SHIVAJI UNIVERSITY, KOLHAPUR
416 004, MAHARASHTRA
PHONE : EPABX – 2609000, BOS Section – 0231-2609094, 2609487
Web : www.unishivaji.ac.in Email: bos@unishivaji.ac.in
शिवाजी विद्यापीठ, कोल्हापूर, ४१६ ००४, महाराष्ट्र
दूरध्वनी - इपीबीएक्स - २०६०९०००, अभ्यासमंडळे विभाग : ०२३१- २६०९०९४, २६०९४८७
वेबसाईट : www.unishivaji.ac.in ईमेल : bos@unishivaji.ac.in

Estd. 1962
"A++" Accredited by NAAC (2021)
With CGPA 3.52

Ref.: SU/BOS/ *IDS* / 607 **Date: 06 - 10- 2025**

To,

The Principal,
All Concerned Affiliated Colleges/Institutions
Shivaji University, Kolhapur

Subject : Regarding revised syllabi of **B. Voc. Part I (Sem. I & II)** degree programme under the Faculty of Inter- Disciplinary Studies as per NEP-2020 (2.0).

Sir/Madam,

With reference to the subject mentioned above, I am directed to inform you that the university authorities have accepted and granted approval to the revised syllabi, nature of question paper and equivalence of **B. Voc. Part I (Sem. I & II)** for follower's degree programme under the Faculty of Inter- Disciplinary Studies as per National Education Policy, 2020 (NEP 2.0).

Course
B. Voc. Advanced Diploma In Medical Laboratory Technology Part -1
B. Voc. Building Technology and Interior Design Part -1
B. Voc. Printing & Publishing Part -1
B. Voc. Nutrition and Dietetics Part – I

This syllabus, nature of question and equivalence shall be implemented from the academic year **2025-2026** onwards. A soft copy containing the syllabus is attached herewith and it is also available on university website www.unishivaji.ac.in NEP-2020 (Online Syllabus)

The question papers on the pre-revised syllabi of above-mentioned course will be set for the examinations to be held in October /November 2025 & March/April 2026. These chances are available for repeater students, if any.

You are, therefore, requested to bring this to the notice of all students and teachers concerned.

Thanking you,

Yours Faithfully

(Dr. S. M. Kubal)
Dy Registrar

Encl. : As above.

Copy to: For Information and necessary action.

1	The Dean, Faculty of IDS	7	Affiliation T. 1 & T. 2 Section
2	Director, Board of Examination and Evaluation	8	Appointment A & B Section
3	The Chairman, Respective Board of Studies	9	P.G.Seminar Section
4	All On Exam Section	10	I.T. Cell
5	Eligibility Section	11	Internal Quality Assurance Cell (IQAC)
6	P. G. Admission Section		

SHIVAJI UNIVERSITY, KOLHAPUR

Established : 1962

Accredited By NAAC with "B" with C.G.P.A. 3.52

Revised Syllabus for
Bachelor of Vocation (B. Voc) (NEP-2.0)

Nutrition and Dietetics

Part I- Sem. I & II

UNDER
Faculty of Interdisciplinary Studies Structure, Scheme and Revised Syllabus

(To be implemented from the Academic Year 2025-26)

Shivaji University, Kolhapur

National Education Policy (NEP-2020) 2.0

First Year Bachelor of Vocation (B. Voc) Nutrition and Dietetics

Level	Semester	COURSES			OE	VSC/SEC	AEC/VEC/IKS	OJT/FP/CEP/CC/RP	Total Credit
		Course -I	Course -II	Course -III			IKS		
4.5	I	DSC-I(2) DSC-II(2) DSCPract.-I (2)	DSC-I(2) DSC-II(2) DSCPract.-I (2)	DSC-I(2) DSC-II(2) DSCPract.-I (2)	OE -I (T/P)(2)		IKS-I (2) Introduction to IKS		
	Credits	4+2=6	4+2=6	4+2=6	2		2		22
	II	DSC-III(2) DSC-IV(2) DSCPract.-II (2)	DSC-III(2) DSC-IV(2) DSCPract.-II (2)	DSC-III(2) DSC-IV(2) DSCPract.-II (2)	OE-II (T/P)(2)		VEC-I(2) (Democracy, Election and constitution)		
	Credits	4+2=6	4+2=6	4+2=6	2		2		22
1st Year Cum. Credits		8(T)+4(P)= 12	8(T)+4(P)= 12	8(T)+4(P)= 12	2 + 2 = 4		2 + 2= 4		44
Exit option: Award of UG Certificate with 44 Credits									

Semester I
B. Voc. Nutrition and Dietetics

Sem.	Course	Code	Paper No.	Title of Paper
I	I	DSC-I	B. Voc. Paper-I	Fundamentals of Food Science
		DSC-II	B. Voc. Paper-II	Basic Nutrition
		DSC-P-I	B. Voc. Practical–I	Based upon DSC-I and DSC-II
	II	DSC-I	B. Voc. Paper-I	Bio-chemical Basics of Nutrition
		DSC-II	B. Voc. Paper-II	Clinical Dietetics
		DSC-P-I	B. Voc. Practical–II	Based upon DSC-I and DSC-II
	III	DSC-I	B. Voc. Paper-I	Sports Dietetics and Nutrition
		DSC-II	B. Voc. Paper-II	Clinical Testing and Diagnostics
		DSC-P-I	B. Voc. Practical–III	Based upon DSC–I and DSC -II
	OE -I	Open Elective	Theory(2)	Human Development/ Public Health Nutrition
	IKS	Indian Knowledge System	Theory(2)	IKS(Generic)

Semester II
B. Voc. Nutrition and Dietetics

Sem.	Course	Code	Paper No.	Title of Paper
II	I	DSC-I	B. Voc. Paper- I	Human Anatomy
		DSC-II	B. Voc. Paper-II	Clinical Nutrition & Diet Therapy
		DSC-P-I	B. Voc. Practical–II	Based upon DSC-I and DSC-II
	II	DSC-I	B. Voc. Paper- I	Nutritional Bio-chemistry
		DSC-II	B. Voc. Paper-II	Medical Nutritional Therapy
		DSC-P-I	B. Voc. Practical–II	Based upon DSC–I and DSC -II
	III	DSC-I	B. Voc. Paper- I	Sports Nutrition (Psychological and Counseling)
		DSC-II	B. Voc. Paper-II	Clinical Testing and Food Analysis
		DSC-P-I	B. Voc. Practical-III	Based upon DSC–I and DSC -II
	OE -II	Open Elective-II	Theory(2)	Human Development/ Public Health Nutrition
	VEC	Value Education Course	Theory(2)	Democracy, Election and Good Governance

Eligibility for Admission:10+2 from any faculty or equivalent Diploma/Advanced Diploma in any related stream.

Eligibility for Faculty:

1) M.Sc.(Nutrition and Dietetics) with NET /SET/Ph.D.
2) M.A. (English) with NET/SET for Business Communication Eligibility for Laboratory Assistant: B.Sc.(Nutrition and Dietetics)/ Diploma in Nutrition and Dietetics.

