

UNIVERSITY OF RAJASTHAN

JAIPUR

SYLLABUS

CERTIFICATE COURSE
IN
PUBLIC HEALTH NUTRITION
(SFS)

(ANNUAL SCHEME)

~~2016~~-2017

Lawr.
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University of Rajasthan

①

Certificate Course In Public Health Nutrition (SFS)

1. **Overview** - Public health nutrition is on the application of Public Health Nutrition Sciences for formulating strategies and actions for preventing and solving the serious problem of malnutrition in our country. This course provides an integrated program covering dietary, epidemiological, public health, program planning, implementation, communication, monitoring and evaluation.

2. Objectives :

This course will enable the students to :

- Gain insight into national nutritional problem, and national and international contribution towards nutrition improvement in India.
- Development of skills in organizing and evaluating nutrition projects in the community.
- To be familiar with various approaches to public health nutrition programs and policies.

3. **Course design**: This six months certificate course focuses on the fundamentals of food science and nutrition, epidemiological methods of research, and community nutrition. The course will be delivered through multi-media, interactive sessions, field visits and guest lectures.

4. **Eligibility criteria**: Graduates from discipline- i.e., (10+2+3) from any recognized university, from any stream with a minimum of 50% of aggregate marks. Admission will be given purely on Merit basis. The best of the percentage obtained at the last qualifying exam will be considered for admission. For more details contact the Department.

5. Teaching

- January to June
- July to December

6. Total Seats: 20

7. Equivalent grades

Percentage	Equivalent grades
90-100	A+
80-90	A
70-79	B+
60-69	B
40-59	C
<40	D

8. Course structure – 6 months

- January to June
- July to December

9. Mode of Admission: Merit

10. Course venue and timings:

PG, Department of Home Science, afternoon.

COURSE CATEGORY

CCC: Compulsory Core Course

ECC: Elective Core Course

PRJ: Project Work

SEM: Seminar

Contact Hours per week

L: Lecture

P: Practical

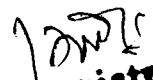
Minimum Credits: 30

CERTIFICATE COURSE IN PUBLIC HEALTH NUTRITION Certificate Scheme Examination

Scheme of Examination:

1. Each theory paper EoSE shall carry 100 marks The EoSE will be of 3 hours duration. Part 'A' of the theory paper shall contain 20 Multiple Choice Questions of 20 marks, based on knowledge, understanding and applications of the topics/texts covered in the syllabus. Each question will carry one mark for correct answer.
2. Part "B" of paper will consist of four questions as suggested below except in cases where a different scheme is specifically specified in the syllabus
 - First question will contain 6 parts out of which four to be answered carrying weightage of 5 marks each. Word limit for each answer will be 50-70 words.
 - There shall be 3 questions (with internal choice) of 20 mark each. The word limit for each answer will be 1000 words
3. Each laboratory EoSE will be of four/six hours duration and involve laboratory experiments/exercises, and viva-voce examination with weightage in ratio of 75:25.

Course Structure: The details of the courses with code, title and the credits assigned are as given below.


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I SEMESTER

S. No.	Subject Code	Course Title	Course Category	Credit	Contact Hours Per Week			EoSE Duration (Hrs.)	
					L	T	P	Thy	F
1.	CPN 101	Introduction to PHN	CCC	4	4	0	0	3	0
2.	CPN 102	Nutritional Assessment and Nutrition during Life Cycle	ECC	4	4	0	0	3	0
3.	CPN 103	Nutrition Epidemiology	CCC	2	2	0	0	3	0
4	CPN 104	Health Promotion and Nutrition Education	CCC	4	4	0	0	3	0
5	CPN 111	Nutritional Assessment	CCC	4	0	0	6	0	4
6	CPN 112	Nutrition during Life Cycle	ECC	4	0	0	6	0	4
7	CPN 113	Application of Epidemiological techniques in Nutrition Research	ECC	4	0	0	6	0	4
8	CPN 114	Program Planning for Nutrition and Health Promotion	CCC	4	0	0	6	0	4
9	CPN 115	Project Work	ECC	4	0	0	6	0	4
10	CPN 116	Seminar/ Term Paper	ECC	2	0	0	0	0	4
				36					

CCC = 18, ECC = 18, Total = 36 credits

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PAPER I

Introduction to Public Health Nutrition (Theory)

