

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

Course Structure (First Year)

Course Code	Course Title	Credit
SEMESTER - I		
	Theory Component	
JDG 1-1	Language and Communication Skills – English I	4
JDG 1-2	Gemology I	4
JDG 1-3	Fundamentals of Jewellery Design I	4
	Skill Component	
JDG 1-4	Practical – I (English Assignments)	6
JDG 1-5	Practical – II (Based on Theory)	12
SEMESTER - II		
	Theory Component	
JDG 2-1	Advanced Communication Skills – English II	4
JDG 2-2	Gemology II	4
JDG 2-3	Fundamentals of Jewellery Design II elleesigning	4
	Skill Component	
JDG 2-4	Practical – III (English Assignments)	6
JDG 2-5	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 I
SEMESTER I THEORY

JDG 1-1- COMMUNICATION SKILLS

Verbal and non-verbal communication

Components of Non-verbal Communication

Types of Listening Active Listening V/s Passive Listening

Empathetic Listening

Traits of a good listener, barriers in effective listening,

Effective listening

Grammar and Vocabulary

Tense and the concept of Time. Passive Voice, Conditionals Prepositions,

Concord. Idioms, Confusables, one-word substitutes, homonyms,

Homophones eponyms

Paragraph Development: Introduction, Topic sentence and supporting sentences.

Attributes of a good paragraph.

Letter - Writing

Business Letters, Structure and types of a business letter, Letter of Inquiry,

Letters of complaint, regret and adjustment

Technical Proposals- Definition, Purpose, Types, Characteristics, Structure, Style and appearance.

Introduction, Definition of an object or a process.

Guidelines for writing good description - organization, content, structure.

JDG 1-2: GEMOLOGY I

Introduction to Gemology

The evolution of the science of gemology, Formation - Geology related to gem minerals. Earth's interior, Geological activities, Origin and occurrence of gem stones and their classification. Basic properties of gems – Beauty, Rarity and Durability, Chemical Composition, Crystal Structure, Chemical Bonds, Crystallography. Classification of gemstones, organic & inorganic gems, Groups, species and varieties; visual observation-4 C's of gemstones, phenomenal varieties, the major gem occurrence of the world,

Chemical Properties

Atomic structure, electrons and chemical bonds, crystalline state and crystalline Materials

Crystal lattice, Amorphous and Metamict minerals, Isomorphism and polymorphism.

Physical Properties

Specific Gravity and density

Hardness

Durability

Cleavage/ Parting

Optical Properties

- a) Importance of light in gemology
- b) Isotropism and anisotropism, pleochroism, polarization
- c) Electromagnetic spectrum - Visible Spectrum; Nature of visible light, wave length and frequency
- d) Light Reflection – Transparency, Reflection and effects: (Luster) due to internal reflection - Total Internal Reflection
- e) Light Refraction- Single and Double Refraction- Total internal refraction (Brilliance)
- f) Dispersion of light
- g) Polarization
- h) Refractive index, birefringence and its determination by Refractometer; Reflectivity; Reflectometers.
- i) Interference figures and their use in gem sorting

Instrumentation

- a) 10 x loupe
- b) Polariscope and Conoscope
- c) Dichroscope
- d) Ultra-violet light unit
- e) Hardness pencils

JDG 1-3: Fundamentals of Jewellery Design I

Jewellery Design (Hand Sketching)

- a) Introduction To The Precious World Of Jewelry
- b) Jewelry Designing: Types Of Jewelry, an overview, Sources & Inspirations
- c) Study Of Design: Elements And Principals Of Design; Point, Line, Shape, Plane, Texture, Color, Pattern, Form and Space, Balance, Rhythm, Harmony, Proportion, Order, Movement, & Compositions
- d) Role of Jewelry Designer
- e) Understanding of various shapes found in nature, forms of creation
- f) Gemstone shapes and cuts
- g) Deriving inspiration from various elements
- h) Developing skills of turning inspiration into ideas

- i) Hand control exercise
- j) Free hand and counter sketching
- m) Study of Historical Jewellery- International: Art Nouveau, Art Deco, Edwardian, Victorian, Retro Period, Egyptians
- k) Still life and perspective view
- l) Shading in geometrical shapes

SEMESTER IPRACTICAL

JDG 1-4: COMMUNICATION SKILLS

Assignments

JDG 1-5: GEMOLOGY I

Use of Gem Instruments

1. Observation of gemstone using a 10x lens
2. Detection of double refraction, by observing pleochroiccolours with the Dichroscope and 10x lens. Identification of gemstones on the basis of pleochroiccolours;
3. Detection of double refraction, interference figures and internal strain with the Polariscope
4. Study of the fluorescent colours exhibited by various gemstones under Ultraviolet (long wave and short wave) light
5. Measurement of refractive indices and birefringence tests using a gem-testing Refractometer
6. Gemstones to be studied in this sem:
 - 1) Garnet
 - 2) Corundum
 - 3) Beryl
 - 4) Iolite
 - 5) Quartz Group, Chalcedony Group and varieties

JDG 1-5: JEWELLERY DESIGN

- a) Sketching
 1. Hand control exercises
 2. Exercises with forms
 3. Creating new forms
 4. Basic designs with form

Rendering of metals

Drawing different shapes and sizes of gem stones

Colouring of gemstones

Basic designing with gem stones and settings

SEMESTER 2 THEORY

JDG 2-1: ADVANCED COMMUNICATION SKILL

Job application

Essential parts - Cover Letter and the 'resume'. Types of 'resumes'

(Curriculum Vitae) Chronological 'resume', functional 'resume'.