Staffing Pattern Teaching: a) In 1st Year of B. Voc. - 1 Full Time and 2 Visiting Lecturers for Nursing and Hospital Management and 1 CHB Lecturer for Business Communication Lab Assistant: For 1st Year of B. Voc. - 1 Part time

SHIVAJI UNIVERSITY,KOLHAPUR
Nutrition and Dietetics NEP Syllabus with effect from June 2025
Course - 1, B. Voc. Nutrition and Dietetics - Semester-I, DSC-I
Paper-I Fundamentals of Food Science

Theory : 30Hours **(Credits:02)**

Course Outcomes: The students will acquire knowledge of

1) Study of food science.
2) Study of food groups.
3) Study of cooking food methods.
4) Study of processing and preservation.

Unit I : Introduction to food science 9Hrs.

- Definition of food, food science
- Study of food science
- Functions of food
-

Unit II : Food Groups 6Hrs.

- Based on Food science
- Based on ICMR
- Based on Basic Five Group.

Unit III : Cooking food Methods 7Hrs.

- Objectives and importance of food cooking Methods
- Classification of cooking methods
- Changes due to cooking in the following food groups: Milk and Milk products, eggs, meat, poultry, sea food,

Unit IV: Food processing and preservation 8Hrs.

- Principles of food preservation
- Importance of food preservation
- Methods of preservation – Dehydration, freezing and canning, radiation, use of microwaves, home-scale methods of preservation and fermentation.

Reference Books:

- Chakroborty (1988). Post Harvest Technology of Cereals, Pulses and Oilseeds, (revised Ed.), Oxford & IBH publishing Co. Pvt. Ltd.
- Charley, H (1982), Food Science, (2nd), John Wiley & Sons Publication
- Frazier W.C. and Westhoff, D.C. (2004) Food Microbiology, TMH, New Delhi.
- Girdharilal, siddappaa, G.S. and Tanden, G.I. (1998), Preservation of fruits and vegetables, ICAR, New Delhi.
- Raw I. S. (2013), Food Quality Evaluation (1st Ed.)

SHIVAJI UNIVERSITY,KOLHAPUR
Nutrition and Dietetics NEP Syllabus with effect from June 2025
Course - 1, B. Voc. Nutrition and Dietetics - Semester-I, DSC-II
Paper - II Basic Nutrition

Theory : 30Hours **(Credits:02)**

Course Outcomes: The students will acquire knowledge of

1. Study the fundamental concept of Basic Nutrition.
2. Study the basic types of food groups and nutrients.
3. Understand the importance of health status.

Basic Nutrition

Objectives

- To create a better understanding of the basic aspects of human nutrition by providing information on the current concepts of nutritional principles
- To give a simple account of the metabolism and functions of the major dietary constituents and their nutritional and clinical importance.
- To study the interrelationships between nutrients along with their recommended allowances and food sources so as to enable students to become aware of the importance of a balanced diet based on sound nutritional

Unit I : Introduction to Nutrition, 8Hrs.

- Definitions: Food, nutrition, Health, Nutrients and functions of Nutrients, different status of nutrition, signs of good and poor nutritional status,
- Functions, digestion, absorption and metabolism of food Buccal digestion, gastric digestion and intestinal digestion, factors that affect digestion, absorption and metabolism, Five food groups, dietary guidelines and food pyramid
- Energy Metabolism: Introduction, unit of measurement, energy value of food- calorimetric or Bi-proximate composition; energy needs of the body- reference man and reference woman; basal metabolic rate, factors affecting the BMR,RDA

Unit II : Carbohydrates 7Hrs.

- Introduction, classification and functions of carbohydrates,
- Digestion, absorption and metabolism, deficiency, excess, RDA and source
- Role of dietary fiber in prevention and treatment of diseases

Unit III : Lipids: 6Hrs.

- Introduction, classification of lipids, functions of fat,
- Digestion, absorption and metabolism of fat,
- Deficiency, excess, food sources and RDA

Unit IV : Proteins: 9Hrs.

- Introduction, classifications of proteins, nutritional classification of amino acids protein quality - biological value, net protein utilization, protein efficiency ratio. Function,
- Digestion, absorption and metabolism of protein
- Deficiency, excess sources and requirements.

Reference Books:

- Agarwal A, & Udipi S.A. (2014). Text Book of Human Nutrition. New Delhi, Jaypee Brothers Medical Publisher (P) Ltd.
- Carolyn, D. (2013) Nutrition Decision, Burlington : Jones & Barlett learning.
- Dunn, C (2013). Nutrition Decisions Burlington : Jones & Barlett publishers.
- Edin, G & Golanty, E (2004) Health and Wellness, (8th Ed.) Burlington : Jones & Barlett publishers.
- Gopalan, C, Rama S & Balasubramaniam, S.C. (2004) Nutritive Value of Indian Foods, Hyderabad, NIN, ICMR.
- Joshi, S.A. (2000) Nutrition and Dietetics (8th Ed.) New Delhi, TATA McGraw Hill Publishing Co. Ltd.

SHIVAJI UNIVERSITY,KOLHAPUR
Nutrition and Dietetics NEP Syllabus with effect from June 2025
Course - 1, B. Voc. Nutrition and Dietetics - Semester-I, DSC-I
Practical Paper-I : Fundamentals of Food Science & Basic Nutrition

Credits: 02

Course Outcomes: The students will acquire knowledge of

1) Changes occurring in the foods as a result of cooking and processing.
2) Get practical knowledge in various applications as preparation of food.

List of Practical's:

Group - I

1) Effect of cooking methods (boiling, steaming, frying, baking, roasting) on taste, texture, color.
2) Study of gelatinization (thickening of starch).
3) Study of coagulation of proteins (milk, egg, pulses).
4) Effect of pH on food (curdling of milk, browning in fru

Group - II

1. Food types and source of nutrients.
2. Prepared a dish rich in carbohydrates
3. prepared a dish rich in protein.
4. Prepared a dish rich in fat.
5. Prepared a dish rich in dietary fiber.
6. Calculate the energy value of food product by using calorimeter.

Reference Books:

- Agarwal A, & Udipi S.A. (2014). Text Book of Human Nutrition. New Delhi, Jaypee Brothers Medical Publisher (P) Ltd.
- Carolyn, D. (2013) Nutrition Decision, Burlington : Jones & Barlett learning.
- Dunn, C (2013). Nutrition Decisions Burlington : Jones & Barlett publishers.
- Edin, G & Golanty, E (2004) Health and Wellness, (8th Ed.) Burlington : Jones & Barlett publishers.
- Gopalan, C, Rama S & Balasubramaniam, S.C. (2004) Nutritive Value of Indian Foods, Hyderabad, NIN, ICMR.
- Joshi, S.A. (2000) Nutrition and Dietetics (8th Ed.) New Delhi, TATA McGraw Hill Publishing Co. Ltd.

SHIVAJI UNIVERSITY,KOLHAPUR
Nutrition and Dietetics NEP Syllabus with effect from June 2025
Course - 2, B. Voc. Nutrition and Dietetics - Semester-I, DSC-I
Paper-I Biochemical Basics of Nutrition

Theory : 30Hours **(Credits:02)**

Course Outcomes: The students will acquire knowledge of

1. Types of clinical sample
2. Physical, chemical and microscopic examination of urine
3. Physical, chemical and microscopic examination of stool
4. Physical, chemical and microscopic examination of semen
5. Clinical methods to analyse sample.

