



**JSS MAHAVIDYAPEETHA**  
**JSS POLYTECHNIC FOR THE DIFFERENTLY ABLED, MYSURU-06**  
**CURRICULUM STRUCTURE**

**III Semester Scheme of Studies-Diploma in Jewellery Design and Technology (C-21)**

Sl. No	Course Category / Teaching Department	Course Code	Course Title	Hours per Week			Total contact hours per week	Credits	CIE Marks		SEE Marks		Total Marks	Min Marks for Passing (including CIE)	Assigned Grade	Grade	SGPA
				L	T	P			Max	Min	Max	Min					
THEORY COURSES																	
1	SC/JD	4431	Metal Finishing and Refining Techniques (T)	4	0	0	4	4	50	20	50	20	100	40			
PRACTICAL COURSES																	
2	JD	4432	Jewellery Designing-I (P)	0	2	4	6	4	60	24	40	16	100	40			
3	JD	4433	Jewellery Making - I (P)	0	3	6	9	6	60	24	40	16	100	40			
4	JD	4434	Stone Setting - I (P)	0	3	6	9	6	60	24	40	16	100	40			
5	JD	4435	CAD (Basic) (P)	0	2	4	6	4	60	24	40	16	100	40			
AUDIT COURSES																	
6	AU/KA		Kannada I	2	0	0	2	2	50	20	--	--	50	20			
Total				06	10	20	36	26	340	136	210	84	550	220			

T-Theory P-Practical D-Drawing E-Elective BS—Basic Science ES-Engineering Science HS-Humanities & Social Science AU-Audit Course EG-English SC-Science

**Note: 1.** Assigned Grade, Grade Point, SGPA and CGPA to be recorded in the Grade / Marks Card.

2. AU-Physical Activity-Students participation in the selected physical activity shall be monitored and the participation record shall be maintained by the respective Programme Coordinator (Head of Section)
3. Theory Course Semester End Examination(SEE) is conducted for 100 marks(3Hours Duration)
4. Practical course CIE is conducted for the 20 marks(3 Hours Duration) and SEE is conducted for the 100 marks (6 Hours Duration)

**Programme Coordinator**

**Principal**

**GOVERNMENT OF KARNATAKA  
DEPARTMENT OF COLLEGIATE AND TECHNICAL EDUCATION  
JSS POLYTECHNIC FOR THE DIFFERENTLY ABLED MYSURU**

**Programme: Jewellery Design and Technology**

Course Code	4431	Semester	III
Course Title	<b>Metal Finishing and Refining Techniques (T)</b>	Course Group	Core
No. of Credits	4	Type of Course	Lecture
Course Category	PC	Total Contact Hours	4 Hrs. / Week
			60 Hrs. / Semester
Prerequisites	SSLC	Teaching Scheme	[ L : T : P ] = 4 : 0 : 0
CIE Marks	50	SEE Marks	50

**RATIONALE:**

Metal Finishing and Refining Techniques (T) provides students to build the basic knowledge about the metals, different methods of cleaning and polishing methods, tools and equipments used for metal finishing techniques, detailed information about recovery techniques and refining and assay process of metals.

**1. COURSE SKILL SET:**

1. To understand different types of metal cleaning methods
2. To study different type of polishing
3. To learn the maintain of tools and equipment's
4. To study gold loss and its control, recovery techniques
5. Safety, health and personal Protective equipment's.

**2. COURSE OUTCOMES**

At the end of the course, students will be able to

	<b>Course Outcome</b>
<b>CO1</b>	Acquire the knowledge of different types of metal cleaning methods
<b>CO2</b>	Acquire the knowledge of different types polishing
<b>CO3</b>	Understand refining process and know about types of refining
<b>CO4</b>	Acquire the knowledge of assaying and types of assaying
<b>CO5</b>	Understand the parting process & able to Identify the evidence of PGM and Impurities

### 3.COURSE CONTENT OUTLINE WITH TEACHING HOURS AND MARK

UNIT NO.	UNIT NAME	TEACHING HOURS	DISTRIBUTION OF THEORY MARKS			
			R	U	A	TOTAL
1	INTRODUCTION AND CLEANING METHODS	10	8	20	12	40
2	POLISHING METHODS	15	8	20	12	40
3	REFINING	13	8	20	12	40
4	ASSAYING	14	8	20	12	40
5	PARTING AND RECOVERY TECHNIQUES	12	8	20	12	40
		64	40	100	60	200

*R = Remember, U = Understand, A = Apply and above levels (Bloom's Revised Taxonomy)*

### 4. DETAILS OF COURSE CONTENTS

The following topics / subtopics is to be taught and accessed in order to develop Unit Skill sets for achieving CO to attain identified skill sets:

UNIT NO. AND NAME	SKILL SET	TOPICS / SUBTOPICS	HOURS L-T-P
UNIT 1: INTRODUCTION AND CLEANING METHODS	Understand different types of metal cleaning methods. Recall the knowledge of metals	1. Use of metal finishing technique 2. Types of jewellery finishes 3. Pickling 4. Ultra sonic cleaning 5. Steam cleaning 6. Washing 1. Lacquering	10-0-0
2.unit POLISHING METHODS	Recall the concept of cleaning methods in jewellery making  Learn different type of polishing	1. Magnetic Polisher 2. Electro plating 3. Pen plating 4. Non polished techniques <ul style="list-style-type: none"> <li>➤ Oxidation</li> <li>➤ Enameling</li> <li>➤ Plating</li> </ul> 5. Coloring process 6. Buff Polishing 7. Drum Polishing 8. Rotatory Tumbler 9. Flexible shaft Grinder 10. Micro motor 11. Emery sheets/sticks/discs 12. Carbide stone 13. Usage of chamois leather	15-0-0

<b>3.Units</b> REFINING	<b>Recall the knowledge cleaning and polishing methods.</b>	<ol style="list-style-type: none"> <li>Principles of various techniques               <ol style="list-style-type: none"> <li>Cupellation process</li> <li>Inquartation and parting</li> <li>Miller's process</li> <li>Wholwill electrolytic refining</li> <li>Fizzer cell process</li> </ol> </li> <li>Advantages and comparative study of various methods</li> <li>Refining of gold by Aqua-regia method.</li> <li>Accessing the content of precious metals from scraps Neutralization of chemical waste and fumes before discharge</li> </ol>	13-0-0
<b>4. Units</b> ASSAYING	<b>Acquire the knowledge of assaying process Learn different types of assaying techniques</b>	<ol style="list-style-type: none"> <li>Principles of various methods of Assaying               <ol style="list-style-type: none"> <li>ICP spectrometry</li> <li>X-Ray Fluorescence (XRF spectroscopy)</li> <li>Touch stone method</li> <li>Density measurement</li> </ol> </li> <li>Fire Assaying (Cupellation method)               <ol style="list-style-type: none"> <li>Introduction</li> <li>Equipments</li> <li>Sampling</li> <li>Weighing</li> <li>Cupellation</li> <li>Introduction</li> <li>Types of cupels</li> </ol> </li> <li>Furnace operations               <ol style="list-style-type: none"> <li>Preheating of cupels</li> <li>Charging of buttons</li> <li>Opening of buttons</li> <li>Driving of lead</li> <li>Finishing of cupellation</li> <li>Removal of muffle</li> </ol> </li> </ol>	14-0-0
<b>5. Units</b> PARTING AND RECOVERY TECHNIQUES	<b>Understand the recovery techniques</b>	<ol style="list-style-type: none"> <li>Gold loss and its control</li> <li>Evidence of impurities in fire assaying</li> <li>Evidence of Platinum group metals in fire assaying</li> <li>Limitations of fire assaying</li> <li>Preparation of bead for parting               <ul style="list-style-type: none"> <li>➤ Ratio of silver to gold</li> <li>➤ Flattening of the bead to require thickness</li> </ul> </li> <li>Choice of glassware for parting               <ul style="list-style-type: none"> <li>➤ Parting cups or glasses and other glasswares</li> </ul> </li> </ol>	12-0-0

## 5. MAPPING OF CO WITH PO

CO	Course Outcome	PO Mapped	Unit Linke	CL R/U/A	Theory in Hrs.	Total Mark
1	Acquire the knowledge of different types of metal cleaning methods	1,2,4,7	1	R/U/A	10	40
2	Acquire the knowledge of different types polishing	1,2,4,7	2	R/U/A	15	40
3	Understand refining process and know about types of refining	1,2,3,4,7	3	R/U/A	13	40
4	Acquire the knowledge of assaying and types of assaying	1,2,3,4,7	4	R/U/A	14	40
5	Understand the parting process & able to Identify the evidence of PGM and Impurities	1,2,3,4,5,7	5	R/U/A	12	40
<b>Total</b>					<b>64</b>	<b>200</b>
<i>R = Remember, U = Understand, A = Apply and above levels (Bloom's Revised Taxonomy)</i>						

## 6. LEVELS OF CO, AND PO MAPPING

Course	CO's	Programme Outcomes (POs)						
		1	2	3	4	5	6	7
<b>Metal Finishing and Refining Techniques</b>	<b>CO-1</b>	3	2	0	1	0	0	3
	<b>CO-2</b>	3	2	0	1	0	0	3
	<b>CO-3</b>	3	2	3	3	0	0	3
	<b>CO-4</b>	3	2	3	3	0	0	3
	<b>CO-5</b>	3	3	2	2	3	0	3
<i>Levels: 3 – Highly Mapped, 2 – Moderately Mapped, 1- Low Mapped and 0 – Not Mapped</i>								

## 7. INSTRUCTIONAL STRATEGY

These are sample Strategies, which teacher can use to accelerate the attainment of the various course outcomes

1. Use of sign language for communication in classroom since most of students are hearing impaired.
2. Use of Audio-Visual aids like ppt, videos, Animation, E-books etc..
3. Hands on training providing for the students in practical and tutorial classes through demonstration.

