

B.Sc. Jewellery & Accessory Designing Subjects & Syllabus

First Term	Semester 1	History of Jewellery and Accessory Art
		Fundamental of Design
		Computer Fundamentals
	Semester 2	Fundamentals of colour theory in Jewel
		Basic techniques in Jewellery design
		Classification of Jewellery Products
Metallurgy		
Second Term	Semester 3	Study of Gemstones
		Gold Smithing -I
		History of Jewellery Designing
		Advanced Technical Designing
		Diamond -I
		Diamond - II
	Semester 4	Corel Draw
		Gemmology - I
		Gemmology - II
		Basic Jewellery Designing
		Advanced Technical Designing
		Jewellery Entrepreneurship
Third Term	Semester 5	Jewellery Entrepreneurship
		Advanced Trend Designs and Portfolio
		Luxury & Retail Jewellery Segments
		Gem and Jewellery Exports
	Manufacturing Tools and Technique - II	
Semester 6	Internship	

SYLLABUS

SEMESTER I

HISTORY OF JEWELLERY AND ACCESSORY ART

- Introduction to Jewellery and Accessory
- Art Decor style modern
- Indian jewellery
- Jewellery business in India

FUNDAMENTAL OF DESIGN

- Foundation Art
- Introduction to Colour Concept
- Rendering
- Métal rendering techniques
- Motif formation
- Perspective
- Jewellery Component

COMPUTER FUNDAMENTALS

- Introduction to basic concepts of computer
- Computer Storage and Memory
- Computer Networking
- Disk operating system
- Computer Security & Ethics

FUNDAMENTALS OF COLOUR THEORY IN JEWELLERY

- Colour definition and Theory
- Colour wheel
- Colour systems
- Standard colour harmonies
- Application of colour in Jewellery
- Colour in principles of design
- Balance and Proportion through colour

SEMESTER II

BASIC TECHNIQUES IN JEWELLERY DESIGN

- Information of materials and the techniques used in Jewellery and Accessories
- Principles of design for jewellery making
- Historical perspective and usage of experimental jewellery
- Researching themes and ideas
- Design considerations, Materials and techniques
- Designing Experimental Jewellery

CLASSIFICATION OF JEWELLERY PRODUCTS

- Knowledge of important categories and sub-types in Jewellery and accessories
- Knowledge of the various product types and their special features.
- Introduction and historical perspective on Rings, Earrings, Bracelets, Pendants and Necklace
- Classification of Studs

METALLURGY

- Introduction to Metallurgy
- Precious Metals and their properties

STUDY OF GEMSTONES

UNIT I

Introduction to Gemstone and their Influence terminology Origin Structure Classification.

UNIT II

Properties of Gem stone Hardness, Cleavage and Fracture, Density Cutting and Polishing of Gems.

UNIT III

Optical Properties Color, Color of Streak, Changes in Color, Refraction of Light, Double Refraction, Transparency, Luster, Light and Color Effects, Luminescence

UNIT IV

Organic Gemstones - Diamonds, Opals, Pearls, Amber, Coral.

UNIT V

Synthetic Gemstone - Synthetic Corundum, Ruby, Sapphire, Emerald, Quartzes, Synthetic Spinel, Synthetic Opal, Synthetic Alexandrite

SEMESTER III

GOLD SMITHING -I

Unit I

Gold smithing Gold smiting's. Silver smithing-Metalsmithing- Meaning Contemporary gold smithing unique properties of gold. Main techniques used by Gold smithing. Traditional fine art skills

Unit II

Beading Process- Bead work tools- pliers, cutters,- memory wire cutter, etc., definition of bead Types of- beads- Bugle, chatons, crystal, Delica, Donuts, Faceted,- Flatbacks, Gem beads (semi-precious) Hex cut, Lamp work,- pearl, Rondelles, Rocaille beads, Seed bead, Shamballa- style other bead types - Crow liquid- pony, tree cut, history of beads

Unit III

Threading Knots- overhand knot slipknot, forward knot,- Backward knot, Threading techniques- Cham shell Calotte technique,- cone technique, crimping technique with crimping pliers;- fold over crimp; split rings- How to use a split ring tool - How to use wire cutters, simple loop technique wire wrapped loop technique.

