Course Curricula

for

Short Term Courses based on Modular Employable Skills (MES)

In

Gems and Jewelry Sector

DIRECTORATE GENERAL OF EMPLOYMENT AND TRAINING

MINISTRY OF LABOUR & EMPLOYMENT

GOVERNMENT OF INDIA

Course Curricula for Short Term Courses based on Modular Employable Skills (MES) in Gems and Jewelry Sector

CONTENTS

Skill Development based on Modular Employable Skills (MES)

Background

The need for giving emphasis on the Skill Development, especially for the less educated, poor and out of school youth has been highlighted in various forums. The skill level and educational attainment of the work force determines the productivity, income levels as well as the adaptability of the working class in changing environment. Large percentage of population in India is living below poverty line. One of the important causes is lower percentage of skilled persons in the workforce

The skill development at present is taking place mostly in the informal way, i.e. persons acquire skill at the work-place when they help their parents, relatives and employers etc. Such persons do not have a formal certificate and thus earn lower wages and are exploited by employers. They have come through informal system due to socio-economic circumstances of the family and the compulsions of earning a livelihood rather than attending a formal course. While their productivity is low, their contribution to the national GDP cannot be ignored. If the country can create a system of certification which not only recognizes their skills but also provides education and training in a mode that suits their economic compulsions, it will not only benefit the workforce to earn a decent living but also contribute to the national economy by better productivity of this workforce.

Another related problem to be tackled is large number of students drop outs (About 63% of the school students drop out at different stages before reaching Class-X).

Frame work for Skill Development based on 'Modular Employable Skills (MES)'

Very few opportunities for skill development are available for the above referred groups (out of school youth & existing workers especially in the informal sector). Most of the existing Skill Development programmes are long term in nature. Poor and less educated persons can not afford long term training programmes due to higher entry qualifications, opportunity cost etc. Therefore, a new frame work for Skill Development for the Informal Sector has been evolved by the DGET to address to the above mentioned problems. The **key features of the new frame work for skill development** are:

- Demand driven Short term training courses based on modular employable skills decided in consultation with Industry
- Flexible delivery mechanism (part time, weekends, full time)
- Different levels of programmes (Foundation level as well as skill upgradation) to meet demands of various target groups
- Central Government will facilitate and promote training while Vocational Training (VT) Providers under the Govt. and Private Sector will provide training
- Optimum utilisation of existing infrastructure to make training cost effective.
- Testing of skills of trainees by independent assessing bodies who would not be involved in conduct of the training programme, to ensure that it is done impartially.
- Testing & certification of prior learning (skills of persons acquired informally)

The Short Term courses would be based on 'Modular Employable Skills (MES)'.
The **concept for the MES** is :

- Identification of 'minimum skills set' which is sufficient to get an employment in the labour market.
- It allows skills upgradation, multiskilling, multi entry and exit, vertical mobility and life long learning opportunities in a flexible manner.
- It also allows recognition of prior learning (certification of skills acquired informally) effectively.
- The modules in a sector when grouped together could lead to a qualification equivalent to National Trade Certificate or higher.
- Courses could be available from level 1 to level 3 in different vocations depending upon the need of the employer organisations.
- MES would benefit different target groups like :
  - Workers seeking certification of their skills acquired informally
  - workers seeking skill upgradation
  - early school drop-outs and unemployed
  - previously child labour and their familly

Age of participants

The minimum age limit for persons to take part in the scheme is 14 years but there is no upper age limit.

Curriculum Development Process

Following procedure is used for developing course curricula

- Identification of Employable Skills set in a sector based on division of work in the labour market.
- Development of training modules corresponding to skills set identified so as to provide training for specific & fit for purpose
- Organization of modules in to a Course Matrix indicating vertical and horizontal mobility. The course matrix depicts pictorially relation among various modules, pre requisites for higher level modules and how one can progress from one level to another.
- Development of detailed curriculum and vetting by a trade committee and by the NCVT

(Close involvement of Employers Organizations, State Governments, experts, vocational training providers and other stake holders is ensured at each stages).

Development of Core Competencies

Possession of proper attitudes is one of the most important attribute of a competent person. Without proper attitudes, the performance of a person gets adversely affected. Hence, systematic efforts will be made to develop attitudes during the training programme.

The trainees deal with men, materials and machines. They handle sophisticated tools and instruments. Positive attitudes have to be developed in the trainees by properly guiding

them and setting up examples of good attitudes by demonstrated behaviors and by the environment provided during training.

Some important core competencies to be developed are:

1. Safety consciousness and safe working practices
2. Care of equipment and tools
3. Punctuality, discipline and honesty
4. Concern for quality
5. Respect for rules and regulations
6. Concern for health and hygiene
7. Cordial relationship and Cooperation with co-workers and team Work
8. Positive attitude and behavior
9. Responsibility and accountability
10. Learn continously
11. Communication Skills
12. Concern for environment and waste disposal

Following competencies should also be developed during level-II and higher courses:

1. Ability for planning, organizing and coordinating
2. Creative thinking, problem solving and decision making
3. Leadership
4. Ability to bear stress
5. Negotiation

Duration of the Programmes

Time taken to gain the qualification will vary according to the pathway taken and will be kept very flexible for persons with different backgrounds and experience. Duration has been prescribed in hours in the curriculum of individual module, which are based on the content and requirements of a MES Module. However, some persons may take more time than the prescribed time. They should be provided reasonable time to complete the course.

Pathways to acquire Qualification:

Access to the qualification could be through:

- An approved training programme; **Or**
- A combination of an approved training programme plus recognition of prior learning including credit transfer; **Or**
- The recognition of prior learning that provides evidence of the achievement of the competencies for the qualification.

Methodology

The training methods to be used should be appropriate to the development of competencies. The focus of the programme is on “performing” and not on “Knowing”. Lecturing will be restricted to the minimum necessary and emphasis to be given for ‘hands on training’.

The training methods will be individual centered to make each person a competent one. Opportunities for individual work will be provided. The learning process will be continuously monitored and feedback will be provided on individual basis.

Demonstrations using different models, audio visual aids and equipment will be used intensively.

Instructional Media Packages

In order to maintain quality of training uniformly all over the country, instructional media packages (IMPs) will be developed by the National Instructional Media Institute (NIMI), Chennai.

Assessment

DGE&T will appoint assessing bodies to assess the competencies of the trained persons. The assessing body will be an independent agency, which will not be involved in conducting the training programmes. This, in turn, will ensure quality of training and credibility of the scheme. Keeping in view the target of providing training/testing of one million persons through out the country and to avoid monopoly, more than one assessing bodies will be appointed for a sector or an area.

Certificate

Successful persons will be awarded certificates issued by National Council for Vocational Training (NCVT).

Course Matrix

Level 1	Level 2	Level 3	Level 4
Foundation Course on Jewellery(GEM102)	Casting (GEM204) Rubber Mould(GEM203) Basic Stone Setting(GEM205) →	1) Pave stone setting(GEM306) 2) Advanced Stone setting(GEM307)	
	Enameling(GEM208) Basic Metal Model Making(GEM209) →	Advanced Metal Model Making(GEM310)	
	Embossing(GEM211) Finishing & Polishing of Jewellery(GEM212)		
	Manual Jewellery Design(GEM213) Jewellery Cad Design(GEM214) Jewellery in Organized Retail(GEM220)	Jewellery Design using Matrix(GEM315)	Advanced Jewellery Designed using Matrix(GEM416)
Diamond grading(GEM117)	1) International system of Diamond Grading(GEM221) 2) Cut optimization & Analysis(GEM219) 3) Cut Designing(GEM218)		
Gem Cutting Assistant(GEM101)			
Sales Executive (Gem & Jewellery)L1 Assistant Assorted (Commercially Used Gemstones)L1 Quality Control Assistant L1			
Jewellery Sales Personnel L1	1) Assistant Designer L2 2) Production Assistant L2 3) Gem Appraisal assistant L2	1) Jewellery Designer L3 2) Production Supervisor L3 3) Gemologist L3	

MODULES

MODULE: GEM CUTTING ASSISTANT

Name	:	**GEM CUTTING ASSISTANT**
Sector	:	**GEMS AND JEWELLERY**
Code	:	**GEM101**
Entry Qualification	:	**8**th std pass with age at least 14 years
Terminal Competency	:	After the training the person will be able to independently operate as a Gem cutter/ polisher
Duration	:	180 hrs (30 working days of 6 hours schedule)

Practical Competencies	Underpinning Knowledge (Theory)
1. Identification of Gems. 2. Estimating/evaluating Gems. 3. Identification & use of tools. 4. Use and maintenance of machinery. 5. Practise in gem cutting & shaping 6. Polishing of gems.	1. History of Gems. 2. Importance of Gems to the World 3. Types of Gems. 4. Difference between natural and artificial gems. 5. Cleanliness and purity of gems. 6. Cutting tools for gems. 7. Identification of cutting & polishing machinery. 8. Techniques of gem evaluation. 9. Types of machinery in Gem cutting & their maintenance. 10. Polishing of Gems; precautions while polishing gems. 11. Measuring devices. 12. Miscellaneous devices for Gem cutting. 13. Preservation of machinery & tools.

TOOLS & EQUIPMENT REQUIRED FOR 25 TRAINEES

Srl No	Description	Quantity
1.	One Set of Gem Cutting Tools.	1. One Set between four trainees
2.	Raw & Polishing Material	2. Adequate quantity
3.	Measuring & viewing devices	3. One Set between four trainees

Model Questions

1. What is the history of Gems?
2. What is the importance of Gems in the World?
3. What are the types of Gems?
4. What are differences between artificial & natural gems?
5. What is meant by cleanliness and purity of Gems?
6. Identify cutting tools.
7. What are the items required for polishing of Gems?
8. What are the types of machinery?
9. What aspects should be borne in mind for maintenance of machinery?
10. What are the measuring devices? What are their uses?
11. How are tools preserved?
12. What are the miscellaneous devices for gem cutting?
13. What are the techniques for gem evaluation?

List of Members of the trade committee :

1. Sola Gems & Jewelery — Member
2. Jayarathna Gems — Member
3. Fairdeal Trading Co — Member
4. Ceylinco Colour Stones Pvt Ltd — Member

Course Module: Foundation course for Jewellery

1. **Module Name : Foundation course for Jewellery**
2. **Sector : Gems & Jewellery**
3. **Code : GEM102**
4. **Entry Qualification : Minimum 8th Std.**
5. **Terminal competency : This course will help the students to understand basics of jewellery**.
6. **Duration : 120 Hrs**
7. **COURSE CONTENT :**

Practical	Theory
○ Object Drawing according to light source and shading, ○ Basic Perspective Drawing ○ Nature drawing [Demonstration and Practice] ○ Colour theory [Demonstration and Practice] ○ General Anatomy of Birds, Animals[Demonstration and Practice] ○ Drawing geometrical constructions with measurements such as Parallel lines, Perpendicular lines, Bisecting angles, Triangle, Square, Hexagon, etc. ○ Geometrical designs[Demonstration and Practice] ○ Design from Natural elements [Demonstration and Practice] ○ Soldering practice [Demonstration and Practice] copper band making project ○ Piercing technique [Demonstration and Practice] 1 project ○ Filing Technique [Demonstration and Practice] 1 project ○ Polishing Technique [Demonstration and Practice] 1 project ○ Engraving Practice, use of only one graver ○ **At the end of this course, the student will undergo <u>Objective test of 100 Marks</u> which will cover all the topics taught in this course.**	○ Basics of Metallurgy ○ Difference between Metals and Non-metals ○ Properties of Metals used in the jewellery like Hardness, Ductility, Malleability, etc. ○ Tools used in the jewellery and their usage. ○ Safety measures taken while making jewellery like for Torch using, Chemicals, etc. ○ Dimensions used in the jewellery ○ What is Soldering? ○ Practical considerations during soldering ○ Introduction for different stones used in the jewellery and its cuts and shapes ○ How to melt the Metals ○ Necessity for Alloying? ○ Rolling mill [operation and use] ○ Wire Drawing machine [operation and use] ○ Use of files ○ What is polishing and necessity for polishing.

10 TOOLS, CONSUMABLES & EQUIPMENTS RECOMMENDED FOR ABOVE COURSE

Sr. No.	Item	Qty	Sr. No.	Item	Qty
	Equipments [Common]			**Consumables [per student]**	
1	Ring Mandrel	4	1	HB pencil	2
2	Polishing machine with Dust collector	4	2	Drawing Brush no.3	1
3	Ultrasonic cleaner	2	3	Drawing Brush no.5	1
4	Steam cleaner	2	4	Copper	50 Gms
	Tools [Per student]		5	Copper band	6 Gms
1	Drawing board [Quarter imperial]	1	6	Paper cutter	1
2	Lakh Stick	1	7	Bees wax	1
3	Triangle file, 6”	1		**Consumables [common]**	
4	Half round file, 6”	1	1	Camlin Water colours, student grade	5 sets
5	Saw Frame	1	2	Medium Solder	2
6	Set Square 30-60	1	3	Lakh	100 Gms
7	Set Square 45	1	4	Emery paper, 400	2
8	Divider	1	5	Emery paper,600	2
9	Scale	1	6	Emery paper,800	2
10	Protractor	1	7	Emery paper ,pink	2
11	T-Square, Small	1	8	Drawing paper, Quarter Size	50 Nos
12	Tweezer plain	1	9	Fevicol	250 gms
13	Soldering Board	1	10	Saw Blades	1 Packet
14	Flux Dish	1	11	Fevistick	3
15	Table lamp	1	12	Flux	100 gms
16	Bench peg	1	13	Tripoli	1/4
17	Work bench	1	14	Rouge	1/4
			15	Graver with Handle	1

Course Module: Rubber mould packing, Vulcanizing, Mouldcutting,Course Wax injection and Tree making

1. **Module Name** : **Rubber mould packing , Vulcanizing, Rubber Mould cutting, Wax injection and Tree Making**
2. **Sector** : **Gem & Jewellery**
3. **Code** : **GEM 203**
4. **Entry Qualification** : **Minimum 8th Std & having completed Foundation course for Jewellery**
5. **Terminal competency** : **After completion of course the participant will acquire the skill of making mould and Wax Tree**
6. **Duration** : **90 Hrs**
7. **COURSE CONTENT** :

Practical	Theory
➢ Identification of tools, consumables, and equipments. ➢ Rubber mould packing technique demonstration and practice [15 pcs] ➢ Operation of vulcanizer ➢ Vulcanizing procedure for rubber moulds ➢ Rubber mould cutting technique ➢ Use of Blades, Blade handle and Clamps ➢ Operation of Wax injector ➢ Wax injection procedure and removal of wax pieces with the help of wax injector ➢ Practice for wax injection [150 pieces] ➢ Wax pieces cleaning ➢ Practice for wax tree making [10 Nos]	➢ Necessity for Rubber mould packing ➢ Prerequisite before rubber mould packing ➢ Tools used for mould packing ➢ Technique of mould packing ➢ Vulcanizing technique ➢ Rubber mould cutting techniques ➢ Wax injector [about machinery] ➢ Purpose and operation for Wax injection ➢ Procedure for removal of wax pieces from rubber mould. ➢ Necessity for cleaning wax pieces with different means. ➢ Purpose and operations for wax tree making. ➢ Precautions to be taken for wax tree making.

TOOLS, CONSUMABLES & EQUIPMENTS RECOMMENDED FOR ABOVE COURSE

Sr. No.	Item	Qty	Sr. No.	Item	Qty
	Equipments [Common]			**Consumables [per student]**	
1	Vulcanizer	1	1	Rubber sheets [Castaldo]	1pkt
2	Wax Injector	2	2	Wax for injection [Common]	2 kg
3	Air compressor	1	3	Silicon spray [common]	2
			4	Surgical Blade No. 11	15
	Tools [Common]		5	Surgical Blade No. 12	15
1	Wax Welder	3	6	Rubber base [common]	5
2	Aluminum frames	8	7	Benzene [common]	½ liter
3	Wax spatulas	2 sets	8	Talcum powder [common]	250 gms
4	Blade handle	5	9	Cotton [common]	100 gms
5	Clamping device	5			
6	Acrylic plates	10			
7	Investment flask	6			
8	Wax carving tool set	2 sets			
9	Acrylic stand	5			

Course Module : Casting

1. **Module Name** : **Casting**
2. **Sector** : **Gem & jewellery**
3. **Code** : **GEM 204**
4. **Entry Qualification** : **Minimum 8th Std & having completed Foundation course for Jewellery**
5. **Terminal competency** : **After completion of course participants will be acquire the skill to cast the jewellary and would be able to set up their own casting unit.**
6. **Duration** : **120 Hrs**
7. **COURSE CONTENT** :

Practical	Theory
➢ Identification of tools, consumables, and equipments. ➢ Rubber mould packing technique demonstration and practice [20 pcs] ➢ Operation of vulcanizer ➢ Vulcanizing procedure for rubber moulds ➢ Rubber mould cutting technique ➢ Use of Blades, Blade handle and Clamps ➢ Operation of Wax injector ➢ Wax injection procedure and removal of wax pieces with the help of wax injector ➢ Practice for wax injection [200 pieces] ➢ Wax pieces cleaning ➢ Practice for wax tree making [10 Nos] ➢ Demonstration and practice for Investment mixing ➢ Dewaxing procedure] ➢ Loading flask into the furnace with proper cycle. ➢ Melting metal in the crucible, stirring	➢ Necessity for Rubber mould packing ➢ Prerequisite before rubber mould packing ➢ Tools used for mould packing ➢ Technique of mould packing ➢ Vulcanizing technique ➢ Rubber mould cutting techniques ➢ Wax injector [about machinery] ➢ Purpose and operation for Wax injection ➢ Procedure for removal of wax pieces from rubber mould. ➢ Necessity for cleaning wax pieces with different means. ➢ Purpose and operations for wax tree making. ➢ Precautions to be taken for wax tree making. ➢ Contents of Investment powder? ➢ Water to powder ratio. ➢ Necessity for Investment mixing. ➢ Precautions to be taken during investment

procedure ➢ Operation and use of casting machine ➢ Demonstration and practice for lifting hot flask in the casting machine ➢ Pouring of hot metal into the flask ➢ Quenching flask in water ➢ Cleaning of investment powder from metal tree.	mixing. ➢ Working procedure for investment mixing ➢ What is Dewaxing? ➢ What is the necessity for Dewaxing? ➢ Purpose of Burnout cycles? ➢ Different Burnout cycles used in the casting. ➢ Precautions to be taken during melting of metal for the casting. ➢ Principle, operation and use of casting machine. ➢ Procedure for pouring the metal into flask ➢ Quenching procedure ➢ Defects in casting ➢ Analysis of defects in casting

8. TOOLS/ EQUIPMENTS CONSUMABLES RECOMMENDED FOR ABOVE COURSE

Sr. No.	Item	Qty	Sr. No.	Item	Qty
	Equipments [Common]			**Consumables [Per student]**	
1	Vulcanizer	1	1	Rubber sheets [Castaldo]	1 kg
2	Wax Injector	2	2	Wax for injection [common]	2 kg
3	Air compressor	1	3	Silicon spray [common]	2
4	Dewaxer	1	4	Surgical Blade No. 11	20
5	Investment casting machine	1	5	Surgical Blade No. 12	20
6	Metal melting furnace	1	6	Rubber base [common]	5
7	Investment mixer	1	7	Benzene [common]	½ liter
			8	Talcum powder [common]	250 gms
	Tools [common]		9	Cotton [common]	100 gms
1	Wax Welder	5	10	Rubber gloves [common]	1 set

2	Aluminum frames	8	11	Silicon ring [common]	5
3	Wax spatulas	2 sets	12	Boric acid powder [common]	100 gms
4	Blade handle	5	13	Graphite rod for stirring [common]	1
5	Clamping device	5	14	Investment powder[common]	10 kg
6	Acrylic plates	5	15	Dust mask	1
7	Investment flask	6	16	Plastic gloves [common]	10 sets
8	Wax carving tool set	2 sets	17	Masking tape [common]	1
9	Tongs for holding flask and crucible	2			
10	Adapter plates	2			
11	Plastic bucket	1			
12	Measuring cylinder	1			
13	Rubber bowls	2			
14	Blender	1			
15	Acrylic stand	5			

Course Module : Basic Stone Setting

1. Module Name : Basic Stone setting
2. Sector : Gem & jewellery

3. Code : GEM 205

4. Entry Qualification : Minimum 8th Std & having completed Foundation course for Jewellery

5. Terminal competency : After completion of course the participants will be acquire the skill of all the kind of settings such as pave,channel,prong,bezel etc.

