

COURSE DETAILS

Name of the Department: **B.Voc (Food processing & Engineering)**

Name of the Course (PAPER): COMMUNICATION SKILLS AND TECHNICAL WRITING

Course Objective: The objective of this course enables the students to understand basic concepts of English grammar and conversation. It helps the students to develop language skills and technical writing.

Course Outcome:

1. Students will be able to learn process and types of communication.
2. Students will be able to learn grammar and improve her vocabulary.
3. Students will be able to develop speaking skills.
4. Students will be able to develop technical writing skills.
5. Students will be able to make presentation.

Assessment Method: Debate, class test and Semester Exam.

Text Book:

1. Technical Communication: Principles and practice, Meenakshi Raman & Sangeeta Sharma, Oxford University press India.

Reference Book:

1. Communication Skills, Sanjay kumar & Pushp Lata, Oxford University press India.

Revision / Remarks: N/A

COURSE DETAILS

Name of the Department: **B.Voc (Food processing & Engineering)**

Name of the Course (PAPER): ELEMENTRY MATHEMATICS

Course Objective: The objective of this course is to impart analytical ability in solving mathematical problems as applied to the respective branches of Engineering

Course Outcome:

1. Students will able to learn Algebra, Determinants and Matrices.
2. Students will able to learn Linear equation.
3. Students will able to learn elementary Trigonometry.
4. Students will able to learn Coordinate Geometry.
5. Students will able to learn Calculus.

Assessment Method: class test and Semester Exam.

Text Book:

1. R.S. Aggarwal, Senior Secondary School Mathematics for Class 11 (English), Bharati Bhawan

Reference Book:

1. A k vasishtha, mathematics, krishna's educational publisher.

Revision / Remarks: N/A

COURSE DETAILS

Name of the Department: **B.Voc (Food processing & Engineering)**

Name of the Course (PAPER): ELEMENTRY BIOLOGY

Course Objective: The objective of this course to familiarize the students with the basic organization of organisms and subsequent building to a living being and to impart an understanding about the machinery of the cell functions that is ultimately responsible for various daily activities.

Course Outcome:

1. Students will able to know origin of life and evolution.
2. Students will able to learn cell biology.
3. Students will able to know lower botany.
4. Students will able to know lower zoology.
5. Students will able to know scope and application of biology.

Assessment Method: class test and Semester Exam.

Text Book:

1. Introduction to Biology, NCERT

Reference Book:

1. K.N. Bhatia and M.P, Tyagi Biology, TRUEMANS'S

Revision / Remarks: N/A

COURSE DETAILS

Name of the Department: **B.Voc (Food Processing & Engineering)**

Name of the Course (PAPER): FOOD MICROBIOLOGY

Course Objective: This course aims to make the student to understand the causes of food spoilage and predict the microorganism that can spoil a given food, when prepared, processed and stored under given condition and take corrective measures to control the spoilage and pathogenic micro- organism in food.

Course Outcome:

1. Students will able to know scope of Microbiology
2. Students will able to learn method of isolation and purification.
3. Students will able to know cause of spoilage in food
4. Students will able to know cause of food borne diseases
5. Students will able to learn control measures of food borne diseases.

Assessment Method: class test, practical and Semester Exam.

Text Book:

1. Frazier, W.C. and Westhoff, D.C. "Food Microbiology". Fourth Edition. Tata McGraw Hill Publishing Co. Ltd., New Delhi 2008

Reference Book:

1. Pelczar, M.J., E.C.S. Chan and N.R. Krieg. "Microbiology". McGraw-Hill New York 1993

Revision / Remarks: N/A

COURSE DETAILS

Name of the Department: **B.Voc (Food Processing & Engineering)**

Name of the Course (PAPER): FUNDAMENTALS OF FOOD PROCESSING

Course Objective: The objective of this course is to understand the scope of food processing and basic knowledge of food processing.

Course Outcome:

1. Students will able to know the scope of food processing in India.
2. Students will able to know the method of food preservation,
3. Students will able to learn basic knowledge of food packaging.
4. Students will able to know the basic knowledge of meat and milk processing.
5. Students will able to learn importance of food industry in India.

Assessment Method: class test, practical and Semester Exam.

Text Book:

1. Potter, N.N., 2002, Food Science, CBS Publishers, ND.

Reference Book:

1. Srivastava, R.P. and Kumar, S., 1998, Fruit and Vegetable preservation: Principles and Practices, 2nd Ed, International Book Distributing Co, Lucknow.
2. Manay, N.S. and Shadaksharaswamy, M. Food Facts and Principles, New Age International (P) Ltd. Publishers.

Revision / Remarks: N/A

COURSE DETAILS

Name of the Department: **B.Voc (Food Processing & Engineering)**

Name of the Course (PAPER): INTRODUCTION TO FRUIT AND VEGETABLE PROCESSING

Course Objective: This course enables the students to gain a sound knowledge about the processing and preservation technologies of fruits and vegetables

Course Outcome:

1. Students will able to quality characteristics of fruits and vegetable.
2. Students will able to know the Canning process of fruits and vegetables.
3. Students will able to learn general methods of freezing of fruits & vegetables.
4. Students will able to know the basic knowledge of Quality control in food processing industry.
5. Students will able to learn method of preparation of fruits juice, Jam etc.,

Assessment Method: class test, practical and Semester Exam.

