SHIVAJI UNIVERSITY, KOLHAPUR.



Accredited By NAAC with 'A' Grade

Syllabus For

P.G. Diploma In Nutrition and Dietetics

(Syllabus to be implemented from June, 2018 onwards.)





P.G. Diploma In Nutrition and Dietetics 2018-19

1. Nomenclature of the Degree:

The nomenclature of the degree awarded shall be Post Graduation Diploma in Nutrition and Dietetics.

2. Eligibility for Admission:

The eligibility for admission to the P. G. Diploma Course in Nutrition and Dietetics shall be Bachelor of Food Technology and Management (BFTM), B.Sc. Food Technology and Management, B.Sc. in Home Science with specialization in Foods and Nutrition, B.Sc. Home Science (General), B. Sc. Food Science and Quality Control, B.Sc. Biochemistry, B.Sc. Chemistry, B.Sc. Microbiology, B.Sc. Biomedical Sciences, B.Sc. Biotechnology and B.Sc. Zoology or B. Voc. Food Processing and Management (with 12th science).

3. Intake capacity:

The intake capacity is 30 students.

4. Duration to complete the Course:

The candidate who fails to complete the course within a period of one academic year should complete the course within Three years from the date of joining the course.

5. Attendance:

A candidate shall not be allowed to appear for the final examination of the University unless she/he has kept a term in the college and produces a certificate from the Principal of the college.

- a) Of having completed the minimum units in theory and practical as prescribed in the syllabus.
- b) Of having attended 80% of the total period devoted to Practical/orals/seminar/displays/workshop/project work and other related activities.
- c) Of having submitted the required no. of tutorials seminars and assignment.



Standard of Passing

To pass the examination a candidate must obtain 40% of marks in each paper. The minimum standard of passing in each theory paper of 80 marks shall be 32 and for practical paper of 50 marks shall be 20. The class for P.G. Diploma will be awarded as follows.

40 - 49%

- Pass Class

50-59 %

- Second Class

60-69%

- First Class

70% and above- First Class with Distinction

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STAFF REQUIREMENT AND QUALIFICATION

Staff

Qualification

Assistant Professor

- A) Master of Science (MSc.) with Specialization in the following
 - 1. Dietetics and Food Service Management
 - 2. Nutrition and Dietetics
 - 3. Clinical Nutrition
 - 4. And Equivalent degrees
 - B) The minimum requirements of a good academic record, 55% marks (or an equivalent grade in a point scale wherever grading system is followed) at the master's level and qualifying in the National Eligibility Test (NET), or an accredited test (State Level Eligibility Test SLET/SET), shall remain for the appointment of Assistant Professors.



P.G. Diploma in Nutrition and Dietetics Course Structure

Sr. no.	Subject	Distribution of Marks			Total Periods	Total Marks
			External Theory	External Practical	Internal	per week
1	Nutritional Biochemistry	80	-	20	2	100
2	Dietetics and Diet Counseling	80	-	20	4	100
3	Human Physiology	80	-	20	2	100
4	Public Nutrition	80		20	2	100
5	Institutional Food Management	80	-	20	2	100
6	Lab Course I	-	50	25	4	75
7	Lab Course II	-	50	25	2	75
8	Field Work	-	-	50	2	50
9	Dissertation and Seminar	-	50	50 (25+25)	2	100
	Total	400	150	250	22	800

- Hospital Internship: The duration of the Course shall be one academic year followed immediately by 2 months Internship in Multi-specialty Hospitals. No candidate who has passed the examination shall be awarded the Diploma unless she has undergone the Internship in an Institution. For a period of at least two months in hospitals, students are expected to collect five case histories and submit a report.
- Field Work: Students must submit reports on their observations in the institution visited.
- The practical examination for Lab Course I shall be conducted over a period of 2 days for 3 hours each and Lab Course II shall be conducted for 3 hours only.



EXAMINATION PATTERN

Theory: - 100 Marks

External Assessment: - 80 Marks Internal Assessment: - 20 Marks

Nature of Theory Examination

Objective Questions:

10 Marks

- · Fill in the blanks.
- Match the following.
- · True or False.
- Explain the term.

