



**M.Phil. FOOD SERVICE MANAGEMENT & DIETETICS (FT / PT)  
PROGRAMME**

(For the candidates to be admitted from the academic year 2018-19 onwards)

**Eligibility:** M. Sc. – Food Service Management and Dietetics / Food & Nutrition / Food Science and Nutrition / Nutrition & Dietetics / Clinical Nutrition and Dietetics

**PROGRAMME OBJECTIVES:**

- To pursue challenging careers as managers/entrepreneur in the dynamic and growing healthcare and food service industry.
- To develop competency in establishing food service centres and diet clinics to meet the requirements of different socio- economic levels.
- To gain knowledge and develop skills in equipment handling involved in both foods service/analytical techniques.
- To develop insight on the practical aspects of analytical cookery.
- To apply advanced statistical procedure to analyze numerical data and draw inference to get an overview of the methodologies used in educational research.

**PROGRAMME STRUCTURE**

Sem-ester	Course	Title of the Course	Exam. Hours	Credits	Marks		
					IA	UE	Total
I	Course - I	Research Methodology	3	4	25	75	100
	Course - II	Food Service Management and Dietetics	3	4	25	75	100
	Course - III	Teaching and Learning skills (Common Paper)	3	4	25	75	100
	Course - IV	Paper on Topic of Research (The syllabus will be prepared by the Guide and the examination will be conducted by the COE)	3	4	25	75	100
II	---	Dissertation and Viva-Voce Viva Voce 50 marks Dissertation 150 marks	--	8	--	--	200
<b>Total</b>				<b>24</b>	--	--	<b>600</b>

**PROGRAMME OUTCOMES:**

- Gain proficiency in the selection and use of information and industry-specific technologies appropriately to enhance work performance and the management delivery of food and nutrition services.
- Become conscientious caterers and students achieve proficiency in implementing safe food handling procedures in food services/ health care practices.
- Learn to combine food service administration and health care to interpret and apply nutritional care principles to promote health and manage a food service department effectively.
- Understand the concept of entrepreneurship as an effective to a ‘White Collar Job.

\*\*\*\*\*

## Course I

### RESEARCH METHODOLOGY

#### Course Objectives :

- Comprehensive, theory based understanding of research fundamentals applicable to the advanced research discipline.
- Conceptual understanding of the, numerical analysis, statistics, and computational information sciences which underpin the advanced research discipline.
- Application of established tools to complex problem solving.
- Fluent application of computerized statistical techniques, tools and resources in health data management process.

#### Unit I : Research process

Types of research, Definition of research problem, Review of Literature, Conceptual Framework for research, Research Tools and Research Design, Collection of data, Analysis and reporting of data, Ethical consideration in Food Service Management and Clinical/ Dietetics research

#### Unit II : Research Documentation

Processing of data – Editing, coding, Tabulation& Graphical representation of data, Interpretation of Data – style and mechanism of writing research report, guidelines for writing references and bibliographical citation- APA , MLA, Chicago, Harvard style, Use of software in writing references and bibliographical citation (ENDNOTE X6), Plagiarism-code of ethics and Application of plagiarism software.

#### Unit III : Instrumentation& Analysis

Nutritional composition analysis –Carbohydrate, Protein, Fat, Fibre, Moisture, Ash, Vitamin & Mineral (Qualitative and Quantitative Analysis)  
**Instrumentation** - Chromatography – TLC, HPLC, HPTLC, Electrophoresis – SDS PAGE, Spectrophotometer – GCMS, AAS, FTIR, FTNIR, NMR, Flourimeter, Flame photometer, and Photoelectric Calorimeter

#### Unit IV : Health Data Management

MS Excel - Introduction to MS Excel, creating a data file, data manipulations, simple statistical analysis (mean, median, mode, 't' test, 'F' test, correlation and regression)using Excel, making graphs and charts.

#### Unit V : Statistical package for Social Sciences (SPSS Version 16.0)

Data view and variable view, importing a file, Data transformations (compute, recode, count, If, yrmoda). Sorting cases, merging and appending data, Frequencies, descriptive statistics, cross tabulations. Statistical analysis: one sample 't' test, independent sample 't' test, paired 't' test, ANOVA with post hoc comparison, chi square test, Fisher's exact test,

McNemar chi-square test, correlation and regression. Non-parametric methods: Mann Whitney U test, Wilcoxon Signed rank test, Spearman's correlation.

