

SavitribaiPhule Pune University
Skill Development Centre
Bachelor of Vocation (B.Voc.) in JEWELLERY DESIGN AND GEMOLOGY
Academic Year:-2018-2019

Course Structure (Second Year)

Course Code	Course Title	Credit
SEMESTER - III		
	Theory Component	
JDG 3-1	Fundamentals of computer	4
JDG 3-2	Gemology III	4
JDG 3-3	Fundamentals of Jewellery Design III	4
	Skill Component	
JDG 3-4	Practical – I (Based on Theory)	6
JDG 3-5	Practical – II (Based on Theory)	12
SEMESTER - IV		
	Theory Component	
JDG 4-1	Marketing	4
JDG 4-2	Gemology IV	4
JDG 4-3	Fundamentals of Jewellery Design IV	4
	Skill Component	
JDG 4-4	Practical – III (Based on Theory)	6
JDG 4-5	Practical – IV (Based on Theory)	12
	Total Credits	60

STRUCTURE FOR SEMESTER			
Title	Credits	Hrs	Marks
Total No. of Theory courses = 3	12 Credits each	180	300
Total No. of Skill based courses = 3	18 Credits	270	450
	30	450	750

STRUCTURE FOR YEAR			
Title	Credits	Hrs	Marks
Total No. of Theory courses = 6	24 (4 Credits each)	360	600
Total No. of Skill based courses = 6	36 (6 Credits each)	540	900
	60	900	1500

YEAR II
SEMESTER III THEORY

JDG 3-1: FUNDAMENTALS OF COMPUTER

Introduction

How to Start the CorelDraw program, Introduction to the CorelDraw program, Menu bar & Drawing Toolbox etc.

Tools

- creating text
- selecting and transforming objects
- shaping objects
- combining/grouping, breaking apart/separating, ungrouping
- converting to curves
- weld, intersection and trim
- aligning, copying, pasting and cloning
- blending and contouring
- fitting text to a path
- colour adjustment and bitmap effects
- page setup and printing
- uses of corel draw in jewellery industry.

JDG 3-2- GEMMOLOGY III

Introduction to Crystallography

Definition and conditions conducive for the formation of crystals. Crystal morphology – faces, forms, edges, solid angles, interfacial angle and its measurement by contact Goniometer, law of constancy of interfacial angle

Crystallographic Elements

Symmetry elements – crystallographic axes, lettering and order of crystallographic axes,

Laws of crystallography – law of constancy of symmetry, law of constancy of interfacial angles,

Classification of crystals into systems

Crystal Systems

Study of following crystallographic systems with respect to their elements of symmetry, crystallographic axes and their forms with indices. i. Orthorhombic (Type: Barytes) ii.

Tetragonal (Type: Zircon) iii. Cubic (Type: Galena) iv. Hexagonal (Type: Beryl) v. Monoclinic (Type: Gypsum) vi. Triclinic (Type: Axinite).

Twinning

Twin crystals, Effects of Twinning, composition plane,, twinning plane and twinning axis, Types of twins – simple and repeated (polysynthetic twins), contact and penetration twins: secondary twins. Examples related to gemology.

Synthetic processes

- A brief history of early gemstone synthesis,
- Flame fusion (Verneuil Process),
- Czochralski (Crystal pulling),
- Kyropoulos
- Skull melting process,
- Flux fusion process,
- Hydrothermal process,
- Gel growth,
- Ceramic process

Treatments

- Bleaching,
- Coating,
- Spraying and Foiling,
- Impregnation with oil, resin
- Fracture filling (colorless),
- Heat Treatment,
- Diffusion Treatment,
- Beryllium Diffusion,
- High Pressure High Temperature HPHT treatment
- Filling of pores (Porous stones) – Colorless,
- Heat treatment in ruby and sapphires with different kinds of residuals, Irradiation, disclosure of enhancements
- Dyeing (Colored impregnation)
- Graphitization,
- Glass filling Lead, Bismuth,
- Laser Drilling,
- Irradiation
- Lattice diffusion
- Sugar smoke Treatment
- Surface modification

JDG 3-3: FUNDAMENTALS OF JEWELRY DESIGN

Types of Jewellery and variations among them:

Women's Jewellery:

- Rings
- Brooches
- Earring
- Necklaces: Choker Necklace, Dog Collar, Riviere, Lariat, Y Necklace, Segmented Necklace, Raani-Haar, Tapering Necklace & Bridal Necklace etc
- Pendant
- Bracelets
- Anklets