- 4.To attend interactive sessions, Group discussion, guest lectures, workshops, industrial visit, MCQ/Quiz, Assignment, open book test to facilitate students for learning.
- 5.Providing the course material in soft/hard copy in advance to the students, to come prepared to the class.

### 8. SUGGESTED LEARNING RESOURCES:

Sl. No	Author	Title of Books	Publication / Year
1	Robert Hole	Jewellery concepts & technology- Oppi Untracht	1962
2	P.L.Soni	Text book of inorganic chemistry	16 <sup>th</sup> Edition
3	G.B.S Narang	Material Science	1952
4	World Gold Council's Technological Magazines		

### 9.COURSE ASSESSMENT AND EVALUATION CHART

Assessment Methods	Types of Assessment		Target	Assessment Methods	Max Marks	Types of Record	Course Outcomes for Assessment
DIRECT ASSESSMENT	CIE  CONTINUOUS INTERNAL EVALUA-TION	IA  Test	STUDENTS	Three tests  (Average of Three tests will be Computed)	30	Blue Books	All Co's
		Assignment &  Student activity		Average of MCQ/Quiz +Open book +Assignment	20	Activity Book	Specified CO by the Course Coordinator
				Total CIE Marks	50		
	SEE  SEMESTER END EXAMINA-TION	Semester  End Exam		End of the Course	50	Answer Scripts	All Co's
				Total	100		
	INDIRECT ASSESSMENT	Student Feedback		STUDENTS	Middle of the Course	Feed Back Forms	
	End of Course Survey			End of the Course			

## 10. COURSE ASSESSMENT SUMMARY

Sl.No	Assessment	Duration	Max Marks	Conversion
1	CIE Assessment – 1 (Written Test – 1) At the end of 6 <sup>TH</sup> Week	80 Minutes	30	Average of three written tests 30 Marks
2	CIE Assessment – 2 (Written Test – 2) At the end of 10th Week	80 Minutes	30	
3	CIE Assessment – 3 (Written Test – 3) At the end of 15th Week	80 Minutes	30	
4	CIE Assessment 4 (MCQ / Quiz) At the end of 8th Week	60 Minutes	20	Average of three 20 Marks
5	CIE Assessment 5 (Open book Test) At the end of 13th Week	60 Minutes	20	
6	CIE Assessment 6 (Student Activity / Assignment) At the beginning of 16th Week		20	
Total Continuous Internal Evaluation (CIE) Assessment				50
7	Semester End Examination (SEE) Assessment (Written Test)	3 Hours	100	50
Total Marks				100

### Note:

1. SEE (Semester End Examination) is conducted for 100 Marks theory courses for a time duration of 3 Hours.
2. Three CIE (written test), each of 30 marks for a time duration of 80 minutes shall be conducted. Also, three CIE (MCQ or Quiz/Open book test/student activity or assignment) each of 20 marks for the time duration of 60 minutes shall be conducted.
3. Assessment of assignment and student activity is evaluated through appropriate rubrics by the respective course coordinator.

## 11. DETAILED COURSE CONTENTS

UNIT NO. AND NAME	DETAILED COURSE CONTENT	C O	PO	CONT ACT HRS.	TOT AL
<b>UNIT 1: INTRODUCTION AND CLEANING METHODS</b>	Use of metal finishes	1	1,2,4,7	2	10
	Types of jewellery finishes	1	1,2,4,7	2	
	Pickling	1	1,2,4,7	2	
	Ultra sonic cleaning	1	1,2,4,7	2	
	Steam cleaning	1	1,2,4,7	1	
	Washing	1	1,2,4,7	1	
<b>UNIT 2: POLISHING METHODS</b>	Electro plating	2	1,2,4,7	1	15
	Magnetic Polisher	2	1,2,4,7	1	
	Pen plating	2	1,2,4,7	2	
	Non polished techniques <ul style="list-style-type: none"> <li>➤ Oxidation</li> <li>➤ Enameling</li> <li>➤ Plating</li> </ul>	2	1,2,4,7	2	
	Coloring process	2	1,2,4,7	2	
	Buff Polishing	2	1,2,4,7	2	
	Drum Polishing	2	1,2,4,7	1	
	Rotatory Trembler	2	1,2,4,7	1	
	Flexible shaft Grinder	2	1,2,4,7	1	
	Micro motor	2	1,2,4,7	1	
	Emery sheets/sticks/discs	2	1,2,4,7	1	
<b>UNIT 3: REFINING</b>	Principles of various techniques	3	1,2,3,4,7	1	13
	Cupellation process	3	1,2,3,4,7	1	
	Inquartation and parting	3	1,2,3,4,7	1	
	Miller's process	3	1,2,3,4,7	1	
	Wholwill electrolytic refining	3	1,2,3,4,7	1	
	Fizzer cell process	3	1,2,3,4,7	2	
	Advantages and comparative study of various methods	3	1,2,3,4,7	2	
	Refining of gold by Aqua-regia method.	3	1,2,3,4,7	2	
	Accessing the content of precious metals from scraps	3	1,2,3,4,7	1	
	Neutralization of chemical waste and fumes before discharge				
<b>ASSAYING</b>	ICP spectrometry	4	1,2,3,4,7	1	14
	X-Ray Fluorescence (XRF spectroscopy)	4	1,2,3,4,7	1	
	Touch stone method	4	1,2,3,4,7	1	
	Density measurement	4	1,2,3,4,7	1	



PARTING AND RECOVERY TECHNIQUES	Fire Assaying (Cupellation method) Introduction Equipments	4	1,2,3,4,7	2	
	Sampling Weighing	4	1,2,3,4,7	2	
	Cupellation Introduction Types of cupels	4	1,2,3,4,7	2	
	Furnace operations Preheating of cupels Charging of buttons	4	1,2,3,4,7	2	
	Opening of buttons Driving of lead	4	1,2,3,4,7	1	
	Finishing of cupellation Removal of muffle	4	1,2,3,4,7	1	
	Gold loss and its control	5	1,2,3,4,5,7	2	15
	Evidence of impurities in fire assaying	5	1,2,3,4,5,7	2	
	Evidence of Platinum group metals in fire assaying	5	1,2,3,4,5,7	2	
	Limitations of fire assaying	5	1,2,3,4,5,7	2	
	Preparation of bead for parting Ratio of silver to gold	5	1,2,3,4,5,7	2	
	Flattening of the bead to require thickness	5	1,2,3,4,5,7	1	
	Choice of glassware for parting	5	1,2,3,4,5,7	2	
	Parting cups or glasses and other glasswares	5	1,2,3,4,5,7	2	
				Total	<b>64</b>

**12. SUGGESTED LIST OF STUDENTS ACTIVITIES FOR CIE**

Sl. NO	Suggested Activities
1	Guidelines in gold assaying and Hall marking process.
2	Assaying of gold jewellery- choice of technique
3	Make a chart on karatage control
4	Collect the information on new technology used in the jewellery polishing process.

**13. RUBRICS FOR ACTIVITY**

Dimension	Scale					Student Score For 20 marks
	Unsatisfactory	Developing	Satisfactory	Good	Exemplary	
	4	8	12	16	20	
1. Organization	Has not included relevant info	Has included few relevant info	Has included some relevant info	Has included many relevant info	Has include all relevant info needed	20
2. Fulfill Team's Roles & Duties	Does not perform any duties assigned	Performs very little duties	Performs partial duties	Performs nearly all duties	Performs all duties of assigned team roles	12
3. Conclusion	Poor	Less Effective	Partially Effective	Summarizes but not exact	Most effective	16
4. Conventions	Frequent Error	More Error	Some Error	Occasional Error	No Error	12
Total Score						60
60/4= 15						Total Marks 15

## **First Semester Examination, Model Question Paper**

### **Metal Finishing and Refining Techniques (T)**

**Duration: 3 Hours]**

**Subject Code: 4431**

**[Max. Marks: 100**

***Instruction:** Answer all the questions considering the internal choice in each section.  
Each section carries 20 marks.*

#### **SECTION – 1**

**[20 Marks]**

1. Multiple choice Four questions 4 Marks

2. a) 8 marks

**OR**

b)

3. a) 8marks

**OR**

b)

#### **SECTION – 2**

**[20 Marks]**

4. Multiple choice Four questions 4 Marks

5. a) 8 marks

**OR**

b)

6. a) 8marks

**OR**

b)

**SECTION – 3**

**[20 Marks]**

7. Multiple choice Four questions 4 Marks

8. a) 8 marks

**OR**

b)

9. a) 8marks

**OR**

b)

**SECTION – 4**

**[20 Marks ]**

10. Multiple choice Four questions 4 Marks

11. a) 8 marks

**OR**

b)

12. a) 8marks

**OR**

b)

**SECTION – 5**

**[20 Marks]**

13. Multiple choice Four questions 4 Marks

14. a) 8 marks

**OR**

b)

15. a) 8marks

**OR**

b)

**---000---**

**GOVERNMENT OF KARNATAKA**  
**DEPARTMENT OF COLLEGIATE AND TECHNICAL EDUCATION**  
**JSS POLYTECHNIC FOR THE DIFFERENTLY ABLED, MYSURU**  
**Programme: Jewellery Design and Technology**

Course Code	4432	Semester	III
Course Title	<b>Jewellery Designing – I</b>	Course Group	Core
No. of Credits	4	Type of Course	Tutorial and Practice
Course Category	PC	Total Contact Hours	6 Hrs. / Week 96 Hrs. / Semester
Prerequisites	SSLC	Teaching Scheme	[ L : T : P ] = 0 : 2 : 4
CIE Marks	60	SEE Marks	40

**RATIONALE:**

Jewellery design help the learners to understand different type's designs based on rings, pendants, bangles and bracelet according to the present industrial meets. \

**1. COURSE SKILL SET:**

1. To study the Theme and Concepts of jewellery design.
2. To understand rings design and themes
3. To learn visualizing different types of Ladies and Gents rings.
4. To understand various Pendent design.
5. To learn visualizing different types of bracelets and Bangles.

