

Government of Karnataka

DEPARTMENT OF COLLEGIATE AND TECHNICAL EDUCATION

JSS POLYTECHNIC FOR THE DIFFERENTLY ABLED, MYSORE – 570 006

(An Autonomous Institute Aided by the Govt. of Karnataka & Approved by AICTE)

VISION OF THE INSTITUTION

Empowering Differently Abled persons with the state-of-art professional skills,
enhancing morality and mental ability for better living.

MISSION OF THE INSTITUTION

M1: Imparting knowledge to the differently abled students with accessible learning environment

M2: Facilitating appropriate co-curricular, extracurricular and extension activities

M3: Providing value-added life skills and knowledge in addition to the regular academic input to make them employment-ready

M4: Instilling the spirit of socialization, equity, ethics and social responsibility

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Revision of Curriculum-2021

DEPARTMENT OF JEWELLERY DESIGN AND TECHNOLOGY

VISION

To develop the differently Abled to become a technical professional to meet the needs of Jewellery Industries in the areas of designing & manufacturing process

MISSION

The mission of the Jewellery Design and Technology Programme for the differently Abled is to benefit the society at large by

- Upgrading the skills constantly, confirming to the needs of jewellery industries incorporating the state-of-art technical developments.
- Creating opportunities to work an individually as in team.
- Providing exposure to structure and unstructured real-world projects in the area of jewellery Design and manufacturing through hands-on activities.
- Making use of total communication to make themselves relevant to the world of work through use of sign language and other assistive technologies.
- Inculcating moral values and leadership abilities among the students which helps to make contribute to growth of the society

PROGRAM EDUCATIONAL OBJECTIVES (PEOS)

1. Lead a successful career as an employee or entrepreneur in the field of Jewellery Design and Technology.
2. Exhibit creative manual and CAD designs to present his or her ideas and thoughts efficiently.
3. Able to work effective as an individual in multi discipline and society at large.
4. Adopt the latest changes and development in the field of Jewellery Design and Technology.

PROGRAMME OUTCOMES

1. **Basic and Discipline Specific Knowledge:** Apply the knowledge of basic mathematics, science and engineering in the field of Jewellery Design to solve engineering problems.
2. **Problem Analysis:** Identify and analyze well defined Jewellery Design problems codified standard method.
3. **Design/Development of solution:** Use acquired knowledge and methodologies in jewellery designing and manufacturing to analyse, interpret the data, or Jewellery manufacturing problems.
4. **Engineering Tools, Experimentation and Testing:** Apply modern Engineering tools and appropriate technology technique to conduct standard tests and measurements.
5. **Engineering Practice for Society, Sustainability and Environment:** Apply appropriate Technology in the contest of society, Sustainability, environment and Ethical practice.
6. **Project Management:** Use Engineering management principles individually as a team member or a Leader to manage projects and effectively communicate about well-defined Engineering activities.
7. **Life-Long Learning:** Ability to analyze needs and engage in updating in the context of technological changes.

MAKING OF PROGRAMME EDUCATIONAL OBJECTIVES WITH PROGRAMME OUTCOMES

	PEO statements	PROGRAMME OUTCOMES						
		1	2	3	4	5	6	7
1	Lead a successful career as an employee or entrepreneur in the field of Jewellery Design and Technology.	S		M		S		S
2	Exhibit creative manual and CAD designs to present his or her ideas and thoughts efficiently.	M		S	M		M	S
3	Able to work effective as an individual in multi discipline and society at large.	M		M		S		S
4	Adopt the latest changes and development in the field of Jewellery Design and Technology.	S	M			M		S

Key: M- Moderate Relationship, S- Strong Relationship,

PROGRAM SPECIFIC OUTCOMES (PSOs)

1. Enable students to meet an individual in industry level in present context.
2. Provide more information on Modern jewellery trends in jewellery making in the present context as Imitation jewellery and Temple jewellery designing.

GENERAL PROGRAMME STRUCTURE AND CREDIT DISTRIBUTION

1. **Definition of Credit:** Credit is a kind of weightage given to the contact hours to teach the prescribed syllabus, which is in a modular form. For courses, one credit is allocated to one contact hour for theory / tutorial per week and one credit is allocated to 02 contact hours for practical.
2. **Choice-Based Credit System (CBCS):** CBCS is a flexible system of learning that permits students to learn at their own pace, choose electives from a wide range of elective courses and adopt an inter-disciplinary approach in learning and make best use of the expertise of available faculty.

3 Range of Credits

1 Hr. Lecture (L) per week	1 credit
1 Hr. Practical (P) per week	0.5 credit
1 Hr. Tutorial (T) per week	1 credit
4 Hrs. Theory (T) per week	4 credit
3 Hrs. Practical (P) per week [1 Hr. Tutorial +2 Hrs. Practical]	2 credit

4. **Programme:** Diploma Programme that is Diploma in Jewellery Design and Technology, which is of three years duration.

PROGRAMME STRUCTURE

1. **Course:** A Course is a component (a paper) of a Programme. All the courses need not carry same weightage. The course should define Course objectives. A course may be designed to involve lectures/ tutorials / laboratory work / seminar / project work/ Internships / seminar or a combination of these, to meet effectively the teaching and learning needs and the credits may be assigned suitably.
2. **Course Code:** Each course shall have an numerical code, First digit indicates the programme code(4), Second digit indicates the syllabus revision ,which includes last two digits for example 12 (where 1 represents first semester and 2 represents the course number in incremental order). last alphabet represent Theory (T), Practical/Internship/Project (P), Drawing (D), Programme / Open Electives (A, B, C, E, F, G ...).
3. **Programme Courses:** the Programme consist of jewellery making(JM), stone setting(SS), Casting Technology(CT), Refining and Assaying(R&A), Gemmolgy(GM), Manual and CAD designing, projects(P), Communication skills (CS), Professional Core(PC), Professional Electives(PE), Employability Enhancement Courses (EEC) and Internships.
 1. **Jewellery Making:** Jewellery making is a skill oriented course which involves metallurgical science, goldsmithing basic, basic jewellery making techniques, which

- helps to students to gain the knowledge about the jewellery manufacturing process.
2. **Stone Setting:** stone setting helps the students to learn about different types of stone setting in jewellery manufacturing process
 3. **Casting Technology:** casting Technology is used for mass production to save time and energy and it was one of the modern method of jewellery manufacturing techniques.
 4. **Refining and Assaying:** Refining and assaying helps to students to know about the different methods of purification and assay process of precious metals.
 5. **Gemmology:** Gemology helps the students about different types of gem stones and its uses in jewellery
 6. **Manual Designing:** Manual designing helps the students to create their own designs in a creative way.
 7. **CAD Designing:** CAD designing advanced method helps the students to design their own design using rhino software to meet the societal needs.
 8. **Professional Core:** Core Courses designed in the programmes which are major courses of the discipline, required to attain desired outcomes and to ignite critical thinking skills amongst students.
 9. **Professional Electives:** Generally, a course can be chosen from a pool of courses and which May be very specific or specialized or advanced or supportive to the discipline or nurtures the candidate's proficiency/skill is called Professional Elective Course.
 10. **Communication Skills:** Communication Skills course are incorporated in the curriculum to meet the desired needs of communication amongst students.
 11. **Employability Enhancement Courses :** It contains the following courses:
 - a. **Mini Project:** Mini Project is a laboratory-oriented course which will provide a platform to students to enhance their practical knowledge and skills by development of small systems/application.
 - b. **Seminar:** Seminar should be based on thrust areas in state of art technologies. Students should identify the topic of seminar and finalize in consultation with Guide. Students should understand the topic and compile the report in standard format and present in front of Panel of Examiners respective Programme.
 - c. **Major Project:** Every student must do one major project in the Final year of their program. The minimum duration of project is 6 months. Students can do their major project in Industry or R&D Lab or in house or combination of any two.

