# B.Sc. Home Science – 3rd Year IDM

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Paper/ Subject</th>
<th>Credit Hours</th>
<th>Theory Marks</th>
<th>Practical Marks</th>
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<td>1</td>
<td>Building Material &amp; Construction Techniques</td>
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<td>3</td>
<td>Furniture Design &amp; Interior Graphics</td>
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<td>6</td>
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<td>Ergonomics and Equipments (*Common to IDM &amp; Composite)</td>
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<td>7</td>
<td>Economics &amp; Entrepreneurship Development (*Common to all streams)</td>
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<td>8</td>
<td>Extension Education (*Common to all streams)</td>
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<td>*Seminar – Presentation on recent topics related to the subject.</td>
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<td>**The marks are totally internal. The seminar will be judged/evaluated by a panel of three staff members of the related department and the average score will be considered as final score.</td>
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B.Sc. Home Science 3rd Year

Building Material and Construction Techniques (Theory)

Credit hours: 3/week M.Marks: 75
Paper: 65
Int. Ass.: 10

Instructions to the Examiner

- Each theory paper will be of three hours.
- Question paper will have four sections. Examiner will set a total of nine questions comprising of two questions from each unit, and one compulsory question of short answer type covering the whole syllabus.
- Student will attempt one question from each unit and the compulsory question.
- All questions may carry equal marks, unless specified

Objectives
To provide knowledge to students about the types of materials used for Building Construction for conceptualizing, designing and executions of interior design projects.

UNIT- I

1. Foundations and Concrete
Foundation- its purpose and types of foundations
Concrete - Ingredients of concrete, properties of concrete, various finishes.
Cement - Properties of normal setting cement & its usages. Cement based products.

2. Bricks and Stone
Types of bricks and Brick masonry
Bricks and Tiles-Types of bricks, Qualities of 1st class bricks and their uses in interior finishes.
Stones - Various types, their properties and use in interiors. Types of stone masonry.

UNIT- II

3. Flooring
Mud, cement, brick, terrazzo, wooden, mosaic, tiles, marble, granite, vitrified, their properties and uses.

4. Roofs& Ceiling
Types of roofs, treatment - Plastering, embossing, fresco, plaster of paris
UNIT – III

5. Wood and Plastic
Wood: Properties, uses, seasoning, defects.
Wood Based Products: Comparative properties and uses of the commercial plywood, board, particle board, laminates, veneers etc.

6. Metals & Glass
Metals – types of metals, properties and availability of steel and aluminium for various functions and various shapes in building construction.
Glass: Types of glass and their Properties.

UNIT – IV

7. Painting & Plastering
Paints, Type of paints, Characteristics of ideal paint, Defects in painting,
Varnishes, Polishes, Distempers, white wash

Painting & Plastering -Types of plaster, Defects in plaster, its repairs,
mixes, curing and finishes. Traditional mixes & modern mixes.

Suggested Readings / Books:
- Title Building Construction by B.C. Punnia; Ashok Kumar Jain; Arun Kumar Jain Publisher Firewall Media, 2005
B.Sc. Home Science 3rd Year

Building Materials and Construction Techniques
(Practical)

Credit hours: 2/week          M. Marks- 50
Paper – 45
Int Ass – 05

1. Foundations – Introduction, Types of Foundation
Types of foundation: - Shallow foundations:
Spread footings, Raft foundation
Deep foundations: pile foundation, pier foundation
Brick masonry: Brick bonds, bats and closers
Stone masonry: rubble and ashlar masonry

2. Openings
a) Arches: parts of an arch, Types of arches.
Lintels: types and techniques of construction
b) Doors: Door frame and Types of doors with sectional details
c) Windows: Types of windows: casement window, louvered window, bay
window, corner window with sectional details

3. Floorings
a.) Types of flooring: stone flooring, wooden flooring, ceramic tiles and their
laying and fixing details

4. Ceilings and roofs
a) Roofs: types of roofs: pitched roofs, flat roofs
b) False Ceiling: Types - pop, gypsum board and ordinary boards with plan
and sectional details

Note:-
1. Students are required to visit organizations/establishment dealing with
manufacture and sale of building materials.
2. Students are required to collect samples of various types of materials and
department should establish a museum of materials which can be as live
demonstration of building materials while teaching this course.
Instructions to the Examiner

- Each practical paper will be of six hours duration.
- Students are required to attempt two questions out of three.
- Questions would be relating to design problems from retail store, residence and office.

