

Scheme of work

BTEC National Sport and Exercise Sciences

Unit 2 Sport and exercise physiology

Broad aim: Successful completion of the unit

Teacher(s):

SB = Student Book 1

ADR = Assessment and Delivery Resource

Academic year:

Number of weeks: 20

Duration of session:

Guided learning hours: 60

Week	Topic/outcome	Tutor activities	Student activities	Resources	Links to grading criteria
1	Introduction and general overview to the unit, assessment procedure and learning outcomes Introduction to the concept of sport and exercise physiology (all outcomes)	Describe unit requirements Define key terms Promote discussion Set out unit requirements Give PowerPoint presentation 2.1: Unit overview	Note taking Discussion of basic concepts	PowerPoint facilities ADR PPT presentation 2.1 Whiteboard SB pages xx-xx	All
2	Aerobic and anaerobic exercise (outcome 1)	Introduce concept of exercise and how it affects the body, in particular the differences between aerobic and anaerobic exercise	Note taking and discussion Complete ADR 2.1	ADR 2.1 Introductory activity Whiteboard SB pages xx-xx	P1, M1, D1
3	Cardiovascular responses to exercise (outcome 1)	Introduce and explain the practical activity Familiarise self with equipment and software Demonstrate and supervise use of heart rate and blood pressure monitors	Note taking Monitor heart rate and blood pressure before, during and after exercise in order to complete ADR 2.2	ADR 2.2 Practical Heart rate monitors (e.g. Polar) Blood pressure monitors Exercise facilities (e.g. treadmill) SB pages xx-xx	P1, M1, D1
4	Respiratory responses (outcome 1)	Outline the responses of the respiratory system to exercise Show some computer animations if possible Set up group work in which students discuss responses of respiratory system to exercise	Note taking Group work and problem solving	Animation software SB pages xx-xx	P1, M1, D1

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5	Neuromuscular responses (outcome 1)	Outline the neuromuscular responses to exercise Set up group work in which students discuss neuromuscular responses to exercise	Note taking Group work and problem solving	SB pages xx–xx	P2, M1, D1
6	Energy system responses (outcome 1)	Outline responses of the energy systems to exercise Support students' research for ADR 2.3	Note taking Problem solving Group work Research for ADR 2.3	Animation software ADR 2.3 Worksheet SB pages xx–xx	P2, M1, D1
7	Understanding the concept of steady-state exercise (outcome 2)	Explain the concept of steady-state exercise, providing relevant examples Lead a discussion on the merits of steady-state exercise	Note taking Discussion	SB pages xx–xx	P3, M2, D2
8	Cardiovascular responses to steady-state exercise (outcome 2)	Explain the concepts of cardiovascular responses to steady-state exercise Familiarise self with equipment and software Demonstrate and ensure correct use of equipment Supervise students in groups to complete the practical activity	Take notes Complete ADR 2.4 in groups using notes from tutor's overview	ADR 2.4 Practical Heart rate monitors Sports facilities (e.g. treadmill, exercise bike, swimming pool) SB pages xx–xx	P3, M2, D2
9	Respiratory responses to steady-state exercise (outcome 2)	Outline the responses of the respiratory system to steady-state exercise Set up group work in which students discuss respiratory responses to steady-state exercise Supervise the extension activity (SB, p. 10)	Note taking Group work and problem solving Completion of extension activity (SB p. 10)	SB pages xx–xx	P3, M2, D2
10	Neuromuscular responses to steady-state exercise (outcome 2)	Outline neuromuscular responses to steady-state exercise Set up group work in which students discuss neuromuscular responses to steady-state exercise	Note taking Group work and problem solving		P4, M2, D2

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11	Energy system responses to steady-state exercise (outcome 2)	Outline the responses of the energy system to steady-state exercise Set up group work in which students discuss energy system responses to steady-state exercise Provide students with guidance for assessment practice	Note taking Group work and problem solving, progressing to completion of assessment practice (SB p. 32)	SB pages xx–xx Assessment practice (SB p. 32)	P4, M2 & D2
12	Understanding fatigue (outcome 3)	Give an overview of the different causes of fatigue and the likely outcomes Assist students to research suitable footage (have examples of fatigued athletes (e.g. marathon runners) to hand)	Note taking Group work on concept of fatigue, progressing to completion of ADR 2.5	ADR 2.5 Research SB pages xx–xx Access to Internet and other suitable sources Examples of fatigued athletes (e.g. marathon runners)	P5, M3
13	Understanding recovery (outcome 3)	Describe the various factors that affect recovery Discuss students' own experiences of recovering from exercise	Note taking Discussion Assessment practice (SB p. 39)	Assessment practice (SB p. 39) SB pages xx–xx	P5, M3
14	Understand how body adapts to long-term exercise (outcome 4)	Introduce the concept behind a long-term (8-week) exercise programme Lead a discussion on the physiological merits of such an exercise programme Supervise student to develop their exercise programme Students then develop a poster of their plan Remind students that they will be expected to explain and justify their plan to the rest of the class	Note taking Discussion Group work to develop training programme and poster	ADR 2.6 Planning and poster SB pages xx–xx A2 poster paper Poster-making materials	P6, M4, D3
15	Cardiovascular adaptation to long-term exercise (outcome 4)	Explain cardiovascular adaptations to long-term exercise, incorporating case studies of elite sportsmen and women to illustrate Hold a discussion, drawing on students' own experiences	Note taking Discussion	Clips of athletes competing (especially endurance athletes) SB pages xx–xx	P7, M4, D3

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16	Respiratory adaptations to long-term exercise (outcome 4)	Give an overview of respiratory responses to long-term exercise Hold a discussion, drawing on students' own experiences	Note taking Discussion	SB pages xx–xx	P7, M4, D3
17	Neuromuscular adaptations to long-term exercise (outcome 4)	Gather some suitable pictures of elite performers in action Explain neuromuscular responses to long-term exercise Guide students' research into neuromuscular adaptations to long-term exercise	Note taking Group research and study to complete ADR 2.7 Presentation of research findings	Access to internet and research materials Picture(s) of elite performers in action ADR 2.7 Research and presentation Presentation facilities SB pages xx–xx	P7, M4, D3
18	Energy system adaptations to long-term exercise (outcome 4)	Describe the adaptations of the energy system to long-term exercise Hold a discussion of factors that are likely to affect long-term adaptations Supervise students to develop a suitable exercise programme and a poster to describe it Remind students that they will be expected to explain and justify their plan to the rest of the class	Note taking Discussion Group work Poster creation	ADR 2.8 Poster SB pages xx–xx A2 poster paper Poster-making materials	P7, M4, D3
19	Skeletal adaptations to long-term adaptations (outcome 4)	Describe the adaptations of the skeleton to long-term exercise Set up group work in which students discuss long-term skeletal adaptation to exercise Introduce assignment practice (SB p. 45)	Note taking Problem solving Group work, progressing to assignment practice (page 45)	SB pages xx–xx	P7, M4, D3
20	Revision of all topics (all outcomes)	Provide students with guidance on completing their assignments Offer students the opportunity to complete or improve assignments before final submission	Completion and / or improvement of assignments	SB pages xx–xx	All