Paper Code: CPN 101

Credits : 4

Max. Marks : 100

Teaching Hours :4 Hours/Week

Total Teaching Workload :40 Hours /Semester

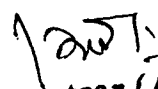
I	<p>UNIT I</p> <ul style="list-style-type: none">- Introduction to PHN 2<ul style="list-style-type: none">- Definition and Scope- Relation between health and nutrition, productivity and development - Functions and Requirements and effect of deficiency of Macro nutrients<ul style="list-style-type: none">- Energy 2- Protein 2- Fat 2- Carbohydrate 2 <p>UNIT II</p> <ul style="list-style-type: none">- Functions and Requirements and effect of deficiency of Micro nutrients<ul style="list-style-type: none">- Vitamin A, B Complex, C, D, E, K 8- Minerals- Iron, Calcium, Zinc, Sodium, Potassium, Iodine and Fluoride 8- Water and Electrolytes 2 <p>UNIT III</p> <ul style="list-style-type: none">- Digestion and Absorption of Macro and Micro nutrients 4- National Programs for combating nutritional deficiencies 2- National Nutrition Policy 2	
	<p>References:</p> <ol style="list-style-type: none">1. Sheila CV. Public Health Nutrition in Developing Countries Pt 1 and 2 . Published by Wood head publishing India PVT LTD, New Delhi. Cambridge, Oxford, Philadelphia, 2010.2. Sehgal S and Raghuvanshi Rita S. Textbook of Community Nutrition, Indian Council of Agricultural Research, Published by: Directorate of Information and Publication of	


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	<p>Agriculture, Indian Council of Agriculture Research, Krishi Anusandhan Bhavan, Pusa, New Delhi, 2011.</p> <ol style="list-style-type: none"> 3. Bamji MS, Rao PN and Reddy V. Textbook of Human Nutrition, Oxford and IBH Publishing Co. Pvt. Ltd., New Delhi, 1996. 4. Waterlow JC. Protein Energy Malnutrition, Edward Arnold, A division of Hodder and Stoughton, 1992. 5. Sachdeva HPS and Chaudhary P (Eds): Nutrition in Children: Developing country concerns, Department of Paediatrics, Maulana Azad Medical College, New Delhi, 1994. 6. Mc Laren DS. A colored Atlas and Textbook of Diet-Related Disorders, 1992. 7. Passmore R and Eastwood MR. Human Nutrition and Dietetics, ELBS, Churchill Livingstone, London, Baltimore, 1986. 8. De Meyer EM. Preventing and Controlling iron deficiency anemia through Primary Health Care, WHO, 1989. 9. Shukla PK. Nutritional problems of India, Prentice Hall of India Private Limited, New Delhi, 1982. B 10. Beaton GH and Bengoa JM. Nutrition in preventive Medicine. The major deficiency syndrome Epidemiology and approaches to control, World Health Organization, Geneva, 1986. 	
	<p>PAPER II</p> <p>Nutritional Assessment and Nutrition during Life Cycle (Theory)</p> <p>Paper Code: CPN 102</p> <p>Credits : 4</p> <p>Max. Marks : 100</p> <p>Teaching Hours : 4 Hours/Week</p> <p>Total Teaching Workload: 40 Hours /Semester</p>	
II	<p style="text-align: center;">UNIT I</p> <p>Assessment of Nutritional Status and Nutritional Surveillance</p> <ul style="list-style-type: none"> - Importance and methods - Anthropometry - Biochemical Examination - Clinical Examination 	<p>2</p> <p>2</p> <p>2</p> <p>2</p> <p>2</p>

- Dietary Survey	4
UNIT II	
• Energy Metabolism – BMR, Factors affecting BMR and Calculation of Energy Requirement	2
• Nutrition during Life Cycle	
○ Nutrition During Growth and Development	
- Infancy	2
- Childhood: Early and Middle	2
Adolescence	2
• Nutrition During Adult Years	
- Pregnancy	1
- Lactation	1
- Adult	1
- Old Age	1
UNIT III	
Prevalence, Etiology, Patho-physiology and Management and Prevention of	
- CVD,	2
- Diabetes,	3
- Hypertension,	2
- Digestive disorders,	3
- Bone Health and	2
- Renal Disease	2
References:	
1. Mahan LK and Stump SE (2000). Krause's Food, Nutrition and Diet Therapy. W.N. Saundes Company, Philadelphia, Pennsylvania. (10th Ed.).	
2. Shils ME, Olson JA, Shike M and Ross, AC (1998). Modern Nutrition in Health and Disease. Williams & Williams, Baltimore, U.S.A. (9th Ed).	
3. Srilakshmi B (2014). Dietetics, 7 th edition, New age International Publishers, New Delhi.	
4. Bamji MS, Rao PN and Reddy V. Textbook of Human Nutrition, Oxford and IBH Publishing Co. Pvt. Ltd., New Delhi, 1996.	
5. Jelliff DS. The Assessment of Nutritional status of the community, WHO Geneva, 1966.	
6. Gopaldas T and Sheshadri S. Nutritional Monitoring and Assessment, Oxford University Press, New Delhi, 1987.	