Unit IV

Wire Jewellery Techniques Making jewellery with jewellery wire and beads using wig-jig tools- setting gemstones, wire wrapping making necklaces and bracelets- by stringing beads, use of stretch magic elastic thread- use of twist 'n'- curt tool, making Necklaces using spool knitter, making bracelets or- necklaces by braiding wire- Bead stringing- Various Knots- Stretch magic projects (Wire jewellery)-Making a simple-& complex wire bead Use of memory wire.

Unit V

Choosing of design brooch, ring, earrings, hairpin, pendant, silver beads etc. How to use various silver clay products, how to use brush. Natural form Jewellery (leaf) what is PMC3, Silver Art clay precious metal clay ingredients - water an organic binder, pure metal particles of silver or gold, fire, role, model, pierce, stamp engrave, cut, tear, assembled, texture & fire reuse of metal, leftovers, filings etc.

HISTORY JEWELLERY DESIGN OF

Unit I

Origin of jewellery design

Jewellery from the dawn of man- Early jewellery function and design- Materials and methods used by early man- Origin of metals- Impact on society

Unit II

History of Indian Jewellery

Design, Indus valley civilization jewellery, Vedic period jewellery, Mouryan period, Sangha period, Gupta period, Mughal period, Rajput period, Impact of British rule on jewellery

Unit III

Indian traditional jewellery

Bridal jewellery : Mangtika, necklace, earrings, nose rings, bangles, armlets, rings waist-band, anklets and toe rings kundan jewellery, Lac jewellery, Meenakari, Navratna jewellery, Bead jewellery, Filigree jewellery, Jadau jewellery, Pachchikam jewellery, Temple jewellery, Tribal jewellery

Unit IV

History of gemstones

Origin of gemstones- History and significance of precious stones in India (Navratna). Some famous historical gemstones- Hope diamond, Kohinoor, The Black Princes Ruby, Star of India, Pearl of Lao Tzu, Andamooka Opal, Medusa Emerald.

ADVANCED TECHNICAL DESIGNS

Unit 1

Jewellery Components

Introduction and usage of jewellery components- types of jewellery findings and components, Links- types of links, usage of links, Clasps- types of Clasps, bar Clasps, 'S' Clasps, pin Clasps, box clasp etc, Hinges - types of hinges, pin hinge, dovetail hinge etc, Findings - earring findings (posts, screw back, ear clips etc), pendants (bails, loops), brooch (pin stems), jewellery components-Rivets, chain ends, beads, jump rings etc

Unit 2

Theme based Jewellery Designing

Introduction to themes, Categories of themes - natural, historic, architectural, symbolic, emotional Researching and documenting a theme, exploring various aspects of the theme, understanding the importance of mood boards, creating mood boards. Creating inspiration boards based on the selected theme, layouts and presentation of mood boards, Deriving inspiration for designs, brainstorming methods, thinking laterally, and design developments possibilities.

Unit 3

Techniques-1

Introduction and historical perspective, rolling mill techniques, acid etching patinas techniques, types of patinas - materials used, process, applications, filigree, piercing, granulation & doming

Unit 4

Techniques-2

Types, materials and techniques, reticulation, repouse & chasing, chiseling engraving, stamping, punching, mokume-gane.

Unit 5

Textures, Finishes

Introduction to different textures and finishes, Sand Blast, Glossy finish (10Kt, 14Kt, 18Kt, 22kt), Brush finish, Antique gold & silver finish, other modified textures and finishes

DIAMOND -I

Unit 1

Introduction

Overview and historical perspective, Diamond origin, Diamond Sources worldwide, Diamond mining Companies Diamonds from rough Crystallograph, 4 C's of Diamond.

Unit 2

Colour

Introduction and Overview, history of colour grading, equipment's used for colour grading, Colour grading classification as per international system, procedure for colour grading.

