Cambridge TECHNICALS

Accredited

OCR LEVEL 3 CAMBRIDGE TECHNICAL

CERTIFICATE/DIPLOMA IN

SPORT

SPORTS NUTRITION

H/502/5640

LEVEL 3 UNIT 5

GUIDED LEARNING HOURS: 60

UNIT CREDIT VALUE: 10

OCR

SPORTS NUTRITION

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LEVEL 3

AIM OF THE UNIT

The aim of this unit is to enable the learner to investigate the concepts of nutrition and digestion in relation to sports performance. The importance of nutrition and hydration to a variety of sports participants will also be explored, including the importance of energy intake, energy expenditure and energy balance. The learner will be able to build knowledge of the components of a balanced diet and plan an appropriate diet plan for a selected sports activity.

PURPOSE OF THE UNIT

Sports performers need to be aware of the impact that good nutrition and hydration have on their performance. The links between a healthy balanced diet and the ability to perform at a high standard are well known and it is important that learners are able to understand the concepts of nutrition and digestion by exploring the physiology of the digestive system and how the body utilises the energy from food.

The completion of this unit will enable the learner to investigate the components of a balanced diet and relate this information to recommended guidelines from public health sources associated with nutrition. Learners will also be able to explore and interpret energy intake and expenditure and the various methods of measuring these for individual sports performers. The factors influencing energy balance, such as age, gender, climate and the types of physical activity will also be examined.

The final part of the unit requires the learner to investigate the relationship between hydration and sports performance and consider the usefulness of sports drinks, gels and traditional hydration methods in relation to the performance needs of competitors. The learner should be able to look at the differing demands of a range of sports and apply their knowledge in order to produce an appropriate diet plan for a selected sports activity.

ASSESSMENT AND GRADING CRITERIA

Learning Outcome (LO) The learner will:	**Pass** The assessment criteria are the pass requirements for this unit. The learner can:	**Merit** To achieve a merit the evidence must show that, in addition to the pass criteria, the learner is able to:	**Distinction** To achieve a distinction the evidence must show that, in addition to the pass and merit criteria, the learner is able to:
1 Know the concepts of nutrition and digestion	P1 describe nutrition, including nutritional requirements using recommended guidelines from public health sources associated with nutrition		
	P2 describe the structure and function of the digestive system in terms of digestion, absorption and excretion		
2 Know energy intake and expenditure in sports performance	P3 describe energy intake and expenditure in sports performance	M1 give examples of the impact of energy balance and hydration in relation to sports performance	D1 give examples of how energy intake, energy balance and hydration needs differ across a number of different sports
	P4 describe energy balance and its importance in relation to sports performance		
3 Know the relationship between hydration and sports performance	P5 describe hydration and its effects on sports performance		
4 Be able to plan a diet appropriate for a selected sports activity	P6 describe the components of a balanced diet		
	P7 plan an appropriate two-week diet plan for a selected sports performer for a selected sports activity	M2 monitor a two week diet plan designed to improve performance in a selected sports activity	D2 review a two week diet plan and make suggestions for improvement

TEACHING CONTENT

The unit content describes what has to be taught to ensure that learners are able to access the highest grade.

Anything which follows an i.e. details what must be taught as part of that area of content.

Anything which follows an e.g. is illustrative, it should be noted that where e.g. is used, learners must know and be able to apply relevant examples to their work though these do not need to be the same ones specified in the unit content.

LO1 Know the concepts of nutrition and digestion

Nutrition: i.e. macronutrients (e.g. carbohydrates, proteins, fats); micronutrients (e.g. vitamins, minerals); fibre; nutritional requirements (e.g. recommended guidelines from public health sources associated with nutrition); common terminology (e.g. Recommended Daily Allowance, Optimum Level, Safe Intake, Estimated Average Requirements, standard abbreviations – RDA, SI, EAR)

Digestion: i.e. structure of digestive system (e.g. buccal cavity, oesophagus, stomach, duodenum, pancreas, liver, gall bladder, small intestine, large intestine, kidneys, digestive juices and enzymes); function of digestive system (e.g. digestion, absorption, excretion)