	7. Antia, FP and Abraham, P: Clinical Dietetics and Nutrition, Oxford University Press, Thirteenth Impression, 2015	
	PAPER III	
	Nutritional Epidemiology (Theory) Paper Code: CPN 103 Credits : 2 Max. Marks : 100 Teaching Hours :2 Hours/Week Total Teaching Workload: 20 Hours /Semester	
III	UNIT I <ul style="list-style-type: none"> • Nutritional Epidemiology - Introduction - Key components of epidemiology-Demography - Epidemiology and Public Health - Important epidemiological Studies UNIT II <p>Malnutrition</p> <ul style="list-style-type: none"> - Present Scenario in India - Causes: Illiteracy, Poverty, Social Factors - Implications - Strategies to Combat Malnutrition UNIT III <p>Research Methods Research Methods specific to Nutrition Factors important in Study Design</p>	 2 2 2 1 2 2 2 1 2 2 2


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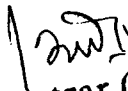


	<p>References:</p> <ol style="list-style-type: none"> 1. Sheila CV. Public Health Nutrition in Developing Countries Pt 1 and 2 . Published by Wood head publishing India PVT LTD, New Delhi. Cambridge, Oxford, Philadelphia, 2010. 2. Sehgal S and Raghuvanshi Rita S. Textbook of Community Nutrition, Indian Council of Agricultural Research, Published by: Directorate of Information and Publication of Agriculture, Indian Council of Agriculture Research, Krishi Anusandhan Bhavan, Pusa, New Delhi, 2011. 3. Hughes, R and Margetts, BM. Practical Public Health Nutrition, Published By Wiley- Blackwell, UK, 2011 4. Gibney, MJ, Margetts, BM, Kearney, JM and Arab, L. Public Health Nutrition. Blackwell Publishing House, UK, 2004. 5. Stein, N. Public Health Nutrition: Principles and Practice in Community and Global Health, Jones and Bartlett Learning, USA, 2015 	
	<p>PAPER IV</p> <p>Health Promotion and Nutrition Education (Theory) Paper Code: CPN 104 Credits : 4 Max. Marks : 100 Teaching Hours :4 Hours/Week Total Teaching Workload :40 Hours /Semester</p>	
	<p>UNIT I</p> <ul style="list-style-type: none"> - Health Promotion- - Definition, - Approaches, Methods, - Significance to achieving better public health nutrition - Outcomes for All populations and Communities 	<p>2</p> <p>4</p> <p>4</p> <p>4</p>
	<p>UNIT II</p> <ul style="list-style-type: none"> - Current PHN scenario in India - Trends in Policy Development - Government Initiatives addressing Nutrition - Highlights and Limitations of the Government programs - Perspectives in Health Promotion - Health Education versus Health Promotion 	<p>2</p> <p>2</p> <p>2</p> <p>2</p> <p>2</p> <p>4</p>
	<p>UNIT III</p>	

	<p>Nutrition Education</p> <ul style="list-style-type: none"> - Need and Scope of Nutrition Education - Links with Health Promotion - Purpose, Advantages and Constraints of Nutrition Education - Framework for Planning Nutrition Promotion and education programs for the public - Information, Education and Communication - Behaviour Change Communication 	<p>2</p> <p>2</p> <p>2</p> <p>2</p> <p>2</p> <p>2</p>
	<p>References:</p> <ol style="list-style-type: none"> 1. Sheila CV. Public Health Nutrition in Developing Countries Pt 1 and 2 . Published by Wood head publishing India PVT LTD, New Delhi. Cambridge, Oxford, Philadelphia, 2010. 2. Sehgal S and Raghuvanshi Rita S. Textbook of Community Nutrition, Indian Council of Agricultural Research, Published by: Directorate of Information and Publication of Agriculture, Indian Council of Agriculture Research, Krishi Anusandhan Bhavan, Pusa, New Delhi, 2011. 3. Hughes, R and Margetts, BM. Practical Public Health Nutrition, Published By Wiley- Blackwell, UK, 2011 4. Gibney, MJ, Margetts, BM, Kearney, JM and Arab, L. Public Health Nutrition. Blackwell Publishing House, UK, 2004 5. Stein, N. Public Health Nutrition: Principles and Practice in Community and Global Health, Jones and Bartlett Learning, USA, 2015 	
	<p style="text-align: center;">PAPER V</p> <p>Nutritional Assessment (Practical/ Skill Development) Paper Code: CPN 111 Credits : 4 Max. Marks : 100 Teaching Hours : 6 Hours/Week Total Teaching Workload : 30 Practicals /Semester</p>	
	<ul style="list-style-type: none"> - Assessment of Nutritional Status <ul style="list-style-type: none"> - Anthropometry- Age Appropriate measurements and cut offs - Height, Weight, BMI, MUAC, WC, HC, Head Circumference, Skin-fold thickness - Biochemical Examination- Hemoglobin, BSF, Albumin in Urine, Measurement of BP 	<p>3</p> <p>3</p> <p>3</p> <p>3</p> <p>3</p>