Objectives

- To develop understanding of designing office, residence and retail projects.
- The aim of this subject is to develop skills in the students for display of various objects, products in retail, exhibitions, museums, commercial and industrial establishment.
- Develop understanding about design of retail outlets and spaces, standard aspects of architecture and interior design, use of elements of ergonomics and graphic design.
- To ensure that the every design project is effective, the designer must be acquainted with fundamentals on optimal utilization of space, marketing and psychology of the clients and their prospects.
- Creating a workable business environment requires effective planning and precise implementation. Attention to detail can mean the difference between an effective working environment and a problematic one.
- Preparing a good and complete design portfolio with every detail that may help students to work on future design projects for appropriate designing.

Office Design Project

- Project introduction (maximum area 2500sq ft)(synopsis)
- Client profile/ company profile/Design brief
- Case studies
- Design layout with working drawings (furniture layout, reflective ceiling plan, flooring Plans, wall treatment and furniture details)
- Concept introduction and concept sheet
- Materials board (finishes board)
- Presentation Drawings (Layout plan & one elevation)
- Perspective view of the reception and waiting area

Residence Design Project (Studio apartment or 2 BHK flat)

- Project introduction
- Client profile/ company profile/Design Brief
- Case studies
• Design layout with working drawings (furniture layout, ceiling plan, flooring plan & wall treatment)
• Concept introduction and concept sheet
• Material boards
• Presentation Drawings (layout plan, 2 elevations)
• A display to be designed as an emphasised part of the residence and a model to be prepared of the display designed.
• Perspective view of any one room

Retail Design Project (on hypothetical site)
• Project introduction (maximum area 3000sq ft)
• Client profile/ company profile/Design Brief
• Case studies
• Library studies
• Design layout with working drawings and presentation drawings
• Window display of a retail shop

Visit to various sites
• Offices
• Residences
• Retail outlets
• Market survey for furniture and other interiors related material.

References
• Joseph, W. The Aesthetics of Merchandise Presentation
• Hudson, J. 1000 New Designs and Where to Find Them Otto, R. and Hudson. J; Retail Design
• Tony, M. Visual Merchandising: Windows and In-Store Displays for Retail
• Edgar, A. F.(2003) 1001 Ideas to Create Retail Excitement, Revised Edition
• Folio. Selection of Interior Designer’s Portfolios. Kamlesh Shah Publisher andDistributors.
• Duffy, F. The New Office. Conran Octopus. Mandarin Offset LTD
• C.J. Peterson. Designed to order stylish solution to organize your home. Hearst books
• Ultimate Home Design Sourcebook Conran Octopus LTD
• Sarah Gaventa. Home Office. Greenwich Editions
• Residential Design. Drafting and Detailing. Thompson
• Corporate Interiors. Visual Reference Publication.
B.Sc. Home Science 3rd Year

Furniture Design & Interior Graphics

(Theory)

Credit hours: 2/week  Max. Marks: 50
Paper: 45
Int. Ass : 05

Instructions to the Examiner

- Each theory paper will be of three hours.
- Question paper will have four sections. Examiner will set a total of nine questions comprising of two questions from each unit, and one compulsory question of short answer type covering the whole syllabus.
- Student will attempt one question from each unit and the compulsory question.
- All questions may carry equal marks, unless specified

Objectives

- This subject is aimed at developing skills in drafting and rendering which will be utilized for interpreting / reading drawings pertaining to interior design.
- To gain knowledge about different styles of existing furniture
- To gain knowledge about furniture construction techniques
- To be able to design different furniture items

UNIT - I

- Definition of graphics and its use in interior design.
- Drafting and its importance in interior design & its types
- Type of plans: Floor plan, Elevation plans, Section plans, Service drawings.

