

# SCHEME OF EXAMINATION & DETAILED SYLLABUS

For  
Bachelor of Vocational Studies  
(B. Voc.)  
(Jewellery Design)



# B.VOC (JEWELLERY DESIGN)

Semester I					
Code No	Paper	Credits	End Semester Exam	Internal Marks	Total Marks
BVJD101	Language and Communication Skills – English I	3	70	30	100
BVJD102	Gemology I	4	70	30	100
BVJD103	Fundamentals of Jewellery Design I	4	70	30	100
BVJD104	Environmental Science	3	70	30	100
BVJD105P	Environmental Science-Lab	3	30	20	50
BVJD106P	Practical – I (English Assignments)	3	30	20	50
BVJD107P	Practical – II (Based on Theory 102 & 103)	12	150	50	200
	<b>Total</b>	<b>32</b>	<b>490</b>	<b>210</b>	<b>700</b>

Semester II					
Code No	Paper	Credits	End Semester Exam	Internal Marks	Total Marks
BVJD201	Advanced Communication Skills – English II	3	70	30	100
BVJD202	Gemology II	4	70	30	100
BVJD203	Fundamentals of Jewellery Design II	4	70	30	100
BVJD204	Soft Skills and Personality Enhancement	3	70	30	100
BVJD205P	Form Studies-Lab	3	30	20	50
BVJD206P	Practical – III (English Assignments)	3	30	20	50
BVJD207P	Practical – IV (Based on Theory 202 & 203)	12	150	50	200
	<b>Total</b>	<b>32</b>	<b>490</b>	<b>210</b>	<b>700</b>

### Semester III

Code No	Paper	Credits	End Semester Exam	Internal Marks	Total Marks
BVJD301	Fundamentals of computer	3	70	30	100
BVJD302	Gemology III	4	70	30	100
BVJD303	Fundamentals of Jewellery Design III	4	70	30	100
BVJD304	Universal Human Values	3	70	30	100
BVJD305P	CAD (Coral Draw)-I	3	30	20	50
BVJD306P	Practical – V	3	30	20	50
BVJD307P	Practical – VI (Based on Theory 302 & 303)	12	150	50	200
	<b>Total</b>	<b>32</b>	<b>490</b>	<b>210</b>	<b>700</b>

### Semester IV

Code No	Paper	Credits	End Semester Exam	Internal Marks	Total Marks
BVJD401	Marketing	4	70	30	100
BVJD402	Gemology IV	4	70	30	100
BVJD403	Fundamentals of Jewellery Design IV	4	70	30	100
BVJD404P	CAD (Photo Shop)-I	3	70	30	100
BVJD405P	Practical – VII	3	30	20	50
BVJD406P	Practical – VIII (Based on Theory 402 & 403)	12	150	50	200
	<b>Total</b>	<b>30</b>	<b>460</b>	<b>190</b>	<b>650</b>

### Semester V

Code No	Paper	Credits	End Semester Exam	Internal Marks	Total Marks
BVJD501	Business Ethics and Management	4	70	30	100
BVJD502	Gemology V	4	70	30	100
BVJD503	Jewellery Design V	4	70	30	100
BVJD504P	Jewel-CAD	3	70	30	100
BVJD505P	Practical – IX	3	30	20	50
BVJD506P	Practical – X (Based on Theory502 & 503)	12	150	50	200
	<b>Total</b>	<b>30</b>	<b>460</b>	<b>190</b>	<b>650</b>

### Semester VI

Code No	Paper	Credits	End Semester Exam	Internal Marks	Total Marks
BVJD601	Entrepreneurship Development	4	70	30	100
BVJD602	Gemology VI	4	70	30	100
BVJD603	Fundamentals of Jewellery Design VI	4	70	30	100
BVJD604P	Rhino -CAD	3	70	30	100
BVJD605P	Practical – XI	3	30	20	50
BVJD606P	Practical – XII (Based on Theory602 & 603)	12	150	50	200
	<b>Total</b>	<b>30</b>	<b>460</b>	<b>190</b>	<b>650</b>

# 1ST SEMESTER

## LANGUAGE AND COMMUNICATION SKILLS

### – ENGLISH I (BVJD 101)

**UNIT-I: 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.

**UNIT-II: GRAMMAR AND VOCABULARY:** Tense and the concept of Time. Passive Voice, Conditionals Prepositions, Concord. Idioms, Confusable, one-word substitutes, homonyms, Homophones eponyms

**UNIT-III: PARAGRAPH DEVELOPMENT:** Introduction, Topic sentence and supporting sentences. Attributes of a good paragraph.

**UNIT-IV: LETTER – WRITING:** Business Letters, Structure and types of a business letter, Letter of Inquiry, Letters of complaint, regret and adjustment.

**UNIT-V: 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.

## GEMOLOGY I

### (BVJD 102)

**UNIT-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.

**UNIT-II: CHEMICAL PROPERTIES:** Atomic structure, electrons and chemical bonds, crystalline state and crystalline Materials Crystal lattice, Amorphous and Metamict minerals, Isomorphism and polymorphism.

**UNIT-III: PHYSICAL PROPERTIES:** Specific Gravity and density: Durability  
Hardness: Cleavage/ Parting

**UNIT-IV: LETTER – WRITING:** Business Letters, Structure and types of a business letter, Letter of Inquiry, Letters of complaint, regret and adjustment.

