



Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore
Shri Vaishnav Institute of Home Science
Choice Based Credit System (CBCS) in Light of NEP-2020
B. Sc. Food and Nutrition Sem V (2022 – 2025)

| Subject Code | Category | Subject Name | Teaching and Evaluation Scheme | | | | | | | | |
|--------------|----------|----------------|--------------------------------|---------------------|--------------------------|-------------------------------|--------------------------|---|---|---|---------|
| | | | Theory | | | Practical | | L | T | P | CREDITS |
| | | | End Sem University Exam (60%) | Two Term Exam (20%) | Teacher Assessment (20%) | End Sem University Exam (60%) | Teacher Assessment (40%) | | | | |
| FSN 501 | Major | Diet Therapy I | 60 | 20 | 20 | 0 | 0 | 4 | 0 | 0 | 4 |

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit;

***Teacher Assessment** shall be based following components: Quiz/Assignment/ Project/Participation in class, given that no component shall exceed more than 10 marks.

Course Educational Objectives (CEOs): The students will

- **CEO 1:** understand the foundation sciences which involve therapeutic dietetics practice, the principles of disease prevention and health promotion, the principles of therapeutic intervention practice.
- **CEO 2:** define and memorize the degenerative diseases, role of diet in the management of various types of diseases through various feeding technique.

Course Outcomes (COs): Student should be able to

- **CO1:** comprehend Medical Nutrition Therapy, various nutritional assessment, and dietary modification.
- **CO2:** differentiate between the types of feeding techniques to ensure adequate nutrition among critically ill patients and nutritional management of febrile disorders.
- **CO3:** manage over and undernutrition through nutrition along with clarifying fad diet and associated consequences.
- **CO4:** comprehend various Gastrointestinal Disorder and role of nutrition in the management of Gastrointestinal Disorders.
- **CO5:** comprehend various cardiovascular diseases and hypertension and role of nutrition in the management of Cardiovascular disorders and Hypertension.

Chairperson

Board of Studies
Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore

Chairperson

Faculty of Studies
Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore

Controller of Examinations

Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore

Registrar

Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore



Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore
Shri Vaishnav Institute of Home Science
Choice Based Credit System (CBCS) in Light of NEP-2020
B. Sc. Food and Nutrition Sem V (2022 – 2025)

| Subject Code | Category | Subject Name | Teaching and Evaluation Scheme | | | | | | | | |
|--------------|----------|----------------|--------------------------------|---------------------|--------------------------|-------------------------------|--------------------------|---|---|---|---------|
| | | | Theory | | | Practical | | L | T | P | CREDITS |
| | | | End Sem University Exam (60%) | Two Term Exam (20%) | Teacher Assessment (20%) | End Sem University Exam (60%) | Teacher Assessment (40%) | | | | |
| FSN 501 | Major | Diet Therapy I | 60 | 20 | 20 | 0 | 0 | 4 | 0 | 0 | 4 |

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit;

***Teacher Assessment** shall be based following components: Quiz/Assignment/ Project/Participation in class, given that no component shall exceed more than 10 marks.

FSN 501: Diet therapy I

Unit I

- Basic Concepts of Diet Therapy: Definition of MNT, role of MNT in the disease management.
- Nutritional - Assessment (ABCD), Diagnosis, Intervention, Monitoring & Evaluation of nutritional care.
- Modifications of the diet – Normal, Soft diet and Liquid Diets and its types.

Unit II

- Types of Feeding: Oral route, entera tube feeding, parenteral feeding and total parental nutrition (TPN).
- Nutrition during Febrile Disorders: Fever and its classification with their general dietary considerations.

Unit III

- Nutrition for Weight Management: Assessment of obesity – BMI, waist hip-ratios, skin fold thickness.
- Dietary Management, Fad diets and their consequences.
- Underweight: Etiology, Health hazards, Treatments.