UNIT - II

- Furniture and importance of furniture designing
- Basic properties of a good furniture and its selection criteria
- Classification of furniture - Beds, Sofas and Chairs, Tables and desks, storage units, screens, outdoor furniture, built-in furniture.
- General principles of furniture arrangement for different rooms

UNIT - III

- Upholstered furniture, materials and technique
- Manufacturing process of wooden furniture
- Type of joints and their application.
UNIT - IV

- Main characteristics of material used for construction of furniture
  - Woods - Solid, Plywood, Veneer, Hardboard, Particle Board, Composite wood etc.
  - Metal, Glass, Plastic and PVC, Bamboo, Marble, Cane & Wrought iron
- Furniture finishing types and characteristics and application techniques

References

4. Veena Gandotra; Meenakshi Shukala and Neerja Jaiswal. Introduction to Interior design & Decoration, Dominat publishers & Distributers
B.Sc. Home Science 3rd Year

Furniture Design & Interior Graphics
(Practical)

Credit hours: 4 / week      Max. Marks: 100
Paper: 90
Int. Ass.:10

INTERIOR GRAPHICS

Exercise: Use of Lines

• Line weight, line types and qualities
• Draw a composition using Horizontal and vertical lines
• Draw a composition using circles, curves, parallel curves etc.

Exercise: Lettering Styles

• Measured lettering (ratio between height and width of letters – Roman
lettering, Gothic and Italics, presentation techniques and standards
adopted – pen, pencil & brush.
• Free hand single stroke lettering in pencil.
• Free hand single stroke lettering in pen and brush

Exercise: Symbolic representation

• Architectural symbols, furniture symbols in plan and elevation,
• Free hand symbolic presentation of human figures, trees, vehicles etc.

Exercise: Use of engineering scales- metric, foot and inches.

• Reduction and Enlargement of simple shapes

Exercise: Projection Drawings

• Three dimensional (solid) geometry shapes – Plan, Elevation and
isometric view.
• Projections – Orthographic, Axonometric of simple 3 dimensional
shapes.

Exercise: Prospective drawings

• One point & two point perspective of three dimensional geometrical
shapes.
FURNITURE DESIGN

Exercise: To gain basic knowledge of simple furniture shapes and their dimensions
- Physical measurement – exercises of different interior objects and simple drafting of measured objects.
- Standard furniture dimensions.
- Free hand drawing of period furniture.

Exercise: To be able to draft simple shapes on scale
- Drafting of simple furniture objects (Chair & Table) with projections, showing plan, front elevation, side elevation, isometric view
- Plan, Elevation and isometric view of different type of joints.

Exercise: To be able to design different furniture items
Make plan, Elevation and isometric views of the following furniture items:
- Design a wardrobe / Wall unit.
- Design Bed and dressing table for a kid.

Survey - Visit furniture market & write a report.

Project – Create designer furniture a chair / a table / a book shelf /
partition wall / Screens / Shelf
B.Sc. Home Science 3rd Year

Auto Computer Aided Design
Practical

Credit hours: 4 /week  Total Marks: 100
Paper: 90
Internal Assessment: 10

Objectives:
The students will learn to use AutoCAD as a drafting tool to produce accurate presentation and working drawings of their design projects and all furniture designs.

UNIT – I

Use of AutoCAD
File Management
Coordinate system
Draw tools: Line, rectangle, circle, offset, construction line, polyline, polygon, arc etc.
Display commands
Setting units and limits.
Assignment: Create simple shapes using Draw tools

UNIT - II

Modified tools
Design studio
Drafting settings- Grid and snap, Ortho, Polar tracking, object snap, Colours, Line weight and line type.
Assignment: Create a room plan using drawing tools & modified tools.

