



# Minutes of Meeting of the 2nd Board of Studies Meeting of the Academic Year 2024-25

**Department of Food Science and Nutrition**



# SEVA MANDAL EDUCATION SOCIETY’S

**Dr. BHANUBEN MAHENDRA NANAVATI COLLEGE OF HOME**

# SCIENCE (Autonomous)

**NAAC Re-accredited ‘A+’ Grade with CGPA 3.69/4 (3rd Cycle) UGC Status: College with Potential for Excellence**

# 338, R.A Kidwai Road, Matunga, Mumbai 400019.

**Minutes of Meeting of the Board of Studies for the Academic Year 2024-25**

**Department of Food Science and Nutrition**

**M.Sc. Clinical Nutrition and Dietetics**

**Course Syllabus**

**Semester IV**

| **Sr. No** | **Courses** | **Type of Course** | **Credits** | **Theory** | **Practical** | **Marks** |
| --- | --- | --- | --- | --- | --- | --- |
| **Semester IV** | | | | | | |
| 4.1 | Dissertation | Research Project | 6 | - | 6 | 150 |
| 4.2 | Scientific Writing and Ethics | Major core | 4 | 4 | - | 100 |
| 4.3 | Pediatric & Geriatric Nutrition | Major core | 4 | 3 | 1 | 100 |
| 4.4 | Techniques of Counselling for Nutrition | Major core | 4 | - | 4 | 100 |
| 4.5 | Introduction to Food Entrepreneurship/ Food Service Management | Major Elective | 4 | - | 4 | 100 |
|  |  |  | **22** |  |  | **550** |

* 1. **Research Project**

| Course Title | **Dissertation** |
| --- | --- |
| Course Credits | **6 (Practical)** |
| Course Outcomes | After going through the course, learners will be able to |
| Execute of a research project |
| Prepare a Dissertation report |
| ***Module 1 (Credit 2) - Introduction to The Process of Collecting Data*** | |
| Learning Outcomes | After learning the module, learners will be able to |
| 1. Understand the process of implementing research based on research proposals. |
| Content Outline | * Describing a sampling method, subject selection (Exclusion & Inclusion criteria), procedure for sample selection. * Understanding data collection methods and tools for data collection * Data Collection of pilot Study & Main Study * Data organization & processing |
| ***Module 2 (Credit 2) – Data Visualization& Application of Statistical Tools*** | |
| Learning Outcomes | After learning the module, learners will be able to |
| * Interpretation of Data based on charts, graphs * Develop and apply relevant statistical tools for the research study |
| Content Outline | * Use of Parametric & Non-parametric Tests * Understanding the statistical tools & its application * Interpretation of statistical tools &its outcome of results |
| ***Module 3 (Credit 2): Dissertation Writing*** | |
| Learning Outcomes | After learning the module, learners will be able to |
| 1. Compile & prepare chapters of the dissertation. |
| Content Outline | * Preparation of a progress report - structure, style, formatting * Preliminary research writing - chapterization , preparation of * Results & Discussion, Summary, Conclusion, Recommendations, Limitations, and References |

# Assignments/Activities towards Comprehensive Continuous Evaluation (CCE)

| Evaluation | Details | Marks |
| --- | --- | --- |
| Internal | Internal Guide Evaluation | 75 |
| External | Thesis Submission and Viva Voce | 75 |
| Total |  | 150 marks |

# References

* Christensen, L. B., Johnson, B., Turner, L. A., & Christensen, L. B. (2015). Research methods, design, and analysis. Pearson Education, Essex.
* Hering, H. (2019). How to write technical reports. Springer Berlin Heidelberg.
* Kamath, R. & Udipi, S. (2010). Thesis and scientific writing: Process form and content. Udaipur: Agrotech Publishing Academy.
* Kothari, C. R. (2019). Research Methodology: Methods and Techniques. New Delhi: New Age International.
* Kumar, R. (2011). Research Methodology - Step-by-Step Guide for. Singapore: Pearson Education.
  1. Major (Core)