Text Book:

1. Siddappa, L.G., and Tondon, G. L., 1986, Preservation of Fruit and Vegetables, Indian Council of Agricultural Research, New Delhi.

Reference Book:

1. Srivastava, R.P. and Kumar, S., 1998, Fruit and Vegetable preservation: Principles and Practices, 2nd Ed, International Book Distributing Co, Lucknow.
2. Manay, N.S. and Shadaksharaswamy, M. Food Facts and Principles, New Age International (P) Ltd. Publishers.

Revision / Remarks: N/A

COURSE DETAILS

Name of the Department: **B.Voc (Food Processing & Engineering)**

Name of the Course (PAPER): **PRACTICAL PAPER I**

Course Objective: The objective of this course is to develop practical skills of microbial and chemical analysis of food product.

Course Outcome:

1. Students will able to know the slide preparation, identification and staining of cells.
2. Students will able to know the method of paper chromatography.
3. Students will able to learn basic knowledge of equipment used in microbiology lab.
4. Students will able to learn microscopic examination and identification of microbes.
5. Students will able to learn cultivation of fungi.

Assessment Method: practical Exam.

Text Book:

1. A Textbook of Microbiology by R C Dubey & D K Maheswari. S Chand Publication.

Reference Book:

Revision / Remarks: N/A

COURSE DETAILS

Name of the Department: **B.Voc (Food Processing & Engineering)**

Name of the Course (PAPER): **PRACTICAL PAPER II**

Course Objective: The objective of this course is to develop practical skills of physicochemical analysis and development of fruit and vegetable Product.

Course Outcome:

1. Students will able to know the physicochemical analysis of food product.
2. Students will able to know the use of food Processing equipment.
3. Students will able to learn drying characteristics of the fruits & vegetables.
4. Students will able to develop skills for organoleptic evaluation of fruit & vegetable products.
5. Students will able to know the method of Preparation of fruit Jams, jelly, tomato ketch-up.

Assessment Method: practical Exam.

Text Book:

1. Ranganna, S., 2001, Handbook of Analysis & Quality control for Fruit & Vegetable Products, Tata McGraw Hill, New Delhi

Reference Book:

1. Srivastava, R.P. and Kumar, S., 1998, Fruit and Vegetable preservation: Principles and Practices, 2nd Ed, International Book Distributing Co, Lucknow

Revision / Remarks: N/A

COURSE DETAILS

Name of the Department: **B.Voc (Food Processing & Engineering)**

Name of the Course (PAPER): **INDUSTRIAL VISIT/TRAINING**

Course Objective: The objective of this course is to develop practical skills and industrial Exposure to students.

Course Outcome:

1. Students will able to interact with food industries.
2. Students will able to know what are the needs and requirements in food industry.
3. Students will able to learn how to work in industry.
4. Students will able to develop industrial skills.
5. Students will able to know how to purchasing, processing and marketing concept.

Assessment Method: Minor Project report, presentation and Viva-voce.

Text Book: N/A

Reference Book: N/A

Revision / Remarks: N/A

COURSE DETAILS

Name of the Department: **B.Voc (Food Processing & Engineering)**

Name of the Course (PAPER): **PERSONALITY DEVELOPMENT**

Course Objective: The objective of this course is to enhance holistic development of students and improve their employability skills.

Course Outcome:

1. Students will able to learn how to develop personality.
2. Students will able to learn how to develop Interpersonal Relations.
3. Students will able to learn stress management.
4. Students will able to learn Conflict Management
5. Students will able to learn Time Management.

Assessment Method: class test, Debate and Semester Exam.

Text Book:

1. Hurlock and Elizabeth, B. Personality Development, Tata McGraw Hill, 1st Ed.
2. Singh, A. and Ubha, D.S., Personality Development and Soft Skills.

Reference Book:

1. Lall and Sharma, Personal Growth Training and Development, Excel Books.

Revision / Remarks: N/A

COURSE DETAILS

Name of the Department: **B.Voc (Food Processing & Engineering)**

Name of the Course (PAPER): **PRINCIPLE OF ECONOMICS**

Course Objective: This course enables the students to attain knowledge about the country's past, present and future scenario, and policies of the Government along with making them a good decision maker.

Course Outcome:

1. Students will able to learn basic concept of Economics.
2. Students will able to learn demand and supply.
3. Students will able to learn price determination.
4. Students will able to learn role of financial institution.
5. Students will able to learn International Trade in Agriculture.

Assessment Method: Semester Exam.

Text Book:

1. Principles of Economics, "**D.N. dwivedi**" Jain book Agency.
2. Principles of Economics, "**N.Gregory Mankiw**" Jain book Agency.

Reference Book: N/A

Revision / Remarks: N/A

COURSE DETAILS

Name of the Department: **B.Voc (Food Processing & Engineering)**

Name of the Course (PAPER): **FUNDAMENTALS OF FOOD AND NUTRITION**

Course Objective: The objective this course is to understand the relationship between food, nutrition and health. Understand the functions of food. Learn rich sources of various nutrients & understand basic principles of meal planning and the use of food exchange list.

