DISCIPLINE SPECIFIC ELECTIVE COURSE
DSE HP 8B3: NUTRITION FOR SPORTS PERFORMANCE

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility Criteria	Pre-requisite of the Course (if any)
		Lecture	Tutorial	Practical/ Practice		
Nutrition for Sports Performance DSE HP 8B3	4	3	1	0	Studied Semester VII	Pass in DSE HP 5B1: Nutritional Biochemistry

Learning Objectives

- To learn the concept of fitness, role of macronutrient and micronutrients in enhancing sports performance, application of nutrition in training, competition and recovery period
- Gain knowledge regarding general metabolic principles, bioenergetic for the working muscle during exercise.
- To understand the hydration guidelines associated with safety and performance of the athletes

Learning Outcomes

Students will be able to

- Understand concepts of fitness, its assessment and different approaches to improve fitness
- Exhibit an understanding of the role of nutrients in performance enhancement in Sports, and strategize its application in training, competition and recovery period
- Effectively plan hydration strategies and sports groups -specific diets for athletes for recreational and competitive athletes in different phases of training and competition.

SYLLABUS OF DSE HP 8B3

THEORY
(Credits 3; Hours 45)

Unit 1- Overview of Physical fitness and health related benefits **8 Hours**

In this Unit, students will be acquainted with the basic concepts of health-related physical fitness

- Introduction to physical activity, physical fitness and exercise
- Assessment of health and skill related fitness
- Benefits of physical fitness and approaches to improve Physical fitness

- Assessment of Energy Expenditure in Sports: Energy Balance and Energy Availability

UNIT II: Sports Nutrition **10 Hours**

This Unit deals with the importance of fuel, nutrients and hydration for sports performance.

- Introduction to Sports Nutrition: Integrated Approach
- Fuel systems and continuum of energy
- Macronutrient recommendations for sports performance
- Micronutrient requirements for sports performance
- Hydration status- assessment and importance
- Fluid replacement guidelines and monitoring

UNIT III: Nutrition for Sports Performance **15 Hours**

This Unit deals with the nutritional inputs during various phases of training and competition and dietary supplements

- Nutrition for Pre competition, during and post competition
- Overview of Dietary Supplements and Ergogenic Aids

UNIT IV Nutrition for special conditions in sports **12 Hours**

In this Unit, nutrition for special conditions will be dealt with and an overview of emerging trends in research and practice of Sports Nutrition will be given.

- Specific nutrition for weight category sports and sports requiring aesthetics: Addressing eating disorders and disordered eating in athletes.
- Women athletes, adolescent athletes, athletes with diabetes, vegetarian athletes, vegetarian athletes, RED-S, Special Olympics and Paralympics
- An overview of emerging Trends and Research in Sports Nutrition, ethics and Professional Practice

TUTORIAL
(Credits 1; Hours 15)

- PARQ assessment and interpretation
- Assessment of health related physical fitness
- Planning a day's diet for a fitness trainee
- Planning a training day's diet for athletes training for ultra-endurance, endurance, strength events, team events and skill based events
- Planning a checklist for dietary modification pre-, during and post-competition for 5 main sports groups
- Planning hydration strategies before, during and after an event
- Survey of sports supplements

Essential Readings:

- Burke, L.M. and Deakin, V. (2002) *Clinical Sports Nutrition, 2nd edition*, Publishers McGraw Hill.
- Hickson, J.F. and Wolinksky, I. (1997) *Nutrition for exercise and Sport. 2nd ed.*CRC Press,
- ILSI, NIN &SAI. (2017) *Nutritional recommendations for high performance athletes 2nd ed.*
- Lal, P.R. (2009). *Handbook of Sports Nutrition*. Friend's Publication, Delhi, India.
- Mahan, L. K. and Escott Stump, S. (2016) *Krause's Food & Nutrition Therapy. 15th ed.* Saunders-Elsevier.

Suggested Readings:

- Austin, K. G. and Seebohar, B. (2021)*Performance Nutrition for Athletes*, Human Kinetics
- Bushman, B. (2017) *ACSM's Complete Guide to Fitness & Health 2nd Edition*, Published by ACSM.
- Benardo, D. (2011) *Advanced Sports Nutrition-2nd Edition.*
- Fik, H. H. and Alan E. Mikesky(2015) Practical Application in Sports and Nutrition. Fourth Edition. Jones & Bartlett Learning, Burlington, MA
- Fink, H. H. and Mikesky, A. E. (2017) *Practical Applications in Sports Nutrition 5th Edition.*
- Ryan, M. (2020) Sports Nutrition for Endurance Athletes (3rd Edition). VeloPress
- McArdle,W.D., Katch, F. I. and Katch, V.L. (2020) Sports and Exercise Nutrition (5th Edition). Wolters Kluwer

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time