Content of syllabus:

S. No	Topic	Domain
Module 1 **(9 Hrs)**	**Basics of energy metabolism, nutrition & dietetics –** • Unit of measuring energy • calorific value of food • BMR & factors affecting it • SDA of food • calculation of energy requirement, • balanced diet • Nutrition in health & diseases (protein energy malnutrition)	**Must Know** • Definition of energy • Unit of energy i.e. calories and joules • Energy Balance i.e. positive & negative energy balance • Basal Metabolic Rate:- ▪ Factors considered while measuring BMR ▪ Factors affecting BMR • Calculation of energy • Definition of Balance diet **Desirable to know** • Food sources that provide energy • Nutrition in health & diseases **Nice to know** • Energy value of different nutrients • Factors considered in planning balance diet

Module 2 **(6 Hrs)**	**Chemistry of carbohydrates & their related metabolism –.** • Introduction • Definition • Classification • Biomedical importance Brief outline of metabolism: Glycogenesis • Glycogenolysis • Glycolysis, • Citric acid cycle & its significance, • HMP shunt • Gluconeogenesis regulation of blood glucose level	**Must Know** • Definition of carbohydrate • Classification of carbohydrate • Definition of glycolysis • Reactions of glycolysis • Definition of citric acid cycle • Reactions of citric acid cycle • Pathway of gluconeogenesis • Pathway of glycogenolysis • Location of HMP Shunt pathway • Reaction of HMP Shunt pathway • Metaboli and hormonal mechanism of glucose homeostasis **Desirable to know** • biomedical importance of carbohydrate • digestion & absorption of carbohydrate • key reactions of gluconeogenesis • regulation of glycogen metabolism • stages of maintenance of blood glucose level **Nice to know** • Properties of monosaccharide • Metabolism of glucose • Glucose transport and insulin secretion • Sites of gluconeogenesis • Glycogen storage disease
Module 3 **(7 Hrs)**	**Amino acids –** • Definition • classification • Essential &non essential amino acids	**Must Know** • Definition of amino acids • Classification of amino-acids • Difference between essential &non essential amino acids **Desirable to know** • Properties of amino acids • Peptide Bonds **Nice to know** • Biomedical importance

Module 4 **(8 Hrs)**	**Chemistry of Proteins & their related metabolism –.** • Introduction, • definition, • classification, • biomedical importance Metabolism: o Transformation o Decarboxylation o Ammonia formation & transport • Urea cycle	**Must Know** • Definition of protein • Classification of proteins • Urea cycle • Digestion, absorption process **Desirable to know** • Structure of protein • Functions of protein • **Nice to know** • Biomedical importance • Denaturation of proteins

Books Recommended:

- Nutritional Biochemistry and the Discovery of Vitamins: the Work of Elmer Verner Mc Collum May 2002Journal of BiologicalChemistry277(19):e8-e10
- DOI:10.1016/S0021-9258(19)60665-4Authors:RobertD.Simoni
- Basic and Applied Biochemistry, Nutrition and Dietetics for Nursing,3e Paperback–1November2021bySheilaJohnandJasmineDevaselvam(Author)3.0outof5
- Teitz,*ClinicalChemistry*.W.B.SaundersCompanyHarcourt(India)Private Limited New Delhi.
- Vasudevan D. & Sree Kumari S., *Text Book of Bio Chemistry for Medical Students*, Jaypee Brothers, New Delhi.
- Biochemistry, U.Satyanarayan, Books and Allied(P) Ltd. Kolkata-India
- Das Debajyothi, *Biochemistry*, Academic Publishers Calcutta.
- Textbook of Medical Laboratory Technology, P.B. Godkar 2nd Edn.2003 Bhalani Publication.
- Handbook of Biochemistry, M.A.Siddique 8th Edn.1993 Vijay Bhagat Scientific Book Co., Patna.

SHIVAJI UNIVERSITY,KOLHAPUR
Nutrition and Dietetics NEP Syllabus with effect from June 2025
Course - 2, B. Voc. Nutrition and Dietetics - Semester-I, DSC-II
Paper - II Clinical Dietetics

Theory : 30Hours **(Credits:02)**

Course Outcomes: The students will acquire knowledge of

1. Knowledge of medicine.
2. Assesment of dietary programme in different age group.
3. Knowledge of community health programme.
4. Knowledge of physiology.
5. Information of food organization and agencies.

Content of syllabus:

Module - 1 :- Applied Nutrition & Food safety **(6 Hrs)**

1. Assessment of nutritional status of different age groups
- Infants, preschoolers, children, adolescents, adults & elderly
- Pregnant & lactating females
2. Planning diet for different age groups as per their nutrient requirements & factors affecting their nutritional needs
- Infants, preschoolers, children, adolescents, adults & elderly
- Pregnant & lactating females
3. Major nutrition related community health problems – PEM, anemia, iodine deficieny, vitamin A deficiency, scurvy, beriberi, pellagra, fluorosis etc.
4. Inborn errors of metabolism in brief
5. Management of diet in different types of institutional settings
6. Quality Control - National & International food safety regulating agencies & organizations

Module - 2 : Molecular Nutrition **(8 Hrs)**

1. The molecular nutrition paradigm
2. Nutritional physiology and biochemistry
3. Nutriepigenomics & metabolomics
4. Dietetics & molecular gastronomy
5. Molecular nutrients targeting with diet

Module - 3 :- Therapeutic Nutrition **(9 Hrs)**

1. Factors in patient care, counselling and co-ordinated nutritional services for the patient, feeding the patient, psychological aspects & assessment of patient's needs – Different nutritional assessment tools for patients (MUST, SGA, MNA etc)

2. RDAs & Dietary guidelines for Indians
3. Physiological changes & diet for different types of infections (Fevers)
4. Physiological changes & diet for GI disorders
5. Physiological changes & diet for Cardiac disorders
6. Physiological changes & diet for pulmonary disorders
7. Physiological changes & diet for kidney disorders

Module- 4 Advanced Nutrition (7 Hrs)

1. Planning diet for different conditions studied in theory like -
- Different Sports
- Weight management programmes
- Planning diet for stress condition
- Disaster diet management plan
- Space nutrition diet plan

REFERENCE BOOKS

1. Simpson & Kafka: Basic Statistics (Oxford & I.B.H. Publishers)
2. Gupta S.P.: Statistical Methods (Sultan Chand & Co.)
3. Goon, Gupta, Das: Fundamentls of statistics, Vol I and II. Gupta
4. Phillip B.S. : Social research, strategy &techtics.
5. Devdas R.P.: Hand book of Research Methodology. Kulandaivel (Sri RamKrishna Mission Vidyalaya 1971)
6. Food Science- B. Srilakshmi.
7. Norman P.N. Food Science, The AVI Publishing Co. 1962.
8. Charley H. Food Science John Wiley & Sons, 1982.
9. Text book of Human Nutrition. Bamji, Rao& Reddy
10. Therapeutic nutrition. B.Srilakshmi

SHIVAJI UNIVERSITY,KOLHAPUR
Nutrition and Dietetics NEP Syllabus with effect from June 2025
Course - 2, B. Voc. Nutrition and Dietetics - Semester-I, DSC-I
Practical Paper-I : Biochemical Basics of Nutrition and Clinical Dietetics

Credits: 02

Course Outcomes: The students will acquire knowledge of

1. Use basic laboratory skills and apparatus to obtain reproducible data from biochemical experiments
2. Analyse, interpret and participate in reporting to their peers on the results of their laboratory experiments.
3. Participate in and report orally on team work investigation of problem based assignments.