Course Outcome:

1. Students will able to learn Constituents of food.
2. Students will able to learn Nutritive values of plant and animal origin.
3. Students will able to learn Functions of food, RDA and Concept of Balanced Diet.
4. Students will able to learn relationship between food, health and nutrition.
5. Students will able to learn BMR, Protein quality, Dietary allowances, etc.,

Assessment Method: class test and Semester Exam.

Text Book:

1. Srilakshmi, B., 2012, Nutrition Science, 4th Revised Edition, New Age International Publishers.
2. Joshi, S., Nutrition and Dietetics, Tata Mcgraw Hill Co. Ltd.

Reference Book:

1. Gopalan, C., RamaSastri, B.V., and Balasubramanian, S.C., 1989, Nutritive Value of Indian Foods, National Institute of Nutrition, ICMR, Hyderabad.

Revision / Remarks: N/A

COURSE DETAILS

Name of the Department: **B.Voc (Food Processing & Engineering)**

Name of the Course (PAPER): **BASIC OF FOOD ENGINEERING**

Course Objective: The objective of this course is to emphasize the various processing methods involved in converting raw material into quality food products.

Course Outcome:

1. Students will able to learn Scope and importance of Food Process Engineering-
2. Students will able to learn Processing methods.
3. Students will able to learn Preservation by drying.
4. Students will able to learn Preservation by low temperature.
5. Students will able to learn Size reduction process.

Assessment Method: class test and Semester Exam.

Text Book:

1. Fellows, P.J, "Food processing Technology: Principles and practice". Second edition, Woodhead Publishing limited, Cambridge, 2005.
2. Dennis, R.H, "Food Process Engineering" Academic Publishing and Press, King Saud University, 1981.

Reference Book:

1. Sahay, K.M. and K.K. Singh, "UNIT Operations in Agricultural Processing". Vikas Publishing House Pvt. Ltd., New Delhi, 2003.

Revision / Remarks: N/A

COURSE DETAILS

Name of the Department: **B.Voc (Food Processing & Engineering)**

Name of the Course (PAPER): **FOOD CHEMISTRY**

Course Objective: This is an introductory course which gives the necessary details and information's to get acquainted with the properties and composition of food

Course Outcome:

1. Students will able to learn Physico-chemical properties of foods.
2. Students will able to learn Carbohydrate.
3. Students will able to learn lipid.
4. Students will able to learn proteins.
5. Students will able to learn Natural Pigments and Flavouring Agents.

Assessment Method: class test and Semester Exam.

Text Book:

1. Lillian Hoagland Mayer, "Food chemistry" CBS Publication

Reference Book:

2. Srinivasan Damodaran, Kirk L. Parkin, and O.R. Fennema, E, "Food Chemistry" 4th Edition, CRC Press, New York2007.

Revision / Remarks: N/A

COURSE DETAILS

Name of the Department: **B.Voc (Food Processing & Engineering)**

Name of the Course (PAPER): **INTRODUCTION TO DAIRY TECHNOLOGY**

Course Objective: The objective of this course is to student known the compositional and technological aspects of milk and study processed milk products.

Course Outcome:

1. Students will able to learn market milk.
2. Students will able to learn Cream, Butter and Cheese.
3. Students will able to learn Evaporated milk.
4. Students will able to learn condensed milk.
5. Students will able to learn Indian dairy products.

Assessment Method: class test and Semester Exam.

Text Book:

1. De Sukumar, "Outlines of Dairy Technology", Oxford University Press, New Delhi 1999.

Reference Book:

2. Walstra, P., 2005, Dairy Technology, Oxford Univ. Press, ND. Milk & Milk Products, Tata McGraw Hill Publishers, USA.

Revision / Remarks: N/A

COURSE DETAILS

Name of the Department: **B.Voc (Food Processing & Engineering)**

Name of the Course (PAPER): **PRACTICAL PAPER I**

Course Objective: The objective of this course is to develop practical skills of nutritional analysis of food product.

Course Outcome:

1. Students will able to learn study nutritional information in different packed foods.
2. Students will able to know quantitative determination of carbohydrates & Protein.
3. Students will able to learn dehydration & rehydration ratio for any fruits & vegetable.
4. Students will able to learn construction and working of Mechanical driers.
5. Students will able to learn Microwave cooking.

Assessment Method: practical Exam.

Text Book:

1. Ranganna, S., 2001, Handbook of Analysis & Quality control for Fruit & Vegetable Products, Tata McGraw Hill, New Delhi

Reference Book:

1. Practical manual of food processing, SHUATS.

Revision / Remarks: N/A

COURSE DETAILS

Name of the Department: **B.Voc (Food Processing & Engineering)**

Name of the Course (PAPER): **PRACTICAL PAPER II**

Course Objective: The objective of this course is to develop practical skills of physicochemical analysis and development of Milk Product.

Course Outcome:

1. Students will able to know the physicochemical analysis of milk product.
2. Students will able to know the Bacteriological estimation of milk
3. Students will able to learn Heat stability of milk.
4. Students will able to learn how to prepare solutions.
5. Students will able to know the method of Preparation of misti dahi, cream and buttermilk.

Assessment Method: practical Exam.

Text Book:

1. Ranganna, S., 2001, Handbook of Analysis & Quality control for Fruit & Vegetable Products, Tata McGraw Hill, New Delhi

Reference Book:

1. Practical manual of food processing, SHUATS.

Revision / Remarks: N/A

COURSE DETAILS

Name of the Department: **B.Voc (Food Processing & Engineering)**

Name of the Course (PAPER): **INDUSTRIAL VISIT/TRAINING**

Course Objective: The objective of this course is to develop practical skills and industrial Exposure to students.

