

FATIMA COLLEGE (AUTONOMOUS)



**Re-Accredited with “A” Grade by NAAC (3rd Cycle)
74th Rank in India Ranking 2020 (NIRF) by MHRD
Maryland, Madurai- 625 018, Tamil Nadu, India**

NAME OF THE DEPARTMENT : RESEARCH CENTRE OF HOME SCIENCE

**NAME OF THE PROGRAMME : M.Sc. HUMAN NUTRITION AND
NUTRACEUTICALS**

PROGRAMME CODE : PSNN

ACADEMIC YEAR : 2021 - 2022

Minutes of the Board of Studies

Name of the Dept: THE RESEARCH CENTRE OF HOME SCIENCE.
To be implemented from the academic year 2021-22,
Venue: Virtual

Convened on 12.04.2021.

Convened at 2.00 pm.

Members Present:

1. DR. VASANTHA ESTHER RANI
2. DR. G. SRIDEVI,
ASST. PROFESSOR,
DEPT. OF PLANT BIOTECHNOLOGY
SCHOOL OF BIOTECHNOLOGY,
MADURAI KAMARAJ UNIVERSITY,
MADURAI - 21.
3. DR. P. C. JEMINA RANI,
ASST. PROFESSOR,
DEPT. OF COSTUME DESIGN &
FASHION
CHIKKANA GOVT. ARTS. COLLEGE,
TIRUPUR.
4. DR. SRIDEVI SIVAKAMI,
ASSOCIATE PROFESSOR,
DEPT. OF FOOD SCIENCE,
MANAGEMENT & DIETETICS.
AVINASHILINGAM UNIVERSITY,
COIMBATORE
5. DR. SURESH GOVINMAN,
RESEARCH HEAD, AVN AYURVEDIC
FORMULATIONS PVT. LTD.

HEAD OF THE DEPT.

Vasanth Esther

UNIVERSITY NOMINEE.

G. Sridevi

Dr. G. Sridevi
Assistant Professor

Department of Plant Biotechnology
School of Biotechnology
Madurai Kamaraj University
Madurai - 21

SUBJECT EXPERT.

P. Ch
12/4/2021

SUBJECT EXPERT.

P. Ch
12/4/2021

INDUSTRIALIST.

L. V
12/4/21

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| 6. | MS. SUSHEELA KATHIRAVAN,
AVP. CORPORATE PARTNERSHIPS,
CALCIDUS SOCIAL ENTREPRISES,
BANGALORE | ALUMNA.
K. Suseela
12.04.21 |
| 7. | DR. N. MALATHI,
ASSOCIATE PROFESSOR,
DEPT. OF ZOOLOGY | DEAN OF ACADEMIC AFFAIRS |
| 8. | DR. R. LATHA.
ASSOCIATE PROFESSOR | STAFF MEMBER |
| 9. | DR. K. KARTHIGA.
ASST. PROFESSOR. | STAFF MEMBER. |
| 10. | MRS. P. MAGDALENE VIRJINI
ASST. PROFESSOR | STAFF MEMBER |
| 11. | MRS. C. HELEN
ASST. PROFESSOR | STAFF MEMBER. |
| 12. | MRS. D. MOUNA.
ASST. PROFESSOR. | STAFF MEMBER |
| 13. | DR. C. PRIYALATHA.
ASST. PROFESSOR. | STAFF MEMBER. |
| 14. | MS. BAREERA
ASST. PROFESSOR. | STAFF MEMBER. |
| 15. | MS. A. MABEL ESTHER PARIPURNA | FDGC - STAFF MEMBER |
| 16. | MRS. C. BHUVANESWARI | FDGC - STAFF MEMBER |

ACTION TAKEN REPORT.

S.N COMMON SUGGESTIONS OFFERED IN THE PREVIOUS BOARD

ACTION TAKEN FOR THE ACADEMIC YEAR 2020-2021.

1. The Board members appreciated the framework of syllabi for UG courses.

2. The Board suggested the increase in the duration of Dietetic internship for UG students.

Increasing the duration of Dietetic internship was considered.

3. The industrial internship at the Textile industry for Diploma course (FDIC) was much appreciated by the Board.

CHANGE OF COURSE TITLE.

S.NO.	OLD COURSE CODE	NEW COURSE CODE	OLD COURSE TITLE	NEW COURSE TITLE	NEED FOR CHANGE
1.	N4AC2	19N4AC3	CATERING & HOTEL MGT-II	FOOD PRODUCTION & SERVICE.	SINCE TWO COURSE PAPERS HAD THE SAME TITLE, A NEED AROSE TO CHANGE THE TITLE OF CATERING & HOTEL MGT-II TO FOOD PRODUCTION & SERVICE

S. No	OLD COURSE CODE	NEW COURSE CODE	OLD COURSE TITLE	NEW COURSE TITLE	NEED FOR C
2.	N4CC10	19N4CC10	FOOD BIOTECHNOLOGY-I	BASICS OF BIOTECHNOLOGY	AS TWO COURSES HAD THE SAME AS PAPER I + II THE COURSE FOR TECHNOLOGY I REMAINED A BASICS OF BIOTECHNOLOGY
3.	N4AC3	19N3AC4	CATERING & HOTEL MANAGEMENT PRACTICALS	LAB IN FOOD PRODUCTION & SERVICE	AS THE PRACTICAL DEALS WITH FOOD PRODUCTION, FOOD BEVERAGE SERVICE THE LAB PAPER RENAMED AS LAB FOOD PRODUCTION & SERVICE.

NEW COURSES INTRODUCED.

S.No.	COURSE CODE	COURSE TITLE	RELEVANCE TO					SCOPE FOR		NEED FOR INTRODUCTION
			L	R	N	G	EMP	ENTR	SD	
1.	19N3CC9	LAB IN BASICS OF CLOTHING CONSTRUCTION				N			SD	LEARNING THE BASICS OF CLOTHING CONSTRUCTION WILL FACILITATE STITCHING GARMENTS WITH EASE.

S.No.	COURSE CODE	COURSE TITLE	RELEVANCE TO			SCOPE FOR			NEED FOR INTRODUCTION
			L	R	N	G	EMP	ENTRE	SD.
2.	19N3AC2	LAB IN CATERING & HOTEL MANAGEMENT		R			EMP.		A LAB FOR FRONT OFFICE & HOUSE KEEPING NECESSITATED THE INTRODUCTION OF A LAB PAPER.

REVISED COURSES

S. No	COURSE CODE	COURSE TITLE	NO & TITLE OF UNITS REVISED	%	NEED FOR REVISION	RELEVANCE				SCOPE FOR		
						L	R	N	G	EMP	ENTRE	SD.
1.	19N3CCY	EXTENSION EDUCATION & COMMUNICATION	MODIFIED UNIT I BY INCLUDING PROGRAM PLANNING IN UNIT I,	10%	RECENT TREND			N		EMP.		
2.	19N3AC1	CATERING & HOTEL MANAGEMENT	THE TITLE OF UNIT III WAS CHANGED TO RESERVATION & RECEPTION. i) FRONT OFFICE COMPONENT FROM UNIT I WAS SHIFTED TO UNIT II ii) RESERVATION & RECEPTION COMPONENT OF UNIT II WAS SHIFTED TO UNIT III	5%	PRIORITISED			N		EMP.		