Modern jewellery

Conceptual designing

Fashion

Designer jewellery

SEMESTER III PRACTICAL

JDG 3-4: FUNDAMENTALS OF COMPUTER

- Create different shapes of gemstones - Round, oval, bugget, triangle, heart, pear, marquees etc
- Create different designs of pendants, rings bangles and necklaces using corel draw toolbox
- Give special effects to the jewellery design
- Saving files in jpg format.
- Introduction to PowerPoint. Starting PowerPoint. AutoContent Wizard. Working with texts, graphs, pictures, audio, and video in slides. Design templates.
- Introduction to Photo Shop

JDG 3-5: GEMOLOGY III (stones of first year + list for second year)

1. Observation of external symmetry, surface marks and cleavage of various crystals and their identification;
2. Use of Colour Filters in detecting synthetic gemstones
3. Visual Identification of various gemstones by its crystal system and other external properties;

Crystallography: Study of elements of symmetry, crystallographic axes and forms of the following crystal systems a) Orthorhombic System (Type: Barytes) b) Tetragonal System (Type: Zircon) c) Cubic system (Type: Galena) d) Hexagonal System (Type: Beryl) e) Monoclinic System (Type: Gypsum) f) Triclinic System (Type: Axinite) g) Measurement of interfacial angle with Contact Goniometer

Study of different type of Gemstones

Apatite, Diopside, Fluorite, Jade, Topaz, Sphene

Synthetic Vs Natural gem identification

JDG 3-5: JEWELRY DESIGN III

Designing of Necklaces, Rings, Bracelets, earrings

Modern jewelry

Conceptual designing

SEMESTER IV THEORY

JDG 4-1 : MARKETING

- Marketing Concepts, Concept of SALES , Difference Between Sales and Marketing
- Approaches to Marketing - Study Approaches and Functional Approaches - Marketing Process - Functions of Marketing
- Market research and Planning - Nature, Process and Contents of Marketing Plan
- Consumer relationship
- Understanding a sales associate and his responsibility
- Responsibility while making sales and add-on sales
- General rule for customer contact
- Customer engaging techniques
- Factors Influencing Buying Behaviour of customers - Buyer decision process
- Type of Customers
- The New Age Customer
- Handling Customer Complaints
- Effective Complaint Management systems
- Understanding Common Customer Complaints
- Essential Steps of Selling Process
 1. Approach the customer
 2. Exchange information
 3. Build value
 4. Create desire
 5. Trial close
 6. Close the sale
 7. Follow-up
- Concept of Good, Bad And Excellent Service
- Stock Management

JDG 4-2 : GEMOLOGY IV

Gemstone Formation in different rocks

Igneous rocks, magmatic and hydrothermal phases and gemstone formation in pegmatites, topaz, tourmaline, beryl, and other gems. Basalts and formation of ruby.

Sedimentary rocks, placer deposits, gemstones found in gravels and other sedimentary rocks.

Metamorphic rocks and formation of gems like ruby, spinel, garnet etc.

Formation of diamonds in the earth's interior.

Origin of diamonds accordingly its surface marking, shape and habits of rough diamonds

Gemstone Exploration

Mining, Mining Techniques, Prospecting, Extraction and Recovery of gemstones.

Gem Localities

Type localities of different gemstones

Major Gem mines

Global and Indian Coloured stone Markets

World Famous gems

Hope Diamond, Kohinoor, Black Prince Ruby, Pearl of India, Tiffany Diamond, etc

JDG 4-3: JEWELLERY DESIGN IV

Basic jewellery designing

Equipment for Jewellery Drawing and Design, Jewellery Drawing, Nature Drawing, Historic Ornament, The Beginning of Design (Variations), Rendering in Pencil, Rendering with Brush, Stone Settings

Rendering in Colour, Rendering Stones

SEMESTER IV PRACTICAL

JDG-4-5: MARKETING

Practical based on Theory

JDG 4-6: GEMOLOGY

In depth study of

- Precious Stones
- Semi-Precious Stones
- Identification of Gemstones in different R.I. ranges
- Description, Properties and Identification of gemstones in the refractive index range 1.40 - 1.50, 1.50- 1.60, 1.60-1.65, 1.66-1.70, 1.70-1.80, above 1.8 over range

Stones to be studied: Beryl, Chrysoberyl, Corundum, Feldspar group, Garnet Group, Tourmaline, Azurite, Natural glass/Obsidian, Rhodonite, Turquoise, Spinel, Ruby Synite, Dumortorite, Rhyolite, Dolomite, Calcite, Chiastolite, Hypersthene, Kyanite, Enstatite, Sodalite, Lapis Lazuli, Prehnite and Scolecite

Mineral Maps

JDG 4-6: JEWELLERY DESIGNING PAPER IV

Designing of Jewellery based on geometric motifs, historical inspirations.