Course Outcome:

1. Students will able to interact with food industries.
2. Students will able to know what are the needs and requirements in food industry.
3. Students will able to learn how to work in industry.
4. Students will able to develop industrial skills.
5. Students will able to know how to purchasing, processing and marketing concept.

Assessment Method: Minor Project report, presentation and Viva-voce.

Text Book: N/A

Reference Book: N/A

Revision / Remarks: N/A

COURSE DETAILS

Name of the Department: **B.Voc (Food Processing & Engineering)**

Name of the Course (PAPER): **FUNDAMENTALS OF STATISTICS**

Course Objective: The objective of this course is to make students familiar with the collection, analysis and interpretation of data.

Course Outcome:

1. Students will able to learn fundamental of statistics
2. Students will able to learn Descriptive measures.
3. Students will able to learn concept of probability.
4. Students will able to learn Tests of hypothesis and level of significance.
5. Students will able to learn Chi square, t and Z tests.

Assessment Method: class test and Semester Exam.

Text Book:

1. Statistical Methods: An introductory Text, by I. Medhi, New Age International Pvt. Ltd.

Reference Book:

1. Fundamental of mathematical statistics. S.C GUPTA, Sultan Chand Publication.
2. Fundamentals of Applied Statistics by S.C. Gupta & V.K. Kapoor, Sultan Chand & Sons Publishers

Revision / Remarks: N/A

COURSE DETAILS

Name of the Department: **B.Voc (Food Processing & Engineering)**

Name of the Course (PAPER): **PRINCIPLES OF FOOD PRESERVATION**

Course Objective: This course helps the students to get Preservation techniques and the changes during storage and preservation.

Course Outcome:

1. Students will able to learn techniques of food preservation.
2. Students will able to learn Water activity of food.
3. Students will able to learn Preservation by fermentation
4. Students will able to learn preservation by radiation.
5. Students will able to learn preservation by chemicals.

Assessment Method: class test and Semester Exam.

Text Book:

1. Food Science by Potter.
2. Technology of Food Preservation by Desrosier.

Reference Book:

1. Preservation of Fruits & Vegetables by IRRI.

Revision / Remarks: N/A

COURSE DETAILS

Name of the Department: **B.Voc (Food Processing & Engineering)**

Name of the Course (PAPER): **INTRODUCTION TO COMPUTER**

Course Objective: This course introduces students with the basic knowledge of computer and thereof, making them feasible with the representation of objects and processes.

Course Outcome:

1. Students will able to learn basic of computer
2. Students will able to learn Internet, networking.
3. Students will able to learn operating system
4. Students will able to learn MS Window.
5. Students will able to learn MS Office.

Assessment Method: class test and Semester Exam.

Text Book:

1. Working with MS Office 2000. Tata McGraw Hill.
2. MS office : BPB Publications

Reference Book:

1. Sinha, P. K., Fundamental of Computers, B.P.B publication.
2. Window based computer course, Gurvinder Singh & Rachhpal Singh, Kalyani Publishers.

Revision / Remarks: N/A

COURSE DETAILS

Name of the Department: **B.Voc (Food Processing & Engineering)**

Name of the Course (PAPER): **BAKERY AND EXTRUSION TECHNOLOGY**

Course Objective: The objective of this course is to understand the handling of instruments and preparation of bakery and extruded products such as, dough, bread, pasta, ready-to-eat snacks; etc., so that students can easily get introduced into the bakery industries.

Course Outcome:

1. Students will able to learn functions of raw material used in bakery product.
2. Students will able to learn dough rheology.
3. Students will able to learn Biscuits manufacturing process.
4. Students will able to learn Bakery Machinery and Equipment.
5. Students will able to learn extrusion technology

Assessment Method: class test and Semester Exam.

Text Book:

1. MATZ S.A, "Bakery Technology and Engineering" CBS publication.

Reference Book:

1. Indian standards Glossary of terms relation to flour milling industry" by Indian standard institution, New Delhi.
2. Extrusion of Food, Vol 2; Harper JM; 1981, CRC Press.
3. Fellows, P.J., "Food Processing Technolgy – Principles and applications – 2nd edition", CRC Press, Woodhead Publishing Ltd (2000).
4. "The prevention of food adulteration ACT", by Akalank publication, Delhi 1954.

Revision / Remarks: N/A

COURSE DETAILS

Name of the Department: **B.Voc (Food Processing & Engineering)**

Name of the Course (PAPER): **PROCESSING OF MEAT, POULTRY AND MARINE PRODUCT**

Course Objective: This course introduces students with the processing, preparation, preservation, spoilage and storage conditions of the meat, poultry and fish products.

Course Outcome:

1. Students will able to learn Meat Processing.
2. Students will able to learn Meat Preservation.
3. Students will able to learn Egg Processing.
4. Students will able to learn Fish Processing.
5. Students will able to learn Fish Preservation.

Assessment Method: class test and Semester Exam.