3.	19N4CC10	BASICS OF BIOTECHNOLOGY	TITLE OF UNIT I RENAMED AS BIOTECHNOLOGICAL APPROACHES IN FOOD PROCESSING	5%	TITLES OF UNITS RENAMED	G.
			i) BASICS OF MICROBIOLOGICAL - CLASSIFICATION OF MICROORGANISMS - BACTERIA, YEAST, MOULD - WAS ADDED			
			ii) UNIT II WAS TITLED AS SPOILAGE, CONTAMI- NATION & PRESERVATION OF FOODS			

UPDATION OF OPEN EDUCATIONAL RESOURCES

S.No	COURSE CODE	COURSE TITLE	DETAILS OF UPDATION
1.	19NICC1	HUMAN DEVELOPMENT	https://www.verywellmind.com/
2.	19NICC2.	PHYSIOLOGY.	www.medicalnewstoday.com
3.	19N2CC4	HUMAN NUTRITION	https://libguides.msu.edu/
4.	19N2CC5	FOOD SCIENCE	www.icfoast.org
5.	19N3CC7	EXTENSION EDUCATION & COMMUNICATION	www.worldcat.org
6.	19N3CC8	Fiber to FABRIC	https://textilestudycenter.com
7.	19N4CC10	BASICS OF BIOTECHNOLOGY	https://openstax.org/microbiology

8.	19N4CC11	CLOTHING AND FASHION.	https://fitnyc.libguides.com/fashiondesign/patternmaking
9.	19N5CC13	CRECHE & PRE-SCHOOL MANAGEMENT	https://libguides.humboldt.edu
10.	19N5CC15	HOUSING, ART IN HOME	https://www.homesandgardens.com
11.	19N6CC14	RESOURCE MANAGEMENT	https://www.brainkart.com
12.	19N6CC19	CLINICAL NUTRITION & DIETETICS.	https://clinical-nutrition.medpub.com
13.	19N5ME1 / 19N5ME2	TECHNICAL TEXTILES FOOD BIOTECHNOLOGY	www.fibre2fashion.com www.foodbiotechnology.html
14.	19N6ME3 / 19N6ME4	FAMILY DYNAMICS. FOOD'S DAIRY PROCESSING	https://guides.lib.uconn.edu/humandevelopment https://www.researchgate.net/publication
15.	19N6ME5 / 19N6ME6	WOMEN'S ENTREPRENEUR NUTRITION FOR HEALTH & FITNESS	https://articles.bplans.com/how-to-get-your-business-funded
16.	19N1NME1	NME - BASICS OF NUTRITION.	www.hanoverhornets.org/nutrition
17.	19N2NME	NME - BASICS OF NUTRITION.	WWW: nutritionnotes - 2 pdf.
18.	19N3SBI	Entrepreneurial SKILLS - SURFACE ORNAMENTATION	https://www.youtube.com/watch?v=0X80noytufe

19.	19N4SB2.	ENTREPRENEUR SKILLS - CAD.	https://www.youtube.com/watch?v=...
20.	19N5SB3.	ENTREPRENEUR SKILLS BAKERY, ADULTERATION & FOOD PRESERVATION	https://www.onlinebrot.com/food-preservation-from-microbial-spoilage-met
21.	19N5SB4.	PARTICIPATORY RURAL APPRAISAL.	https://ecoursesonline.in/res.in/mod/page/
22.	19N6SB5.	NUTRITION COUNSELING.	www.sciencedirect.com/di counseling.
23.	19N6SB6.	INTERIOR DESIGN AND DECORATION.	https://www.elementdesign.com/

REVISION OF COURSES.

S. NO.	COURSE CODE	COURSE TITLE	NO. & TITLE OF UNITS REVISED	% REVISED	NEED FOR REVISION	RELEVANCE
1.	N5CC11	CRECHE & PRESCHOOL MANAGEMENT.	i) INCLUDE CHILD PSYCHOLOGY ii) CONCEPTS ON SPECIAL CHILDREN	20%	SCORE FOR CHILD COUNSELING	N
2.	19N5CC14	LAB IN PRESCHOOL ADMINISTRATION	PLANNING SUPPLEMENTARY FOODS IN PRESCHOOL LAB	10%	WILL FETCH JOBS IN PRESCHOOL ADMINISTRATION	N

3.19N5CC11	FAMILY RESOURCE MANAGEMENT	TITLE - FRM CHANGED TO HOUSING ART IN HOME.	5% THE TITLE HOUSING ART IN HOME SEEMS APT.	R.V.	S.D.
4.19NSME1	TECHNICAL TEXTILES	CHANGE OF TERMINOLOGY OF TRANSPORTATION TEXTILES TO MOBIL TEXTILES.	5% BETTER TERMINOLOGY	N	EMP.
5.19NSME2.	FOOD BIOTECHNOLOGY	COMBINATION OF UNIT IV & V, UNIT V - GM FOODS	10% KNOWLEDGE ON GM FOODS ACCORDING TO RECENT TREND.	G.	EMP.
6.19NSB3.	BAKING, (22N5SB3) FOOD PRESERVATION & ADULTERATION	i) TITLE CHANGED TO BAKERY, ii) UNIT III TO BE CHANGED AS HOI, TYPES, METHODS & IDENTIFICATION OF ADULTERANTS	MORE APPROPRIATE	N	EMP. & ENTRC & SD.
		iii) IN UNIT IV, METHODS OF PRESERVATION, SUGGESTION TO INCLUDE MARMALADE, VATHAL & VADASAM			

7. 19N5SB4	PARTICIPATORY IN UNIT II - RURAL APPRAISAL OF METHODS - INCLUDE TYPES OF MENU. ii) IN UNIT V - INCLUDE REPORTS & DOCUMENTS.	THE SYLLABUS 80% WOULD BE COMPLETE BY ADDING REPORTS & DOCUMENTS IN PRA	N
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8. 19N5CC15	HOUSING ART IN HOME. TITLE OF FRM-1 WAS RENAMED AS HOUSING ART IN HOME.	MORE APPROPRIATE 5%	N
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9. 19N6CC17	FAMILY RESOURCE MANAGEMENT TITLE CHANGED TO RESOURCE MANAGEMENT i) IN UNIT I - GREEN CONSUMERISM INCLUDED. ii) IN UNIT II - LIGHTING - NATURAL LIGHTING WAS SUGGESTED.	RECENT TOPIC 10%	N
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10. 19N6CC19	CLINICAL NUTRITION & DIETETICS ALLERGY & BURNS INCLUDED IN UNIT IV	5% INCREASING NEED FOR DIETARY MODIFICATIONS FOR ALLERGY & BURNS	G1. EMP
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11.	19N6ME3.	FAMILY DYNAMICS.	INCLUDE CASE STUDY.	10%.	GIVES PRACTICAL KNOWLEDGE.	G.	S.D.
12.	19N6ME4	FOOD & DAIRY PROCESSING	IN UNIT I - RECENT TRENDS IN PACKAGING INCLUDED.	5%.	RECENT TREND.	N	ENTRE.
13.	19N6ME5	WOMEN'S ENTREPRENEURSHIP DEVT.	IN UNIT III, INCLUDE MSME. IN UNIT II - INPUTS TO START BUSINESS	5%.	CURRENT TOPICS.	N	ENTRE.
14.	19N6ME6	NUTRITION FOR HEALTH & FITNESS	IN UNIT III, DIET MANIPULATION TO BE CHANGED TO DIET MODIFICATION IN UNIT V, THE TERM NATUROPATHY TO BE INCLUDED	MORE APPROPRIATE	G.	EMP.	
15.	19N6SB5	NUTRITION COUNSELING	IN UNIT I, ROLE OF DIETETIAN, CLASSIFICATION, RESPONSIBILITIES & CODE OF ETHICS, R.D, MEMBERSHIP IN LDA & NSI TO BE INCLUDED	10%.	FACILITATE BETTER UNDERSTANDING.	N	EMP & S.D.