**2. JOB ROLE**

SL.NO	LEVEL	JOB ROLES
1	3	Junior Assistant Designer

**3. PREREQUISITES**

STUDENT	Nil.
TEACHER	Five year experience in Jewellery designing

**4. COURSE OUTCOMES**

At the end of the course, students will be able to

	Course Outcome
<b>CO1</b>	Apply the knowledge of theme and concept to create the rings designs.
<b>CO2</b>	Develop different types of pendants designs.
<b>CO3</b>	Acquire the knowledge of theme and concept in designing bangles.
<b>CO4</b>	Acquire the knowledge of designing bracelet based on theme and concept.

## 5.COURSE CONTENT OUTLINE WITH TEACHING HOURS AND MARK

UNIT NO	UNIT TITLE	TEACHING HOURS	DISTRIBUTION LEVELS (Marks)			TOTAL
			R	U	A	
01	DESIGNING OF DIFFERENT TYPES OF LADIES RINGS & GENTS RING.	27	10	20	20	50
02	DESIGNING OF DIFFERENT TYPES OF GENTS PENDENTS & LADIES PENDENTS.	21	10	20	20	50
03	DESIGNING OF DIFFERENT TYPES OF BANGLES.	24	10	20	20	50
04	DESIGNING OF DIFFERENT TYPES OF BRACELET.	24	10	20	20	50
<b>Total</b>		<b>96</b>	<b>40</b>	<b>80</b>	<b>80</b>	<b>200</b>

## 6.INSTRUCTIONAL STRATEGY

**These are sample strategies, which teacher can use to accelerate the attainment of the various course outcomes**

1. Use of sign language for communication in classroom since most of students are hearing impaired.
2. Use of Audio-Visual aids like ppt, videos, Animation, E-books etc..
3. Hands on training providing for the students in practical and tutorial classes through demonstration.
4. To attend interactive sessions, Group discussion, guest lectures, workshops, industrial visit, MCQ/Quiz, Assignment, open book test to facilitate students for learning.
5. Providing the course material in soft/hard copy in advance to the students, to come prepared to the class.
6. Instructors should expose students to explore User Interface thoroughly.
7. Emphasis should be given on designing skills.

## 7. DETAILS OF COURSE CONTENTS

The following topics / subtopics is to be taught and accessed in order to develop Unit Skill sets for achieving CO to attain identified skill sets:

UNIT NO.	TOPICS/SUBTOPICS	LEARNING OUTCOME (IN COGNITIVE DOMAIN)	HOURS T : P
1	<b>DESIGNING OF DIFFERENT TYPES OF LADIES RINGS &amp; GENTS RING</b>		<b>27</b>
	1. Rings, leaf, butterfly, geometrical, flower. 2. Contemporary Rings. 3. Temple Rings 4. Traditional Rings.	1. Understand the concept based designing the rings. 2. Learn different types of ring designs based on theme.	
2	<b>DESIGNING OF DIFFERENT TYPES OF GENTS PENDENTS &amp; LADIES PENDENTS.</b>		<b>21</b>
	1. Ribbon based pendent. 2. Contemporary Pendants. 3. Traditional Pendants.	1. Understand the ribbon based pendants design. 2. Learn different types of pendants designs based on theme.	
3	<b>DESIGNING OF DIFFERENT TYPES OF BANGLES</b>		<b>24</b>
	1. Modern Bangles 2. Traditional Bangles.	1. Learn different types of bangles designs based on theme.	
4	<b>DESIGNING OF DIFFERENT TYPES OF BRACELET</b>		<b>24</b>
	1. Bracelet, flexible bracelet, unit bracelet, fixed bracelet. 2. Contemporary bracelet. 3. Traditional bracelet	1. Understand the concept based on designing bracelet. 2. Learn different types of bracelet designs based on theme.	

## 8. SUGGESTED PRACTICAL EXERCISES

Sl No	Suggested Practical Exercises (should be similar in skills to the ones enlisted)	Unit No	PO	CO	L:P Hrs
1	Rings design based on leaf,	1	1,3,4,7	1	1:2
2	Rings design based on butterfly,	1	1,3,4,7	1	1:2
3	Rings design based on geometrical shapes	1	1,3,4,7	1	1:2
4	Rings design based on flower	1	1,3,4,7	1	1:2
5	Contemporary Rings.	1	1,3,4,7	1	2:4
6	Temple Rings	1	1,3,4,7	1	1:2
7	Traditional Rings	1	1,3,4,7	1	2:4
8	Ribbon based pendent.	2	1,3,4,7	2	2:4

9	Contemporary Pendants.	2	1,3,4,7	2	2:4
10	Traditional Pendants	2	1,3,4,7	2	3:6
11	Modern Bangles	3	1,3,4,7	3	4:8
12	Traditional Bangles.	3	1,3,4,7	3	4:8
13	Bracelet, flexible bracelet, unit bracelet, fixed bracelet.	4	1,3,4,7	4	4:8
14	Contemporary bracelet.	4	1,3,4,7	4	2:4
15	Traditional bracelet	4	1,3,4,7	4	2:4

The suggested practical exercises specified above are demonstrated for the attainment of the competency. These practical activities can also be used for the student assessment in portfolio mode for awarding CIE marks. The lecturer can enhance the competency level of the students by sketching more practical exercises.

#### NOTES:

1. It is compulsory to prepare log book/record of exercises. It is also required to get each exercise recorded in logbook, checked and duly dated signed by the teacher
2. Student activities are compulsory and are also required to be performed and noted in logbook.
3. Student activity is compulsory and part of skill assessment. The activity enables student to explore the course, help student to demonstrate creativity & critical thinking.
4. Student activity report is compulsory part to be submitted at the time of practical ESE
5. Student activity and student activity reports must be uploaded to learning management system.
6. For CIE, students are to be assessed for Skills/competencies achieved.



**9. MAPPING OF CO WITH PO**

CO	COURSE OUTCOME	PO MAPPED	EXPERIMENT LINKED	COGNITIVE LEVEL (R/	TUTORIAL & PRACTICAL SESSIONS IN
CO-1	Apply the knowledge of theme and concept to create the rings designs.	1,3,4,7	1-7	A	27
CO-2	Develop different types of pendants designs.	1,3,4,7	8-10	A	21
CO-3	Acquire the knowledge of theme and concept in designing bangles.	1,3,4,7	11-12	A	24
CO-4	Acquire the knowledge of designing bracelet based on theme and concept.	1,3,4,7	13-15	A	24
<b>Total</b>					<b>96</b>

**10. LEVELS OF CO, AND PO MAPPING**

Course	CO's	Programme Outcomes (POs)						
		1	2	3	4	5	6	7
<b>Jewellery Designing – I</b>	<b>CO-1</b>	3	0	3	2	0	0	3
	<b>CO-2</b>	3	0	3	2	0	0	3
	<b>CO-3</b>	3	0	3	2	0	0	3
	<b>CO-4</b>	3	0	3	2	0	0	3
<i>Levels: 3 – Highly Mapped, 2 – Moderately Mapped, 1- Low Mapped and 0 – Not Mapped</i>								

**11. SUGGESTED LEARNING RESOURCES:**

Sl. No	Author	Title of Books	Publication / Year
1	Robert Hale	Jewellery concepts and Technology (OPPI UNTRACHT)	1982

**SUGGESTED LINKS**

- <https://www.youtube.com/watch?v=wuTwUGYIZOM>
- <https://www.youtube.com/watch?v=6ZjOaJIueb4>
- <https://www.youtube.com/watch?v=67A8uRFU920>
- <https://www.youtube.com/watch?v=aldrGTVm5ws>

## 12. SUGGESTED LIST OF PROPOSED STUDENT ACTIVITIES

**Note: the following activities or similar activities for assessing CIE (IA)**

SL. NO	ACTIVITY
1	Any five ring designs based on butterfly, flower. Geometrical.
2	Any five pendant designs based on contemporary and traditional theme.
3	Any five bangle designs based on contemporary and traditional theme.
4	Any five bracelet designs based on contemporary and traditional theme.

## 13. COURSE ASSESSMENT AND EVALUATION CHART

Assessment Methods	Types of Assessment		Target	Assessment Methods	Max Marks	Types of Record	Course Outcomes for Assessment
DIRECT ASSESSMENT	CIE CONTINUOUS INTERNAL EVALUATION	IA Test	STUDENTS	Two skill tests (Average of Two skill tests will be Computed)	20	Blue Books	All Co's
		Assignment & Student activity		Portfolio	30	Portfolio and Activity Book	Specified CO by the Course Coordinator
				Activity	10		
				Total CIE Marks	60		
	SEE SEMESTER END EXAMINATION	Semester End Exam		End of the Course	40	Answer Scripts	All Co's
				Total	100		
	INDIRECT ASSESSMENT	Student Feedback		STUDENTS	Middle of the Course	Feed Back Forms	
End of Course Survey		End of the Course					

**14. COURSE ASSESSMENT SUMMARY**

Sl. No	Assessment	Time frame in Semester	Duration	Max marks	Conversion
1.	Portfolio	Entire Duration		30	30
2	Skill Test-1 (Skill test 1-Unit 1&2)	At the end of 8 <sup>th</sup> week	3 Hrs	20	Average of two skill tests 20
3	Skill Test-2 (Skill test 2 -Unit,3,4)	At the end of 15 <sup>th</sup> week	3 Hrs	20	
4	Student Activity	At the beginning of 16 week		10	10
5	Total Continuous Internal Evaluation(CIE)Assessment				60
6	Semester End Examination (SEE) Assessment  conducted for 100 marks, finally reduced to 40 marks weight age		4 Hrs	100	40
	TOTAL				100

**Note:**

CIE Skill test is conducted for 100 marks (3 Hours duration) as per scheme of evaluation and the obtained marks are scaled down to 20 marks.

SEE is conducted for 100 Marks (3 Hours duration) as per scheme of evaluation. 30 marks awarded for portfolio.

1. Assessment of assignment and student activity is evaluated through appropriate rubrics by the respective course coordinator.