Interviews

Introduction, General preparations for an interview, Types of questions generally asked at the interviews. Types of interviews, Importance of nonverbal aspects.

Group Discussions

Introduction, Group discussions as a part of the selection process, guidelines for group discussion. Role functions in group discussion.

Communication Development Skill

Presentation, Effective presentation strategies.

Defining purpose, analysis of audience and locate, organizing contents.

Preparing an outline of the presentation.

Visual aids, nuances of delivery, Body language and effective presentation.

Peer Review, Video, Technology, Social Media,

News reports, Charts, Advertisements

JDG 2-2: GEMMOLOGY II

4 C's of Gemstones

Color and Phenomena

Coloring elements; Allochromatic, Ediochromatic, Pseudochromatic; Pleochroism; Light-Interference, Lustre; Sheen; play of colour, Adularescence, colour change, Chatoyancy, Asterism, Labradorescence, Iridescence, Orient, Aventurescence

Clarity

Inclusions and their types, Breaks, Fluid Inclusion and Included crystals, Inclusions for identification Growth lines and colour zoning, twinning, types of inclusion, identification of natural and synthetic gemstones, colour zone diffusion and induced feathers/fingerprints, use of laboratory equipments and methods for identification

Cut

Fashioning of Gemstones, Shape and style, Traditional gem shapes, other gem shapes and styles, proportions and finish

Carat Weight

Size of the gemstone and carat weight

Introduction to Gem Treatments

Bleaching, Heat Treatment, Fracture Filling

Gemstone Alternatives

Synthetics, Imitation and Simulants

Study of different type of Gemstones

- | | | |
|--------------------------|--------------------|----------------|
| a) Ruby | g) Coral | n) Labradorite |
| b) Sapphire | h) Pearl | o) Aventurene |
| c) Yellow sapphire | i) Amber | p) Opal |
| d) Emerald | j) Mother of Pearl | q) Sunstone |
| e) Garnet | k) Carnelian | r) Blood stone |
| f) Chrysoberyl cat's eye | l) Moonstone | s) Onyx |
| | m) Alexandrite, | |

Instrumentation

1. Microscope
2. Balance for specific gravity determination
3. Spectroscope
4. Chelsea Colour filter

Care and Cleaning of Gems

Handling and Storage, Cleaning-Ultrasonic Cleaners, Steam Cleaners, Gentle cleaning

Organic Gemstone

Pearls, Shells, Amber, Coral, Ivory, Jet,

JDG 2-3: FUNDAMENTALS OF JEWELLERY DESIGN II

History and Purpose of Jewelry

History of Jewellery in Indian context

Study of historical Jewellery – India Mauryan, Sunga, Gupta, Kushan, Chandella, Mughal

History of Ornamentation: Brief Introduction

Jewellery in the 21st century: Latest Fashion Trends and Forecast, Colour in Gems

SEMESTER II PRACTICAL

JDG 2-4: ADVANCED COMMUNICATION SKILL

Practical based on Theory

JDG 2-5: GEMOLOGY II

1. Observation of the listed gemstones using following instruments
 - a) external features (cut, colour, fractures, etc.) of a gemstone using a 10x lens
 - b) Dichroscope
 - c) Polariscope
2. Determination of specific gravity by hydrostatic weighing method and by using heavy liquids
3. Study of the absorption spectra of various gemstones using a direct vision Spectroscope
4. Observation of the internal features of various natural and synthetics gemstones with a microscope; Growth lines and colour zoning, types of inclusion, identification of natural and synthetic gemstones, colour zone diffusion and induced feathers/fingerprints.
5. Various types of cuts
6. Determination of Geographical And Geological Origin of Gemstones Based On Inclusions
7. **Instrumentation**
 - Microscope
 - Spectroscope
 - Chelsea Colour filter
 - Balance for specific gravity determination

JDG 2-5 : FUNDAMENTALS OF JEWELRY DESIGN

Object Drawing According To Light Source And Shading

Basic Perspective of Drawing, Nature Drawing

General Anatomy Of Birds, Animals

Drawing Geometrical Constructions With Measurements Such As Parallel Lines,

Perpendicular Lines, Bisecting Angles, Triangle, Square, Hexagon, Etc.

Geometrical Designs Design from Natural Elements