16. 19N6SB6

INTERIOR DESIGN
& DECORATION

TITLE VASTU
IN INTERIORS
CAN BE

REPLACED BY
VASTU IN HOUSE
PLANNING

• SCIENTIFIC
EVIDENCE OF
VASTHU COULD
BE MENTIONED

5% FOR BETTER
UNDERSTANDING

N

17. 19N4SB2

CAD.

IN UNIT II,
"INTRODUCING
COLOURS &
DESIGNS" IS

MODIFIED AS
"INTRODUCTION
TO ELEMENTS
& PRINCIPLES
OF DESIGN"

• IN UNIT V,
DRAPING IS
EXPANDED AS
DRAPING WITH
SLEEVES, YOKE,
COLLAR &
POCKETS.

FACILITATE
20% QUESTION
SETTING.

N

18. Change in pairing of Major Electives in the VI Sem
19N6ME3/19N6ME4 - Family Dynamics/Nutrition for Health & Fitness
19N6ME5/19N6ME6 - Food & Dairy Processing/Human & Entrepreneurship Development

NEW COURSES INTRODUCED.

S.NO.	COURSE CODE	COURSE TITLE	RELEVANCE TO	SCOPE FOR	NEED FOR INTRODUCTION
1.	19N5SB4	ENTREPRENEURIAL SKILLS - PARTICIPATORY RURAL APPRAISAL.	N	SD	AS PART OF EXTENSION EDUCATION, PRA IS THE RECENT TREND.
2.	21N1SLZ	NUTRITION IN HEALTH & FITNESS	G.	ENTRE.	WILL HELP LEARNERS TO BECOME ENTREPRENEURS OR SEEK EMPLOYMENT AS HEALTH OFFICER, FITNESS TRAINER.
3.	21SC2SLW2	BASICS OF PSYCHOLOGY	G.	EMP.	THE COURSE IS THE NEED OF THE HOUR... AS MANY COGNITIVE ISSUES ARE LINKED WITH PSYCHOLOGY.
4.	21Z3SLN3	PUBLIC HEALTH & HYGIENE	N	EMP.	KNOWLEDGE WILL HELP STUDENTS TO SEEK JOBS AS HEALTH INSPECTOR, SANITATION OFFICER ETC.
5.	21N4SLC4	TEXTILE COLOURATION	G	EMP	KNOWLEDGE ON DYING PROCESS WILL BRIGTEN JOB OPPORTUNITIES IN DYE HOUSES.
6.	21A5SLN5	CONSUMERISM	N	SD.	WILL ENHANCE KNOWLEDGE ON CONSUMERISM

7.	21SC6SLN6	HOSPITAL MANAGEMENT	G	EMP.	KNOWLEDGE HOSPITAL AD WILL FAVOR THE LEARNER FIND JOBS IN RENNED HOSPITALS.
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INTRODUCTION OF PURELY SKILL EMBEDDED CERTIFICATE /
DIPLOMA / ADVANCED DIPLOMA VALUE ADDED COURSE.

S.NO.	COURSE CODE	COURSE TITLE	MOU	SKILLS SHARPENED.	COURSE OUTCOME
1.	21UGVACN1	HAND EMBROIDERY		SKILL DEVELOPMENT.	EMP ENTRE.
2.	21UGVACN2	MONTESORI AID TRAINING	THE REGIONAL CENTRE FOR TRAINING & DEVELOPMENT-AN AUTHORISED TRAINING INSTITUTE UNDER NATIONAL PLANNING COMMISSION GOVT. OF INDIA.	SKILL TRAINING	EMP ENTRE.
3.	21UGVACN3	MONTESORI CHILD CARE EDUCATION	II	SKILL TRAINING	EMP ENTRE.

RUBERICS FOR INTERNSHIP / PROJECT

S.NO.	C ₁ 20 MKS.	C ₂ 20 MKS.	CIA TOTAL. 40 MKS.	EXTERNAL 60 MKS.
1.	PROJECT	PRESENTATION.	TOTAL.	PROJECT - 30 VIVA VOCE - 30
2.	INTERNSHIP.	CASE STUDY REPORT	TOTAL.	ATTENDANCE - 20 INVOLVEMENT - 20 REPORT - 20 <u>60</u>

PROPOSED / SIGNED MOUs.

MOU proposed to be signed with the Regional Center for Training & Development - an authorised Training institute under National Planning Commission, Govt. of India for the purpose of Montessori Training & Education.

MoUs have been signed with Apollo Hospitals, Vadamalayan Hospital, Shenbagam Hospital for the purpose of dietetic internships for UG students.

Minutes of the Board of Studies for M.Sc H Nutrition & Nutraceuticals.

Venue: Virtual.

Convened on 12.04.2021. Convened at 2pm.

ACTION TAKEN REPORT.

S.No.	COMMON SUGGESTIONS OFFERED IN THE PREVIOUS BOARD.	ACTION TAKEN FOR THE ACADEMIC YEAR 2020.
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1. The Board members appreciated the framework of syllabi for PG courses.

2. The industrial internship at the Food industry for PG students was much appreciated by the Board.

NEW COURSES INTRODUCED.

S.No	COURSE CODE	COURSE TITLE	RELEVANCE SCORE FOR							NEED FOR INTRODUCED
			L	R	N	G	EMP	ENTR	SD	
1.	PG4NEA	NUTRITION IN CRITICAL CARE & DISASTERS.					G EMP			STUDENTS CAN FIND A SPECIAL DIETETIAN JOB IN MULTISPECIAL HOSPITALS.

REVISED COURSES.

S.No	COURSE CODE	COURSE TITLE	No. & TITLE OF UNITS REVISED	% OF REVISION	NEED FOR REVISION	RELEVANCE	SCORE FOR.
1.	PG3N11	FUNCTIONAL FOODS & NUTRACEUTICALS IN PREVENTIVE DIETETICS.	PHYSIOLOGICAL ASPECTS OF UNIT I, II & V WERE DELETED, AS A PAPER EXCLUSIVELY ON APPLIED PHYSIOLOGY HAS BEEN INTRODUCED IN SEM I. IN UNIT V, REPRODUCTIVE HEALTH IS INCLUDED.	25%	A PART OF THE SYLLABUS HAS BEEN DELETED AND INCLUDED IN THE PAPER APPLIED PHYSIOLOGY IN SEM. I.	L	EMP.
2.	19PG3N14	ANALYTICAL INSTRUMENTATION	ICP - INDUCTIVE COUPLED PLASMA SPECTROPHOTOMETRY WAS INCLUDED IN UNIT IV	5%	RECENT SPECTROSCOPIC METHOD WAS INCLUDED.	G	EMP.
3.	19PG3N16	TECHNIQUES IN EXPERIMENTAL NUTRITION.	ESTIMATION OF ACID VALUE IN FRUITS & VEGETABLES HAS BEEN INCLUDED.	5%	ONE OF THE ESSENTIAL ANALYSIS FOR FRUITS & VEGETABLES.	G	EMP
4.	19PG4N16	FOOD MICROBIOLOGY	UNIT II WAS RENAMED AS FOOD BORNE INFECTIONS.				

UNIT II WAS 5% TITLES OF
 RENAMED AS UNITS ARE
 CONTAMINATION, RENAMED.
 SPOILAGE $\frac{1}{3}$
 PREVENTION.
 UNIT IV WAS
 RENAMED AS
 FOOD BORNE
 INTOXICATIONS.