**15. RUBRICS FOR ACTIVITY**

Dimension	Scale					Student Score For 10 marks
	Unsatisfactory	Developing	Satisfactory	Good	Exemplary	
	2	4	6	8	10	
1. Organization	Has not included relevant info	Has included few relevant info	Has included some relevant info	Has included many relevant info	Has include all relevant info needed	10
2. Fulfil Team's Roles & Duties	Does not perform any duties assigned	Performs very little duties	Performs partial duties	Performs nearly all duties	Performs all duties of assigned team roles	6
3. Conclusion	Poor	Less Effective	Partially Effective	Summarizes but not exact	Most effective	8
4. Conventions	Frequent Error	More Error	Some Error	Occasional Error	No Error	4
Total Score						28
Total Marks						7

**16. REQUIREMENTS:**

Sl. No.	Specification
1.	Drawing Table
2.	Jewellery Designing Materials

## Third Semester Examination, Model Question Paper – 2022

### Jewellery Designing – I

Duration: 4 Hours]

Subject Code: 4432

[Max. Marks: 100

**Instruction:** Answer all the questions considering the internal choice in each question.

Qn. No.	Question	CL	COs	POs	Marks
1	Design any two traditional based ring with specification and render it. a. Gents ring b. Ladies ring	R / U/A	1	1,3,4,7	15
2	Design any two contemporary based gents's pendent with specification and render it.  OR Design any two Traditional based ladies pendent with specification and render it.	R / U/A	2	1,3,4,7	20
3	Design a modern type bangle as per the given specification and render it. ( Top View, Side View and 3D View)	R / U/A	3	1,3,4,7	40
4	Design any one traditional unit based bracelet with specification and render it.	R / U/A	4	1,3,4,7	25
<b>Total Marks</b>					<b>100</b>

Questions are not framed from Unit 1 in the final SEE. Short questions can only be asked from that unit.

### RUBRICS FOR SKILL TEST EVALUATION (CIE & SEE)

Sl. No.	Parameter to be observed
1	Concepts/Theme
2	Designing
3	Specification
4	Rendering
<b>Note: Above parameters observed for all the questions</b>	

**GOVERNMENT OF KARNATAKA  
DEPARTMENT OF COLLEGIATE AND TECHNICAL EDUCATION  
JSS POLYTECHNIC FOR THE DIFFERENTLY ABLED MYSURU**

**Programme: Jewellery Design and Technology**

Course Code	4433	Semester	III
Course Title	Jewellery Making - I	Course Group	Core
No. of Credits	6	Type of Course	Tutorial and Practice
Course Category	PC	Total Contact Hours	9 Hrs. / Week 144 Hrs. / Semester
Prerequisites	SSLC	Teaching Scheme	[ L : T : P ] = 0 : 3 : 6
CIE Marks	60	SEE Marks	40

**RATIONALE:**

Jewellery making helps the learner to operate jewellery machineries, soldering techniques and able to create simple earrings.

**1. COURSE SKILL SET:**

After the completion of the study of this subject students should be able to

1. Learn soldering technique.
2. Acquire skills for filigree making techniques.
3. Acquire skills for fabrication techniques.
4. Learn steps involved in simple jewellery construction-studs & drops.

**2. JOB ROLE**

SL.NO	LEVEL	JOB ROLES
1	2	Assistant bench worker in jewellery making

**3. PREREQUISITES**

STUDENT	SSLC
TEACHER	Goldsmith and experience in Jewellery Manufacturing Process

**4. COURSE OUTCOMES**

At the end of the course, students will be able to

	Course Outcome
<b>CO1</b>	Use different tool & equipments used for Jewellery making workshop and soldering techniques.
<b>CO2</b>	Able to Prepare filigree design forms acquire the knowledge of fabrication works.
<b>CO3</b>	Understand the steps involved in jewellery manufacturing process.
<b>CO4</b>	Able to Manufacture simple jewellery construction-studs & drops.

## 5. COURSE CONTENT OUTLINE WITH TEACHING HOURS AND MARK

UNIT NO.	UNIT TITLE	TEACHING HOURS	DISTRIBUTION LEVELS (Marks)			TOTAL
			R	U	A	
01	SOLDERING PRACTICES	24	10	20	20	50
02	PARTS PREPARATION AND FABRICATION TECHNIQUES	33	10	20	20	50
03	STEPS INVOLVED IN SIMPLE JEWELLERY MANUFACTURING- STUDS & DROPS	33	10	20	20	50
04	PRACTICES IN SIMPLE JEWELLERY CONSTRUCTION STUD AND DROPS.	54	10	20	20	50
Total		96	40	80	80	200

## 6. INSTRUCTIONAL STRATEGY

The strategies, which teacher can use to accelerate the attainment of the various course outcomes

1. Use of sign language for communication in classroom since most of students are hearing impaired.
2. Use of Audio-Visual aids like ppt, videos, Animation, E-books etc.
3. Hands on training providing for the students in practical and tutorial classes through demonstration.
4. To attend interactive sessions, Group discussion, guest lectures, workshops, industrial visit, MCQ/Quiz, Assignment, open book test to facilitate students for learning.
5. Providing the course material in soft/hard copy in advance to the students, to come prepared to the class.
6. Instructors should expose students to explore User Interface thoroughly.
7. Demonstration using visual/graphic content should be delivered. Emphasis should be given on working skills.

## 7. DETAILS OF COURSE CONTENTS

The following topics / subtopics is to be taught and accessed in order to develop Unit Skill sets for achieving CO to attain identified skill sets:

UNIT NO	TOPICS/SUBTOPICS	LEARNING OUTCOME (IN COGNITIVE DOMAIN)	HOURS T:P
1	<b>SOLDERING PRACTICES</b>		<b>24</b>
	1. Introduction and Basic requirements 2. Types and Preparations 3. Importance of non-cadmium solders 4. Latest development in soldering process 5. Basic techniques, Tools and Consumables 6. Practices and Round link chain 7. Round link over lap chain, Precautions	1. Identify the tools used in jewellery manufacturing process 2. Able to do soldering techniques.	
2	<b>PARTS PREPARATION AND FABRICATION TECHNIQUES</b>		<b>33</b>
	1. Introduction and Types of filigree making. 2. Forms & sizes of wire used in filigree shaping tools 3. Constructions Basic filigree designs 4. Soldering Practices on filigree works 5. Stone setting on filigree designs 6. Basic ideas for making outer and inner designs for filigree patterns. 7. Basic techniques 8. Fabrication of filigree designs with suitable outer design & inner design. 9. Finishing of the filigree based jewellery 10. How to overcome the complaints rose in filigree patterns	1. Able to do filigree process. 2. Acquire the knowledge of jewellery manufacturing by using filigree	
3	<b>STEPS INVOLVED IN SIMPLE JEWELLERY MANUFACTURING- STUDS &amp; DROPS</b>		<b>33</b>
	1. Introduction and Design Tools and consumables. 2. Parts preparation and Fabrication 3. Soldering and Pre-finishing 4. Repairs and Final finishing 5. Precautions.	1. Understand the use of tools and consumables used for jewellery manufacturing. 2. Able to do repairs and final finishing works in jewellery manufacturing works.	
4	<b>PRACTICES IN SIMPLE JEWELLERY CONSTRUCTION STUD AND DROPS.</b>		<b>54</b>
	1. Round type of stud and drops. 2. J-stud and Drops. 3. Basket earring and Drops. 4. Introduction to stud and Jhumka.	1. Able to create new stud and drops according to their designs. 2. Able to do basket earrings and jumkha	
	<b>TOTAL</b>		<b>144</b>



## 7. SUGGESTED PRACTICAL EXERCISES

SI No	Suggested Practical Exercises (should be similar in skills to the ones enlisted)	Unit No	PO	C O	T:P Hrs
1	Introduction and Basic requirements	1	1,2,3,4,7	1	1:2
2	Types and Preparations	1	1,2,3,4,7	1	1:2
3	Importance of non-cadmium solders	1	1,2,3,4,7	1	1:2
4	Latest development in soldering process	1	1,2,3,4,7	1	1:2
5	Basic techniques, Tools and Consumables	1	1,2,3,4,7	1	1:2
6	Practices and Round link chain	1	1,2,3,4,7	1	2:4
7	Round link over lap chain, Precautions	1	1,2,3,4,7	1	1:2
8	Introduction and Types of filigree making.	2	1,2,3,4,7	2	1:2
9	Forms & sizes of wire used in filigree shaping tools	2	1,2,3,4,7	2	1:2
10	Constructions Basic filigree designs	2	1,2,3,4,7	2	1:2
11	Soldering Practices on filigree works	2	1,2,3,4,7	2	1:2
12	Stone setting on filigree designs	2	1,2,3,4,7	2	1:2
13	Basic ideas for making outer and inner designs for filigree patterns.	2	1,2,3,4,7	2	1:2
14	Basic techniques	2	1,2,3,4,7	2	1:2
15	Fabrication of filigree designs with suitable outer design & inner design.	2	1,2,3,4,7	2	1:2
16	Finishing of the filigree based jewellery	2	1,2,3,4,7	2	1:2
17	How to overcome the complaints rose in filigree patterns	2	1,2,3,4,7	2	2:4
18	Introduction and Design Tools and consumables.	3	1,2,3,4,7	3	3:6
19	Parts preparation and Fabrication	3	1,2,3,4,7	3	3:6
20	Soldering and Pre-finishing	3	1,2,3,4,7	3	3:6
21	Repairs and Final finishing	3	1,2,3,4,7	3	1:2
22	Precautions.	3	1,2,3,4,7	3	1:2
23	Round type of stud and drops.	4	1,2,3,4,7	4	5:10
24	J-stud and Drops.	4	1,2,3,4,7	4	5:10
25	Basket earring and Drops.	4	1,2,3,4,7	4	5:10
26	Introduction to stud and Jhumka.	4	1,2,3,4,7	4	3:6

The suggested practical exercises specified above are demonstrated for the attainment of the competency. These practical activities can also be used for the student assessment in portfolio mode for awarding CIE marks. The lecturer can enhance the competency level of the students by sketching more practical exercises.