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	<ul style="list-style-type: none"> - Clinical Examination - Dietary Survey- - Standardization of Recipes -Techniques of standardization and preparation of standardized recipes 	3 3 3 3 3
	References: <ol style="list-style-type: none"> 1. Sharma Sheel , Practical Biochemistry. Classic Publishing House, Jaipur- Delhi (1993) 2. Talwar, G.P. (2002) 3rd Edition, Text Book of Biochemistry and Human Biology Prentice Hall of India, New Delhi. 3. Jelliffee DS. The Assessment of Nutritional status of the community, WHO Geneva, 1966. 4. Gopaldas T and Sheshadri S. Nutritional Monitoring and Assessment, Oxford University Press, New Delhi, 1987. 5. Hughes, R and Margetts, BM. Practical Public Health Nutrition, Published By Wiley- Blackwell, UK, 2011 	
	PAPER VI Nutrition during Life Cycle (Practical/ Skill Development) Paper Code: CPN 112 Credits : 4 Max. Marks : 100 Teaching Hours :6 Hours/Week Total Teaching Workload: 30 Practicals /Semester	
	Planning of Diet for <ul style="list-style-type: none"> - Pregnancy - Lactation - Infancy - Childhood: Early and Middle - Preparation of vitamin 'A' / Beta carotene rich snack for young children - Adolescence - Preparation of Iron rich Snack for pregnant women/ Adolescent girls - Adult Old Age Planning and preparation of Low cost Nutritious recipes Infant Pre-mixes 	3 3 3 3 3 3 3 3 3 3


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	Low cost nutrient dense recipe with special emphasis on Iron, Calcium, Protein and energy	3 3
	<p>References:</p> <ol style="list-style-type: none"> 1. Sheila CV. Public Health Nutrition in Developing Countries Pt 1 and 2 . Published by Wood head publishing India PVT LTD, New Delhi. Cambridge, Oxford, Philadelphia, 2010. 2. Sehgal S and Raghuvanshi Rita S. Textbook of Community Nutrition, Indian Council of Agricultural Research, Published by: Directorate of Information and Publication of Agriculture, Indian Council of Agriculture Research, Krishi Anusandhan Bhavan, Pusa, New Delhi, 2011. 3. Khanna K, Gupta S, Pass S., Seth R, Mahna, R and Puri S(1997). Textbook of Nutrition and Dietetics. Phoenix Publishing House, Pvt. Ltd., New Delhi. 4. Srilakshmi B (2005). Dietetics, New age International (p) Ltd, Publishers New Delhi. 5. Bamji MS, Rao PN and Reddy V. Textbook of Human Nutrition, Oxford and IBH Publishing Co. Pvt. Ltd., New Delhi, 1996. 6. Mc Laren DS. A colored Atlas and Textbook of Diet-Related Disorders, 1992. 7. Passmore R and Eastwood MR. Human Nutrition and Dietetics, ELBS, Churchill Livingstone, London, Baltimore, 1986. 8. De Maeyer EM. Preventing and Controlling iron deficiency anemia through Primary Health Care, WHO, 1989. 9. Jelliff DS. The Assessment of Nutritional status of the community, WHO Geneva, 1966. 10. Gopaldas T and Sheshadri S. Nutritional Monitoring and Assessment, Oxford University Press, New Delhi, 1987. 	
	<p align="center">PAPER VII</p> <p>Epidemiological Techniques in Nutrition Research (Practical/ Skill Development) Paper Code: CPN 113 Credits : 4 Max. Marks : 100 Teaching Hours :6 Hours/Week Total Teaching Workload :30 Practicals /Semester</p>	
	- Community work	3