| Course Title | **Scientific Writing and Ethics** |
| --- | --- |
| Course Credits | **4 (Theory)** |
| Course Outcomes | After going through the course, learners will be able to |
| 1. Apply the fundamental concepts in preparing a scientific manuscript to communicate research findings effectively. |
| 1. Understand the significance of ethical practices in research writing. |
| ***Module 1 (Credit 1) -  Introduction to scientific writing*** | |
| Learning Outcomes | After learning the module, learners will be able to |
| 1. Understand and apply the principles of scientific writing. 2. Develop skills to construct well-organized scientific documents with logical flow. |
| Content Outline | * Writing for the scientific community, types of paper (short communication, original research article, review) * Organization of a research paper - IMRAD format, STROBE checklist, Choosing a title, Writing a paper - Abstract, Introduction, Methods, Results, Discussion, Summary guidelines, References, and citations. * Prepare tables and figures, which are data presentation guidelines. * Reference management - Mendley, Zotero, Reference managers |
| ***Module 2 (Credit 1) -  Preparation of a Research manuscript*** | |
| Learning Outcomes | After learning the module, learners will be able to |
| 1. Prepare research manuscripts that meet academic and publication standards. 2. Understand the process of publication of articles in research journals. |
| Content Outline | * Publishing work: selection of journal, journal quality - Citation index and Impact factors, indexed journals, open access journals * Manuscript author guidelines - manuscript preparation & submission, authorship, proofreading of a manuscript, reviewing of a manuscript, making corrections and answering reviewers queries, reasons for rejection of a manuscript |
| ***Module 3 (Credit 1) -  Other scientific communications*** | |
| Learning Outcomes | After learning the module, learners will be able to |
| 1. Learn to present research findings for different audiences 2. Develop skills to structure a scientific oral and poster presentation 3. Develop the ability to write clear and concise research proposals |
| Content Outline | * Preparation of oral and poster presentations - Organization of the Paper, Presentation of the Paper, Slides, Preparing and presenting a research Poster * Writing a Review Paper - Characteristics of a Review Paper, Preparing an Outline, Types of Reviews * Preparing a Grant Proposal - Identifying Potential Sources of Funding, Preliminary Letters and Proposals, Common Parts of a Proposal, Writing the Proposal, Common Reasons for Rejection, Resubmitting a Proposal, Writing a Progress Report |
| ***Module 4 (Credit 1) - Ethics and scientific integrity*** | |
| Learning Outcomes | After learning the module, learners will be able to |
| 1. Know about the ethics of science research 2. Understand the research integrity |
| Content Outline | * Ethics: definition, moral philosophy, relation with research * Falsification, Fabrication & Plagiarism, predatory publishers & journals * Selective reporting & misrepresentation of Data * Redundant Publications: duplicate & Overlapping publications, * Salami slicing * Drillbit -Antiplagiarism tool |

# Assignments/Activities towards Comprehensive Continuous Evaluation (CCE)

| Evaluation | Details | Marks |
| --- | --- | --- |
| Internal | Unit Test | 25 |
|  | Preparation of Manuscript and Class Presentations | 25 |
| External | Written Examination | 50 |
| Total |  |  |

**References**

* Gastel, B., & Day, R. A. (2022). How to write and publish a scientific paper. Bloomsbury Publishing USA.
* Guidance on Scientific Writing- Equator Network. Https://www.equator-network.org/library/guidance-on-scientific-writing/
* Katz, M. J. (2009). From research to manuscript: A guide to scientific writing. Springer Science & Business Media.
* Kotz D, Cals J. Scientific writing and publishing in medicine and health sciences: A quick guide in English and German. Berlin, Boston: De Gruyter; 2021.
* Nair, P. R., & Nair, V. D. (2014). Scientific writing and communication in agriculture and natural resources (p. 13). Springer.
* Peat, J., Elliott, E., Baur, L., & Keena, V. (2013). Scientific writing: easy when you know how. John Wiley & Sons.