List of Practical's: Group - I

1. Identification of carbohydrates (Qualitative Tests).
2. Identification of proteins (Qualitative Tests).
3. Estimation of glucose in urine by Benedict’s methods.
4. Determination of activity of human salivary amylase.
5. Separation of amino acids by thin layer chromatography.

List of Practical's: Group - II

1. Estimation of protein by Biuret method.
2. Separation of amino acids circular paper chromatography.
3. Estimation of glucose by DNS method.
4. Construction of maltose calibration curve.
5. Separation of amino acid by ascending chromatography.

SHIVAJI UNIVERSITY,KOLHAPUR
Nutrition and Dietetics NEP Syllabus with effect from June 2025
Course - 3, B. Voc. Nutrition and Dietetics - Semester-I, DSC-I
Paper-I Sports Dietetics and Nutrition

Theory : 30Hours **(Credits:02)**

Course Outcomes:

- To enable students to understand.
- Importance or holistic fitness for health.
- Role or exercise and nutrition in fitness nutritional needs and problems or sports personal.

UNIT-1 SPORT NUTRITION (3 Hours)

- Introduction

UNIT-2 Evaluation and growth of sport nutrition (4 Hours)

- Importance of carbohydrate loading

UNIT-3 Pregame and Post game Meals (3 Hours)

UNIT -4Approach to the management of illness and health (4 Hours)

- Nutrition, exercise, physical fitness and health their interrelationship.

References:

- Nutrition and Metabolism in Sports, Exercise and Health 2nd Editionby Jie Kang (Author)
- Bigger Leaner Stronger: The Simple Science of Building the Ultimate Male Body Paperback – March15, 2019by Michael Matthews
- The Plant-Based Boost: Nutrition Solutions for Athletes and Exercise Enthusiasts Paperback – May27, 2019

Note : (If any such as)

1. In theory examination, the weightage to numerical problems should not exceed 30%
2. Students can use scientific calculators in theory examination.

SHIVAJI UNIVERSITY,KOLHAPUR
Nutrition and Dietetics NEP Syllabus with effect from June 2025
Course - 3, B. Voc. Nutrition and Dietetics - Semester-I, DSC-II
Paper - II Clinical Testing and Diagnostics

Theory : 30Hours **(Credits:02)**

Course Outcomes:

- To develop the skills on the qualification technique of various components.
- Students will have a thorough understanding on the working principle and instrumentation of various instrument in clinical analysis.
- The students will know the importance of various methods to identify any malfunctions aspect of food.

Unit - I : Bioanalytical Chemistry & Enzymology (9 Hours)

a) Standardization of acids and alkalies
b) Preparation of buffers, indicators and use of pH meter
c) Paper chromatography of amino acids and sugars
d) Isolation, calculation of percent yield of amylase from sweet potato and study of optimum pH, Km
e) Estimation of Acid Phosphatase

Unit- II : Isolation, Preparation & Extraction (6 Hours)

a) Casein from milk
b) Cholesterol from egg yolk
c) Lycopene from tomatoes
d) Albumin & globulin from egg whites

Unit - III : Clinical Analysis (from blood, serum) Estimation of: (8 Hours)

a) Glucose by Folin- Wu Method, GOD/POD
b) Lipid profile- Triglycerides & cholesterol
c) Protein by Biuret, Fehn-Lowry
d) Estimation of Iron
e) Estimation of Calcium
f) Estimation of phosphorus

Unit - IV : OIL Extraction In Milk And Food seeds. (7 Hours)

Types, Method etc,

References

- Bayens Dominiezak – Medical biochemistry, Mosby Publishers, Harcourt, 1999 Brave Robert D – Introduction to Instrumental Analysis, McGraw Hlll Book Co, New York Chatterjee and Rana Shinde Medical - Biochemistry Dandekar, S. P., Rane S. A. (2004).
- Practicals & Viva in Medical Biochemistry, New Delhi: Elsevier/Reed Elsevier Feitz – Clinical Chemistry Frelfelder D- Physical Biochemistry.
- Skoog Douglas A – Principles of InstrumentalAnalysis Harcourt Brace publishers, London Gill CV – Short cases in clinical biochemistry, Churchill Livingston, Edinburgh, 1984 Godkar, P. B. (2003).
- Textbook of Medical Laboratory Technology 2nd Ed. Mumbai. Bhalani Publishing House. Greenberg David M – Metabolic Pathways. Vols. 2 and 3, 3rd editions. Academic Press, New York Harvey David
- Modern Analytical Chemistry, International editi Henry Richard et al – Clinical Chemistry, Principles and Techniques, 2nd edition, Harper and Row, New York Holme David J – Problem solving in analytical biochemistry, H & Longman Sc. And Tech, Essex India Pvt Ltd. Jayaram J., (1981)
- Laboratory Manual in Biochemistry, New Delhi: Wiley Eastern Ltd. John Bernard Henry, Clinical Diagnosis and Management by Laboratory Methods, Saunders publications, 20theition Kamal SH – Clinical Biochemistry for Medical Technologies, Churchill Livingston, London Methods in Enzymology
- Kaplan Murrary Robert – Harper's biochemistry, 24th edition, Prentice Hall International UK LTD, 1990 Nelson DI, Cox MM – Lehninger Principles of Biochemistry Ninfa Alexander J and Ballou David P
- Fundamental Laboratory Approaches for Biochemistry and Biotechnology, Fitzgerald Science Press, Bethesda on, McGraw, Hlll, Boston Pearson, D. (1970). Chemical Analysis of Foods, (6th Ed), London:
- T.A. Churchill. Plummer, D. T. (1979). Introduction to Practical Biochemistry. Bombay: Tata McGraw Hill Pub. Co. Ltd. Practical Biochemistry by David Plummer RaoRanganathan – Text book of biochemistry 3rd edition, Prentice Hall, New Delhi Rodney.

SHIVAJI UNIVERSITY,KOLHAPUR
Nutrition and Dietetics NEP Syllabus with effect from June 2025
Course - 3, B. Voc. Nutrition and Dietetics - Semester-I, DSC-I
Practical Paper-I : Sports Dietetics and Nutrition and Clinical Testing and Diagnostics

Credits: 02

Course Outcomes:

The students will acquire knowledge of

- Gym diet plan.
- Counseling and exercise assignments.
- Losing body fat.
- Eating strategies.
- Gym visit.

Each one 2 practical's

Group - I

1. Visit to Gym
2. Five types of gym diet plan
3. Case studies of gymnastic persons
4. Counselling and exercise assignments.
5. Losing body fat.

Group - II

1. Sprints, Jumps throws and multi-events.
2. Eating strategies for the distance runner of walker.
3. Exercise in hot climate.
4. Exercise in cold climates.