**UNIT-V:**

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

# FUNDAMENTALS OF JEWELLRY DESIGN I (BVJD 103)

## UNIT-I:

- a) Introduction to the Precious World of Jewelry
- b) Jewelry Designing: Types of Jewelry, an overview, Sources & Inspirations

**UNIT-II: 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.

## UNIT-III:

- a) Role of Jewelry Designer
- b) Understanding of various shapes found in nature, forms of creation
- c) Gemstone shapes and cuts
- d) Deriving inspiration from various elements
- e) Developing skills of turning inspiration into ideas
- f) Hand control exercise
- g) Free hand and counter sketching
- h) Still life and perspective view
- i) Shading in geometrical shapes

**UNIT-IV: STUDY OF HISTORICAL JEWELLERY:** International: Art Nouveau, Art Deco, Edwardian, Victorian, Retro Period, Egyptians

# ENVIRONMENTAL SCIENCE (BVJD 104)

**UNIT-I: NATURAL RESOURCES:** Introduction to Environment and natural resources (Definition, scope and important) – Forest Resources: Use and over-exploitation of forest resources and its impact on forest and tribal people – Water Resources: Use and over- exploitation of water and impact – Land Resources: Land degradation and soil – erosion, desertification – Food Resources: Effects of modern agriculture, fertilizer- pesticide problems – Energy Resources: Growing energy needs renewable and non- renewable energy source-use of alternative energy sources.

**UNIT-II: ECOSYSTEM AND BIODIVERSITY:** Concept of an ecosystem – Structure and function of an ecosystem – Energy flow in the ecosystem - Food chains, food webs and ecological pyramids – Types of ecosystem – Biodiversity: genetic, species and ecosystem diversity, India as a mega – diversity nation – Treats to biodiversity: habit loss, poaching of wild life, man-wildlife conflicts; Endangered and endemic species of India – Conservation of Biodiversity: In-situ and Ex-situ conservation of biodiversity.

**UNIT-III: ENVIRONMENTAL POLLUTION:** Causes, effects and control measure of: Air pollution, Water pollution, Soil pollution, Noise pollution and nuclear hazards, Solid waste management, Global environmental problems.

**UNIT-IV: SOCIAL ISSUES AND THE ENVIRONMENT:** Sustainable development, Rural Urban problems related to environment, Water management and rain water harvesting – Environment ethics: Issues and possible solutions, Environmental Protection Policy, Acts and Legislation, Population and the Environment – Environmental and Population concern: Environment and human health, Environment education at various levels – HIV/AIDS, Women and child welfare, gender issues, gender equity, institutions for gender studies / research.

**UNIT-V:** Meaning and concepts, types, causes and management – Effects of disaster on community, economy, environment – Disaster management cycle: early response, rehabilitation, reconstruction and preparedness – Vulnerability Analysis and role of community in Disaster Mitigation – The Disaster Management Act 2005 – Disaster Management Authority: National, State and District level – Ill effects of fireworks.

# ENVIRONMENTAL SCIENCE-LAB (BVJD 105P)

## LIST OF EXPERIMENTS:

1. Determination of pH, conductivity and turbidity in drinking water sample.
2. Determination of pH and conductivity of soil/sludge samples.
3. Determination of moisture content of soil sample.
4. Determination of Total Dissolved Solids (TDS) of water sample.
5. Determination of dissolved oxygen (DO) in the water sample.
6. Determination of Biological oxygen demand (BOD) in the water sample.
7. Determination of Chemical oxygen demand (COD) in the water sample.
8. Determination of Residual Chlorine in the water sample.
9. Determination of ammonia in the water sample.
10. Determination of carbon dioxide in the water sample.
11. Determination of nitrate ions or sulphate ions in water using spectrophotometer.
12. Determination of the molecular weight of polystyrene sample using viscometer method.
13. Base catalysed aldol condensation by Green Methodology.
14. Acetylation of primary amines using eco-friendly method.
15. To determine the concentration of particulate matter in the ambient air using High Volume Sampler.

## SUGGESTED BOOKS:

1. I. Vogel, G. H. Jeffery, Vogel's Text Book of Quantitative Chemical Analysis, Published by Longman Scientific & Technical, 5th Edition, 1989.
2. [dst.gov.in/green-chem.pdf](http://dst.gov.in/green-chem.pdf) (monograph of green chemistry laboratory experiments).
3. S. Chawla, Essentials of Experimental Engineering Chemistry, Dhanpat Rai & Co., 3 Edition, 2008.
4. S. Rattan, Experiments in Applied Chemistry, Published by S.K. Kataria & Sons, 2 Edition, 2003.
5. W. Cunningham and M. A. Cunningham, Principles of Environment Science: Enquiry and Applications, Tata McGraw Hill Publication, N. Delhi, 2003.
6. A. Kaushik and C. P. Kaushik, Perspectives in Environment Studies, 4th Edition, New Age International Publishers, 2013.

Note: Any 10-12 Experiments out of the list may be chosen

# PRACTICAL – I (ENGLISH-I ASSIGNMENTS) (BVJD 106P)

# **PRACTICAL – II (BASED ON THEORY)**

## **(BVJD 107P)**

### **GEMOLOGY I**

#### Use of Gem Instruments

1. Observation of gemstone using a 10x lens
2. Detection of double refraction, by observing pleochroic colours with the Dichroscope and 10x lens. Identification of gemstones on the basis of pleochroic colours;
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

### **JEWELLERY DESIGN-I**

#### a) Sketching

1. Hand control exercises
2. Exercises with forms
3. Creating new forms
4. Basic designs with form Rendering of metals
5. Drawing different shapes and sizes of gem stones Colouring of gemstones
6. Basic designing with gem stones and settings

# 2ND SEMESTER

## ADVANCED COMMUNICATION SKILLS – ENGLISH II

### (BVJD201)

#### **UNIT–I: JOB APPLICATION:**

Essential parts - Cover Letter and the 'resume'. Types of 'resumes' (Curriculum Vitae) Chronological 'resume', functional 'resume'.