Short Notes:

20 Marks

Subjective Questions:

50 Marks

Solve any five questions out of seven.

Nature of Practical Examination

Pract	ical Paper:		50 Marks
	Journals:	¥	10 Marks
•	Viva:		10 Marks
•	Experiment:		30 Marks
Diss	sertation and S	eminar	100 Marks
•	Dissertation		75 Marks
	>	Internal assessment	25 Marks
	>	External Assessment	50 Marks
•	Seminar		25 Marks
	()	Report	10 Marks
		Presentation	15 Marks



Post Graduate Diploma in Nutrition and Dietetics Subject: NUTRITIONAL BIOCHEMISTRY

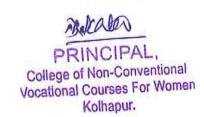
Objectives:

To enable students to:

- 1) Learn the role of nutrients in foods and deficiency diseases.
- 2) Understand the metabolism of nutrients in health and diseases
- 3) Understand the regulation of metabolism

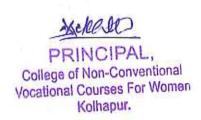
Sr. No.	TOPICS	No of Periods
3r. No.	Chemistry and Metabolism of Carbohydrates Definition Classification Biological role Metabolism - Digestion and absorption, Glycolysis, Krebs cycle, Electron Transport System, Gluconeogenesis, Glycogenesis, Glycogenolysis, HMP pathway, Galactose Metabolism, Fructose Metabolism, Disorders related to Carbohydrate	No of Periods 10
2	metabolism. Chemistry and Metabolism of Lipids Definition Classification Biological Role of Fatty Acids and Lipids Metabolism- Digestion and Absorption, Oxidation of Fatty Acids Metabolism of Lipoproteins and Ketone Bodies and Their Significance, Cholesterol Metabolism, Metabolism of Adipose Tissue, Disorders Related to Lipid Metabolism.	10
3	Chemistry and Metabolism of Proteins Definition Classification Biological Role of Amino Acids and Proteins Biological Value of Protein Metabolism -Digestion and Absorption, Transamination, Deamination, Metabolism of Ammonia, Urea Cycle	10





	Disorders Related To Protein/Amino Acid Metabolism.	
4	Vitamins	05
5	Minerals Definition Types Absorption and Function and Role of Minerals in Metabolism Deficiency Diseases.	05
6	 Water and Electrolyte balance Functions of Water Distribution of Body Water Water Intake And Water Output Electrolyte Composition of Body Fluids Regulation of Electrolyte Balance Dehydration and Over hydration 	05
7	Acid Base balance Role of Buffers Lungs and Kidney in Maintaining Acid Base Balance and Related Disorders	03
8	Organ Function Tests Liver Function Tests Kidney Function Tests Gastric Function Tests Pancreatic Function Tests Thyroid Function Tests	07
9	Hormones Definition Classification Mechanism of Action Hormones of Hypothalamus, Pituitary Gland, Thyroid Gland, Adrenal Gland, Gonads and Gastrointestinal Hormones	05





References:

- Dasgupta, S. K., Biochemistry Vol. I; n & III, Mc Millan Co. of India Limited
- Das, Debajyoti, Biochemistry 2nd ed., 1980, Academic Publishers, India.
- Harper, H. A. et al, A review of physiological chemistry, Los Altos, Lange medical publications, 1985.
- · Lehninger, A. L., Principles of Biochemistry
- Orten J. M. & Newhaus O. V, Human Biochemistry, C. V Mosby
- Co. S1. Lois, JSA 1982.
- Chatterjee Textbook of Medical Biochemistry
- · Biochemistry, U Satyanarayna, U.Chakrapani 4th edition,

ESTD 1994
KOLHAPUR CNCVCW

Post Graduate Diploma in Nutrition and Dietetics Subject: DIETETICS AND DIET COUNSELLING

Objectives:-

The course will enable the students:

- 1] To understand the etiology, physiologic and metabolic anomalies of acute and chronic diseases and patient needs.
- 2] To know the effect of the various diseases on nutritional status and nutritional and dietary requirements.
- 3] To be able to recommend and provide appropriate nutritional care for prevention/ and treatment of the various diseases.