COURSE CODE AND DEFINITION

Cours e code	Definitions	Teaching Dept. Code	Name of the Teaching Department	Teaching Dept. Code	Name of the Teaching Department
L	Lecture	MS	Metallurgical Science	SS	Stone Setting
T	Tutorial	DS	Design Studies	BCS	Basic Computer Skills
P	Practical	GSB	Goldsmithing Basic	R&A	Refining and Assaying
PC	Program Core Courses	JMB	Jewellery Making Basic	CT	Casting Technology
PE	Program Elective Courses	BWC	Basic Workshop Calculation	CAD	CAD Basic
AU	Audit Courses	TD	Technical Drawing	R&M	Retail and Marketing
SI	Summer Internship	CSE	Communication Skills in English Lab	GM	Gemmology
PR	Project	MFT	Metal Finishing Technique	JC	Jewellery Craft
SE	Seminar	PMS	Project Management Skill	PP	Professional Practice
CIE	Continuous Internal Evaluation	JD	Jewellery Designing	EDP	Entrepreneurship Development Programme
SEE	Semester End Examination	JM	Jewellery Making	IJ	Imitation Jewellery

MANDATORY VISITS/WORKSHOP/EXPERT LECTURES

1. It is mandatory to arrange one industrial visit every semester for the students of each branch.
2. It is mandatory to conduct a One-week workshop during the winter break after fifth semester on professional/ industry/ entrepreneurial orientation.
3. It is mandatory to organize at least one expert lecture per semester for each branch by inviting resource persons from domain specific industry.

EVALUATION SCHEME

A. For Practical Courses:

1. Five Written and practice test to be conducted for 30 marks as per scheme of evaluation.
2. Online certification course awarded 40 marks
3. Profile building for internship awarded 20 marks
4. Portfolio evaluation awarded 30 marks
5. Semester End examination conducted for 100 Marks and reduced to 60 marks

A. For Summer Internship / Projects / Seminar etc.

1. Evaluation is based on work done, quality of report, performance in viva-voce, presentation etc.

NOTE:

- A. The Continuous Internal Evaluation (CIE) is based on the student's performance in Internal Assessment tests, student activity, mini project, quizzes, assignments, seminars, viva-voce in practical, lab record etc. as specified in respective course curriculum.
- B. **Major Project/Mini Project:** Students can do their major project in Industry or R&D Labor in house. Mini Project is a laboratory-oriented course which will provide a platform to students to enhance their practical knowledge and skills by development of small systems/application.
- C. **Personality and character development:** It is mandatory for the students from 1st semester to enroll in any one of the personality and character development programmes (NCC/NSS/YRC/Yoga/Technical Club) and undergo training for their Personality and character development.
 - National Cadet Corps (NCC).
 - National Service Scheme (NSS) will have social service activities in and around the Institution.
 - Youth Red Cross (YRC) will have activities in and around the institution.
 - Yoga
 - Technical Clubs.
- D. **Internship:** A minimum of 10 credits (400 Hours) of Internship/ Entrepreneurial activities
/ Project work/ Seminar and Inter/ Intra Institutional Training may be counted toward three-year diploma programme.
- E. **Mapping of Marks to Grades:** Each course (Theory/Practical) is to be assigned 100 marks, irrespective of the number of credits, and the mapping of marks to grades may be done as per the following table:

F.

Range of Marks	Level	Assigned Grade	Grade Point
91-100	Outstanding	A+	10
81-90	Excellent	A	09
71-80	Very Good	B+	08
61-70	Good	B	07
51-60	Above Average	C+	06
45-50	Average	C	05
40-44	Satisfactory	D	04
<40	Fail	F	00

Fail due to shortage of attendance and therefore, to repeat the course/semester.	F*	00
Fail in Continuous internal Evaluation (CIE).	F**	00

Note: Those Candidates who have not obtained requisite minimum pass marks in CIE are not eligible to take up SEE in that course until they get requisite minimum pass marks in the CIE. They may re-register for the CIE in the subsequent regular semesters by paying prescribed examination fee.

SGPA and CGPA Calculations

Semester Grade Point Average (SGPA)=	$\frac{\sum[(\text{Course Credits earned}) \times (\text{Grade Points})] \text{ for all the courses in that semester}}{\sum[\text{Total Course credits applied}] \text{ for all the courses in that semester}}$
Cumulative Grade Point Average (CGPA)=	$\frac{\sum[(\text{Course Credits earned}) \times (\text{Grade Points})] \text{ for all courses, excluding those with F*/F** grades until that semester}}{\sum[\text{Total Course Credits earned}] \text{ for all Courses excluding those with F*/F** grades until that semester}}$

Note: The SGPA and CGPA shall be rounded off to 2 decimal points and reported in the semester Diploma marks /grade card.

A. SGPA and CGPA Calculations: An illustrative example for one academic year

Semester	Course Code	Credits Applied (CA)	Result Grade	Grade Points (GP)	Credits Earned (CE)	Credit points (CP=CE x GP)	SGPA, CGPA
I	Course 1	4	B	7	4	4x7=28	SGPA=CP/CA =110/22 = 5.00
I	Course 2	4	F	0	0	0x0=00	
I	Course 3	4	Absent (F)	0	0	0x0=00	
I	Course 4	4	A	9	4	4x9=36	
I	Course 5	2	A+	10	2	2x10=20	
I	Course 6	2	D	4	2	2x4=08	
I	Course 7	2	A	9	2	2x9=18	SGPA = 5.00
	Total	22			14	110	

Note: In 1s semester grade/marks card only SGPA is reported. From 2 d semester onwards both SGPA & CGPA will be reported in the grade/marks card.

Semester	Course Code	Credits Applied (CA)	Result Grade	Grade Points (GP)	Credits Earned (CE)	Credit points (CP=CE x GP)	SGPA, CGPA
II	Course 1	4	B	7	4	4x7=28	SGPA=CP/CA =100/19 = 5.26
II	Course 2	4	A	9	4	4x9=36	
II	Course 3	3	D	4	3	3x4=12	
II	Course 4	3	Absent (F)	0	0	0x0=00	
II	Course 5	2	A+	10	2	2x10=20	CGPA = CP/CE
II	Course 6	1	D	4	1	1x4=04	

II	Course 7	2	F	0	0	0x0=00	=(110+136)/ (14+22)
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	19		14	100	
I Semester Back log courses					

I	Course 2	4	C	5	4	4x5=20	=6.83
I	Course 3	4	D	4	4	4x4=16	
	Total	27			22	136	

- Total credits of the semester excluding the credits of the courses under F/F*/F** grade are considered for the calculation of CGPA of the two consecutive semesters under consideration.