Clarity

Introduction and overview, clarity grading classification as per international system, Inclusion & blemishes, Five factors of clarity grading, Clarity Treatments

Unit 3

Cut and Carat

Introduction to diamond Cut. Types of cuts, theory of cutting diamonds, Proportions grading, Polish and symmetry grading, Sewing and Gauging Carat, weigh testimation, Overview of mounted jewellery

Unit 4

Synthetic Diamonds and treatments

Synthetic Diamonds process (CVD and HPHT) , Identification of diamonds from different synthetic and imitation diamonds , Color treatments & their identification, Clarity treatments & their identification, Diamond manufacturing: Designing the rough to polishing the diamond, Pricing: for polished and rough diamonds

Unit 5

Diamond Pipeline

Rough diamond market- Sizing and Shape, DTC - History and importance, Conflict diamond, Kimberly process, sorting for quality and color, the polished diamond market

Unit 6

Differentiating between diamonds and stimulants

Types of stimulants, differentiating between diamonds and simulants by using of 10 x loupe, Differentiating using diamond testers, Ultraviolet rays practically differentiating 10 diamond stimulants

COREL DRAW

Unit I

Introduction

How to Start the CorelDraw program- Introduction to the CorelDraw program, Menu bar- & Drawing Toolbox How to make heart and heartleaf- how to make different shapes of gemstones- round, oval, budget, triangle, heart, pear, marquees.

Unit II

Rendering jewellery

Use of colour, outline tools. How to give metallic effects, gold, silver, platinum, copper. How to give gemstones. How to give textured effects. Sand finish, matte finish, silk finish, pearl effect.

Unit III

Stone settings

Prong setting, Prong Pave, Pave setting, Channel setting; Flush setting, invisible setting, Pressure setting, Bezel setting.

Unit IV

Creating jewellery with measurements

Creating diamonds and stones with measurements- Creating rings and bangles of different sizes, creating pendants, creating necklaces:

Unit V

Techniques of Coral draw

Duplicating, copying objects, mirroring, table and graph paper, trimming objects, special fill tools smart fill, interactive fill tool, interactive mesh tool drawing tools, Connector tools, linking objects, Using symbols & clip art. Blending objects, contouring, distorting objects, perspective effects, shadow effects, Transparency effect, Tent properties, enveloping tent, Using symbols & clip art, Zooming / viewing showingprintable area.

SEMESTER IV

GEMOLOGY - I

Unit 1

Introduction

Overview of gemstones, history of gems, learning the general observations of gemstones - color, luster, phenomena, fracture, habit etc, Formation of gemstones- Different types of rocks, Pegmatite rocks, subduction, Mining: Different mining operations of gemstones- open pit mining- alluvial mining- Underground Mining, Carat: Carat meaning, history. Different units of conversation of carat to points, cents, grams and milligrams.

Unit 2

Instruments used in gemology and its applications

Loupe and Refractometer- Applications and uses, Polaris cope and dichroscope - applications and uses, Microscope and Spectroscope - Applications and uses, Chelsea filter, Tripod, Calipers and Leveridge Gauges - applications and uses, Grading gemstones according to GIA standards, Grading gemstones according to other international standards.

Unit 3

Properties of gemstones

Study of Physics for gemstone: Introduction to light, types of light used in gemology lab: reflection, refraction, color: hue, tone, saturation, physical & optical properties: hardness: scratch Hardness, Moh's Hardness Scale, Density: determination of density by different methods: 1 Hydrostatic balance 2.Suspension method 3. Weights used in the Gem trade, Optical properties using instruments: Determination of Refractive Index using Refractometer, Polariscopic: Single reflection, Double reflection, Optical properties with light: Double Refraction, Dispersion, Absorption Spectra, Transparency, Luster, Pleochroism, and Luminescence, And Study of Inclusions: Natural Inclusion: needles, clouds, fluids, and crystals man made inclusion, Inclusion by treatments: fissures, cleavages, fractures.

Unit 4

Gemstone, Properties, sources and identification

Ruby, Sapphire, Emerald, Quartz and Chalcedony, Opal, Tourmaline, Peridot, Topaz, Beryl, Chrysoberyl, Tanzanite, Iolite, Andalusite, Zircon, Garnet, Lapis lazuli, Turquoise, Spinel, Feldspar

UNIT 5

Organic gems and identification

Pearl - Properties and identification, Natural & cultured Pearls- Properties and identification, Jet- Properties and identification, Ivory - Properties and identification, Coral - Properties and identification, Amber- Properties and identification

GEMMOLOGY - II

Unit 1

Introduction to Gemstone identification

Observation using loupe, Observation using Microscope, Evaluating the cut Gemstone Chart Grading with Loupe, Grading with microscope, Evaluating color, hue, tone and saturating, Grading set stones

Unit 2

Clarity identification

Types of inclusions, How to differentiate different types of inclusions, Grading clarity according to GIA system, Grading clarity according to International systems like HRD and IGI

Unit 3

Gemstone identification

Ruby, Sapphire, Emerald, Quartz and chalcedony, Opal, Tourmaline, Peridot, Topaz, Beryl, Chrysoberyl, Tanzanite: Iolite: Andalusite: Zircon, Garnet, Lapis lazuli, Turquoise, Spinel, Feldspar Etc.

