

RRBM UNIVERSITY, ALWAR

SYLLABUS

M.A./M.Sc. (HOME SCIENCE)

Annual Scheme

Eligibility for (boys and girls both) this course: (B.A(H.Sc) / B.A additional (H.Sc) / B.Sc (H.Sc)

Examination Scheme:

The question paper will have four sections/units. Paper setter will set a total of nine questions comprising one compulsory question 10 short answer type) covering the whole syllabus and two questions from each section/unit. Students will attempt one question from each section/unit and one compulsory question. All questions will carry equal marks...

M.A/MSc.Previous (Annual Scheme)

FOOD AND NUTRITION

THEORY: Max Marks:100

Min Marks:36

Paper I-Food Processing and Management

Paper II- Bakery and Confectionery

Paper III-Entrepreneurship and soft skill development

Paper IV-Research Methodology and Statistics

PRACTICALS: Max Marks: 100

Min Marks:36

Practical-1.Bakery and confectionary technology: 50 marks

Practical-2.food preservation : 50 marks

2/2/2021

Project work: Max Marks-50

Min Marks-18

Project work in any field/topic of Nutrition

Paper I- Food Processing and Management

Teaching Hours: 4 Periods/Week

Maximum Marks: 100

Unit – I Introduction to Fruits and Vegetables

1. Scope, importance, production, and processing status of Fruits and Vegetables in India
- 2 Morphology and Composition of Fruits and vegetables
- 3 Storage of fruits and vegetables- principles and types of storage systems

Unit – II Jam, Jelly & Marmalade

- 1 Definition, Selection of fruits, Ingredients used and their role, Method of preparation
2. Sugar-based fruit products-Fruit Preserves, Candied fruits, Glazed fruits, and Crystallized fruits
3. Fruit Beverages-Definition and types, Methods of preparation- Juice, RTS, squash, nectar, syrup, crush, cordial and blended beverages

Unit-III Milk and Milk Products Processing

1. Introduction to Milk and milk products -Definition, Production and Processing, the status of milk, Types of Milk Products, Equipment used in the dairy industry
2. Composition of milk- Physio-chemical properties, Composition, and Nutritive value, Factors affecting the composition of milk, Effect of heat, acid, and microorganisms on milk

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3. Processing of milk-Pasteurisation, Sterilization, Dehydration
4. Special Milks-Re-constituted or Re-hydrated milk, Condensed milk, Toned Milk, Flavoured Milk, UHT Milk
- 5- Milk Products-Dahi, Chakka, Shrikhand, Butter, Butter Milk, Butter oil, Lassi, Channa, Paneer, Rasogulla, Khoa and Basundi, Ice-cream and Cheese

Unit IV Food Preservation

- 1 Concept, Importance of food preservation, Principles of food preservation, Techniques of food preservation.
2. Preservation by drying - Concept, history, Types of drying and dryers, Treatments prior to drying
3. Preservation by use of high temperature- Concept and importance, Various methods used-pasteurization, Boiling, Canning, Effect of high temperature on food.
4. Preservation by Low Temperature- Concept, History, Types of Preservation methods by low temperature, Different types of equipment used for preservation by low temperature, Treatments Prior to freezing
5. Modern techniques in food preservation - Concept, Definition, High Hydrostatic pressure, Hurdle technology, Pulse electric field.
6. Evaporation – Definition, factors affecting evaporation, names of evaporators used in food
7. Food Preservation by Irradiation-Introduction, units of radiation, kinds of ionizing radiations used in food irradiation, mechanism of action, uses of radiation processing in the food industry,

References:

- 1) Lal G., Siddhappa G., Tondon G. L., 1986, Preservation of fruits and vegetables, ICAR, New Delhi.

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- 2) Shrivastava, R. P. and Kumar. S., 1998, Fruit and Vegetable Preservation: Principles and Practices, 2nd Edition, International Book Distribution Co., Lakhanow.
- 3) Salunkhe, D. K., and Kadam S. S., Ed 1995, Handbook of Fruit Science and Technology: Production, Composition and Processing, Marcel Dekker, New York.
- 4) Salunkhe, D. K., and Kadam S. S., Ed 1995, Handbook of Vegetable Science and Technology: Production, Composition, Storage and Processing, Marcel Dekker, New York
- 5) Dey S., 1994, Outlines of Dairy Technology, Oxford Univ. Press, New Delhi.
- 6) Rosenthal I., 1991, Milk and Milk Products, VCH, New York.
- 7) Robinson R. K., (2 vol. set), 1986, Modern Dairy Technology, Elsevier Applied Science, UK.
- 8) Warner J. M., 1976, Principles of Dairy Processing, Wiley Eastern Ltd, New Delhi