**NOTES:**

1. It is compulsory to prepare log book/record of exercises. It is also required to get each exercise recorded in logbook, checked and duly dated signed by the teacher
2. Student activities are compulsory and are also required to be performed and noted in logbook.
3. Student activity is compulsory and part of skill assessment. The activity enables student to explore the course, help student to demonstrate creativity & critical thinking.
4. Student activity report is compulsory part to be submitted at the time of practical ESE
5. Term work report is compulsory part to be submitted at the time of practical ESE.
6. Student activity and student activity reports must be uploaded to learning management system.
7. For CIE, students are to be assessed for Skills/competencies achieved.

## 8. MAPPING OF CO WITH PO

CO	COURSE OUTCOME	PO MAPPED	EXPERIMENT LINKED	COGNITIVE LEVEL R	TUTORIAL & PRACTICAL SESSIONS
CO-1	Use different tool & equipments used for Jewellery making workshop and soldering techniques.	1,2,3,4,7	1-7	A	24
CO-2	Able to Prepare filigree design forms acquire the knowledge of fabrication works.	1,2,3,4,7	8-17	A	33
CO-3	Understand the steps involved in jewellery manufacturing process.	1,2,3,4,7	18-22	A	33
CO-4	Able to Manufacture simple jewellery construction-studs & drops.	1,2,3,4,7	23-26	A	54
<b>Total</b>					<b>144</b>

## 9. LEVELS OF CO, AND PO MAPPING

Course	CO's	Programme Outcomes (POs)						
		1	2	3	4	5	6	7
<b>Jewellery Making - I</b>	<b>CO-1</b>	3	3	2	2	0	0	3
	<b>CO-2</b>	3	3	2	2	0	0	3
	<b>CO-3</b>	3	3	2	2	0	0	3
	<b>CO-4</b>	3	3	2	2	0	0	3
<i>Levels: 3 – Highly Mapped, 2 – Moderately Mapped, 1- Low Mapped and 0 – Not Mapped</i>								

**10. SUGGESTED LEARNING RESOURCES:**

Sl. No	Author	Title of Books	Publication / Year
1	Robert Hale	Jewellery concepts and Technology (OPPI UNTRACHT)	1982

**11. SUGGESTED LINKS**

- <https://www.youtube.com/watch?v=wuTwUGYIZQM>
- <https://www.youtube.com/watch?v=6ZjOaJIueb4>
- <https://www.youtube.com/watch?v=67A8uRFU920>
- <https://www.youtube.com/watch?v=aldrGTVm5ws>

**12. SUGGESTED LIST OF PROPOSED STUDENT ACTIVITIES**

**Note: the following activities or similar activities for assessing CIE (IA)**

SL. NO	ACTIVITY
1	Collect different types of studs and drops.(Traditional, Contemporary and Modern)
2	Collect the detail information on steps involved in jewellery manufacturing process

### 13. COURSE ASSESSMENT AND EVALUATION CHART

Assessment Methods	Types of Assessment		Target	Assessment Methods	Max Marks	Types of Record	Course Outcomes for Assessment
DIRECT ASSESSMENT	CIE  CONTINUOUS INTERNAL EVALUATION	IA Test	STUDENTS	Two skill tests  (Average of Two skill tests will be Computed)	20	Blue Books	All Co's
		Assignment & Student activity		Portfolio	30	Portfolio and Activity Book	Specified CO by the Course Coordinator
				Activity	10		
				Total CIE Marks	60		
	SEE  SEMESTER END EXAMINATION	Semester End Exam		End of the Course	40	Answer Scripts	All Co's
				Total	100		
INDIRECT ASSESSMENT	Student Feedback		STUDENTS	Middle of the Course	Feed Back Forms		
	End of Course Survey			End of the Course			

**14. COURSE ASSESSMENT AND EVALUATION CHART**

Sl. No	Assessment	Time frame in Semester	Duration	Max marks	Conversion
1.	Portfolio	Entire Duration		30	30
2	Skill Test-1 (Skill test 1-Unit 1&2)	At the end of 8 <sup>th</sup> week	3 Hrs	20	Average of two skill tests 20
3	Skill Test-2 (Skill test 2 -Unit,3,4)	At the end of 15 <sup>th</sup> week	3 Hrs	20	
4	Student Activity	-		10	10
5	Total Continuous Internal Evaluation(CIE)Assessment				60
6	Semester End Examination (SEE) Assessment conducted for 100 marks, finally reduced to 40 marks weightage		4 Hrs	100	40
	TOTAL				100

**Note:**

2. CIE Skill test is conducted for 100 marks (3 Hours duration) as per scheme of evaluation and the obtained marks are scaled down to 20 marks.

1. SEE is conducted for 100 Marks (3 Hours duration) as per scheme of evaluation3. 30 marks awarded for portfolio.

2. Assessment of assignment and student activity is evaluated through appropriate rubrics by the respective course coordinator.

## 15. RUBRICS FOR ACTIVITY

Dimension	Scale					Student Score For 10 marks
	Unsatisfactory	Developing	Satisfactory	Good	Exemplary	
	2	4	6	8	10	
1. Organization	Has not included relevant info	Has included few relevant info	Has included some relevant info	Has included many relevant info	Has include all relevant info needed	10
2. Fulfil Team's Roles & Duties	Does not perform any duties assigned	Performs very little duties	Performs partial duties	Performs nearly all duties	Performs all duties of assigned team roles	6
3. Conclusion	Poor	Less Effective	Partially Effective	Summarizes but not exact	Most effective	8
4. Conventions	Frequent Error	More Error	Some Error	Occasional Error	No Error	4
Total Score						28
Total Marks						7

## 16. REQUIREMENTS:

Sl. No.	Specification
1.	Work bench
2.	General goldsmithing tools, equipment's and consumables
3.	Table lamp

## Third Semester Examination, Model Question Paper – 2022

### Jewellery Making - I

Duration: 4 Hours]

Subject Code: 4433

[Max. Marks: 100

**Instruction:.** Answer all the questions considering the internal choice in each questions.

Qn. No.	Question	CL	COs	POs	Marks
1	Design the round links and soldering with the different type of solders.	R / U/A	1	1,2,3,4,7	20
2	Design the inner and outer filigree designs by using fabrication techniques. OR Design the inner and outer wire designs by using fabrication techniques.	R / U/A	2	1,2,3,4,7	20
3	Design and manufacture a pair of stud and drops by following the jewellery manufacturing techniques using sterling silver	R / U/A	3	1,2,3,4,7	30
4	Design and manufacture a pair of basket earring and drops by following the jewellery manufacturing techniques using sterling silver	R / U/A	4	1,2,3,4,7	20
5	Viva voce	R / U/A	1,2,3,4	1,2,3,4,7	10
<b>Total Marks</b>					<b>100</b>

Questions are not framed from Unit 1 in the final SEE. Short questions can only be asked from that unit.

### RUBRICS FOR SKILL TEST EVALUATION (CIE & SEE)

Sl. No.	Parameter to be observed	Marks Allotted
1	Soldering	20
2	Fabrication	20
3	Stud and drops	30
4	Basket earring and drops	20
5	Viva voce	10
<b>Total</b>		<b>100</b>

**GOVERNMENT OF KARNATAKA**  
**DEPARTMENT OF COLLEGIATE AND TECHNICAL EDUCATION**  
**JSS POLYTECHNIC FOR THE DIFFERENTLY ABLED (AUTONOMOUS)**

**Programme: Jewellery Design and Technology**

Course Code	4434	Semester	III
Course Title	Stone Setting-I	Course Group	Core
No. of Credits	6	Type of Course	Tutorial and Practice
Course Category	PC	Total Contact Hours	9 Hrs. / Week 144 Hrs. / Semester
Prerequisites	SSLC	Teaching Scheme	[ L : T : P ] = 0 : 3 : 6
CIE Marks	60	SEE Marks	40

**RATIONALE:**

Stone setting helps the learner to prepare tools and gravers used for stone setting and able to do setting of stones based on flush, bezel and prong setting and understand the safety precaution in the jewellery workshop

**1. COURSE OBJECTIVES:**

After the completion of the study of this subject students should be able to

1. Understand different tool & equipments used for Stone Setting.
2. Acquire skills for the Flush, Bezel and Prong settings techniques.
3. Understand the safety precaution in the Jewellery lab
4. Acquires skills of application orientated tasks.

**2. JOB ROLE**

SL.NO	LEVEL	JOB ROLES
1	2	Assistant stone setter in jewellery workshop

**3. PREREQUISITES**

STUDENT	SSLC
TEACHER	Experience in Jewellery stone setting Process

**4. COURSE OUTCOMES**

At the end of the course, students will be able to

	Course Outcome
<b>CO1</b>	Use different tool & equipments for stone setting lab.
<b>CO2</b>	Acquire skills for flush stone setting techniques
<b>CO3</b>	Acquire skills for Bezel stone setting techniques
<b>CO4</b>	Acquire skills for Prong stone setting techniques



## 5. COURSE CONTENT OUTLINE WITH TEACHING HOURS AND MARK

UNIT NO	UNIT TITLE	TEACHING HOURS	DISTRIBUTION LEVELS (Marks)			TOTAL
			R	U	A	
01	SETTING AND MAKING OWN TOOLS AND GRAVERS	21	10	20	20	50
02	PROCEDURE FOR FLUSH SETTING	39	10	20	20	50
03	PROCEDURE FOR BEZEL SETTING	42	10	20	20	50
04	PROCEDURE FOR PRONG SETTING	42	10	20	20	50
Total		144	40	80	80	200

## 6. INSTRUCTIONAL STRATEGY

These are sample strategies, which teacher can use to accelerate the attainment of the various course outcomes

1. Use of sign language for communication in classroom since most of students are hearing impaired.
2. Use of Audio-Visual aids like ppt, videos, Animation, E-books etc..
3. Hands on training providing for the students in practical and tutorial classes through demonstration.
4. To attend interactive sessions, Group discussion, guest lectures, workshops, industrial visit, MCQ/Quiz, Assignment, open book test to facilitate students for learning.
5. Providing the course material in soft/hard copy in advance to the students, to come prepared to the class.
6. Instructors should expose students to explore User Interface thoroughly.
7. Demonstration using jewellery making equipment's and tools. Emphasis should be given on practical working skills.

