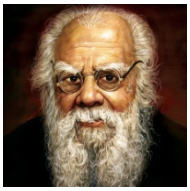
PERIYAR UNIVERSITY

Periyar Palkalai Nagar, Salem-636011

(Reaccredited with 'A' Grade by the NAAC)



School of Professional Studies

DEPARTMENT OF FOOD SCIENCE AND NUTRITION

M.Phil. DEGREE
in
FOOD SCIENCE, TECHNOLOGY AND NUTRITION

[Choice Based Credit System (CBCS)]

REGULATIONS AND SYLLABUS

(Effective from the academic year 2018-2019 and thereafter)

(The syllabus is also subjected to Ph.D. Degree candidates who have to complete course work)

M.Phil. Food Science Technology and Nutrition

Regulations and Syllabus with effect from the academic year (2018-2019)

Programme Objectives

- to mould student's skills and individuality in Food Science and Nutrition research.
- to motivate the students to build a bridge between nutrition research and community development.

Programme Outcome

- Scholars can able to apply various techniques in food product development, food business plan, safe food production protocol, analysis of public health issues, strategic solution for nutritional problems, drafting and implementing nutrition policies and programmes.

Eligibility for Admission

Candidates who have qualified for post graduate degree in Food Science and Nutrition, Foods and Nutrition, Food Technology, Food Processing, Food Engineering, Agriculture, Home Science, Biochemistry and Catering Science and Technology approved by the Association of Indian Universities are eligible to register for the Degree of Master of Philosophy (M.Phil.) and Doctor of Philosophy (Ph.D.) in Food Science Technology and Nutrition.

For full – time M.Phil. registration, candidates shall be required to have obtained a minimum of 55% marks in PG programme. The candidates belonging to SC/ST community, the minimum percentage of marks for registration is 50%. The conditions specified by the University are prevailed in the respective academic year as per the revisions in M.Phil. and Ph.D. regulations proposed by University Grants Commission and thereafter.

Duration

The duration of the M.Phil. Course shall extend over a period of one year from the date of commencement.

Structure of the Programme

The course of study for M.Phil. degree shall consist of (a) Part-I comprising three written papers according to the syllabus prescribed from time to time; and (b) Part-II Dissertation/Thesis. Part-I shall consist of Paper-I: Research Methods and Techniques and Paper-II Advances in Food Science and Nutrition. There shall also be a third paper which shall be the background paper relating to the proposed research.

Scheme of Examination for M.Phil. Degree

Semester I (Part I)

S.No.	Paper Code	Title of the paper	Exam Hours	I	E	T	C
Core Papers (C)							
1	16MPFSN01	Research Methods and Techniques	3	25	75	100	4
2	16MPFSN02	Advances in Food Science and Nutrition	3	25	75	100	4
3	16MPFSN03	Guide Paper	3	25	75	100	4
		Total	-	75	225	300	12

Note:- I- Internal, E-External, T- Total, C- Credit

Semester II (Part II)

S.No.	Paper Code	Title of the paper	Exam Hours	I	E	T	C
Core Papers (C)							
1	16MPFSN04	Dissertation and Viva Voce	3	50	150	200	12
		Total	-	50	150	200	12

Note:- I- Internal, E-External, T- Total, C- Credit

The following procedure is to be adopted to award internal marks

(i) Seminar : 10 Marks
(ii) Tests : 10 Marks
(iii) Attendance : 05 Marks

5. The question paper pattern is

Part A 5X5 = (25 marks)
(Internal choice)

Part B 5X10 = (50 marks)
(Internal choice)

Passing Minimum

A candidate shall be declared to have passed Part-I of the examination if he/she secures not less than 50% of the marks in each paper including Paper –III for which examination is conducted internally.

A candidate shall be declared to have passed Part-II of the examination, if his/ her dissertation is atleast commended.

All other candidates shall be declared to have failed in the examination.

M.Phil. FOOD SCIENCE TECHNOLOGY AND NUTRITION
PART I SYLLABUS
Paper I - Research Methods and Techniques

SUB CODE : 16MPFSN01 **HOURS**: L +T+P=C
MARKS : 100 4+0+0 = 4

Objectives

1. To gain updated knowledge on research design, data analysis, analytical techniques, publication and copyright related to Food Science and Nutrition discipline.