6. Duration : 240 Hrs

7. COURSE CONTENT :

Practical	Theory
➢ Identification of tools, consumables used in stone setting. ➢ Preparation of gravers and tapping tool for master setter ➢ Demonstration & Practical for Prong setting- Four prong earring, solitaire ring, Marquise pendant, Emerald pendant, etc. ➢ Demonstration & Practical for Bezel setting- Oval cabochon bezel pendant, step bezel, etc. ➢ Demonstration & Practical for Flush setting ➢ Demonstration & Practical for Gypsy setting Total 20 projects will be done for the setting program.	➢ Tools and consumables used in the model making and their uses ➢ Necessity for making tools for master setter and their usage. ➢ Power point presentation about all the settings such as Prong, Bezel, Channel, settings. ➢ Before starting of any setting, theoretical & technical knowledge about the respective settings would be given and then the further practical demonstration will start.

8. TOOLS/ EQUIPMENTS & CONSUMABLES RECOMMENDED FOR ABOVE COURSE

Sr. No.	Item	Qty	Sr. No.	Item	Qty
	Equipments & Tools [per student]			**Consumables [per student]**	
1	Grinder **[common]**	1	1	Knife graver	1
2	Bench block	1	2	Flat graver	1
3	Ring clamp with screw	1	3	Round graver	1
4	Ring clamp with wedge	1	4	Double half round graver	1
5	Steel square	1	5	Ball burrs of different sizes	1 set
6	Center punch	1	6	Hart burr of different sizes	1 set
7	Scriber	1	7	Cup burrs of different sizes	1 set
8	Triangle, Round, Flat files [2-cut]	1 each	8	Beading tools of different sizes	1 set
9	Chisel hammer	1	9	Kross burrs	3
10	Little torch kit with accessories	1	10	Silver casting pieces	120 gms
11	Flexible shaft with key	1	11	Lighter	2
12	Workbench	1	12	Beeswax	1
13	Table lamp	1	13	Lakh	150 gms
14	Optivisor	1	14	Black wax	2 nos
15	Tweezer- straight	1	15	Tooth brush	1
16	File cleaning brush	1	16	Powder **[common]**	250 gms
17	Eye glass	1	17	Stones of different sizes	1 set
18	Saw frame	1	18	Handkerchief	1
19	Chain Nose plier	1	19	Suppari	5
20	Shellac stick	1	20	Blue wire, 4 mm	2 nos
21	Shellac stick holder	1			
22	Polishing stone- Red, Green, Pink	1 each			
23	Compressor hammer	1			
24	Micro flexible shaft	1			
25	Degree gauge	1			

Course Module : Advance Stone Setting

1. Module Name : **Advance Stone setting**
2. **Sector** :**Gem & jewellery**
3. Code : **GEM 306**

4. Entry Qualification : **Minimum 8th Std. and completion of Course of Basic stone setting**

5. Terminal competency : **After completion of course participants will acquire the advance skill of all settings such as pave, channel, prong, bezel, etc.**

6. Duration : **360 Hrs**

7. COURSE CONTENT :

Practical	Theory
➢ Demonstration & Practical for Pave' setting- Rectangle pendant, Square pendant, Heart pendant, Oval pendant ➢ Demonstration & Practical for Channel setting- Channel setting in RBC, Baguette. ➢ Demonstration & Practical for Invisible setting- with 6,9, and 16 pieces ➢ Demonstration & Practical for Pressure setting- Cluster setting ➢ Demonstration & Practical for Pre cut Pave setting-Rectangle and Square pendant Total 25 projects will be done for the setting program.	➢ Tools and consumables used in the model making and their uses ➢ Necessity for making tools for master setter and their usage. ➢ Power point presentation about all the settings such as Pave, Pressure, Invisible settings. ➢ Before starting of any setting, theoretical & technical knowledge about the respective settings would be given and then the further practical demonstration will start.

TOOLS/ EQUIPMENTS & CONSUMABLES RECOMMENDED FOR ABOVE COURSE

Sr. No.	Item	Qty	Sr. No.	Item	Qty
	Equipments & Tools [Per student]			**Consumables**	
1	Grinder [Common]	2	1	Knife graver	1
2	Bench block	1	2	Flat graver	1
3	Ring clamp with screw	1	3	Round graver	1
4	Ring clamp with wedge	1	4	Double half round graver	1
5	Steel square	1	5	Ball burrs of different sizes	1 set
6	Center punch	1	6	Hart burr of different sizes	1 set
7	Scriber	1	7	Cup burrs of different sizes	1 set
8	Triangle, Round, Flat files [2-cut]	1 each	8	Beading tools different sizes	1 set
9	Chisel hammer	1	9	Kross burrs	3
10	Little torch kit with accessories	1	10	Silver casting pieces	150gms
11	Flexible shaft with key	1	11	Lighter	2
12	Workbench	1	12	Beeswax	1
13	Table lamp	1	13	Lakh	200 gms
14	Optivisor	1	14	Black wax	2 nos
15	Tweezer- straight	1	15	Tooth brush	1
16	File cleaning brush	1	16	Powder	250gms
17	Eye glass	1	17	Stones of different sizes	1 set
18	Saw frame	1	18	Handkerchief	1
19	Chain Nose plier	1	19	Suppari	5
20	Shellac stick	1	20	Blue wire	2 nos
21	Shellac stick holder	1			
22	Polishing stone- Red, Green, Pink	1 each			
23	Compressor hammer	1			
24	Micro flexible shaft	1			
25	Degree gauge	1			

Course Module: Pave stone setting

1. Module Name	**:**	**Pave stone setting**
2. Sector	**:**	**Gem & Jewellery**
3. Code	**:**	**GEM 307**
4. Entry Qualification	**:**	**Minimum 8th Std. and having completed the course of Basic stone setting**
5. Terminal competency	**:**	**After completion of course the participant will acquire the skill of** Pave stone setting
6. Duration	**:**	**240 Hrs**
7. COURSE CONTENT	**:**	

Practical	Theory
➢ Identification of tools, consumables used in Pave stone setting. ➢ Preparation of gravers and tapping tool for Pave setting ➢ Demonstration & Practical for Pave setting- Rectangle pendant-1,2,3,4,5 ➢ Demonstration & Practical for Pave setting Square pendant-1,2,3 ➢ Demonstration & Practical for Pave setting- Oval pendant & Heart pendant ➢ Demonstration & Practical for Precut-pave setting- Rectangle pendant & Square pendant Total 20 projects will be done for the setting program.	➢ Tools and consumables used in the pave settings and their uses ➢ Necessity for making tools for Pave setting & their usage. ➢ Power point presentation about all the settings such as Pave setting. ➢ Theoretical & technical knowledge about the pave settings would be given and then the further practical demonstration will start. ➢ Making of beads according to different scheme of holes. ➢ Different types of pave settings

TOOLS/ EQUIPMENTS & CONSUMABLES RECOMMENDED FOR ABOVE COURSE

Sr. No.	Item	Qty	Sr. No.	Item	Qty
	Equipments & Tools [per student]			**Consumables [per student]**	
1	Grinder [common]	1	1	Knife graver	1
2	Bench block	1	2	Flat graver	1
3	Ring clamp with screw	1	3	Round graver	1
4	Ring clamp with wedge	1	4	Double half round graver	1

5	Steel square	1	5	Ball burrs of different sizes	1 set
6	Center punch	1	6	Hart burr of different sizes	1 set
7	scriber	1	7	Cup burrs of different sizes	1 set
8	Triangle, Round, Flat files [2-cut]	1 each	8	Beading tools of different sizes	1 set
9	Chisel hammer	1	9	Kross burrs	3
10	Little torch kit with accessories	1	10	Silver casting pieces	100 gms
11	Flexible shaft with key	1	11	Lighter	2
12	Workbench	1	12	Beeswax	1
13	Table lamp	1	13	Lakh	200 gms
14	Optivisor	1	14	Black wax	1
15	Tweezer- straight	1	15	Tooth brush	1
16	File cleaning brush	1	16	Powder [common]	250 gms
17	Eye glass	1	17	Stones of different sizes	1 set
18	Saw frame	1	18	Handkerchief	1
19	Chain Nose plier	1	19	Suppari	5
20	Shellac stick	1	20	Blue wire, 4 mm	2
21	Shellac stick holder	1			
22	Polishing stone- Red, Green, Pink	1 each			
23	Compressor hammer	1			
24	Micro flexible shaft	1			

Course Module : Enamelling

1. Module Name : **Enamelling**
2. Sector : **Gem & jewellery**
3. Code : **GEM 208**

4. Entry Qualification : **Minimum 8th Std & having completed Foundation course for Jewellery**

5. Terminal competency : **After completion of course participant will Acquire the skill of Enameling of Jewellery**

6. Duration : **240 Hrs**

7. COURSE CONTENT :

Practical	Theory
➢ Identification of tools, consumables used in Enamelling. ➢ Demonstration and preparation of jewellery articles for meenakari. [5 Nos] ➢ Demonstration and preparation of Craft articles for meenakari. [5 Nos] ➢ Demonstration and practice for Dry colour charging and stenciling [5 Nos] ➢ Demonstration and practice for Wet colour charging and Brush work [5 Nos] ➢ Enamelling with the help of wires [5 Nos]	➢ Tools and consumables used in the Enamelling and their uses ➢ How to prepare Enamels? ➢ Storage of Enamels. ➢ Different application methods used in meenakari. ➢ Firing methods ➢ Finishing methods used in Enamelling.

8. **TOOLS/ EQUIPMENTS & CONSUMABLES RECOMMENDED FOR ABOVE COURSE**

Sr. No.	Item	Qty	Sr. No.	Item	Qty
	Equipments & Tools [common]			**Consumables [per student]**	
1	Enamelling Furnace	1	1	COPPER SHEET 20 gauge	250 gms
2	Containers	1 dozen	2	Enamel colours assorted 10 shades	100gms each
3	steel pallets	15	3	Assorted 10 shades	50 Gms each
4	Brass wire brush	1	4	sable drawing brush, [0,1,3 each]	3 of each type
5	Plastic trays	1	5	Emery sticks	1
6	Feeder	1	6	Silver	60 Gms

7	Stainless steel mesh	2	7	Sulphuric acid	250 ml
8	Stainless steel Mortar pastel	1			
9	Sieves	2			
10	Scissor	5			

Course Module : Basic Metal Model making

1. Module Name : **Basic Metal model making**
2. Sector : **Gem & jewellery**

3. Code : **GEM 209**

4. Entry Qualification : **Minimum 8th Std & having completed Foundation course for Jewellery**

5. Terminal competency : **After completion of course the participant will acquire the skill** of **piercing, soldering, metal forming techniques in model making**

6. COURSE CONTENT :

Practical	Theory
➢ Identification of tools, consumables, and equipments. ➢ Making of pendants of various shapes [10 Nos] ➢ Making of rings [5 Nos] ➢ Earring making with clutch [3 Nos] ➢ Soldering technique [pop technique] [5 exercises] ➢ Polishing demonstration	➢ Tools and consumables used in the model making and their use ➢ Tracing and Piercing technique ➢ Soldering technique ➢ Types of soldering techniques ➢ What do you mean by Annealing? Necessity for Annealing. ➢ Different types of files used in the jewellery industry ➢ 0-cut files, 2-cut files, 4-cut files ➢ Flat, Round, Triangle, Half round, Double half round, Barrette files ➢ Necessity for filing & Use of different files ➢ Melting metal and pouring metal in ingots ➢ Rolling and wire drawing procedure ➢ Principle of ring sizing, ➢ Different metal forming techniques used in the jewellery like Engraving, Embossing, doming, bending, wire work, forging, etc.

TOOLS/ EQUIPMENT & CONSUMABLES RECOMMENDED FOR ABOVE COURSE

Sr. No.	Item	Qty	Sr. No.	Item	Qty
	Equipments [common]			**Consumables [Per student]**	
1	Shearing machine	1	1	Silver grains	100 gms
2	Rolling mill	2	2	Copper	300 gms
3	Annealing station, Pickling tank	1 each	3	Solder- Medium	4
4	Wire drawing machine	2	4	Solder-Soft	1
5	Metal melting station	1	5	Silicon cylinder	5
6	Iron Anvil with wooden block	2	6	Bristle end brush	4
7	Table vice	2	7	Drill bits if different sizes	10 of each size
8	Grinder	1	8	Mandrels-Emery, screw, threaded	5 of each type
9	Doming blocks with punches	2 sets	9	Apron	1
10	Disc cutter	4 sets	10	Fevi quick	2
	Tools [per student]		11	lighter	3
1	Bench block	1	12	Cup burr	2
2	Ceramic soldering board	1	13	Kross burr	2
3	Ring clamp with screw	1	14	Cylinder burr	2
4	Ring clamp with wedge	1	15	Scissor	1
5	Steel square	1	16	Fevi stick	1
6	Steel ruler	1	17	Flux dish	1
7	Center punch	1	18	flux	50 gms
8	Scriber	1	19	Plaster of paris	3 kg
9	Ring size stick	1	20	Binding wire **[common]**	150 gms
10	Ring size bunch	1	21	Sulphuric acid **[common]**	100ml
11	Tweezer third hand	1	22	Painting brush	1
12	Plastic hammer	1	23	Shoe brush	1
13	0-cut,2-cut and 4-cut files	1 set of each	24	Plastic bowl	1
14	Chisel hammer	1			
15	Little torch kit with accessories	1			
1 6	Flexible shaft with key	1			
17	Workbench	1			
18	Table lamp	1			
19	Optivisor	1			
20	Tweezer- straight, self lock [straight & bent]	1 each			
21	Soldering pik	1			
22	File cleaning brush	1			
23	Eye glass	1			
24	Saw frame	1			
25	Pliers of different types	7 pliers			

Course Module : Advance Metal Model making

1. Module Name : **Advanced Metal model making**
2. **Sector** : **Gem & jewellery**
3 Code : **GEM 310**

4 Entry Qualification : **Minimum 8th Std.& having completed course of Basic Metal Model Making**

5 Terminal competency : **After completion of course the participant will acquire the advance skill of Metal Model making i.e. piercing, soldering, metal forming techniques, etc.**

6 Duration : **360 Hrs [3 Months]**

7 COURSE CONTENT :

Practical	Theory
➢ Making of rings [3 Nos] ➢ Earring making with clutch [2 Nos] ➢ Making of Bangles with the help of collets [5 Nos.] ➢ Making of at least two collet for different settings such as prong, bezel, etc [12 nos] ➢ Making of Bracelet [2 nos] ➢ Locks, linkages of different types [10 Nos] ➢ Setting demonstration	➢ Tools and consumables used in the model making and their use ➢ Various linkages in the jewellery making ➢ How to make different types of collets, Bezels, etc. ➢ Different types of fittings and hooks used in the jewellery. ➢ Introduction to various stone settings used in the jewellery making. ➢ Introduction to diamond grading and gemology.

TOOLS/ EQUIPMENT& CONSUMABLES RECOMMENDED FOR ABOVE COURSE

Sr. No.	Item	Qty	Sr. No.	Item	Qty
	Equipments [common]			**Consumables [per student]**	
1	Shearing machine	1	1	Silver grains	120

					gms
2	Rolling mill	1	2	Copper	250 gms
3	Annealing station, Pickling tank	1	3	Solder- Medium	5
4	Wire drawing machine	2	4	Solder-Soft	1
5	Metal melting station	1	5	Silicon cylinder	4
6	Iron Anvil with wooden block	2	6	Bristle end brush	4
7	Table vice	2	7	Drill bits if different sizes	5 of each
8	Grinder	1	8	Mandrels-Emery, screw, threaded	5 of each
9	Doming blocks with punches	2 sets	9	Apron	1
10	Disc cutter	2 sets	10	Fevi quick	2
	Tools [per student]		11	lighter	2
1	Bench block		12	Cup burr	2
2	Ceramic soldering board		13	Kross burr	2
3	Ring clamp with screw		14	Cylinder burr	2
4	Ring clamp with wedge		15	Scissor	1
5	Steel square		16	Fevi stick	1
6	Steel ruler		17	Flux dish	1
7	Center punch		18	Flux **[common]**	50 gms
8	Scriber		19	Plaster of paris	4 kg
9	Ring size stick		20	Binding wire **[common]**	150 gms
10	Ring size bunch		21	Sulphuric acid **[common]**	100ml
11	Tweezer third hand		22	Painting brush	1
12	Plastic hammer		23	Shoe brush	1
13	0-cut,2-cut and 4-cut files		24	Plastic bowl	
14	Chisel hammer				
15	Little torch kit with accessories				
1 6	Flexible shaft with key				
17	Workbench				
18	Table lamp				
19	Optivisor				
20	Tweezer- straight, self lock [straight & bent]				
21	Soldering pik				
22	File cleaning brush				
23	Eye glass				
24	Saw frame				
25	Pliers of different types				

Course Module: Embossing

1. Module Name	**:**	**Embossing**
2. Sector	**:**	**Gem & Jewellery**
3. Code	**:**	**GEM 211**
4. Entry Qualification	**:**	**Minimum 10th Std & having completed Foundation course for Jewellery**
5. Terminal competency	**:**	**After completion of this course the participant will acquire the skill in metal crafting & Jewellery**
6. Duration	**:**	**360 Hrs**
7. COURSE CONTENT	**:**	

Practical	Theory
➢ Identification of tools, consumables used in Embossing. ➢ Making of Punches of different types for doing embossing work. ➢ Demonstration and practical for making punches ➢ Preparation of Bitumen-Demonstration and application ➢ Uses of line tool and their application ➢ Uses for finishing and finer tools ➢ Embossing from front and rear side-application and uses ➢ Different types of textures and their applications ➢ Doming and shaping technique and their applications. ➢ Demonstration and practical about use of punches on wooden base [10 Nos] ➢ Demonstration and practical about use of punches on Copper base [15 Nos] ➢ Demonstration and practical about use of punches on Silver base [10 Nos]	➢ Tools and consumables used in the Embossing and their uses ➢ Presentation about the History of Embossing and the procedure for the pre-preparation for making items with embossing technique ➢ Before use of any punch the description about the respective punch and application of that tool would be explained. ➢ Making of Bitumen. ➢ Surface finishing technique ➢ Texturing techniques

➢ Detailing of repousee work according to the design. ➢ Removing of excess metal by cutting, filing, etc. ➢ Final polishing, Lacquering.	

TOOLS/ EQUIPMENT & CONSUMABLES RECOMMENDED FOR ABOVE COURSE

Sr. No.	Item	Qty	Sr. No.	Item	Qty
	Equipments & Tools [per student]			**Consumables [per student]**	
1	Punches for Embossing [Common]	2 sets	1	Copper 24 gauge	150 gms
2	Chisel Hammer	1	2	Silver	100 gms
3	Ball pein hammer	1	3	Wooden Board	15
4	Wooden anvil	15	4	Tracing paper	15
5	Table lamp	1	5	Fevistick	1
6	Kadai and other accessories [common]	1	6	Sulphuric acid [common]	250 ml
7	Saw frame	1	7	Tar [common]	1 kg
8	Files- 0 cut, 2-cut and 4-cut files	1 set each	8	Yellow powder [common]	1 kg
9	Chain nose and flat plier	1 each	9	Black ink [common]	½ kg
10	Plain Tweezer	1	10	Emery papers of different types	1 of each size
11			11	Round brush black	1

Course Module: Finishing and Polishing of jewellery pieces

1. Module Name	**:**	**Finishing and polishing of jewellery pieces.**
2. Sector	**:**	**Gems & Jewellery**
3. Code	**:**	**GEM 212**
4 Entry Qualification	**:**	**Minimum 8th Std. & having completed Foundation course for Jewellery**
5. Terminal competency	**:**	**After completion of course the participant will acquire the skill of Polishing and Finishing the jewellery**
6. Duration	**:**	**120 Hrs**
8. COURSE CONTENT	**:**	

Practical	Theory
➢ Identification of tools, consumables, and equipments. ➢ Practical demonstration about use of different files on different surfaces. ➢ Technique for collection of dust of the filings. ➢ Technique for cleaning files ➢ Practical demonstration about making emery mandrels, Emery sticks and Emery boards for 120,180, 400, 600, 800, pink Emery papers. ➢ Practical demonstration about use of emery mandrels, Emery sticks and Emery boards ➢ Practical demonstration about Thread polishing ➢ Demonstration about Buffing. How to use different buffs and polishing compounds for polishing. ➢ Practical demonstration about the use of Burnisher. ➢ Operation and use of Ultrasonic cleaner, Steam cleaner and Magnetic polisher. ➢ Practice on 20 jewellery pieces and 6	➢ Different types of files used in the jewellery industry ➢ 0-cut files, 2-cut files, 4-cut files ➢ Flat, Round, Triangle, Half round, Double half round, Barrette files ➢ Necessity for filing & Use of different files ➢ Necessity for Emery polish ➢ Use of all the kind of emery papers used. ➢ What is Thread polish? ➢ What is Tripoli and Rouge? ➢ Necessity and use of polishing machine [Buffing] ➢ Use of Dust collector. ➢ Use of Ultrasonic cleaner and Steam cleaner. ➢ Necessity for Burnish polish ➢ Other polishing tools used for polishing jewellery.

chains to perfect the technique of filing, Finishing and polishing.	