References:_

- Nutrition and Metabolism in Sports, Exercise and Health 2nd Editionby Jie Kang (Author)
- Bigger Leaner Stronger: The Simple Science of Building the Ultimate Male Body Paperback – March15, 2019by Michael Matthews
- The Plant-Based Boost: Nutrition Solutions for Athletes and Exercise Enthusiasts Paperback – May27, 2019

SHIVAJI UNIVERSITY,KOLHAPUR
Nutrition and Dietetics NEP Syllabus with effect from June 2025
B. Voc. Nutrition and Dietetics - Semester-I, OE-I
Paper Title: Human Development/Public Health Nutrition

(Credits:02)

Course Outcomes: The students will acquire knowledge of

1. Use basic laboratory skills and address individual nutritional needs .
2. Analyse, interpret and participate in reporting to their peers on the results of their laboratory experiments.
3. Participate in and report orally on team work investigation of problem based assignment.

Pre requisites Note: (If Any- such as Knowledge of the topics in the theory papers.)

1. Planning of low cost nutritious recipes for infants, preschoolers,
2. Assessment of nutritional status:
   - Anthropometry – weight and height measurements
   - Plotting and interpretation of growth charts for children below 5 years
   - Identification of clinical signs of common nutritional disorders
   - Dietary assessment – FFQ and 24 hour diet recall 2. Planning and conducting a food demonstration.
3. Planning of low cost nutritious recipes for pregnant/nursing mothers.
4. Planning a recepie for obese person
5. Planning a recepie for Diabetes Mellitus patient.
6. Planninga recepie for PEM patient.
7. Planninga low cost recepie for infants .
8. Planninga low cost recepie for preschoolers .
9. Interpritation of Midday meal programme.
10. Plan a diet for coronary artery disease .

SHIVAJI UNIVERSITY,KOLHAPUR
Nutrition and Dietetics NEP Syllabus with effect from June 2025
B. Voc. Nutrition and Dietetics - Semester-I,
Paper Title: Indian Knowledge System (IKS)

SHIVAJI UNIVERSITY,KOLHAPUR
Nutrition and Dietetics NEP Syllabus with effect from June 2025
Course - 1, B. Voc. Nutrition and Dietetics - Semester-II, DSC-I
Paper - I : Human Anatomy

Theory : 30Hours **(Credits:02)**

Course Outcomes: The students will acquire knowledge of

1. Study the fundamental concept of Human Anatomy.
2. Understand nature and types of Human Anatomy.
3. Understand the health status.

Unit I : **Lower Extremity** 9Hrs.

Abdomen -Quadrants of abdomen,
Stomach and duodenum,
Liver, Spleen
Pancreas
Small intestine, large intestine

Unit II: System 6Hrs.

- Male Reproduction System
- Female reproduction System
- Bones of Lower Limb
- Muscles of Lower Limbs

Unit III: Renal System 8Hrs.

- Physiological anatomy: nephrons – cortical and juxtamedullary. Juxtaglomerullar apparatus, blood flow and its regulation, function of kidneys.
- Mechanism of Urine formation, Globular Filtration ,GFR, Insulin Clearance, Concentration and dilution of Urine, Acid base balance
- Endocrine system
  Introduction, functions, local Hormones

Unit IV: Reproduction System 7Hrs.

- Introduction ,Sex determination, sex differentiation
- Male and female reproduction system ,functions of testes, ovaries and uterus , menstrual cycle, menarche, menopause
- CNS and ANS
- Cerebellum, Thalamus and hypothalamus, nuclei functions
- Special senses

Reference Books:

- SNELL (Richard S), Clinical Anatomy for Medical Students. Ed. 5 Little Brown and Company Boston, 1995.
- MOORIE (Kieth L.) Clinically oriented Anatomy Ed. 3 williams and wilkins Baltimore 1952.
- Datta A. K. Essentials of human Anatomy : Head and Neck & Ed. 2 Vol. II Current Book International Calcutta 1954.
- SING (Inderbir). Textbook of anatomy with colour atlas : introduction, osteology upper extremity, Vol. I, JP Brothers, New Delhi 1996.
- B.D. CHAURASIA'S Human Anatomy - Regional, ANO Applied, Volume I, Volume II and Volume III.

SHIVAJI UNIVERSITY,KOLHAPUR
Nutrition and Dietetics NEP Syllabus with effect from June 2025
Course - 1, B. Voc. Nutrition and Dietetics - Semester-II, DSC-II
Paper - II : Clinical Nutrition & Diet Therapy

Theory : 30Hours **(Credits:02)**

Course Outcomes: The students will acquire knowledge of

1. Study of fundamental concept of Clinical Nutrition and Diet Therapy.
2. Study of concepts of health and public health nutrition.
3. Study of major nutritional problems in developing countries.

Clinical nutrition Or Diet Therapy Or applied nutrition Or Public health

Objectives

- To enable the students to understand Nutrition and Health situations in India.
- Their role as a dietitian in improving the nutritional and Health Status of the vulnerable groups and the overall community.
- Acquire skills in assessing Nutritional status of the people, skills in communications and planning, organizing abilities required for conducting nutrition education programmes
- Develop the right attitudes towards working in the communities.

Unit I : Relation of health and nutrition 7Hrs.

- Concept of Health, Nutrition and Public Health Nutrition
- Demographic trends in India and the significance of certain indices of Health and Nutrition situation of a community. (IMR, MMR, TFR, Birth rate, Death rate, Life expectancy etc.)
- Major Nutritional problems in developing countries – PEM, Night blindness, Nutritional anaemia, Endemic, Goitre, Rickets, Osteomaleria, Beriberi, Pellagra etc.

Unit II : Role of a dietician 8Hrs.

- Education and personal qualifications,
- Role and responsibilities of a dietitian, nutrition counseling
- Professional ethics and obligations, Career opportunities for dietitians

Unit III : Dietary surveys 6Hrs.

- Methods, ways of interpretations
- Analysis, recommendations based on survey findings

Unit IV : Nutritional status 9Hrs.

Assessment of Nutritional status – Nutritional Anthropometry, Biochemical assessment and **observations for clinical signs –** Interpretations of the result, comparisons with the standards, **Suggestions/ recommendations –** growth monitoring for children below 10 years. 15
Diet Therapy – rationale for diet therapy (The normal diet, Modifications of the diet to the light diet, soft diet, full liquid diet, clear liquid diet, Tube feedings);
Routes for diet therapy – enteral and parental; use of biochemical parameters in the planning of diets.

Reference Books:

- Anderson, Liennea, Dibble, Marjarie, Turkki, P.R. Mitchell, Helen & Rynbergen, Henderika (1982), "Nutrition in Health and Disease" 17th Edition J.B. Lippincott Co. Philadelphia.
- Antia F. P. (1989) "Clinical Dietetics and Nutrition" 3rd Edition Oxford University, Press, Bombay.
- Bennion Marion (1979) "Clinical Nutrition" Harper and Row Publishers Inc., New York.
- Swaminathan M.S.1985 Essential of foods and nutrition, the Bangalore Printing & Publishing Company Ltd.
- Shukla P.K. (1982) Nutritional Problems in India, Prentice - Hall of India, Private Limited, New Delhi.
- Barbara Luke (1986) Principles of Nutrition and Diet therapy, Little, Brown and Company, Boston.