B. CGPA Calculation of the entire programme: An Illustrative Example.

Semester	I	II	III	IV	V	VI	Total
Credits of the Semester	22	19	24	24	24	24	137
$\sum CP$	110	136	184	155	191	188	964

$$CGPA = \frac{964}{22+19+22+24+24+24} = \frac{[110+136+184+155+191+18]}{137} = 7.04$$



JSS MAHAVIDYAPEETHA
JSS POLYTECHNIC FOR THE DIFFERENTLY ABLED, MYSURU-06
 Curriculum Revision Committee: C-21(Fifth and Sixth Semester)
 Department of Jewellery Design and Technology

Date: 12-06-2023

**PROCEEDINGS OF THE CURRICULUM REVISION COMMITTEE MEETING OF V & VI SEMESTER
 DIPLOMA IN JEWELLERY DESIGN AND TECHNOLOGY PROGRAMME HELD ON 12-06-2023 AT
 12.30 PM AT EAM CONFERENCE HALL.**

Sl. No.	Name	Designation with Address	Contact Number
Chairman			
	Sri N M Shivakumaraswamy	Programme coordinator Dept. of JD&T, Academician	9448826306
Co-ordinator			
2	Smt. Prathibha k	Lecturer in Chemistry JSSPDA, Academician	9620131674
Members			
3	Ms Nikitha	Proprietor, Global Identification of Gems Jewellery, Bangalore Industry Representative	9916353555
4	Sri Manoj Nag	Proprietor, Mallika Jewellery, Bangalore Industry Representative	9686785370
5	Sri Adarsh	Gold appraiser, Canara Bank, SBI Bank, KVG Bank, K R Nagar Alumni Representative	9535556496
6	Sri Lakhan N	Visual Merchandizes Tanisqh Jewels, Bangalore Alumni Representative	9844638144
7	Sri Nandish	Sales Executive , Tanisqh Jewels, Mysore Alumni Representative	9164140760
8	Sri Shankar	Proprietor Sneham jewels, Bangalore Industry Representative	9845404488
9	Sri Bharath S U	Proprietor AG Crafts, Bangalore Industry Representative	9902100456
10	Sri Shakthivel	Managing Partner, Amber, Hosur Industry Representative	9901665475
11	Ms Harshitha T G	Designer Aurum Jewels Mysuru	6360509404

		Alumni Representative	
12	Sri Chandrashekar M S	Parent of Bhargavi IV Semester Parent Representative	7259758800
13	Sri Shivakumara R	Parent of Malikarjuna VI semester Parent Representative	8095837127
14	Sri Raghu C P	Goldsmith JSSPDA Mysuru	9342049765
15	Sri Rajendraprasad C S	Instructor JSSPDA Mysuru	9986887936
16	Sri Devraj V Manuvachari	Instructor JSSPDA Mysuru	8971183403
17	Sri Mahesh N P	Instructor JSSPDA Mysuru	9148701235

Sri Shivakumaraswamy N M, Programme coordinator of JD and chairman of curriculum Revision Committee welcomed the members to the meeting. He briefed the members on the following points:

1. The Syllabus being followed under the Scheme of Autonomous
2. The syllabus is framed based on the C20 Curriculum of the Board.
3. Preliminary meeting held in the department and taken opinion from the internal faculty.
4. Modifications required to the needs of the Industries and Differently Abled students.
5. Provisions of the PWD Act and Guidelines issued by the GOI for conducting Written Examinations for the Differently Abled.

He requested the Members of the Committee to go through the details placed and Provide valuable suggestions / opinions for the Revision of the Curriculum.

The committee discussed in detail regarding the curriculum revision of V and VI Semesters of Diploma in Jewellery Design & Technology to be implemented from the academic year 2023-24. The committee reviewed the existing curriculum and the revised draft curriculum as per the rules & regulations applicable to the education for the students with special needs.. The committee discussed and recommended the following points keeping the present industrial scenario.

FIFTH SEMESTER:

Professional Practice

- Recommended to retain same as the syllabus as mentioned in draft.
Including more practical knowledge, specifically focusing on advanced methods of stone settings and the advanced use of instruments in jewelry making.
- Adopting industry standard methods for manufacturing jewelry to ensure higher quality and market competitiveness.
- Placing more emphasis on CAD (Computer-Aided Design) training to keep up with modern design techniques.
- Giving more importance to the design of new trends in jewelry to stay current and meet market demands.
- **Gemmology**
- Recommended to retain same as the syllabus as mentioned in draft.
- Acquiring new gemological instruments to enhance the learning experience and keep students updated with the latest technologies.
- Providing training on imitation jewelry to empower students to earn their own income by diversifying their skill set

**The internal marks allotment pattern of all the subjects is
Mentioned below.**

Internal Assessment for Practical's: 60Marks

1. Assessment of assignment and student activity is evaluated through appropriate rubrics by the respective course coordinator. The secured mark in each case is rounded off to the next higher digit.

Practical Subjects: Five Written and practice test to be conducted for 30 marks as per scheme of evaluation.

Online certification course awarded 40 marks

Profile building for internship awarded 20 marks

Portfolio evaluation awarded 30 marks

Semester End examination conducted for 100 Marks and reduced to 60 marks

The meeting ended with vote of thanks to all the members by Smt. Prathibha K Co ordinator of the curriculum revision committee.

**(Prathibha K)
Co-ordinator**

**(Shivakumaraswamy N M)
Chairman**

SCHEME OF STUDIES DIPLOMA IN JEWELLERY DESIGN AND TECHNOLOGY (C-21)



JSS Mahavidyapeetha

JSS POLYTECHNIC FOR THE DIFFERENTLY ABLED, MYSURU-06
CURRICULUM STRUCTURE
V Semester Scheme of Studies - Diploma in Jewellery Design and Technology [C-21]
SCHEME AND EVALUATION

SCHEME AND EVALUATION																			
Pathway	Course Category / Teaching Department	Course Code	Pathway Title	Hours per Semester			Total contacthrs	Credits	CIE Marks		SEE-1 Marks (Theory)		SEE-2 Mark (Practical)		Total Marks	Min Marks for Passing (including CIE marks)	Assigned	Grade Point	SGPA and CGPA
				L	T	P			Ma x	Min	Max	Min	Max	Min					
Programme Specialization Pathway																			
1	JD Specialization pathways in emerging areasStudent may select any one of the specializations	4451	Professional Practice	128	64	384	468	24	240	96	60	24	100	40	400	160			
		4452	Gemology	128	64	384	468	24	240	96	60	24	100	40	400	160			
Entrepreneurship Pathway																			
2	ES/EE		Entrepreneurship and Start up	104	52	312	468	24	240	96	160	64	400	160					

L: - Lecture T: - Tutorial P: - Practical

Note: In 5th Semester student need to select any one of the pathways consisting of 24 credits.