TOOLS/ EQUIPMENT & CONSUMABLES RECOMMENDED FOR ABOVE COURSE

Sr. No.	Item	Qty	Sr. No.	Item	Qty
	Equipments [Common]			**Consumables [per student]**	
1	Polishing machine with Dust collector	4	1	Silver casting [15 Nos]	90 gms
2	Ultrasonic cleaner	2	2	Brass chains [5 Nos]	25 gms
3	Steam cleaner	2	3	Small Buff [Yellow]	2
4	Magnetic polisher	1	4	Small Buff [White]	2
	Tools [Per student]		5	Bristle end brush	6
1	Ring clamp with Screw	1	6	Bristle brush wheel	4
2	CC Flexible shaft with key	1	7	Prepolish wheels, Hard	2 sets
3	Safety Goggle	1	8	Prepolish wheels, soft	2 sets
4	Table lamp	1	9	Felt buff	2 sets
5	Bench peg	1	10	Felt stick	1
6	Work bench	1	11	Tripoli [Common]	1
7	Plastic mallet	1	12	Rouge [Common]	1
8	2-cut files	1 set	13	Emery paper-120,180,400, 600, 800, pink	3 of each types
9	4-cut files	1 set	14	Emery mandrel	8
10	Needle file set	1	15	Emery stick	4
11	0-cut files	1 set	16	Emery board	1
12	Burnisher straight & curved	1	17	Screw mandrel	4
13	Pin vice	1	18	Head mandrel	4
14	Bench block	1	19	Silicon cylinder	5
15	Degree gauge	1	20	Apron	1
16	File cleaning brush	1	21	Ball burr	2
17	Pliers [Flat, Round, Chain nose]	3	22	Kross burr	2
18	Saw frame	1	23	Leather gloves	8
19	Optivisor	1	24	Dust mask	2

Course Module: Manual Jewellery Design

1. Module Name : **Manual Jewellery Designing**

2. Sector : **Gems & Jewellery**
3. Code : **GEM213**
4.Entry Qualification : **Minimum 10th Pass & having completed Foundation course for Jewellery**

5.Terminal competency : **After completion of course the participant will acquire the skill of designing the Jewellery manually**

6. Duration : **120 Hrs**

8.COURSE CONTENT

Practical	Theory
➢ Identification of tools, consumables, and equipments. ➢ Design Principles and its application. ➢ Basics of rendering using normal lead pencils and colours pencils ➢ Merging two or multiple shades of colour pencils ➢ How to draw different techniques used in manufacturing ➢ How to show different textures when designing jewellery ➢ Creating Designs based on design principles ➢ Drawing different styles of stones ➢ Shading different styles of stones ➢ Incorporating setting while designing jewellery ➢ Creating necklaces of different styles with stones and settings	➢ Description on what is Design? What is Creativity and how important is it to be creative while designing? ➢ Design principles and its usage. ➢ Presentation and placement of designs on paper ➢ Different techniques of manufacturing ➢ Importance of textures in designing ➢ Understanding the practical details of jewellery designing also points to be kept in mind while designing jewellery. ➢ Different styles of jewellery ➢ Types of settings ➢ Styles of settings Different cultures and other types of body jewellery and accessories ➢ American Market ➢ Indian Market ➢ Glossary of Indian terms related to jewellery ➢ Glossary of International Jewellery terms ➢ Calculation of Diamond weight as per design

➢ Creating bracelets/bangles with stones and settings ➢ Creating earrings of different styles with stones and settings ➢ Creating different types of body jewellery with stones and settings ➢ Orthographic projections ➢ Assignment for American Bridal ring sets and Mangalsutra and Tanmaniyas	

TOOLS/ EQUIPMENT & CONSUMABLES RECOMMENDED FOR ABOVE COURSE

Sl	Article	Size/Type	Qty
	Consumables per student		
1	Regular pencil	HB, B, 2B	1each
2	Clutch pencil	0.5	1
3	0.5mm lead	0.5mm	1 packet
4	clutch pencil	0.3	1
5	0.3mm lead	0.3mm	1 packet
6	Rotring pen	0.1	1
7	Compass with clutch pencil	Maped	1
8	Transparent pocket files	A4	50pages
9	18 bi-colour pencil set	Faber castell	1
10	Executive bond white paper	A4	100
11	alabaster paper 100gsm	A4	100
12	Gateway paper / vellum	A4	50
13	Eraser		1
14	sharpener for pencils		1
15	IIJ Folder		1
	Tool Kit per Student		
1	Set square 30/60/90deg	medium	1
2	Set square 90/45/45deg	medium	1
3	protractor	medium	1
4	Ruler	6" plastic	1
5	Ruler	12" metal	1
6	Circle template - COMPLEX- ART-11-1820	1mm-36mm	1
7	Oval template - COMPLEX- ART-11-1834	30/60deg	1
8	Oval template - COMPLEX- ART-11-1836	15deg	1
9	template - Matt or Gesswein for stones , with measurements		1

Course Module: Jewellery CAD Designing

1. Module Name	**:**	**Jewellery CAD Design using Rhinoceros.**
2. Sector	**:**	**Gems & Jewellery**
3. Code	**:**	**GEM 214**
4. Entry Qualification	**:**	**Minimum 10th Std., and having completed course on " Computer Fundamentals , MS Office & Internet "& having completed Foundation course for Jewellery**
5. Terminal competency	**:**	**After completeion of course participant will acquire the skill of designing the Jewellery by using Rhinoceros**
6. Duration	**:**	**120 Hrs.**

7. Course content

Practical	Theory
Rhinoceros Software	
Practical application of various commands.	Welcome & introduction, explain the Rhino Window.
How to draw the 2D different curves / shapes types of shapes & Modify	Create and Edit 2D curve objects.
Converting your 2D curves in to 3D Surfaces & Polysurfaces.	Layer Menu, Dimension Menu, View Port Shade Mode.
Organized your work with the help of layer menu.	Place Background Image, Picture Frame and trace with the help of 2D curves.
Place a background images for 2d tracing.	Create 3D solid & Surface Toolbar.
Create different types of jewellery.	Editing & Modifying 3D Solid EditingTools.
Create diamond library for jewellery designing.	Demo & Explanations: - Techniques for Making CAD Model (For Ring, Pendent, Earring etc)
Increasing and decreasing the diamond sizes.	
Creating, Editing & Modifying the CAD Designs.	
Make your own jewellery products.	

TOOLS/ EQUIPMENT & CONSUMABLES RECOMMENDED FOR ABOVE COURSE

Sr. No.	Item	Qty
	Equipments (Per Student)	
1	Computer.	1
2	Software Licenses (Rhino)	1
3	Table.	1
4	Chair.	1

Course Module: Jewellery CAD designing using Matrix6

1. Module Name	**:**	**Jewellery CAD Design using Matrix 6**
2. **Sector**	**:**	**Gems & Jewellery**
3. Code	**:**	**GEM 315**
4. Entry Qualification	**:**	**Minimum 10th Std., and having completed Course on "Jewellery CAD Design" using Matrix 6**
5. Terminal competency	**:**	**After completeion of course participant will acquire the skill of designing the Jewellery by using Matrix software**
6. Duration	**:**	**60 Hrs.**

Practical	Theory
Create a simple ring with Prong & bezel setting	Ring Rail, Profile Placer, Sweep1, Outside Ring Rail, Sweep2, Quad Flip.
Loading a gem with different types and sizes.	Gem Loader, "V" Ray for Rendering.
Placing Gems along with the prongs on the ring surfaces.	Bezel Setting, Bezel Cutter, Head Builder, Head Builder Library.,
Apply Bezel Setting for different types of diamonds.	F6, Gem Loader, Gems on Curve, Object on Curve, Match Attributes,
Apply Prongs Setting for different types of Diamonds.	Eternity Ring Builder, Signet Ring Builder, Raised Band Builder, Award Ring Builder..
Create collets for diamond.	Raised Band Builder, Pattern Builder.
Create Micro-cutter setting for diamonds.	Gems Prong & Beads on Surface, Gem Cutter Library, And Boolean Demo.
Apply pave setting with pave prong on design.	Metal from Gems, Micro Prong Cutter.
Render your CAD model.	Pave Builder, Pave Prong Builder
Create a Cluster setting.	
Create a Plain ring bands with name or designs.	
Calculate the gold weight of your design.	
Channel Builder, Bright-Cut Channel, Bright Cutters.	
Cut to fingure Rail, Plane & Cube Cutters, Metal Weight Checker, and Gem Reporter.	

TOOLS/ EQUIPMENT & CONSUMABLES RECOMMENDED FOR ABOVE COURSE

Sr. No.	Item	Qty
	Equipments (Per Student)	
1	Computer.	1
2	Software Licenses (Matrix)	1
3	Table.	1
4	Chair.	1

Course Module: Advanced Jewellery CAD designing using Matrix

1. Module Name : **Jewellery CAD Design using Matrix 6**

2. Sector : **Gems & Jewellery**

3. Code : **GEM 416**

4. Entry Qualification : **Minimum 10th Std., and having completed Course on "Jewellery CAD Design using Matrix 6 "**

5. Terminal competency : **After completeion of course participant will acquire the advanced skills of designing the Jewellery by using Matrix software**

6. Duration : **60 Hrs.**

7. Content

Practical	Theory
Create a simple ring with Prong & bezel setting Loading a gem with different types and sizes. Placing Gems along with the prongs on the ring surfaces. Apply Bezel Setting for different types of diamonds. Apply Prongs Setting for different types of Diamonds. Create collets for diamond Create Micro-cutter setting for diamonds. Apply pave setting with pave prong on design. Render your CAD model. Create a Cluster setting Create a Plain ring bands with name or designs. Calculate the gold weight of your design. Channel Builder, Bright-Cut Channel, Bright Cutters. Cut to fingure Rail, Plane & Cube Cutters, Metal Weight Checker, and Gem Reporter.	Surface Pull back, Object Checker, Metal Weights, Emerald Cluster Builder, Advance Cluster Builder, Gem Reporter. Head Builder, Head Library, Milligrain Builder. Cutter Library, Channel Builder, Ring Re-sizer, Advanced Custom Rail. Emerald Builder, Tapper Baguette Builder, Baguette & Round gem between 2 curves. Curve Transform, Advance Pave, Cut to Fingure Rail,

Tools/Equipment & Consumbles recommended for above course

Sl No	Item	Quantity
Equipments (Per Student		
1	Computer.	1
2	Software Licenses (Matrix)	1
3	Table.	1
4	Chair.	1

(Revised Course Module on Diamond Grading)

NAME : Diamond Grading

SECTOR : Gem & Jewellery

CODE : GEM117

ENTRY QUALIFICATION : Std. 8th Pass

Age Limit : Above Min 14 years

Unit Size : 20 Students

DURATION : 270 hours

Terminal Competency : After completion of course participant will be able to -Work as Assistant diamond grader on National and International standards.

Under pinning knowledge	Practical competencies
1.Introduction : on mines and past history of diamond, Focus on rough stone. 2.Factors & characteristics of the diamond. 3.Necessity of diamond grading. Focus on Indian or international Market for export and local 4.Consumption in studded jewellery of the diamond . 5.Focus on main parts & Total facets of Diamond. 6.Study with loop, eye glass, Microscope. Focus on 4c (Color, Clarity, Cut, Carat) in brief . 7.Colour: Analysis of a color of the Diamond & its effect on diamond grading/value . 8.Grading: Study the difference between the international and local Grading. 9.Clarity:Focus on clarity ,Check the inclusion in the diamond. Study the effect of clarity in the diamond's value and grading. Differentiate between local and international clarity Grading. 10. Cut in Diamond: Focus on cut ,Study the effect of the cut on diamond's value	Identification of various hand tools, their identification and applications Introduction of Digital weighing M/C, Eye glass, Loop & Mcroscope and their use in Diamond study Introducing rough stones Study methods of the rough diamond Method of diamond look Study the diamond with loop and microscope Study of color grading Practice of color grading Sarin dia-marker with latest software 3.51 Application & use of Software Study of series of the international of local color grading Study the clarity of the diamond Study the series of international and local clarity grading. Study the different types of the cut, cut grade Examine the measurement of cut in microscope Practice of the sieves Practice on identification of real and imitation diamond

and grading 11.To use the sarin for the cut grade. Study of examining the different cuts of the diamond & its role in firing of the diamond. 12.Technique and identification of real and imitation diamond. 13.Reflection knowledge in the polish diamond.	

TOOLS/ EQUIPMENT & CONSUMABLES RECOMMENDED FOR ABOVE COURSE

Sr. No.	Item	Qty
	Equipments [Common]	
1	Carat balance	1
2	Sieve Size	1
3	Ultra – violet lamp	1
	Bench Tools, Student kit [Per student]. To be returned daily by the student	
1	MM gauge	1
2	10x lens	1
3	Locking tweezer	1
4	Selvyt cloth	1
5	Scoop	1
6	Colour grading shade card	1
7	Assortment pad	1
8	Pencil	1
9	.5mm red ink pilot pen	1
10	.5mm green ink pilot pen	1
11	Pouch for all the items in the kit	1
	Consumables [per student]	
1	Worksheets for the full program	40pgs max
2	Spiral bound Handout	25pgs max

Module Name: Cut Designing

1 Module Name	**:**	**Cut Designing**
2. Sector	**:**	**Gem & jewellery**
3. Code	**:**	**GEM 218**
4. Entry Qualification	**:**	**Minimum 12th Std. & having completed the course of Diamond Grading**
5. Terminal competency	**:**	**After completion of course the participant will acquire the skill of Designing any new Diamond Shape.**
6. Duration	**:**	**60 Hrs**

7. Content

Practical	Theory
• Introduction about Diamond Calculator • Various Standard shapes • Viewing the polish under various structured lighting • Checking light performance in standard shape • Understanding Cut Designer in Diamond Calculator • Generation of XML and ASC file • Designing standard popular cuts - Round Brillant, Princess, Oval etc. • Revision	• Optical Properties of Diamond • Why New Cuts are important? • What role you will play in development of a new business opportunity? • Process flow of designing a new cut • Pre-requisites for designing a cut • Revision

TOOLS/EQUIPMENT & CONSUMABLES RECOMMENDED FPR ABOVE COURSE

Sl No	Item	Qty
1	Diamond Calculater Software	One /student
2	H&A, ASET, IDEAL	One/student

Module Name: Cut Optimization and Analysis

1 Module Name	**:**	**Cut Optimization and Analysis**
2. Sector	**:**	**Gem & jewellery**
3. Code	**:**	**GEM 319**
4. Entry Qualification	**:**	**Minimum 12th Std. & having completed the course of Cut Designing**
5. Terminal competency		**After completion of course the participant wil acquire the skill of Optimizing any diamond shape for maximize the yield and performance**
6. Duration	**:**	**60 Hrs**

7.Content

Practical	Theory
Diamond Calculater Basic **Designing standard popular cuts like Taper, Flander, Happy 8, Radiant, Cushion.** **Custom Girdle Features** **Designing special cuts** **Understanding HDR and ETAS** **Optimize special cuts for performance** **Preparing ASC file for allocation in rough diamonds** **Prepeare Appraiser data for allocation** **Revision**	**Diamond Calculater Basic** **How will you achieve exclusivity?** **'DIAMOND IS FOREVER' campaign from DTC** **Understanding HDR and ETAS** **Optimize special cuts for performance**

TOOLS/EQUIPMENT & CONSUMABLES RECOMMENDED FPR ABOVE COURSE

Sl No	Item	Qty
1	Diamond Calculater Software	One /student
2	H&A, ASET, IDEAL	One/student
3	Diamond Calcualater Professional Version Software	One

Course Module: Jewellery in Organised retail Management (JOR)

1. Module Name	**:**	**Jewellery in Organised retail Management**
2. Sector	**:**	**Gem & jewellery**
3. Code	**:**	**GEM 220**
4. Entry Qualification	**:**	**Minimum 10th Std. & having completed Foundation course for Jewellery**
5.Terminal competency	**:**	**After attending the course Participant will acuire the following :** **1. Soft skills for hadling the customers** **2. Judging the customers need** **3. Handling of Sales by convicing customer on Technical terms & professional terms.**
6.Duration	**:**	**175 Hrs**
7 COURSE CONTENT	**:**	

Practical	Theory
➢ Interactive sessions of CRM where mock presentations and discussions are held for different topics mentioned in the theory. ➢ Making of copper band ➢ Finishing and polishing of casted pieces ➢ Electroplating ➢ Stone setting demonstration ➢ Enamelling, Embossing demo. ➢ Diamond grading practical ➢ Gemmology practical about identification of different gemstones ➢ Designing of jewellery pieces	Customer relationship Management ➢ .History of selling ➢ Ability and personality of sales person ➢ Job description ➢ Sales approach ➢ Learning and meeting customer needs ➢ Key words to be used ➢ Selling process ➢ Importance of customer service ➢ Principles of service Jewellery manufacturing ➢ Gold & its karatage ➢ Quality control ➢ Stone setting ➢ Hallmarking scheme ➢ Metal forming techniques Diamond Grading and Gemmology ➢4 c's of diamond ➢Cut ,carat, colour grading theory

	➢Gemstones use din the jewellery [Navratnas] Jewellery design ➢Design terminology ➢Principles of design ➢Rendering technique ➢Designing of pedant, ring, earring,etc ➢Jewellery care **Soft skills** ➢ Saree draping for Girls ➢ Grooming ➢ Makeup and Hairstyling for Girls ➢ Civic Sense ➢ Personal Hygiene ➢ Etiquette ➢ Telephone Etiquette

9. TOOLS/ EQUIPMENT & CONSUMABLES RECOMMENDED FOR ABOVE COURSE

Sr. No.	Item	Qty	Sr. No.	Item	Qty
	Materials required, Manufacturing [common]			**Consumables Manufacturing [per student]**	
1	Workbench	1	1	Copper strip	10 gms
2	Soldering station	1	2	Silver ring	5 gms
3	Flexible shaft with key	1	3	Emery paper , all types	1 each
4	Table lamp	1	4	Feviquick	1
5	Tools required [per student]	1	5	Medium solder	¼
6	Flat file	1	6	Emery mandrel	4
7	Half round file	1	7	Lighter	1
8	Trriangle file	1			
9	Flux dish	1			
10	Soldering board	1			
11	Tweezer	1			
12	Safety goggle	1			
13	Apron	1			
	Material required [per student] Diamond grading & Gemmology				
1	Diamond grading kit	1			
2	Table lamp	1			
3	Diamonds & gemstones				

	Material required [per student] Design				
	Rotaring Pencil 05mm	1		Oval Template 1836 [common]	3
	Eraser	1		Round Template 1820 [common]	3
	Plastic Ruler 6"	1			
	24 Colour pencil set (Conty)	4 sets			
	Comman for 4 student				

List of trade Committee Members

Sl No	Name	Designation	Email/Phone	Status
1	Sh R Senthil Kumar	Regional Director,RDAT,Mumbai	rdatmum@nic.in 022 24057519	Chairman
2	Sh D K Pawagi	Jt Director of Trg,RDAT Mumabai	dkpawagi@gmail.com 022 24057519	Member
3	Sh Ketan P Patel	Dy Director of Training,RDAT Mumabi	patelktan@yahoo.co.in	Member
4	Sh D K Jatav	Assistant Director of Training,RDAT Mumbai	dkjatav@nic.in	Member
5	Ms Renu Kapoor	Director,Indian Institute of Jewellery,Mumbai	renuiij@iij.net.in	Member
6	Ms Dolly Minawal	Jewellery Designer	9820087675	Member
7	Mr Ashok Gadhaire	Senior faculty,IIJ,Mumbai	9892413256 askok@iij.net.in	Member
8	Ms Dipal Sane	Head of Gemology , IIJ , Mumbai	9820232767 Dipal_sane@iij.net.in	Member
9	Mr Arun Shekhwat	Branch Manager,Lexus Softmac India,Mumbgai	9930800050 arun@lexus-com.com	Member
			R Senthil Kumar Regional Director	