LO2 Know energy intake and expenditure in sports performance

Energy: i.e. measures (e.g. calories, joules, kilocalories, kilojoules); sources (e.g. fats, carbohydrates, proteins); measuring requirements (e.g. body composition, basal metabolic rate, lean body mass, percentage body fat (skinfold analysis, bioelectrical impedance analysis, hydrodensitometry)); body weight; calorimetry (e.g. direct, indirect)

Energy balance: i.e. basal metabolism; age; gender; climate; physical activity

LO3 Know the relationship between hydration and sports performance

Hydration: i.e. signs and symptoms (e.g. dehydration, hyperhydration, hypohydration, superhydration); fluid intake (e.g. pre-event, inter-event, post-event); sources, (e.g. water, sports drinks (hypertonic, hypotonic, isotonic))

Effects on sports performance: (e.g. frequency, intensity, duration, specificity, progression, recovery)

LO4 Be able to plan a diet appropriate for a selected sports activity

Diet: i.e. balanced diet i.e. appropiate amount of carbohydrates, fats, proteins, water, fibre, vitamins, minerals.

Activities: (e.g. aerobic, anaerobic, muscular strength and endurance, flexibility; timing, (e.g. pre-season, midseason, post-season, pre-event, inter-event, post-event)).

Planning diets: i.e. appropriate for selected activity; appropriate for selected sports performer; assessment of needs, (e.g. weight gain, weight loss, muscle gain, fat gain, fat loss); nutrition (e.g. macronutrients, micronutrients, fibre); food groups (e.g. grains, vegetables, fruits, oils, dairy, meat); sources; availability; cost; ease of preperation.

DELIVERY GUIDANCE

LO1 In order to deliver the content of the unit, tutors should utilise a range of techniques, such as formal lectures, presentations, case studies, practical activities and research tasks. Learners should be encouraged to investigate current healthy eating guidelines from public health sources and input from guest speakers with sports nutrition experience would be valuable. They will need to familiarise themselves with relevant terminology related to nutrition.

LO2 Learners need to understand the different nutritional needs that a range of sporting activities can have and also the how the relationship between energy intake and expenditure can vary for different athletes (e.g. age, gender, body composition, basal metabolic rate, competition requirements and training schedules). This could be covered by completing practical assessments to measure body composition, peer investigations, case studies and by interviewing local sports performers or coaches.

LO2 and LO3 Tutors should emphasise that learners will not be qualified sports nutritionists after completing this unit, learners will have developed skills in evaluating dietary plans for sporting activities and should be able to give suggestions as to how they can be improved in general terms, but they should not give any sports performer dietary advice or make recommendations for supplements.

The main focus of this unit is to encourage learners to make use of the knowledge gained in relation to the concepts of nutrition, digestion, energy and hydration requirements and relate these to a specific sports performer. They will need to take into account factors such as training and competition requirements, age, gender and specific body measurements in order to devise a suitable two week diet plan.

GUIDANCE ON ASSESSING THE SUGGESTED TASKS

For P1, learners must be able to describe nutrition and nutritional requirements using common terminology associated with nutrition and making reference to guidelines available from recommended public health sources. For P2, learners must be able to describe the structure and function of the digestive system and be able to identify the enzymes that break down specific food sources. There should be a clear description of the process of digestion, absorption and excretion.

Criteria P3 and P4 focus on the energy intake and expenditure necessary for sports performance. It may be that centres do not have access to the necessary practical resources, however, external visits to Universities or local health clubs could be incorporated as part of the assignment where more specialised equipment is required. Other methods of measuring energy intake and output could be explored by learners such as the use of nutritional analysis software, completion and analysis of food diaries, calculations of basal metabolic rate, pedometers, skinfold calipers, protocol charts or pre-published questionnaires, the results of which can be used by learners to produce their written report. For P5, the learner needs to describe the relationship between hydration and sports performance. Learners could investigate a range of sports drinks, gels and supplements and even attempt producing their own, where facilities allow. They can then use this information to add to their report, describing the different methods of hydration and their relationship to sports performance. For M1, learners will need to give examples of the impact of energy balance and hydration in relation to sports performance. Learners should give real life examples and could use a case study format to present their findings. D1 is an extension of M1, whereby the learner should give clear examples of how energy intake, energy balance and hydration needs differ across a number of different sports. These can be examples of positive and/or negative impacts, and should be based on real life scenarios. A minimum of three different sports should be examined to achieve this criterion.