Text Book:

1. B. D Sharma, "Outline of meat science and technology" JAYPEE BROTHERS MEDICAL PUBLISHER.
2. Dr. K Gopa kumar, "Fishery Technology" INDIAN COUNCIL OF AGRICULTURE RESEARCH

Reference Book:

1. Mead, "Processing of poultry" 1989.

Revision / Remarks: N/A

COURSE DETAILS

Name of the Department: **B.Voc (Food Processing & Engineering)**

Name of the Course (PAPER): **BASICS OF FOOD SAFETY**

Course Objective: The objective of this course is to impart the knowledge of food safety and HACCP for food safety system.

Course Outcome:

1. Students will able to learn Principles of food safety.
2. Students will able to learn about ADULTRATION.
3. Students will able to learn concepts of food quality.
4. Students will able to learn Food Safety.
5. Students will able to learn Food laws.

Assessment Method: class test and Semester Exam.

Text Book:

1. Food safety and standards regulations, 2010.
2. Roday, S., 1998, Food Hygiene and sanitation, Tata McGraw Hill Ed.,

Reference Book:

1. Manay, N.S., 2001, Foods: Facts & Principles, Wiley Eastern India Ltd.,
2. Ranganna, S., 2001, Handbook of Analysis & Quality control for Fruit & Vegetable Products, Tata McGraw Hill, New Delhi.

Revision / Remarks: N/A

COURSE DETAILS

Name of the Department: **B.Voc (Food Processing & Engineering)**

Name of the Course (PAPER): **PRACTICAL PAPER I**

Course Objective: The objective of this course is to develop practical skills of nutritional analysis of food product.

Course Outcome:

1. Students will able to learn about block diagram Various Parts of Windows with their Names.
2. Students will able to learn qualitative analysis of wheat flour.
3. Students will able to learn role of yeast.
4. Students will able to prepare different types of cookies or biscuits and cakes.
5. Students will able to learn Texture Profile Analysis.

Assessment Method: Practical Exam.

Text Book:

1. Ranganna, S., 2001, Handbook of Analysis & Quality control for Fruit & Vegetable Products, Tata McGraw Hill, New Delhi

Reference Book:

1. Practical manual of food processing, SHUATS.

Revision / Remarks: N/A

COURSE DETAILS

Name of the Department: **B.Voc (Food Processing & Engineering)**

Name of the Course (PAPER): **PRACTICAL PAPER II**

Course Objective: The objective of this course is to develop practical skills of physicochemical analysis and development of Milk Product.

Course Outcome:

1. Students will able to learn evaluation of meat and fish for quality.
2. Students will able to know the determination of Egg components.
3. Students will able to learn Laboratory safety.
4. Students will able determine the Critical Control Points.
5. Students will able to know how to prepare a chart of specifications for different Food products as specified by BIS.

Text Book:

1. Ranganna, S., 2001, Handbook of Analysis & Quality control for Fruit & Vegetable Products, Tata McGraw Hill, New Delhi

Reference Book:

1. Practical manual of food processing, SHUATS.

Revision / Remarks: N/A

COURSE DETAILS

Name of the Department: **B.Voc (Food Processing & Engineering)**

Name of the Course (PAPER): **INDUSTRIAL VISIT/TRAINING**

Course Objective: The objective of this course is to develop practical skills and industrial Exposure to students.

Course Outcome:

6. Students will able to interact with food industries.
7. Students will able to know what are the needs and requirements in food industry.
8. Students will able to learn how to work in industry.
9. Students will able to develop industrial skills.
10. Students will able to know how to purchasing, processing and marketing concept.

Assessment Method: Minor Project report, presentation and Viva-voce.

Text Book: N/A

Reference Book: N/A

Revision / Remarks: N/A

COURSE DETAILS

Name of the Department: **B.Voc (Food Processing & Engineering)**

Name of the Course (PAPER): **BUSINESS AND FINANCIAL MANAGEMENT**

Course Objective: This course has been introduced to prepare students to become good entrepreneurs with the skills and techniques of a good management system that will help them to succeed in their future.

Course Outcome:

1. Students will able to learn Definition and Scope of Management.
2. Students will able to learn Plant Layout.
3. Students will able to learn Production Management and Control.
4. Students will able to learn Objectives of Financial Management.
5. Students will able to learn and Functions of Financial Management.

Assessment Method: class test and Semester Exam.

Text Book:

1. Financial Management by Khan & Jain. Tata McGraw Hills

Reference Book:

1. Principle & Practice of Management by T. N. Chabra. Dhanpat Rai & Sons, Delhi.
2. Fundamentals of Book keeping & Accountancy by Sharma, Chug & Katyal. S. Dinesh & Comp., Jalandhar.

Revision / Remarks: N/A

COURSE DETAILS

Name of the Department: **B.Voc (Food Processing & Engineering)**

Name of the Course (PAPER): **FOOD ADDITIVES.**

Course Objective: The objective of this course is to inculcate the students about the role and activity of chemical and natural food additives theoretically. Students will get exposure to food additives and their functions on food.

Course Outcome:

1. Students will able to learn definition, properties, and functions of food additives
2. Students will able to learn need for food additives.
3. Students will able to learn types of Additive.
4. Students will able to learn usage of food additives.
6. Students will able to learn Preservatives and Stabilizers.

Assessment Method: class test and Semester Exam.