#### **UNIT–II: INTERVIEWS:**

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

#### **UNIT–III: GROUP DISCUSSIONS:**

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

#### **UNIT–IV: 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

# GEMOLOGY II

## (BVJD202)

#### **UNIT–I: “4 C’s OF GEMSTONES”**

##### **COLOR AND PHENOMENA:**

Coloring elements; Allochromatic, Ediochromatic, Pseudo chromatic; 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 equipment's 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

#### **UNIT–II:**

##### **INTRODUCTION TO GEM TREATMENTS:**

Bleaching, Heat Treatment, Fracture Filling

**GEMSTONE ALTERNATIVES:**

Synthetics, Imitation and Simulants

**STUDY OF DIFFERENT TYPE OF GEMSTONES:**

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

**INSTRUMENTATION:**

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

**UNIT-III: CARE AND CLEANING OF GEMS:** Handling and Storage, Cleaning-Ultrasonic Cleaners, Steam Cleaners, Gentle cleaning

**UNIT-IV: ORGANIC GEMSTONE:** Pearls, Shells, Amber, Coral, Ivory, Jet.

# FUNDAMENTALS OF JEWELLERY DESIGN II ELLEESIGNING (BVJD203)

**UNIT-I:**

History and Purpose of Jewelry.

**UNIT-II:**

History of Jewellery in Indian context.

**UNIT-III:** Study of historical Jewellery – India Mauryan, Sunga, Gupta, Kushan, Chandella, Mughal.

**UNIT-IV:** History of Ornamentation: Brief Introduction.

**UNIT-V:** Jewellery in the 21st century: Latest Fashion Trends and Forecast, Colour in Gems.

# SOFT SKILLS AND PERSONALITY ENHANCEMENT (BVJD204)

## **UNIT-I:**

(I) Team Building – The magic of synergy, characteristics of an effective team, essentials Of an effective team, Team Dynamics, Team Leading, Managing a Team.

(II) Art of Negotiation –To understand what is negotiation, Ways of negotiating and being Successful in it, to understand the power of language and non-verbal communication.

(III) Grooming –To learn selection of proper attire as per the place, practiced perception, How to carry one's self, How to project one's self in the positive frame and spirit.

## **UNIT-II:**

(I) Organizing Meetings – How to announce, call and organize a meeting in a smooth manner, How to design Agenda and prepare Minutes of Meeting

(II) Telephonic Etiquettes –Learn the tone and pitch of voice while speaking over phone, How to send a voice mail.

(III) Business Etiquettes –What does business etiquettes mean, Professional and Cultural expectations, Effective writing, Corporate Communication, Interaction with foreign clients.

## **UNIT-III:**

(I) Stress Management –Types of stress, Symptoms and causes of Stress, Power of perception, Reaction to stress, Stress Management techniques.

(II) Time Management – Importance of Time Management, Prioritizing Tasks, Goal setting, Barriers to Time Management, Planning Routine and Time Tables.

(III) Self-Management –Self-evaluation, Self-discipline, Self-criticism, SWOT analysis, Self Awareness, Development of the Self.

## **UNIT-IV:**

(I) Presentation Skills –How to prepare a presentation, Knowing the audience and their requirements, Effective ways to deliver presentation, How to prepare Multimedia presentation.

(II) Organizational Skills – How to understand the nature and structure of organization, to understand hierarchy and communication channel of the organization, Clarity about the roles and responsibilities in an organization, How to be a team member, How to draft reports

(III) Leadership Skills

## **UNIT-V:**

(I) Group Discussion – Understanding the nature of discussion, Difference between debate and discussion, Ways to form and present arguments, Ways to defend your point.

(II) Personal Interview –To learn the skills of appearing in an interview and being successful in it.

(III) Public Speaking – Art of public speaking, To know the rhetoric of making a public speech, exploring rhetorical elements through various ideas..

(IV) Conference and Meeting, Participation and Technical clarity in conference and meeting, Learning to listen and respond, Final Report drafting.

# FORM STUDIES-LAB (BVJD205P)

## COURSE OUTCOME:

- Ability to control surfaces of objects created from imagination
- Function oriented look at product aesthetics
- Applying Logic and mathematics to generate volumes

**UNIT-I:** Thinking in three dimensions Concepts of space and Volume, Evolution of a flat shape into a volume; History of utilitarianism; Stone Age Tools; Evolution of farming equipment; native artisanal tools; Creating compositions using rectilinear and curvilinear surfaces; Regular and irregular Solids, geometric shapes and their compositions; Regular and irregular Organics shapes;

### UNIT-II:

Structure and Order

Form, Feature and Content, Dominant, subdominant and subordinate elements, transition elements; Creating a family of forms;

Abstraction, Expression and Meaning in Product Form; Generative algorithms; Generated Forms;

### UNIT-III: Transformation and Movement

Addition, subtraction, conformation, Transition, Morphing; Radii Manipulation; creating volumes through imaginary movements;