For P6, learners need to describe the components of a healthy balanced diet. For P7, learners need to produce an appropriate two-week diet plan for a selected sports performer for a specific sports activity. This should also include relevant hydration information. Examples could be provided by the production of a guidance leaflet for a chosen sports performer, the status of the athlete needs to be identified and taken into consideration when producing the diet plan (e.g. amateur, semi – professional, professional or elite). The leaflet must include a full description of the components of a balanced diet, including macro and micro nutrients, and a specific two week diet plan for a chosen sports performer. To achieve M2, the learner is required to implement and monitor the two week diet plan. D2 builds on M2 and requires the learner to review the two week diet plan. They should be able to identify strengths and areas for improvement.

Criteria	Assignment title	Scenario	Assessment
P1, P2	Nutrition and digestion.	Your sports coach has asked you to improve your knowledge of nutrition. You will demonstrate this by producing a presentation that describes current nutritional guidelines and the structure and function of the digestive system.	Presentation. Witness statement.

P3, P4, P5, M1, M2, D1	Energy intake and expenditure and hydration in sports performance.	You are to investigate methods of measuring energy intake and expenditure and research different methods of hydration used in sports performance. Produce a written report of your findings to show your understanding of the effects of energy balance and hydration on sports performance and how they differ across a number of different sports.	Written report.
P6, P7, M3, D2	Sport related diet plan.	You have been asked to produce a guidance leaflet which describes the components of a balanced diet and includes a suitable two week diet plan for a selected sports performer for a specific sports activity. A peer decides to follow the plans so you monitor the plas review it on completion to inform any amendments that may need to be made to your leaflet.	Guidance leaflet for a specific sports performer.

RESOURCES

Books

Adams M et al – *BTEC Level 3 National Sport (Performance and Excellence) Student Book* (Pearson, 2010) ISBN 9781846906510

Adams M et al – *BTEC Level 3 National Sport Teaching Resource Pack* (Pearson, 2010) ISBN 9781846906541

Bean A – *Sports Supplements* (A&C Black, 2007) ISBN 9780713682595

Burke L – *Practical Sports Nutrition* (Human Kinetics, 2007) ISBN 9780736046954

Food Standards Committee – *Manual of Nutrition* (Stationery Office Books, 2008) ISBN 9780112431169

Griffin J – *Food for Sport: Eat Well, Perform Better* (Crowood, 2001) ISBN 9781861262165

Karinch M – *Diets Designed for Athletes* (Human Kinetics, 2001) ISBN 9780736038348

Larson-Meyer D E – *Vegetarian Sports Nutrition* (Human Kinetics, 2006) ISBN 9780736063616

Manore M et al – *Sport Nutrition for Health and Performance* (Human Kinetics, 2000) ISBN 9780873229395

McArdle W et al – *Sports and Exercise Nutrition* (Lippincott, Williams and Wilkins, 2005) ISBN 9780781749930

Rinzler C A – *Nutrition for Dummies, 4th Edition* (Wiley, 2006) ISBN 9780471798682

Journals

British Journal of Nutrition

British Medical Journal

International Journal of Sports Nutrition

Journal of Nutrition

Journal of Sports Nutrition

Websites

British Nutrition Foundation www.nutrition-org.uk

Food Standards Agency www.foodstandards.gov.uk

National Health Service Choices www.nhs.uk/livewell

BBC www.bbc.co.uk/health/

Nutritional Analysis Tool - Food Science and Human Nutrition Department at the University of Illinois
www.myfoodrecord.com/mainnat.html

MAPPING WITHIN THE QUALIFICATION TO OTHER UNITS

Unit 1: Principles of Anatomy and Physiology in Sport

Unit 4: The Physiology of Fitness

Unit 9: Exercise for Specific Groups

Unit 16: Analysis of Sports Performance

Unit 23: Fitness Training and Programming

CONTACT US

Staff at the OCR Customer Contact Centre are available to take your call between 8am and 5.30pm, Monday to Friday.

We're always delighted to answer questions and give advice.

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