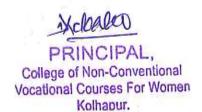
SR. NO.	TOPICS	No. of PERIODS
1.	 THERAPEUTIC DIETS: Basic Concept Therapeutic Adaptation of Normal Diet Factors Considered Routine Hospital Diets Mode of feeding methods Role of dietitian in the Hospital and Community Patient Care and Counseling 	05
2.	DIET IN WEIGHT IMBALANCE AND COUNSELING: Obesity and Underweight Causes Health Risk Dietary Treatment Psychotherapy	08
3.	DIET, NUTRIENT AND DRUG INTERACTION: • Effect of drugs on ingestion, digestion, absorption and metabolism of nutrients. • Effect of food, nutrients and nutritional status on drug dosage and efficacy.	05
4.	 DIET IN FEVER: Nutrition and Infection Metabolic changes during Infection Typhoid fever Tuberculosis HIV Infection and AIDS 	08
5.	ANEMIA Resulting from Acute Hemorrhage	08





	The Parish Advisor Control of the Co	
	Nutritional anemia	
	Sickle cell anemia	
	Thalassemia	
	 Pathogenesis and dietary management in the 	
	above conditions	
6.	FOOD INTOLERANCES AND FOOD	06
	ALLERGY:	
	Adverse food reactions	
	Treatment and Management	
	Prevention	
7.	DIET IN DISEASES OF GASTRO INTESTINAL	13
	TRACT AND COUNSELING:	
	Upper GI Tract Disorders	
	Disorders of Esophagus	
· ·	Disorders of Stomach	
	Lower GI Tract Disorders	
	Common Intestinal Disorders	
	Disorders of Small Intestine	
	Intestinal Brush Border Enzyme Deficiencies	
	 Inflammatory Bowel Diseases 	
	Disorders of Large Intestine	
8.	DIET IN LIVER DISEASES AND	10
	COUNSELING:	
	Hepatitis	
	Cirrhosis of Liver	
	Hepatic coma	
á	Diseases of Gall Bladder	
	Diseases of Pancreas	
9.	DIET IN KIDNEY DISEASES AND	10
	COUNSELING:	
	Glomerulonephritis	
	Nephrotic Syndrome	
	Acute Renal Failure,	
	Chronic Renal Failure	
	End Stage Renal Diseases	
1907-1000	Urolithiasis	
10.	NUTRITION IN EATING DISORDERS	05
	Introduction	
	Anorexia Nervosa	
	Bulimia Nervosa	
	Binge Eating Disorders	
11.	NUTRITION AND NEUROLOGICAL	08
	DISORDERS	
	Parkinson's disease	





	 Alzheimer's disease Epilepsy Migraine Multiple Sclerosis Neurotrauma Spine trauma Feeding problems of patients with neurological disorders 	*
12.	DISEASES OF METABOLIC DISORDER AND COUNSELING: • Diabetes Mellitus • Gout	11
13.	DIET IN CARDIOVASCULAR DISEASES AND COUNSELING:	12
14.	 DIET IN CANCER AND COUNSELING: Risk factors Metabolic Alterations and Nutritional Problems related to Cancer Nutritional requirements of Cancer patients related to Cancer Therapy Cancer Prevention 	11

Reference: -

- Mahan L. K., Escott- Stump, S. and Raymond J. L. (2012): "Krause's Food and the Nutrition Care Process", 13th Edition, Elsevier.
- Ross, A.C., Caballero B., Cousins R. J., Tucker K.L. and Ziegler T. (2014) Modern Nutrition in Health and Disease. Wolters Kluwer Health/ Lippincott Williams and Wilkins. Ed 11th
- Garrow, J. S., James, W.P.T. and Ralph, A. (2000): Human Nutrition and Dietetics. 10th Edition, Churchill Livingstone.
- Nix Staci (2013) William's Basic Nutrition and Diet Therapy. Elsevier Ed. 14th.