Chairperson

Board of Studies
Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore

Chairperson

Faculty of Studies
Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore

Controller of Examinations

Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore

Registrar

Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore



Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore
Shri Vaishnav Institute of Home Science
Choice Based Credit System (CBCS) in Light of NEP-2020
B. Sc. Food and Nutrition Sem V (2022 – 2025)

| Subject Code | Category | Subject Name | Teaching and Evaluation Scheme | | | | | | | | |
|--------------|----------|----------------|--------------------------------|---------------------|--------------------------|-------------------------------|--------------------------|---|---|---|---------|
| | | | Theory | | | Practical | | L | T | P | CREDITS |
| | | | End Sem University Exam (60%) | Two Term Exam (20%) | Teacher Assessment (20%) | End Sem University Exam (60%) | Teacher Assessment (40%) | | | | |
| FSN 501 | Major | Diet Therapy I | 60 | 20 | 20 | 0 | 0 | 4 | 0 | 0 | 4 |

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit;
***Teacher Assessment** shall be based following components: Quiz/Assignment/ Project/Participation in class, given that no component shall exceed more than 10 marks.

Unit IV

Nutrition in Gastrointestinal Disorders:

- Peptic Ulcer Disease, Irritable Bowel Syndrome (IBS), Constipation,
- Diarrhea Diseases of the Small Intestine.
- Celiac Disease, Tropical Sprue, Lactose Intolerance.
- Inflammatory Bowel Disease - Crohn's Disease and Ulcerative Colitis.

Unit V

Nutrition in Cardiovascular Diseases.

- Nutrition in Cardiovascular Diseases- Atherosclerosis, Acute Cardiovascular Disease
- Dietary Management Chronic Coronary Heart Disease
- Hypertension: Classification, Risk Factors, Symptoms, Dietary Management.

Chairperson

Board of Studies
Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore

Chairperson

Faculty of Studies
Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore

Controller of Examinations

Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore

Registrar

Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore



Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore
Shri Vaishnav Institute of Home Science
Choice Based Credit System (CBCS) in Light of NEP-2020
B. Sc. Food and Nutrition Sem V (2022 – 2025)

| Subject Code | Category | Subject Name | Teaching and Evaluation Scheme | | | | | | | | |
|--------------|----------|----------------|--------------------------------|---------------------|--------------------------|-------------------------------|--------------------------|---|---|---|---------|
| | | | Theory | | | Practical | | L | T | P | CREDITS |
| | | | End Sem University Exam (60%) | Two Term Exam (20%) | Teacher Assessment (20%) | End Sem University Exam (60%) | Teacher Assessment (40%) | | | | |
| FSN 501 | Major | Diet Therapy I | 60 | 20 | 20 | 0 | 0 | 4 | 0 | 0 | 4 |

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit;
***Teacher Assessment** shall be based following components: Quiz/Assignment/ Project/Participation in class, given that no component shall exceed more than 10 marks.

Suggested readings:

- Srilakshmi,B.(2005):Dietetics,5th edition, New Age International(P) Limited Publishers, New Delhi Therapeutic Nutrition,17th Ed.,
- Antia, F.P. (2005): Clinical Nutrition and Dietetics, Oxford University Press, Delhi Mahan, L.K.,
- Arlin, M.T. (2000): Krause’s Food, Nutrition and Diet therapy, 11th edition, W.B.Saunders Company, London.
- Shubhangi A Joshi (2002): Nutrition and Dietetics2nd edition, Tata Mc Graw-Hill Publishing Company Limited, New Delhi.
- Mac Millan Publishing Co Williams’s (1989): Nutrition and diet Therapy.6th edition. Times Mirror/Mosby College Publishing, St.Louis

Chairperson

Board of Studies
Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore

Chairperson

Faculty of Studies
Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore

Controller of Examinations

Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore

Registrar

Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore



Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore
Shri Vaishnav Institute of Home Science
Choice Based Credit System (CBCS) in Light of NEP-2020
B. Sc. Food and Nutrition Sem V (2022 – 2025)

| Subject Code | Category | Subject Name | Teaching and Evaluation Scheme | | | | | | | | |
|--------------|----------|---------------|--------------------------------|---------------------|--------------------------|-------------------------------|--------------------------|---|---|---|---------|
| | | | Theory | | | Practical | | L | T | P | CREDITS |
| | | | End Sem University Exam (60%) | Two Term Exam (20%) | Teacher Assessment (20%) | End Sem University Exam (60%) | Teacher Assessment (40%) | | | | |
| FSNP 502 | Major | Nutrition Lab | 60 | 20 | 20 | 0 | 0 | | 0 | 4 | 2 |

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit;

***Teacher Assessment** shall be based following components: Quiz/Assignment/ Project/Participation in class, given that no component shall exceed more than 10 marks.

