

AC 27/2/13
Item no. 4.29

UNIVERSITY OF MUMBAI



Syllabus
SEMESTER III and IV
Program: M.Sc.
Course: Home Science
Branch IC: Sports Nutrition

(Credit Based Semester and Grading System with effect
from the academic year 2013–2014)

SEMESTER III

Course Code	SUBJECTS	Internal Marks	Univ. Marks	Total	Periods / Week	Credits
PSHSIC301	Sports Nutrition	40	60	100	3	4
PSHSIC302	Nutritional management of Degenerative/metabolic diseases	40	60	100	3	4
PSHSIC303	Holistic fitness	40	60	100	3	4
PSHSIC304	Food Service Management in Health Care Settings	40	60	100	3	4
PSHSICP301	Nutrition & Exercise for Special Conditions	-	50	50	4	2
PSHSICP302	Project	-	150	150	4	6
	TOTAL			600	20	24

Course Code	Title	Periods/week	Marks	Credits
PSHSIC301	Sports Nutrition	3	100	4

Objectives

- To acquire knowledge about specific nutrient required for various sport activities.
- To understand important issues, concerns on enhancing performance.
- To learn about techniques used to assess nutritional status of athletics and sports persons.

Course Content		Periods
Unit I	Nutrient Bioenergetics Energy Cycle Sources of body fuels and their utilization Relationship of specific cells to metabolism Adipocytes Muscle fibre Energy balance	15
Unit II	Nutritional Concerns for female athletes Vitamins and Mineral malnutrition (Athletic Triad) Eating disorders. Nutritional Issues for Special Environments and Conditions. Training and competing at different altitudes At extreme climates While traveling long distances	15
Unit III	Nutrient Requirements for Competitive Sports Persons. Power Sports Endurance Sports Combined	15

References:

- Summerfield, Lianne, M. (2001), *Nutrition Exercise and Behaviour. An integrated approach to weight management.*
- Burke, Louise and Deakin, Vicki (2006) *Clinical Sports Nutrition*, McGraw – Hill Pvt. Ltd. Australia.
- Wolinsky, I. and Drishill, Judy (1997) *Sports and Nutrition Vitamins and Trace elements*, CRC Press BY.
- Wolinsky, I. (1998) *Nutrition in Exercise and Sports* CRC press NY.
- Browns, Fred and Caustan, Cargill (2002) *Essentials of Sports Nutrition – 2nd edition* John Wiley and Sons, England.
- Bernadot, Dan (1999) *Nutrition for serious Athletes*, Human Kinetics USA.
- Wolinsky, Ira and Driskell, J. (2004) *Nutritional Ergogenic aids*, CRC Press NY.

Course Code	Title	Periods/week	Marks	Credits
PSHSIC302	Nutritional Management of Degenerative and Metabolic Diseases	3	100	4

Objectives

To enable students understand

- Principles of nutritional management in various therapeutic conditions.
- The importance and process of nutritional counseling for athletic and non athletic persons.
- The symptoms and dietary treatment of nutrient deficiencies.

Course Content		Periods
Unit I	Nutrition Care Process Steps involved in the Nutritional assessment, Diagnosis, Intervention monitoring, evaluation and documentation of the information about patients. The procedure of diet prescription, Modification of normal diet, Types of hospital diets	15

	Nutritional Counseling Discharge planning and home care.	
Unit II	Nutrition for Weight Management in Sports and Non-Sports Persons of Various Age Groups / Categories. Weight Loss: Physiology of Overweight & Obesity Assessment and Complication of obesity Obesity among Sports persons Approaches (Dietary & Lifestyle (Exercise for weight and fat loss) Plateau effect & weight recycling. Negative aspects of weight loss and recovery strategies Weight gain: Need for weight gain, weight specific categorization of sports persons, Sports with weight restrictions.	15
Unit III	Nutrition for Weight Management in Sports and Non-Sports Persons of Various Age Groups / Categories. Eating disorders Prevalence, Causes & Metabolic / Physiologic Consequences Role of Nutrition and Lifestyle modification Nutritional Management of Selected Clinical Conditions: A-Gastro Intestinal Disorders: Peptic Ulcer, Duodenal Ulcer, liver diseases etc... Etiology, Pathophysiology and effect of Exercise.	15

