

Syllabus for COMPUTER AIDED JEWELLERY DESIGNER

Course Name	COMPUTER AIDED JEWELLERY DESIGNER
Sector	GEMS & JEWELLERY
Course Code	GJR/2024/CAJD/351
Level	4
Occupation	COMPUTER AIDED JEWELLERY DESIGNER
Job Description	The individual at work uses CAD software and tools to produce a range of jewellery designs that are both aesthetically pleasing and practical for the manufacturing process. This CAD drawings provide all the essential information that forms the basis for every stage of jewellery manufacturing.
Course Duration	Total Duration 390 Hrs (T- 90 , P- 180 , OJT-60 and ES-60)
Trainees' Entry Qualification	<ul style="list-style-type: none"> • 12th grade pass • Completed 2nd year of 3-year diploma (after 10th) • Pursuing 2nd year of 3-year regular Diploma (after 10th) • 10th grade pass with two years of any combination of NTC/NAC/CITS or equivalent. <ul style="list-style-type: none"> • 8th pass plus 2-year NTC plus 1-Year NAC plus 1-Year CITS • 10th grade pass and pursuing continuous schooling (for 2-year program) • 11th Grade Pass and pursuing continuous schooling • Previous relevant Qualification of NSQF Level 3.0 with minimum education as 8th Grade pass with 3-year relevant experience • Previous relevant Qualification of NSQF Level 3.5 with 1.5-year relevant experience
Trainers Qualification	Graduate with CAD Software knowledge, working knowledge with softwares like Rhinoceros & Matrix essential

Structure of Course:

Module No.	Module name	Outcome	Compulsory/ Optional	Theor y (Hrs.)	Practic al (Hrs.)	Total (Hrs.)
1	Introduction of Software & Design Interface	Execute the fundamental operations within the software to apply them in various jewellery designs	Compulsory	20	40	60

Module No.	Module name	Outcome	Compulsory/ Optional	Theory (Hrs.)	Practical (Hrs.)	Total (Hrs.)
2	Earrings & Pendant designing	Create various Earring & Pendant designs	Compulsory	20	40	60
3	Designing Of Finger Ring & Bangle	Create different Finger Ring & Bangle designs	Compulsory	20	40	60
4	Designing Of Bracelet & Necklace	Create new designs of Bracelets & Necklace	Compulsory	20	40	60
5	3D model making of useful objects & utensils	Apply 3D Modelling techniques to replicate and create design of 3D objects.	Compulsory	10	20	30
6	OJT	Work in real job situation with special emphasis on basic safety and hazards in this domain (OJT).	Compulsory	--	60	60
7	Employability Skill	As per guided curriculum	Compulsory	60	--	60
TOTAL:				150	240	390

SYLLABUS:

Module 1: Introduction of Software & Design Interface

Outcome:

Execute the fundamental operations within the software to apply them in various jewellery designs

Theory Content:

- All important tools like curve, surface, poly-surface, trim, joint, group, background bitmap, and other available tools.
- Sketch 2d design following background bitmap.
- Variety style of stone setting
- Modify surfaces in different style.
- Make design, maintain viewports, follow parameters, metal weight, stone weight.
- Recheck final 3dm file & send to CAD operator for bulk production.

Practical Content:

- Operating 3d module Software.
- Understanding the four viewport.
- Use of Save, Restore, Backup files.
- Demonstration on Tools and parameters to make 3dm file.
- Import the blue print of 3dm file.
- 2d sketch of 3dm file.
- Convert 2d sketch in 3dm format.

- Maintain parameters (millimetre).
- Save final blue print of design maintain IPR.
- Completion & delivery of the projects on time & share feedback.

Tools & Equipment:

White Board/Black Board, LCD Projector, Scanner, Desktop Computer With Latest Configuration, Licensed Software Rhinoceros, Licensed Software Matrix, Job Card/Brief, Library Of Basic Designs Of Jewellery, Instructor's Table, Instructor's Chair, White Board 4'-00" X 8'-00", Table, Chair

Module 2: Earrings & Pendant designing

Outcome: Create various Earring & Pendant designs

Theory Content:

- Collect blueprint of Small Tops, Medium Earrings. Long Earrings. Traditional long Earrings, Party wear Earrings from internet, newspaper, magazine, & third party provider.
- Collect blueprint of Small pendent, Solitaire pendent, Double loop Pendent, Traditional pendent, Party wear Pendent from internet, newspaper, magazine, & third party provider.
- Understand the proper concept of the blueprint.
- Discuss & share feed back to the designer.