Course Educational Objectives (CEOs): The students will

- **CEO 1:** understand the foundation sciences which involve therapeutic dietetics practice, the principles of disease prevention and health promotion, the principles of therapeutic intervention practice.
- **CEO 2:** develop comprehensive understanding of different nutraceuticals and functional foods.

Course Outcomes (COs): Student should be able to

- **CO1:** formulate therapeutic diet for critically ill patients.
- **CO2:** Formulation of functional food and food product

Nutrition Lab Practical's.

1. Planning and preparing diets for gastrointestinal disorders like diarrhea and constipation Peptic Ulcer patients, viral hepatitis and cirrhosis of liver
2. Planning and preparing diets for Enteral Nutrition.
3. Planning and preparing diets for obese and underweight patients.
4. Planning and preparing diets for cardiovascular disease like hyper cholestrolemia, hypertension, Myocardial Infarction.

Chairperson

Board of Studies
Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore

Chairperson

Faculty of Studies
Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore

Controller of Examinations

Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore

Registrar

Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore



Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore
Shri Vaishnav Institute of Home Science
Choice Based Credit System (CBCS) in Light of NEP-2020
B. Sc. Food and Nutrition Sem V (2022 – 2025)

| Subject Code | Category | Subject Name | Teaching and Evaluation Scheme | | | | | | | | |
|--------------|----------|----------------|--------------------------------|---------------------|--------------------------|-------------------------------|--------------------------|---|---|---|---------|
| | | | Theory | | | Practical | | L | T | P | CREDITS |
| | | | End Sem University Exam (60%) | Two Term Exam (20%) | Teacher Assessment (20%) | End Sem University Exam (60%) | Teacher Assessment (40%) | | | | |
| FSN502(P) | Major | Diet Therapy I | 60 | 20 | 20 | 0 | 0 | | 0 | 4 | 2 |

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit;

***Teacher Assessment** shall be based following components: Quiz/Assignment/ Project/Participation in class, given that no component shall exceed more than 10 marks.

5. To perform different types of blanching of fruits and vegetables.
6. To perform different types drying in fruits and vegetables.
7. To perform cut out analysis of canned product.
8. Preservation of fruits by high concentration of sugar i.e., jam.
9. Preservation of fruit and vegetables by high concentration of salt/acid i.e., pickle.
10. Preservation of food by addition of chemicals i.e., tomato ketchup.
11. Preservation of fruits & vegetables by freezing.

Suggested Readings:

- Rahman, M. (2019). *Handbook of food preservation*. Boca Raton: CRC Press.
- Desrosier, N.W., & Desrosier, J.N. (2019). *The Technology of Food Preservation*. Chennai: CBS publishing.
- Fellows, P.J. (2018). *Food Processing Technology: Principles and Practice*. India: Wood-head publishing ltd.
- Karel, M., & Fenema, O.R. (2018). *Physical principles of Food Preservation*. New York: Marcel Dekker publisher.
- N. Shakuntalamanay and M. Shadaksharaswam (2016), *Food Facts and Principles*, 3/e, New Age International, 2008.
- Antia, F.P. (2015), *Clinical Nutrition and Dietetics*, Oxford University Press, Delhi
- Srilakshmi, B. (2005). *Dietetics*, New Age International (P) Limited Publishers, New Delhi
- Shubhangini A Joshi (2002), *Nutrition and Dietetics*, 2nd edition, Tata Mc Graw-Hill Publishing Company Limited, New Delhi.