**4.3 Major (Core):**

| Course Title | **Paediatric and Geriatric Nutrition** |
| --- | --- |
| Course Credits | **(Theory- 3+Practical - 1)** |
| Course Outcomes | After going through the course, learners will be able to |
| * Understand the nutritional needs of pediatric and geriatric populations * Develop skills to perform nutritional assessments of pediatric and geriatric populations * Plan nutritional strategies for pediatric and geriatric individuals & populations |
| ***Module 1Th (Credit 1):  Pediatric Nutrition*** | |
| Learning Outcomes | After learning the module, learners will be able to |
| * Understand feeding practices and nutritional requirements of pediatric populations * Learn physiological changes seen in pediatrics and use of different tools for nutritional assessment |
| Content Outline | 1. Feeding practices for infants- Breastfeeding & Complementary feeding 2. Physiological changes from infancy to adolescence 3. Nutritional requirements in infancy, childhood and adolescence 4. Tools for nutritional assessment of pediatric populations |
| ***Module 2 Th (Credit 1): Pediatric Malnutrition & micronutrient deficiencies*** | |
| Learning Outcomes | After learning the module, learners will be able to |
| * Understand different types of malnutrition occurring in pediatric population * Develop strategies to treat and combat these malnutrition disorders |
| Content Outline | 1. Malnutrition in pediatrics 2. Preterm/ VLBW infants 3. SAM/MAM 4. PEM 5. Micronutrient deficiencies 6. Over nutrition in paediatrics |
| ***Module 3 Th (Credit 1): Geriatric Nutrition*** | |
| Learning Outcomes | After learning the module, learners will be able to |
| * Understand physiological changes occurring in elderly and their impact on nutritional status * Conduct nutritional assessments of elderly populations and identify nutritional deficiencies |
| Content Outline | 1. Physiological changes associated with elderly population 2. Factors influencing food consumption in elderly 3. Nutritional assessment of elderly population 4. Nutritional deficiencies in elderly population |
| ***Module 4 Pr (Credit 1): Meal Preparations for pediatric and geriatric groups*** | |
| Learning Outcomes | After learning the module, learners will be able to |
| * Develop healthy and nutritious recipe for pediatric and geriatric populations * Understand the variations required for developing these recipe to make them palatable and healthy |
| Content Outline | Planning preparations for   1. Infants 2. Children 3. Adolescents 4. Elderly |

# Assignments/Activities towards Comprehensive Continuous Evaluation (CCE)

| Evaluation | Details | Marks |
| --- | --- | --- |
| Internal | Unit Test | 25 |
|  | Meal Planning and Preparations | 25 |
| External | Written Examination | 50 |
| Total |  |  |

References:

* Koletzko, B., Bhutta, Z. A., Cai, W., Dhansay, M. A., Duggan, C. P., Makrides, M., & Orsi, M. (Eds.). (2022). *Pediatric nutrition in practice*. Karger Medical and Scientific Publishers.
* Suskind, D., & Lenssen, P. (Eds.). (2013). *Pediatric Nutrition handbook: an algorithmic approach*. John Wiley & Sons.
* King, K. (2012). *Pediatric nutrition* (pp. 53-69). P. Q. Samour (Ed.). Jones & Bartlett Learning.
* Duggan, C., Watkins, J. B., Koletzko, B., & Walker, W. A. (Eds.). (2016). *Nutrition in pediatrics: basic science, clinical applications* (Vol. 1). PMPH USA, Ltd.
* Dubey, A. P. (2017). Pediatric nutrition in practice: 2: nd: revised edition.
* Heizer, W. D. (2004). Handbook of Clinical Nutrition and Aging. *Gastroenterology*, *127*(5), 1641-1642.
* Watson, R. R. (2008). *Handbook of Nutrition in the Aged*. CRC Press.
* Morley, J. E., & Thomas, D. R. (2007). *Geriatric nutrition*. CRC press.
* Gallo, J. J. (Ed.). (2006). *Handbook of geriatric assessment*. Jones & Bartlett Learning.
* Chernoff, R. (2013). Geriatric nutrition: the health professional's handbook.

**4.4 Major (Core)**

| Course Title | **Techniques for Counselling in Nutrition** |
| --- | --- |
| Course Credits | **(Practical- 4)** |
| Course Outcomes | After going through the course, learners will be able to |
| * Enable students to develop teaching aids for counseling * Apply knowledge of counseling strategies to counsel and educate an individual or group. |
| ***Module 1 (Credit 1):  Counselling Process*** | |
| Learning Outcomes | After learning the module, learners will be able to |
| * Understand the process of counselling, role of a counsellor and client in counselling process * Understand Counselling techniques, strategies and communication skills |
| Content Outline | **Counsellor –** Characteristics of an effective counselor  **The Client –** Characteristics, expectations  **The Counselling Process:**  **Techniques for obtaining relevant information**  1. Clinical Information  2. Medical History and General Profile  3. Dietary Diagnosis  4. Nutritional Status  5. Correlating relevant information and identifying areas of need  Counselling techniques, strategies and communication skills |
| ***Module 2 (Credit 1): Development of aids*** | |
| Learning Outcomes | After learning the module, learners will be able to : |
| * Understand different methods and aids used for counseling * Learn to develop resources and aids required for counseling * Make appropriate use of developed aids in the counseling process |
| Content Outline | Channels of Nutrition Communication  Teaching aids- Machine & Non-machine  Teaching aid preparation |
| ***Module 3 & 4(Credit 2): Conducting Nutrition and Health Education session*** | |
| Learning Outcomes | After learning the module, learners will be able to |
| * Conduct nutrition and health education sessions using developed aids * Evaluate the effectiveness of the method and aids used |
| Content Outline | Conducting Nutrition and Health education sessions for different sections of the community such as schools, colleges, corporate sectors, society, etc |