Practical Content:

- Import blueprint of design.
- Set blueprint in required parameters.
- Make 2d sketch on the basis of blueprint.
- Convert design in 3dm format.
- Modify surfaces following blueprint & make stone setting in Variety of ways.
- Check metal & stone weight.
- Modify design for bulk production

Tools & Equipment:

White Board/Black Board, LCD Projector, Scanner, Desktop Computer With Latest Configuration, Licensed Software Rhinoceros, Licensed Software Matrix, Job Card/Brief, Library Of Basic Designs Of Jewellery, Instructor's Table, Instructor's Chair, White Board 4'-00" X 8'-00", Table, Chair

Module 3: Designing Of Finger Ring & Bangle

Outcome:

Create different Finger Ring & Bangle designs

Theory Content:

- Collect blueprint of Ladies Solitaire, Ring, Fancy multi-layered Ring, Cocktail party wear Ring, Gents Ring from internet, newspaper, magazine, & third party provider.
- Collect blueprint of Solitaire Bangle, Traditional Bangle, Party wear Bangle from internet, newspaper, magazine, & third party provider.
- Understand the proper concept of the blueprint.
- Discuss & share feed back to the designer.

Practical Content:

- Import blueprint of design.
- Set blueprint in required parameters.
- Make 2d sketch on the basis of blueprint.
- Convert design in 3dm format.
- Modify surfaces following blueprint & make stone setting in Variety of ways.
- Check metal & stone weight.
- Modify design for bulk production

Tools & Equipment:

White Board/Black Board, LCD Projector, Scanner, Desktop Computer With Latest Configuration, Licensed Software Rhinoceros, Licensed Software Matrix, Job Card/Brief, Library Of Basic Designs Of Jewellery, Instructor's Table, Instructor's Chair, White Board 4'-00" X 8'-00", Table, Chair

Module 4: Designing Of Bracelet & Necklace

Outcome: Create new designs of Bracelets & Necklace

Theory Content:

- Collect blueprint of Ladies Solitaire Bracelet, Ladies Indo-western Bracelet, Gents Bracelet from internet, newspaper, magazine, & third party provider.
- Collect blueprint of Solitaire Necklace, Traditional Necklace, Party wear Necklace from internet, newspaper, magazine, & third party provider.
- Understand the proper concept of the blueprint.
- Discuss & share feed back to the designer.

Practical Content:

- Import blueprint of design.
- Set blueprint in required parameters.
- Make 2d sketch on the basis of blueprint.
- Convert design in 3dm format.
- Modify surfaces following blueprint & make stone setting in Variety of ways.
- Check metal & stone weight.
- Modify design for bulk production

Tools & Equipment :

White Board/Black Board, LCD Projector, Scanner, Desktop Computer With Latest Configuration, Licensed Software Rhinoceros, Licensed Software Matrix, Job Card/Brief, Library Of Basic Designs Of Jewellery, Instructor's Table, Instructor's Chair, White Board 4'-00" X 8'-00", Table, Chair

Module 5: 3D model making of useful objects & utensils**Outcome:**

Apply 3D Modelling techniques to replicate and create design of 3D objects.

Theory Content:

- Collect blueprint of Glass, Plate, and Bottle from internet, newspaper, magazine, & third party provider.
- Understand the proper concept of the blueprint.
- Discuss & share feed back to the designer.