UNIT - III

Text
Dimensions
Raster image
Blocks
Layers
Assignment: Create a house plan and elevation.

UNIT – IV

Plotting from model and paper space.
Creating Isometric drawing of a chair and Table
Creating 3D views of a room
Assignment 1: Create an isometric view of a chair
Assignment 2: Create an 3D view of a room
**Note:**
There will be two practicals per week and each practical will be of two hours.
Final practical examination will be of three hours.
Final practical examination will be set by the external examiner on the spot.

**References**
- AutoCAD manual (Auto Desk)
- Dummy Series of Books (AutoCAD)
- Finkelstein, E. AutoCAD 2010 B
B.Sc. Home Science 3rd Year
Ergonomics & Equipments
(Common to IDM & Composite)
(Theory)

Credit hours: 3 /week      Max. Marks: 75
Exam time: 3 hrs.          Paper - 65
                           Int. Ass – 10

Instructions to the Examiner
• Each theory paper will be of three hours.
• Question paper will have four sections. Examiner will set a total of nine questions comprising of two questions from each unit, and one compulsory question of short answer type covering the whole syllabus.
• Student will attempt one question from each unit and the compulsory question.
• All questions may carry equal marks, unless specified

Objectives
1. To impart the knowledge about importance of equipment in daily life
2. To understand different types of tools and equipments
3. To develop the understanding of importance of ergonomics

ERGONOMICS

UNIT - I
1. Ergonomics
   • Meaning & Scope of Ergonomics
   • Need & Importance of Ergonomics in the home
   • Elements of Ergonomics – work & work place environment,
     Anthropometry & Biomechanics, human factors & human engineering

   UNIT – II
2. Workers consideration in work space design
   a) Anthropometric Consideration
   b) Work Habits
   c) Work Postures
   d) Equipment and Clearance space

HOUSEHOLD EQUIPMENT

UNIT – III
3. Household Equipment
   a) Importance of equipment in daily life
   b) Factors affecting selection of Household Equipments

**UNIT - IV**

5. Utensils
   - Classification of utensils: surface cookery, oven cookery, serving cookery
   - Cleaning & care of these utensils

6. Kitchen tools – Types, selection factors, cleaning & care of kitchen tools

**References:**

- Essentials of ergonomics by Veena Gandotra, Dominant Publishers & Distributors Pvt. Ltd.
- Household Equipment Principles by Helen J. Van Zante, PRENTICE – HALL, INC., Englewood Cliffs, New jersey
- Household Equipment by Louise Jenison Peet
B.Sc. Home Science 3rd Year

Ergonomics & Equipments
(Common to IDM & Composite)
(Practical)

Credit hours: 2 / week                                Max. Marks: 50
Exam time: 3 hrs.                                                     Paper : 45
Int. Ass: 05

Practical

1. Identify and make a list of Household equipments according to various types
2. Identify different types of kitchen utensils & tools
3. Do market survey & make a portfolio on different types of equipments, utensils & tools available in the market comparing their cost & suitability
4. Operation and care of common household appliances – Vacuum cleaner, microwave, refrigerator, food processor
5. Measurement of Body dimension i.e. structural and functional dimensions
6. Identification and analysis of different postures assumed by women during work.
B.Sc. Home Science 3rd Year

Interior Services
(Theory)

Credit hours: 3 / week

Max. Marks: 75

Paper -65

Int. Ass – 10

Instructions to the Examiner

• Each theory paper will be of three hours duration.
• Question paper will have four sections. Examiner will set a total of nine questions comprising of two questions from each unit, and one compulsory question of short answer type covering the whole syllabus.
• Student will attempt one question from each unit and the compulsory question.
• All questions may carry equal marks, unless specified

OBJECTIVES:-

• To familiarize the students with the effects of work place environment on health and efficiency.
• Planning and Strategies to improve the work environment workers' safety and health these include physical, social, psychological, and environmental conditions and factors.
• To familiarize the students with design implications of services required within a building such as lifts, escalators and air-conditioning.
• To enable the students to make building plans with due consideration to illumination requirements, requirement of mechanical services and safety & security of the occupants
• To enable the students to understand the importance of ventilation and insulation in a building and the ways to achieve them in design process..