Level-II Module

1. **Module Name:** **INTERNATIONAL SYSTEM OF DIAMOND GRADING**
2. **Sector:** **Gems & Jewellery**

3. **Code:** **GEM221**

4. **Entry Qualification:** **Minimum 8th Std.and having completed the course on Diamond grading(GEM117)**

5. **Terminal Competency: After completion of course the participant will be able to : Work as diamond grader / assorter as per National and international standards**

6. **Duration:** **210 Hrs**

7. **Capacity:** **20 Students**

8. **Content**

Practical competencies	**Under Pinning knowledge**
	- Introductation of course
Clarity	- purpose of grading
- Inclusions	- diamond grading institutions
- Blemishes	- how to see a diamond stepwise
- Specific Symbols to denote specific inclusions and blemishes	Clarity
- Grading as per the definitions of international clarity grades	- Inclusions
Cut	- Blemishes
- Individual factors contributing to the proportions	- Conditions for clarity grading
- Dimensions	- Definition of clarity grading
- Total depth% calculation	- Summarizing the clarity grading
- Table %	Cut
- Culet%	- Introduction
- Crown Height%	- Brilliance
- Pavilion depth %	- luster, dispersion & scintillation
- Crown angle	- Critical angle
	- The proportion grade
	- Factors contributing to the proportions

- Pavilion Angle	- use sarin technology for proportion
- finish – polish & symmetry	- different types of girdle
- painting girdle,digging girdle,azimuth angle.	- painting girdle,digging girdle,azimuth angle.
- heart & arrow cut	- finish – polish & symmetry
- various fancy shape diamonds	- polish symmetry and cut grade
- grading for fancy shapes	- heart & arrow cut
- The proportion grade	- grading for fancy shapes
Colour	- various fancy shape diamonds
- colour grading as per international & domestic terms	Colour
- fluorescence in diamonds	- Classification as per international & domestic terms
- fluorescent grade	- colour grading
	i. colour grading factors
	ii. colour grading table
	- fancy coloured diamonds
Carat	fluorescent coloured diamonds
- relation between weight, diameter & sieve size for RBC	fluorescent grade
- manual calculation of weight	Carat
- Calculation using Carat Balance	- introduction
	- relation between weight, diameter & sieve size for RBC

Tools & Equipment required for the course:

Sl No	Name of Tools/Equipment	Qty
	Hand Tools /Per Trainee	
1.	Eye Glass	1
2.	Twizer	1
3.	Stand Eye Glass	1
4.	Grading Pad	1
5.	Crystal Light	1
6.	Scoop	1
7.	Paper Weight	1
8.	Selvet	1
9.	Velvet Tray	1
	Equipments/Batch (Batch size of 20 students)	
1.	Stand Eye Glass	4
2.	Stone Holder	4
3.	Sieves	2

4.	Digital Weighing Machine	2
5.	Microscope with measurement Eye Piece	2
6.	Dial Gauge Meter	2
7.	4.C. Diamond Series	250 Nos
8	Sarin dia-marker with latest software 3.51.	1(with 3 Lens)
9	Helium software (pacor,oxygen inclusion,helium rough)	1 Set
	Furniture	
1.	Chair	1 per student
2.	White table 4' × 2'	3
3.	Self Walt Cupboard	1
4.	Office Table with chair	1
5.	Cupboard	1

Members of the constituted Trade Committee

Sl No	Name S /Sh	Designation	Office	Remarks
1	D K Pawagi	Joint Director of Training,	RDAT, Mumbai	Chairman
2	H V Patel	Principal	Govt I T I ,Surat	Member
3	Krunal Sanghi	Principal	Nav sarjan Edu. Charitable Trust,Surat	Member
4	Bharat Mehta	Owner	Darshan Exim, Surat	Member
5	Jaswant Bhai shah	Manager	Shakti Tools,Surat	Member
6	Alpesh Sanghvi	Director	Arihant Diamond Institute, Surat	Member

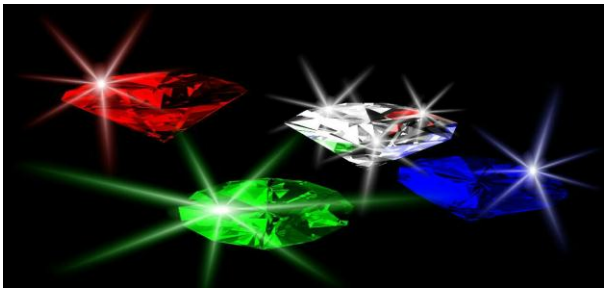
Course Curricula
Under

SKILL DEVELOPMENT INITIATIVE SCHEME (SDIS)

Based on
Modular Employment Skills (MES)

Gem & Jewellery Sector




Designed in 2012

Directorate General of Employment & Training
Ministry of Labour & Employment
Government of India

List of members attended the Trade Committee Meeting for designing the course curriculam under **Skill Development Initiative Skill(SDIS)** based on Modular Employment Skills(MES) in **Gem & Jewellery sector** held on 6th january,2012

Director:- S.J. Amalan, CSTARI, Kolkata

Sl No.	Name of the Member & Designation	Representing Organization	Remarks
1	Mrs Renu Kapoor, Director/chairman	Indian Institute of jewellery (Div.of Modem of India Ltd)	Chairman
2	Mr. Devendra Jadav, Asst. Director	RDAT Mumbai	Member
3	Mr.L.K.Mukherjee, Deputy Director of Training	CSTARI, Kolkata	Member
4	Mr.S.B.Sardar, Asst Director Training	CSTARI,Kolkata	Member
5	Mr. Prabitra Ghosh, Asst. Director Training	DGET, New delhi	Member
6	Mr.Pranav Choudhary, Asst. Director Training	DGET, New delhi	Member
7	Mr. Ajay Lalwani, CEO	Indian Institute of jewellery (Div.of Modem of India Ltd)	Member
8	Mr. Manuj Bansal, Academic Head	Indian Institute of jewellery (Div.of Modem of India Ltd)	Member
9	Mr. Arun Kareer, Gemology-Faculty	Indian Institute of jewellery (Div.of Modem of India Ltd)	Member
10	Mr. Ankesh Jain, Corporate -Sales	Indian Institute of jewellery (Div.of Modem of India Ltd)	Member
11	Mr. Kiran Madan, Corporate _ Office	Indian Institute of jewellery (Div.of Modem of India Ltd)	Member
12	Mr. Fakruddin Shaikh, Academic Manager	Indian Institute of jewellery (Div.of Modem of India Ltd)	Member
13	Mr. Ajit Pendurkar, Director-M V Pendurkar Jeweler & GBOD-GJF	M V Pendurkar jewelers	Member
14	Ms. Jyotsna Patwardhan, Course coordinator	Garware institute of Career Education & development	Member
15	Mr. Vivek Das, Lecturer	Specialist & Mental work, Mumbai	Member
16	Mr. Mahendra Thacker , HOD-Advertising & Graphics design	WIC, Mimbai	Member
17	Ms. Rashida Asrani, MD	ABACCA, Mumbai	Member

Course Curricula for Short Term Courses based on Modular

Employable Skills (MES) in Gem & Jewllery

CONTENTS

Level-I

Module No.

Name	: Jewellery Sales Personnel
Sector	: Gems & Jewellery
Code	: **GEM 122**
Entry Qualification	: Minimum 8th Std. Pass and Age 14yrs.
Terminal competency	: A student with a peripheral knowledge of: Design, CAD, Gemology, Manufacturing and Customer Relationship Management in this sector
Duration	: 320 Hrs
COURSE CONTENT	:

Practical Competency	Underpinning Knowledge(Theory)
Design	
• Identification of tools, consumables and equipments used in designing • Fundamental design principles and their applications. • Basics of rendering using normal lead pencils and colour pencils • How to show different textures when designing jewellery • Creating designs based on design principles • Drawing different styles of stones • Shading different styles of stones • Incorporating settings while designing jewellery • Incorporation of geometry into designs • Designing with a specific consumer group in mind	• Description on What is Design, What is creativity and how important is it to be creative while designing? • Fundamental Design principles/ways to modify and their usage • Presentation and placement of designs on paper • Study of different manufacturing details, clasps etc • Importance of textures in designing • Understanding of points to be kept in mind while designing jewellery • Different styles of jewellery – types of earrings, necklaces, bangles etc. • Types of settings – Prong, Channel, Pave, Invisible, Bezel

• Study of eras in jewellery – Art Deco, Art Nouveau	• Basic geometry • Fundamentals of Art – elements of design, colour theory * History of Jewellery
CAD	
• Introduction to various computer operations – starting the computer, shutting, starting the program, quitting etc. • Navigation across the Interface • Practical application of various commands • Creating & editing 2D curve objects • Conversion of 2D curves in to 3D Surfaces & Polysurfaces • Organizing with the help of layer menu • Practical learning of editing commands, object selection, views & view-port and its application to making a precise jewellery model	• Introduction to the Interface Window. • How to draw & modify different 2D curves / shapes • Study of types of 2D shapes • Layer Menu, Dimension Menu, View Port Shade Mode • Placing background image, picture frame and tracing with the help of 2D curves •
Gemmology	
• Practical study of Diamonds as per various parameters – 4C's, etc. • Colour classification • Colour grading • Grading for fancy shapes • Various fancy shape diamonds • Brilliance • Luster, dispersion & scintillation • Critical angle • The proportion grade • Heart & arrow cut	• Introduction to Diamonds - Diamond Formation, Processing of Rough Diamond, Chemical, Physical & Optical Properties of Diamond • 4 C's – The Diamond Characteristics Diamond Grading & its Purpose • Relation between weight, diameter & sieve size for RBC • Valuation of diamond inclusions & blemishes • Principles and conditions for clarity grading • Principles and conditions for colour classification

• Grading for fancy shapes • Various fancy shape diamonds • Practical study of gemstones to study the optical & physical properties and the actual usage of various instruments • Treatments & Enhancement of Gemstones • Cut stimulant (a study on all instruments) Green, Red, White • Cut simulant (a study on all instruments) Yellow, Blue, Black • Safety Measures & precautions to be taken while working on floor • Taking proper care of machinery • Cleaning & general maintenance • Tool / inventory check • The proportion grade • Heart & arrow cut • Grading for fancy shapes • Various fancy shape diamonds • Practical study of gemstones to study the optical & physical properties and the actual usage of various instruments • Treatments & Enhancement of Gemstones • Cut simulant (a study on all instruments) Green, Red, White • Cut simulant (a study on all instruments) Yellow, Blue, Black • Safety Measures & precautions to be taken while working on floor • Taking proper care of machinery	• Comparative chart of principal grading systems • Introduction to Gemmology , Optical & physical properties Instruments like - 10x, S.G, Refractometer, Chelsea filter / UV/CF, Polariscope/ Dichroscope, Microscope • Synthetic Gemstones • Treatments & Enhancement GSV Study of various gemstones – Beryl, Tourmaline, Peridot, Topaz, Corundum, Zoisite, Garnet , Chrysoberyl, Feldspar, Opal, Pearl and Coral Quartz

• Cleaning & general maintenance • Tool / inventory check	
Manufacturing	
• Practical making of simple jewellery pieces incorporating simple aspects of the techniques of manufacturing of a jewellery ornament • Piercing techniques • Soldering techniques • Rolling of metal to reduce thickness • Bending of metal strip • Filing techniques to make a domed effect • Riveting of the clasp • Prong setting • Finishing and polishing • Safety measures & precautions to be taken while working on floor • Taking proper care of machinery • Cleaning & general maintenance • Tool / inventory Check	• Application of various processes of jewellery manufacturing like Piercing ,soldering, bending, filing polishing, finishing and a simple setting • Theoretical introduction to vacuum casting & its procedures involved • Necessity for rubber mould packing, its prerequisites • Vulcanizing technique • Rubber mould cutting techniques • Purpose and operations for wax tree making • What is Investment powder & the need of investment mixing • Dewaxing • Burnout cycle * Analysis of defects in casting
Customer Relationship Management	
• Interactive sessions on how to deal with various types of customers • Training of soft skills	• History of selling • About the sales person – his/her ability, personality & experience • Learning & meeting customer needs • Keywords to use in presentation • The selling process • Principles of service

	• Building lasting customer relationship • Creating values for the customer • Closing the sale • Handling objections

TOOLS, CONSUMABLES & EQUIPMENTS RECOMMENDED FOR ABOVE COURSE

List of Tools & Equipments for Training		
Sr. No.	Equipment Name	Quantity
Manufacturing		
1	Annealing station	1
2	Grinder	2
3	Lac tank	1
4	Pickling tank	1
5	2 Polishing machines with 1 dust collector	2
6	Ring sizer	1
7	Rolling mill	1
8	Shearing machine	1
9	Steam cleaners	1
10	Table vice	2
11	Ultrasonic cleaners	1
12	Weighing balance	1
13	Wire drawing machine	1
14	Work bench	21
15	Chair	21
16	Table	1
17	Adjustable Table Lamp	21
18	Bangle Mandrill	2
19	Computer for Presentations	1
20	LCD Camera for Projection	1
21	Projector	1
22	CC Flexible shaft with key	21
Design		
1	Glass Top Light Box Table for Tracing	1
2	Chair	21
3	Table	21
4	Table Lamps	20
5	Computer for Presentations	1
6	White Board	1
CAD		
1	Computers	21
2	Multi User Software Licenses	1
3	VGA with Screen Sharing/ Projector/ 32" LCD	1

	Monitor for Projection	
4	Chairs	21
5	Computer Tables	21
Gemmology		
1	Computer for Presentation	1
2	Godrej Coffer Box H.255 X W.360	1
3	Electronic Balance(Scales 300 Ct)	1
4	Density Kit	2
5	U.V. Cabinet with daylight	2
6	Immersion scope with Base	2
7	Polariscope with Conoscope	12
8	Dichroscope	12
9	Chelsea Filter	12
10	Stereo zoom Microscope	12
11	Refract meter	12
12	Velvet Tray Gem Lab small black 8 x5	10
13	Velvet Tray Gem Lab big black 11 x 14	5
14	Assortment Pad	5
15	10X Lens	20
16	1 Locking Tweezer	20
17	Scoop	20
18	20 mm –gauge	20
19	Selvyt Cloth	20
20	Shade Card	20
21	Table Lamps	20
22	Work Bench with White Tops	21
23	Chairs	21
24	Gemstones & Diamonds	400 Approx
List of Tools for Training		
Manufacturing		
Sr. No.	**Name**	**Quantity**
1	Copper Tongs	4
2	Draw Plates (Tungsten carbide) (1 Small, 1 Big)	2
3	Iron Hammer	1
4	Ring Mandrel	2
5	Round Mandrel set	1
6	Tweezers for steamer	2
7	Plastic Yellow Mallet	2
8	Wedge blocks	1
9	Iron Wooden anvil	1
10	Bench Block	15
11	Bench peg (U and V)	20
12	Centre punch	20
13	Ceramic soldering board	20
14	Hammer chisel Big	20
15	Indian Oil Stone	10

16	Prong pusher	20
17	Ring clamp with Screw	20
18	Ring sizer bunch	12
19	Ring size stick	12
20	Scriber	20
21	Shellac stick	20
22	Steel Square 4"	10
23	Third hand	20
24	Eye glass 10x	20
25	Safety Goggles (N-Space)	20
26	Scale 6”	20
27	Heart Burr 1.9 mm	20
28	Soldering Torch (Black)	20
29	Saw Frame	20
30	Digimatic Caliper 6’’	20
31	Divider 3’’	20
32	File Cleaning Brush	20
33	File Flat 6”	20
34	Metal Snips	20
35	Needle File set of 12 pcs (14 cm)	20
36	Needle files Assorted	40
37	Pliers 5’’ Chain Nose	20
38	Pliers 5’’ Flat	20
39	Pliers 5’’ Round Nose	20
40	Tool Kit Box	20
41	Tweezers–Plain	20
42	Tweezers self lock-Straight	20
43	Wooden Handle	20
Consumable Requirement		
Manufacturing		
Sr No.	**Name**	**Quantity**
1	Flux (kg)	0.5
2	Borax (kg)	0.5
3	Liquid soap (Litre)	1
4	LPG Cylinder	2
5	Machine oil (ml)	200
6	Ultrasonic solution	1
7	Blue wire 2.0 mm (Bundles)	10
8	Shellac (Kg)	2
9	Tripoli	3
10	Rouge	3
11	Casted pieces (gms)	500
12	Caustic soda powder (Kg)	0.25
13	Copper Plate (kg)	2
14	Emery Board	20
15	Flux Dish	20
16	Mandrill Emery	20

17	Mandrill Threaded	20
18	Small Buff (White 4'')	20
19	Small Buff (Yellow 4'')	20
20	Round Brush Black	20
21	Scissors	20
22	Emery Stick	20
23	Felt Stick	20
24	Painting Brush	20
25	Shoe Brush	20
26	Apron	20
27	Polishing Thread (bundle)	2
28	Saw Blades 2/0 Laxmi Brand (bundle)	20
29	Bees wax (kg)	1
30	Copper wire, 1mm (kg)	1
31	Drill Bit -Assorted	80
32	Emery Paper - Assorted	80
33	Fevi Stick	20
34	Fevi Quick	20
35	Lighter	20
36	Stone CZ	20
41	Silicon Cylinder	20
42	Solder Strips	30
43	Bristle End Brush (Black)	20
44	Dust Mask	20
45	**LPG Small Bottle**	**10**
Design		
1	Paper A4,100gsm	2000
2	Poster Colours (Set of 12)	20
3	Clutch Pencil With Lead, 0.5	20
4	Clutch Pencil, 0.3	20
5	Compass with Clutch Pencil	20
6	Oval Template ART-11-1836	20
7	Copier Paper - A 4 (500 sheets pack)	20
8	Eraser - Non-Dust (Big)	20
9	Colour pencil set	20
10	Tracing Sheets - A4	800
11	Graph Paper	20
12	Bag to keep the stationary	20
13	1 inch ring binder - A 4	40
14	Kneadable Eraser	20
15	Lead Box 0.3 mm	40
16	Lead Box 0.5mm	40
17	Various templates – Circle , Ellipse etc	40-60
20	Masking Tape - 1 Inch	20
21	Paint Brushes – 00, 1, 2, 3	60-80
22	Palette	20
23	Protractor (Medium)	20
24	Regular Pencil – HB	20

25	Isograph Ink – Black	20
26	Isograph, 0.1 mm	20
27	Ruler (6" Plastic)	20
28	Set Square 30°/ 60°/ 90° (Medium)	20
29	Set Square 90°/ 45°/ 45° (Medium)	20
30	Sharpener	20
31	Transparent Pocket Files - A4	1000
CAD		
1	CD	20
Gemmology		
1	Board markers all colours	2
2	Duster	2
3	Red Pen for correction	1
4	Rubber stamp for authentication	1
5	Stamp Pad	1
6	Blue Pen for data entry	20
7	Stapler	1
8	Staples	10
9	Punching machine	1
10	Correction pen	1
11	Scissors	1
12	Cutter	1
13	Transparent Plastic Pocket file folders	100
14	Box File for keeping Records	1
15	Register for Attendance	1
16	Worksheets	As per the Requirement
17	RI Liquid 3ml bottle	2
18	Box of tissue papers	2
19	Box File	20

Level -II
Module

Name : Assistant Designer
Sector : Gem &Jewellery
Code : **GEM 223**
Entry Qualification : Minimum 8th Pass, 14 Years & having completed Jewellery Sales Personnel Program (GEM 122)

Terminal competency : Competent to create simple Jewellery designs Also able to create, edit & modify the CAD designs Develop designs as per Indian preferences Create different types of settings in metal and wax Create casted pieces as per specific designs
Duration : 320Hrs
COURSE CONTENT :

Practical Competency	Underpinning Knowledge(Theory)
Design	
• Ability to calculate the value of a Jewellery piece from the sketch itself • Working on the designs as per given situations • Market study of various materials • Development of designs as per Indian preferences • Visit to showrooms to study product line, brand strategies etc. • Application of orthographic projections in Jewellery	• Estimation of Jewellery (Gold & Gemstones) – the underlying methodology • Study of different alternative materials that can be used in fashion Jewellery • Fashion Jewellery • Study of preferences of consumer groups • Study of Jewellery brands – Indian as well as International – their form, language, aesthetics, price points, marketing strategies etc. • Study of Indian Market – Jewellery styles