Chairperson

Board of Studies
Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore

Chairperson

Faculty of Studies
Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore

Controller of Examinations

Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore

Registrar

Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore



Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore
Shri Vaishnav Institute of Home Science
Choice Based Credit System (CBCS) in Light of NEP-2020
B. Sc. Food and Nutrition Sem V (2022 – 2025)

| Subject Code | Category | Subject Name | Teaching and Evaluation Scheme | | | | | | | | |
|--------------|----------|---------------|--------------------------------|---------------------|--------------------------|-------------------------------|--------------------------|---|---|---|---------|
| | | | Theory | | | Practical | | L | T | P | CREDITS |
| | | | End Sem University Exam (60%) | Two Term Exam (20%) | Teacher Assessment (20%) | End Sem University Exam (60%) | Teacher Assessment (40%) | | | | |
| FSN 502(P) | Major | Nutrition Lab | 60 | 20 | 20 | 0 | 0 | | 0 | 4 | 2 |

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit;

***Teacher Assessment** shall be based following components: Quiz/Assignment/ Project/Participation in class, given that no component shall exceed more than 10 marks.

Suggested Reading:

- Antia, F.P. (2005), Clinical Nutrition and Dietetics, Oxford University Press, Delhi
- Mahan, L.K., Arlin, M.T. (2000), Krause's Food, Nutrition and Diet therapy, 11th edition, W.B.Saunders Company, London.
- Robinson, C.H; Lawler M.R., Chenoweth, W.L., and Garwick, A.E.(1986), Normal and Therapeutic Nutrition, 17th Ed., Mac Millan Publishing Co.
- Shubhangini A Joshi (2002), Nutrition and Dietetics 2nd edition, Tata Mc Graw-Hill Publishing Company Limited, New Delhi.
- Srilakshmi, B.(2005)., Dietetics, New Age International(P) Limited Publishers, New Delhi
- Williams S. (1989), Nutrition and diet Therapy. 6th edition. Times Mirror/Mosby College Publishing.
- N. Shakuntalamanay and M. Shadaksharaswam,(2008). Food Facts and Principles, 3/e, New Age International.

Chairperson

Board of Studies
Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore

Chairperson

Faculty of Studies
Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore

Controller of Examinations

Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore

Registrar

Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore



Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore
Shri Vaishnav Institute of Home Science
Choice Based Credit System (CBCS) in Light of NEP-2020
B. Sc. Food and Nutrition Sem V (2022 – 2025)

| Subject Code | Category | Subject Name | Teaching and Evaluation Scheme | | | | | | | | |
|---------------|--------------|--------------------------|--------------------------------|---------------|---------------------|-------------------------|---------------------|----------|----------|----------|----------|
| | | | Theory | | | Practical | | L | T | P | CREDITS |
| | | | End Sem University Exam | Two Term Exam | Teachers Assessment | End Sem University Exam | Teachers Assessment | | | | |
| FSN503 | DSE 1 | Food Preservation | 60 | 20 | 20 | 0 | 0 | 4 | 0 | 0 | 4 |

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit;
***Teacher Assessment** shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

Course Educational Objectives (CEOs): The students will -

CEO1: acquire knowledge pertaining to principles and methods of preserving foods.

CEO2: develop ability in preparing and preserving various foods by household methods.

CEO3: understand the different methods of cooking food.

Course Outcomes (COs): Student should be able to -

CO1: acquainted with principles of preservation of foods.

CO2: familiarize about high temperature and low temperature food processing.

CO3: understand the basic concepts of drying and dehydration and irradiation.

CO4: acquainted with salt and sugar preservation methods.

CO5: understand the latest method of food preservation.

Syllabus

UNIT I

- Food preservation: causes of food spoilage, principles, classification of preservation methods.
- Types of food on the basis of shelf life.

UNIT II

- Preservation at high temperature: canning, blanching, pasteurization, sterilization and evaporation.
- Preservation at low temperature: chilling, cold storage and freezing.