G

UPDATION OF OPEN EDUCATIONAL RESOURCES

S.No	COURSE CODE	COURSE TITLE	DETAILS OF UPDATION
1.	19PG1N1	ADVANCED HUMAN NUTRITION	https://en.wikibooks/Fundamentals of human nutrition
2.	19PG1N2	ADVANCED DIETETICS	https://library.open.org
3.	19PG1N3	APPLIED PHYSIOLOGY	www.livescience.com
4.	19PG2N6	CLINICAL NUTRITION & DIET THERAPY	https://clinical-nutrition.imb
5.	19PG2N7	FUNCTIONAL FOODS & NUTRACEUTICALS	https://www.wisegeek.com
6.	19PG2N8	RESEARCH METHODOLOGY	https://library.shu.edu/open-research methods
7.	19PG3N12	COMMUNITY NUTRITION	https://www.nin.res.in/
8.	19PG3N11	FUNCTIONAL FOODS & NUTRACEUTICALS IN PREVENTIVE DIETETICS	www.medicalnewstoday.com

9. 19PG3NE3 ANALYTICAL INSTRUMENTATION <https://microbenotes.com/Types of chromatography/>.
10. 19PG3NE1. FOOD PRODUCT DEVELOPMENT & SENSORY EVALUATION <https://open.lib.umn.edu/principlesmarketing/>.
11. 19PG3NE2 INSTITUTIONAL MANAGEMENT <https://open.umn.edu/opentextbooks/>
12. 19PG4N1b FOOD MICRO BIOLOGY <https://www.biocaster.org/>.
13. 19PG4N14. NUTRITIONAL BIOCHEMISTRY <https://www.chem.purdue.edu/>.
14. 19PG4N18. ADVANCED FOOD SCIENCE & PROCESSING TECHNIQUES <https://www.britanica.com/technology/meat-processing>.
15. 19PG4NE3 FOOD SAFETY & QUALITY CONTROL. <https://www.ag.ndsu.edu/>
16. 19PG4NE4 NUTRITION IN CRITICAL CARE & DISASTERS www.scm.org/getattachments/Diaster/Nutrition-Therapy.

REVISION OF COURSES

S. No.	COURSE CODE	COURSE TITLE	UNITS REVISED	%	NEED FOR REVISION	RELEVANCE
1.	19PG1N3.	APPLIED PHYSIOLOGY	INCLUDE TRANS GENDER. SPECIFY SECONDARY SEXUAL CHARACTERIS OF MALE/FEMALE	10%	INCLUSION OF SUBHEADINGS GIVES MORE INPUTS.	G
2.	19PG2N10. (22PG2N10)	FFN LAB.	QUANTITATIVE ESTIMATION OF CURCUMIN, PHENOLS & LIGNANS WERE DELETED. INSTEAD QUALITATIVE ANALYSIS OF PHENOLS, TANNINS, SAPONINS, FLAVONOIDS, ANTHOCYANINS & PHYTOSTEROLS ARE INCLUDED	40%	IDENTIFYING THE PRESENCE OF BIOACTIVE COMPONENTS WOULD ENHANCE KNOWLEDGE ABOUT THE MULTIPLE NUTRACEUTICALS PRESENT INFOOD THROUGH QUALITATIVE ANALYSIS.	G

NEW COURSES INTRODUCED.

S. No.	COURSE CODE	COURSE TITLE	RELEVANCE	SCOPE	NEED FOR INTRODUCTION
1.	21PG1SLN1	INTELLECTUAL PROPERTY RIGHTS.	G.	SD.	RECENT TREND IN APPLYING PATENT FOR THE INNOVATIVE FORMULATIONS OF VALUE ADDED FOOD PRODUCTS

2.	21PG2NSL2	GERIATRIC SCIENCES.	G.	ENTR.	KNOWLEDGE OF DIET COUNSELING FOR ELDERLY.
3.	21PG3NSL3	NUTRITION GENOMICS.	G.	SD.	NUTRIGENOMICS IS THE RECENT TREND IN NUTRITIONAL SCIENCES.
4.	21PG4NSL4	SPORTS NUTRITION	G.	EMP.	NEED FOR DIET COUNSELING FOR SPORTS PERSONS.

INTRODUCTION OF PURELY SKILL - EMBEDDED CERTIFICATE/DIPLOMA.

NIL.

APPROVAL OF PH.D COURSE WORK SYLLABUS.

Ph.D Course Work syllabus for 3 Ph.D Full time scholars was approved by the Board.

RUBERICS FOR INTERNSHIP / THESIS.

C1 - 20 marks.

C2 - 20 marks.

TOTAL C.I.A - 40 marks.

External

Thesis - 30 marks.

VIVA VOCE - 30 marks.

TOTAL - 60 marks.

The Ruberics for internship & Thesis was approved by the Board.

1. HEAD OF THE DEPT.

Masontya E. Panji

2. UNIVERSITY NOMINEE.

G. Sudi

3. SUBJECT EXPERT

P. Adhi Sleni

4. SUBJECT EXPERT. *S. C. Me*
5. INDUSTRIALIST. *Mr. [Signature]*
6. ALUMNA. *K. Suseela*

7. DEAN OF ACADEMIC AFFAIRS.

8. STAFF MEMBERS.

- 1) *Masonth E. Ravi*
- 2) *R. Latha*
- 3) *D. Minu*
- 4) *P. Eydela Vijini*
- 5) *[Signature]*
- 6) *K. Kalliga*
- 7) *C. Priyathar*
- 8) *Banerjee*
- 9) *[Signature]*
- 10) *A. Mabel Esther Paripurna*
- 11) *E. Bhuvaneswari*

12/09/2021

FATIMA COLLEGE (AUTONOMOUS), MADURAI-18**RESEARCH CENTRE OF HOME SCIENCE-
HUMAN NUTRITION AND NUTRACEUTICALS***For those who joined in June 2019 onwards***PROGRAMME CODE: PSNN**

COURSE CODE	COURSE TITLE	HRS / WK	CREDIT	CIA Mks	ESE Mks	TOT. MKs
SEMESTER - I						
19PG1N1	Advanced Human Nutrition	6	4	40	60	100
19PG1N2	Advanced Dietetics	6	4	40	60	100
19PG1N3	Applied Physiology	6	4	40	60	100
19PG1N4	Advanced Dietetics Lab	4	2	40	60	100
19PG1N5	Clinical Laboratory Techniques Lab	4	2	40	60	100
19N1EDC	EDC-Nutrition & Dietetics	3	3	40	60	100
	Library	1	-	-	-	-
Total		30	19			
SEMESTER - II						
19PG2N6	Clinical Nutrition & Diet Therapy	6	4	40	60	100
19PG2N7	Functional Foods & Nutraceuticals	6	4	40	60	100
19PG2N8	Research Methodology	6	4	40	60	100
19PG2N9	Clinical Nutrition & Diet Therapy Lab	4	2	40	60	100
19PG2N10	Functional Foods & Nutraceuticals Lab	4	2	40	60	100
19N2EDC	EDC-Nutrition & Dietetics	3	3	40	60	100
	Library	1		-	-	-

Total		30	19			
SEMESTER - III						
19PG3NS1	Summer Internship	-	3	40	60	100
19PG3N11	Functional Foods & Nutraceuticals in Preventive Dietetics	6	5	40	60	100
19PG3N12	Community Nutrition	6	5	40	60	100
19PG3N13	Analytical Instrumentation	6	5	40	60	100
19PG3NE1	Food Product Development and Evaluation	4	4	40	60	100
19PG3NE2	Institutional Management	4	4	40	60	100
19PG3N14	Community Nutrition Lab	4	2	40	60	100
19PG3N15	Techniques for Experimental Nutrition Lab	4	2	40	60	100
Total		30	26			
SEMESTER - IV						
19PG4N16	Food Microbiology	6	5	40	60	100
19PG4N17	Nutritional Biochemistry	6	5	40	60	100
19PG4N18	Advanced Food Science and Processing Techniques	6	5	40	60	100
19PG4NE3	Food Safety and Quality Control	4	4	40	60	100
19PG4NE4	Nutrition in Critical Care and Disasters	4	4	40	60	100
19PG4N19	Food Microbiology Lab	4	2	40	60	100
19PG4N20	Nutrient Analysis Lab	4	2	40	60	100
19PG4NPR	Project*& Viva Voce		3	50	50	100
Total		30	26			