### UNIT-IV: Identities and relationships

Ambiguity of "Form follows function"; examples from nature; Forms of Machine elements;

Skeletons of life forms; Exoskeletons; Plant Structures

Components of Built Spaces; Visualization through surface modeling software;

Material Explorations using Papier Mache, wood, Threads, Ropes, Plaster of Paris and Polystyrene; Introduction to 3D Printing;

## REFERENCES:

Gyorgy Kepes, Language of Vision, Dover Publications, 1995

Kimberly Elam, Geometry of Design: Studies in Proportion and Composition, Princeton Architectural Press, 2001 Gaston Bachelard and Maria Jolas (Translator), The Poetics of Space, Beacon Press; Reprint edition, 1994 Gail Greet Hannah, Elements of Design, Princeton Architectural Press, 2002

H. G. Greet and R. R. Kostellow, Elements of Design and the Structure of Visual Relationships, Architectural Press, NY, 2002  
Mario Livio, the Golden Ratio: The Story of PHI, the World's Most Astonishing Number, Broadway, 2003

# PRACTICAL – III (ENGLISH-II ASSIGNMENTS) (BVJD206P)

# **PRACTICAL – IV (BASED ON THEORY)**

## **(BVJD207P)**

### **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 synthetic 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

### **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

# 3RD SEMESTER FUNDAMENTALS OF COMPUTER (BVJD301)

**UNIT-I: INTRODUCTION:** How to Start the CorelDraw program, Introduction to the CorelDraw program, Menu bar & Drawing Toolbox etc.

**UNIT-II:**

- creating text
- selecting and transforming objects
- shaping objects
- Combining/grouping, breaking apart/separating, ungrouping

**UNIT-III:**

- converting to curves
- weld, intersection and trim
- Aligning, copying, pasting and cloning
- blending and contouring

**UNIT-IV:**

- fitting text to a path
- colour adjustment and bitmap effects
- Page setup and printing
- Uses of Corel draw in jewellery industry.

# GEMOLOGY III (BVJD302)

**UNIT-I: 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.

**UNIT-II: 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.

**UNIT-III: 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).

**UNIT-IV: 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.

**UNIT-V:**

**SYNTHETIC PROCESSES:**

- A brief history of early gemstone synthesis,
- Flame fusion (Verneuil Process),
- Czochralski (Crystal pulling),
- Kyropolous
- 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

# FUNDAMENTALS OF JEWELLERY DESIGN III (BVJD303)

**UNIT-I: TYPES OF JEWELLERY AND VARIATIONS AMONG THEM:**

Women's Jewellery:

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

**UNIT-II:** Modern jewellery.

**UNIT-III:** Conceptual designing.

**UNIT-IV:** Fashion, Designer jewellery.

# UNIVERSAL HUMAN VALUES (BVJD304)

**UNIT-I:** Course Introduction- Need, Basic Guidelines, Content and Process for Value Education Understanding the need, basic guidelines, content and process for Value Education, Self-Exploration—what is it? - its content and process; ‘Natural Acceptance’ and Experiential Validation- as the mechanism for self-exploration, Continuous Happiness and Prosperity- A look at basic Human Aspirations, Right understanding, Relationship and Physical Facilities- the basic requirements for fulfillment of aspirations of every human being with their correct priority, Understanding Happiness and Prosperity correctly- A critical appraisal of the current scenario, Method to fulfill the above human aspirations: understanding and living in harmony at various levels

**UNIT-II:** Understanding Harmony in the Human Being- Harmony in Myself Understanding human being as a co-existence of the sentient ‘I’ and the material ‘Body’, Understanding the needs of Self (‘I’) and ‘Body’ - Sukh and Suvidha, Understanding the Body as an instrument of ‘I’ (I being the doer, seer and enjoyer), Understanding the characteristics and activities of ‘I’ and harmony in ‘I’, Understanding the harmony of I with the Body: Sanyam and Swasthya; correct appraisal of Physical needs, meaning of Prosperity in detail, Programs to ensure Sanyam and Swasthya.

**UNIT-III:** Understanding Harmony in the Family and Society- Harmony in Human-Human Relationship Understanding harmony in the Family- the basic unit of human interaction, Understanding values in human-human relationship; meaning of Nyaya and program for its fulfillment to ensure Ubhay-tripti; Trust (Vishwas) and Respect (Samman) as the foundational values of relationship, Understanding the meaning of Vishwas; Difference between intention and competence, Understanding the meaning of Samman, Difference between respect and differentiation; the other salient values in relationship, Understanding the harmony in the society (society being an extension of family): Samadhan, Samridhi, Abhay, Sah-astitva as comprehensive Human Goals, Visualizing a universal harmonious order in society- Undivided Society (Akhand Samaj), Universal Order (SarvabhaumVyawastha )- from family to world family!.

**UNIT-IV:** Understanding Harmony in the Nature and Existence- Whole existence so-existence Understanding the harmony in the Nature, Interconnectedness and mutual fulfillment among the four orders of nature- recyclability and self-regulation in nature, Understanding Existence as Co-existence (Sah-astitva) of mutually interacting units in all-pervasive space, Holistic perception of harmony at all levels of existence.