Chairperson

Board of Studies
Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore

Chairperson

Faculty of Studies
Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore

Controller of Examinations

Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore

Registrar

Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore



Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore
Shri Vaishnav Institute of Home Science
Choice Based Credit System (CBCS) in Light of NEP-2020
B. Sc. Food and Nutrition Sem V (2022 – 2025)

| Subject Code | Category | Subject Name | Teaching and Evaluation Scheme | | | | | | | | |
|--------------|----------|-------------------|--------------------------------|---------------|---------------------|-------------------------|---------------------|---|---|---|---------|
| | | | Theory | | | Practical | | L | T | P | CREDITS |
| | | | End Sem University Exam | Two Term Exam | Teachers Assessment | End Sem University Exam | Teachers Assessment | | | | |
| FSN503 | DSE 1 | Food Preservation | 60 | 20 | 20 | 0 | 0 | 3 | 0 | 0 | 3 |

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit;
 ***Teacher Assessment** shall be based following components: Quiz/Assignment/ Project/Participation in Class,given that no component shall exceed more than 10 marks.

UNIT III

- Preservation by drying dehydration and concentration: principle, methods and effect on quality.
- Preservation by radiation: definition, methods of Irradiation, direct & indirect effect, measurement of radiation dose, dose distribution and effect on microorganisms.

UNIT IV

- Chemical preservation and Bio preservation: principle, types and effects on human health.
- Preservation by salt & sugar: principle, method and effect on food quality.
- Preservation by fermentation: definition, types and benefits of fermented foods.

UNIT V

- Recent methods in food preservation: pulsed electric field processing, high pressure processing, processing using ultrasound, dielectric, ohmic and infrared heating.

Suggested readings:

- Desrosier, N.W., & Desrosier, J.N. (2019). *The Technology of Food Preservation*. Chennai: CBS publishing.
- Fellows, P.J. (2018). *Food Processing Technology: Principles and Practice*. India: Wood-head publishing ltd.
- Karel, M., & Fenema, O.R. (2018). *Physical principles of Food Preservation*. New York: Marcel Dekker publisher.
- Rahman, M. (2019). *Handbook of food preservation*. Boca Raton: CRC Press.

Chairperson

Board of Studies
 Shri Vaishnav Vidyapeeth
 Vishwavidyalaya, Indore

Chairperson

Faculty of Studies
 Shri Vaishnav Vidyapeeth
 Vishwavidyalaya, Indore

Controller of Examinations

Shri Vaishnav Vidyapeeth
 Vishwavidyalaya, Indore

Registrar

Shri Vaishnav Vidyapeeth
 Vishwavidyalaya, Indore



Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore
Shri Vaishnav Institute of Home Science
Choice Based Credit System (CBCS) in Light of NEP-2020
B. Sc. Food and Nutrition Sem V (2022 – 2025)

| Subject Code | Category | Subject Name | Teaching and Evaluation Scheme | | | | | | | | |
|--------------|---|----------------------------|--------------------------------|---------------------|--------------------------|-------------------------------|--------------------------|---|---|---|---------|
| | | | Theory | | | Practical | | L | T | P | CREDITS |
| | | | End Sem University Exam (60%) | Two Term Exam (20%) | Teacher Assessment (20%) | End Sem University Exam (60%) | Teacher Assessment (40%) | | | | |
| FSNP504 | Field project/Internship/Apprenticeship | Product Formulation/Survey | 0 | 0 | 0 | 60 | 40 | 3 | 0 | 0 | 3 |

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit;

***Teacher Assessment** shall be based following components: Quiz/Assignment/ Project/Participation in class, given that no component shall exceed more than 10 marks.

Part A: Product Formulation

Course Objectives: To gain hands on training regarding product development.

Part B: Survey Conduction

Course Objectives:

To understand the nuances of scientific writing, develop skills for questionnaire development and identification and collection of scientific information and learn the techniques of presenting inferred information.

Course Learning Outcomes: Student will be able to:

- CO1: Demonstrate knowledge of scientific writing methods and styles.
- CO2: Develop a research design on a topic relevant to their field.
- CO3: Prepare a systematic literature review on a selected topic.
- CO4: Present a presentation of collected information.

Chairperson

Board of Studies
Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore

Chairperson

Faculty of Studies
Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore

Controller of Examinations

Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore

Registrar

Shri Vaishnav Vidyapeeth
Vishwavidyalaya, Indore