Post Graduate Diploma in Nutrition and Dietetics Subject: HUMAN PHYSIOLOGY

Objectives:-

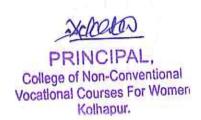
To enable students to understand the:

- 1. Structure of the cell, various tissues organs of the body
- 2. Different systems of the body and their functions

3. Regulation of the body function.

Sr. No.	TOPICS Total work	
SI. 140.	TOPICS	No. of
1.	ORGANIZATION OF HUMAN BODY	periods
	General anatomy of human body	04
%	Structure of cell	
	Tissues -Structure and functions of various types of	
	tissues	
	 Introduction to various systems 	
	Skeletal system,	
	Cavities of body	
2.	DIGESTIVE SYSTEM	08
	Brief study of the anatomical organization of the digestive tract	
	 Process of digestion, absorption and assimilation of food 	
3.	CIRCULATORY SYSTEM	08
	 Heart Structure and working of heart 	
	Determination of Blood pressure	
	Cardiac cycle	
	Cardiac output, Heart rate	
	 Lymphatic system-Composition and Formation, Organs involved, functions of lymph 	
4	HEMATOLOGY	06
	 Composition and functions of blood 	Ø.V
	 Mechanism of blood coagulation 	
	Blood group systems	
5	DEFENSE MECHANISMS OF THE BODY	08
	 First Line, Second And Third Line Of Defense 	
	Active Immunity	
	Passive Immunity	4





	Factors Affecting Immunity	
6	RESPIRATORY SYSTEM	06
	Basic anatomy of the Respiratory System	
	Process of Respiration	
	Disorders	
7	URINARY SYSTEM	08
	 Structure and functions of organs of urinary system 	
	 Composition of normal and abnormal urine 	
8.	NERVOUS SYSTEM	08
	Structure of Neuron	
	Transmission of nerve Impulse	
	 Organs of Central nervous system and their 	
	functions	
	Peripheral Nervous system	(4)
	Autonomous Nervous system	
	Reflex Action	
9.	REPRODUCTIVE SYSTEM	04
	 Introduction 	
	Male Reproductive System	
	Female Reproductive System	

References:-

- 1. L Antony, C.A (1963), 'Text Book of Anatomy and Physiology', the c.v. Moshy Co., Saint Louis
- 2. Bell G.H., Davidson, J.N., and Scarborough H. (1972) 'Textbook of Physiology and Biochemistry' London E.S. Livingston Ltd.
- 3. Best. C.H., and Taylor, R. B. (1965) 'The Living Body', London, Chapman & Hall Ltd.
- 4. Best. c.H., and Taylor. R.B. (1975), 'The Physiological Basis for Medical Practice' Calcutta, The Williams and Wilkinson Scientific Book Agency.
- 5. Guytons, AC. (1966), 'Text book of Medical Physiology', London, W.B. Saundes & Co.
- Rogers, T.S, Elementary (1961), 'Human Physiology', New York, John Willey and Sons, Inc.7. Green, H.(1972), 'An Introduction to Human Physiology' London, Oxford University Press
- 7. K Sembulingam, Prem Sembulingam. Essentials of Medical Physiology.





Post Graduate Diploma in Nutrition and Dietetics Subject: PUBLIC NUTRITION

Objectives:-

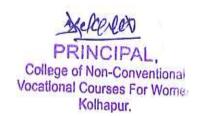
To enable the students:

- 1] To focus on the promotion of good health through nutrition and the primary prevention of nutrition related problems
- 2] To deal with nutritional epidemiology.
- 3] To be aware of public policies relevant to nutrition.