Students can continue their higher education irrespective of the Pathway selected

Programme Coordinator
Principal



JSS Mahavidyapeetha

JSS POLYTECHNIC FOR THE DIFFERENTLY ABLED, MYSURU-06**CURRICULUM STRUCTURE****VI Semester Scheme of Studies - Diploma in Jewellery Design and Technology [C-21]*****SCHEME AND EVALUATION***

Pathway	Course Category / Teaching	Course Code	Pathway	Course		Total contact	Credits	CIE Marks		SEE Marks		Total Marks	Min Marks for Passing	Assigned Grade	Grade	SGPA and CGPA
Internship	JD	445S	Specialization pathway	Internship/project	40 Hours / week Total 16 Weeks	640	16	240	96	160	64	400	160			
		445E	Entrepreneurship and Start up pathway	Minimum Viable Product -MVP/ Incubation/ Startup proposal	40 Hours / week Total 16 Weeks	640	16	240	96	160	64	400	160			

Note : Student shall undergo Internship/Project/research project/MVP/Incubation/Startup proposal in the same area as opted in 5th semester pathway

Programme Coordinator

Principal



JSS Mahavidyapeetha

**JSS POLYTECHNIC FOR THE DIFFERENTLY ABLED,
MYSURU-06
DIPLOMA IN JEWELLERY DESIGN AND TECHNOLOGY**

Program	Jewellery Design and Technology	Semester	5
Course Code	4451	Type of Course L:T:P	128 : 61 : 384
Course Name	Professional Practice	Credits	24
CIE Marks	240	SEE Marks	160

Introduction:

A professional practice course in jewellery making is highly valuable for students as it provides them with practical knowledge and skills. By enrolling in such a course, students can gain hands-on experience, which is crucial in the field of jewellery making. This practical knowledge equips students with the necessary skills to create intricate and beautiful pieces of jewellery.

Moreover, this course opens up numerous job opportunities for students. With the practical skills acquired during the course, students become qualified candidates for various positions in the jewellery industry. They can apply for jobs as jewellery designers, artisans, gemstone setters, or even sales representatives in jewellery stores. The demand for skilled jewellery makers is high, and completing a professional practice course significantly enhances students' chances of securing rewarding employment in this field.

Additionally, the course can provide students with valuable internship opportunities. Internships allow students to work under experienced professionals in the industry, gaining real-world exposure and refining their skills. This practical experience further strengthens their resume and increases their chances of finding employment upon graduation.

Furthermore, with the combination of practical knowledge, job opportunities, and internship experience, students are well-prepared to pursue entrepreneurship in the jewellery industry. Armed with the skills and expertise gained from the professional practice course, students can establish their own jewellery businesses. They can design and create bespoke jewellery pieces, cater to individual preferences, and even specialize in bridal jewellery, such as complete bridal sets. This entrepreneurial path allows students to showcase their creativity and craftsmanship while building a successful career in the jewellery industry.

Pre-requisite

Before the start of this specialization course, student shall have prerequisite knowledge gained in the first two years on the following subjects:

1st year – Metallurgical Science, Design Studies, Goldsmithing (Basic and Advanced), Jewellery Making (Basic), Basic Workshop Calculation, and Technical Drawing

2nd year- metal Finishing and Refining Techniques, Jewellery Designing-I, Jewellery Making –I, Stone Setting-I, CAD (Basic), Casting Technology, Jewellery Designing-II, Jewellery Making –II, Stone Setting-II, CAD (Advanced) and Indian Constitution.

In the third year of study, student shall be applying previous years learning along with specialized field of study into projects and real-world applications.

Course Cohort Owner

A Course Cohort Owner is a faculty from the core discipline, who is fully responsible for one specialized field of study and the cohort of students who have chosen to study that specialized field of study.

Guidelines for Cohort Owner

1. Each Specialized field of study is restricted to a Cohort of 20 students which could include students from other relevant programs.
2. One faculty from the Core Discipline shall be the Cohort Owner, who for teaching and learning in allied disciplines can work with faculty from other disciplines or industry experts.
3. The course shall be delivered in boot camp mode spanning over 12 weeks of study, weekly developmental assessments and culminating in a mini capstone.
4. The industry session shall be addressed by industry subject experts (in contact mode/online / recorded video mode) in the discipline only.
5. The cohort owner shall be responsible to identify experts from the relevant field and organize industry session as per schedule.
6. Cohort owner shall plan and accompany the cohort for any industrial visits.
7. Cohort owner shall maintain and document industrial assignments, weekly assessments, practices and mini project.
8. The cohort owner shall coordinate with faculties across programs needed for their course to ensure seamless delivery as per time table
9. The cohort owner along with classroom sessions can augment or use supplementary teaching and learning opportunities including good quality online courses available on platforms like Karnataka LMS, Infosys Springboard, NPTEL, Unacademy, SWAYAM, etc.

Course outcome:

On successful completion of the course, the students will be able to:

CO1	Learn ball making and practice weaving ropes
CO2	Able to understand types of linking and manufacture different types of clasps
CO3	Manufacture Jewellery findings and making mangalsutra chain
CO4	Able to manufacture Traditional, Contemporary and Modern Necklace
CO5	Able to manufacture of Traditional, Contemporary and Moderns Earrings and bangle

Week	C O	P O	Days	1 st session (9 am to 1 pm)	L	T	P	2 ND session (1.30 pm to 4.30 pm)	L	T	P
1	1	1,3,6,7	1	Understanding of Designs Design Design forms in metal work Design components for metal work Designing and creating a jewel Design development	2		2	Rope Chain Annealing and Wire Rolling process Annealing and Wire drawing process	1		2
			2	Understanding of Designs Basic forms of design Design and construction Design transfer to metal Different material & methods of transfer of the design to metal	2		2	Rope Chain Loop making Loop fabrication	1		2
			3	EQUIPMENT AND TOOLS USED FOR JEWELLERY MAKING Rolling mill Foredom motor Tube drawing machine Fly die press Drilling machine Buffing machine Bangle sizing machine	2	2		Rope Chain Loop soldering Loop stretching			3
			4	EQUIPMENT AND TOOLS USED FOR JEWELLERY MAKING Annealing chamber Electroplating bath Polishing machine like, Drum polisher,		2	2	Rope Chain Bending loops for chain making Fabricating the loops finishing process			3
			5	Developmental Assessment			2	Assessment Review and corrective action			3
			6	Industry Class+ Assignment PLC programming			3				
Week	C O	P O	Days	1 st session (9 am to 1 pm)	L	T	P	2 ND session (1.30 pm to 4.30 pm)	L	T	P