Unit 4

Gemstone identification: Organic gemstones

Pearl – Properties and identification, Natural & cultured- Properties and identification, Jet- Properties and identification, Ivory - Properties and identification, Coral - Properties and identification, Amber- Properties and identification

Unit 5

Gemstone treatment identification

Heat treatment, lattice and beryllium diffusion, Smoke and sugar treatment, Ceramic process etc., Coating, Doublet, Fracture filling, Wax impregnation, Oiling, Quench Cracking etc.

BASIC JEWELLERY DESIGN

Unit 1

- Design
- Elements of design
- Project - design

Unit 2

- Chain making
- Various forms of linkage
- Use of tools
- Decorative links
- Project
- Chain

Unit 3

- Sawing and drilling metals
- Look at the work of Alexander Calder
- Use of jeweler's saws

- Use of drill presses
- Use of files
- Project
- Sawn in metals

Unit 4

- Soldering
- Use of torches
- Safety rules
- Project - solder samples
- 1 quiz

Unit 5

- Final design
- Using design elements
- Design and plan a piece of jewelry. Make it.

ADVANCED TECHNICAL DESIGNING (STUDED)

Unit 1

Stone Settings

Pave setting, prong setting, channel setting, bezel setting, invisible setting, cluster and fancy settings

Unit 2

Rendering

Stone Rendering, different shaped gems, rendering color gem stones rendering diamonds, rendering translucent gems, rendering opaque gems, rendering Semi precious stones

Unit 3

Findings-studded Jewellery

Studded findings and its uses, Solitaire pendant baskets, Solitaire ring baskets, Ring shanks, bands, bangles

Unit 4

Theme based Jewellery Designing

Introduction to themes, Categories of themes, natural, historic, architectural, symbolic, emotional. Researching and documenting a theme, exploring various aspects of the theme. Understanding the importance of mood boards, Creating moodboards, Creating inspiration boards based on the selected theme, layouts and presentation of mood boards, deriving inspiration for designs, brainstorming methods, thinking laterally

Unit 5

Design Methodology

Form Generation, form Manipulation, mirroring and sizing, detailing, rendering, final presentation and submission ideas.

JEWELLERY ENTREPRENEURSHIP

UNIT-I

Entrepreneurship and entrepreneur – define and concepts, essential features of entrepreneurship, characteristic of entrepreneur, functions of entrepreneur, role of creativity and innovation in entrepreneurship, evolution of entrepreneurship.

UNIT-II

Steps for starting a small scale enterprise -steps to be taken. preparation of project report - guidelines. Procedure and formalities for registration. Types of organization-sole proprietorship. partnership. joint stock company. Factors influencing the choice of organization

UNIT-III

Promotion of a venture – opportunities analysis, SWOT analysis, internal and external analysis, technological competitiveness, setting up new unit- Legal requirements

UNIT-IV

Marketing in an entrepreneurial context. Steps in marketing process, product based ventures -5 points, service based ventures – 8 points, Five forces in the entrepreneurial marketing environment, environmental scanning

UNIT-V

Marketing analysis- understanding customers, advertising and media planning, fashion shows & other events.

SEMESTER V

ADVANCED TREND DESIGN AND PORTFOLIO

UNIT-1

Introduction

Introduction and historical perspective on rings, classification of rings-bridal rings- wedding bands, engagement rings, solitaire rings, eternity rings, promise rings, cluster rings, cocktail rings. Technical considerations while designing rings. 3-D design for rings.