• Projections by Third Angle Method • Development of various types of Jewellery	that work across India • Bridal Jewellery for different cultures • Study of Orthographic Projections • Various styles of necklaces & earrings • Introduction to International markets
CAD	
• Placing an image for tracing in a 2d format • Creation of different types of jewellery • Creation of diamond library of various styles of cut for jewellery designing • Resizing a diamond • Create, edit & modify 3D designs • Ability to make & design a jewellery piece	• How to create • 3D solids • Surface Toolbar Editing & modifying 3D solids & the tools Understanding techniques for making a CAD model (various jewellery ornaments)
Manufacturing	
• Making of gravers • Learning different types of settings in metal and wax • Rubber mould packing technique - demonstration and practice • Operation of a vulcanizer • Vulcanizing procedure for rubber moulds • Rubber mould cutting technique • Use of blades, blade handle and clamps • Operation of a wax injector • Wax injection procedure and removal	• How various gravers are used • Differences in setting a stone in metal to that in wax • Procedures involved in various settings • Indepth study of vacuum casting process • Factors to be kept in mind before mould cutting • Introduction to a vulcanizer • Creating a wax tree • Dewaxing • Burnout cycle • Precautions to be followed while pouring

of wax pieces with the help of wax injector • Practicing the process of wax injection • Cleaning of wax pieces Practice sessions in wax tree making • Demonstration and practice of investment mixing • Dewaxing procedure • Loading the flask into the furnace. • Understanding the need to conform to an accurate cycle during the burnout process • Melting metal in the crucible, stirring procedure Operation and use of casting machine	metal in an investment flask • Safety measures & precautions to be taken while working on the floor • Maintenance of machinery • Tool/inventory check

TOOLS, CONSUMABLES & EQUIPMENTS RECOMMENDED FOR ABOVE COURSE

List of Tools &Equipments for Training		
Sr. No.	Equipment Name	Quantity
Manufacturing		
1	Annealing station	1
2	Grinder	2
3	Lac tank	1
4	Pickling tank	1
5	2 Polishing machines with 1 dust collector	2
6	Ring sizer	1
7	Rolling mill	1
8	Shearing machine	1
9	Steam cleaners	1
10	Table vice	2
11	Ultrasonic cleaners	1
12	Weighing balance	1
13	Wire drawing machine	1
14	Work bench	21
15	Chair	21
16	Table	1
17	Adjustable Table Lamp	21
18	Bangle Mandrill	2
19	Computer for Presentations	1
20	LCD Camera for Projection	1
21	Projector	1
22	CC Flexible shaft with key	21

23	Air compressor	1
24	Blender	1
25	Burnout furnace	1
26	Settling tanks	1
27	Enamelling Furnace	1
28	Investment + casting machine(with vacuum)	1
29	Metal melting furnace	1
30	Vulcanized	1
31	Wax Injector	1
32	Sand Blaster	1
33	Magnetic Polisher	1
Design		
1	Glass Top Light Box Table for Tracing	1
2	Chair	21
3	Table	21
4	Table Lamps	20
5	Computer for Presentations	1
6	White Board	1
CAD		
1	Computers	21
2	Multi User Software Licenses	1
3	VGA with Screen Sharing/ Projector/ 32" LCD Monitor for Projection	1
4	Chairs	21
5	Computer Tables	21

List of Tools for training		
Manufacturing		
Sr. No.	Name	Quantity
1	Acrylic plates	10
2	Acrylic stand	5
3	Adaptor plate	5
4	Aluminum frames	3
5	Ball Pin Hammer	10
6	Bench Block	15
7	Bench peg (U and V)	20
8	Centre punch	20
9	Ceramic Crucibles for metal melting	10
10	Ceramic soldering board	20
11	Clamping device	10
12	Coal shegdi	2
13	Copper Tongs	4
14	Digimatic Caliper 6''	20
15	Divider 3''	20
16	Draw Plates (Tungsten carbide) (1Small, 1 Big)	2
17	Eye glass 10x	20
18	File Cleaning Brush	20
19	File Flat 6"	20
20	Hammer chisel Big	20
21	Heart Burr 1.9 mm	20
22	Indian Oil Stone	10

23	Ingots	3
24	Investment flask	3
25	Iron Hammer	1
26	Iron Wooden anvil	1
27	Kadai	3
28	Measuring cylinder	1
29	Mesh	1
30	Mesh Holder	1
31	Metal Snips	20
32	Needle File set of 12 pcs (14 cm)	20
33	Needle files Assorted	80 - 100
34	Oval Mandrel	4
35	Plastic bucket	2
36	Plastic Yellow Mallet	2
37	Pliers 5'' Chain Nose	20
38	Pliers 5'' Flat	20
39	Pliers 5'' Round Nose	20
40	prong pusher	20
41	Ring clamp with Screw	20
42	Ring Mandrel	2
43	Ring size stick	12
44	Ring sizer bunch	12
45	Round Mandrel set	1
46	Rubber Base	5
47	Rubber bowls	2
48	Safety Goggles (N-Space)	20
49	Saw Frame	20
50	Scale 6"	20
51	Scriber	20
52	Shellac stick	20
53	Soldering Torch (Black)	20
54	Sprue cutter	2
55	Steel Square 4"	10
56	Surgical Blade handles	10
57	Third hand	20
58	Tongs for holding crucible	1
59	Tongs for holding flask	1
60	Tool Kit Box	20
61	Tweezers for steamer	2
62	Tweezers–Plain	20
63	Tweezers self lock-Straight	20
64	Wax carving Stick	4
65	Wedge blocks	1
66	Wooden Handle	20

Consumable Requirement		
Manufacturing		
Sr No.	Name	Quantity
1	Ball Burr as per requirement	20
2	Beading Tool, required size with handle (Set)	20

3	Blue wire 3 mm	20
4	Borax (Kg)	1
5	Boric Acid Powder (Kg)	1
6	Brass chains (gms)	200
7	Bristle End Brush (black)	20
8	Bristle End Brush (white)	20
9	Bristle end wheel black	20
10	Bristle end wheel white	20
11	Casted pieces (gms)	500
12	Cloths	20
13	Cup Burr, as per requirement	20
14	Double half round Graver with Handle	20
15	Drill Bit – as per the requirement	40-50
16	Dust Mask	20
17	Emery Paper - Assorted	40 – 60
18	Felt stick	10
19	Fevi Quick	20
20	Fevi Stick	20
21	File Cleaning brush	20
22	Flat Graver with Handle	20
23	Flux (Kg)	1
24	Half round Graver with Handle	20
25	Hart Burr, sizes as per requirement	20
26	Knife Graver with Handle	20
27	Lighter	20
28	Liquid soap (ltr)	1
29	LPG Cylinder	2
30	Machine oil (ltrs)	0.2
31	Mandrill Emery	20
32	Mandrill Screw	20
33	Mandrill Threaded	20
34	Masking tape	2
35	Oxygen Cylinders	2
36	Polishing Stone (Green) Sharpner 1/0	20
37	Polishing Stone (Pink) Finisher 4/0	20
38	Pre-polish Wheels –Hard	10
39	Pre-polish Wheels –Soft	10
40	Rouge	10
41	Round Graver with Handle	20
42	Round hair brush, 1c	10
43	Round hair brush, 2c	10
44	Sanding Disk –C	5
45	Sanding Disk –F	5
46	Sanding Disk –M	5
47	Shellac (Kg)	2
48	Silicon Cylinder	40
49	Solder Strips	20 - 40
50	Small Buff (White 4'')	20
51	Small Buff (Yellow 4'')	20
52	Soft soldering board	10
53	Square Graver with Hnadle	20
54	Stone set (Set)	20

55	Sulphuric acid (ltr)	2
56	Tooth brush	10
57	Tripoli	5
58	Ultrasonic solution (ltr)	1
Design		
1	Alabaster Paper A4,100gsm	1000
2	A3 Jackets	1000
3	A3 Ring Binder 1/2 Inch	20
4	Alabaster Paper A3 Size	2000
5	Faber Castle 18 bicolor pencil set	20
6	Tracing Sheets - A4	1600
7	Graph Paper - A3	20
8	1 inch ring binder - A 4	20
9	Double Sided Tape	20
10	Pen Knife/ Cutter	20
11	Color Chart Paper - Blue/ Black	20
12	Mount Board	20
13	A3 Ring Binder 1 Inch	20
14	Transparent Pocket Files - A4	500
CAD		
1	CD	20

Level-II
Module

Name	:	Production Assistant
Sector	:	Gem & Jewellery
Code	:	**GEM 224**
Entry Qualification	:	Minimum 8th Pass, 14 Years & having completed Jewellery Sales Personnel Program (GEM 122)
Terminal competency	:	Reasonable knowledge of Jewellery Manufacturing Will have the ability to control and work on the Casting Techniques enameling Do basic model making Perform basic settings in wax as well as metal
Duration	:	320 Hrs
COURSE CONTENT	:	

Practical Competency	Underpinning Knowledge(Theory)
• Making of gravers • Learning different types of settings in metal and wax • Rubber mould packing technique demonstration and practice • Operation of a vulcanizer • Vulcanizing procedure for rubber moulds • Rubber mould cutting technique • Use of blades, blade handle and clamps • Operation of wax injector • Wax injection procedure and removal of wax pieces with the help of wax	• Understand the usage of different gravers • Understanding the difference in setting a stone in metal and wax • Procedures involved in various settings • Indepth study of the vacuum casting process • Aspects to be kept in mind before mould cutting • Explanation of a vulcanizer • Making of a wax tree • Dewaxing

injector • Practice for wax injection • Wax pieces cleaning • Practice for wax tree making • Demonstration and practice for Investment mixing • The Enamelling Process	• Burnout cycle • Precautions to be followed while pouring metal in an investment flask • Enamelling – Various types & techniques • The process of enamelling • Understanding the nuances of varying temperatures of the furnace • Precautions to be taken while enameling • Precautions to be followed while pouring metal in investment flask • Safety measures & precautions to be taken while working on the floor • Taking proper care of machinery • Cleaning & general maintenance • Tool/inventory Check
• Making of gravers • Learning different types of settings in metal and wax • Rubber mould packing technique demonstration and practice • Operation of a vulcanizer • Vulcanizing procedure for rubber moulds • Rubber mould cutting technique • Use of blades, blade handle and clamps • Operation of wax injector • Wax injection procedure and removal of wax pieces with the help of wax injector • Practice for wax injection • Wax pieces cleaning • Practice for wax tree making	• Understand the usage of different gravers • Understanding the difference in setting a stone in metal and wax • Procedures involved in various settings • In-depth study of the vacuum casting process • Aspects to be kept in mind before mould cutting • Explanation of a vulcanizer • Making of a wax tree • Dew axing • Burnout cycle • Precautions to be followed while pouring metal in an investment flask • Enamelling – Various types & techniques • The process of enamelling

• Demonstration and practice for Investment mixing • The Enamelling Process	• Understanding the nuances of varying temperatures of the furnace • Precautions to be taken while enameling • Precautions to be followed while pouring metal in investment flask • Safety measures & precautions to be taken while working on the floor • Taking proper care of machinery • Cleaning & general maintenance • Tool/inventory Check
• Making of gravers • Learning different types of settings in metal and wax • Rubber mould packing technique demonstration and practice • Operation of a vulcanizer • Vulcanizing procedure for rubber moulds • Rubber mould cutting technique • Use of blades, blade handle and clamps • Operation of wax injector • Wax injection procedure and removal of wax pieces with the help of wax injector • Practice for wax injection • Wax pieces cleaning • Practice for wax tree making • Demonstration and practice for Investment mixing • The Enamelling Process	• Understand the usage of different gravers • Understanding the difference in setting a stone in metal and wax • Procedures involved in various settings • Indepth study of the vacuum casting process • Aspects to be kept in mind before mould cutting • Explanation of a vulcanizer • Making of a wax tree • Dew axing • Burnout cycle • Precautions to be followed while pouring metal in an investment flask • Enamelling – Various types & techniques • The process of enamelling • Understanding the nuances of varying temperatures of the furnace • Precautions to be taken while enameling • Precautions to be followed while pouring metal in investment flask • Safety measures & precautions to be

	taken while working on the floor • Taking proper care of machinery • Cleaning & general maintenance • Tool/inventory Check

TOOLS/ EQUIPMENTS CONSUMABLES RECOMMENDED FOR ABOVE COURSE

List of Tools &Equipments for Training		
Sr. No.	Equipment Name	Quantity
Manufacturing		
1	Annealing station	1
2	Grinder	2
3	Lac tank	1
4	Pickling tank	1
5	2 Polishing machines with 1 dust collector	2
6	Ring sizer	1
7	Rolling mill	1
8	Shearing machine	1
9	Steam cleaners	1
10	Table vice	2
11	Ultrasonic cleaners	1
12	Weighing balance	1
13	Wire drawing machine	1
14	Work bench	21
15	Chair	21
16	Table	1
17	Adjustable Table Lamp	21
18	Bangle Mandrill	2
19	Computer for Presentations	1
20	LCD Camera for Projection	1
21	Projector	1
22	CC Flexible shaft with key	21
23	Air compressor	1
24	Blender	1
25	Burnout furnace	1
26	Settling tanks	1
27	Enamelling Furnace	1
28	Investment + casting machine(with vacuum)	1
29	Metal melting furnace	1
30	Vulcanizer	1
31	Wax Injector	1
32	Sand Blaster	1

33	Magnetic Polisher	1

List of Tools for training		
Manufacturing		
Sr. No.	Name	Quantity
1	Acrylic plates	10
2	Acrylic stand	5
3	Adaptor plate	5
4	Aluminum frames	3
5	Ball Burr as per requirement	20
6	Ball Pin Hammer	10
7	Beading Tool, required size with handle	20
8	Bench Block	15
9	Bench peg (U and V)	20
10	Iron wires - Assorted	As required
11	Bristle End Brush (black)	80
12	Bristle End Brush (white)	80
13	bristle end wheel black	80
14	bristle end wheel white	80
15	Centre punch	20
16	Ceramic Crucibles for metal melting	10
17	Ceramic soldering board	20
18	Clamping device	10
19	Cloths	20
20	Coal shegdi	2
21	Copper Tongs	4
22	Cup burr, all size	20
23	Digimatic Caliper 6''	20
24	Divider 3''	20
25	Double half round Graver with Handle	20
26	Draw Plates (Tungsten carbide) (1Small, 1 Big)	2
27	Drill Bit – As required	80
28	Dust Mask	20
29	Emery Paper- As required	80 - 320
30	Eye glass 10x	20
31	Fevi Stick	20
32	Fevi Quick	20
33	File cleaning brush	20
34	File Flat 6"	20
35	Flat Graver with Handle	20

36	Half round Graver with Handle	20
37	Hammer chisel Big	20
38	Hart Burr, sizes as per requirement	20
39	Heart Burr 1.9 mm	20
40	Indian Oil Stone	10
41	Ingots	3
42	Investment flask	3
43	Iron Hammer	1
44	Iron Wooden anvil	1
45	Kadai	3
46	Knife Graver with Handle	20
47	Lighter	20
48	Measuring cylinder	1
49	Mesh	1
50	Mesh Holder	1
51	Metal Snips	20
52	Needle File set of 12 pcs (14 cm)	20
53	Needle files - Assorted	40-80
54	Oval Mandrel	4
55	Plastic bucket	2
56	Plastic Yellow Mallet	2
57	Pliers 5'' Chain Nose	20
58	Pliers 5'' Flat	20
59	Pliers 5'' Round Nose	20
60	Polishing Stone (Green) Sharpener 1/0	20
61	Polishing Stone (Pink) Finisher 4/0	20
62	Prong pusher	20
63	Ring clamp with Screw	20
64	Ring Mandrel	2
65	Ring size stick	12
66	Ring sizer bunch	12
67	Round Graver with Handle	20
68	Round Mandrel set	1
69	Rubber Base	5
70	Rubber bowls	2
71	Safety Goggles (N-Space)	20
72	Saw Frame	20
73	Scale 6"	20
74	Scriber	20
75	Shellac stick	20
76	Silicon Cylinder	80
77	Small Buff (White 4'')	20
78	Small Buff (Yellow 4'')	20
79	Soldering Torch (Black)	20
80	Sprue cutter	2
81	Square Graver with Handle	20
82	Steel Square 4"	10
83	Stocking	20
84	Surgical Blade handles	10
85	Third hand	20
86	Tongs for holding crucible	1
87	Tongs for holding flask	1

88	Tool Kit Box	20
89	Tooth brush	20
90	Tweezers–Plain	20
91	Tweezers for steamer	2
92	Tweezers self lock-Straight	20
93	Wax Block Blue 1 Lb	20
94	Wax Block Green 1 Lb	20
95	Wax Carving Set Tools	20
96	Wax carving Stick	4
97	Wax Ring Rod (Round)	20
98	Wax Ring Rod D Blank	20
99	Wedge blocks	1
100	Whitener	20
101	Wooden Handle	20

Consumable Requirement		
Manufacturing		
Sr No.	Name	Quantity
1	Benzene (ltr)	1
2	Ball Burr as per requirement	20
3	Beading Tool, required size with handle (Set)	20
4	Binding wire	0.5
5	Blue wire 3 mm	20
6	Borax (Kg)	1
7	Boric Acid Powder (Kg)	1
8	Brass chains (gms)	250
9	Bristle End Brush (black)	20
10	Bristle End Brush (white)	20
11	bristle end wheel black	20
12	bristle end wheel white	20
13	Casted pieces (gms)	500
14	Cloths	20
15	Coal (Kg)	3
16	Copper Plate 12 gauge (Kg)	2
17	Copper Sheet (3 mm) (Kg)	2
18	Copper Sheet, 24 Guage (Kg)	1
19	copper solder	10
20	Copper wire, 1mm (Kg)	1
21	Cup Burr, as per requirement	20
22	Double half round Graver with Handle	20
23	Drill Bit # 0.80	40
24	Drill Bit # 1.0	40
25	Dust Mask	20
26	Emery Paper 400	40
27	Emery Paper 600	40
28	Emery Paper 800	40
29	Enamel colours assorted 10 shades (Kg)	1
30	Fevi Quick	20
31	Fevi Stick	20
32	File Cleaning brush	20
33	Flat Graver with Handle	20

34	Flux (Kg)	1
35	Geru (100 gms)	2
36	Graphite crucible for melting	2
37	Graphite Rod for Stirring	1
38	Half round Graver with Handle	20
39	Hart Burr, sizes as per requirement	20
40	Investment Powder (Kg)	20
41	Kerosene (ltr)	2
42	Knife Graver with Handle	20
43	Lighter	20
44	Liquid soap (ltr)	1
45	LPG Cylinder	2
46	Machine oil (ltrs)	0.2
47	Mandrill Emery	20
48	Mandrill Screw	20
49	Mandrill Threaded	20
50	Masking tape	2
51	Oxygen Cylinders	2
52	Pink Wax Sheet (pkt)	2
53	Polishing Stone (Green) Sharpener 1/0	20
54	Polishing Stone (Pink) Finisher 4/0	20
55	Polishing Thread Bundle	2
56	Pre-polish Wheels –Hard	10
57	Pre-polish Wheels –Soft	10
58	Rouge	10
59	Round Graver with Handle	20
60	round hair brush, 1c	10
61	round hair brush, 2c	10
62	Rubber sheets [Castaldo] (pkt)	3
63	Sanding Disk –C	5
64	Sanding Disk –F	5
65	Sanding Disk –M	5
66	Shellac (Kg)	2
67	Silicon Cylinder	40
68	silicon spray	2
69	Silver Grains (gms)	500
70	Silver Solder –Soft	20
71	Silver Solder- Medium	20
72	Small Buff (White 4'')	20
73	Small Buff (Yellow 4'')	20
74	Soft soldering board	10
75	Square Graver with Handle	20
76	Stone set	20
77	Sulphuric acid (ltr)	2
78	Surgical blades	4
79	Talcum powder Bottle	2
80	Tar (Kg)	3
81	Tooth brush	10
82	Tripoli	5
83	Ultrasonic solution (ltr)	1
84	Wax for Injection (Kg)	5
85	Wax Welder	10

86	Wooden blocks	10
87	Yellow powder (Kg)	2

Level-II
Module

Name : Gem Appraisal Assistant

Sector : Gem & Jewellery

Code : **GEM 225**

Entry Qualification : Minimum 8 Std, 14 years & having completed Jewellery Sales Personnel program (GEM 122)

Terminal competency : This program is designed to give the student an In-depth knowledge in their area of Specialization – Gemmology.