	Total	120	90			
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OFF-CLASS PROGRAMME

ADD-ON COURSES

Course Code	Courses	Hrs.	Credits	Semester in which the course is offered	CIA Mks	ES E Mks	Total Marks
	SOFT SKILLS	40	4	I	40	60	100
	COMPUTER APPLICATIONS SPSS	40	4	II	40	60	100
	MOOC COURSES (Department Specific Courses/any other courses) * Students can opt other than the listed course from UGC-SWAYAM /UGC /CEC	-	Minimum 2 Credits	-	-	-	
	COMPREHENSIVE VIVA (Question bank to be prepared for all the papers by the respective course teachers)	-	2	IV	-	-	100
	READING CULTURE	15/ Semester	1	I-IV	-	-	-

	TOTAL		13 +				
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EXTRA CREDIT COURSE

Course Code	Courses	Hrs.	Credits	Semester in which the course is offered	CIA Mks	ESE Mks	Total Marks
21PG1ZSL	Intellectual Property Rights	-	2	I	40	60	100
21MSW2SL	Geriatric Sciences	-	2	II	40	60	100
21PG3SLN	Nutrigenomics	-	2	III	40	60	100
21PG4SLN	Sports Nutrition	-	2	IV	40	60	100

- **Lab Courses :**

- A range of 10-15 experiments per semester

- **Summer Internship:**

- Duration-1 month (2nd Week of May to 2nd week of June-before college reopens)

- **Project:**

- Off class
- Evaluation components-Report writing + Viva Voce (Internal marks-50) + External marks 50

- **EDC:**

Syllabus should be offered for two different batches of students from other than the parent department in Sem-I & Sem-II

I M.Sc.,HUMAN NUTRITION AND NUTRACEUTICALS

SEMESTER –II

For those who joined in 2019 onwards

PROGRAMM E CODE	COURSE CODE	COURSE TITLE	CATEGOR Y	HRS/WEEK	CREDITS
PSNN	19PG2N10	Functional Foods and Nutraceutical Lab	Lab	4	2

COURSE DESCRIPTION

The practical course provides hands –on training in the use of hi-tech precision equipments to identify and analyze the specific nutraceuticals present in the respective functional food.

COURSE OBJECTIVES

- To make the students aware of the principle of analysis, extraction and identification of nutraceuticals.
- To determine qualitatively and quantitatively the presence of certain bioactive components in particular foods.
- To understand the calculation of the quantity of nutraceuticals present in the foods.

UNITS

UNIT –I Estimation of lycopene

(12 HRS.)

Estimation of lycopene in food sources like tomato, papaya & watermelon

UNIT –II Estimation of tannins

(12 HRS.)

Estimation of tannins in food sources like grapes, pomegranates and chocolates

UNIT –III Estimation of capsaicin**(12 HRS.)**

Estimation of capsaicin in capsicum, green chillies and dry chillies

UNIT –IV Qualitative analysis of phenols, tannins and saponins (12 HRS.)**UNIT –V Qualitative analysis of flavonoids, anthocyanins and (12 HRS.)
phytosterols****REFERENCES:**

1. Berwal. J.S., Grewal R.B., Kapoor C.M & Garg M.R (2004). *Practical Methods in Food Analysis*. Agrotech Publishing Academy, Udaipur.
2. Geetha Swaminathan & Mary George, (2002). *Laboratory Chemical Methods in Food Analysis*. Margham Publications, Chennai.
3. Jayaraman J. (1996), *Laboratory Manual in Biochemistry*. New Age International Ltd. New Delhi.
4. Ranganna S. (1986), *Hand Book of Analysis and Quality Control for fruit and Vegetable Products*. Tata Mc Graw –Hill Publishing Company Limited, New Delhi.
5. Sadasivam S. & Manickam A. (1991), *Biochemical Methods*. New Age International Pvt. Ltd., New Delhi.
6. Yeshajahu Pomeranz & Clifton E. Meloan, (2004), *Food Analysis –Theory and Practice*. CBS Publishers and Distributors, New Delhi.

COURSE CONTENTS & LECTURE SCHEDULE:

Module No.	Topic	No. of Lectures	Teaching Pedagogy	Teaching Aids
UNIT -1 Estimation of lycopene				
1.1	Estimation of lycopene in tomato, papaya & watermelon	12	Demonstration , Chalk & Board	Glass wares & Instruments
UNIT -2 Estimation of tannin				
2.1	Estimation of tannins in		Demonstration	Glass wares

	grapes, pomegranates & chocolates	12	, Chalk & Board	& Instruments
UNIT -3 Estimation of capsaicin				
3.1	Estimation of capsaicin in capsicum, green chillies & dry chillies	12	Demonstration , Chalk & Board	Glass wares & Instruments
UNIT -4 Qualitative analysis of phenols, tannins and saponin				
4.1	Qualitative analysis of phenols, tannins and saponins	12	Demonstration , Chalk & Board	Glass wares & Instruments
UNIT -5 Qualitative analysis of flavonoids, anthocyanins and phytosterols				
5.1	Qualitative analysis of flavonoids, anthocyanins and phytosterols	12	Demonstration , Chalk & Board	Glass wares & Instruments

EVALUATION PATTERN

SCHOLASTIC				NON - SCHOLASTIC	MARKS		
C1	C2	C3	C4	C5	CIA	ESE	Total
10	10	10	5	5	40	60	100

C1 – Internal Test - 1

C2 – Internal Test - 2

C3 – Model Practical Exam

C4 – Record, **C5** – Non - Scholastic

COURSE OUTCOMES

On the successful completion of the course, students will be able to:

NO.	COURSE OUTCOMES	KNOWLEDGE LEVEL (ACCORDING TO REVISED BLOOM'S TAXONOMY)	PSOs ADDRESSED
CO 1	Estimate the lycopene content in fruits.	K2	PSO2 & PSO8
CO 2	Compare the tannin content present in different foods.	K2	PSO2 & PSO8
CO 3	Identify the capsaicin content in foods	K3	PSO2 & PSO8
CO 4	Test for qualitative analysis of phenols, tannins and saponins in foods	K4	PSO2 & PSO8
CO 5	Determine the qualitative analysis of flavonoids, anthocyanin & phytosterols	K5	PSO2 & PSO8

Mapping of COs with PSOs

CO / PSO	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9	PSO 10	PSO 11	PSO 12	PSO 13	PSO 14	PSO 15
CO1	1	3	1	1	1	1	1	3	1	1	1	1	1	1	1
CO2	1	3	1	1	1	1	1	3	1	1	1	1	1	1	1
CO3	1	3	1	1	1	1	1	3	1	1	1	1	1	1	1

CO4	1	3	1	1	1	1	1	3	1	1	1	1	1	1	1
CO5	1	3	2	1	1	1	1	3	1	1	1	1	1	1	1

Mapping of COs with POs

CO/ PSO	PO1	PO2	PO3	PO4
CO1	3	1	1	1
CO2	2	2	1	1
CO3	2	2	2	1
CO4	2	1	1	1
CO5	2	1	1	1

Note: " Strongly Correlated – 3 " Moderately Correlated – 2
 Weakly Correlated -1

COURSE DESIGNER:

1. Dr. Vasantha Esther Rani
2. Mrs. D.Mouna

Forwarded By



(Dr.Vasantha Esther Rani)

I M.Sc. HUMAN NUTRITION AND NUTRACEUTICALS
SEMESTER – I

For those who joined in 2021 onwards

PROGR AMME CODE	COURSE CODE	COURSE TITLE	CATEGORY	HRS /WE EK	CREDIT S
PSNN	21PG1ZSL	Intellectual Property Rights	Self- Learning		2

COURSE DESCRIPTION

The course will be helpful for the students to understand the different forms of IP which could be utilized for the protection of inventions

COURSE OBJECTIVES

- To understand the concept of Intellectual Property and Intellectual Property Rights with special reference to India.
- To appreciate the significance of Intellectual Property in modern times, in the light of its international legal regime.
- To study the important Agreements, Treaties and Conventions relating to Intellectual Property Rights.
- To understand the intricacies of grant of Patent, Patentability, Licensing and Revocation at National and International level

UNITS:

UNIT 1: INTRODUCTION TO INTELLECTUAL PROPERTY RIGHT (IPR)

IPR – Concept, scope and History, IPR in India and world, Types, Economic importance of IPR.