**UNIT-V:** Implications of the above Holistic Understanding of Harmony on Professional Ethics Natural acceptance of human values, Definitiveness of Ethical Human Conduct, Basis for Humanistic Education, Humanistic Constitution and Humanistic Universal Order, Competence in Professional Ethics: a) Ability to utilize the professional competence for augmenting universal human order, b) Ability to identify the scope and characteristics of people-friendly and eco-friendly production systems, technologies and management models, Case studies of typical holistic technologies, management models and production systems, Strategy for transition from the present state to Universal Human Order: a) At the level of individual: as socially and ecologically responsible engineers, technologists and managers, b) At the level of society: as mutually enriching institutions and organizations.

# CAD (CORAL DRAW)-I (BVJD305P)

## COURSE OBJECTIVES:

- Create design awareness of different styles of jewellery
- Develop skills to communicate design intention
- Create digital jewellery models.
- Introduction of powerful features of corel draw and their use for converting designer's original idea and inspiration into a successful jewellery design.
- To make students aware about the creative aspect of making bangles, rings, jewellery sets and professional artwork.

### UNIT-I: INTRODUCTION

- How to Start the Corel Draw 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, bugget, triangle, heart, pear, marquess etc

### UNIT-II:

#### RENDERING JEWELLERY

- Use of colour, fill and outline tools
- How to fill metallic effects : Gold, silver, platinum, copper
- How to fill gemstones
- How to give textured effects: Sand finish, matte finish, silk finish etc.
- How to give pearl effect
- How to give kundan effect

### UNIT-III: STONE SETTINGS

- Prong settings
- Prong Pave
- Pave settings
- Channel settings
- Flush settings
- Invisible settings
- Pressure settings
- Bezel
- Bezel settings

### UNIT-IV: CREATING JEWELLERY WITH MEASUREMENTS

- Creating diamonds and stones with measurements
- Creating rings and bangles of different sizes
- Creating pendants
- Creating necklaces : Chokers, small, long, single stranded, multiple stranded

### REFERENCES:

<http://online-jewellery-designing-training.blogspot.in/>  
[rhino3dcadjewelrydesignclasses.doattend.com](http://rhino3dcadjewelrydesignclasses.doattend.com) [dsiidc.org/nij/jewellerydesigning](http://dsiidc.org/nij/jewellerydesigning)  
[www.gia.edu/gem-education/program-jewelry-design-cad-cam](http://www.gia.edu/gem-education/program-jewelry-design-cad-cam)  
[www.iigj.org/](http://www.iigj.org/)

# PRACTICAL – V

## (BVJD306P)

### 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 drawtoolbox
- 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

# PRACTICAL – VI (BASED ON THEORY)

## (BVJD307P)

### 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, Spheue Syntheic Vs Natural gem identification

### JEWELRY DESIGN III

Designing of Necklaces, Rings, Bracelets, earrings Modern jewelry  
Conceptual designing

# 4TH SEMESTER MARKETING (BVJD401)

## UNIT-I:

- 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

## UNIT-II:

- Understanding a sales associate and his responsibility
- Responsibility while making sales and add-on sales
- General rule for customer contact
- Customer engaging techniques

## UNIT-III:

- Factors Influencing Buying Behavior of customers - Buyer decision process
- Type of Customers
- The New Age Customer
- Handling Customer Complaints

## UNIT-IV:

- 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

## UNIT-V:

- Concept of Good, Bad and Excellent Service
- Stock Management

# GEMOLOGY IV (BVJD402)

**UNIT-I: GEMSTONE FORMATION IN DIFFERENT ROCKS:** Igneous rocks, magmatic and hydrothermal phases and gemstone formation in pegmatite's, 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

**UNIT-II: GEMSTONE EXPLORATION:** Mining, Mining Techniques, Prospecting, Extraction and Recovery of gemstones.

**UNIT-I: GEMSTONE FORMATION IN DIFFERENT ROCKS:** Igneous rocks, magmatic and hydrothermal phases and gemstone formation in pegmatite's, 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

**UNIT-II: GEMSTONE EXPLORATION:** Mining, Mining Techniques, Prospecting, Extraction and Recovery of gemstones.

**UNIT-III: GEM LOCALITIES:**

Type localities of different gemstones

Major Gem mines

Global and Indian Coloured stone Markets

**UNIT-IV: WORLD FAMOUS GEMS:**

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

# FUNDAMENTALS OF JEWELLERY DESIGN IV (BVJD403)

## BASIC JEWELLERY DESIGNING

**UNIT-I:** Equipment for Jewellery Drawing and Design, Jewellery Drawing, Nature Drawing.

**UNIT-II:** Historic Ornament, the Beginning of Design (Variations).

**UNIT-III:** Rendering in Pencil, Rendering with Brush, Stone Settings.

**UNIT-IV:** Rendering in Colour, Rendering Stones.

# CAD (PHOTO SHOP)-I (BVJD404P)

## COURSE OBJECTIVES:

- Create design awareness of different styles of jewellery
- Develop skills to communicate design intention
- Create digital jewellery models.
- Introduction of powerful features of Photoshop and their use for converting designer's original idea and inspiration into a successful jewellery design.
- To make students aware about the creative aspect of making bangles, rings, jewellery sets and professional art work.

**UNIT-I:**

- How to Start the Photoshop program.
- Introduction to the Photoshop program, Menu bar & Drawing Toolbox
- Selection Tools
- Live Demo -Selecting Images

**UNIT-II:**

- Drawing & painting tools
- Image editing & manipulation
- Working with text, rasterizing text and images
- Working with layers
- Live Demo - Loading a Selection and coloring the Selected Area
- Live Demo - Making a Layer (Layer Mask)

**UNIT-III: STONE SETTINGS**

- Explanation of various tools like Dodge & blur tool, Rubber Stamp & pattern stamp tool,
- Working with images, channels & masks
- Saving and loading selections
- Using paths - Design a complete set of fashion jewellery
- Special effects on images - use Filters to make your designs alluring - Give a flare, give a glow and put the spotlight on your design!