UNIT - I

Illumination

• Illumination – its types- General, task and accent lighting. Type of illumination sources – natural and artificial – general characteristics. Types of lighting fixtures, Lighting arrangement in a building.
UNIT - II

Mechanical Services

• Lifts–types, Design considerations
• Escalators –Essential requirements, Advantages, Design considerations, Difference between lifts and escalators.

UNIT - III

Building Environment

• Thermal insulation- necessity, General principles, Choice of insulating material, Methods of achieving thermal insulation of exposed walls, doors & windows & roof.

UNIT - IV

SAFETY AND SECURITY

• Safe building design- need –, General design tips for safety in kitchen, bathroom, doors, windows & electric safety, floor, stair & ramps, outdoor safety design – general safety tips. Secure building design- Ways of Monitoring and surveillance in a building.
• Fire Protection: Causes and Effects of fire – Precautionary Measures – Characteristics of fire resisting materials – General requirements for fire resisting buildings – Fire protection systems. Fire detection and alarm systems

References:

5. Building Construction by B.C. Punmia; Ashok Kumar Jain; Arun Kumar Jain Publisher Firewall Media, 2005
B.Sc. Home Science 3rd year
Economics and Entrepreneurship Development
(Common to all streams)
(Theory)

Credit Hours: 2 /week            Maximum Marks: 50
Duration of Exam: 3 hours         Paper : 45
                                      Internal Assessment :05

Instruction to the Examiners:

1. Each theory paper will be of three hours duration.
2. Questions paper will have four sections.
3. A total of Nine questions comprising of two questions from each unit and one compulsory questions of short answer type covering the whole syllabus will be set.
4. All questions may carry equal marks unless specified.
5. Students will be expected to attempt one question from each unit and the compulsory question

Objective:

1. To prepare the platform where the students view entrepreneurship and self-employment as a desirable and feasible career option.
2. Stimulating the potential to develop entrepreneurial orientation through innovation and creativity
3. To orient the students with basic principles involved in starting and managing a new enterprise

**Unit- I**

1. Entrepreneurial economics:
   - Need and importance
   - entrepreneurship and role in economic development

2. Entrepreneur and Enterprise:
   - Entrepreneurial traits and types
   - Entrepreneurial competencies.

3. Women entrepreneurs:
   - characteristics
   - role and challenges faced during creation and enterprise management

**Unit-II**

4. Business Idea/Plan:
   - Pitching a business idea and its formulation.
5. Project Formulation:
   - a brief introduction.
   - finance proposal and sources.

6. Intellectual Property rights (Creation-Protection-encashing)

   **Unit-III**

7. Small business enterprise management:
   - Problems of small enterprises in India
   - Non Profit Institutions in support of small business development.

8. Business Environment:
   - Factors affecting business environment and profitability of business

   **Unit-IV**

9. Business marketing:
   - Marketing strategies-packaging, advertising & publicity, e-marketing
   - Four Ps of marketing-Product, Price, Place and Promotion.

