

SYLLABUS FOR

B.Voc. in Gem & Jewellery Industry Professional

Academic Session

2024 – 27

SCHOOL OF STUDIES IN GEOLOGY & WRM
PT. RAVISHANKAR SHUKLA UNIVERSITY, RAIPUR

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SYLLABUS

Course Name: B.Voc. in Gem & Jewellery Industry Professional	
Semester 1	
Paper 1	Business Communication & Writing Skills
Paper 2	Introduction to Mineralogy & Gemological Techniques
Lab Course I	Gemology I
Semester 2	
Paper 3	Descriptive Gemology
Paper 4	Gemstone Grading & Enhancement Techniques
Lab Course 2	Gemology II
Semester 3	
Paper 5	Gem Cutting & Polishing Techniques
Lab Course 3	Gemology III
Semester 4	
Paper 6	Jewellery Designing & Techniques
Lab Course 5	Gemology IV
Semester 5	
Paper 7	Industrial Operations
Lab Course 4	Gemology V
Semester 6	
Paper 8	Project Work & Vocational Training
Lab Course 6	Gemology VI

Course Name: B.Voc. in Gem & Jewellery Industry Professional	
Semester 1	
Paper 1	Business Communication & Writing Skills
	<p>Introducing Professional English: Theory of Communication, Types and modes of Communication, Oral communication in English, Communication Cycle, Monologue, Dialogue, Group Discussion, Effective Communication/ Mis-Communication, Principles (7C's) of communication, Grapevine communication, English phonology, Intonation patterns in English, Intra-personal, Inter-personal and Group communication, Auxiliaries, Tense and aspect, Interrogative and negative sentences, The positive, Conditionals, Concord, Confusing words, Question tag.</p> <p>Vocabulary: Verbal and Non-verbal (Spoken and Written) Personal, Social and Business, Phrasal Verbs, Idioms, Collocations, Antonyms / Synonyms, One word substitution, Agreement of verb & subject. Written Business Communication: -Email Etiquette, Professional Presentations; Writing Skills:- Documenting, Report Writing, Making notes, Letter writing, Writing a Resume, Writing- Memo, Cover Letter, Quotation, Tender, Do's & Don'ts of précis writing.</p>




	<p>Advanced Communication Skills: Initiating, Sustaining and Closing a Business Conversation, Selling skills: closing a sale, participating in Business Discussions, Making Formal Speeches, Diction and pronunciation, Agreeing and Disagreeing in Industry, Appointments and Friendly Reminders, Making and Handling Complaints</p> <p>Internet Communications Skills: Drafting business e-mails, attending to queries, Email etiquette, Writing blogs and articles, Presentation Techniques including making power point presentations, Group Discussions, Situational Role Play.</p>
Paper 2	Introduction to Mineralogy & Gemological Techniques
	<ol style="list-style-type: none"> 1. Structure of Earth; Types of Rocks; Formation of Minerals and Gems; 2. Types of Chemical Bonding; 3. Physical properties of Gems: Hardness, Mohs Scale, Cleavage, Parting, Fracture, Specific Gravity 4. Magnetism, Pyro-electricity, Piezoelectricity and Radioactivity in Gems 5. Morphology of Crystals <p>Gem Optics and Gem Occurrences</p> <ol style="list-style-type: none"> 1. Basic qualities of Gems, Colour and their causes in Gems, Transparency, Lusture, Pleochroism, Interference, Dispersion, Reflection, Refraction, single and Double Refraction, Strain 2. Sheen, Chatoyancy, Asterism, Iridescence, Adularescence, Aventuryscence, Opalescence 3. Various Cuts and Shapes 4. Occurrences of precious, semi-precious gem stones in India and World, 5. Gemstone deposits of Chhattisgarh, Madhya Pradesh, Odisha, Andhra Pradesh and Jharkhand <p>Gemological Instruments</p> <ol style="list-style-type: none"> 1. Gemological Instruments and their principle: Jewellers Lens, Microscope, 2. Stereo-Zoom Microscope, Horizontal Microscope 3. Spectroscope, Dichroscope, Polariscope, Refractometer, UV Lamp, Chelsea Filter, Thermal Probes 4. Advanced Gemological Instruments: FTIR, Raman Spectroscope, DiamondSURE, DiamondVIEW
Lab Course I	Gemology I
	<p>Determination of Hardness , Specific Gravity (by Hydrostatic and Heavy liquid method), Nature of Fracture, Cleavage direction, Crystal Habit</p> <p>Identifying various cuts and shapes,</p> <p>Identifying lusture, single-, double- refraction</p> <p>Observation of different sheen in gemstones</p>