UNIT 2: PATENTS AND COPYRIGHTS

Patent Act 1970 and its amendments - Patent filing in India and abroad: determination of patentability of inventions. Copyrights - Introduction, Works protected under copyright law, Rights, Transfer of Copyright, Infringement.

UNIT 3: TRADEMARKS AND GEOGRAPHICAL INDICATIONS

Trademarks - Objectives, Types, Rights, Protection of goodwill, Infringement, Passing off, Defenses and Domain name. Geographical Indications - Objectives, Justification - International Position - Multilateral Treaties - current scenario in Indian.

UNIT 4: TRADITIONAL KNOWLEDGE

Traditional Knowledge Digital Library - Information Technology Related Intellectual Property Rights - Computer Software and Intellectual Property, Database and Data Protection. WTO- International Arena and National level - Bio-Propecting and Bio-Piracy

UNIT 5: BIOTECHNOLOGY AND INTELLECTUAL PROPERTY RIGHTS Plant and Animal genetic resources GATT & TRIPS; Patent for genes and DNA sequence; International convention; Plant breeder's rights and farmers rights -Intellectual Property Protection (IPP) - WTO, WIPO and TRIPS. Biosafety concepts and issues- Biosafety protocol 2000. Bioethics – Principles, autonomy, human rights, beneficence, privacy, justice and equity.

REFERENCES

1. N.S. Gopalakrishnan & T.G. Agitha, (2009) Principles of Intellectual Property Eastern Book Company, Lucknow.
2. Kerly's Law of Trade Marks and Trade Names (14th Edition) Thomson, Sweet & Maxwell
3. Ajit Parulekar and Sarita D' Souza, (2006) Indian Patents Law – Legal & Business Implications; Macmillan India Ltd.
4. B.L. Wadehra (2000) Law Relating to Patents, Trade Marks, Copyright, Designs & Geographical Indications; Universal law Publishing Pvt. Ltd., India.
5. 1. Dutfield G. (2003). Intellectual Property Rights and the Life Science Industries: A Twentieth Century History (Globalization and Law). Routledge. 2. Mahop, M.T. (2010).
6. Intellectual Property, Community Rights and Human Rights: The Biological and Genetic Resources of Developing Countries. Routledge.

7. Martin Khor (2002). Intellectual Property, Biodiversity and Sustainable Development: Resolving the Difficult Issues. Zed Books limited.

DIGITAL OPEN EDUCATIONAL RESOURCES

- USPTO – United States Patent and Trademark Office (<http://www.uspto.gov/>)
- IPINDIA – Indian Patent Office (<http://www.ipindia.nic.in/>)
- Google Patents – Worldwide Patents (<https://patents.google.com/>)
- WIPO – World Intellectual Property Organisation (<http://www.wipo.int/patentscope/en/>)
- FPO – Free Patents Online (<http://www.freepatentsonline.com/>)

EVALUATION PATTERN

SCHOLASTIC				NON - SCHOLASTIC	MARKS		
C1	C2	C3	C4	C5	CIA	ESE	Total
5	10	15	5	5	40	60	100

COURSE OUTCOMES

On the successful completion of the course, students will be able to:

NO.	COURSE OUTCOMES	KNOWLEDGE LEVEL (ACCORDING TO REVISED BLOOM'S TAXONOMY)	PSOs ADDRESSED
CO 1	List the types of IPR	K1	PSO1&
CO 2	Explain the procedure for obtaining patents and copyright	K2	PSO6
CO 3	Identify the importance of	K3	PSO6

	Trademarks and Geographical Indications		
CO 4	Analyze the concepts of traditional knowledge and information technology.	K4	PSO6
CO 5	Assess the biosafety and bioethical principles followed in Biotechnology Lab	K5	PSO1& PSO6

Mapping of COs with PSOs

CO / PSO	P SO 1	PSO 2	PSO 3	P SO 4	P SO 5	P SO 6	P SO 7	P SO 8	P SO 9	P SO 10	P SO 11	P SO 12	P SO 13	P SO 14	P SO 15
CO 1	2	2	2	3	1	3	1	1	2	1	1	1	2	1	1
CO 2	2	2	2	3	1	3	1	1	2	1	1	1	2	1	1
CO 3	2	2	2	3	1	3	1	1	2	1	1	1	2	1	1
CO 4	2	2	2	3	1	3	1	1	2	1	1	1	2	1	1

CO 5	2	2	2	3	1	3	1	1	2	1	1	1	2	1	1
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Mapping of COs with POs


	PO1	PO2	PO3	PO4
CO1	3	3	2	1
CO2	3	3	2	1
CO3	3	3	2	1
CO4	3	3	2	1
CO5	3	3	2	1

Note: Strongly Correlated – 3 “ Moderately Correlated
– 2 Weakly Correlated -1

COURSE DESIGNER:

1. Dr. N. Nagarani (Zoology)
2. Mrs. C. Helen (Home Science)

Forwarded By


Dr. A. TAMIL SELVI
 Head, Dept. of Zoology
 FATIMA COLLEGE (AUTONOMOUS)
 MADURAI-625 018

HOD'S Signature

& Name

I M.Sc. HUMAN NUTRITION AND NUTRACEUTICALS**SEMESTER-II***For those who joined in 2021 onwards*

PROGRA MME CODE	COURSE CODE	COURSE TITLE	CATEGORY	HRS/ WEEK	CREDI TS
PSNN	21MSW2SL	GERIATRI C SCIENCE	SELF LEARNING	-	2

COURSE DESCRIPTION:

This course analyzes the social aspects of aging in by giving an introduction to the field of gerontology, its history, theories, and research methods.

COURSE OBJECTIVES:

To make the students aware of the problems of the old people in the present-day situation and its sociological implications.

To equip the learners to explores the sociological aspects of aging.

UNIT –I INTRODUCTION TO SOCIAL GERONTOLOGY

Nature (Self Study) and Scope of Social Gerontology. Theories of Social Gerontology- Activity Theory, Disengagement Theory, Continuity Theory, Age Stratification Theory, Labelling Theory

UNIT –II CHANGES DURING OLD AGE

Physical aging: Changes in body composition, organ systems - Psychological aging: changes in memory and learning- Social aging: Role changes, age norms and role adaptation (Self Study).