Duration : 320 Hrs

COURSE CONTENT :

Practical Competency	Underpinning Knowledge(Theory)

• Study of geological occurrence deposits • Study of crystallography – seven crystal systems • Wooden models + Specimens • Styles of cut: Brilliant, step, mixed, concave, cabochon, carvings, cameo, intaglio, briolette, beads etc. • Possible shapes • Judging cut – symmetry, angles, polish etc. • Calibration and measurements of cut • Physical properties - S.G. hydrostatic & immersion • Optics - Principles and Instrumentation 10x Refractometer Chelsea filter /UV/CF Polariscope/ Dichroscope Microscope(Vertical + Immersion) Spectroscope (visible) • Enhancement - All gemstones to be tested on all standard instruments • Synthesis - All gemstones to be tested on all standard instruments Gemstone Species • Major Species Beryl, Chrysoberyl, Corundum, Diamond, Feldspar, Garnet, Quartz [All gemstones to be tested on all standard instruments] Minor species A-Z series [All gemstones to be tested on standard instruments] • Organic gem materials Amber, Ammonite, Coral, Pearl, Shell [all gem materials to be tested with 10X and certain specific instruments] • Safety measures & precautions to be taken while working in the laboratory • Importance of Maintenance of Equipment	• Understanding the Geological and geographical occurrence of various gemstone deposits Understanding of Crystallography & its importance in recognizing rough gemstones - • Evaluating gemstones on the basis of their styles of cut - symmetry, angles, polish etc. • Study of specific factors that influence the Quality control of diamonds, coloured stones and organic gems • Physical Properties : Hardness, Cleavage, Toughness, Fracture, Brittleness , Durability • Understanding the importance of Specific Gravity • Electrical and magnetic properties, resistance to chemicals and heat • An overview of instruments such as :Conductivity meter ; Sieves ; Gauges; Weighing Balance ; Hardness Pencils;; Diamond Pen / India Ink • -Optics - Principles and Instrumentation • Nature of light - Electromagnetic radiations & spectrum • Light sources & types of illumination • • Characteristics of light - transmission, reflection, refraction, polarisation • Instrumentation – Refractometer, Polariscope, Dichroscope • Study of alternate methods of R.I. Measurement • Magnification – 10X and microscope studies • Causes of Colour • Pleochroism • Colour related phenomena • Dispersion, Spectroscopy – visible, UV-VIS-NIR, IR, instrumentation -visible

• Cleaning & general maintenance • Tool/inventory check	spectroscope • U.V. and X – Rays and their practical applications • Other instruments :Filters - Chelsea Filter; Hot Point; Thermal Probes – Diamond, Moissanite; Reflectivity meter; Geiger Muller Counter; Proportion scope; Diamond sure / plus/ view • Methods of enhancement/ treatment • Study of the various methods– bleaching, coating, spraying, foiling, colourless impregnation, fracture filling and coloured impregnation (fracture filling, porous material, dyeing, sugar and smoke treatment etc.), heating, diffusion, irradiation, laser drilling, HPHT, graphitization - principles, conditions and identification criteria • A review of enhancement terminology used internationally by laboratories of repute • Synthesis, Composites, Glass and Plastic: Flame fusion, flux fusion, hydrothermal, skull melt, gel growth, ceramic and diamond synthesis techniques • Principles, conditions and identification criteria **Detailed study of Gemstone Species** • <u>Major species</u> • Beryl, Chrysoberyl, Corundum, Diamond, Feldspar, Garnet, Quartz • Formation, Geographic and geological locations • Classification – varieties / type classification • Physical, optical and chemical properties • identification criteria • Simulants and their separation • Minor species - A-Z series • Approx. 100 gemstones • Classification – varieties / type

	classification • Physical, optical and chemical properties • Identification criteria and simulants • Geographical locations • Organic gem materials - Amber, Ammonite, Coral, Ivory, Jet, Pearl, Shell • Classification • Geographic locations • Culturing process and identification

TOOLS/EQUIPMENTS & CONSUMABLES RECOMMENDED FOR ABOVE COURSE

List of Tools & Equipments for Training		
Sr. No.	Equipment Name	Quantity
1	Projector	1
2	Computer for Presentation	1
3	Godrej Coffer Box H.255 X W.360	1
4	Electronic Balance(Scales 300 Ct)	1
5	Density Kit	2
6	U.V. Cabinet with daylight	2
7	Immersionscope with Base	2
8	Polariscope with Conoscope	12
9	Dichroscope	12
10	Chelsea Filter	12
11	Stereo zoom Microscope	12
12	Refractometer	12
13	Velvet Tray Gem Lab small black 8 x5	10
14	Velvet Tray Gem Lab big black 11 x 14	5
15	Assortment Pad	5
16	10X Lens	20
17	1 Locking Tweezers	20
18	Scoop	20
19	20 mm –gauge	20
20	Selves Cloth	20
21	Shade Card	20
22	Table Lamps	20
23	Work Bench with White Tops	21
24	Chairs	21
25	Immersion scope with base	1
26	Gemstones	1200 aprox

27	Spectroscope	1

List of Tools for Training		
Sr. No.	Name	Quantity
None		

Consumable Requirement		
Sr No.	Name	Quantity
1	Board markers all colours	2
2	Red Pen for correction	1
3	Blue Pen for data entry	1
4	0.5mm Lead Pencils with extra lead	1
5	Eraser	1
6	Staples	1
7	Correction pen	1
8	Transparent Plastic Pocket file folders	10
9	Box File for keeping Records	1
10	Register for Attendance	1
11	Session Log Book	1
12	Individual Student Log / Grade Book	1
13	Worksheets	As Required
14	RI Liquid 3ml bottle	2
15	Box of tissue papers	20

Level-III

Module

Name : Jewellery Designer

Sector : Gem & Jewellery

Code : **GEM 326**

Entry Qualification : Minimum 8th Std, 14 Years & having completed the Assistant Designer program (GEM 223)

Terminal competency : A Professional Jewellery Designer with the ability to not only design jewellery but also have the competence and confidence to monitor its production from start to finish

Duration : 320 Hrs

COURSE CONTENT :

Practical Competency	Underpinning Knowledge(Theory)
Design	
• Study & development of jewellery for International markets • Representation of jewellery in isometry • Various intersecting solids • Representation of 3D surfaces • Application of different techniques of mechanisms	• Study of the International markets • Study of preference of major importing countries of jewellery • Fusion of techniques in jewellery • 3D view – Isometry or Perspective • Development of an orthographic drawing into an isometric drawing
Manufacturing	
• Setting of stones using different types of setting • Finishing and polishing techniques • Application of designs in the pieces • Market Visits for identification of vendors • Safety Measures & precautions to be taken while working on floor • Taking proper care of machinery • Cleaning & general maintenance • Tool/inventory Check	• The production cycle from design to finished piece Understanding production schedules and their importance Estimating costs of manufacturing • The importance of maintenance of equipment • Minimizing wastage • Collection of scrap for refining

TOOLS/ EQUIPMENTS&CONSUMABLESRECOMMENDED FOR ABOVE COURSE

List of Tools & Equipments for Training		
Sr. No.	Equipment Name	Quantity

Manufacturing		
1	Annealing station	1
2	Grinder	2
3	Lac tank	1
4	Pickling tank	1
5	2 Polishing machines with 1 dust collector	2
6	Ring sizer	1
7	Rolling mill	1
8	Shearing machine	1
9	Steam cleaners	1
10	Table vice	2
11	Ultrasonic cleaners	1
12	Weighing balance	1
13	Wire drawing machine	1
14	Work bench	21
15	Chair	21
16	Table	1
17	Adjustable Table Lamp	21
18	Bangle Mandrill	2
19	Computer for Presentations	1
20	LCD Camera for Projection	1
21	Projector	1
22	CC Flexible shaft with key	21
23	Air compressor	1
24	Blender	1
25	Burnout furnace	1
26	Settling tanks	1
27	Enamelling Furnace	1
28	Investment + casting machine(with vacuum)	1
29	Metal melting furnace	1
30	Vulcanizer	1
31	Wax Injector	1
32	Sand Blaster	1
33	Magnetic Polisher	1
Design		
1	Glass Top Light Box Table for Tracing	1
2	Chair	21
3	Table	21
4	Table Lamps	20
5	Computer for Presentations	1
6	White Board	1
CAD		
1	Computers	21
2	Multi User Software Licenses	1
3	VGA with Screen Sharing/ Projector/ 32" LCD Monitor for Projection	1
4	Chairs	21
5	Computer Tables	21

List of Tools for Training		
Manufacturing		
Sr. No.	Name	Quantity

1	Acrylic plates	10
2	Acrylic stand	5
3	Adaptor plate	5
4	Aluminum frames	3
5	Ball Pin Hammer	10
6	Bench Block	15
7	Bench peg (U and V)	20
8	Centre punch	20
9	Ceramic Crucibles for metal melting	10
10	Ceramic soldering board	20
11	Clamping device	10
12	Coal shegdi	2
13	Copper Tongs	4
14	Digimatic Caliper 6''	20
15	Divider 3''	20
16	Draw Plates (Tungsten carbide) (1Small, 1 Big)	2
17	Eye glass 10x	20
18	File Cleaning Brush	20
19	File Flat 6"	20
20	Hammer chisel Big	20
21	Heart Burr 1.9 mm	20
22	Indian Oil Stone	10
23	Ingots	3
24	Investment flask	3
25	Iron Hammer	1
26	Iron Wooden anvil	1
27	Kadai	3
28	Measuring cylinder	1
29	Mesh	1
30	Mesh Holder	1
31	Metal Snips	20
32	Needle File set of 12 pcs (14 cm)	20
34	Needle files - Assorted	80 - 10
35	Oval Mandrel	4
36	Plastic bucket	2
37	Plastic Yellow Mallet	2
38	Pliers 5'' Chain Nose	20
39	Pliers 5'' Flat	20
40	Pliers 5'' Round Nose	20
41	prong pusher	20
42	Ring clamp with Screw	20
43	Ring Mandrel	2
44	Ring size stick	12
45	Ring sizer bunch	12
46	Round Mandrel set	1
47	Rubber Base	5
48	Rubber bowls	2
49	Safety Goggles (N-Space)	20
50	Saw Frame	20
51	Scale 6"	20
52	Scriber	20
53	Shellac stick	20

54	Soldering Torch (Black)	20
55	Sprue cutter	2
56	Steel Square 4"	10
57	Surgical Blade handles	10
58	Third hand	20
59	Tongs for holding crucible	1
60	Tongs for holding flask	1
61	Tool Kit Box	20
62	Tweezers for steamer	2
63	Tweezers–Plain	20
64	Tweezers self lock-Straight	20
65	Wax carving Stick	4
66	Wedge blocks	1
67	Wooden Handle	20

Consumable Requirement		
Manufacturing		
Sr No.	Name	Quantity
1	Ball Burr as per requirement	20
2	Beading Tool, required size with handle (Set)	20
3	Binding wire (Kg)	1
4	Borax (Kg)	1
5	Boric Acid Powder (Kg)	1
6	Bristle End Brush (black)	20
7	Bristle End Brush (white)	20
8	Bristle end wheel black	20
9	Bristle end wheel white	20
10	Cup burr, as per requirement	20
11	Degreasing Agent	1
12	DI Water (5 Ltr)	1
13	Drill Bit – As Required	40
14	Emery Paper – As Required	60 - 800
15	Felt stick	8
16	Flux (Kg)	1
17	Gold Plating Solution	1
18	Hart Burr - Assorted	80 - 100
19	Liquid soap (Ltr)	2
20	LPG	2
21	Machine oil (Ltr)	1
22	Mandrill Emery	20
23	Mandrill Screw	20
24	Mandrill Threaded	20
25	Masking tape	3
26	Oxygen	2
27	Pre-polish Wheels –Hard	20
28	Pre-polish Wheels –Soft	20
29	Rhodium Solution	1
30	Rouge	5
31	Sanding Disk – M	20
32	Shellac (Kg)	3
33	Silicon Cylinder	20
34	Silver Solder –Soft	20

35	Silver Solder- Medium	20
36	Soft soldering board	20
37	Sulphuric acid (Ltr)	3
38	Tripoli	5
39	Ultrasonic solution (Ltr)	1
Design		
1	Alabaster Paper A4,100gsm	1500
2	A3 Jackets	800
3	A3 Ring Binder 1/2 Inch	20
4	Alabaster Paper A3 Size	1000
13	Gateway/Vellum Sheets - A4	1600
14	Graph Paper - A3	20
16	1 inch ring binder - A 4	20
32	A3 Ring Binder 1 Inch	20
40	Transparent Pocket Files - A4	800
CAD		
1	CD	20
2	Wax Block/ Resin Piece	20

Level-III
Module

Name : Production Supervisor
Sector : Gem &Jewellery
Code : **GEM 327**
Entry Qualification : Minimum 8thStd Pass, 14Yrs & having completed Production Assistant Program (GEM 224)

Terminal competency : A Jewellery Technologist with an ability and Competence to develop a product from design to a

finished ornament Monitor production and quality

Duration : 320 Hrs

COURSE CONTENT :

Practical Competency	Underpinning Knowledge(Theory)
• Advanced Settings • Application of various mechanisms used in jewellery making: Riveting Clasp making Chain making Finishing and polishing techniques • Application of Manufacturing techniques used in Jewellery piece: Piercing Soldering Setting Filing Finishing Polishing Working with Gold Visit to market to identify vendors	• How to translate a design to a finished piece of jewellery Representation & technical drawings required • Creating a production schedule Estimation of cost Estimation of weight of metal used • Calculation of labour cost • Safety measures & precautions to be taken while working on the floor • Maintenance of machinery • Cleaning & general maintenance • Tool / inventory Check • Taking adequate measures to reduce wastage • Collection of scrap metal for refining • Gold and its properties

TOOLS/ EQUIPMENTS & CONSUMABLES RECOMMENDED FOR ABOVE COURSE

List of Tools &Equipments for Training		
Sr. No.	Equipment Name	Quantity
Manufacturing		
1	Annealing station	1
2	2 Polishing machines with 1 dust collector	2
3	Adjustable Table Lamp	21
4	Air compressor	1
5	Bangle Mandrill	2

6	Blender	1
7	Burnout furnace	1
8	CC Flexible shaft with key	21
9	Chair	21
10	Computer for Presentations	1
11	Enamelling Furnace	1
12	Grinder	2
13	Investment + casting machine(with vacuum)	1
14	Lac tank	1
15	LCD Camera for Projection	1
16	Magnetic Polisher	1
17	Metal melting furnace	1
18	Pickling tank	1
19	Projector	1
20	Ring sizer	1
21	Rolling mill	1
22	Sand Blaster	1
23	Settling tanks	1
24	Shearing machine	1
25	Steam cleaners	1
26	Table	1
27	Table vice	2
28	Ultrasonic cleaners	1
29	Vulcanizer	1
30	Wax Injector	1
31	Weighing balance	1
32	Wire drawing machine	1
33	Work bench	21
34	Heater	2
35	Rectifier	2
36	Beaker	7
37	Titanium coated anode	1

List of Tools for training		
Manufacturing		
Sr. No.	Name	Quantity
1	Acrylic plates	10
2	Acrylic stand	5
3	Adaptor plate	5
4	Aluminum frames	3
5	Ball Burr as per requirement	20
6	Ball Pin Hammer	10
7	Beading Tool, required size with handle	20
8	Bench Block	15
9	Bench peg (U and V)	20
10	Blue wire – As Reqd	80 - 100
11	Bristle End Brush (black)	80
12	Bristle End Brush (white)	80
13	Bristle end wheel black	80
14	Bristle end wheel white	80
15	Centre punch	20
16	Ceramic Crucibles for metal melting	10

17	Ceramic soldering board	20
18	Clamping device	10
19	Cloths	20
20	Coal shegdi	2
21	Copper Tongs	4
22	Cup burr, all size	20
23	Digimatic Caliper 6''	20
24	Divider 3''	20
25	Double half round Graver with Handle	20
26	Draw Plates (Tungsten carbide) (1Small, 1 Big)	2
27	Drill Bit – As Required	80 - 100
28	Dust Mask	20
29	Emery Paper – As Required	80 - 320
30	Eye glass 10x	20
31	Fevi Stick	20
32	Fevi Quick	20
33	File cleaning brush	20
34	File Flat 6"	20
35	Flat Graver with Handle	20
36	Half round Graver with Handle	20
37	Hammer chisel Big	20
38	Hart Burr, sizes as per requirement	20
39	Heart Burr 1.9 mm	20
40	Indian Oil Stone	10
41	Ingots	3
42	Investment flask	3
43	Iron Hammer	1
44	Iron Wooden anvil	1
45	Kadai	3
46	Knife Graver with Handle	20
47	Lighter	20
48	Measuring cylinder	1
49	Mesh	1
50	Mesh Holder	1
51	Metal Snips	20
52	Needle File set of 12 pcs (14 cm)	20
53	Needle files - Assorted	80 - 100
54	Oval Mandrel	4
55	Plastic bucket	2
56	Plastic Yellow Mallet	2
57	Pliers 5'' Chain Nose	20
58	Pliers 5'' Flat	20
59	Pliers 5'' Round Nose	20
60	Polishing Stone (Green) Sharpener 1/0	20
61	Polishing Stone (Pink) Finisher 4/0	20
62	prong pusher	20
63	Ring clamp with Screw	20
64	Ring Mandrel	2
65	Ring size stick	12
66	Ring sizer bunch	12
67	Round Graver with Handle	20
68	Round Mandrel set	1

69	Rubber Base	5
70	Rubber bowls	2
71	Safety Goggles (N-Space)	20
72	Saw Frame	20
73	Scale 6”	20
74	Scriber	20
75	Shellac stick	20
76	Silicon Cylinder	80
77	Small Buff (White 4'')	20
78	Small Buff (Yellow 4'')	20
79	Soldering Torch	20
80	Sprue cutter	2
81	Square Graver with Handle	20
82	Steel Square 4"	10
83	Stocking	20
84	Surgical Blade handles	10
85	Third hand	20
86	Tongs for holding crucible	1
87	Tongs for holding flask	1
88	Tool Kit Box	20
89	Tooth brush	20
90	Tweezers–Plain	20
91	Tweezers for steamer	2
92	Tweezers self lock-Straight	20
93	Wax Block Blue 1 Lb	20
94	Wax Block Green 1 Lb	20
95	Wax Carving Set Tools	20
96	Wax carving Stick	4
97	Wax Ring Rod (Round)	20
98	Wax Ring Rod D Blank	20
99	Wedge blocks	1
100	Whitener	20
101	Wooden Handle	20

Consumable Requirement		
Manufacturing		
Sr No.	Name	Quantity
1	Benzene (Ltr)	1
2	Ball Burr as per requirement	20
3	Beading Tool, required size with handle (Set)	20
4	Binding wire (Kg)	1
5	Blue wire 3 mm	20
6	Borax (Kg)	1
7	Boric Acid Powder (Kg)	1
8	Brass chains (Gms)	250
9	Bristle End Brush (black)	40
10	Bristle End Brush (white)	40
11	Bristle end wheel black	40
12	Bristle end wheel white	40

13	Casted pieces (Gms)	500
14	Cloths	20
15	Coal (Kg)	3
16	Copper Plate 12 gauge (Kg)	2
17	Copper Sheet (3 mm) (Kg)	2
18	Copper Sheet, 24 Gauge (Kg)	1
19	Copper Solder	10
20	Copper wire, 1mm (Kg)	1
21	Cup Burr, as per requirement	20
22	Degreasing Agent	1
23	DI Water (5 Ltr)	1
24	Double half round Graver with Handle	20
25	Drill Bit – As Required	80 - 160
26	Dust Mask	20
27	Emery Paper – As Required	40 - 160
28	Enamel colours assorted 10 shades (Kg)	1
29	Fevi Quick	20
30	Fevi Stick	20
31	File Cleaning brush	20
32	Flat Graver with Handle	20
33	Flux (Kg)	1
34	Geru (100 gms)	2
35	Gold Plating Solution	1
36	Graphite crucible for melting	2
37	Graphite Rod for Stirring	1
38	Half round Graver with Handle	20
39	Hart Burr, sizes as per requirement	80 - 100
40	Investment Powder (Kg)	20
41	Kerosene (Ltr)	2
42	Knife Graver with Handle	20
43	Lighter	20
44	Liquid soap (Ltr)	1
45	LPG Cylinder	2
46	Machine oil (Ltr)	1
47	Mandrill Emery	20
48	Mandrill Screw	20
49	Mandrill Threaded	20
50	Masking tape	3
51	Oxygen Cylinders	2
52	Pink Wax Sheet (Pkt)	2
53	Polishing Stone (Green) Sharpner 1/0	20
54	Polishing Stone (Pink) Finisher 4/0	20
55	Polishing Thread Bundle	2