Unit 2

Earrings

Classification of Studs & earrings buttons, hanging style drops, dangles Hoops and Huggies, Bali, fancy styles – chandeliers, shoulder dusters,

Design and technical considerations for earrings, Perspective design techniques

Unit 3

Pendants and Necklaces

Introduction and historical perspective on Pendants, Classification of Pendants- lockets, medallions, tassels, sliders. Introduction and historical perspective on Necklaces, classification of necklaces- by length, types of necklaces, Bib, collarets, festoon, Riviera, asymmetrical. Design and technical considerations for necklaces and pendants

Unit 4

Bangles and Bracelets

Introduction and historical perspective on Bangles and Bracelets, classification of Bangles, Fixed and elliptical bracelets. tennis bracelets, link bracelets, cuff bracelets, charm bracelets, design and technical considerations for bangles and bracelets

Unit 5

Brooches, tiepins and other product categories

Introduction and historical perspective, Brooches, cufflinks, tiepins, tiara, headornaments, nose pins, Belt style ornaments, anklets and accessories.

LUXURY & RETAIL JEWELLERY SEGMENTS

Unit 1

Luxury jewellery segment

Introduction to luxury jewellery segments, Fine jewellery- historical references, types of materials used, renowned fine jewellery designers, design considerations for fine jewellery, couture Jewellery- introduction to couture jewellery, design considerations for couture jewellery

Unit 2

Film & Theatre Jewellery

Introduction to film & theatre jewellery, research themes, characters, period, Material considerations, creating designs for a film production, creating designs for a theatre production, study of renowned film and theatre jewellery

Unit 3

Retail Jewellery

Introduction to retail jewellery, Brands- definition, types of brands, brand positioning, Market study and research considerations, materials, design considerations, forecasting, pricing and positioning, Developing a collection range for a selected brand

Unit 4

Men & Kids jewellery

Introduction to men's jewellery, Types of jewellery available for men, Design considerations, materials, Pricing etc., Introduction to Kid's jewellery, Types of jewellery available for Kid's, Design considerations, materials, pricing etc.

Unit 5

Antique Jewellery

History and origin of jewellery - styles of antique jewellery - types of antique jewellery - various designs - cross cultural influence - temple jewellery - metals and stones used in antique jewellery.

GEM AND JEWELLERY EXPORT

Unit 1

Introduction

Introduction and overview, Exim policy, customs act, different acts relating to export and import, formalities for commencing, customs formalities

Unit 2

Exports

Introduction and overview, export documentation, project exports, export of services export of excisable goods, 100% export oriented units, export processing zones - special economic zones, duty drawback procedure export/import by post customs house agents

Unit 3

Imports

Introduction, Import documentation, clearance of import goods, import of different products, Import incentives, imports licenses etc.

Unit 4

Gem and Jewellery export market

Introduction - Scope of study - Statistics of Gem & Jewellery export, Markets - Global Competition, Export Promotion schemes, product development, Technical aspects of gold jewellery, Role of export Promotion Council

Unit 5

Indian and International Market

Main features of jewellery of major International markets - USA - Japan - Dubai - Italy - Germany - France - features of jewellery in Indian markets.

MANUFACTURING TOOLS AND TECHNIQUES - II

Unit 1

Introduction to Manufacturing

Tools and equipment's and its uses, Soldering and heating, Gas supply and emergency shut off, Safety precautions.

Unit 2

Basic techniques

Cutting of metals, Drilling, Filing, Heating, Soldering

Unit 3

Technical exercises and earring making

Wirework and chain making, Use of different shapes in draw plate, drawing readymade chain, Use of rolling mill, Simple doomed earrings, Earrings with different techniques

Unit 4

Stone setting and ring making

Introduction to stone setting, Simple bezel collet making, Polishing and finishing, Stamping and pressing, simple prong making, Making of rings set with stone

Unit 5

Polishing and finishing

Uses of files for finishing, Polishing materials like leather, cloth etc., Polishing compounds (liquid and solid), Emery paper grades and uses, Cleaning methods like steam cleaning, Other hand finishes (scratch, brush)

Internship

The objective of the internship is to enable students to gain knowledge on functioning of jewellery enterprise through on the job training. Students will be sent to various reputed jewellery organizations individually or in groups to carry out project work under the supervision of a factory guide on a specific topic related to jewellery design and management. A faculty guide will also continuously monitor the progress on the project.

The report will be submitted to the principal and also evaluated by internal and external examiners detailed by the university

Placement Opportunity

As with most creative fields, new entrants begin as apprentices. Later on they may work with jewellery houses or freelance. Large exporters employ designers or select designs from eminent freelancers. Branded and designer jewellery offers openings for dealership. In the traditional studio-based design sector, crafts people have been working to prepare each article individually. Their work is sold through local outlets, at tourist destinations, emporia's and through craft meals.