# Assignments/Activities towards Comprehensive Continuous Evaluation (CCE)

| Evaluation | Details | Marks |
| --- | --- | --- |
| Internal | Unit Test | 25 |
|  | Development of Counselling Aids | 25 |
| External | Conducting Counseling Sessions using the aids developed | 50 |
| Total |  | 100 |

**References:**

* "Nutrition Counseling: A Comprehensive Resource for Health Professionals" by Judy G. Odom and Linda B. R. Thompson (2011)
* "Nutrition Therapy and Pathophysiology" by Marcia Nahikian-Nelms and Kathryn P. Sucher (2015)
* "The Complete Guide to Nutritional Health" by Barbara M. Scully (2013)
* "Counseling and Educational Psychology in Health Care Settings" by Lisa J. A. L. Smith (2010)
* "Behavioral Nutrition: A Handbook for Health Professionals" by Paul A. L. de Vries (2017)
* "Dietitian's Dilemma: A Guide to Nutrition Counseling" by Jennifer O. Albrecht (2014)
* "The Handbook of Health Psychology and Behavioral Medicine" by H. Koenig and M. E. Wolever (2017)

**4.5 Major (Elective) I**

| Course Title | **Introduction to Food Entrepreneurship** |
| --- | --- |
| Course Credits | **4 (Theory)** |
| Course Outcomes | After going through the course, learners will be able to |
| 1. Understand the concepts of entrepreneurship, its needs and scope |
| 2. Understand the meaning of the term entrepreneur, the classification of entrepreneur, and the qualities of  an entrepreneur |
| 3. Appreciate the concept of innovation |
| ***Module 1 (Credit 1): Entrepreneurship in Education – What, Why, When, How*** | |
| Learning Outcomes | After learning the module, learners will be able to |
| 1. To understand the basic concepts of Entrepreneurship |
| 1. To  know about the common core of entrepreneurship |
| Content Outline | 1.1 Terminology of Entrepreneurship  1.2 Who is an Entrepreneur?  1.3 Characteristics of a Successful Entrepreneur |
| ***Module 2 (Credit 1): Creativity, Innovation and Entrepreneurship*** | |
| Learning Outcomes | After learning the module, learners will be able to |
| 1. To understand the different ways to assess entrepreneurship |
| 1. To know about the entrepreneur skills |
| Content Outline | 2.1 The Creative Process  2.2 The Process of Innovation |
| ***Module 3 (Credit 1):* Business Requirements for Food Products** | |
| Learning Outcomes | After learning the module, learners will be able to |
| To apprehend the global concept of entrepreneurship |
| To understand the insights about entrepreneurship as a business model |
| Content Outline | 3.1 What an Entrepreneur Needs to Consider?  3.2 Marketing skills  3.3 Developing the Business Plan |
| ***Module 4 (Credit 1): Understanding the Development of  Innovative Food Products*** | |
| Learning Outcomes | After learning the module, learners will be able to |
| 1  To gain practical knowledge through skill-based training |
| 2. To understand the scaling up of Food products through a practical approach |
| Content Outline | 4.1 Development of Food Products  4.2 Innovations  Modification & Standardization  4.3 Packaging & Food Labeling  4.4 FSSAI Rules & Regulations |

# Assignments/Activities towards Comprehensive Continuous Evaluation (CCE)

| Evaluation | Details | Marks |
| --- | --- | --- |
| Internal | Unit Test | 25 |
|  | Class Presentations and fieldwork | 25 |
| External | Written Examination | 50 |
| Total |  |  |

