamic • use of different leadership styles – democratic, authoritarian (autocratic) and laissez-faire (casual) to suit the athlete or situation	
12	**Motor learning and coaching** • learning and skill development in relation to correction and improvement of self and others ▪ use of video analysis ▪ checklists ▪ peer/mentor/coach feedback ▪ questionnaires	
13	Revision and catch up	**Task 1:** Semester 1 written examination (14%)
14–15	**Exercise physiology** • relationship between energy demands and nutritional requirements pre-, during and post-competitive sporting activity ▪ fats ▪ proteins ▪ carbohydrates ▪ glycaemic index (low and high) • hydration pre-, during and post-competitive sporting activity	**Task 2**: Sport performance – developing physical skills and tactics (10%)

Week	Syllabus content	Assessment
16–17	**Exercise physiology** • physiological risks and benefits associated with the use of performance enhancers ▪ protein powders ▪ anabolic steroids ▪ caffeine ▪ creatine ▪ EPO ▪ blood doping	
18	**Exercise physiology** • considerations for performing in varying environmental conditions (heat/humidity, cold, altitude) ▪ temperature regulation mechanisms (radiation, convection, conduction, evaporation) ▪ physiological changes in these environments ▪ acclimatisation processes and the adaptations gained ▪ strategies to manage performance in these environments	
19	**Exercise physiology** • components of periodisation: ▪ micro cycle ▪ meso cycle ▪ macro cycle ▪ pre-season (preparation) ▪ in season (competition) ▪ off-season (transition)	
20	**Exercise physiology** • principles of training ▪ peaking ▪ tapering ▪ recovery (including strategies) ▪ maintenance • overtraining (signs and symptoms)	**Task 3:** Investigation – biomechanics; motor learning and coaching; exercise physiology (10.5%) **Task 4:** Topic test – exercise physiology (14%)
21–23	**Functional anatomy** • structure of skeletal muscle ▪ muscle belly ▪ epimysium ▪ endomysium ▪ fascicle ▪ perimysium ▪ muscle fibre ▪ myofibril • the role of the following in the sliding filament theory: ▪ myosin (cross bridges) ▪ actin (binding sites) ▪ sarcomere ○ H zone ○ I band	

Week	Syllabus content	Assessment
	○ A band ○ Z line ▪ calcium (release of ATP) • relationship between the velocity of muscle contraction to the amount of force exerted by the contraction ▪ force–velocity (concentric) • relationship between the length of muscle to the potential amount of force it can exert ▪ force–length (shortened, mid-length, lengthened) • structure of the motor neuron ▪ dendrite ▪ axon ▪ cell body/nucleus	
24	**Functional anatomy** • function of the following in relation to creating movement: ▪ sensory neuron ▪ the brain ▪ spinal cord ▪ motor neuron ▪ motor unit • relationship between muscle contraction and nerve function ▪ 'all or none' law ▪ motor unit size and number ▪ fibre recruitment (preferential recruitment) ▪ frequency of impulse • characteristics of fast and slow twitch fibres and their relationship to physical performance types (sprint, endurance) ▪ Type I ▪ Type IIa ▪ Type IIb	
25	**Sports psychology** • strategies used pre- and during performance, to manage stress, motivation, concentration, self-confidence and arousal levels ▪ self-talk ▪ relaxation ▪ performance routines ▪ goal-setting ▪ imagery	**Task 5**: Sport performance – developing physical skills and tactics (20%)
26	**Sports psychology** • group cohesion ▪ social cohesion ▪ task cohesion • strategies to improve group cohesion ▪ use of leadership ▪ communication ▪ goal setting (individual and team) ▪ team building ▪ roles and expectations • factors affecting group cohesion ▪ social loafing ▪ leadership ▪ team dynamics	**Task 6:** Topic test – functional anatomy and biomechanics (7%)

Week	Syllabus content	Assessment
27	Revision	
28	**Task 7: Semester 2 Written examination**	**Task 7:** Semester 2 written examination (24.5%)