10. Conducting a SWOT analysis of enterprise.

**Recommended Readings:**

6. SIDBI Report on Small Scale Industries Sector (Latest Editions)
8. SIDBI Report on Small Scale Industries Sector (Latest Editions)
B.Sc. Home Science 3rd year

Economics and Entrepreneurship Development
(Common to all streams)

Paper: Practical

Credit Hours: 2 /week  Maximum Marks: 50
Duration of Exam: 3 hours  Paper: 45
Internal Assessment: 05

Objective:
1. To prepare the platform where the students view entrepreneurship and self-employment as a desirable and feasible career option.
2. Stimulating the potential to develop entrepreneurial orientation through innovation and creativity
3. To orient the students with basic principles involved in starting and managing a new enterprise

Instruction to the Examiners:
1. Each theory paper will be of three hours duration.
2. Questions paper should cover the entire syllabus.
3. The file work and viva will be of 5 marks each (Total = 10 marks)

Contents:
1. Preparation of project report for small enterprises/cottage industries. (The students will be advised to develop a structured instrument (questionnaire) for conducting first hand survey of the various aspects of respective entrepreneurs/enterprise, conducting the SWOT analysis and suggesting feasible measures for policy implementation)
2. Assignments on opportunity scouting and idea generation: role of creativity & innovation in business research.
3. Developing a Business Plan for Micro enterprises on any one of the following:
   a. Cafeteria/Diet clinic
   b. Nursery school/Day care
   c. Boutiques
   d. Interior Design studios.
B.Sc. Home Science 3rd year

EXTENSION EDUCATION
(Common to all streams)

Credit hours: 2 /week       Total Marks : 50
Exam Time: 3 hours       Paper (Theory): 45
Int. Assessment: 05

Instructions for Paper Setter:

1. Each theory paper will be of three hours duration.
2. Question paper will have four sections.
3. A total of nine questions comprising of two questions from each unit, and one compulsory question of short answer type covering the whole syllabus will be set.
4. All questions may carry equal marks unless specified.
5. Students will be expected to attempt one question from each unit and the compulsory question.

Objectives:

1. To understand the concept of extension and its relevance for self & national development.
2. To appreciate the role of Home Science extension in community development.
3. To create awareness about rural development and various programs and agencies involved in it.
4. To sensitize students towards various methods, preparation and selection of suitable materials for effective communication.

Unit-I

INTRODUCTION TO EXTENSION EDUCATION

- Concept, principles, philosophy of extension
- Extension Education process
- Qualities of extension workers
- Home Science Extension as a discipline and its contribution towards development.

Unit-II

RURAL AND COMMUNITY DEVELOPMENT

- Definition of rural and community development
- Origin of community development
- Introduction to Panchayati Raj and Democratic Decentralization
- Rural Development Programmes in India – Integrated Child Development Services (ICDS), etc.
Unit-III

EXTENSION TEACHING METHODS AND AIDS

- Concept and steps in extension teaching
- Classification of extension teaching methods according to form and use
- Classification of Audiovisual aids
- Introduction of various audio visual aids

Unit-IV

EXTENSION PROGRAMME

- Concept of Extension Programme Planning
- Factors affecting selection and use of extension teaching methods and aids in extension programme planning.
- Steps in Extension Programme Planning
B.Sc. Home Science 3\textsuperscript{rd} year
EXTENSION EDUCATION
(Practical)
(Common to all streams)

Exam time: 3 hrs       Total Marks: 50
Credit hours :2 / week   Paper: 45
Internal Assessment: 05

Instructions for Paper Setter:

1. Each practical paper will be of 3 hours duration.
2. The question paper should cover the entire syllabus.
3. The file work and viva voice will be of 5 marks each (Total = 10 marks)

Objectives:

1. To cradles the seed of social awareness in the students and make them understand their own worth in the society.
2. To develop skills in the use of participatory approaches in program planning and evaluation.
3. To fulfills the social responsibility of the students by giving their knowledge and service to the people in need.

Contents:

1. Preparation, presentation and evaluation of any one visual aid (poster, chart, etc.).
2. Preparation, presentation and evaluation of any one A-V aid (puppet show, power point presentation, etc.).
3. Survey of a selected community to identify their felt and unfelt needs.
4. Planning, organization, implementation and evaluation of a need based extension programme for the selected community in relation to anyone of the following:
   - Literacy
   - Income Generation
   - Health
   - Social Evils.
REFERENCES