Text Book:

1. Food Science (5th Edn.) by Potter & Hotchkiss, CBS Publishers & Distributors.

Reference Book:

1. Manay, N.S. and Shadaksharaswamy, M. Food Facts and Principles, New Age International (P) Ltd. Publishers.

Revision / Remarks: N/A

COURSE DETAILS

Name of the Department: **B.Voc (Food Processing & Engineering)**

Name of the Course (PAPER): **COMPUTER PROGRAMMING AND LANGUAGES-II**

Course Objective:

This course introduces students with the various important languages and programming of the computer system that will help them to develop their skills and expertise.

Course Outcome:

1. Students will able to learn basic of C Language.
2. Students will able to learn Programming.
3. Students will able to learn Problem Solving Aspect.
4. Students will able to learn Basic algorithms.
5. Students will able to learn Introduction to Database Management.

Assessment Method: class test and Semester Exam.

Text Book:

1. P. K. Sinha and P.Sinha "Foundations of Computing" BPB Publication, 2003.

Reference Book:

1. Programming in C by K.S. Kahlon, Gurvinder Singh & Rachhpal Singh, Kalyani Publishers.

Revision / Remarks: N/A

COURSE DETAILS

Name of the Department: **B.Voc (Food Processing & Engineering)**

Name of the Course (PAPER): **INTRODUCTION TO CEREALS, PULSES & OIL SEEDS TECHNOLOGY**

Course Objective: This course introduces students with the basic food we eat. It starts with the introduction of different varieties of cereals, pulses and oil seeds and then stating about their processing conditions, storage system till the final consumption by the consumers.

Course Outcome:

1. Students will able to learn Composition, structure and processing characteristics of paddy.
2. Students will able to learn parboiling and milling of paddy
3. Students will able to learn Wheat milling processing.
4. Students will able to learn Traditional and modern milling process of pulses.
5. Students will able to learn Processing of oil seeds.

Assessment Method: class test and Semester Exam.

Text Book:

1. Samuel Matz, "The Chemistry and Technology of Cereals as Food and Feed", Chapman & Hall 1992.
2. Kent N.L.and A.D.Evans, "Technology of Cereals" 4th Edition, Elsevier Science (Pergaman), Oxford, UK 1994.

Reference Book:

1. Chakraverty, A. "Post-Harvest Technology of Cereals, Pulses and Oilseeds". Oxford and IBH Publishing Co, Calcutta 1995

Revision / Remarks: N/A

COURSE DETAILS

Name of the Department: **B.Voc (Food Processing & Engineering)**

Name of the Course (PAPER): **UNIT OPERATION IN FOOD ENGINEERING**

Course Objective: This course enables the students are exposed to different UNIT operations performed in various food processing industries so as to enable them to understand the basic processes.

Course Outcome:

1. Students will able to learn principle of evaporation and single effect and multiple effects evaporator.
2. Students will able to learn distillation and their types.
3. Students will able to learn Theory and principles of size reduction.
4. Students will able to learn Theory and principle of mixing.
5. Students will able to learn Theory and principle of Screening.

Assessment Method: class test and Semester Exam.

Text Book:

1. Paul Singh and Dennis R Heldman., “Introduction to Food Engineering”. Third Earle R.L.,
2. “UNIT operations in Food Processing”, Pergamon Press.

Reference Book:

1. Verma, R.C., Jain, S.K., Fundamentals of food engineering, Himanshu Publications.

Revision / Remarks: N/A

COURSE DETAILS

Name of the Department: **B.Voc (Food Processing & Engineering)**

Name of the Course (PAPER): **BEVERAGE TECHNOLOGY**

Course Objective: This course introduces students to the liquid drink we consume in our daily routine. It makes them learn about the preparation and preservation of different kinds of beverages, so that they can be easily linked up with the beverage industry.

Course Outcome:

1. Students will able to learn Basic ingredients used in beverage industry.
2. Students will able to learn Carbonated Beverages.
3. Students will able to learn Non-Carbonated Beverages.
4. Students will able to learn quality control in beverage industry.
5. Students will able to learn quality of water used in beverage industry.

Assessment Method: class test and Semester Exam.

1. Text Book: Ashurst, P.R, "Chemistry and technology of Soft drink and fruit juices", 2nd edition, Blackwell Publishing Ltd. 2005.
2. Steen, D.P and Ashurst, P.R, "Carbonated soft drinks – Formulation and manufacture", Blackwell Publishing Ltd. 2000.

Reference Book: N/A

Revision / Remarks: N/A

COURSE DETAILS

Name of the Department: **B.Voc (Food Processing & Engineering)**

Name of the Course (PAPER): **PRACTICAL PAPER I**

Course Objective: The objective of this course is to develop practical skills on C languages and various testing methods of cereals grains quality.

Course Outcome:

1. Students will able to learn programs on different applications of C.
2. Students will able to learn Web page designing
3. Students will able to learn physico-chemical tests for flour.
4. Students will able to learn physico-chemical tests of rice.
5. Students will able to learn Rheological properties of dough.

Assessment Method: Practical Exam.

Text Book:

1. Ranganna, S., 2001, Handbook of Analysis & Quality control for Fruit & Vegetable Products, Tata McGraw Hill, New Delhi

Reference Book:

2. Practical manual of food processing, SHUATS.

Revision / Remarks: N/A

COURSE DETAILS

Name of the Department: **B.Voc (Food Processing & Engineering)**

Name of the Course (PAPER): **PRACTICAL PAPER II**

Course Objective: The objective of this course is to study construction and working of various food processing equipment used in food industries and physicochemical analysis and development of Fruit beverages.