TOTAL WORKLOAD: 60

Sr. No.	TOPICS	No. of PERIODS
1	Public Nutrition:	04
2.	Nutritional Problems in India: Protein Energy Malnutrition Micronutrient Deficiencies Vitamin Deficiencies	08
3.	 Population Dynamics: Demography, Demographic Transition and Demographic Cycle Population Structure Vital Statistics and Implications of Vital Statistics in Population Growth Population Policy Relationship between Fertility, Nutrition and Quality of Life 	08
4.	Assessment of Nutritional Status: Population Sampling Anthropometry Clinical Assessment Biochemical Assessment Dietary Assessment	10
5.	Nutrition Monitoring And Nutrition Surveillance Nutrition Monitoring And Its Current Programmes Nutrition Surveillance System	06





6.	Nutrition Policy and Programmes: Integrated Child Development Services (ICDS) Programme Nutrient Deficiency Control Programme Supplementary Feeding Programme Food Security Programme Self-Employment and Wage Employment Schemes	08
7.	Strategies to Combat National Nutritional Problems Introduction Diet Or Food Based Strategies Nutrient Based Strategies Immunization	08
8.	Nutrition and Health Education: Definition Importance Nutrition Education Methods Teaching aids used in Nutrition Education Mass communication media used in Nutrition Education Nutrition Education through Educational Institutions Role Of Nutrition Education Programs In Eradication Of Malnutrition	08

REFERENCES:

- 1. Beaton GH and Bengoa JM. Nutrition in Preventive Medicine, WHO (1976).
- FAO/WHO. Preparation and use of food based dietary guidelines. Report of a joint FAO/WHO consultation: Nicosia, Cyprus. Nutrition Programme, WHO, Geneva (1996).
- 3. Gibney M. J., Margetts B. M., Kearney J. M. and Arab L. Public Health Nutrition. Blackwell Publishing Company (2013).
- National Nutrition Policy. Department of Women and child Development.
 Ministry of Human Resource Development, New Delhi, Government of India, 1993.
- Park.K. (2017) Park's Textbook of Preventive and Social Medicine, 24th ed. M/s Banarsida Bhanot, Jabalpur.
- Jelliffe, D. B and Jelliffe, E.F.P. (1989) Community Nutritional Assessment, Oxford University Press.
- 7. Wadhwa, A. and Sharma, S. (2003) Nutrition in the Community A text book SCN News, UN ACC/SCN Subcommittee on Nutrition





Post Graduate Diploma in Nutrition and Dietetics

Subject: INSTITUTIONAL FOOD MANAGEMENT

Objectives:-

To enable the students:

1. To develop food service management skills,

2. To develop professional approach backed by special skills, knowledge and vigilance at every stage of food service operation'

3. To acquire specific knowledge about training and/ or developing manpower in food service unit.

Sr. No.	TOPICS	No of PERIODS
1	Institutional Food Management	10
	 Evolution of food service industry 	
	 Principles of Management 	
	 Functions of Management 	
	 Organization Chart 	
	Leadership	801
2	Management of Spaces	06
	Kitchen Spaces	(6)20%
	 Storage Spaces 	
*	Service Spaces	N.
3	Equipment	10
	Catering Equipment	- J
	Selection of Equipment	N.
	 Equipment Design, Installation and 	
	Operation	
	 Purchasing Equipment 	
	 Care and Maintenance of Equipment 	
4	Food Management	12
	 Characteristic of foods 	
	 Food Purchasing 	7.
	Menu Planning	
	 Food Production 	
	 Food Service 	
	 Dishwashing 	
5	Financial Management	08
	 Definition and Scope 	379(1997)





	Cost Concepts	
	Cost Control	
	Pricing	
6	Personnel Management	08
	Introduction	
	 Recruitment, Selection and Induction 	
	Training and Development	
7	Hygiene, Sanitation and Safety	06
	Hygiene and Sanitation	
	Safety	
	 Food Standards in India 	

Reference:

- Sethi Mohini. 2nd Edition. (2016) Institutional Food Management, New Age International Publishers.
- Sethi M. and Malhan S.– 3rd Edition (2015) Catering Management An Integrated Approach. New Age International Publishers.
- 3. Arora R. K. (2007). Food Service and Catering Management. A.P.H. Publishing Corporation, New Delhi.
- 4. Kinton R. and Ceserani V. (1992). The Theory of Catering. ELBS with Hodder and Stoughton.
- 5. Scanlon N.L. (2007). Catering Management. John Wiley and Sons, Inc.