SHIVAJI UNIVERSITY,KOLHAPUR
Nutrition and Dietetics NEP Syllabus with effect from June 2025
Course - 1, B. Voc. Nutrition and Dietetics - Semester-II, DSC-P-I
Practical Paper-I : Human Anatomy and Clinical Nutrition & Diet Therapy

Credits: 02

Course Outcomes: The students will acquire knowledge of

1) Study of fundamental concepts of Human Anatomy.
2) To understood the health status.
3) Understand the nature and types of HumanAnotomy.

List of Practical's:

Group - I

1. Upper extremity including surface Anatomy
2. Head, Spinal cord, Neck and Brain Including Surface Anatomy
3. Embryology – models, chart and X- rays

   - Demonstration of the muscles of the whole body and organs in thorax and abdomen in a cadaver
   - Surface making of the lung, pleura, fissures and lobes of lungs, heart, liver, spleen

Group - II

1. Planning ,preparation and demonstration of low cost nutrient rich recipes
2. Plan a diet for pregnant, lactating women
3. Plan a diet for different stages of school going children
4. Plan a diet for adults.
5. Plan a diet for Older.
6. Nutrition Education
   - Arrange Nutritional Programme
   - Teaching Aids
   - Nutrition message
   - Street play
7. Visit to different N.G.O’s

Reference Books:

- SNELL (Richard S), Clinical Anatomy for Medical Students. Ed. 5 Little Brown and Company Boston, 1995.
- MOORIE (Kieth L.) Clinically oriented Anatomy Ed. 3 williams and wilkins Baltimore 1952.
- Datta A. K. Essentials of human Anatomy : Head and Neck & Ed. 2 Vol. II Current Book International Calcutta 1954.
- SING (Inderbir). Textbook of anatomy with colour atlas : introduction, osteology upper extremity, Vol. I, JP Brothers, New Delhi 1996.
- B.D. CHAURASIA'S Human Anatomy - Regional, ANO Applied, Volume I, Volume II and Volume III.

SHIVAJI UNIVERSITY,KOLHAPUR
Nutrition and Dietetics NEP Syllabus with effect from June 2025
Course - 2, B. Voc. Nutrition and Dietetics - Semester-II, DSC-I
Paper - I : Nutritional Bio-chemistry

Theory : 30Hours **(Credits:02)**

Course Outcomes: The students will acquire knowledge of

1. The Importance of biochemistry.
2. The concepts and theory of biochemistry.
3. The students understand the fundamental energetics of biochemical processes, their functionalities.

Content of syllabus:

Enzymes **8 Hrs.**

- Introduction
- definition
- classification
- coenzymes
- isoenzymes
- properties
- factors affecting enzyme action
- enzyme inhibition

Acid base balance concepts & disorders **7 Hrs.**

- pH
- Buffers
- Acidosis
- Alkalosis

Hormones **6 Hrs.**

- Classification,
- general mode of action,
- hormones of
- Pituitary,
- Thyroid,
- Parathyroid,
- Adrenals,

Hyperglycemia & hypoglycemia **9 Hrs.**

Diabetes mellitus –

- Definition
- Types
- Features
- Gestation diabetes mellitus
- Glucose tolerance test

Books Recommended:

- Nutritional Biochemistry and the Discovery of Vitamins: the Work of Elmer VernerMcCollumMay 2002Journal of Biological Chemistry 277(19):e8-e10
- DOI:10.1016/S0021-9258(19)60665-4Authors:Robert D. Simoni
- Basic and Applied Biochemistry, Nutrition and Dietetics for Nursing, 3e Paperback – 1 November 2021by Sheila John and Jasmine Devaselvam (Author)3.0 out of 5
- Teitz, *Clinical Chemistry*. W.B. Saunders Company Harcourt (India) Private Limited New Delhi.
- Vasudevan D. & Sree Kumari S., *Text Book of Bio Chemistry for Medical Students*, Jaypee Brothers, New Delhi.
- Biochemistry, U. Satyanarayan, Books and Allied (P) Ltd. Kolkata-India
- Das Debajyothi, *Biochemistry*, Academic Publishers Calcutta.
- Text book of Medical Laboratory Technology, P.B. Godkar 2nd Edn. 2003 Bhalani Publication.
- Handbook of Biochemistry, M. A. Siddique 8th Edn.1993 Vijay Bhagat Scientific Book Co., Patna.

SHIVAJI UNIVERSITY,KOLHAPUR
Nutrition and Dietetics NEP Syllabus with effect from June 2025
Course - 2, B. Voc. Nutrition and Dietetics - Semester-II, DSC-II
Paper - II : Medical Nutrition Therapy

Theory : 30Hours **(Credits:02)**

Course Outcomes: The students will acquire knowledge of

1. Knowledge of medical science and physiological factors.
2. Assesment of dietary programme in different deficiency disorder.
3. Knowledge of community health programme.
4. Knowledge of molecular nutrition.
5. Importance of quality control of food.

Content of syllabus:

Module - 1 : Applied Nutrition & Food safety **(7 Hrs)**

1. Quality Control - National & International food safety regulating agencies & organizations
   - FSSAI & its rules & regulations to maintain food quality & holistic wellness
   - Safe food practices as per FSSAI, nutrition labelling & carbon foot prints of food
2. Quality evaluation & Techniques -
   - Sensory evaluation – Colour, texture, flavour & taste, different tests & methods of sensory evaluation of foods
   - Bacteriological & nutritional quality evaluation for food products
   - Statistical methods used in quality control
   - Food adulteration & food toxicities including food borne illness
3. Food safety &contamination : Naturally occuring toxins & antinutritional factors (lathyrism, Epidemic dropsy), contamination of food (Chemical, heavy metal & pesticide residue) fungal aflatoxic hepatitis, enteroergotism & my cotoxicosis.

Module - 2 : Molecular Nutrition **(8 Hrs)**

1. Dietary supplements & nutraceuticals
2. Survey of target molecules
3. Survey of nutrient molecules
4. Targeting Foodome – Metabolome Interaction: a combined Modeling Approach
5. Metabolic syndrome in relation to different diseases

Module - 3 : Therapeutic Nutrition **(6 Hrs)**

1. Physiological changes & diet for liver disorders
2. Physiological changes & diet for neurological disorders
3. Physiological changes & diet for different types of cancers, burn

4. Nutritional care in pre & post surgey
3. Physiological changes & diet for different types of cancers, burn
4. Nutritional care in pre & post surgey patients including bariatrics
5. Physiological changes & diet for different types of autoimmune disorders

Module - 4 :- Advanced Nutrition (9 Hrs)

1. Presentations based on traditional & modern developments in
   - Fermented foods
   - Antioxidants
   - Functional foods
   - Organic foods

Books Recommended: (List of Minimum 5 books)