## 7. DETAILS OF COURSE CONTENT

The following topics / subtopics is to be taught and accessed in order to develop Unit Skill Sets for achieving CO to attain identified skill sets:

UNIT NO	TOPICS/SUBTOPICS	LEARNING OUTCOME	HOURS T : P
1	<b>SETTING AND MAKING OWN TOOLS AND GRAVERS</b>		<b>21</b>
	1. Gravers, Files, Pliers. 2. Wooden clamps, Dividers. 3. Scribes and burnisher. 4. Burrs, Job holding devices. 5. Drills, Beading tools. 6. Stone positioners, Stone pushers. 7. Flat hole drill, Taper drill. 8. Flush setting tool. 9. Modifying holding devices. 10. Hardening and tempering of steel.	1. Gain knowledge to prepare tools for stone setting	
2	<b>PROCEDURE FOR FLUSH SETTING</b>		<b>39</b>
	1. How to do flush setting. 2. Preparation, Layout, Procedure. 3. Limitations. 4. Quality control. 5. Process of burnishing the metal edge.	1. Understand the concept of flush setting. 2. Able to set flush stone setting in jewellery manufacturing process.	
3	<b>PROCEDURE FOR BEZEL SETTING</b>		<b>42</b>
	1. Preparation of bezel. 2. Procedure for bezel setting (round) 3. Quality control.	1. Understand the concept of bezel setting. 2. Able to set bezel stone setting in jewellery manufacturing process.	
4	<b>PROCEDURE FOR PRONG SETTING</b>		<b>42</b>
	1. Shapes of prongs. 2. Prong arrangement. 3. Shapes of mounds. 4. Setting independent prongs.	1. Understand the concept of bezel setting. 2. Able to set bezel stone setting in jewellery manufacturing process.	
	<b>TOTAL</b>		<b>144</b>

## 8. SUGGESTED PRACTICAL EXERCISES

Sl. No	Suggested Practical Exercises (should be similar in skills to the ones enlisted)	Unit No	PO	C O	L:P Hrs
1	Gravers, Files, Pliers, Wooden clamps, Dividers, Scribes and burnisher,	1	1,2,3,4,7	1	2:4
2	Burrs, Job holding devices, Drills, Beading tools, Stone positioners, Stone pushers,	1	1,2,3,4,7	1	2:4
3	Flat hole drill, Taper drill, Flush setting tool.	1	1,2,3,4,7	1	1:3
4	Modifying holding devices, Hardening and tempering of steel.	1	1,2,3,4,7	1	2:4
5	How to do flush setting.	2	1,2,3,4,7	2	5:10
5	Preparation, Layout, Procedure	2	1,2,3,4,7	2	3:6
6	Limitations and Quality control	2	1,2,3,4,7	2	3:6
7	Process of burnishing the metal edge	2	1,2,3,4,7	2	2:4
8	Preparation of bezel.	3	1,2,3,4,7	3	9:18
9	Procedure for bezel setting (round)	3	1,2,3,4,7	3	3:6
10	Quality control.	3	1,2,3,4,7	3	2:4
11	Shapes of prongs	4	1,2,3,4,7	3	5:10
12	Prong arrangement	4	1,2,3,4,7	4	3:6
13	Shapes of mounds.	4	1,2,3,4,7	4	3:6
14	Setting independent prongs.	4	1,2,3,4,7	4	3:6

The suggested practical exercises specified above are demonstrated for the attainment of the competency. These practical activities can also be used for the student assessment in portfolio mode for awarding CIE marks. The lecturer can enhance the competency level of the students by sketching more practical exercises.

### NOTES:

1. It is compulsory to prepare log book/record of exercises. It is also required to get each exercise recorded in logbook, checked and duly dated signed by the teacher
2. Student activities are compulsory and are also required to be performed and noted in logbook.
3. Student activity is compulsory and part of skill assessment. The activity enables student to explore the course, help student to demonstrate creativity & critical thinking.
4. Student activity report is compulsory part to be submitted at the time of practical ESE
5. Term work report is compulsory part to be submitted at the time of practical ESE.
6. Student activity and student activity reports must be uploaded to Learning management system.
7. For CIE
8. , students are to be assessed for Skills/competencies achieved.

## 9. MAPPING OF CO WITH PO

	COURSE OUTCOME	PO MAPPE	EXPERI MENT LINKED	COGNITI VE	TUTORIA L &
CO-1	Use different tool & equipments used for stone setting lab.	1,2,3,4,7	1-4	A	21
CO-2	Acquire skills for the different types of stone setting techniques	1,2,3,4,7	5-7	A	39
CO-3	Know the safety precaution in the stone setting lab	1,2,3,4,7	8-10	A	42
CO-4	Acquires skills of Application orientated tasks	1,2,3,4,7	11-14	A	42
<b>Total</b>					<b>144</b>

## 10. LEVELS OF CO, AND PO MAPPING

Course	CO's	Programme Outcomes (POs)						
		1	2	3	4	5	6	7
STONE SETTING - I	CO-1	3	3	2	2	0	0	3
	CO-2	3	3	2	2	0	0	3
	CO-3	3	3	2	2	0	0	3
	CO-4	3	3	2	2	0	0	3
<i>Levels: 3 – Highly Mapped, 2 – Moderately Mapped, 1- Low Mapped and 0 – Not Mapped</i>								

## 11. SUGGESTED LEARNING RESOURCES

Sl. No	Author	Title of Books	Publication / Year
1	Robert Hale	Jewellery concepts and Technology (OPPI UNTRACHT)	1982

## 12. SUGGESTED LINKS

[https://www.youtube.com/watch?v=Sz9U\\_nS5aAQ](https://www.youtube.com/watch?v=Sz9U_nS5aAQ)  
<https://www.youtube.com/watch?v=PSPXdMhH3nU>

### 13. SUGGESTED LIST OF PROPOSED STUDENT ACTIVITIES

**Note: the following activities or similar activities for assessing CIE (IA)**

SL. NO	ACTIVITY
1	Collect the information on flush stone setting in jewellery manufacturing techniques
2	Collect the information on prong stone setting in jewellery manufacturing techniques
3	Collect the information on wax setting in gem stones jewellery manufacturing techniques
4	Collect the information on bezel stone setting in jewellery manufacturing techniques

### 14. COURSE ASSESSMENT AND EVALUATION CHART

Assessment Methods	Types of Assessment		Target	Assessment Methods	Max Marks	Types of Record	Course Outcomes for Assessment
DIRECT ASSESSMENT	CIE CONTINUOUS INTERNAL EVALUATION	IA Test	STUDENTS	Two skill tests (Average of Two skill tests will be Computed)	20	Blue Books	All Co's
		Assignment & Student activity		Portfolio	30	Portfolio and Activity Book	Specified CO by the Course Coordinator
				Activity	10		
				Total CIE Marks	60		
	SEE SEMESTER END EXAMINATION	Semester End Exam		End of the Course	40	Answer Scripts	All Co's
				Total	100		
	INDIRECT ASSESSMENT	Student Feedback		STUDENTS	Middle of the Course	Feed Back Forms	
End of Course Survey		End of the Course					

**15. COURSE ASSESSMENT AND EVALUATION CHART**

Sl. No	Assessment	Time frame in Semester	Duration	Max marks	Conversion
1.	Portfolio	Entire Duration		30	30
2	Skill Test-1 (Skill test 1-Unit 1&2)	At the end of 8 <sup>th</sup> week	3 Hrs	20	Average of two skill tests 20
3	Skill Test-2 (Skill test 2 -Unit,3,4)	At the end of 15 <sup>th</sup> week	3 Hrs	20	
4	Student Activity	-		10	10
5	Total Continuous Internal Evaluation(CIE)Assessment				60
6	Semester End Examination (SEE) Assessment  conducted for 100 marks, finally reduced to 40 marks weightage		4 Hrs	100	40
	TOTAL				100

**Note:**

1. CIE Skill test is conducted for 100 marks (3 Hours duration) as per scheme of evaluation and the obtained marks are scaled down to 20 marks.
2. SEE is conducted for 100 Marks (3 Hours duration) as per scheme of evaluation3. 30 marks awarded for portfolio.
3. Assessment of assignment and student activity is evaluated through appropriate rubrics by the respective course coordinator.

**16. RUBRICS FOR ACTIVITY**

Dimension	Scale					
	2. Unsatisfactory	4. Developing	6. Satisfactory	8. Good	10. Exemplary	
1. Organization	Has not included relevant info	Has included few relevant info	Has included some relevant info	Has included many relevant info	Has include all relevant info needed	
2.Fulfil Team's Roles & Duties	Does not perform any duties assigned	Performs very little duties	Performs partial duties	Performs nearly all duties	Performs all duties of assigned team roles	
3. conclusion	Poor	Less Effective	Partially Effective	Summarizes but not exact	Most effective	
4.Conventions	Frequent Error	More Error	Some Error	Occasional Error	No Error	
Total Score						
Total Marks						

**17. REQUIREMENTS:**

Sl. No.	Specification	Quantity
1.	Work bench	30
2.	General stone setting tools, equipments and consumables	-
3.	Table lamp, LPG gas connection	-

## Third Semester Examination, Model Question Paper – 2022

### Stone Setting - I

**Duration:** 4 Hours]

**Subject Code:** 4434

**[Max. Marks: 100**

**Instruction:** Answer all the questions considering the internal choice in each question.

Qn. No.	Question	CL	COs	POs	Marks
1	Identify the given tools and write its uses.	R / U/A	1	1,2,3,4,7	10
2	Design a flush setting based simple pendent and manufacture the same using sterling silver as per the specification given below 2mm stones, 5 number	R / U/A	2	1,2,3,4,7	20
3	Design a bezel setting based simple pendent and manufacture the same using sterling silver as per the specification given below 2.5mm stones, 10 number	R / U/A	3	1,2,3,4,7	30
4	Design a prong setting based simple pendent and manufacture the same using sterling silver as per the specification given below 2 mm stones, 5 number	R / U/A	4	1,2,3,4,7	30
5	Viva voce	R / U/A	1,2,3,4	1,2,3,4,7	10
<b>Total Marks</b>					<b>100</b>

Questions are not framed from Unit 1 in the final SEE. Short questions can only be asked from that unit.