2	02	1,2,4,6,7	1	Peer discussion on Industrial assignment		4		Box clasp Hook clasp				3
			2	EQUIPMENT AND TOOLS USED FOR JEWELLERY MAKING Holding tools Direct striking tools	2		2	Box clasp Regular box clasp part-1				3
			3	EQUIPMENT AND TOOLS USED FOR JEWELLERY MAKING Cutting tools Metal removal tools Torsion tools	2		2	Box clasp Regular box clasp part-2				3
			4	EQUIPMENT AND TOOLS USED FOR JEWELLERY MAKING Magnetic polisher, Ultrasonic cleaner. Pen plating	2		2	Box clasp Toggle clasp Part - 1				3
			5	Developmental Assessment	2		2	Assessment Review and corrective action				3
			6	Industry Class+ Assignment PLC programming			1					
Week	C O	P O	Days	1 st session (9 am to 1 pm)	L	T	P	2 ND session (1.30 pm to 4.30 pm)	L	T	P	
3	02	1,2,4,6,7	1	Peer discussion on Industrial assignment		4		Jewellery Linking Round link Wire rolling Wire Drawing				3
			2	EQUIPMENT AND TOOLS USED FOR JEWELLERY MAKING Indirect striking tools Compression tools	2		2	Jewellery Linking Round link Round link making				3
			3	EQUIPMENT AND TOOLS USED FOR JEWELLERY MAKING Mechanized rotary motion power tools Chain press machine	2		2	Jewellery Linking Flat link making Wire rolling Wire drawing Wire sheet making				3
			4	EQUIPMENT AND TOOLS USED FOR JEWELLERY MAKING	2		2	Jewellery Linking Flat link making Bending and soldering				3

				Coin press machine Automatic link making machine				Flat link making			
			5	Developmental Assessment	2		2	Assessment Review and corrective action			3
			6	Industry Class+ AssignmentPLC programming			1				
Week	C O	P O	Days	1st session (9 am to 1 pm)	L	T	P	2ND session (1.30 pm to 4.30 pm)	L	T	P
4	02	1,2,4, 6,7	1	Peer discussion on Industrial assignment		4		Jewellery Linking Half round link making Wire rolling Wire drawing Half round wire sheet making			3
			2	GENERAL WORKSHOP REQUIREMENTS Organizing the work areas	2		2	Jewellery Linking Half round link making Bending and soldering Link making process			3
			3	GENERAL WORKSHOP REQUIREMENTS Workshop maintenance	2		2	Jewellery Linking Twist link making Wire rolling Wire drawing Round link making			3
			4	GENERAL WORKSHOP REQUIREMENTS Scrap collecting techniques	2		2	Jewellery Linking Twist link making Cutting Twisting			3
			5	Developmental Assessment	2		2	Assessment Review and corrective action			3
			6	Industry Class+ AssignmentPLC programming			1				
Week	C O	P O	Days	1st session (9 am to 1 pm)	L	T	P	2ND session (1.30 pm to 4.30 pm)	L	T	P
5	03	1,2,3, 6,7	1	Peer discussion on Industrial assignment		4		Findings Mangalsutra findings Wire rolling Wire drawing Round link making			3
			2	Engraving Uses of engraving on jewellery Engraving tools and accrssories	2		2	Findings Mangalsutra findings Fabrication Soldering and finishing			3
			3	Engraving Preparing the work piece for engraving	2		2	Findings S Type Hooks			3

							Wire rolling Wire drawing Twisting				
			4	Engraving Holding and uses a Gravers Engraving practice	2		2	Findings U Type Hooks Wire rolling Wire drawing Twisting			3
			5	Developmental Assessment	2		2	Assessment Review and corrective action			3
			6	Industry Class+ AssignntPLC programmingme			1				
Week	C O	P O	Days	1st session (9 am to 1 pm)	L	T	P	2ND session (1.30 pm to4.30 pm)	L	T	P
6	03	1,2,3,6,7	1	Peer discussion on Industrial assignment		4		Mangalsutra pendant making Pendant designing (Center pendant and Side pendant)			3
			2	Soldering Solders of precious metals and there alloys	2		2	Mangalsutra pendant making Rendering and specification of design pendant (Center pendant and Side pendant)			3
			3	Fluxes used for silver or hard soldering Presoldering operations Burning fuels	2		2	Mangalsutra pendant making Parts Preparation in Metal Forms Wire rolling Wire drawing Wire sheet making			3
			4	The three stages of a soldering cycle Post soldering operations Soft soldering	2		2	Mangalsutra pendant making Parts Preparation in Metal Forms Filigree, Granules Round link making			3
			5	Developmental Assessment	2		2	Assessment Review and corrective action			3
			6	Industry Class+ AssignmentPLC programming			1				
Week	C O	P O	Days	1st session (9 am to 1 pm)	L	T	P	2ND session (1.30 pm to4.30 pm)	L	T	P
7	03	1,2,3,6,7	1	Peer discussion on Industrial assignment		4		Mangalsutra pendant making Fabrication Fabricating the design forms Bending with metal according to design with diameter Setting the designed metal form using jewellery wax(black wax)			3
			2	Metal Finishing: Achieving Desired	2		2	Mangalsutra pendant making			3

				Surface Appearance Metal finishing techniques: manual and mechanical Cleaning solution finishing techniques				Fabrication Wire sheet bending according to designs Inner design making			
			3	Hand and mechanical finishing techniques Grinding Abrasive blast cleaning and texturing	2		2	Mangalsutra pendant making Fabrication Outer design making Pouring the plaster of parries (POP) and curing Removing from black wax			3
			4	Tumbling or Barrel finishing Burnishing	2		2	Mangalsutra pendant making Fabrication Pre – heating the pendant Applying different forms of solders for fabricated parts and soldering (Sheet, wire, strip, clipped, powder and paste)			3
			5	Developmental Assessment	2		2	Assessment Review and corrective action			3
			6	Industry Class+ AssignmentPLC programming			1				
Week	C O	P O	Days	1st session (9 am to 1 pm)	L	T	P	2ND session (1.30 pm to4.30 pm)	L	T	P
8	03	1,2,3, 6,7	1	Peer discussion on Industrial assignment		4		Mangalsutra pendant making Repair work and final finishing with magnetic polisher			3
			2	Hand polishing and Buffing Mechanical finishing of metal surface	2		2	Mangalsutra chain by using black beads Wire rolling Wire drawing Loop making			3
			3	Abrasives Natural Abrasives Artificial Abrasives	2		2	Mangalsutra chain by using black beads Soldering the loops Stretching the loops Bending			3
			4	Flexible shaft equipment and Accessories	2		2	Mangalsutra chain by using black beads Joining black beads Inter locking 24x2inches=48inches			3
			5	Developmental Assessment	2		2	Assessment Review and corrective action			3
			6	Industry Class+ AssignmentPLC programming			1				
Week	C O	P O	Days	1st session (9 am to 1 pm)	L	T	P	2ND session (1.30 pm to4.30 pm)	L	T	P
9	04	1,2,3,	1	Peer discussion on Industrial		4		Manufacturing of Necklace (Modern,			3