1. Nutrition & Dietetics & Nutrition. Antia F.P. & Abraham P.
2. Human Nutrition & Meal Planning. Sheel Sharma
3. Nutritional problems of India :Shukla P.K.
4. Catering Management – Mohini Shetty & Surjeet Malhan
5. Normal & Therapeutic nutrition. Robinson CH, Lawler MR, Chenoweth WL and Garwick AW (1986) 17th Ed. Macmillan Publishing Company, Newyork,, Collier Macmillan Canada, Inc. Toronto, Collier Macmillan publishers, London.
6. Textbook of biochemistry by E.S. West, W.R. Todd, H.S. Nelson, T.T. Van Brugger, Oxford I.B.H. Publishing Co., New Delhi, Bombay, Calcutta.
7. Lehninger, A.L. Biochemistry, Worth Publishing Inc. N.Y.
8. Textbook of biochemistry for Medical Students by A.V.S. Rama Rao, L.K. & S. Publishers, Tanaku
9. Molecular Nutrition – The Practical Guide. Jeffrey I, Mechanick MD, Michael A., Via MD and Shan Zhao, Endocrine Press, 2018.
10. Nutrition care & therapeutic nutrition. Krause.
11. Normal & Therapeutic nutrition. Robinson CH, Lawler MR, Chenoweth WL and Garwick AW (1986) 17th Ed. Macmillan Publishing Company, Newyork,, Collier Macmillan Canada, Inc. Toronto, Collier Macmillan publishers, London.
12. Modern nutrition in health & disease. Shils M.E. And Young V.R. Bombay K.M. Verghese Company (vi edition 1988)

SHIVAJI UNIVERSITY,KOLHAPUR
Nutrition and Dietetics NEP Syllabus with effect from June 2025
Course - 2, B. Voc. Nutrition and Dietetics - Semester-II, DSC-P-I
Practical Paper-II : Nutritional Bio-chemistry and Medical Nutrition Therapy

Credits: 02

Course Outcomes: The students will acquire knowledge of

1. Use basic laboratory skills and address individual nutritional needs .
2. Analyse, interpret and participate in reporting to their peers on the results of their laboratory experiments.
3. Participate in and report orally on team work investigation of problem based assignment.

Pre requisites Note: (If Any- such as Knowledge of the topics in the theory papers.)

List of Practicals:

Group - I

1) Learning anthropometric techniques – Recording & interpretation of height, weight, BMI, Fat percentage, waist hip ration, bone mineral density, skin fold thickness, chest, head & mid upper arm circumference, infant weight & length
2) Measurement of blood pressure and healthy recepie for hypertensive condition.
3) Measurement of temperature
4) Identify clinical signs and symptoms of PEM.

Group - II

1) Biochemical assessment of diabetes mellitus.
2) Calculate doses of dietary supplements.
3) Biochemical assessment of Anaemia.
4) Clinical aeesment of Liver cirrhosis patient.
5) Signs and symptoms of Parkinson disease with diet .
6) Procedure for Enteral and Parentaral feeding.

Reference

- Nutrition & Dietetics & Nutrition. Antia F.P. & Abraham P.
- Human Nutrition & Meal Planning. Sheel Sharma
- Nutritional problems of India :Shukla P.K.
- Catering Management – MohiniShetty&SurjeetMalhan
- Normal & Therapeutic nutrition. Robinson CH, Lawler MR, Chenoweth WL and Garwick AW (1986) 17th Ed. Macmillan Publihing Company, Newyork,, Collier Macmillan Canada, Inc. Toronto, Collier Macmillan publishers, London.
- Textbook of biochemistry by E.S. West, W.R. Todd, H.S. Nelson, T.T. Van Brugger, Oxford I.B.H. Publishing Co., New Delhi, Bombay, Calcutta

SHIVAJI UNIVERSITY,KOLHAPUR
Nutrition and Dietetics NEP Syllabus with effect from June 2025
Course - 3, B. Voc. Nutrition and Dietetics - Semester-II, DSC-I
Paper - I : Sport Nutrition (Psychological & Counseling)

Theory : 30Hours **(Credits:02)**

Course Outcomes:

The students will acquire knowledge of

- Sport Nutrition
- Importance of physical fitness
- Nutrition guideline for maintenance of health and fitness.
- Nutrition and requirement of exercise.

UNIT-1 SPORT NUTRITION

- Parameter of Fitness and Tests

UNIT-2 SIGNIFICANCE OF PHYSICAL FITNESS

- Nutrition in Prevention and management of weight control region.

UNIT-3 NUTRITION GUIDELINE FOR MAINTAINACE OF HEALTH AND FITNESS.

UNIT -4 NUTRITION AND REQUIREMENT OF EXERSICE

- Dietary Supplements & Ergogenic Aids.

References:_

- Nutrition and Metabolism in Sports, Exercise and Health 2nd Editionby Jie Kang (Author)
- Bigger Leaner Stronger: The Simple Science of Building the Ultimate Male Body Paperback – March15, 2019by Michael Matthews
- The Plant-Based Boost: Nutrition Solutions for Athletes and Exercise Enthusiasts Paperback – May27, 2019

SHIVAJI UNIVERSITY,KOLHAPUR
Nutrition and Dietetics NEP Syllabus with effect from June 2025
Course - 3, B. Voc. Nutrition and Dietetics - Semester-II, DSC-II
Paper - II : Clinical Testing/Food Analysis

Theory : 30Hours **(Credits:02)**

Course Outcomes :-

To develop the skills on the quantification technique of various components, allergens present in food products. Learning Outcome: Students will have a thorough understanding onthe working principle and instrumentation of various instruments used in food analysis. The students will knowthe importance of various methods to identify any malfunction aspect of food. 6 P.G. DEPARTMENT OF FSTN.

UNIT-I Nature and Concept of Food analysis,

Basic instrumentation: Principle for pH meter, Dialysis, ultra filtration, Reverse osmosis. Centrifugation: Principle, Theory (RCF, Sedimentation coefficient) and types of Rotors, Ultracentrifugation, Calorimetry: Bomb calorimeter, Principle of Rheological Analysis- Rheological parameters, rheological methods, instruments and application, Texture profile analysis, Densimetry, Refractometry,

UNIT-II Spectroscopic analysis of food components,

Principle, instrumentation & application of Colorimetric (colorimeter, colourflex), UV-Vis spectrophotometer, Spetroflurometer, IR, Atomic Absorption Spectroscopy, Mass spectroscopy, NMR and ESR.

UNIT-III Chromatography: Theory & Principle,
chromatographic parameter (partition coefficient, capacity factor, retention & dead time, Resolution& their calculation),components of chromatography & types (paper, thin layer, partition) Advance chromatography: GC,HPLC,HPTLC(principle, instrumentation &application). Separation technique & analysis: Electrophoresis: Paper & gel electrophoresis, PAGE, iso-electric focusing, 2D electrophoresis, Immuno electrophoresis.

UNIT-IV Isotopic &immune techniques:

Principle & theory of isotopic method, types, measurement &detection of radioactivity, Autoradigraphy, Immuno-techniques, Principle, antigen-antibody interaction, enzymatic immune assay-ELISA and its types. Different immuno techniques of antigen detection in food sample.