	Plotting of gemstone deposits of India and World Gemological instruments handling to study physical and optical character of gemstones
Semester 2	
Paper 3	Descriptive Gemology
	<p>Identification of various gemstones by their physical and optical properties using gemological instruments: Orthoclase, Plagioclase, Moonstone, Albite, Diopside, Labradorite, Anorthite, Sun Stone, Amazonite, Almandine, Pyrope, Grossular, Andradite, Spessartine, Uvarovite, Ruby, Yellow Sapphire, Blue Sapphire, Pink Sapphire, Gossenite, Aquamarine, Emerald, Heliodor, Morganite, Cats Eye, Alexandrite</p> <p>Semi-precious, Organic Gemstones and other varieties: Rock Crystal, Amethyst, Citrine, Smoky Quartz, Rose Quartz, Aventurine Quartz, Quartz Cat's Eye, Crypto-crystalline Quartz (Chalcedony), Jasper, Achrolite, Rubelite, Indicolite, Veriscite,</p> <p>Organic Gemstones: Amber, Coral, Pearl (Real and Cultured), Culturing of Pearls, Ivory, Wood Fossil</p> <p>Other varieties: Magnetite, Hematite, Iolite, Zade, Zadite, Nepharite, Lapis Lazuli, Sodalite, Malachite, Turquoise, Zircon, Tanzanite, Zoisite, Sinhelite, Sphene, Spinel, Spodumene, Kunzite, Rhodochrosite, Serpentine, Topaz, Kyanite, Peridot, Epidote, Fluorspar, Enstatite, Calcite</p>
Paper 4	Gemstone Grading & Enhancement Techniques
	<ol style="list-style-type: none"> 1. Forms, Twinning, Growth Features, External and Internal Features 2. International Grading of Diamonds (4 C), Colour, Clarity, Cut, Carat: Fluorescence <p>Gemstone Synthesis & Enhancement</p> <ol style="list-style-type: none"> 1. Synthesis Methods 2. Identification of synthetic gemstones, Ruby, Blue Sapphire, Yellow Sapphire, Emerald, Cubic Zirconia, Glass Paste, Moissanite, Synthetic Quartz, Synthetic Diamond, HTPT, CVD 3. Gemstone enhancement, methods 4. Identification of enhancement and its disclosure
Lab Course 2	Gemology II
	Gemological identification, appraising of natural, synthetic and enhanced gemstones.

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Semester 3	
Paper 5	Gem Cutting & Polishing Techniques
	<ol style="list-style-type: none"> 1. History of Gem cutting & Polishing 2. Steps of gem cutting & polishing, cleaving, sawing, bruising, cutting & polishing 3. Introduction to different gem cutting & polishing instruments 4. Different shapes & cuts and their specifications 5. Introduction to diamond cutting & polishing techniques
Lab Course 3	Gemology III
	Practical learning of various methods of gem cutting & polishing Making different cuts and shapes
Semester 4	
Paper 6	Jewellery Designing & Techniques
	<ol style="list-style-type: none"> 1. History, types of jewellery, metallurgy & metal texture, making alloys, identifying jewellery metals, jewellery manufacturing techniques, wax molding, filing, setting, engraving techniques, jewellery enamelling 2. Diamond, gem (studded), gold, silver jewellery manufacturing techniques 3. Jewellery designing, designing various types of jewellery for men, women and children 4. Designing for international and domestic markets 5. Introduction to CAD Jewellery designing
Lab Course 4	Gemology IV
	Goldsmith workshop training in jewellery manufacturing Concept of Jewellery designing: sketching, CAD application Submission of Project Report
Semester 5	
Paper 7	Industrial Operations
	<ol style="list-style-type: none"> 1. Operation: Gem/ Diamond cutting & polishing units 2. Operation: Jewellery manufacturing units 3. Operation: Colour stone, diamond marketing units 4. Operation: Jewellery marketing units 5. Operation: Domestic & International Promotional Techniques 6. Scope of gem & jewellery industries in India and Chhattisgarh 7. Scope of gem/ diamond cutting & polishing units in India and Chhattisgarh 8. Natural raw material – raw gems availability in India and with special reference to Chhattisgarh & surrounding states 9. Leadership, management training program, HRD, Sales, Production, Quality control 10. Role of GJEPC, MMTC, NMDC, Hindustan Diamond Trading Company, DTC in gem & jewellery industry

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Lab Course 5	Gemology V
	Project on gem & jewellery industry Interaction, exposure to gem & jewellery industry
Semester 6	
Paper 8	Project Work & Vocational Training
	Industry based training program on production, sales, marketing, supervision and quality control
Lab Course 6	Gemology VI
	Project Work, Preparation of Project Report & Viva voce

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