		6,7		assignment				Contemporary, Traditional) Parts preparation Preparation of design forms in metal according to necklace designs			
			2	Stones and their settings: Selection of precious, semiprecious and synthetic stones	2		2	Manufacturing of Necklace (Modern, Contemporary, Traditional) Design forms Wire rolling Wire sheet making			3
			3	Tumbling Mechanical Shaping and Polishing stones	2		2	Manufacturing of Necklace (Modern, Contemporary, Traditional) Design forms Filligire, Granules, stamping			3
			4	Bezel setting Setting a Faceted Stones	2		2	Manufacturing of Necklace (Modern, Contemporary, Traditional) Design forms Bezel making, Prong making			3
			5	Developmental Assessment	2		2	Assessment Review and corrective action			3
			6	Industry Class+ AssignmentPLC programming			1				
Week	C O	P O	Days	1st session (9 am to 1 pm)	L	T	P	2ND session (1.30 pm to 4.30 pm)	L	T	P
10	04	1,2,3, 6,7	1	Peer discussion on Industrial assignment		4		Fabrication Fabricating the design forms in metal work according to necklace design Arrangement of outer design of necklace by using black wax			3
			2	Electroplating: Reasons for Electroplating Principal properties of plated Coatings	2		2	Fabrication Fabricating the design forms in metal work according to necklace design Arrangement of inner design of necklace by using black wax			3
			3	Electroplating: Factors influencing electroplated results Immersion or Dip plating	2		2	Preparation of different types of soldering Hard solder, Medium solder, Easy solder			3
			4	Brush Plating Electroplating and Electroforming equipment and conditions	2		2	Different forms of solders Applying different form of solder for fabricated parts and soldering (sheet, wire, strip, clipped, powder and paste)			3
			5	Developmental Assessment	2		2	Assessment Review and corrective action			3

			6	Industry Class+ AssignmentPLC programming			1				
Week	C O	P O	Days	1 st session (9 am to 1 pm)	L	T	P	2 ND session (1.30 pm to4.30 pm)	L	T	P
11	04	1,2,3, 6,7	1	Peer discussion on Industrial assignment		4		Building fragments in to units. Joining fabricated parts by intermediary metal alloy fusion- soldering			3
			2	Coloring Metals Metal coloring: Broadening the basic color range of metals	2		2	Pre finishing Removing soldered necklace parts from plaster of parries (POP) Pickling, washing and polishing			3
			3	Coloring process Post coloring treatments	2		2	Repair work for unsoldered parts of necklace			3
			4	Anodizing Metals: Electrochemical conversion coating and dye coloring	2		2	Magnetic polishing and Final finishing			3
			5	Developmental Assessment	2		2	Assessment Review and corrective action			3
			6	Industry Class+ AssignmentPLC programming			1				
Week	C O	P O	Days	1 st session (9 am to 1 pm)	L	T	P	2 ND session (1.30 pm to4.30 pm)	L	T	P
12	05	1,2,3, 6,7	1	Peer discussion on Industrial assignment		4		Manufacturing of Bangle (Modern, Contemporary, Traditional) Preparation of design forms in metal according to bangle designs Wire rolling, Wire sheet making			3
			2	Designing of necklace center pendant	2		2	Manufacturing of Bangle (Modern, Contemporary, Traditional) Design forms Filligire Granules, Stamping			3
			3	Designing of necklace side units	2		2	Manufacturing of Bangle (Modern, Contemporary, Traditional) Bezel making, Prong making			3
			4	Rendering and specification	2		2	Fabrication Fabricating the design forms in metal work according to bangle design Arrangement of outer design of inner design bangle by using black wax			3
			5	Developmental Assessment	2		2	Assessment Review and corrective action			3
			6	Industry Class+ AssignmentPLC			1				

Week	C O	P O	Days	programming 1 st session (9 am to 1 pm)	L	T	P	2 ND session (1.30 pm to 4.30 pm)	L	T	P
13	05	1,2,3,6,7	1	Peer discussion on Industrial assignment		4		Fabrication Preparation of different types of soldering Hard solder			3
			2	Designing of Bangle top view	2		2	Fabrication Medium solder, Easy solder			3
			3	Designing of Bangle side view	2		2	Fabrication Building fragments in to units. Joining fabricated parts by intermediary metal alloy fusion- soldering			3
			4	Rendering and specification	2		2	Fabrication Pre finishing Removing soldered necklace parts from plaster of parries (POP) Pickling, washing and polishing			3
			5	Developmental Assessment	2		2	Assessment Review and corrective action			3
			6	Industry Class+ Assignment PLC programming			1				
Week	C O	P O	Days	1 st session (9 am to 1 pm)	L	T	P	2 ND session (1.30 pm to 4.30 pm)	L	T	P
14	05	1,2,3,6,7		Peer discussion on Industrial assignment		4		Manufacturing of Earrings (Modern, Contemporary, Traditional) Preparation of design forms in metal according to bangle designs Wire rolling Wire sheet making			3
				Designing of Earrings	2		2	Manufacturing of Earrings (Modern, Contemporary, Traditional) Design forms Filligire, Granules Stamping			3
				Designing of Earrings side view	2		2	Manufacturing of Earrings (Modern, Contemporary, Traditional) Bezel making, Prong making			3
				Rendering and specification	2		2	Fabrication Fabricating the design forms in metal work according to bangle design Arrangement of outer design of inner design bangle by using black wax			3

				Developmental Assessment	2		2	Assessment Review and corrective action			3
				Industry Class+ AssignmentPLC programming			1				
Week	C O	P O	Days	1st session (9 am to 1 pm)	L	T	P	2ND session (1.30 pm to 4.30 pm)	L	T	P
15	05	1,2,3,6,7		Peer discussion on Industrial assignment		4		Fabrication Preparation of different types of soldering Hard solder			3
				Designing of Earring	2		2	Fabrication Medium solder, Easy solder			3
				Designing of Earrings side view	2		2	Fabrication Building fragments in to units. Joining fabricated parts by intermediary metal alloy fusion- soldering			3
				Rendering and specification	2		2	Fabrication Pre finishing Removing soldered necklace parts from plaster of parries (POP) Pickling, washing and polishing			3
				Developmental Assessment	2		2	Assessment Review and corrective action			3
				Industry Class+ AssignmentPLC programming			1				
Week	C O	P O	Days	1st session (9 am to 1 pm)	L	T	P	2ND session (1.30 pm to 4.30 pm)	L	T	P
16	05	1,2,3,6,7		Peer discussion on Industrial assignment		4		Fabrication Preparation of different types of soldering Hard solder			3
				Designing of studs and drops	2		2	Manufacturing of earrings (Modern, Contemporary, Traditional) Medium solder, Easy solder			3
				Designing of studs and drops side view	2		2	Fabrication Building fragments in to units. Joining fabricated parts by intermediary metal alloy fusion- soldering			3
				Rendering and specification	2		2	Fabrication Pre finishing, Removing soldered necklace parts from plaster of parries (POP) Pickling, washing and polishing			3
				Developmental Assessment	2		2	Assessment Review and corrective action			3
				Industry Class+ AssignmentPLC programming			1				

CIE and SEE Assessment Methodologies

CIE Assessment	Assessment Mode	Duration In hours	Max Marks
Week 5	CIE 1– Written and practice test	4	30
Week 7	CIE 2– Written and practice test	4	30
Week 9	and practice test	4	30
Week 12	CIE 4– Written and practice test	4	30
Week 15	CIE 5– Written and practice test	4	30
	On line Course work (Minimum 10 hours online course with certification from (SWAYAM/NPTEL/Infosys Springboard)		40
	Profile building for Internship / Submission of Synopsys for project work		20
Portfolio evaluation (Based on industrial assignments and weekly developmental assessment) *			30
TOTAL CIE MARKS (A)			240
SEE 1 - Theory exam (QP from BTE) Conducted for 100 marks 3 hrs duration reduced to 60 marks		3	60
SEE 2 – Practical		3	100
TOTAL SEE MARKS (B)			160
TOTAL MARKS (A+B)			400