References

- Wolinsky, Ira (1998) *Nutrition in Exercise & Sport* (3rded.)
Fred and Brouns (2002) *Essentials of Sports Nutrition* (2nd ed.), John Wiley & Sons pub.
Mc Ardle, W.D. & Katch (2005) *Sports and Exercise Nutrition* (4thed.) Williams & Wilkins, A Waverly Company.
Williams, C. & Delvin, J.T. (1992) *Foods, Nutrition & Sports Performance* (1sted.)E. & F.N. Sons' Pub.
Burke, L. Y.and Deking, V. (2006) *Clinical Sports Nutrition* (3rd ed.), Tata McGraw Hill Pub.
Summerfield, Lianne, M. (2001) *Nutrition Exercise and Behaviour An integrated approach to weight management*, Belmont (USA). Wadsworth/Thompson Learning

Course Code	Title	Periods/week	Marks	Credits
PSHSIC303	Holistic Fitness	3	100	4

Objectives

- To know about all dimensions of fitness
- To understand the concepts of stress and its implications on Health
- To imbibe knowledge about strategies that could be used to modify unhealthy behavior

Course Content		Periods
Unit I	Holistic Health Definition and Meaning Dimensions of wellness Physical Social Emotional Spiritual Environmental Psychological Occupational	15
Unit II	Exercise for Fitness Health benefits of exercise	15

	Component of health related physical fitness Physiological responses to exercise Starting and maintaining a fitness program	
Unit III	Nutrition for Health An overview of sound nutritional principles for healthy living Defining Nutrient Needs for different age groups Consumer concerns on food safety and nutritional adequacy Interrelations of diet/ Exercise for weight control Effects obesity and being overweight on health Facts and Fallacies of weight control Behavioral modifications	15

References

- Powers, S. and Dodd, Stephen (1996) *Total fitness*, Allyss and Bacon, Univ. of Florida
- Hoeger, W., Turner, Low and W. Hafen Brent (2002), *Wellness Guidelines for a healthy life style* Wadsworth/Thomas Learning USA.
- Brannon, L. and Feist, Jess (2000), *Health Psychology IV edition, An Introduction to behaviour and health*, Wadsworth USA.
- Schafer Walt (1998) *Stress Management for IV ed. Wellness* Wadsworth USA.
- Mind, body and soul* (1998) The body shop, Bullyinch press book, little Brown and co.
- Bhat and Savur, S. (1998) *Fitness for life*, Jaico publishing House, Mumbai
- Hamlyn, *Encyclopedia for Complimentary Health* (1996)

Course Code	Title	Periods/week	Marks	Credits
PSHSIC304	Food Service Management in Health Care Settings	3	100	4

Objectives

- To apply the principles of management in food service organizations (health settings)
- To understand the importance of quality management and process improvement in food service organizations
- To learn about the food product flow in specific food production units
- To gain knowledge about entrepreneurship in the food service sector

Course Content	Periods
Unit I Food Service Operating Practices Self operating, contracting, franchising Food service operations in: schools, Hospitals, Other health care centers(fitness, wellness clinics) Emergency food service operations Correctional facilities	15
Unit II Management Functions Organizational design Leadership and motivation Personnel management Performance improvement Marketing food services	15
Unit III Quality Management Approaches to quality improvement Tools used in process management Issues for quality improvement Standards of quality in food service organisations	15

References

- Spears, Marian, C. and Gregoine, Mary, B. (2006) *Food service organization – A managerial and system approach* Pearson Prentice Hall USA.

Payne – Palacio, Theis, Monica (2005) *Introduction to food service*, Pearson Prentice Hall USA.
 Aswathappa, K. (2005) *Human resource and personnel management* (4thed.) Tata McGraw – Hill Publishing Company limited. New Delhi.
 Robbin, Stephen and Coult, Mary (2002), *Management* (7thed.) Ashoka K. Ghosh, Prentice – Hall of India, Pvt. Ltd. New Delhi.
 Buttle, Francis (1992) *Hotel and food service marketing – A managerial approach* ELBS edition, Cassel Educational Ltd, London.
 Sudan AmikSadan, (2002) *Food service operations*, Anmol Publications, New Delhi.
 Negi, Jagmohan (2004) *Food and beverage laws (Food Safety and Hygiene)*, Aman Publication, New Delhi.
 Bagchi, S.N. and Sharma, Anita (2004) *Textbook of food and beverage service* 2nd revised edition Aman Publications, New Delhi.
 Subject Kumar, Sandeep Mallik (2007) *Food service facilities*, Aman Publishers New Delhi.
 Hughes, Diane and Golzen, Godfrey (1986) *Running your own restaurant*, Kojan Page limited, London.
 Erdosh, George (2000) *Start and run a profitable cater business*, Jaico Publishing House, Mumbai.