UNIT –III GERIATRIC NUTRITION

Definition, Aging Society and Nutrition Epidemiology, Physical and Physiological Changes, Nutritional Assessment

UNIT –IV AGEING & NUTRITION

Nutritional Changes and Requirement, Role of Nutrition in the Prevention of Age-Associated Diseases, Health and Feeding Problems among Elderly, Nutrition Support-Parenteral/ Enteral/ Oral

UNIT –V SUPPORT SYSTEM OF THE ELDERLY

Role of family (Self Study), Government and Non government in the care of elderly, Rights of Elderly – Care and maintenance, Indian Laws and welfare schemes related to Elderly. Palliative Care, Dying and Death, Bereavement

TEXT BOOK:

1. Krishanandsanwal, Fundamentals of Gerontology Akansha publishing house, New Delhi, 2008.

REFERENCES:

1. Simone de Behavior, Old Age, Cox and Wyman Ltd. London, 1972.
2. S. IrudayaRajan, U.S. Mishra and P. Sankarasarma, India's Elderly Burden or Challenge, Sage publications, New Delhi, 1999.
3. L. Thara Bhai, Aging Indian, Perspective Decent Books, New Delhi, 2002.
4. P.V.Ramamurti, Handbook of Indian gerontology, D. Jamuna Serialspublications,New Delhi, 2004.
5. K. Kapoor, India's Elderly, satwanti Kapoor amittal publications, New Delhi, 2004.
6. R. K. A. Subrahmanya, Social Security for the elderly, shiprapublications ,2005.
7. D. P. Saxena, Sociology of Aging, Concept publishing company, New Delhi,2006.
8. Asiya Nasreen. "Urban elderly – coping strategies and societal responses", Concept publishing company, New Delhi,2009.
9. Shills, M.E and Young, M.E, (1996), Modern Nutrition in Health and Disease. Varghese Company (Indian).
10. John E. Morley and David R. Thomas, (2007), Geriatric Nutrition. CRC Press Taylor & Francis Group.

OPEN EDUCATIONAL RESOURCES:

<https://www.allpsychologycareers.com/topics/social-gerontology.html>

<https://www.encyclopedia.com/medicine/encyclopedias-almanacs-transcripts-and-maps/geriatric-nutrition-0>

<https://www.bestvalueschools.com/faq/what-is-social-gerontology>

EVALUATION PATTERN

SCHOLASTIC				NON - SCHOLASTIC	MARKS		
C1	C2	C3	C4	C5	CIA	ESE	Total
5	10	15	5	5	40	60	100

COURSE OUTCOMES (CO)

On the successful completion of the course, students will be able to:

NO .	COURSE OUTCOMES	KNOWLEDGE LEVEL (REVISED BLOOM'S TAXONOMY)	PSOs ADDRESSED
CO 1	Recall the nature, scope and theories of Social Gerontology	K1	PSO1& PSO2
CO 2	Classify the physical, psychological and social changes of aging	K2	PSO3

CO 3	Interpret the geriatric nutrition and its importance	K3	PSO5
CO 4	Analyze the nutritional change and requirement of old age people	K4	PSO5
CO 5	Analyse the rights and care for old age people provided by government	K4	PSO4

Mapping of COs with PSOs

CO / PSO	P SO 1	P SO 2	P SO 3	P SO 4	P SO 5	P SO 6	P SO 7	P SO 8	P SO 9	P SO 10	P SO 11	P SO 12	P SO 13	P SO 14	P SO 15
CO 1	2	2	2	3	1	3	1	1	2	1	1	1	2	1	1
CO 2	2	2	2	3	1	3	1	1	2	1	1	1	2	1	1
CO 3	2	2	2	3	1	3	1	1	2	1	1	1	2	1	1
CO 4	2	2	2	3	1	3	1	1	2	1	1	1	2	1	1
CO 5	2	2	2	3	1	3	1	1	2	1	1	1	2	1	1

Mapping of COs with POs

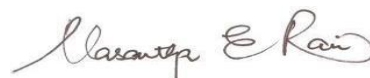
	PO1	PO2	PO3	PO4
CO1	3	3	2	1
CO2	3	3	2	1
CO3	3	3	2	1
CO4	3	3	2	1
CO5	3	3	2	1

Note: Strongly Correlated – 3 “ Moderately Correlated
– 2 Weakly Correlated -1

COURSE DESIGNERS:

Ms.P. Magdalene Virjini

Forwarded By



(Dr. Vasantha Esther Rani)

II M.Sc.,HUMAN NUTRITION AND NUTRACEUTICALS

SEMESTER –III

For those who joined in 2021 onwards

PROGRAMME CODE	COURSE CODE	COURSE TITLE	CATE GORY	HRS/ WEEK	CRE DITS
PSNN	21PG3SLN	Nutrigenomics	SELF LEARNING	-	2

COURSE DESCRIPTION

This course aims to understand, in depth, the influence of genetics on micronutrient metabolism, and implications for complex human diseases.

COURSE OBJECTIVES

- To understand the concept of genes and genomes
- To become aware of the interactions of nutrients with human disease conditions.
- To explore the influence of genes on cellular and molecular metabolism.

UNITS

UNIT –I THE STRUCTURE OF GENES AND GENOMES

Structure and functions of genes- Chromatin, genome organization, DNA, histones and RNA; Epigenetic modifications- histone acetylation, methylation, phosphorylation, ubiquitination; Genetic variations - SNPs, copy number variations, nucleotide repeats, addition, insertions and deletions.

UNIT –II NUTRIGENETICS

Gene concept- one Gene one polypeptide concept; Brief account on Transcriptome, proteome and Metabolome. Genetic bases of complex diseases – cardiovascular diseases, obesity, diabetes, cancer; Inborn errors of

metabolism - Fructose intolerance, Galactosemia, Maple sugar urine disease, Phenylketonuria.

UNIT –III GENE-DIET INTERACTIONS

Concepts of Nutrients and Genetic Interaction, Personalised Nutrition, Nutritional Epigenetics, Concepts of Microbiome and Nutrients Interaction, Contribution of the microbiome to health and disease.

UNIT –IV NUTRIGENOMICS OF COMPLEX DISEASES

Modifying disease risk through nutrigenomics - Modulating the risk of Cardio Vascular Diseases, Diabetes Mellitus, Obesity and Cancer through nutrigenomics.

UNIT –V NUTRITIONAL REGULATION OF GENE EXPRESSION

Regulation of intake. Nutrients as Regulators- Macronutrients - carbohydrate, lipids, and protein Micronutrients - vitamins A and D. The intestinal microbiota - role in nutrigenomics.

UNIT –VI DYNAMISM(For CIA only)

NUTRIGENOMICS & INDUSTRY AND PUBLIC:

Scope and Importance to Human Health and Industry. Bringing nutrigenomics to the food industry- important challenges; Public health - significance of nutrigenomics.

REFERENCES:

1. Brown T. A. (2007), Genomes 3. Garland Science Publishing, New York.
2. Griffiths, A.J.F., J.H. Miller, Suzuki, D.T., Lewontin, R.C. and Gelbart, W.M.(2009). An Introduction to Genetic Analysis. IX Edition. Freeman and Co., N.Y., USA.