Lab Course I

Sr. No.	Practical	No. of Periods	
1.	Standardization of portion sizes for different food preparations.	08	
2.	Routine Hospital Diets	12	
	 To plan a Clear Liquid diet. 		
	 To plan a Full Liquid Diet. 		
	To plan a Soft Diet.		
3.	Diet In Weight Imbalance And Counseling:	08	
	To plan a diet for Obesity.	8.55	
	 To plan a diet for Underweight. 		
4.	Diet In Fever:	12	
	 To plan a diet for Typhoid fever. 	-	
	 To plan a diet for Tuberculosis. 		
	 To plan a diet for HIV Infection and AIDS. 		
5.	To plan a diet for Nutritional Anemia	04	
6.	Diet in Diseases of Gastro Intestinal Tract and	20	
	Counseling:	ib ::	
	 To plan a diet for Peptic Ulcer. 		
6	 To plan a diet for Lactose Intolerance. 	ž.	
	 To plan a diet for Coeliac Disease. 		
	To plan a diet for Constipation.		
	To plan a diet for Diarrhea.		
	 To plan a diet for Uncreative Colitis. 		
7.	Diet In Liver Diseases And Counseling:	14	
	To plan a diet for Hepatitis.		
	To plan a diet for Cirrhosis of Liver.		
	To plan a diet for Hepatic coma.		
	To plan a diet for Cholelithiasis and	8	
	Cholecystitis.		
	 To plan a diet for Pancreatitis. 		
8.	Diet in Kidney Diseases and Counseling:	14	
	To plan a diet for Nephrotic Syndrome. To plan a diet for Nephrotic Syndrome.		
	To plan a diet for Acute Renal Failure. To plan a diet for Acute Renal Failure.		
	 To plan a diet for End Stage Renal Diseases. 		





	To plan a diet for Urolithiasis.	
9.	Diseases of Metabolic Disorder and Counseling: To plan a diet for IDDM. To plan a diet for NIDDM. To plan a diet for Gout.	12
10.	Diet in Cardiovascular Diseases and Counseling: To plan a diet for Dyslipidemia. To plan a diet for Hypertension. To plan a diet for Myocardial infarction.	12
11.	To plan a diet for Cancer.	04



Lab Course II

Total workload: 60

G N1		Total workload: 60	
Sr. No.	Practical	No of Periods	
1.	Quantity Cooking: Basic Principles Market Survey	12	
	 Analysis of the relationship between the purchased amount, edible portion and cooked weight of foodstuffs 		
	Standardized Recipe		
2.	Planning Meals for Institutional Feeding:	14	
	 Planning a Mid-Day Snack for preschool Children. 		
	 Planning Meals for College Canteen 		
	 Planning meals for College Hostel Mess 	8	
	 Planning meals for Working Women Hostel. 		
3.	Planning and Organization for Industrial Catering:	08	
	Planning Meals for Industrial Canteen.		
	Planning Meals for Railway Base Kitchen		
	 Planning Meals for Railway Base Kitchen. 		
4.	Catering for Special Occasions and Events:	10	
	 Planning Meals for a Birthday party. 		
	 Planning Meals for a Cocktail party. 		
χ. Ι	 Planning Meals for a Convention/ 		
	Conference.		
5.	Preparation of Prospectus for Setting Up A Food Service Unit:	06	
	 Visit to a food service establishment to study its planning and functioning 		
	 Preparing a planning prospectus to set up a food service unit 		



EQUIVALANCE FOR PGDND COURSE

Sr. No.	Old Course	Sr. No.	New Course
1	Clinical Nutrition	1	Field Work
2	Nutritional Biochemistry	2	Nutritional Biochemistry
3	Dietetics and Diet Counseling	3	Dietetics and Diet Counseling
4	Human Physiology	4	Human Physiology
5	Public Nutrition	5	Public Nutrition
6	Food Service Management	6	Institutional Food Managernent
7	Lab Course I	7	Lab Course I
8	Lab Course II	8	Lab Course II
9	Dissertation and Seminar	9	Dissertation and Seminar