References:

1. Bioinstrumentation by .Veerakumari,
2. Biochemical & Molecular biology techniques. byWilson&Walker,
3. Food Chemistry, Aurand, L.W. and Woods, A.E. 1973.AVI, Westport.
4. Principles of Food Science: Part-I Food Chemistry. Fennema, O.R. Ed. 1976 Marcel Dekker, New York.
5. Methods in Food Analysis. Joslyn, M.A. Ed. 1970.Academic Press, New York.
6. Developments in Food Analysis Techniques-1. Applied Science King, R.D. Ed. 1978Publishers Ltd., London.
7. Separation Methods inBiochemistry 2nd Ed Morris, C.J. and Morris, P. 1976. PitmanPub., London.
8. An Introduction to Practical Biochemistry. Plummer, D.T. 1971Mc-Graw Hill Pub.Co., New York.
9. A Manualof Laboratory Techniques. Raghuramulu, N., Madhavan Nair, K., and Kalyanasundaram, S. Ed.1983.National Institute of Nutrition, ICMR, Hyderabad.

SHIVAJI UNIVERSITY,KOLHAPUR
Nutrition and Dietetics NEP Syllabus with effect from June 2025
Course - 3, B. Voc. Nutrition and Dietetics - Semester-II, DSC-P-I
Practical Paper-III : Sport Nutrition (Psychological & Counseling) and Clinical Testing and Food Analysis

Credits: 02

Course Outcomes:

The students will acquire knowledge of

- Types of exercise
- Research fitness
- Gym Results
- Drawback of fitness.

Pre-requisites Note (if any - Such a knowledge of the topics in the theory papers.)

List of Practical's

Group - I

1. Types of Exercise
2. Gym Results
3. Fitness researches
4. Drawback of fitness
5. Long Jump
6. Sukhasana
7. Vajrasana
8. Bhujangasana
9. Chakrasana
10. Chairstant Test

Group - II

1) Height, weight, BMI calculation
2) Waist–hip ratio measurement
3) Mid-upper arm circumference (MUAC)
4) Estimation of Hemoglobin (Sahli's method / Cyanmethemoglobin method)
5) Determination of Packed Cell Volume (PCV)
6) Differential WBC count
7) Blood glucose estimation (glucometer / GOD-POD method)
8) Serum cholesterol determination

9) Serum total protein and albumin estimation (Biuret method)
10) Serum calcium/phosphorus estimation
11) Physical examination (color, odor, volume)
12) Qualitative tests for glucose, albumin, ketone bodies
13) Specific gravity measurement

References:_

- Nutrition and Metabolism in Sports, Exercise and Health 2nd Editionby Jie Kang (Author)
- Bigger Leaner Stronger: The Simple Science of Building the Ultimate Male Body Paperback – March15, 2019by Michael Matthews
- The Plant-Based Boost: Nutrition Solutions for Athletes and Exercise Enthusiasts Paperback – May27, 2019

SHIVAJI UNIVERSITY,KOLHAPUR
Nutrition and Dietetics NEP Syllabus with effect from June 2025
B. Voc. Nutrition and Dietetics - Semester-II, OE-II
Paper Title: Human Development/Public Health Nutrition

(Credits:02)

Course Outcomes: The students will acquire knowledge of

1. To enable the students to develop recipes for treating various nutritional deficiencies
2. To develop in them the skill to modify normal diets for disease conditions

Pre requisites Note: (If Any- such as Knowledge of the topics in the theory papers.)

1) Planning and preparation of snacks for PEM.
2) Visit report of any national programme of health.
3) Planning and preparation of any two snacks recepie for VAD
4) Planning and preparation of one full days diet for PEM.
5) Planning and preparation of one full days diet for IDA.
6) Prepare health report of Alcoholic patient
7) Planning and preparation of one full days diet for IDD
8) Make a diet chart for special need child.
9) Basic nutrition management in flood and war situation.
10) Criteria for physical fitness in sport.

Reference Books:

- Mudambi, SR and Rajagopal, MV. Fundamentals of Foods, Nutrition and Diet Therapy; Fifth Ed; 2007; New Age International Publishers
- Wardlaw GM, Hampl JS. Perspectives in Nutrition; Seventh Ed; 2007; McGraw Hill..
- Sethi P and lakra P Aahaarvigyaan ,PoshanevamSuruksha, Elite Publishing house, 2015
- Khanna K et al. Textbook of Nutrition and Dietetics;2013; Phoenix Publisher.
- Sharma S, Wadhwa A. Nutrition in the Community- A textbook; 2003; Elite Publishing House Pvt. Ltd.

SHIVAJI UNIVERSITY,KOLHAPUR
Nutrition and Dietetics NEP Syllabus with effect from June 2025
B. Voc. Nutrition and Dietetics - Semester-II, VEC
Paper Title: Value Education Course
Democracy, Education and Good Governance

SHIVAJIUNIVERSITY, KOLHAPUR

B.Voc. Nutrition and Dietetics Syllabus

NEP2020 (2.0) Semester – I & II

Nature of Question paper

Time: 1:00 Hr **Total Marks 30**

Solve questions from the following.

Q.1 Multiple choice Question **06 Marks**

i.

ii.

iii

iv.

v.

vi.

Q.2 LonganswerQuestion (Any Two out of three) **12 Marks**

i.

ii.

iii

Q.3ShortAnswerQuestions (Any Four out of six) **12 Marks**

i.

ii.

iii.

iv.

v.

vi.

Internal Assessment **20 Marks**

Home Assignment

Class Assignment (Tutorial Type) Quiz

Mid-Term Test

Nature of Practical Question Paper

Internal practical examination	**50 marks**
1. Group I	20 Marks
2. Group II	20 Marks
3. Submission of Certified Journal	10 Marks

Assessment:

The NEP 2020 emphasizes upon formative and continuous assessment rather than summative assessment. Therefore, the scheme of assessment should have components of these two types of assessments. Assessment has to have correlations with the learning outcomes that are to be achieved by a student after completion of the course

a) **ContinuousAssessment:**Assignments,projects,presentations,seminarsandquizzes
b) **Examinations:** Midterm, finals, or comprehensive exams.
c) **ResearchProjects/Dissertation/Thesis:**Evaluatedthroughsubmissionandviva-voce
d) **Grading System:** Standardized letter grades, percentages,or CGPA

Letter Grades and Grade Points:

The Semester Grade Point Average (SGPA) is computed from the grades as a measure of the student's performance in a given semester. The SGPA is based on the grades of the current term, while the Cumulative GPA (CGPA) is based on the grades in all courses taken after joining the programme of study. The HEIs may also mention marks obtained in each course and a weighted average of marks based on marks obtained in all the semesters taken together for the benefit of students.

Computation of SGPA and CGPA: UGC recommends the following procedure to compute the Semester Grade Point Average (SGPA) and Cumulative Grade Point Average (CGPA)

Letter Grade	Grade Point
O (Outstanding)	10
A+(Excellent)	9
A(VeryGood)	8
B+(Good)	7
B(AboveAverage)	6
C (Average)	5
P (Pass)	4
F (Fail)	0
Ab (Absent)	0

1.The SGPA is the ratio of the sum of the product of the number of credits with the grade points scored by a student in all the courses taken by a student and the sum of the number of credits of all the courses undergone by a student, i.e.

$$\textbf{SGPA}(S_i) = \frac{\sum (C_{ix} G_i)}{\sum C_i}$$

Where C_i is the number of credits of the i^{th} course and G_i is the grade point scored by the student in the i^{th} course.