Course Code	Title	Periods/week	Marks	Credits
PSHSICP301	Nutrition & Exercise for Special Conditions	4	100	4

Objectives

- To enable students plan and prepare diets for weight management and malnourished conditions.
- To impart the skill of coordinating exercise programme and diet in special conditions.
- To impart theoretical knowledge and practical skills in planning and preparation of diets for sports persons of various categories.

Course Content		Periods
Unit I	Planning & Preparation of Diets for: Male and Female Non-sports persons of different activity levels. Sports Persons of various categories: Endurance sports persons: Track events (Runners & Swimmers) Team events (Cricket, Hockey etc.,)	15
Unit II	Planning & Preparation of Diets for: Resistance sports persons: Strength events (wrestlers, weight lifters etc. Body builders	15
Unit III	Planning and Preparation of Diets for Sports and Non-Sports Persons Suffering for the following Conditions Weight Management : Weight Loss and Weight gain Dehydration-Preparation of sports drinks.	

References

Burkee, L. and Deakin, V. (2006) *Clinical sports nutrition* (3rded.) The McGraw Hill Companies
 Mahan, L.K. and Escott-Stumps, S. (2000) *Krause's food, nutrition & diet therapy* (11thed.) CRC press.

SEMESTER IV

Course Code	SUBJECTS	Internal Marks	Univ. Marks	Total	Periods / Week	Credits
PSHSIC401	Sports Nutrition Paper - II	40	60	100	3	4
PSHSIC402	Nutritional management of Degenerative/metabolic diseases	40	60	100	3	4
PSHSIC403	Holistic fitness	40	60	100	3	4
PSHSIC404	Food Service Management in Health Care Settings	40	60	100	3	4
PSHSICP401	Nutrition & Exercise for Special Conditions	-	50	50	4	2
PSHSICP402	Part A: Project	-	100	100	4	4
	Part B: Internship		50	50	--	2
	TOTAL			600	20	24

Course Code	Title	Periods/week	Marks	Credits
PSHSIC401	Sports Nutrition	3	100	4

Objectives

- To acquire knowledge about specific nutrient required for various sport activities.
- To understand important issues, concerns on enhancing performance.
- To learn about techniques used to assess nutritional status of athletics and sports persons.

Course Content		Periods
Unit I	Oxidative Stress & Exercise Performance Role of Antioxidants Water & Electrolyte Requirements Fluid replacement strategies in various sports activities	15
Unit II	Meal Patterns and Dietary Intake For Anaerobic power For Aerobic power Timing of meals. Nutrition for Immunity Factors affecting immunity Age, Sex, Exercise etc.	15
Unit III	Supplements and Ergogenic Aids. Nutritional and non Nutritional supplement Amino Acid derivatives Lipid derivatives Other substances present in food Pharmacologic and chemical substance. Evaluation of effectiveness Geriatric Nutrition Nutritional Requirements and common Nutritional Problems among geriatric sports and non-sports persons.	15

References

- Summerfield, Lianne, M. (2001), *Nutrition Exercise and Behaviour. An integrated approach to weight management.*
- Burke, Louise and Deakin, Vicki (2006) *Clinical Sports Nutrition*, McGraw – Hill Pvt. Ltd. Australia.
- Wolinsky, I. and Drishill, Judy (1997) *Sports and Nutrition Vitamins and Trace elements*, CRC Press BY.
- Wolinsky, I. (1998) *Nutrition in Exercise and Sports* CRC press NY.
- Browns, Fred and Caustan, Cargill (2002) *Essentials of Sports Nutrition – 2nd edition* John Wiley and Sons, England.
- Bernadot, Dan (1999) *Nutrition for serious Athletes*, Human Kinetics USA.
- Wolinsky, Ira and Driskell, J. (2004) *Nutritional Ergogenic aids*, CRC Press NY.

Course Code	Title	Periods/week	Marks	Credits
PSHSIC402	Nutritional Management of Degenerative and Metabolic Diseases	3	100	4

Objectives

To enable students understand

- Principles of nutritional management in various therapeutic conditions.
- The importance and process of nutritional counseling for athletic and non athletic persons.
- The symptoms and dietary treatment of nutrient deficiencies.