### RUBRICS FOR SKILL TEST EVALUATION (CIE & SEE)

Sl. No.	Parameter to be observed	Marks Allotted
1	Identification of tools	10
2	Flush setting	20
3	Bezel Setting	30
4	Prong setting	30
5	Viva voce	10
<b>Total</b>		<b>100</b>



**GOVERNMENT OF KARNATAKA  
DEPARTMENT OF COLLEGIATE AND TECHNICAL EDUCATION  
JSS POLYTECHNIC FOR THE DIFFERENTLY ABLED, MYSURU**

**Programme: Jewellery Design and Technology**

Course Code	4435	Semester	IV
Course Name	CAD (Basic)	Course Group	Core
No. of Credits	4	Type of Course	Lecture + Practice
Course Category	Core	Total Contact Hours	9 Hrs. / Week
			144 Hrs. / Semester
Prerequisites	Tutorial and Practical	Teaching Scheme	[L : T : P] = 0: 1 : 2
CIE Marks	60	SEE Marks	40

**RATIONALE:**

CAD (basic) helps the learner to gain more knowledge on designing the jewellery. Using CAD we can manufacture more number of products within a short period of time. This presently has scope in industries. This course helps the students to prepare their own designs and also with respect to the company needs.

**1. COURSE SKILL SET**

1. Understand different tool & equipments used for stone setting.
2. Acquire skills for the Share prong, Pave and Channel settings techniques.
3. Understand the safety precaution in the Jewellery lab.
4. Acquires skills of Application orientated tasks.

**2. JOB ROLE**

SL.NO	LEVEL	JOB ROLES
1	3	Junior CAD Designer

**3. PREREQUISITES**

STUDENT	SSLC
TEACHER	1 year training in CAD

**4. COURSE OUTCOMES**

At the end of the course, students will be able to

	Course Outcome
<b>CO1</b>	Understand the basic concepts in MS office
<b>CO2</b>	Understand Rhino basics & 3D space and Learn Basic Settings, modeling aid & file, edit view.
<b>CO3</b>	Learn usage of curve, surface, solid, dimension, transform, tools, analyze Commands.
<b>CO4</b>	Create their own design.

## 5. COURSE CONTENT OUTLINE WITH TEACHING HOURS AND MARK

UNIT NO	UNIT TITLE	TEACHING HOURS	DISTRIBUTION LEVELS (Marks)			TOTAL
			R	U	A	
01	INTRODUCTION TO MICROSOFT OFFICE	21	10	20	20	50
02	INTRODUCTION TO CAD IN JEWELLERY, RHINO & 3-D SPACE, SETTING UP YOUR WORKSPACE - BASIC SETTINGS AND OPTIONS, MODELING AIDS, FILE, EDIT, VIEW	27	10	20	20	50
03	CURVE, SURFACE, SOLID, DIMENSION, TRANSFORM, TOOLS, ANALYZE	24	10	20	20	50
04	CREATING OF OWN DESIGNS	24	10	20	20	50
<b>Total</b>		<b>96</b>	<b>40</b>	<b>80</b>	<b>80</b>	<b>200</b>

## 6. INSTRUCTIONAL STRATEGY

**These are sample strategies, which teacher can use to accelerate the attainment of the various course outcomes**

1. Use of sign language for communication in classroom since most of students are hearing impaired.
2. Use of Audio-Visual aids like ppt, videos, Animation, E-books etc...
3. Hands on training providing for the students in practical and tutorial classes through demonstration.
4. To attend interactive sessions, Group discussion, guest lectures, workshops, industrial visit, MCQ/Quiz, Assignment, open book test to facilitate students for learning.
5. Providing the course material in soft/hard copy in advance to the students, to come prepared to the class.
6. Instructors should expose students to explore User Interface thoroughly.
7. Demonstration using visual/graphic content should be delivered. Emphasis should be given on working skills.

## 7. DETAILS OF COURSE CONTENTS

The following topics / subtopics is to be taught and accessed in order to develop Unit Skill sets for achieving CO to attain identified skill sets:

UNIT NO.	TOPICS/SUBTOPICS	LEARNING OUTCOME (IN COGNITIVE DOMAIN)	HOURS T : P
1	INTRODUCTION TO MICROSOFT OFFICE		21
	<b>MS-Word Basics</b> Paragraph, Columns, Borders, Page layout, Orientation, Margins. Inserting and Editing Items Table, Picture, Chart, Shapes, Header & Footer, Text Box, Symbols, Objects. Advanced Options Find and Replace Spelling and Grammar Check, Thesaurus, Mail Merge, Word Count, Protection, Views. <b>MS EXCEL</b> Workbook, Worksheet, Cell, Cell Address, Cell Range, Different Type of Data, entering different Types of Data, Formula, Auto Filling, Formatting Cells and Sheets, Different Types of Charts, Inserting Charts, Formatting Charts, Sorting data,	1 Understand the basic procedure of operating Microsoft word 2 Able to create a letters with proper alignment. 3 Understand the fundamental procedure of operating Microsoft excel. 4 Able to do operations in Microsoft excel spreadsheet.	
2	<b>INTRODUCTION TO CAD IN JEWELLERY, RHINO &amp; 3-D SPACE, SETTING UP YOUR WORKSPACE – BASIC SETTINGS AND OPTIONS, MODELING AIDS, FILE, EDIT, VIEW</b>		27
	Use of software in Jewellery Designing, Use of Rapid Proto Type (RPT) machine, The Rhino Workspace, Viewport Navigation for 2-Dimensional (XY axis) & 3- Dimensional, Work on (XYZ axis), Working in Different Viewports, Navigating in 3-D Space – Panning, Zooming and Rotating Your View, Shade and Rendered Viewport Modes – for Visibility While Modeling, Setting up Your Workspace – Opening Rhino, Your Workspace – Settings for Document Properties, Saving your Document Properties Settings as a Template, Rhino Options – Basic Settings, Rhino Options – Adjusting Display Settings for better Screen Visualization, Exporting and Importing Rhino Options, Grid Snap mode, Ortho Mode, Object Snap (“Osnap”), New, Open, Save, Save small, Incremental save, Save As, Save As template, Insert, Import, Import selected, Properties, Print, Send, Exit, Undo, Redo, Cut copy, Paste,	1. Understand the basic concept in the rhino software 2. Learn about dimensions and viewpoints in 2D CAD designs 3. Understand the various options under file, edit and view. 4. Able to operate file, edit and view option.	

3	<b>CURVE, SURFACE, SOLID, DIMENSION, TRANSFORM, TOOLS, ANALYZE</b>	24
	Point object, Point cloud, Line, Polyline, Rectangle, Polygon, Free-form, Circle, Arc, Ellipse, Parabola, Hyperbola, Conic, Helix, Spiral, Extend curve, Fillet curve, Fillet corners, Chamfer curve, Connect curve, Offset curve, Offset normal to surface, Blend surface, Curve from 2 views, Cross section profiles, Convert, Curve from objects Plane, Loft, Sweep 1 Rail, Sweep 2 Rail, Revolve, Rail revolve, Curve network, Corner points, Edge curve, Planar curve, Extrude curve, Patch, Extend surface, Fillet surface, Chamfer surface, Connect surface, Variable fillet/blend /chamfer, Offset surface, Variable offset surface, Blend surface, Unroll Box, Sphere, Cylinder, Cone, Pyramid, Ellipsoid, Tube, Pipe, Slab, Torus, Text, Extrude planar curve, Extrude surface, Extrude surface to boundary, Fillet edge, Cap planar holes, Extract surface, Union, Difference, Intersection, Boolean two object, Boolean split, Linear Dimension, Aligned Dimension, Rotated Dimension, Ordinate Dimension, Radial Dimension, Diameter Dimension, Angle Dimension, Leader, Text block, Make 2-D drawing, Move, Copy, Rotate, Rotate 3-D, Scale, Shear, Mirror, Symmetry, Align, Orient, Array, Set points, Project to plane, Twist, Bend, Taper, Flow along curve, Flow along surface, Smooth, Move UVN, Soft move, Object snap, Commands, Toolbar layout, Reset toolbar, Calculator, Mass properties, Edge tools, Direction	1. Understand the various options under curve, surface, solid, dimension and tools. 2. Able to operate curve, surface, solid, dimension and tools.
4	<b>CREATING OF OWN DESIGNS</b>	24
	Necklace Design Pendent Design Earring Design Ring Design	1. Able to create own necklace, pendent, earring and ring CAD designs using rhino software
	<b>TOTAL</b>	96