* The industrial assignment shall be based on peer-to-peer assessment for a total of 10 marks (on a scale of 1 to 10) and in the event of a group assignment the marks awarded will be the same for the entire group, the developmental assessment will be for a total of 20 marks and based on MCQ/case study/demonstration and such other assignment methods



JSS Mahavidyapeetha
**JSS POLYTECHNIC FOR THE DIFFERENTLY ABLED,
 MYSURU-06**

Program	Jewellery Design and Technology	Semester	5
Course Code	4452	Type of Course L:T:P	128 :64 : 384
Course Name	GEMMOLOGY	Credits	24
CIE Marks	240	SEE Marks	160

DIPLOMA IN JEWELLERY DESIGN AND TECHNOLOGY

Introduction:

A gemmology course is incredibly valuable for students seeking practical knowledge in jewellery making. By enrolling in this course, students can acquire in-depth understanding and hands-on experience in identifying, grading, and appraising gemstones. This practical knowledge is essential for anyone involved in the jewellery industry.

The gemmology course opens up a plethora of job opportunities for students. With their expertise in gemstone identification and grading, students become qualified candidates for positions such as gemmologists, jewellery appraisers, and gemstone consultants. These roles are in high demand in the jewellery industry, and completing a gemmology course significantly enhances students' chances of securing lucrative job positions.

Additionally, the course can provide students with valuable internship opportunities. Interning with renowned jewellery companies, gemstone dealers, or gemological laboratories allows students to gain practical experience and refine their skills under the guidance of industry professionals. This practical exposure further strengthens their resume and increases their chances of finding employment upon graduation.

Furthermore, the combination of practical knowledge, job opportunities, and internship experience equips students to pursue entrepreneurship in the jewellery industry. With their gemmological expertise, students can start their own jewellery businesses or establish themselves as independent gemstone consultants.

Pre-requisite

Before the start of this specialization course, student shall have prerequisite knowledge gained in the first two years on the following subjects:

1st year – Metallurgical Science, Design Studies, Goldsmithing (Basic and Advanced), Jewellery Making (Basic), Basic Workshop Calculation, and Technical Drawing

2nd year- metal Finishing and Refining Techniques, Jewellery Designing-I, Jewellery Making –I, Stone Setting-I, CAD (Basic), Casting Technology, Jewellery Designing-II, Jewellery Making –II, Stone Setting-II, CAD (Advanced) and Indian Constitution.

In the third year of study, student shall be applying previous years learning along with specialized field of

Course Cohort Owner

A Course Cohort Owner is a faculty from the core discipline, who is fully responsible for one specialized field of study and the cohort of students who have chosen to study that specialized field of study.

Guidelines for Cohort Owner

1. Each Specialized field of study is restricted to a Cohort of 20 students which could include students from other relevant programs.
2. One faculty from the Core Discipline shall be the Cohort Owner, who for teaching and learning in allied disciplines can work with faculty from other disciplines or industry experts.
3. The course shall be delivered in boot camp mode spanning over 12 weeks of study, weekly developmental assessments and culminating in a mini capstone.
4. The industry session shall be addressed by industry subject experts (in contact mode/online / recorded video mode) in the discipline only.
5. The cohort owner shall be responsible to identify experts from the relevant field and organize industry session as per schedule.
6. Cohort owner shall plan and accompany the cohort for any industrial visits.
7. Cohort owner shall maintain and document industrial assignments, weekly assessments, practices and mini project.
8. The cohort owner shall coordinate with faculties across programs needed for their course to ensure seamless delivery as per time table
9. The cohort owner along with classroom sessions can augment or use supplementary teaching and learning opportunities including good quality online courses available on platforms like Karnataka LMS, Infosys Springboard, NPTEL, Unacademy, SWAYAM, etc.

Course outcome:

On successful completion of the course, the students will be able to:

CO1	Able to classify different types of gemstones and summarize the structure of gemstones.
CO2	Able to learn properties and inclusions in gemstones.
CO3	Know optical properties, crystallography and physical properties of gemstones.
CO4	Identify the Diamonds and Synthetic stones and Illustrate the Navarathnas.
CO5	Able to identify synthetic flame fusion, flux and hydrothermal synthetic, organic gemstones.

Week	C O	P O	Days	1 st session (9 am to 1 pm)	L	T	P	2 nd session (1.30 pm to 4.30 pm)	L	T	P
1	01	1,2,4,5,7	1	Introduction to Gemmology & Classification of gemstones. Scientific Classification	2		2	Dichroscope Principle	1		2
			2	Introduction to Gemmology & Classification of gemstones. Commercial Classification	2		2	Dichroscope Construction and working	1		2
			3	Origin, structure of gemstones & Properties of Gemstones. Origin, Formation of crystals	2	2		Dichroscope Isotropic and Anisotropic stones			3
			4	Origin, structure of gemstones & Properties of Gemstones. Crystal systems, Hardness		2	2	Dichroscope Dichroism and trichroism			3
			5	Developmental Assessment			2	Assessment Review and corrective action			3
			6	Industry Class+ Assignment PLC programming			3				
Week	C O	P O	Days	1 st session (9 am to 1 pm)	L	T	P	2 nd session (1.30 pm to 4.30 pm)	L	T	P
2	01	1,2,4,5,7	1	Peer discussion on Industrial assignment		4		Polaris cope Principle Construction and working S.R., D.R., A.G.G. & A.D.R Stone			3
			2	Origin, structure of gemstones & Properties of Gemstones. Scratch Hardness, Mohr's Hardness Scale,	2		2	Polaris cope Optic character of gemstone			3
			3	Origin, structure of gemstones & Properties of Gemstones.	2		2	Polaris cope Uniaxial and Biaxial optic signs			3