Course Content		Periods
Unit I	Nutritional Management of Selected Clinical Conditions: Diabetes Mellitus and CVD Etiology, Pathophysiology, metabolic alterations, Complications, Assessment and Management.	15
Unit II	Nutritional Management of Selected Clinical Conditions: Osteoporosis	15

	Bone Physiology, Effect of Nutrition age, sex and exercise on bone health. Assessment of skeletal fitness. Preventive and curative strategies of osteoporosis	
Unit III	Nutritional Management of Exercise Injuries	15
Unit IV	Management of Selected Macro and Micronutrient Deficiency Diseases PEM, EFA deficiency, Vitamin A, Iron and Iodine deficiency disorders.	15

References

- Wolinsky, Ira (1998) *Nutrition in Exercise & Sport* (3rded.)
Fred and Brouns (2002) *Essentials of Sports Nutrition* (2nd ed.), John Wiley & Sons pub.
Mc Ardle, W.D. & Katch (2005) *Sports and Exercise Nutrition* (4thed.) Williams & Wilkins, A Waverly Company.
Williams, C. & Delvin, J.T. (1992) *Foods, Nutrition & Sports Performance* (1sted.)E. & F.N. Sons' Pub.
Burke, L. Y.and Deking, V. (2006) *Clinical Sports Nutrition* (3rd ed.), Tata McGraw Hill Pub.
Summerfield, Lianne, M. (2001) *Nutrition Exercise and Behaviour An integrated approach to weight management*, Belmont (USA). Wadsworth/Thompson Learning

Course Code	Title	Periods/week	Marks	Credits
PSHSIC403	Holistic Fitness	3	100	4

Objectives

- To know about all dimensions of fitness
- To understand the concepts of stress and its implications on Health
- To imbibe knowledge about strategies that could be used to modify unhealthy behavior

Course Content		Periods
Unit I	Stress and Health Interplay of mind, body and behavior Stress responses, relaxation responses and homeostasis Stress prone personality patterns Stress related chronic diseases/ disorder Effects of depression on health Suicide—warning signs and prevention stress assessment Managing stress Modifying unhealthy behavior	15
Unit II	Addictive Behavior and its Effect on Health Risk factors of addiction Harmful effects of substance abuse Strategies to overcome substance abuse	15
Unit III	Fitness Assessment for Wellness Evaluation of health status Measuring cardio respiratory fitness measuring muscle endurance Flexibility Field assessment of body composition Lifetime Fitness Adherence to a fitness program regime Factors that affect adherence Problems of adherence	15

References

- Powers, S. and Dodd, Stephen (1996) *Total fitness*, Allyss and Bacon, Univ. of Florida
Hoeger, W., Turner, Low and W. Hafen Brent (2002), *Wellness Guidelines for ahealthy life style*
Wadsworth/Thomas Learning USA.
Brannon, L. and Feist, Jess (2000), *Health Psychology IV edition, An Introduction to behaviour and health*,
Wadsworth USA.
Schafer Walt (1998) *Stress Management for IV ed. Wellness* Wadsworth USA.
Mind, body and soul (1998) The body shop, Bullyinch press book, little Brown and co.
Bhat and Savur, S. (1998) *Fitness for life*, Jaico publishing House

Course Code	Title	Periods/week	Marks	Credits
PSHSIC404	Food Service Management in Health Care Settings	3	100	4

Objectives

- To apply the principles of management in food service organizations (health settings)
- To understand the importance of quality management and process improvement in food service organizations
- To learn about the food product flow in specific food production units
- To gain knowledge about entrepreneurship in the food service sector

Course Content		Periods
Unit I	Menu Planning Trends in menu planning Menu pattern and structure	15
Unit II	Food Product Flow Procurement Production Service Kitchen design Equipment layout Safety, sanitation and maintenance	15
Unit III	Entrepreneurship In Food Service Starting of a food service business(location, layout) Management of finances Legal requirements Skills/ knowledge needed for an entrepreneur in food service sectors. Planning strategies for marketing of food services/ products.	15