**References:**

* Abes, E. S., Jackson, G. &amp; Jones, S. R. 2002. Factors that motivate and deter faculty use of service learning. Michigan Journal of Community Service Learning, 9, 5-17.
* Ajzen, I. 1991. The theory of planned behavior. Organizational behavior and human decision processes, 50,179-211.
* Amabile, T. &amp; Kramer, S. 2011. The progress principle: Using small wins to ignite joy, engagement, and creativity at work, Harvard Business Press
* Black, P. &; Wiliam, D. 2009. Developing the theory of formative assessment.
* Blank, S. G. & Dorf, B. 2012. The startup owner manual: the step-by-step guide for building a great company, K&; S Ranch, Incorporated.
* Kazungu, I. (2022). Rajeev Roy, Entrepreneurship. New Delhi: Oxford University Press, 2010, 592 pp. ₹ 299.00 (Hardback). ISBN: 9780195695243. Journal of Entrepreneurship and Innovation in Emerging Economies, 9(1), 144–148.
* Price, allison & Price, David: Entrepreneurship : a practical guide. Australia. Allen& Unwin, 2013.
* Pandey, G.N.: A complete guide to successful entrepreneurship. New Delhi. Vikas Publishing House Pvt. Ltd., 1993.
* Bharol, C.R.: Entrepreneurship and entrepreneurial development programma. Lucknow. New Royal Book Co., 2005.
* Shankar, Raj: Entrepreneurship theory and practice. Chennai. Vijay Nicole Imprints Pvt. Ltd., 2012.

**Major (Elective) II)**

| Course Title | **Food Service Management** |
| --- | --- |
| Course Credits | **4 credits (Theory)** |
| Course Outcomes | After going through the course, learners will be able to: |
| Distinguish between different types of food service systems and delivery systems |
| Identify the steps in the development of menu planning for different institutes |
| familiarize with the flow of organizational chart applicable to a hospital setting and understand the role of the dietitian in a food service operation |
| ***Module 1 (Credit 1): Food Service Industries*** | |
| Learning Outcomes | After learning the module, learners will be able to |
| 1. Identify the different types of food service systems along with other food delivery systems |
| 1. Design sample menu plans for different institutions to understand the importance of menu planning. |
| Content Outline | 1. Introduction to Food Service & Catering Industry 2. Types of Food Service Systems 3. Food Delivery Systems 4. Menu Planning |
| ***Module 2 (Credit 1): Physical Facilities and Layout*** | |
| Learning Outcomes | After learning the module, learners will be able to |
| 1. Understand the physical layout and structure of the kitchen design, ventilation, proper lighting, and storage conditions |
| 1. Identify the appropriate conditions required to purchase, store, and mobilize food materials. |
| Content Outline | 1. Size and Type of Kitchen 2. Design and Layout of Kitchen 3. Physical Facilities: Ventilation, Flooring, Lighting. 4. Food Material: Purchase, storage and handling |
| ***Module 3 (Credit 1): Hospital Food Service Set up*** | |
| Learning Outcomes | After learning the module, learners will be able to |
| 1. Identify the role of dietitians in food service operations |
| 1. Design menu plans for a hospital set-up after understanding the food service set-up for a hospital and food production taking place in the hospital. |
| Content Outline | 1. Hospital Food Production 2. Menu Planning for Hospitals 3. Organizational Chart for Food Service 4. Role of a Dietitian in Food Service Operations |
| ***Module 4 (Credit 1): Management of Resources*** | |
| Learning Outcomes | After learning the module, learners will be able to |
| 1. Identify different styles and principles of management and leadership, tools, and functioning of the managerial tenets. |
| 1. Understand strategies to allow the management of different resources in the food service industry. |
| Content Outline | 1. Principles of  management 2. Functions and Tools of Management 3. Styles of Leadership 4. Resource Management |

# Assignments/Activities towards Comprehensive Continuous Evaluation (CCE)

| Evaluation | Details | Marks |
| --- | --- | --- |
| Internal | Unit Test | 25 |
|  | Class Presentations | 25 |
| External | Written Examination | 50 |
| Total |  |  |

References:

**Books**

* Payne-Palacio, J., & Theis, M. (2016). \*Foodservice management: Principles and practices\* (13th ed.). Pearson.
* Grossbauer, S. (2011). \*Managing foodservice operations\*. Prentice Hall.
* Payne-Palacio, J., & Theis, M. (2016). \*Introduction to foodservice\* (12th ed.). Pearson.
* Arduser, L., & Brown, D. R. (2006). \*The professional caterer’s handbook: How to open and operate a financially successful catering business\*. Atlantic Publishing Group Inc.
* Ninemeier, J. D. (2016). \*Management of food and beverage operations\* (6th ed.). American Hotel & Lodging Educational Institute.
* Bhojwani, M. (2007). Food service management: Principles and practice. Rajat Publications.
* Fernandes, B. (2023). Food service management. Discovery Publishing.
* Bhatt, H. (2008). Food service management. Crescent Publishing Corporation.
* Malhotra, R. K. (2005). Food service and catering management. Anmol Publications Pvt. Limited.
* Chatterjee, S., & George, B. (2009). Food & beverage service and management. Jaico Publishing House.