Course Outcome:

1. Students will able to study construction and working of various food processing equipment
2. Students will able to learn Preparation of nectar beverages.
3. Students will able to learn Laboratory safety.
4. Students will able determine the Critical Control Points in Beverage industry.
5. Students will able to energy balance by solving problems.

Text Book:

1. Ranganna, S., 2001, Handbook of Analysis & Quality control for Fruit & Vegetable Products, Tata McGraw Hill, New Delhi

Reference Book:

1. Practical manual of food processing, SHUATS.

Revision / Remarks: N/A

COURSE DETAILS

Name of the Department: **B.Voc (Food Processing & Engineering)**

Name of the Course (PAPER): **INDUSTRIAL VISIT/TRAINING**

Course Objective: The objective of this course is to develop practical skills and industrial Exposure to students.

Course Outcome:

11. Students will able to interact with food industries.
12. Students will able to know what are the needs and requirements in food industry.
13. Students will able to learn how to work in industry.
14. Students will able to develop industrial skills.
15. Students will able to know how to purchasing, processing and marketing concept.

Assessment Method: Minor Project report, presentation and Viva-voce.

Text Book: N/A

Reference Book: N/A

Revision / Remarks: N/A

COURSE DETAILS

Name of the Department: **B.Voc (Food Processing & Engineering)**

Name of the Course (PAPER): **ENTREPRENEURSHIP IN FOOD INDUSTRIES**

Course Objective: This course provides exposure of the students with certain industrial sectors and the marketing of their products in Uttar Pradesh.

Course Outcome:

1. Students will able to learn Entrepreneur & entrepreneurial flair.
2. Students will able to learn Classification of industries.
3. Students will able to learn Opportunities of food processing industries
4. Students will able to learn Market survey, project formulation.
5. Students will able to learn function of financial institution.

Assessment Method: class test and Semester Exam.

Text Book:

1. Financial Management by Khan & Jain. Tata McGraw Hills

Reference Book:

1. . Entrepreneurial Development by Sarwate (Everest Publication)

Revision / Remarks: N/A

COURSE DETAILS

Name of the Department: **B.Voc (Food Processing & Engineering)**

Name of the Course (PAPER): **CORPORATE LEADERSHIP SKILLS**

Course Objective: The objective of this course is to develop leadership Skills in students.

Course Outcome:

1. Students will able to learn Basic forms of Communication.
2. Students will able to learn Theories of Communication.
3. Students will able to learn writing resume, letter of appreciation. How to organise seminars.
4. Students will able to learn Nonverbal communication.
5. Students will able to learn Modern forms of communication.

Assessment Method: class test and Semester Exam.

Text Book:

1. Bovee and Thill: Business Communication Today; Tata McGraw Hill, New Delhi.

Reference Book:

1. Balasubramanyam; Business Communications; Vikas Publishing House, Delhi.
2. Kaul: Business Communication; Prentice Hall, New Delhi.
3. Kaul: Effective Business Communication: Prentice Hall, New Delhi.
4. Patri VR: Essentials of Communication; Greenspan Publications, New Delhi

Revision / Remarks: N/A

COURSE DETAILS

Name of the Department: **B.Voc (Food Processing & Engineering)**

Name of the Course (PAPER): **FOOD PLANT SANITATION & WASTE MANAGEMENT**

Course Objective: This course introduces students with hygienic conditions and sanitation of the different areas of the food industries along with their effective waste management techniques.

Course Outcome:

1. Students will able to learn Sanitary design of food process equipment
2. Students will able to learn By-product obtained from food industries.
3. Students will able to learn Characterization of food industry waste.
4. Students will able to learn advanced techniques foe waste management.
5. Students will able to learn waste water treatment system

Assessment Method: class test and Semester Exam.

Text Book:

1. Chereminoff P. N. & A.C Morresi, "Energy from Solid Wastes" 1976,
2. Guide to Improving Food Hygiene - Ed Gaston and Tiffney.

Reference Book: N/A

COURSE DETAILS

Name of the Department: **B.Voc (Food Processing & Engineering)**

Name of the Course (PAPER): **PROCESSING OF SPICE AND PLANTATION CROPS**

Course Objective: The objective of this course is to make students learn about the variety of crops and their processing technique that provides us with varied scale of spices and condiments.

Course Outcome:

1. Students will able to learn production and importance of spices.
2. Students will able to learn Processing of coffee, tea and cocoa.
3. Students will able to learn Processing of coconut, areca nut, and cashew.
4. Students will able to learn Importance of medicinal crops.
5. Students will able to learn processing of medicinal crops.

Assessment Method: class test and Semester Exam.

Text Book:

1. Pruthi, J.S, "Major Spices of India – Crop Management and Post Harvest Technology". Indian Council of Agricultural Research, Krishi Anusandhan Bhavan, Pusa, New Delhi. PP. 514, (1998)

Reference Book:

1. Pandey, P. H, "Post Harvest Engineering of Horticultural Crops through Objectives". Saroj Prakasan, Allahabad 2002.

Revision / Remarks: N/A

COURSE DETAILS

Name of the Department: **B.Voc (Food Processing & Engineering)**

Name of the Course (PAPER): **FOOD PACKAGING**

Course Objective: This course introduces students with the packaging materials, methods, types of packaging and packaging instruments of the food industries.