UNIT I

Research design in Food Science and Technology – Food sampling techniques for analysis and product development, sample preparation for various analysis, standardization and portion control, Extraction and Isolation of specific compounds in food – starch, protein, fat, phytochemicals and Nutraceutical compounds, research design- factorial design, randomised block design, central composite rotatable design, techno-economic feasibility analysis, Rapid Assessment Procedures, modeling and computer simulation studies, *in vitro* and *in vivo* methods of testing bioavailability of nutrients, Acute and chronic toxicity studies.

UNIT-II

Research design in Nutritional Science – Problem identification and idea generation, selection of a problem, hypothesis formulation, research design in descriptive surveys and experimental research, sampling techniques, research tools- Quantitative and Qualitative, Reliability and validity of data gathering / measuring instruments. Nutritional mapping and surveillance. Food security status assessment process.

UNIT-III

Statistics – Descriptive Statistics, testing of hypothesis – parametric and non – parametric tests, Computer aided software in statistical calculation - Ms Excel based, SPSS, Organization and representation of data, Ethics in research.

UNIT-IV

Report writing – types of report, parts of report, preparation of project proposal for funding support. Publication / knowledge dissemination - different forms of scientific writing, ISBN and ISSN numbering, citations, Indexing, Impact factor, IPR and patenting, public appraisal techniques for knowledge dissemination.

UNIT-V

Principles and applications of various analytical techniques – colorimetry, photometry, flourimetry, flame photometer, atomic absorption spectrophotometer, chromatography, electrophoresis, infrared spectrometry, X-Ray diffractometer, microscopes, viscometer, rheometer, texture analyser, densitometer, refractometer, penetrometer, hydrometer, hunter color lab, water activity meter.

Practical Experiences

1. Two-day Workshop on "SPSS Packages in food and Nutritional sciences"
2. Two-day Workshop on Food Science and Nutrition Research methods.
3. Training on utilization of e-resource, journal numbering, citations of an article, indexing, impact factor calculation through central library of Periyar University.
4. Training on advanced analytical techniques.

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M.Phil. FOOD SCIENCE AND NUTRITION
PART I SYLLABUS
Paper II – Advances in Food Science and Nutrition

SUB CODE: 16MPFSN02 **HOURS**: L +T+P=C

MARKS : 100 4+0+0= 4

Objectives

1. To explore research oriented knowledge and entrepreneurial skill on Food Science and Nutrition discipline.

UNIT I

Properties and quality of food – Principles and methods of determination of physical, functional, chemical, nutritional, thermodynamic, mass – transfer, kinetic, microbiological and sensory properties of food. Food'omics' – metabolomics, proteomics and nutrigenomics.

UNIT-II

Food value chain – Origin of food, production trend, post harvest technology- from farm yard to consumer table, shelf life of a product, packaging material and systems, labeling, food processing industries in World and India, food industrial by products and waste management.

UNIT-III

Food safety and regulations - Anti nutritional factors, contaminants and toxic elements in food, food additives, food laws and regulations- National and International laws and legislations, food safety management tools, consumer protection procedures, laws and regulations, food safety testing kits and rapid diagnostic procedures.

UNIT-IV

Special Nutrition – Nutrition in exercise, sports, space, defense, high altitudes, low temperatures, submarines. nutrition and diet in common deficiency disorders, nutrition and diet in common diseases / disorders, nutrition in critical care – pre and post operative diets, nutrition and behaviors, role of Nutraceutical and functional components in health claim.

UNIT-V

Public Health Nutrition – Evolution of nutrition, nutrition transition, nutritional and non-nutritional indicators of nutritional status of a community, food security status in India, systems, policies and organization deliverables of food and nutritional security in India. Nutrition in emergencies.

Practical experience

1. Training on food safety and quality control by FSSAI personnel.
2. Field visit to public health department to study its functional and current status.
3. Visit to food processing industries.
4. Any one entrepreneurship programme.

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