Practical Content:

- Import blueprint of design.
- Set blueprint in required parameters.
- Make 3d sketch on the basis of blueprint.
- Convert design in 3dm format.
- Modify surfaces following blueprint & make stone setting in Variety of ways.
- Check metal & stone weight.
- Modify design for bulk production

Tools & Equipment:

White Board/Black Board, LCD Projector, Scanner, Desktop Computer With Latest Configuration, Licensed Software Rhinoceros, Licensed Software Matrix, Job Card/Brief, Library Of Basic Designs Of Jewellery, Instructor's Table, Instructor's Chair, White Board 4'-00" X 8'-00", Table, Chair

Module 6: OJT

Outcome:

Work in real job situation with special emphasis on basic safety and hazards in this domain

Practical Content:

Assessor will check report prepared for this component of Practical training of the course and assess whether competency has been developed to work in the real job situation with special emphasis on basic safety and hazards in this domain. (The trainee is expected to undertake work in actual workplace under any supervisor / contractor for **60 Hours**.)

Module 7: Employability Skills

Key Learning Outcomes

Introduction to Employability Skills

Duration: 1.5 Hours

After completing this programme, participants will be able to:

1. Discuss the Employability Skills required for jobs in various industries
2. List different learning and employability related GOI and private portals and their usage

Constitutional values - Citizenship

Duration: 1.5 Hours

3. Explain the constitutional values, including civic rights and duties, citizenship, responsibility towards society and personal values and ethics such as honesty, integrity, caring and respecting others that are required to become a responsible citizen
4. Show how to practice different environmentally sustainable practices.

Becoming a Professional in the 21st Century

Duration: 2.5 Hours

5. Discuss importance of relevant 21st century skills.
6. Exhibit 21st century skills like Self-Awareness, Behaviour Skills, time management, critical and adaptive thinking, problem-solving, creative thinking, social and cultural awareness, emotional awareness, learning to learn etc. in personal or professional life.
7. Describe the benefits of continuous learning.

Basic English Skills

Duration: 10 Hours

8. Show how to use basic English sentences for everyday conversation in different contexts, in person and over the telephone
9. Read and interpret text written in basic English
10. Write a short note/paragraph / letter/e -mail using basic English

Career Development & Goal Setting

Duration: 2 Hours

11. Create a career development plan with well-defined short- and long-term goals

Communication Skills

Duration: 5 Hours

12. Demonstrate how to communicate effectively using verbal and nonverbal communication etiquette.
13. Explain the importance of active listening for effective communication
14. Discuss the significance of working collaboratively with others in a team

Diversity & Inclusion

Duration: 2.5 Hours

15. Demonstrate how to behave, communicate, and conduct oneself appropriately with all genders and PwD
16. Discuss the significance of escalating sexual harassment issues as per POSH act.

Financial and Legal Literacy

Duration: 5 Hours

17. Outline the importance of selecting the right financial institution, product, and service
18. Demonstrate how to carry out offline and online financial transactions, safely and securely
19. List the common components of salary and compute income, expenditure, taxes, investments etc.
20. Discuss the legal rights, laws, and aids

Essential Digital Skills

Duration: 10 Hours

21. Describe the role of digital technology in today's life
22. Demonstrate how to operate digital devices and use the associated applications and features, safely and securely
23. Discuss the significance of displaying responsible online behaviour while browsing, using various social media platforms, e-mails, etc., safely and securely
24. Create sample word documents, excel sheets and presentations using basic features
25. utilize virtual collaboration tools to work effectively

Entrepreneurship

Duration: 7 Hours

26. Explain the types of entrepreneurship and enterprises
27. Discuss how to identify opportunities for potential business, sources of funding and associated financial and legal risks with its mitigation plan
28. Describe the 4Ps of Marketing-Product, Price, Place and Promotion and apply them as per requirement
29. Create a sample business plan, for the selected business opportunity

Customer Service

Duration: 5 Hours

30. Describe the significance of analysing different types and needs of customers
31. Explain the significance of identifying customer needs and responding to them in a professional

manner.