References

- Spears, Marian, C. and Gregoine, Mary, B. (2006) *Food service organization – A managerial and system approach* Pearson Prentice Hall USA.
- Payne – Palacio, Theis, Monica (2005) *Introduction to food service*, Pearson Prentice Hall USA.
- Aswathappa, K. (2005) *Human resource and personnel management* (4thed.) Tata McGraw – Hill Publishing Company limited. New Delhi.
- Robbin, Stephen and Coult, Mary (2002), *Management* (7thed.) Ashoka K. Ghosh, Prentice – Hall of India, Pvt. Ltd. New Delhi.
- Buttle, Francis (1992) *Hotel and food service marketing – A managerial approach* ELBS edition, Cassel Educational Ltd, London.
- Sudan AmikSadan, (2002) *Food service operations*, Anmol Publications, New Delhi.
- Neigh, Jagmohan (2004) *Food and beverage laws (Food Safety and Hygiene)*, Aman Publication, New Delhi.
- Bagchi, S.N. and Sharma, Anita (2004) *Textbook of food and beverage service* 2nd revised edition Aman Publications, New Delhi.
- Subject Kumar, Sandeep Mallik (2007) *Food service facilities*, Aman Publishers New Delhi.
- Hughes, Diane and Golzen, Godfrey (1986) *Running your own restaurant*, Kojan Page limited, London.
- Erdosh, George (2000) *Start and run a profitable cater business*, Jaico Publishing House, Mumbai.

Course Code	Title	Periods/week	Marks	Credits
PSHSICP401	Nutrition & Exercise for Special Conditions	4	100	4

Objectives

- To enable students plan and prepare diets for weight management and malnourished conditions.
- To impart the skill of coordinating exercise programme and diet in special conditions.
- To impart theoretical knowledge and practical skills in planning and preparation of diets for sports persons of various categories.

Course Content		Periods
Unit I	Planning and Preparation of Diets for Sports and Non-Sports Persons Suffering for the following Conditions: Eating Disorders Hypertension	15
Unit II	Planning and Preparation of Diets for Sports and Non-Sports Persons Suffering for the following Conditions: CHD Ulcers (Peptic Duodenal)	15
Unit III	Planning and Preparation of Diets for Sports and Non-Sports Persons Suffering for the following Conditions: Jaundice PEM Anemia	15
Unit IV	Planning of Exercise Programmes for Special Conditions	15

References

- Burke, L. and Deakin, V. (2006) *Clinical sports nutrition* (3rdEd.) The McGraw Hill Companies
Mahan, L.K. and Escott-Stumps, S. (2000) *Krause's food, nutrition & diet therapy*(11thEd.)CRC press.

Scheme of Examination

The performance of the learners shall be evaluated into two parts. The learner's performance shall be assessed by Internal Assessment with 40% marks in the first part by conducting the Semester End Examinations with 60% marks in the second part. The allocation of marks for the Internal Assessment and Semester End Examinations are as shown below:-

Internal assessment for Theory 40 %

Sr. No	Evaluation type	Marks
1	One seminar based on curriculum assessed by teacher of the institution teaching PG learners / Publication of a research paper/ presentation of a research paper in seminar or conference. A. Selection of the topic, introduction, write up, references- 15 marks. B. Presentation with the use of ICT- 15 marks.	30
2	Active participation in routine class instructional deliveries	05
3	Overall conduct as a responsible learner, communication and leadership qualities in organizing related academic activities	05

Semester End Theory Examination 60 %

Semester End Theory Examination of 60 marks (three unit courses)

Duration: These examinations shall be of two and half hours duration.

Theory question paper pattern:

- There shall be five questions each of 12 marks. On each unit there will be one question and the first one will be based on entire syllabus.
- All questions shall be compulsory with internal choice within the questions. Each question will be of 18 to 20 marks with options.
- Question may be subdivided into sub-questions a, b, c... and the allocation of marks depend on the weightage of the topic.

Practicals Semester End Examination of 50 marks (No Internal Assessment)

Sr. No	Evaluation type	Marks
1	Laboratory work: Semester End Examination	40
2	Journal	05
3	Viva	05

Practicals Semester End Examination of 100 marks (No Internal Assessment)

Sr. No	Evaluation type	Marks
1	Laboratory work: Semester End Examination	80
2	Journal/Report	10
3	Viva	10

*Examination for the Project and Internship will be conducted in the form of presentation and viva.

Standard of Passing is as per the ordinances set by the University of Mumbai for the Credit Based Semester and Grading System for the postgraduate courses.