## Reference Books

1. **Beverley Moriarty (2018)** Research Skills for Teachers: From research question to research design **Publisher:** A&U Academic Australia **ISBN:**9781760290672
2. **Kothari. C.R.(2003)** Research Methodology – Methods and Techniques, **Publisher:** New age International **ISBN (13) :** 978-81-224-2488-1
3. **Zar, J.H. 2003.** Biostatistical Analysis. Pearson Education (Singapore) Pvt. Ltd., Indian Branch, New Delhi
4. **Wilson and Walkar,(2000)**A Biologist guide to principles and techniques of practical biochemistry by 5th edition, Cambridge University press
5. **Boyer. R,(2000)** Modern Experimental Biochemistry 3rd edition Addison Wesley Longman,
6. **Morris A Jacobs ()** The Chemical analysis of food and Food products **Publisher:** CBS Publishers and Distributors New Delhi **ISBN:**9781760290672
7. **Upadhyay, and Nath(1997)**Biochemical Chemistry Principles and Techniques, Himalaya Publication
8. **Veerakumari L (2015)** **Bioinstrumentation** **Publisher:** MJP **ISBN:**9788180942549
9. **Webster (2007)****Bioinstrumentation** **Publisher:** Wiley **ISBN:** 9788126513697
10. **Bernd held (2007)** Excel Functions & Formulas **Publisher:** BPB publications **ISBN:** 9788183331821
11. **WebTech Sol.(2010)** Mastering Microsoft Excel Functions and Formulas 1 Edition **Publisher:** Khanna Book Publishing **ISBN:** 9789380016566
12. **Marija L. Norušis (2008)** **SPSS 16.0 Guide to Data Analysis (2nd Edition)****Publisher:** Prentice Hall; 2 edition **ISBN-10:** 0136061362 **ISBN-13:** 978-0136061366
13. **KiranPandya (2011)** SPSS in Simple Steps **Publisher:** Dreamtech Press India Pvt. Ltd **ISBN:** **9789350042519**
14. **Chow SC, Shao J and Wang H.(2008)** Sample size calculations in clinical research, **Publisher:** Chapman & Hall, CRC press.
15. **Kate Williams (2017)** Referencing And Understanding Plagiarism (Pocket Study Skills) **Publisher:** Palgrave 2 edition **ISBN-10:** 1137530715 **ISBN-13:** 9781137530714

## Journals

- ✓ BMC Medical Research Methodology - <https://bmcmedresmethodol.biomedcentral.com/>
- ✓ Journal of Mixed Methods Research - <http://journals.sagepub.com/home/mmr>
- ✓ Qualitative Research - <http://journals.sagepub.com/home/qri>
- ✓ Organizational Research Methods - <http://journals.sagepub.com/home/orm>
- ✓ International Journal of Science and Research Methodology - [www.ijprm.humanjournals.com](http://www.ijprm.humanjournals.com)

✓ International Journal of Social Research Methodology - <https://ijsrm.org>

**Course Outcomes :**

Upon successful completion of this subject students should be able to:

- Learn and understand the basic of several research techniques that can create artifact in identifying a research problem and be able to design components to solve the same
- Understand theory and design to approach research problem.
- Identify and describe operation of bio instrumentation.
- Analyze where and how these Instrumentation sensors are used in healthcare.
- Review and understand the principles of digital applications to design and solve the problem to be used in laboratory and application sessions.

\*\*\*\*\*

## Course II

### FOOD SERVICE MANAGEMENT AND DIETETICS

#### Course Objectives :

- Establish a food service manufacturing facility to support innovative and sustainable growth in the food industries
- Entrepreneurial focus to train and educate students and stakeholders in current and emerging processing technologies.
- Develop an energy-efficient operation for the food industry
- Develop and implement safe food supply chain
- Develop and maintain a high quality careers in dietetics
- Enhance digital proficiency in health management

#### Unit I : Dietary Unit and Health Centre

**Project planning-** Idea Generation, Market analysis, Cost benefit analysis, Prototype development, Business plan, Project proposal, Food engineers Role Registration & Licensing of a food business (FSSAI Regulation), Implementation protocol,

#### Unit II : Nutraceuticals and Health Management

Definition, Nutraceutical formulations & Challenges, Mechanism of actions, Potential Nutraceutical Ingredients, Isolation and manufacturing protocol of a compound, Nutraceutical industries & marketing trends in India& Global, Regulations and Legislations for nutraceuticals in India

#### Unit III : Quality Assurance Programme

Food Safety Management: Basic concept, Prerequisites - GHPs, GMPs and SSOPs, HACCP, ISO series, TQM - concept and need for quality, components of TQM, Role of quality assurance programme in the establishment of catering unit.

#### Unit IV : Patient Management and Nutrition Care Process

**In patient/ Outpatient care** - Date entry and enrolment of patients, Treatment regimen, General information, Diet history, Food likes and dislikes, Nutrient requirement Calculations, Diet prescription, Meal planning and distribution, Portion control, Implementation and follow- up.