32. Discuss the significance of maintaining hygiene and dressing appropriately

Getting ready for apprenticeship & Jobs

Duration: 8 Hours

- 33. Create a professional Curriculum Vitae (CV)
- 34. Use various offline and online job search sources such as employment exchanges, recruitment agencies, and job portals respectively
- 35. Discuss the significance of maintaining hygiene and confidence during an interview
- 36. Perform a mock interview
- 37. List the steps for searching and registering for apprenticeship opportunities

Learning Outcome – Assessment Criteria

Module No.	Outcome	Assessment Criteria
1	Execute the fundamental operations within the software to apply them in various jewellery designs	<p>After completion of this module students will be able to:</p> <ul style="list-style-type: none"> 1.1 Operate Rhinoceros software, demonstrate a mastery of the tools and features essential for jewellery modelling. 1.2 Create accurate, precise design and models. 1.3 Explain their creative ideas to design jewellerys. 1.4 Prepare design files that are ready for the manufacturing process. 1.5 Effectively visualize and accomplish a task.
2	Create various Earring & Pendant designs	<p>After completion of this module students will be able to:</p> <ul style="list-style-type: none"> 2.1 Identify different designs of earrings & pendant. 2.2 Produce market-ready computerised design of earrings & pendant having good accuracy and precision. 2.3 Adapt to current design trends of earrings & pendant. 2.4 Visualise and design earrings & pendant efficiently in minimum time 2.5 Create pieces that meets market demand
3	Create different Finger Ring & Bangle designs	<p>After completion of this module students will be able to:</p> <ul style="list-style-type: none"> 3.1 Identify different designs of Finger Ring & Bangle. 3.2 Produce market-ready computerised design of Finger Ring & Bangle having good accuracy and precision. 3.3 Adapt to current design trends of Finger Ring & Bangle. 3.4 Visualise and design Finger Ring & Bangle efficiently in minimum time 3.5 Create pieces that meets market demand
4	Create new designs of Bracelets & Necklace	<p>After completion of this module students will be able to:</p> <ul style="list-style-type: none"> 4.1 Identify different designs of Bracelets & Necklace. 4.2 Produce market-ready computerised design of Bracelets & Necklace having good accuracy and

Module No.	Outcome	Assessment Criteria
		<p>precision.</p> <p>4.3 Adapt to current design trends of Bracelets & Necklace.</p> <p>4.4 Visualise and design Bracelets & Necklace efficiently in minimum time</p> <p>4.5 Create pieces that meets market demand</p>
5	Apply 3D Modelling techniques to replicate and create design of 3D objects.	<p>After completion of this module students will be able to:</p> <p>5.1 Visualise a 3D object and create its design.</p> <p>5.2 Produce computerised 3D design with good accuracy and precision.</p> <p>5.3 Complete the task efficiently.</p> <p>5.4 Implement new market trends.</p>
6	OJT	Assessor will check report prepared for this component of Practical training of the course and assess whether competency has been developed to work in the real job situation with special emphasis on basic safety and hazards in this domain. (The trainee is expected to undertake work in actual workplace under any supervisor / contractor for 60 Hours.)
7	Employability Skill	As per guided curriculum

List of Tools, Equipment & materials needed for 30 Trainees (Practical)

Sl. No.	Items Name	Specification	Qty.
1	White Board/Black Board		1
2	LCD Projector		1
3	Scanner		1
4	Desktop Computer With Latest Configuration		15
5	Licensed Software Rhinoceros		1
6	Licensed Software Matrix		1
7	Job Card/Brief		30
8	Library Of Basic Designs Of Jewellery		1
9	Instructor's Table		1 No.
10	Instructor's Chair		2 Nos.
11	White Board 4'-00" X 8'-00"		1 No.
12	Table		30 Nos.
13	Chair		30 Nos.

Marks Distribution

outcome	Outcome Code	Total Th marks	Total Pr marks	Total OJT marks
Execute the fundamental operations within the software to apply them in various jewellery designs	GJR/1305/OC1	30	140	0
Create various Earring & Pendant designs	GJR/1305/OC2	30	130	0
Create different Finger Ring & Bangle designs	GJR/1305/OC3	30	130	0
Create new designs of Bracelets & Necklace	GJR/1305/OC4	30	130	0
Apply 3D Modelling techniques to replicate and create design of 3D objects.	GJR/1305/OC5	30	120	0
Work in real job situation with special emphasis on basic safety and hazards in this domain (OJT).	GJR/1305/OC6	0	0	150
Employability Skills – 60 Hrs	DGT/VSQ/N0102	50	0	0