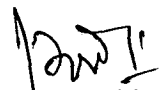

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	<ul style="list-style-type: none"> - Need for community analysis - Techniques of data collection - Conduct a community analysis - Community diagnosis and identification of areas of Nutrition-Health Education - Planning a program on Nutrition and Health education on - Anemia in Pregnant, lactating and adolescent girl and young children- Importance of de-worming and supplementation with 100 days of IFA - Hygiene and Sanitation - IYCN - Immunization - Care of Pregnant women - Right to food • Research Methods/ Study Designs <ul style="list-style-type: none"> - Observational - Experimental - Case Control - Cross sectional - Community trails - Clinical trails 	<p>3</p> <p>3</p> <p>3</p> <p>3</p> <p>3</p> <p>3</p> <p>3</p> <p>3</p> <p>3</p> <p>3</p> <p>3</p>
	<p>References:</p> <ol style="list-style-type: none"> 1. Sheila CV. Public Health Nutrition in Developing Countries Pt 1 and 2 . Published by Wood head publishing India PVT LTD, New Delhi. Cambridge, Oxford, Philadelphia, 2010. 2. Schgal S and Raghuvanshi Rita S. Textbook of Community Nutrition, Indian Council of Agricultural Research, Published by: Directorate of Information and Publication of Agriculture, Indian Council of Agriculture Research, Krishi Anusandhan Bhavan, Pusa, New Delhi, 2011. 3. Gibney, MJ, Margetts, BM, Kearney, JM and Arab, L. Public Health Nutrition. Blackwell Publishing House, UK, 2004 4. Hughes, R and Margetts, BM. Practical Public Health Nutrition, Published By Wiley- Blackwell, UK, 2011 	
	<p>PAPER VIII</p> <p>Program Planning for Nutrition and Health Promotion (Practical/ Skill Development) Paper Code: CPN 114</p>	

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	Credits : 4 Max. Marks : 100 Teaching Hours :6 Hours/Week Total Teaching Workload :30 Practicals /Semester	
	<ul style="list-style-type: none"> • Visit to ongoing programs <ul style="list-style-type: none"> - Two health promotion programs - Two programs addressing nutrition - Evaluation of 2 Ongoing programs on Nutrition • Nutrition education program <ul style="list-style-type: none"> - Planning a nutrition education program - Preparation of teaching aids - Implementation and evaluation - Report Writing How to formulate a report - Application of relevant tests - Recommendations for External and Internal Evaluation 	3 3 3 3 3 3 3 3 3 3
	References: <ol style="list-style-type: none"> 1. Sheila CV. Public Health Nutrition in Developing Countries Pt 1 and 2 . Published by Wood head publishing India PVT LTD, New Delhi. Cambridge, Oxford, Philadelphia, 2010. 2. Sehgal S and Raghuvanshi Rita S. Textbook of Community Nutrition, Indian Council of Agricultural Research, Published by: Directorate of Information and Publication of Agriculture, Indian Council of Agriculture Research, Krishi Anusandhan Bhavan, Pusa, New Delhi, 2011. 3. Gibney, MJ, Margetts, BM, Kearney, JM and Arab, L. Public Health Nutrition. Blackwell Publishing House, UK, 2004 4. Hughes, R and Margetts, BM. Practical Public Health Nutrition, Published By Wiley- Blackwell, UK, 2011 	
	PAPER IX	
	Project Work (Practical/ Skill Development) Paper Code: CPN 115 Credits : 4 Max. Marks : 100 Credits :6 Hours/Week Total Workload : 30 Practicals /Semester	
	Data collection, analysis and interpretation of data in form graphs, charts,	18

	<p>tables and others Report Writing Introduction Review of literature Materials and methods Result and discussions Conclusion Summary Bibliography Annexures</p>	12
	Refer available journals, research studies and abstract books and world wide web.	
	PAPER X SEMINAR Paper Code: CPN 116 Credits : 2 Max. Marks : 100 Credits : 2 Hours/Week	
	Refer available journals, research studies and abstract books and world wide web.	
	Presentation of Seminar from the relevant and related topics of the course in consultation with allotted teacher/ Mentor	
	Submission of report, presentation and Viva-voce at the end of semester will be required for both project work and seminar. The project work and seminar will be evaluated by a Board of three examiners consisting of Head of the Department, guide / mentor and one examiner other than guide.	


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