PAPER-II Bakery and Confectionery

Teaching Hours: 4 Periods/Week

Maximum Marks: 100

Unit - I Bakery

1. Scope of bakery, units of measurements, bakery terms, basic equipment, baking temperatures for bread and confectionery
2. Hygiene- Concept of hygiene and its importance in the bakery, personal hygiene, work area hygiene
3. Structure of wheat grain- physical structure, Longitudinal section, wheat milling process-roller flour mill, stone mill

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4. flour- composition of flour, types of flour, grades of flour, water absorption power, gluten

Unit - II

1. Role of raw materials used for bread making-essential -flour, salt, yeast, water
optional- sugar, eggs, milk and milk products, butter, oil

2. Methods of bread making - straight dough method, salt delay, no time dough, sponge, and dough method.

3. Characteristics of good bread- (external)- volume, symmetry, shape, color, (internal)-texture, aroma, elasticity

4. Basic bread by different methods- Bread rolls, breadsticks, fancy rolls, white bread, brown bread, soft rolls, Buns, milk bread, pizza

Unit-III Confectionery

1. Introduction to confectionery- scope, terms, small and large equipment used in bakery and confectionery.

2. Role of raw material required for confectionery- wheat, flour, sugar, fat, eggs.
Essential ingredients-flour, sugar, shortening, eggs,

Optional ingredients-baking powder, milk, milk products, dry fruits, baking soda, dairy products

3. Moistening agents- milk, egg, water

4. Fats and oils- Composition, functions in confectionery, types of oil, storage

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5. Leaving agents-chemical, natural, water vapors, and biological

6. Cake making methods - Sugar Butter method, Flour Butter method, Genoese, Blending

7. Cakes by different methods-Vanilla sponge cake, fruit cake, fatless sponge, swiss roll, chocolate sponge.

Unit-IV

1. Biscuits and cookies- melting moment, Tricolour biscuits, choco chip cookies, Nan-khatai, salted biscuits, nut cookies, butter cookies

2. Shortcrust pastry-jam tarts, bake well tarts, lemon curd tarts

3. Pastry making-principals of pastry making, various types of pastries

4. Characteristics of cakes- external, internal, cake faults and their remedies, types of icing

5. Hot and cold deserts - caramel custard, bread, and butter pudding, trifle pudding

Unit- V

1. Bread faults and remedies- basic reasons for faults, common internal and external faults, remedies.

2. bread improvers and additives- natural: milk, egg, S.M.P, Soya flour, sugar,fat
Chemical: glycerol mono state, potassium bromate, potassium iodate

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3. Types of the oven- Electric: OTG, microwave, rotary, single deck, double deck, pizza oven, Nonelectric Oven: Diesel oven, gas oven, brick oven

4. Bread disease- Rope and Mold, causes and prevention

5. Bakery layout the right approval for setting up of a bakery-Location, government Procedure, Selection of equipment, total space required, electricity

References:

1. Bakery I student handbook and practical manual, published by CBSC
2. A professional text to bakery and confectionery by Jhon Kingslee
3. Ornamental confectionery and the art of baking in all its branches by Herman
4. bread: a baker's book of technique and recipes by Jeffery Hamelman
5. The taste of bread by Raymond Calvel
6. Special and decorative bread by Roland Belhux

PAPER III Entrepreneurship and Soft Skill Development

Teaching Hours: 4 Periods/Week
Maximum Marks: 100

Unit: 1 Introduction to Entrepreneurship

1. Concept of entrepreneurship: meaning, definition, nature, and characteristics of entrepreneurship. Traits of Entrepreneurship
2. Phases of Entrepreneurship Development, Introduction to Entrepreneurship Skills importance and benefits.

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3. Entrepreneurship, and Enterprise, Objectives of Entrepreneurship, Role of Entrepreneurship
4. Functions of Entrepreneur, Entrepreneurial process, The Entrepreneurial Mindset.

Unit 2 Entrepreneurship Development Skills

1. Meaning of Entrepreneurship skill, Types of Entrepreneurship Skills
2. Business management skills, Teamwork, and leadership skills, Communication and listening, Customer service skills
3. Financial skills, Analytical and problem-solving skills, Critical thinking skills, Strategic thinking and planning skills, Technical skills
4. Time management and organizational skills, Branding, marketing, and networking skills, How to improve entrepreneurial skills, Entrepreneurial skills in the workplace, Entrepreneurial Imagination, And Creativity
5. Small industries development organization (SIDO), National small industries corporation(NSIC), National Institute of small industry extension training (NISIET), Small industries development bank of India (SIDBI)

Unit 3 Personality Development

1. Introduction to personality, Dimensions of personality, Determinants of personality
Winning personality
2. Projecting a Positive Social Image, Grooming, Body language, Eye contact, Social etiquette, Manners in conversations, Module on Office Etiquette, Module on Customer Care, Telephone handling Techniques

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3. Personality and the Self, Positive self-image and negative self-image, Problems of maladjustment, Building self-esteem, and confidence

Unit 4 Effective Communication

1. Group Discussion: introduction, importance, Preparation for a group discussion, Skills for effective participation, Traits tested in a group discussion, Initiating a group discussion, Non-verbal communication in group discussion, Types of group discussions Ambience/Seating Arrangement for Group Discussion, Difference between Group Discussion, Panel Discussion and Debate, topic-based and Case-based Group Discussion, Individual Traits.