56	Pre-polish Wheels –Hard	10
57	Pre-polish Wheels –Soft	10
58	Rhodium Solution	1
59	Rouge	10
60	Round Graver with Handle	20
61	Round hair brush, 1c	10
62	Round hair brush, 2c	20
63	Rubber sheets [Castaldo] (Pkt)	3
64	Sanding Disk –C	5
65	Sanding Disk –F	5
66	Sanding Disk –M	5
67	Shellac (Kg)	2
68	Silicon Cylinder	40
69	Silicon spray	2
70	Silver Grains (Gms)	500
71	Silver Solder –Soft	20
72	Silver Solder- Medium	20
73	Small Buff (White 4'')	10
74	Small Buff (Yellow 4'')	10
75	Soft soldering board	20
76	Square Graver with Handle	20
77	Stone set (Set)	20
78	Sulphuric acid (Ltr)	2
79	Surgical blade no. 11 (Pkt)	2
80	Surgical blade no. 12 (Pkt)	2
81	Talcum powder Bottle	2
82	Tar (Kg)	3
83	Tooth brush	20
84	Tripoli	5
85	Ultrasonic solution (Ltr)	1
86	Wax for Injection (Kg)	5
87	Wax Welder	10
88	Wooden blocks	10
89	Gold	50 gms
90	Yellow powder (Kg)	2

Level-III
Module

Name : Gemologist

Sector : Gem &Jewellery

Code : **GEM 328**

Entry Qualification : Minimum 8th Std, 14 years & having completed Gem Appraisal Assistant Program (GEM 225)

Terminal competency : A professional Gemologist with the ability to identify and analyse the quality of loose and mounted gemstones .A thorough knowledge of instruments used, address concerns such as synthetics and enhancements being done and the ability to certify gemstones on an international level

Duration : 320 Hrs

COURSE CONTENT :

Practical Competency	Underpinning Knowledge(Theory)
• An overview of all standard instruments, synthetics and enhanced gemstones • GSV overview of all major gemstones • Separation of gemstone lots: • Single colour separations – stimulants • Multiple colour mixed lot separations • Rough gemstones • Cut gemstones • Project Specialization – Selection of a specific topic by each student • PPT • Typed project work (details as per selected topic - data/photographs/line diagrams etc.) • Market survey Safety measures & precautions to be taken while working on floor • Taking proper care of machinery and their importance • Cleaning & general maintenance	• An overview of instrumentation and their principles • An overview of the optical and physical properties of gemstones. An overview of synthetics and enhanced gemstones • Principles and concepts of packet lot separations for single colours and mixed colour gemstone lots • Their evaluation, assortment and grading standards • Principles and concepts of packet lot separations for single colours and mixed colour rough gemstones and their identification characteristics • Indian and international standards for gemstones • Administrative training • Setting up a gem & jewellery factory / retail outlet etc., Retail Management and Marketing, Export & Import Formalities, Banking & Taxation Norms • International certification standards • Laboratory certification, trade bodies and their utility, International

• Tool / inventory Check	controversies, practices and ethics - A comparative analysis and overview

TOOLS/ EQUIPMENTS &CONSUMABLES RECOMMENDED FOR ABOVE COURSE

List of Tools &Equipments for Training		
Sr. No.	Equipment Name	Quantity
1	Projector	1
2	Computer for Presentation	1
3	Godrej Coffer Box H.255 X W.360	1
4	Electronic Balance(Scales 300 Ct)	1
5	Density Kit	2
6	U.V. Cabinet with daylight	2
7	Immersion scope with Base	2
8	Polaris cope with Iconoscope	12
9	Dichroscope	12
10	Chelsea Filter	12
11	Stereo zoom Microscope	12
12	Refract meter	12
13	Velvet Tray Gem Lab small black 8 x5	10
14	Velvet Tray Gem Lab big black 11 x 14	5
15	Assortment Pad	5
16	10X Lens	20
17	1 Locking Tweezers	20
18	Scoop	20
19	20 mm –gauge	20
20	Selves Cloth	20
21	Shade Card	20
22	Table Lamps	20
23	Work Bench with White Tops	21
24	Chairs	21
25	Immersion scope with base	1
26	Gemstones	1200 aprox
27	Spectroscope	1

List of Tools for Training		
Sr. No.	Name	Quantity

Consumable Requirement

Sr No.	Name	Quantity
1	Board markers all colours	2
2	Red Pen for correction	1
3	Blue Pen for data entry	1
4	0.5mm Lead Pencils with extra lead	1
5	Eraser	1
6	Staples	1
7	Correction pen	1
8	Transparent Plastic Pocket file folders	10
9	Box File for keeping Records	1
10	Register for Attendance	1
11	Session Log Book	1
12	Individual Student Log / Grade Book	1
13	Worksheets	4000 aprox
14	RI Liquid 3ml bottle	2
15	Box of tissue papers	20

Level-I
Module

Name	:	Quality Control Assistant
Sector	:	Gem &Jewellery
Code	:	**GEM 129**
Entry Qualification	:	Minimum 8th Std, 14Yrs
Terminal competency	:	A person with a basic knowledge of: Basic techniques used in manufacturing Repronging & Retipping
Duration	:	160 Hrs

COURSE CONTENT :

Practical Competency	Underpinning Knowledge(Theory)
• Setting • Polishing the insides of the diamond area • Making grooves, setting stones • putting nicks on the diamond • Tapping the metal • Re-shanking of a prong set ring • Repronging and retipping • Making different types of shapes of wires • Use of black wax and Plaster of Paris for making jewellery • Demonstration of casting • Stone play • Sizing up of the ring • Demonstration of steps used for making sheet • Use of bangle mandrel for sizing	• Basics of metallurgy, difference between metals and non-metals • Properties of metals used in the jewellery -Tools used in the jewellery and their usage • Safety measures to be kept in mind while making jewelleryWhat is Annealing, Necessity for Annealing, Study of measurements used in jewellery • Filing & Usage of files (0,2 and 4 cut files) • Melting and alloying • The importance of alloying? • Rolling mill [operation and use],wire drawing machine [operation and use], • The use of tungsten carbide draw plate-its advantages over the other draw plates.. • Demonstration of steps used for making basic rings & other calculations involved • Use of ring size bunch and ring size stick,

• Wire drawing process • Making of various mechanisms • Safety measures & precautions to be taken while working on floor • General maintenance of machinery and equipment • Tool / inventory Check	American and Indian size • Potential ring sizing problems, sizing down & sizing up • Usage of digital caliper. • Use of ring bender and wedge block • Precautions to be taken during soldering • Usage of ring clamps with screw and ring clamp with wedge for holding ring • Use of Emery mandrel Use of Felt stick • Properties of silver and its alloys • Melting Process – Usage of various materials Understanding liquids temperature • Usage of lac stick for setting • Study of various settings - Step bezel, Channel setting and Bar channel setting & its quality control, Solitaire ring • Pre polishing and grooving and setting of stone • Study of filigree work • Understanding the casting process and importance of good casting

TOOLS/ EQUIPMENTS & CONSUMABLES RECOMMENDED FOR ABOVE COURSE

List of Tools &Equipments for Training		
Sr. No.	Equipment Name	Quantity
Manufacturing		
1	Annealing station	1
2	Grinder	2
3	Lac tank	1
4	Pickling tank	1
5	2 Polishing machines with 1 dust collector	2
6	Ring sizer	1
7	Rolling mill	1
8	Shearing machine	1
9	Steam cleaners	1
10	Table vice	2

11	Ultrasonic cleaners	1
12	Weighing balance	1
13	Wire drawing machine	1
14	Work bench	21
15	Chair	21
16	Table	1
17	Adjustable Table Lamp	21
18	Bangle Mandrill	2
19	Computer for Presentations	1
20	LCD Camera for Projection	1
21	Projector	1
22	CC Flexible shaft with key	21
23	Air compressor	1
24	Blender	1
25	Burnout furnace	1
26	Settling tanks	1
28	Investment + casting machine(with vacuum)	1
29	Metal melting furnace	1
30	Vulcanizer	1
31	Wax Injector	1
32	Sand Blaster	1
33	Magnetic Polisher	1

List of Tools for training		
Manufacturing		
Sr. No.	Name	Quantity
1	Acrylic plates	10
2	Acrylic stand	5
3	Adaptor plate	5
4	Aluminum frames	3
5	Ball Burr as per requirement	20
6	Ball Pin Hammer	10
7	Beading Tool, required size with handle	20
8	Bench Block	15
9	Bench peg (U and V)	20
10	Blue wire – As Required	80 - 100
11	Bristle End Brush (black)	80
12	Bristle End Brush (white)	80
13	Bristle end wheel black	80
14	Bristle end wheel white	80
15	Centre punch	20
16	Ceramic Crucibles for metal melting	10
17	Ceramic soldering board	20
18	Clamping device	10
19	Cloths	20
20	Coal shegdi	2
21	Copper Tongs	4
22	Cup burr, all size	20
23	Dogmatic Caliper 6''	20
24	Divider 3''	20
25	Double half round Graver with Handle	20
26	Draw Plates (Tungsten carbide) (1Small, 1 Big)	2

27	Drill Bit – As Required	80
28	Dust Mask	20
29	Emery Paper – As Required	80 - 320
30	Eye glass 10x	20
31	Fevi Stick	20
32	Fevi Quick	20
33	File cleaning brush	20
34	File Flat 6”	20
35	Flat Graver with Handle	20
36	Half round Graver with Handle	20
37	Hammer chisel Big	20
38	Hart Burr, sizes as per requirement	20
39	Indian Oil Stone	10
40	Ingots	3
41	Investment flask	3
42	Iron Hammer	1
43	Iron Wooden anvil	1
44	Kadai	3
45	Knife Graver with Handle	20
46	Lighter	20
47	Measuring cylinder	1
48	Mesh	1
49	Mesh Holder	1
50	Metal Snips	20
51	Needle File set of 12 pcs (14 cm)	20
52	Needle file - Assorted	80
53	Oval Mandrel	4
54	Plastic bucket	2
55	Plastic Yellow Mallet	2
56	Pliers 5’’ Chain Nose	20
57	Pliers 5’’ Flat	20
58	Pliers 5’’ Round Nose	20
59	Polishing Stone (Green) Sharpener 1/0	20
60	Polishing Stone (Pink) Finisher 4/0	20
61	prong pusher	20
62	Ring clamp with Screw	20
63	Ring Mandrel	2
64	Ring size stick	12
65	Ring seizer bunch	12
66	Round Graver with Handle	20
67	Round Mandrel set	1
68	Rubber Base	5
69	Rubber bowls	2
70	Safety Goggles (N-Space)	20
71	Saw Frame	20
72	Scale 6”	20
73	Scriber	20
74	Shellac stick	20
75	Silicon Cylinder	80
76	Small Buff (White 4'')	20
77	Small Buff (Yellow 4'')	20
78	Soldering Torch (Black)	20

79	Spruce cutter	2
80	Square Graver with Handle	20
81	Steel Square 4"	10
82	Stocking	20
83	Surgical Blade handles	10
84	Third hand	20
85	Tongs for holding crucible	1
86	Tongs for holding flask	1
87	Tool Kit Box	20
88	Tooth brush	20
89	Tweezers -Plain	20
90	Tweezers for steamer	2
91	Tweezers self lock-Straight	20
92	Wax Block Blue 1 Lb	20
93	Wax Block Green 1 Lb	20
94	Wax Carving Set Tools	20
95	Wax carving Stick	4
96	Wax Ring Rod (Round)	20
97	Wax Ring Rod D Blank	20
98	Wedge blocks	1
99	Whitener	20
100	Wooden Handle	20

Consumable Requirement		
Manufacturing		
Sr No.	Name	Quantity
1	Benzene (Ltr)	1
2	Ball Burr as per requirement	20
3	Beading Tool, required size with handle (Set)	20
4	Binding wire	0.5
5	Blue wire 3 mm	20
6	Borax (Kg)	1
7	Boric Acid Powder (Kg)	1
8	Brass chains (Gms)	250
9	Bristle End Brush (black)	20
10	Bristle End Brush (white)	20
11	Bristle end wheel black	20
12	Bristle end wheel white	20
13	Casted pieces (Gms)	500
14	Cloths	20
15	Coal (Kg)	3
16	Copper Plate 12 gauge (Kg)	2
17	Copper Sheet (3 mm) (Kg)	2
18	Copper Sheet, 24 Gauge (Kg)	1
19	Copper solder	10
20	Copper wire, 1mm (Kg)	1
21	Cup Burr, as per requirement	20
22	Double half round Graver with Handle	20
23	Drill Bit – As Required	40
24	Dust Mask	20
25	Emery Paper – As Required	40 - 160
26	Fevi Quick	20

27	Fevi Stick	20
28	File Cleaning brush	20
29	Flat Graver with Handle	20
30	Flux (Kg)	1
31	Geru (100 gms)	2
32	Graphite crucible for melting	2
33	Graphite Rod for Stirring	1
34	Half round Graver with Handle	20
35	Hart Burr, sizes as per requirement	20
36	Investment Powder (Kg)	20
37	Kerosene (Ltr)	2
38	Knife Graver with Handle	20
39	Lighter	20
40	Liquid soap (Ltr)	1
41	LPG Cylinder	2
42	Machine oil (Ltrs)	0.2
43	Mandrill Emery	20
44	Mandrill Screw	20
45	Mandrill Threaded	20
46	Masking tape	2
47	Oxygen Cylinders	2
48	Pink Wax Sheet (Pkt)	2
49	Polishing Stone (Green) Sharpner 1/0	20
50	Polishing Stone (Pink) Finisher 4/0	20
51	Polishing Thread Bundle	2
52	Pre-polish Wheels -Hard	10
53	Pre-polish Wheels -Soft	10
54	Rouge	10
55	Round Graver with Handle	20
56	round hair brush, 1c	10
57	round hair brush, 2c	10
58	Rubber sheets [Castaldo] (Pkt)	3
59	Sanding Disk -C	5
60	Sanding Disk -F	5
61	Sanding Disk -M	5
62	Shellac (Kg)	2
63	Silicon Cylinder	40
64	Silicon spray	2
65	Silver Grains (Gms)	500
66	Silver Solder -Soft	20
67	Silver Solder- Medium	20
68	Small Buff (White 4'')	20
69	Small Buff (Yellow 4'')	20
70	Soft soldering board	10
71	Square Graver with Handle	20
72	Stone set	20
73	Sulphuric acid (Ltr)	2
74	surgical blades - Assorted	2
75	Talcum powder Bottle	2
76	Tar (Kg)	3
77	Tooth brush	10
78	Tripoli	5

79	Ultrasonic solution (Ltr)	1
80	Wax for Injection (Kg)	5
81	Wax Welder	10
82	Wooden blocks	10
83	Yellow powder (Kg)	2

Level-I
Module-

Name	:	Assistant Assorter (Commercially Used Gemstones)
Sector	:	Gem & Jewellery
Code	:	**GEM 130**
Entry Qualification	:	Minimum 8th Std & 14 years of age
Terminal competency	:	A person with a basic knowledge of: Commercially used gemstones Major Group/ Species/ Variety Usage of various instruments
Duration	:	80 Hrs

COURSE CONTENT :

Practical Competency		Underpinning Knowledge(Theory)

• Study of Optical & physical properties on various Instruments - basic principle of working, uses, parts of the instrument, precautions and practical application:
  • 10x
  • S.G
  • Refractometer
  • Chelsea filter / UV/CF
  • Polariscope/ Dichroscope
  • Microscope
• Synthetic Gemstones
• Treatments & Enhancement
	• Group/Species/ Variety - Beryl , Tourmaline, Peridot , Topaz Corundum , Zoisite,Garnet , Chrysoberyl, Feldspar, Opal, Pearl and Coral Quartz
	Cut stimulants (all instruments) Green, Red, White.
	  • Yellow, Blue, Black
	  • Safety measures & precautions to be taken while working on floor
		• Define the basic qualities (beauty, rarity, durability) of a gemstone, style of cut, evaluating cut
		  • Optical & physical properties –Hardness Cleavage Specific Gravity - Estimation of Heft
		  • Transparency
		  • Reflection
		  • Refraction - Refractive Index measurement
		• Study of Properties of the stone e.g. colour, pleochroism, dispersion, luminescence
		• Phenomenal effect if any- chatoyancy, asterism, sheen, etc.
		• All enhancements and treatments associated with the

	• Taking proper care of machinery • Cleaning & general maintenance • Tool / inventory Check	gemstone and their identification • All synthesis associated with gemstone-their identification, trade name and manufacturers where possible • Beryl (Emerald, Aquamarine & other Beryl), Diamond, Corundum (Ruby & Sapphire), Garnet, Tourmaline, Chrysoberyl, Feldspar, Quartz, Peridot, Opal, Zoisite, Topaz, Coral, Pearl

TOOLS/ EQUIPMENTS & CONSUMABLES RECOMMENDED FOR ABOVE COURSE

List of Tools &Equipments for Training		
Sr. No.	Equipment Name	Quantity
Gemmology		
1	Computer for Presentation	1
2	Godrej Coffer Box H.255 X W.360	1
3	Electronic Balance(Scales 300 Ct)	1
4	Density Kit	2
5	U.V. Cabinet with daylight	2
6	Immersion scope with Base	2
7	Polaris cope with Conoscope	12
8	Dichroscope	12
9	Chelsea Filter	12
10	Stereo zoom Microscope	12
11	Refractometer	12
12	Velvet Tray Gem Lab small black 8 x5	10
13	Velvet Tray Gem Lab big black 11 x 14	5
14	Assortment Pad	5
15	10X Lens	20
16	1 Locking Tweezer	20
17	Scoop	20
18	20 mm –gauge	20
19	Selves Cloth	20
20	Shade Card	20
21	Table Lamps	20
22	Work Bench with White Tops	21
23	Chairs	21
24	Projector	1
25	Gemstones & Diamonds	400 Aprox

List of Tools for Training
Gemmology

Consumable Requirement		
Gemmology		
1	Board markers all colours	2
2	Duster	2
3	Red Pen for correction	1
4	Rubber stamp for authentication	1
5	Stamp Pad	1
6	Blue Pen for data entry	20
7	Stapler	1
8	Staples	10
9	Punching machine	1
10	Correction pen	1
11	Scissors	1
12	Cutter	1
13	Transparent Plastic Pocket file folders	100
14	Box File for keeping Records	1
15	Register for Attendance	1
16	Worksheets	As Required
17	RI Liquid 3ml bottle	2
18	Box of tissue papers	2
19	Box File	20

Level-I
Module-

Name	:	Sales Executive (Gems &Jewellery)
Sector	:	Gem & Jewellery
Code	:	**GEM 131**
Entry Qualification	:	Minimum 8th Std, 14 Yrs, 6 months work experience
Terminal competency	:	A salesperson with comprehensive product knowledge Diamonds & coloured gemstones Gold & Silver Properties Basic Understanding of Design Soft Skills & Handling of Customer
Duration	:	80 Hrs

COURSE CONTENT :

Practical Competency	Underpinning Knowledge
Gemmology	
• Clarity Inclusions • Blemishes • Definitions and conditions for clarity grading • Summarizing the clarity grading • Comparative chart of principal grading system • Cut • Finish – polish & symmetry • Culet DIAMOND AND ITS IMITATIONS	• Understanding of diamonds - Diamond formation, chemical, physical & optical properties of diamond 4 C's – The Diamond Characteristics Diamond grading & its purpose Carat - introduction, relation between weight, diameter & sieve size for RBC, valuation of diamond Clarity – Inclusions, Blemishes • Conditions for clarity grading & comparative charts of principal grading systems • Colour classification, fancy coloured,

<table>
<tr><td>

- Synthetic cubic Zirconia
- Synthetic Moisssanite

NAVRATNAS

- Visual Observation with a 10X lens

</td><td>

fluorescent coloured, chameleon diamonds

- Cut – Introduction, brilliance, luster, dispersion & scintillation, critical angle, the proportion grade, factors contributing to the proportions, finish – polish & symmetry, heart & arrow cut, grading for fancy shapes, various fancy shape diamonds
- Natural gemstones and its stimulants, treatments, synthetics, inclusion patterns of natural / synthetic of the following gems – Diamond, Ruby, Sapphire, Chrysoberyl, Hessonite Garnet, Coral and Pearl.