Course Outcome:

1. Students will able to learn packaging– functions of packaging.
2. Students will able to learn Properties and Shelf Life of Packaging Materials.
3. Students will able to learn types and methods of packaging.
4. Students will able to learn CANNING OPERATIONS
5. Students will able to learn evaluation of packaging.

Assessment Method: class test and Semester Exam.

Text Book:

1. “Food Packaging Technology Handbook (2nd revised edition)” by NIIR Board, published by NIIR project consultancy service, ISBN: 9789381039090, Code: NI93 2012.

Reference Book:

1. Gorden L. Robertson by CRC PRESS TAYLOR & FRANCIS GROUP.

Revision / Remarks: N/A

COURSE DETAILS

Name of the Department: **B.Voc (Food Processing & Engineering)**

Name of the Course (PAPER): **QUALITY CONTROL IN FOOD INDUSTRY**

Course Objective: This course introduces students with all the norms and regulations mentioned by FSSAI, 2006 for safe food consumption by the consumers. It enables them to understand the sensory evaluation of the food products and their regulatory quality check-up.

Course Outcome:

1. Students will able to learn HACCP
2. Students will able to learn Instrumental measurements of sensory attribute.
3. Students will able to learn Sensory evaluation of food
4. Students will able to learn food safety management system
5. Students will able to learn Quality control vs. quality assurance.

Assessment Method: class test and Semester Exam.

1. Text Book: Ranganna, S, "Hand book of analysis and Quality control for fruits and vegetable products". Tata Mc Graw hill. New Delhi 1986.
2. Sohrab, "Integrated ISO 9001 HACCP system for food processing industries". Springer Publications 2002.
3. Rekha.S.Singhtal, Pushpa. R.Gulgarni, "Handbook of indices of food quality & HACCP-A practical approach". Springer Publications 1998.

Reference Book:

1. Krammer, A. and Twigg, B.A, "Quality control for the food industry". 3rd Ed., AVI. Westport 1970.

Revision / Remarks: N/A

COURSE DETAILS

Name of the Department: **B.Voc (Food Processing & Engineering)**

Name of the Course (PAPER): **PRACTICAL PAPER I**

Course Objective: The objective of this course is to develop practical skills on quality analysis of various food product.

Course Outcome:

1. Students will able to determine of total dissolved solids, DO, BOD and COD of water.
2. Students will able to learn bacterial analysis.
3. Students will able to learn CIP.
4. Students will able to learn Chemical analysis of spices moisture, valuable oil, specific gravity.
5. Students will able to learn Adulteration in spices.

Assessment Method: Practical Exam.

Text Book:

2. Ranganna, S., 2001, Handbook of Analysis & Quality control for Fruit & Vegetable Products, Tata McGraw Hill, New Delhi

Reference Book:

3. Practical manual of food processing, SHUATS.

Revision / Remarks: N/A

COURSE DETAILS

Name of the Department: **B.Voc (Food Processing & Engineering)**

Name of the Course (PAPER): **PRACTICAL PAPER II**

Course Objective: The objective of this course is to introduce students with the packaging materials, methods, types of packaging and packaging instruments of the food industries.

Course Outcome:

1. Students will able to learn different packaging materials.
2. Students will able to learn Canning of fruits and vegetables
3. Students will able to learn sensory quality evaluation.
4. Students will able determine Ash content of wheat
5. Students will able to learn Analysis of spices, tea, and coffee.

Text Book:

1. Ranganna, S., 2001, Handbook of Analysis & Quality control for Fruit & Vegetable Products, Tata McGraw Hill, New Delhi

Reference Book:

1. Practical manual of food processing, SHUATS.

Revision / Remarks: N/A

COURSE DETAILS

Name of the Department: **B.Voc (Food Processing & Engineering)**

Name of the Course (PAPER): **INDUSTRIAL VISIT/TRAINING**

Course Objective: The objective of this course is to develop practical skills and industrial Exposure to students.

Course Outcome:

16. Students will able to interact with food industries.
17. Students will able to know what are the needs and requirements in food industry.
18. Students will able to learn how to work in industry.
19. Students will able to develop industrial skills.
20. Students will able to know how to purchasing, processing and marketing concept.

Assessment Method: Minor Project report, presentation and Viva-voce.

Text Book: N/A

Reference Book: N/A

Revision / Remarks: N/A

COURSE DETAILS

Name of the Department: **B.Voc (Food Processing & Engineering)**

Name of the Course (PAPER): **MAJOR PROJECT (INDUSTRIAL /INSTITUTIONAL)**

Course Objective: The objective of this course is Students have to undergo practical training in Food Process Engineering related project site or design / planning office so that they become aware of the practical application of theoretical concepts studied in the class rooms.

Course Outcome:

1. Students will able to interact with food industries.
2. Students will able to know what are the needs and requirements in food industry.
3. Students will able to learn how to work in industry.
4. Students will able to develop industrial skills.
5. Students will able to know how to purchasing, processing and marketing concept.

Assessment Method:

1. 300 marks performance and presentation.
2. 150 marks project report
3. 150 marks viva-voce

Text Book: N/A

Reference Book: N/A

Revision / Remarks: N/A