**UNIT-IV:**

- Saving files with different extensions i.e. GIF, JPEG, PDF and other web supported formats.
  - Importing files from CorelDraw or any other applications.
- Scanning images.

**REFERENCES:**

<http://online-jewellery-designing-training.blogspot.in/>  
[rhino3dcadjewelrydesignclasses.doattend.com](http://rhino3dcadjewelrydesignclasses.doattend.com) [dsiidc.org/nij/jewellerydesignin](http://dsiidc.org/nij/jewellerydesignin)  
[www.gia.edu/gem-education/program-jewelry-design-cad-cam](http://www.gia.edu/gem-education/program-jewelry-design-cad-cam)  
[www.iigj.org/](http://www.iigj.org/)

## **PRACTICAL – VII (BVJD405P)**

## **PRACTICAL – VIII (BASED ON THEORY) (BVJD406P)**

**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, Chiasolite, Hypersthene, Kyanite, Enstatite, Sodalite, Lapis Lazuli, Prehnite and Scolecite

Mineral Maps

**JEWELLERY DESIGNING PAPER IV**

Designing of Jewellery based on geometric motifs, historical inspirations.

# 5TH SEMESTER BUSINESS ETHICS AND MANAGEMENT (BVJD501)

## UNIT-I:

Management principles  
Concept, Scope Importance, Objectives and Functions.

## UNIT-II:

Human resource development  
Personal Management and Human resource management.

## UNIT-III:

Planning Processes  
Critical thinking, creative thinking, strategic thinking Conventional and strategic planning.

## UNIT-IV:

Recruitment trends, Section steps, Type of Interviews, Induction, Job changes, promotions, Career planning; concepts, objectives and development.

## UNIT-V:

Listening and understanding skills, Leadership skills, Problem solving steps.

# GEMOLOGY V (BVJD502)

**UNIT-I: INTRODUCTION TO DIAMONDS:** Chemical composition, Physical properties, Durability of Diamonds, Diamonds and their internal structure: Crystal Forms, Growth Features, Crystallography, Cleaving, Surface Markings, Rough Diamonds  
**4 C's of Diamonds-**

- Color: Grades, treatments, enhancements Depth of the colour, Shade of the colour, Colour of the inclusion, position of the colour zoning, Fluorescence and phosphorescence.
- Clarity: flaws, inclusions, blemishes, grading standards,
- Cut: Types, History, Proportions, Variations, planning and marking, sawing, Bruting, Faceting of table, Faceting of crown, Faceting of pavilion. Instruments used in cutting and polishing of diamond processing. Manual method of planning and marking. Computerized or automatic method for planning marking and diamond sawing.
- Carat: measurement and calculation, Cost computation.

**UNIT-II: OPTICAL PROPERTIES AND CRYSTALLINITY:** Cubic system; Forms; Twins, Parallel growth; Irregular forms; Growth features, Fracture; Cleavage; Hardness (Moh's Scale); Specific gravity (Heavy liquids and Hydrostatic method); Electrical conductivity, Thermal conductivity; Graphitization.

Single; double and anomalous double refraction, Refractive index; Strain patterns; Dispersion; Absorption spectra; Transparency to Ultra-violet and x-rays; Reflectivity; Luminiscence.

**GEOLOGICAL OCCURRENCES AND THEIR HISTORY:** Geological occurrence of Diamonds, Diamond deposits, Kimberlites and Lamprolites, pipe deposits. Gem and industrial diamond, kimberlite (mines); Alluvial deposits (river beds), Marine deposits (beaches, sea-bed); Meteoric diamonds; Localities like Australia; Borneo; Brazil; India; Sierra Leon; Russia; South Africa; South West Africa, Zaire, Canada etc.

**WORKING AND MANUFACTURING PROCESS OF DIAMONDS:**

- Survey methods of diamond deposits, Mining techniques of diamond deposits, History of diamond and diamond mining, Blood diamonds and conflict diamonds.
- Extraction of Diamonds: Crushing, Washing and Screening, Heavy media separator, Grease table, Grease belt, ray separation.
- Sorting of rough diamonds: Sorting by Size; Shapes; Colour; Purity.
- Manufacturing of diamonds: Grains; Sawing; Cleaving; Bruting; Grinding; Polishing; 4,3,2, point stones; Acidizing; Ultrasonic cleaning.

**UNIT–III: DIAMOND GRADING:**

**1. COLOUR GRADING OF POLISHED STONES:**

Lighting standards and magnification; Comparison stones. Colour grading systems (G.I.A.; HRD; Indian, C.I.B.J.O.)

**2. CLARITY GRADING OF POLISHED STONES:**

Magnification; Lighting; International grading scales; (G.I.A.; HRD; Indian; C.I.B.J.O.); Criteria for grading; Internal blemishes; External defects.