</td></tr>
<tr><td colspan="2">Manufacturing</td></tr>
<tr><td>

- Identification of tools, consumables, and equipments
- Piercing technique
- Uses of different types of emery papers
- Finishing & polishing techniques
- Demonstration of casting
- Rubber mould packing technique demonstration
- Operation of vulcanizer
- Rubber mould cutting demonstration
- Removal of wax pieces from rubber mould.
- Use of blades, blade handle and clamps
- Operation of wax injector
- Demonstration of wax tree
- Demonstration for Investment mixing

</td><td>

- Sizing of ring, old & Karat age, composition of alloys
- Increasing & decreasing the karat age
- Quality control – How to check, understanding of flaws
- What is Hallmarking?
- Casting, rubber mould packing & its prerequisites
- Vulcanizing & rubber mould cutting techniques
- Wax injection process, wax tree making, investment mixing, dewaxing, burnout cycle
- Procedure for pouring the metal into flask
- Quenching procedure
- Defects in casting
- Analysis of defects in casting

</td></tr>
<tr><td colspan="2">Design</td></tr>
</table>

• Developing a design & incorporating different settings • Rendering the piece of jewellery to evoke customer interest • Designing a piece to be manufactured	• Various steps involved in development of design • Effects of lighting on jewellery – rendering & shading • Various steps involved in conversion of design to manufacturing
Customer Relationship Management	
• Interactive sessions on how to deal with various types of customers	• History of selling • About the sales person – his/her ability, personality & experience • Learning & meeting customer needs • Keywords to use in presentation • The selling process • Principles of service • Building lasting customer relationship • Creating values for the customer • Closing the sale • Handling objections

TOOLS/ EQUIPMENTS & CONSUMABLES RECOMMENDED FOR ABOVE COURSE

List of Tools &Equipments for Training		
Sr. No.	Equipment Name	Quantity
Manufacturing		
1	Annealing station	1
2	2 Polishing machines with 1 dust collector	2
3	Adjustable Table Lamp	21
4	Air compressor	1
5	Beaker	7
6	Blender	1
7	Burnout furnace	1
8	CC Flexible shaft with key	21
9	Chair	21
10	Computer for Presentations	1
11	Grinder	2
12	Investment + casting machine(with vacuum)	1
13	Lac tank	1
14	LCD Camera for Projection	1
15	Magnetic Polisher	1
16	Metal melting furnace	1

17	Pickling tank	1
18	Projector	1
19	Rectifier	2
20	Ring seizer	1
21	Rolling mill	1
22	Sand Blaster	1
23	Settling tanks	1
24	Shearing machine	1
25	Steam cleaners	1
26	Table	1
27	Table vice	2
28	Ultrasonic cleaners	1
29	Vulcanizer	1
30	Wax Injector	1
32	Weighing balance	1
33	Wire drawing machine	1
34	Work bench	21
Design		
1	Glass Top Light Box Table for Tracing	1
2	Chair	21
3	Table	21
4	Table Lamps	20
5	Computer for Presentations	1
6	White Board	1
Gemmology		
1	Computer for Presentation	1
2	Godrej Coffer Box H.255 X W.360	1
3	Electronic Balance(Scales 300 Ct)	1
4	Density Kit	2
5	U.V. Cabinet with daylight	2
6	Immersion scope with Base	2
7	Polariscope with Conoscope	12
8	Dichroscope	12
9	Chelsea Filter	12
10	Stereo zoom Microscope	12
11	Refractometer	12
12	Velvet Tray Gem Lab small black 8 x5	10
13	Velvet Tray Gem Lab big black 11 x 14	5
14	Assortment Pad	5
15	10X Lens	20
16	1 Locking Tweezers	20
17	Scoop	20
18	20 mm –gauge	20
19	Selvyt Cloth	20
20	Shade Card	20
21	Table Lamps	20
22	Work Bench with White Tops	21
23	Chairs	21
24	Gemstones & Diamonds	400 Aprox

List of Tools for training
Manufacturing

Sr. No.	Name	Quantity
1	Ring Mandrel	4
2	Lac Stick	20
3	Triangle file, 6”	20
4	Half round file, 6”	20
5	Saw Frame	20
6	Divider	20
7	Scale	20
8	Protractor	20
9	T-Square, Small	20
10	Tweezers plain	20
11	Soldering Board	20
12	Flux Dish	20
13	Table lamp	20
14	Bench peg	20

Consumable Requirement		
Manufacturing		
Sr No.	Name	Quantity
1	Medium Solder	40
2	Lac (Kg)	1
3	Emery paper, Assorted	40 - 160
4	Fevicol (Kg)	1
5	Saw Blades	20 Packets
6	Fevistick	3
7	Flux	100 gms
8	Tripoli	10
9	Rouge	10
10	Graver with Handle	20
11	Copper Sheet	1 Kg
12	Copper band	150 Gms
13	Bees wax	150 Gms
Design		
1	Paper A4,100gsm	200
2	Clutch Pencil With Lead, 0.5	20
3	Compass with Clutch Pencil	20
4	Oval Template ART-11-1836	20
5	Eraser - Non-Dust (Big)	20
6	Colour pencil set	20
7	Gateway/Vellum Sheets - A4	800
8	Graph Paper	20
9	Lead Box 0.5mm	40
10	Circle Template ART-11-1820	20
11	Oval Template ART-11-1834	20
12	Stone Template ART-11-1889	20
13	Masking Tape - 1 Inch	20
14	Ruler (6" Plastic)	20
15	Set Square 30°/ 60°/ 90° (Medium)	20
16	Set Square 90°/ 45°/ 45° (Medium)	20
17	Sharpener	20
18	Transparent Pocket Files - A4	100
Gemmology		

1	Board markers all colours	2
2	Duster	2
3	Red Pen for correction	1
4	Rubber stamp for authentication	1
5	Stamp Pad	1
6	Blue Pen for data entry	20
7	Stapler	1
8	Staples	10
9	Punching machine	1
10	Correction pen	1
11	Scissors	1
12	Cutter	1
13	Transparent Plastic Pocket file folders	100
14	Box File for keeping Records	1
15	Register for Attendance	1
16	Worksheets	As Required
17	RI Liquid 3ml bottle	2
18	Box of tissue papers	2
19	Box File	20

List of the Members attended in the Trade Committee Metering for designing the Course Curricula under Skill Development Initiative Scheme (SDIS) based on Modular Employability Skills (MES) on Gems & Jewellery held at Sawansukha Institute of Gemology & Jewellery Design, Kolkata Dated 2/8/2013.

SL.NO	NAME OF THE MEMBERS & DESIGNATION	REPRESENTING ORGANISATION	REMARKS
1.	MR.PANKAJ PAREKH, CHAIRMAN	GEMS & JEWELLERY EXPORT PROMOTION COUNCIL, KOLKATA	CHAIRMAN
2.	MR.K.SRINIVASAN RAO, JOINT DIRECTOR OF TRAINING	CSTARI, KOLKATA	MEMBER
3.	MR.L.K.MUKHERJEE, DEPUTY DIRECTOR OF TRAINING	CSTARI, KOLKATA	MEMBER
4	MR.ARINDAM ACHARYA, ASSISTANT DIRECTOR OF INDUSTRIAL TRAINING	DIT,WB, KOLKATA	MEMBER
5	Mr.R.N.MANNA, TRAINING OFFICER	CSTARI, KOLKATA	MEMBER
6	MR.RUPCHAND SAWANSUKHA, CHAIRMAN	SAWANSUKHA JEWELLERS PVT.LTD, KOLKATA	MEMBER
7	MR.ABHAY KUMAR JAIN, OWNER	ANUPAM TRADERS, KOLKATA	MEMBER
8	MR.ABHISHEK SONI, OWNER	M.S. SONS, KOLKATA	MEMBER
9	MR.GAUTAM DUGGAR, OWNER	DUGAR JEWELS, KOLKATA	MEMBER
10	MR.NARAYAN MANIHAR, OWNER	MANIHAR GEMS, KOLKATA	MEMBER
11	MR.ASHOK BENGANI, OWNER	BEGANI GEMS, KOLKATA	MEMBER
12	MR.HARSHAD AJMERA, OWNER	J.J.GOLD HOUSE, KOLKATA	MEMBER
13	MR.MUKESH, OWNER	PRAKASH GOLD PALACE, KOLKATA	MEMBER
14	MR.PRAKASH JAIN, OWNER	AKASH DIAMOND,KOLKATA	MEMBER
15	MR.SANJAY MODI, OWNER	DIAMOND DIMENSIONS, KOLKATA	MEMBER
16	MR.SUNIL MEHTA, OWNER	S.K.MEHTA & CO. KOLKATA	MEMBER
17	MR.UDAY SINDEY, OWNER	G.N.HALLMARKING ,KOLKATA	MEMBER
18	MR.SIDDHARTHAA SAWANSUKHA, CEO	SAWANSUKHA JEWELLERS PVT.LTD,KOLKATA	MEMBER
19	MRS.NIKI SAWANSUKHA, PRINCIPAL	SAWANSUKHA INSTITUTE OF GEMOLOGY & JEWELLERY DESIGN, KOLKATA.	MEMBER

COURSE MATRIX

Level-1

Module No.1	**Jewellery Designer**
Module No.2	**Computer Aided Designer (Jewellery**
Module No.3	**Costume Jewellery Maker**

GENERAL INFORMATION

1. Name of the Module : – **Jewellery Designer**

2. Sector:- **Gems & Jewellery**

3. Course Code : **GEM 532**

4. Duration :- **320 hrs**

5. Space Norms :- **30 Sq Mtr.**

6. Entry Qualification :- **Passed 8th class examination**

7. Unit Size(No of Students) :- **20 Trainees**

8. Instructor's/Trainer's Qualification : - **Diploma in Jewellery Designing with Minimum one year of experience.**

9. Terminal Competency **After completion of course participants will be acquire the skill to design the jewellary and would be able to set up their own using design unit.**

- **Understanding various steps of designing**
- **Identify various designs appliqué& technique that already being practiced locality**
- **Know & apply basic design skills that will help create news ideas.**

PRACTICAL COMPETENCES	UNDERPINNING KNOWLEDGE (THEORY)
Basic shapes of Diamond: • Different types & shapes of diamonds. • Different ways of faceting the diamonds.	**Introduction to the world of Designing**: • Definition of designing. • Techniques used in designing.
Practical class on types of pencil shading on different shapes of stones (faceted & non-faceted): • Different levels of shading. • Techniques of shading from dark to light & light to dark. • Shading of colours on the faceted & non- faceted stones.	**Different levels of shading**: • Different ways of shading. • Techniques of holding the pencil.

Rendering & Rot ring on A4 sheet and Gateway sheets: • Rendering(colouring) of stones. • Drawing on A4 sheets. • Rendering the final with rot ring pen.	**Introduction to Metal Motifs & its modifications:** • Definition of motifs • Application of motifs. • Modification of motifs.
Metal textures & rendering of different types of metals: • Texturing on the metals. • Rendering on the metals. • Different types of metals with colour representation.	**Types of Gold:** • Types of gold. • Alloy mixtures ratio. • Types of metals.
Detailing, stretching & compressing, enlarging & reducing, symmetry & mirroring of a design: • Detailing of a design. • Stretching of a design. • Enlarging of a design. • Reducing of a design. • Symmetry & Mirroring of a design.	**Different types of settings -> Setting Terminology** . • Different types of settings. • Terminology of setting-Indian & Internationally.
Setting on combo motifs: • Combination of motifs. • Assembling of two or three motifs. • Settings based on the combo motifs.	**Jewellery in International Market (USA, SEA):** • Introduction to International markets. • Types of jewellery used in International markets.
Design based on 2D & 3D effect: • Designs in 2D effect. • Designs in 3D effect.	**Famous brands**: • Awareness of the famous brands. • Helps in innovative ideas.
Ear-rings -> Traditional & International using different settings: • Tops. • Balis. • Short earrings. • Long earrings. • Jhumkas.	**Indian Market, Jadau**: • Basic introduction of Indian market. • Definition of jadau.
Pendants -> Contemporary & traditional: • Contemporary pendants. • Traditional pendants. • Solitaire Pendants.	**Jewellery & Design Terminology (Indian & International):** • Jewellery terminology Indian & International. • Design terminology Indian & International.
Rings -> Ladies, Rings (Solitaires & Cocktail): • Ladies fancy rings. • Ladies solitaire rings.	**Types of Ornaments /Jewellery**. • Types & techniques. • Names in Indian and International

• Ladies cocktails RINGS. • Gents fancy rings. • Gents contemporary rings.	markets.
Bangles & Bracelets (Gents + Ladies): • Ladies • Gents Bracelets.	**Textures:** • Types of textures. • Detailing of the textures.
Necklace -> • Traditional necklace. • Solitaire necklace. • Contemporary necklace. • Jadau necklace. • Gold necklace. • International markets.	**Craftsmanship**: • Introduction about craftsmanship. • Definition of minakari. • Definition of filigree. • Definition of cutwork.
Estimation of the Jewellery: • Estimation or budgeting of the designs.	**Introduction to Diamond & its market value, different shapes:** • Basic knowledge of diamonds & estimation of diamonds.

Note:- Expected Salary- Rs.5000/- Monthly

LIST OF TOOLS & EQUIPMENTS

A. TRAINEES TOOL KIT

SL.No.	NAME OF THE ARTICLE	QUANTITY
1.	FOLDER	AS REQUIRED
2.	ROTRING PEN 1.3 MM	AS REQUIRED
3.	ROTRING INK BLACK	AS REQUIRED
4.	STAEDLER PENCIL	AS REQUIRED
5.	STAEDLER LEADS 0.5 MM	AS REQUIRED
6.	STAEDLER OR FABER CASTLE COLOUR PENCILS	AS REQUIRED
7.	ERASER	AS REQUIRED
8.	PAPERS	AS REQUIRED
9.	ROUND TEMPLATE	AS REQUIRED
10.	OVAL TEMPLATE	AS REQUIRED

B. THEORY ROOM

SL.NO	NAME OF THE INSTRUMENTS	QUANTITY(NOS.)
1.	SINGLE DESKS FOR STUDENTS	20
2.	SPLIT AC	1
3.	FACULTY CHAIR AND DESK	1

4.	REVOLVING CHAIRS WITHOUT ARMS	20
5.	LOCKERS FOR INDIVIDUAL STUDENT TO KEEP THEIR BELONGINGS SAFELY	20
6.	WHITE BOARD WITH PROPER TEMPORARY MARKER AND DUSTER FOR THE FACULTY/INSTRUCTOR	1
7.	INDIVIDUAL LIGHTS FOR EACH TRAINEE	20

NOTE:

- 1 TO 10 ITEMS IN THE TRAINEES TOOL KIT CAN BE CONSIDERED AS CONSUMABLE ITEMS.
- THERE ARE NO HAZARDOUS ITEMS USED IN THIS COURSE MODULE.

GENERAL INFORMATION

1. Name of the Module : Computer Aided Designer (Jewellery)
2. Sector : Gems & Jewellery
3. Course Code : GEM 733
4. Duration : 320 hrs
5. Space Norms : 30 Sq Mtr.
6. Entry Qualification : Passed 8th class examination & After passing the initial course of Advance Jewellery Design.
7. Unit Size(No of Students) : 20 Trainees
8. Instructor's/Trainer's Qualification : - Diploma in Computer Aided Design with Minimum one year of experience.
9. Terminal Competency : After completion of course participants will be acquire the skill aided design the jewellary and would be able to set up their own computer software installation .

1. Understand market and design trends in Computer
2. Identify the various steps of maintaining quality control
3. Demonstrate the chain of costing, marketing and sales.

PRACTICAL COMPENTICES	UNDERPNING KNOWLEDGE (THEORY)
Applications: • Tools and its applications.	**Introduction to the world of Computers** • Definition of Computer Aided Design. • Tools & Techniques.
Free hand curves: • Practice of application of tools.	**Creating & Editing 2D objects** • Creating 2D objects. • Editing 2D objects.
Conversions: • Conversions of 2D curves in to 3D surfaces & poly surfaces.	**Introduction to menus & layers.** • Definition of menus • Definition of layers • Definition of dimensions.
Layer Menu: • Use of layer menu	**3d surface:** • Creating 3D solid & surface Tool bar
Creating designs: • Budgeting with design • Earrings (tops, fancy long) • Pendant • Rings (ladies, gents, cocktail)	**3D solid tools:** • Editing of 3D solid tools • modifying of 3D solid tools

• Bangles(diamond, gold, pacheli) • Chain bracelet • Necklace (fancy, bridal) • Accessories (any)	**Settings:** • Types of settings. • Application of the settings on the designs.

Note:- Expected Salary- Rs.7000/- Monthly

A. THEORY ROOM

SL.NO	NAME OF THE INSTRUMENTS	QUANTITY(NOS.)
1.	SINGLE DESKS FOR STUDENTS	20
2.	SPLIT AC	1
3.	FACULTY CHAIR AND DESK	1
4.	REVOLVING CHAIRS WITHOUT ARMS	20
5.	LOCKERS FOR INDIVIDUAL STUDENT TO KEEP THEIR BELONGINGS SAFELY	20
6.	WHITE BOARD WITH PROPER TEMPORARY MARKER AND DUSTER FOR THE FACULTY/INSTRUCTOR	1
7.	INDIVIDUAL COMPUTER & SOFTWARE FOR EACH TRAINEE	20

NOTE:

1. None of the items used in this course are hazardous. Hence, no safety measures are required to take.
2. None of the items from 1 to 7 are consumable items.

GENERAL INFORMATION

1. **Name of the Module:** **Costume Jewellery Maker**

2. **Sector:** **Gems & Jewellery**

3. **Course Code :** **GEM 634**

4. **Duration :** **320 hrs**

5. **Space Norms :** **30 Sq Mtr.**

6. **Entry Qualification :** **8th pass or 15 years of age.**

7. **Unit Size(No of Students) :** **20 Trainees**

8. **Instructor's/Trainer's Qualification : -** **Diploma in Costume Jewellery Making with Minimum one year of experience.**

9. **Terminal Competency :** **After completion of course participants will be acquire the skill to costume the jewellary and would be able to set up their own Costume facility. Such as basic shapes from wire ,tools, Different wires.**

- **Understanding various steps of costumedesigning**
- **Identify various designs appliqué technique that already being practiced locality**
- **Know & apply basic design skills costume that will help create news ideas.**

PRACTICAL	UNDERPINNING KNOWLEDGE (THEORY)
INTRODUCTION: • Basic shapes from wire.	**INTRODUCTION OF TOOLS:** • Types of Tools
WIRES & ITS APPLICATIONS: • Bracelets from wires	**TOOLS & TECHNIQUES:** • Application of tools
ITEMS FROM WIRES: • Rings from Wires • Beaded bracelet & ring • Wire net Bangle • Beaded necklace with pendant set • Chain necklace • Enameling / Minakari work • Western Designed Pendant • Metal Bangle • Ear-rings : Top, Bali, Short & Long ear rings. • Thread work ear-ring, bangle & necklace.	**INTRODUCTION OF WIRES:** • Types of wires. • Difference in types of wires.

• Finishing touch of all the items.	
	USAGE OF WIRES: • Measurement Techniques of Wires.
	INTRODUCTION OF SOLDERING: • Soldering • Techniques of soldering.

Note:- Expected Salary- Rs.6000/- Monthly

LIST OF TOOLS & EQUIPMENTS

SL.NO.	ITEMS	QUANTITY(NOS.)
1.	CUTTER	20
2.	ROUND PLAS	20
3.	SQUARE PLAS	20
4.	SACLE	20
5.	HAMMER	20
6.	TWEEZER	20
7.	DRILL MACHINE	5
8.	STICKS	10
9.	FLAT STEEL	5
10.	RING ROD	5
11.	RING SIZE	5
12.	BANGLE ROD	5
13.	SCISSORS	5
14.	DRAWING BLOCK	5
15.	SAW FRAME	15
16.	BLADES (PER PACKET)	5 PACKETS EACH
17.	GAS LIGHTER + GAS	5
18.	FILERS	20
19.	ASBESTOS	10
20.	COTTON	10
21.	BOROX	10
22.	MINAKARI COLOUR	AS PER REQUIREMENT
23.	POLISHING MACHINE	5
24.	EXHAUST FAN	1
25.	REVOLVING CHAIRS WITHOUT ARMS	21
26.	INDIVIDUAL DESKS	20
27.	DISPLAY BOARD	1
28.	COOLER	1
29.	TEMPORARY MARKER	2
30.	DUSTER	1
31.	WASTE CLOTH	AS PER REQUIREMENT

SAFETY HAZARDS:

- This course requires a lot of practical training. Hence, there are chances of hand being slightly cut due to the use of saw frame or a slight burn due to the use of soldering technique.

- Hence, we take the necessary precautions by having a First Aid Box which includes Band Aids, Burnol or Silverex Ointments, Cotton, Dettol Antiseptic Liquid.