#### Unit V : Computer and Mobile Application in Nutrition

**Nutrition software programmes** - Use of computers in the field of nutrition - patient registration, diet prescription, counselling and research applications. Softwares in nutrition research: DIETCAL, WHO ANTHRO PLUS, ESHA DIETSOFT and DIGEST. Role and impact of smart phone App for Nutrition Education

#### References Books

1. **Livingston, G.E. (1979).** Food Service Systems-Analysis, Design and Implementation -Academic Press. •

2. **Powers, T. F. And Powers, T. M. (1984).** Food Service Operations Planning and Control. John Wiley & Sons.
3. **Minor, L. J., Cichy, R. F. (1984). Food Service Systems Management. Connecticut AviPubl**
4. **Yashwant Vishnupant Pathak (2009)** Handbook of Nutraceuticals Volume I Ingredients, Formulations, and Applications & Volume II Scale-Up, Processing and Automation: **Publisher:** CRC Press ISBN 9781420082210
5. **Israel Goldberg (2009)**Functional Foods – Designer foods, Pharma foods, Nutraceuticals**Publisher:** Aspen publishers Inc Maryland**ISBN** :9781441951953
6. **D.G. Rao (2010)** Fundamentals of Food Engineering **Publisher:** Asoke K. Ghosh PHI learning Pvt. Ltd. **ISBN:** 9788120338715
7. **Yasmine Motarjemi HuubLelieveld (2013)** Food Safety Management 1st Edition A Practical Guide for the Food Industry **Publisher:** Academic Press **ISBN:** 9780123815040

### **Journals**

- ✓ Journal of Business and Hotel Management
- ✓ The Journal of Foodservice Management and Education - <http://fsmec.org/journal/>
- ✓ Journal of Foodservice Business Research - <https://www.tandfonline.com/>
- ✓ International Journal of Contemporary Hospitality Management - <https://www.emeraldinsight.com>
- ✓ [Journal of culinary science & technology](https://www.emeraldinsight.com)
- ✓ Journal of the Academy of Nutrition and Dietetics - <https://www.journals.elsevier.com/journal-of-the-academy-of-nutrition-and-dietetics>
- ✓ Journal of Nutrition and Dietetics - <https://www.omicsonline.org/journal-nutrition-dietetics.php>
- ✓ The Journal of Human Nutrition and Dietetics - <https://onlinelibrary.wiley.com/journal/1365277x>

### **Course Outcomes :**

Upon successful completion of this subject students should be able to:

- Enter the Hotel/ Hospital sector with proficient skills at the competent level.
- Gain autonomy in professional code of ethics expected for a food service entrepreneur/dietitian
- Perform management functions related to field of expertise that affect employees, customers, patients and food
- Master skills and hands-on experience necessary to develop, implement and monitor food safety and quality assurance systems in the food manufacturing industry
- Gain authority in responsible use of resources, including employees/patients, money, time, health, food and in disposing the waste
- Mastering new terrain in Computerized Nutrition Education

\*\*\*\*\*

## **COURSE III**

### **Teaching and Learning Skills**

#### **Course Objectives :**

- Acquaint different parts of computer system and their functions.
- Understand the operations and use of computers and common Accessories.
- Develop skills of ICT and apply them in teaching learning context and Research.
- Appreciate the role of ICT in teaching, learning and Research.
- Acquire the knowledge of communication skill with special reference to its elements, types, development and styles.
- Understand the terms communication Technology and Computer mediated teaching and develop multimedia /e- content in their respective subject.
- Understand the communication process through the web.
- Acquire the knowledge of Instructional Technology and its Applications.
- Develop different teaching skills for putting the content across to targeted audience.

#### **Unit I : Computer Application Skills**

Information and Communication Technology (ICT): Definition, Meaning, Features, Trends – Integration of ICT in teaching and learning – ICT applications: Using word processors, Spread sheets, Power point slides in the classroom – ICT for Research: On-line journals, e-books, Courseware, Tutorials, Technical reports, Theses and Dissertations-- **ICT for Professional Development**: Concept of professional development; institutional efforts for competency building; individual learning for professional development using professional networks, OERs, technology for action research, etc.

#### **Unit II : Communications Skills**

Communication: Definitions – Elements of Communication: Sender, Message, Channel, Receiver, Feedback and Noise – Types of Communication: Spoken and Written; Non-verbal communication – Intrapersonal, interpersonal, Group and Mass communication – Barriers to communication: Mechanical, Physical, Linguistic & Cultural – Skills of communication: Listening, Speaking, Reading and Writing – Methods of developing fluency in oral and written communication – Style, Diction and Vocabulary – Classroom communication and dynamics.