**3. GRADING FOR CUT:**

Spread stones; Lumpy and Fish-eye stones, Proportion scope and proportion analyzing, Carat system; weighing scales; Estimating weight of mounted stones (gauges); Sieves and sieve sizes. Estimating: Table percentage, Pavilion depth, Crown angle, Pavilion angle and Girdle thickness

**UNIT–IV: SYNTHETIC DIAMONDS AND SIMULANTS:**

**1. SYNTHETIC DIAMOND:**

Synthesis; Artificial colorations; Identification of treated diamond.

**2. DIAMOND SIMULANTS:**

Gadolinium Gallium Garnet (GGG); Yttrium Aluminium Garnet (YAG); Strontium Titanate; Synthetic Rutile; Synthetic Cubic Zirconia; Synthetic moissanite; Spinel, Sapphire; Zircon; Topaz; Quartz; Paste, Doublets.

**DIAMOND MARKETS**

Global and Indian Markets for Diamonds

De-Beers consolidated Mines; Diamond Trading Company (D.T.C.); Sights supplied by D.T.C.; Diamond Bourses; Clubs; Operation of the National and International markets. Sources of Rough diamonds: HDC, MMTC, NMDC, Local-resellers, DTC, Open market.

# JEWELLERY DESIGN V

## (BVJD503)

**UNIT–I: MAIN FEATURES OF JEWELRY OF MAJOR INTERNATIONAL MARKETS:** USA, Japan, Dubai, French market, Italian market, German market.

**UNIT–II: MAIN FEATURES OF JEWELLERY OF EUROPEAN INTERNATIONAL MARKETS:** Italy, Germany, France.

**UNIT–III: TRADITIONAL JEWELLERY:** Definition of Traditional jewellery.

**UNIT-IV: MAIN FEATURES OF JEWELLERY OF MAJOR INDIAN MARKETS:** Kundan Meena Jewellery of Rajasthan, Kundan Meena, Definition/ Meaning, Process, Evaluation, Enameling, Kinds of Enamel, Gold Jewellery of Rajkot, Temple Jewellery of Kerala, Terracotta Jewellery of Bengal, Jewellery Style of Maharashtra, Art of Filigree- Orissa, Filigree, Meaning & Process, Silver, Filigree.

**UNIT-V: JEWELRY MATERIALS:**

How to choose Material for Jewellery

Designs derived from Nature- the Moth-Mullen in Design, The Snow Crystal in Design, the Sea-horse in Design, and The Butterfly in Design

Designing - Elliptical Brooch, Buckles, Clasps, Bar Pins Pendants, Lavalier and Necklaces, Pendants, Lavalier and Necklaces, the watch fob, hat pin, cuff link, cuff button, the finger ring, scarf pin, Chains, pendant slides, pendant connections

Designing – flower spray

Study of apple blossoms – bud forms, bud sections, sections of seed pods, leaf outlines Studies from Peacock, shells

# JEWEL-CAD (BVJD504P)

## COURSE OBJECTIVES:

- Create design awareness of different styles of jewellery
- Develop skills to communicate design intention
- Create digital jewellery models.
- Introduction of powerful features of Jewel CAD and their use for converting designer’s original idea and inspiration into a successful jewellery design.
- Translate digital model to 3D master model through jewelCAD.
- To make students aware about the creative aspect of making bangles, rings, jewellery sets and professional art work.
- Study how jewel CAD is attached to many digital manufacturing machines eg. Casting, engraving , laser etc. and their handling

**UNIT-I:**

- Introduction to Jewel cad 5.1 (Update4)
- File and View Toolbar
- Working With Database
- Inserting object from the database
- Learn to select object
- Transform Toolbar
- CopyToolbar
- Introduction to Copy Toolbar
- Grid settings and measurements
- Cut-Paste Tool
- Vertical mirrorcopy
- Horizontal mirrorcopy
- Revolve 180 Copy
- Cycle Copy
- Extend copy
- Revolvecopy

#### **UNIT-II:**

##### -Deform Toolbar

- Bend tool, Bend two size
- Taper, Taper two size
- Scaled paper, Scaled Taper (Two Sides)
- Duplicate – Object Color
- Skew – Skew Two Sides, Twist -Skew

##### - Curve Toolbar

- Simple Two Curves
- Vertical/Horizontal mirrorcurve
- Revolve 180Curve
- Cycle curve
- Extend curve
- Revolve Curve
- Circle

#### **UNIT-III:**

##### - Deform Toolbar

- Extend, Vertical Revolve Surface, Horizontal Loft surface, Pipe Surface
- Boolean Intersect, Boolean Subtract, Boolean Union, Boolean Dis Boolean
- Cv Select, Cv Edit.

##### - Rail Options

- Rail Scale, Rail Scale Semi, Rail Shape, Rail Shape1, Rail Vertical,
- Rail Loop world, Rail Horizontal, Rail Loop center, Rail Ring
- 3Rail, 3Rail1,3Rail3
- Loop, b) Prong, c) Skoop, d) Socket, e) Supty

#### **UNIT-IV: DEFORM TOOLBAR**

- Prong setting
- Pave setting
- channel setting
- Bezel setting
- Invisible setting
- Flush setting
- Presser setting
- Nick setting

#### **REFERENCES:**

1. [www.studio3-jewelcad.net/3013/08/video-tutorial-jewelcad-5113.htm](http://www.studio3-jewelcad.net/3013/08/video-tutorial-jewelcad-5113.htm)
2. <https://dogo.ga/DOC/Jewelcad-Pro-Tutorial.doc>
3. [www.vobium.com/in/s/courses/computers...it/.../Learn-jewelcad-51](http://www.vobium.com/in/s/courses/computers...it/.../Learn-jewelcad-51)
4. [www.aonlinetraining.com/jewellery\\_jewel\\_cad.php3](http://www.aonlinetraining.com/jewellery_jewel_cad.php3)
5. [www.jcadcam.com/](http://www.jcadcam.com/)