3. Snustad, D.P. and Simmons, M.J. (2009). Principles of Genetics. V Edition, JohnWiley and Sons Inc.
4. Watson, J.D., Myers, R.M., Caudy, A. and Witkowski, J.K. (2007). Recombinant DNA- Genes and Genomes- A Short Course. III Edition, Freeman and Co., N.Y.,USA.
5. Journal Nutrigenetics Nutrigenomics 2011;4:69–89; Nutrigenetics and Nutrigenomics: Viewpoints on the Current Status and Applications in Nutrition Research and Practice.
6. Journal Nutrients 2012, 4, 1898-1944; Molecular Nutrition Research— The Modern Way Of Performing Nutritional Science.
7. Journal Nutrients 2013, 5, 32-57; Nutrigenetics and Metabolic Disease: Current Status and Implications for Personalized Nutrition

Open Educational Resources (OER) :

1. <http://www.ga-online.org/files/Antalya2011/WS2-Daniel.pdf>
2. <http://www.authorstream.com/Presentation/winingneeraj01-1272374-nutritional-genomics/>
3. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3121546/>
4. <https://pubmed.ncbi.nlm.nih.gov/17378721/>
5. <https://pubmed.ncbi.nlm.nih.gov/15485344/>
6. <https://pubmed.ncbi.nlm.nih.gov/17684398/>

EVALUATION PATTERN

SCHOLASTIC				NON - SCHOLASTIC	MARKS		
C1	C2	C3	C4	C5	CIA	ESE	Total
5	10	15	5	5	40	60	100

COURSE OUTCOMES

On the successful completion of the course, students will be able to:

NO.	COURSE OUTCOMES	KNOWLEDGE LEVEL (ACCORDING TO REVISED BLOOM'S TAXONOMY)	PSOs ADDRESSED
CO 1	Describe the fundamental concepts of genome organization and the genetic variations	K2	PSO 1
CO 2	Analyze the genetic basis of complex diseases	K2, K3	PSO 1
CO 3	Summarize the concepts of Nutrient- Gene Interaction	K2, K4	PSO 1 & PSO 2
CO 4	Build knowledge on modify the disease risk through nutrigenomics	K2	PSO 3 & PSO 4
CO 5	Identify the nutrients as regulators in nutrigenomics	K3& K5	PSO 2

Mapping of COs with PSOs

CO/ PSO	PSO1	PSO2	PSO3	PSO4	PSO5	CO/ PSO

CO1	3		3	3		
CO2	2		3	3		2
CO3	3	2	2	2		2
CO4	2		3	3		2
CO5	2	2	3	3		2

Mapping of COs with POs

CO/ PSO	PO1	PO2	PO3	PO4	PO5
CO1	3	3	3		2
CO2	3	2	2		
CO3	3	3			
CO4	3	3		2	2
CO5	3	2			

Note: Strongly Correlated – 3 Moderately Correlated – 2

“ Weakly Correlated -1

COURSE DESIGNERS:

1.Mrs. J.Thelma 2.Mrs. D.Mouna

Forwarded By



**HOD'S Signature
& Name**

FATIMA COLLEGE (AUTONOMOUS) MADURAI – 18.
II M.Sc. HUMAN NUTRITION AND NUTRACEUTICALS
SEMESTER –III & IV

For those who joined in 2019 onwards

PROGRAM ME CODE	COURSE CODE	COURSE TITLE	CATEGORY	HRS/ WEE K	CREDIT S
PSNN	21PG4SLN	SPORTS NUTRITION	Self Learning	-	2

COURSE DESCRIPTION

The course explains the medical nutrition therapy for sports personnel, common diseases, and special conditions like sports related disease conditions.

COURSE OBJECTIVES

- To identify and describe the nutritional needs of normal & sports personnel.
- To identify and describe various sports related disease conditions.
- To gain knowledge on appropriate medical nutritional therapy for sports injury, sports anaemia, dehydration, gut disorders & allergies.
- To develop the attitude and capacity for taking up sport nutrition counselling as a profession.

Units

Unit-I Introduction to Health & Exercise:

Concept of health, Wellness, Well being . Specific fitness and health status. Physical Activities & Fitness: Concept to Fitness, Exercise -Definition, components of fitness, energy system – aerobic & anaerobic, nutritional demands of sports and dietary recommendations – objectives, nutritional requirements, dietary guidelines-

Unit-II Holistic approach to the management of fitness and health:

Energy input and output. Diet and Exercise Effect of specific nutrients on work performance and physical fitness. Nutrition, exercise, Physical fitness and health – inter-relationship.

Unit III Nutrition in Sports:

Sports specific requirement, Diet manipulation - Pre-game and post game meals. Assessment of different nutrigenic aids and commercial supplements. Diets for persons with high energy requirements, stress, fracture and injury.

Unit IV Medical nutrition therapy (MNT):

MNT for athletes with Nutrition related disorders; Diabetes and Cardiovascular disease: Physiological effect of exercise; Physical activity. Effects of long-term physical activity; Acute effects of exercise; Dietary guidelines and Nutrient timing; type of carbohydrate and timing; Pre and post event carbohydrate loading and fluids; Osteoporosis: Causes and consequences; Physiological effects of exercise; Sports Anaemia: Causes and consequences; .Physiological effects of exercise

Unit V Sports Nutritional Therapy for Gut disorders:

Athletes with gastrointestinal disorders: food allergies and food intolerance; GI disturbance; Excessive flatulence; Abdominal distention; Intermittent diarrhoea; Constipation; Food related adverse reactions (FRAR). Fluid intake- Water and electrolyte balance, losses and their replenishments during exercise and sports events, dehydration and its effects.

References:

1. "Fitness and Wellness" : Warner W. K Hoeger and Sharvon A. Hoeger.
2. "Fitness & Wellness concepts": Charles B. Corbina & Ruth Lindsey.
3. "Lifetime Fitness & Wellness - A personal choice": Melvin H. Williams
4. Oxford Textbook of Public Health, Helen Liepman. • Sunderlal, Aadarsh, Pankaj, 2007.
5. Textbook of Community Medicine, CBS Publishers & Distributors. • Kirch, Wilhelm, 2008.
6. Encyclopedia of Public Health, Volume 1 & 2, Kluwer Academic Publishers.

7. Mary -Jane Schneider and Henrey Schneider, 2006 (2nd edition), Introduction to Public Health, Jones and Bartlett Publishers.
- 8.Kathleen Mahan. L. Sylvia Escott-Stump, Janice L Raymond & Krause (2011) .*Food & Nutrition Therapy*, (13th ed), Elsevier Publications.
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EVALUATION PATTERN

SCHOLASTIC				NON - SCHOLASTIC	MARKS		
C1	C2	C3	C4	C5	CIA	ESE	Total
5	10	15	5	5	40	60	100

COURSE OUTCOMES

On the successful completion of the course, students will be able to:

NO.	COURSE OUTCOMES	KNOWLEDGE LEVEL (ACCORDING TO REVISED BLOOM'S TAXONOMY)	PSOs ADDRESSED
CO 1	Concept of health and wellness Physical activity and fitness	K2	PSO 1
CO 2	Analyze Energy input and output. Physical fitness and health – inter-relationship.	K2, K3	PSO 1
CO 3	Summarize the concepts of Nutrition in sports	K2, K4	PSO 1 & PSO 2
CO 4	Build knowledge on Medical Nutrition Therapy	K2	PSO 3 & PSO 4
CO 5	Identify the sports nutrition therapy for gut disorders	K3& K5	PSO 2

Mapping of COs with PSOs

CO / PSO	P SO 1	PSO 2	PSO 3	P SO 4	P SO 5	P SO 6	P SO 7	P SO 8	P SO 9	P SO 10	P SO 11	P SO 12	P SO 13	P SO 14	P SO 15
C O1	3		3	3											
C O2	2		3	3		2									
C O3	3	2	2	2		2									
C O4	2		3	3		2									
C O5	2	2	3	3		2									

Mapping of COs with POs

CO/ PSO	PO1	PO2	PO3	PO4	PO5
C01	3	3	3		2
C02	3	2	2		
C03	3	3			
C04	3	3		2	2
C05	3	2			

Note: Strongly Correlated – 3
Moderately Correlated – 2
Weakly Correlated -1

COURSE DESIGNERS:

Ms.P. Magdalene Virjini

Forwarded By

A handwritten signature in dark ink, appearing to read 'Vasantha E Rani', written in a cursive style.

(Dr. Vasantha Esther Rani)