#### **Unit III : Pedagogy**

Instructional Technology: Definition, Objectives and Types – Difference between Teaching and Instruction – Lecture Technique: Steps, Planning of a Lecture, Delivery of a Lecture – Narration in tune with the nature of different disciplines – Lecture with power point presentation - Versatility of

Lecture technique – Demonstration: Characteristics, Principles, planning Implementation and Evaluation – Teaching-learning Techniques: Team Teaching, Group discussion, Seminar, Workshop, Symposium and Panel Discussion.

#### **Unit IV : E- Learning, Technology Integration and Academic Resources in India**

Concept and types of e-learning (synchronous and asynchronous instructional delivery and means), m-learning (mobile apps); blended learning; flipped learning; E-learning tools (like LMS; software's for word processing, making presentations, online editing, etc.); subject specific tools for e-learning; awareness of e-learning standards- Concept of technology integration in teaching- learning processes; frameworks guiding technology integration (like TPACK; SAMR); Technology Integration Matrix- Academic Resources in India: MOOC, NMEICT; NPTEL; e-pathshala; SWAYAM, SWAYAM Prabha, National academic depository, National Digital Library; e-Sodh Sindhu; virtual labs; eYantra, Talk to a teacher, MOODLE, mobile apps, etc.

#### **Unit V : Skills of Teaching and Technology based assessment**

Teaching skills: Definition, Meaning and Nature- Types of Teaching Skills: Skill of Set Induction, Skill of Stimulus Variation, Skill of Explaining, Skill of Probing Questions, Skill of Black Board Writing and Skill of Closure – Integration of Teaching Skills – Evaluation of Teaching Skills- **Technology for Assessment:** Concept of assessment and paradigm shift in assessment; role of technology in assessment 'for' learning; tools for self & peer assessment (recording devices; e-rubrics, etc.); online assessment (open source software's; e-portfolio; quiz makers; e- rubrics; survey tools); technology for assessment of collaborative learning like blogs, discussion forums; learning analytics.

#### **References**

1. Bela Rani Sharma (2007), Curriculum Reforms and Teaching Methods, Sarup and sons, New Delhi
2. Brandon Hall , E-learning, A research note by Namahn, found in: [www.namahn.com/resources/ .../note-e-learning.pdf](http://www.namahn.com/resources/.../note-e-learning.pdf), Retrieved on 05/08/2011
3. Don Skinner (2005), Teacher Training, Edinburgh University Press Ltd., Edinburgh
4. Information and Communication Technology in Education: A Curriculum for schools and programmed of Teacher Development, Jonathan Anderson and Tom Van Weart, UNESCO, 2002.
5. Jereb, E., & Šmitek, B. (2006). Applying multimedia instruction in e-learning. Innovations in Education & Teaching International, 43(1), 15-27.
6. Kumar, K.L. (2008) Educational Technology, New Age International Publishers, New Delhi.



7. Learning Management system : [https://en.wikipedia.org/wiki/Learning\\_management\\_system](https://en.wikipedia.org/wiki/Learning_management_system) , Retrieved on 05/01/2016
8. Mangal, S.K (2002) Essential of Teaching – Learning and Information Technology, Tandon Publications, Ludhiana.
9. Michael,D and William (2000), Integrating Technology into Teaching and Learning: Concepts and Applications, Prentice Hall, New york.
10. Pandey,S.K (2005) Teaching communication, Commonwealth Publishers, New Delhi.
11. Ram Babu,A abd Dandapani,S (2006), Microteaching (Vol.1 & 2), Neelkamal Publications, Hyderabad.
12. Singh,V.K and Sudarshan K.N. (1996), Computer Education, Discovery Publishing Company, New York.
13. Sharma,R.A., (2006) Fundamentals of Educational Technology, Surya Publications,Meerut
14. Vanaja,M and Rajasekar,S (2006), Computer Education, Neelkamal Publications, Hyderabad.

### **Course Outcomes**

After completing the course, the students will:

- Develop skills of ICT and apply them in Teaching Learning context and Research.
- Be able to use ICT for their professional development.
- Leverage OERs for their teaching and research.
- Appreciate the role of ICT in teaching, learning and Research.
- Develop communication skills with special reference to Listening, Speaking, Reading and Writing.
- Learn how to use instructional technology effectively in a classroom.
- Master the preparation and implementation of teaching techniques.
- Develop adequate skills and competencies to organize seminar / conference / workshop / symposium / panel discussion.
- Develop skills in e-learning and technology integration.
- Have the ability to utilize Academic resources in India for their teaching.
- Have the mastery over communication process through the web.
- Develop different teaching skills for putting the content across to targeted audience.
- Have the ability to use technology for assessment in a classroom.

\*\*\*\*\*