# **PRACTICAL – IX** **(BVJD505P)**

# **PRACTICAL – X (BASED ON THEORY)** **(BVJD506P)**

## **GEMOLOGY V**

Practical based on Theory

## **JEWELLERY DESIGN V**

Designing Jewelry suitable to different world markets Designing jewelery around different gem stones

# 6TH SEMESTER

# ENTREPRENEURSHIP DEVELOPMENT

## (BVJD601)

**UNIT-I:** Concept of entrepreneurship, entrepreneurial talent, business ideas, fundamentals of entrepreneurship, challenges of entrepreneurship.

**UNIT-II:** Project Management: Feasibility and Viability.

**UNIT-III:** Skill development, Business Incubation.

**UNIT-IV:** Advertising: types, agencies, media planning, brand awareness, brand names, headlines, slogans, basic elements of advertising.

**UNIT-V:** Code of Ethics.

# GEMOLOGY VI

## (BVJD602)

**UNIT-I: METAL:**

Precious metals: Gold, Silver & Platinum, Characteristics/Properties and Classification of Metals, Metal Texture, Alloy.

**UNIT-II: METAL AND THEIR BEHAVIOR:**

Characteristics and classification, ores, metal groups-ferrous, non-ferrous, alloys, mining and techniques-surface mining, subsurface mining and types. Basic techniques of jewellery making- measurement, layout, sawing, drilling, filing. Precious metals and their mining, methods of refinement and recovery, application in jewellery, quality control –lowering or raising metal quality, hallmarking, standard weights and measures.

**UNIT-III: GEM TRADE**

**SELLING GEMSTONES THROUGH THEIR PROPERTIES:**

Clarity, Colour, Cut, Carat Weight.

**CUSTOMER INTERACTIONS:**

Approach, Information Exchange, Demonstration Techniques, Value Enhancement, Sale approaches, Closure, Add-on Sales, Follow up.

**UNIT-IV:**

**SECURITY:**

Gem and Jewelry Related Giftware: Watches, Crystal pieces, Enamel pieces, figurines, desk accessories, cufflinks, China, Hollowware etc.

**SERVICE:**

Knowledge, Repeat Sales, Personal Attention, Awareness, Care and cleaning, home care, Jewelry handling etc.

**UNIT-V: HALL MARKING AND GEM CERTIFICATION**

Pricing/ Valuation

Market Terms/ Indian Trade

# FUNDAMENTALS OF JEWELLERY DESIGN VI (BVJD603)

## RHINO –CAD (BVJD604P)

### COURSE OBJECTIVES:

- Create design awareness of different styles of jewellery
- Develop skills to communicate design intention
- Create digital jewellery models.
- Introduction of powerful features of Rhino CAD and their use for converting designer's original idea and inspiration into a successful jewellery design.
- Translate digital model to 3D master model through Rhino CAD.
- To make students aware about the creative aspect of making bangles, rings, jewellery sets and professional art work.
- Study how Rhino CAD is attached to many digital manufacturing machines eg. Casting, engraving, laser etc. and their handling.

#### UNIT-I:

- Introduction to Rhinocad
- File and View Toolbar
- Working With Database
- Inserting object from the database
- Learn to select object
- Transform Toolbar
- Copy Toolbar
- Grid settings and measurements
  - l) Cut-Paste Tool
  - ii) Vertical mirror copy
  - iii) Horizontal mirror copy
  - iv) Revolve 180 Copy
  - v) Cycle Copy
  - vi) Extend copy
  - vii) Revolve copy

#### UNIT-II:

- Deform Toolbar
- Bend tool
- b) Bend two size
  - Taper
  - Taper two size
- e) Scaled paper
- f) Scaled Taper (Two Sides)

- g) Duplicate – Object Color
- h) Skew – Skew Two Sides
- l) Twist -Skew

**UNIT–III: CURVE TOOLBAR**

- Simple TwoCurves
- b) Vertical/Horizontal mirrorcurve
- c) Revolve 180 Curve
- d) Cycle curve
- e) Extend curve
- f) Revolve Curve

**UNIT–IV: DEFORM TOOLBAR**

- Boolean Internet
- b) Boolean Subtract
- c) BooleanUnion
- d) Boolean Dis Boolean
- e) CvSelect
- f) CvEdit

**UNIT–V: Rail Options**

- RailScale
- b) Rail ScaleSemi
- c) RailShape
- d) RailShape1
- e) RailVertical
- f) RailLoopworld
- g) RailHorizontal
- h) RailLoopcenter
- l) RailRing
- j) RailRing1
- k) RailRing3
- l) RailRing3
- m) RailRing4
- n) 3Rail
- o) 3Rail1

**REFERENCES:**

[rhino3dcadjewelrydesignclasses.doattend.com](https://rhino3dcadjewelrydesignclasses.doattend.com)

<https://www.rhino3d.com/training><https://www.andrew.cmu.edu/course/><https://www.rhino3d.com/><https://www.lynda.com/Rhino-3D-Software-tutorials>

**PRACTICAL – XI**  
**(BVJD605P)**

**PRACTICAL – XII (BASED ON THEORY)**  
**(BVJD606P)**





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