2. Employment Communication: Introduction, Resume, Curriculum Vitae, Scannable Resume, Developing an Impressive Resume, Formats of Resume, Job Application or Cover Letter Professional Presentation, Importance of Resume.

3. Nature of Oral Presentation, Planning a Presentation, Preparing the Presentation, Delivering the Presentation Job Interviews: Introduction, Definition of Interview, Types of Interviews, Preparatory Steps for Job Interviews.

4. Leader and Leadership, Leadership Traits, Team Building, Types of teams,

5. Decision Making and Negotiation: Introduction to Decision Making, Steps for Decision Making, Decision Making Techniques, Negotiation Fundamentals, Negotiation Styles, Major Negotiation.

References

1. "Soft Skills" by Hariharan S and S P Shanmugapriya
2. "Soft Skills: Know Yourself and Know the World" by Alex
3. "Making Work Work for the Highly Sensitive Person" by Beverly Jaeger
4. "Enhancing Soft Skills" by Dipali Biswas

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5. "Entrepreneurial Development" by Khanka S S
6. Entrepreneurship and small business management by G.S. Sudha

PAPER IV Research Methodology and Statistics

Teaching Hours: 4 Periods/Week

Maximum Marks: 100

Unit - 1

1. Research- meaning, purpose, and objectives
2. Research designs- Experimental, and Observational surveys
3. Report writing- Definition and identification of research problem, objectives, formation of a hypothesis, null hypothesis.
4. Review of related literature, Methodology, tools to be used, citation formats/ Bibliography.

Unit - 2

1. Sampling techniques and tools-types of sampling.
2. Methods of data collection-questionnaire, interview, case studies, surveys
3. Statistics- Scope and Significance in Home Science discipline Descriptive and inferential statistics, Functions and limitations of statistics

Unit-3

1. Understanding various statistical techniques-Regression equations and regression lines
2. Inferential Statistics: \bar{y} Level of significance, \bar{y} Standard error, and Confidence limits

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3. Statistical Techniques:

- i) Simple Arithmetic Mean (direct method)
- ii) Median and Mode
- iii) Standard deviation (assumed mean method)
- iv) Characteristics, use, limitations

Unit- 4

1. Correlation & Degree of Freedom:

Correlation - Introduction, definition & Types, Carl Pearson's & Spearman's rank correlation method. Correlation of coefficient – Meaning & use.

2. Degree of Freedom – Introduction, Definition.

- i) X (chi-square) Test for 2x2x2x3 table.
- ii) Application of 't'-test for small samples (below 30 samples)
- iii) 'f' test.
- iv) Analysis of Variance (ANOVA)

References

- 1. Jain, T. R., Aggarwal, S. C., and Rana, R. K. (2008). Basic Statistics for Economists. V.K. Publications.
- 2. Gupta, K. R. (2012). Practical Statistics. Atlantic publications
- 3. Gupta, S. P. (2009). Statistical Methods. Sultan Chand and sons.
- 4. Meyer, S. L., Gamst, C. G., and Guarino, A. J. (2014). Performing data analysis using SPSS. Sage publications.

2/2/2014

5. Field, A. (2015). Discovering Statistics using IBM SPSS Statistics. Sage publications.

PRACTICAL I BAKERY AND CONFECTIONERY TECHNOLOGY

No. of instructional hours: 3 hrs/week

Max Marks-50

1. Preparation of ghee biscuits
2. Preparation of melting marvels
3. Preparation of sweet and salt biscuits
4. Preparation of bread
5. Preparation of pizza
6. Preparation of hot cross buns(sweet buns)
7. Preparation of jam nut cookies
8. Preparation of varieties of cakes

Fast food preparation

- 1.chhola bhatura
- 2.aalu tikki ,chhola
- 3.burgar

Chinese dish preparation

1. Chaumin
2. Manchurian
3. spring roll
4. honey chili potato
5. fried rice
6. momos

. Visit the production Module of a bakery

2/2/2022

PRACTICAL II FOOD PRESERVATION

No. of instructional hours: 3 hrs/week

Max Marks-50

- 1) Introduction to freezing equipment
- 2) Preservation by using chemical preservatives i) Tomato ketchup ii) Fruit squash
- 3) Preparation of product by using salt as a preservative
- 4) Preparation of product by using sugar as a preservative
- 5) Preparation of product by using oil as a preservative
- 6) Preparation of food products by Freeze-drying
- 7) Visit the food preservation industry

2/2/2020