## 8. SUGGESTED PRACTICAL EXERCISES

Sl No	Suggested Practical Exercises (should be similar in skills to the ones enlisted)	Unit No	PO	CO	T:P Hrs
1	Paragraph, Columns, Borders, Page layout, Orientation, Margins. Inserting and Editing Items Table, Picture, Chart, Shapes, Header & Footer, Text Box, Symbols, Objects.	1	1,3,4,5,7	1	1:2
2	Advanced Options Find and Replace Spelling and Grammar Check, Thesaurus, Mail Merge, Word Count, Protection, Views.	1	1,3,4,5,7	1	2:4
3	Workbook, Worksheet, Cell, Cell Address, Cell Range, Different Type of Data,	1	1,3,4,5,7	1	2:4
4	Entering different Types of Data, Formula, Auto Filling, Formatting Cells and Sheets,	1	1,3,4,5,7	1	1:2
5	Different Types of Charts, Inserting Charts, Formatting Charts, Sorting data,	1	1,3,4,5,7	1	1:2
6	Use of software in Jewellery Designing, Use of Rapid Proto Type (RPT) machine,	2	1,3,4,5,7		1:2
7	The Rhino Workspace, Viewport Navigation for 2-Dimensional (XY axis) & 3- Dimensional, Work on (XYZ axis), Working in Different Viewports,	2	1,3,4,5,7		2:4
8	Navigating in 3-D Space – Panning, Zooming and Rotating Your View, Shade and Rendered Viewport Modes – for Visibility While Modeling Setting up Your Workspace	2	1,3,4,5,7	2	2:4
9	Rhino Options – Adjusting Display Settings for better Screen Visualization, Exporting and Importing Rhino Options, Grid Snap mode, Ortho Mode, Object Snap (“Osnap”),	2	1,3,4,5,7		2:4
10	New, Open, Save, Save small, Incremental save, Save As, Save As template, Insert, Import, Import selected, Properties, Print, Send, Exit, Undo, Redo, Cut copy, Paste, Delete, Select, objects, Control points, Visibility, Groups,	2	1,3,4,5,7	2	2:4
11	Point object, Point cloud, Line, Polyline, Rectangle, Polygon, Free-form, Circle, Arc, Ellipse, Parabola, Hyperbola, Conic, Helix, Spiral, Extend curve, Fillet curve, Fillet corners, Chamfer curve, Connect curve, Offset curve, Offset normal to surface, Blend surface, Curve from 2	3	1,3,4,5,7	3	2:4
12	Curve network, Corner points, Edge curve, Planar curve, Extrude curve, Patch, Extend surface, Fillet surface, Chamfer surface, Connect surface, Variable fillet/blend /	3	1,3,4,5,7	3	2:4
13	Extrude surface, Extrude surface to boundary, Fillet edge, Cap planar holes, Extract surface, Union, Difference, Intersection, Boolean two object, Boolean split, Linear Dimension,	3	1,3,4,5,7	3	2:4
14	Twist, Bend, Taper, Flow along curve, Flow along surface, Smooth, Move UVN, Soft move, Object snap, Commands, Toolbar layout, Reset toolbar, Calculator, Mass properties, Edge tools, Direction	3	1,3,4,5,7	3	2:4
15	Necklace Design	4	1,3,4,5,7	3	2:4
16	Pendent Design	4	1,3,4,5,7	4	2:4
17	Earring Design	4	1,3,4,5,7	4	2:4
18	Ring Design	4	1,3,4,5,7	4	2:4

The suggested practical exercises specified above are demonstrated for the attainment of the competency. These practical activities can also be used for the student assessment in portfolio mode for awarding CIE marks. The lecturer can enhance the competency level of the students by sketching more practical exercises.

**NOTES:**

- 1 It is compulsory to prepare log book/record of exercises. It is also required to get each exercise recorded in logbook, checked and duly dated signed by the teacher
- 2 Student activities are compulsory and are also required to be performed and noted in logbook.
- 3 Student activity is compulsory and part of skill assessment. The activity enables student to explore the course, help student to demonstrate creativity & critical thinking.
- 4 Student activity report is compulsory part to be submitted at the time of practical ESE
- 5 Term work report is compulsory part to be submitted at the time of practical ESE.
- 6 Student activity and student activity reports must be uploaded to learning management system.
- 7 For CIE, students are to be assessed for Skills/competencies achieved.

## 9. MAPPING OF CO WITH PO

	<b>COURSE OUTCOME</b>	<b>PO MAPPED</b>	<b>EXPERIMENT LINKE</b>	<b>COGNITIVE LEVEL (R</b>	<b>TUTORIAL &amp; PRACTICAL SESSIONS IN</b>
<b>CO-1</b>	Understand the basic concepts in MS office	1,3,4,5,7	1-5	A	21
<b>CO-2</b>	Understand Rhino basics & 3D space and Learn Basic Settings, modeling aid & file, edit view.	1,3,4,5,7	6-9	A	27
<b>CO-3</b>	Learn usage of curve, surface, solid, dimension, transform, tools, analyze Commands.	1,3,4,5,7	10-14	A	24
<b>CO-4</b>	Create their own design.	1,3,4,5,7	15-18	A	24
<b>Total</b>					<b>96</b>

## 10.LEVELS OF CO, AND PO MAPPING

Course	CO's	Programme Outcomes (POs)						
		1	2	3	4	5	6	7
CAD (Basic)	CO-1	3	0	3	2	2	0	3
	CO-2	3	0	3	2	2	0	3
	CO-3	3	0	3	2	2	0	3
	CO-4	3	0	3	2	2	0	3
Levels: 3 – Highly Mapped, 2 – Moderately Mapped, 1- Low Mapped and 0 – Not Mapped								

### 1. SUGGESTED LEARNING RESOURCES:

Sl. No	Author	Title of Books	Publication / Year
1	Rajesh Hongal	Basics of Computers and Application	1995
2	Buscaglia	Rhino for Jewelry	2000

### SUGGESTED LINKS

[https://www.youtube.com/watch?v=Sz9U\\_nS5aAQ](https://www.youtube.com/watch?v=Sz9U_nS5aAQ)

<https://www.youtube.com/watch?v=PSPXdMhH3nU>

### 2. SUGGESTED LIST OF PROPOSED STUDENT ACTIVITYS

**Note: the following activities or similar activities for assessing CIE (IA)**

SL. NO	ACTIVITY
1	Create any five 2D pendant designs using rhino software
2	Create any five 2D ring designs using rhino software
3	Create any five 2D necklace designs using rhino software
4	Create any five 2D earring designs using rhino software

### 3. COURSE ASSESSMENT AND EVALUATION CHART

Assessment Methods	Types of Assessment		Target	Assessment Methods	Max Marks	Types of Record	Course Outcomes for Assessment
DIRECT ASSESSMENT	CIE -CONTINUOUS INTERNAL EVALUA- TION	IA Test	STUDENTS	Two skill tests  (Average of Two skill tests will be Computed)	20	Blue Books	All Co's
		Assignment & Student activity		Portfolio	30	Portfolio and Activity Book	Specified CO by the Course Coordinator
				Activity	10		
				Total CIE Marks	60		
	SEE SEMESTER END EXAMINA- TION	Semester End Exam		End of the Course	40	Answer Scripts	All Co's
				Total	100		
	INDIRECT ASSESSMENT	Student Feedback		STUDENTS	Middle of the Course	Feed Back Forms	
End of Course Survey		End of the Course					



#### 4. COURSE ASSESSMENT SUMMARY

Sl. No	Assessment	Time frame in Semester	Duration	Max marks	Conversion
1.	Portfolio	Entire Duration		30	30
2	Skill Test-1 (Skill test 1-Unit 1&2)	At the end of 8 <sup>th</sup> week	3 Hrs	20	Average of two skill tests 20
3	Skill Test-2 (Skill test 2 -Unit,3,4)	At the end of 15 <sup>th</sup> week	3 Hrs	20	
4	Student Activity	At the beginning of 16 <sup>th</sup> week		10	10
5	Total Continuous Internal Evaluation(CIE)Assessment				60
6	Semester End Examination (SEE) Assessment conducted for 100 marks, finally reduced to 40 marks weightage		4 Hrs	100	40
	TOTAL				100

**Note:**

1. SEE (Semester End Examination) is conducted for 100 Marks Practical courses for a time duration of 4 Hours.
2. Two CIE (written test), each of 20 marks for a time duration of 3 Hours shall be conducted. Also, one student activity or assignment of 10 marks shall be conducted.
3. 30 marks awarded for portfolio.
4. Assessment of assignment and student activity is evaluated through appropriate rubrics by the respective course coordinator.

**15. RUBRICS FOR ACTIVITY**

Dimension	Scale					Student Score For 10 marks
	Unsatisfactory	Developing	Satisfactory	Good	Exemplary	
	2	4	6	8	10	
1. Organization	Has not included relevant info	Has included few relevant info	Has included some relevant info	Has included many relevant info	Has include all relevant info needed	10
2. Fulfill Team's Roles & Duties	Does not perform any duties assigned	Performs very little duties	Performs partial duties	Performs nearly all duties	Performs all duties of assigned team roles	6
3. Conclusion	Poor	Less Effective	Partially Effective	Summarizes but not exact	Most effective	8
4. Conventions	Frequent Error	More Error	Some Error	Occasional Error	No Error	4
Total Score						28
Total Marks						7

**16. REQUIREMENTS:**

Sl. No.	Specification
1.	Rhino software
2.	Systems
3.	System tables

## Fourth Semester Examination, Model Question Paper – 2022

### CAD (BASIC)

Duration: 4 Hours]

Subject Code: 4435

[Max. Marks: 100

**Instruction:.** Answer all the questions considering the internal choice in each question.

Qn. No.	Question	CL	COs	POs	Marks
1	Write the short cut for the following computer key words. (Copy, paste, cut, undo, bold, repeat, save, open, new and shut down.)	R / U/A	1	1,3,4,5,7	10
2	Perform an excises using background bitmap to do design	R / U/A	2	1,3,4,5,7	10
3	Draw any one design using tool bars in rhino 4.0 software	R / U/A	3	1,3,4,5,7	30
4	Perform a given design using rhino 4.0 software and write its specification	R / U/A	4	1,3,4,5,7	40
5	Viva voce	R/U/A	1,2,3,4	1,3,4,5,7	10
<b>Total Marks</b>					<b>100</b>

Questions are not framed from Unit 1 in the final SEE. Short questions can only be asked from that unit.

### RUBRICS FOR SKILL TEST EVALUATION (CIE & SEE)

Sl. No.	Parameter to be observed	Marks Allotted
1	Short cut keys	10
2	Excises using tool bar	10
3	2-D Modeling 1	30
4	2-D Modeling 2	40
5	Viva voce	10
<b>Total</b>		<b>100</b>