				Density, Determination of density, Hydrostatic Balance							
			4	Origin, structure of gemstones & Properties of Gemstones. Suspension Method, Weights used in the Gem trade, Optical properties	2		2	Polaris cope Use of konoscope			3
			5	Developmental Assessment	2		2	Assessment Review and corrective action			3
			6	Industry Class+ AssignmentPLC programming			1				
Week	C O	P O	Days	1st session (9 am to 1 pm)	L	T	P	2nd session (1.30 pm to 4.30 pm)	L	T	P
3	01	1,2,4, 5,7	1	Peer discussion on Industrial assignment		4		Refractometer Critical angle of gemstone Total internal reflection in gems			3
			2	Origin, structure of gemstones & Properties of Gemstones. Colour, Refraction and reflection, Determination of Refractive Index using Refractometer	2		2	Refractometer Refractive index determination			3
			3	Origin, structure of gemstones & Properties of Gemstones. Other properties, Double Refraction, Dispersion	2		2	Refractometer Birefringence and optic sign			3
			4	Origin, structure of gemstones & Properties of Gemstones. Absorption Spectra, Transparency, Luster, Pleochroism, Luminescence	2		2	Refract meter Spot method for cabochons and Carvings			3
			5	Developmental Assessment	2		2	Assessment Review and corrective action			3
			6	Industry Class+ AssignmentPLC			1				

				programming							
Week	C O	P O	Days	1st session (9 am to 1 pm)	L	T	P	2nd session (1.30 pm to 4.30 pm)	L	T	P
4	02	1,2,4, 5,7	1	Peer discussion on Industrial assignment		4		Spectroscope Absorption of light			3
			2	Usage of Instruments and devices in Gem Testing & Study of inclusions in Gemstones.	2		2	Spectroscope Dispersion in gemstones			3
			3	Refractrometer	2		2	Spectroscope Working & use of spectroscope			3
			4	Spectroscope	2		2	Spectroscope Typical spectrums of certain Gem stone			3
			5	Developmental Assessment	2		2	Assessment Review and corrective action			3
			6	Industry Class+ Assignment PLC programming			1				
Week	C O	P O	Days	1st session (9 am to 1 pm)	L	T	P	2nd session (1.30 pm to 4.30 pm)	L	T	P
5	03	1,2,4, 5,7	1	Peer discussion on Industrial assignment		4		Microscope U. V. light Introduction and working of microscope			3
			2	Polariscope,	2		2	Microscope U. V. light Construction of Microscope			3
			3	Dichroscope,	2		2	Microscope U. V. light Typical inclusion in gemstones			3
			4	Microscope, Chelsea Filter.	2		2	Microscope U. V. light Typical inclusion in gemstones			3
			5	Developmental Assessment	2		2	Assessment Review and corrective action			3
			6	Industry Class+ Assignment PLC programming			1				
Week	C O	P O	Days	1st session (9 am to 1 pm)	L	T	P	2nd session (1.30 pm to 4.30 pm)	L	T	P

6	04	1,2,4, 5,7	1	Peer discussion on Industrial assignment		4		OPTICAL PROPERTIES OPTICS Practical with phenomenon			3
			2	Importance of cutting in gemstones	2		2	OPTIC NATURE Single and double refraction			3
			3	Study of Navarathna Ruby, lord surya	2		2	OPTIC NATURE Optic axis cause of colour in gemstones			3
			4	Study of Navarathna Pearl, lord chandra	2		2	OPTIC NATURE Optic axis cause of colour in gemstones			3
			5	Developmental Assessment	2		2	Assessment Review and corrective action			3
			6	Industry Class+ AssignmentPLC programming			1				
Week	C O	P O	Days	1st session (9 am to 1 pm)	L	T	P	2nd session (1.30 pm to 4.30 pm)	L	T	P
7	04	1,2,4, 5,7	1	Peer discussion on Industrial assignment		4		PHENOMENON IN GEMSTONES Cat's eye			3
			2	Study of Navarathna Red Coral, lord kuja	2		2	PHENOMENON IN GEMSTONES Asterism			3
			3	Study of Navarathna Emerald, lord budh	2		2	PHENOMENON IN GEMSTONES Play of colours			3
			4	Study of Navarathna Yellow sapphire, lord guru	2		2	PHENOMENON IN GEMSTONES Sheen			3
			5	Developmental Assessment	2		2	Assessment Review and corrective action			3
			6	Industry Class+ AssignmentPLC programming			1				
Week	C O	P O	Days	1st session (9 am to 1 pm)	L	T	P	2nd session (1.30 pm to 4.30 pm)	L	T	P
8	04	1,2,4, 5,7	1	Peer discussion on Industrial assignment		4		PHENOMENON IN GEMSTONES Aventurescence Pleochroism			3
			2	Study of Navarathna	2		2	PHENOMENON IN GEMSTONES			3

				Diamond, lord sukra				Metamerism			
			3	Study of Navarathna Blue sapphire, lord shani	2		2	PHENOMENON IN GEMSTONES Iridescence			3
			4	Study of Navarathna Hessonite, lord rahu	2		2	PHENOMENON IN GEMSTONES Luster and transparency			3
			5	Developmental Assessment	2		2	Assessment Review and corrective action			3
			6	Industry Class+ AssignmentPLC programming			1				
Week	C O	P O	Days	1st session (9 am to 1 pm)	L	T	P	2nd session (1.30 pm to 4.30 pm)	L	T	P
9	04	1,2,4,5,7	1	Peer discussion on Industrial assignment		4		PHYSICAL PROPERTIES OF GEMSTONES Hardness - hardness scale, differential hardness			3
			2	Study of Navarathna Cat's eye	2		2	PHYSICAL PROPERTIES OF GEMSTONES Cleavage			3
			3	Colour of gem stones	2		2	PHYSICAL PROPERTIES OF GEMSTONES Parting - Toughness			3
			4	Flaws in gemstones and gem testing	2		2	PHYSICAL PROPERTIES OF GEMSTONES Specific gravity - Hydrostatic and heavy liquids method			3
			5	Developmental Assessment	2		2	Assessment Review and corrective action			3
			6	Industry Class+ AssignmentPLC programming			1				
Week	C O	P O	Days	1st session (9 am to 1 pm)	L	T	P	2nd session (1.30 pm to 4.30 pm)	L	T	P
10	02, 04	1,2,4,5,7	1	Peer discussion on Industrial assignment		4		CRYSTALLOGRAPHY OF GEMSTONES			3

							Seven-crystal system				
			2	Physical and Chemical Properties- Hardness, hardness scale	2		2	CRYSTALLOGRAPHY OF GEMSTONES Crystal axis			3
			3	Differential hardness, Cleavage, Toughness, Specific gravity	2		2	CRYSTALLOGRAPHY OF GEMSTONES Elements of symmetry Crystal forms and habits			3
			4	Differentiation among important gemstones.	2		2	CRYSTALLOGRAPHY OF GEMSTONES Types of twinned crystals Surface marking			3
			5	Developmental Assessment	2		2	Assessment Review and corrective action			3
			6	Industry Class+ AssignmentPLC programming			1				
Week	C O	P O	Days	1st session (9 am to 1 pm)	L	T	P	2nd session (1.30 pm to4.30 pm)	L	T	P
11	04	1,2,4, 5,7	1	Peer discussion on Industrial assignment		4		IDENTIFICATION OF ROUGH CRYSTALS BY OBSERVING			3
			2	Differentiation among important gemstones.	2		2	VARIOUS GEMSTONES			3
			3	Study of Diamonds & Synthetic stones development. 4C’s of Diamonds, Basic of Diamond grading,	2		2	COURNDUMS Rubies and Sapphires			3
			4	Study of Diamonds & Synthetic stones development. Verneuil process, Imitation Stones	2		2	BERYL GROUP Emerald, Aquamarines etc.			3
			5	Developmental Assessment	2		2	Assessment Review and corrective action			3
			6	Industry Class+ AssignmentPLC programming			1				
Week	C O	P O	Days	1st session (9 am to 1 pm)	L	T	P	2nd session (1.30 pm to4.30 pm)	L	T	P
12	04	1,2,4, 5,7	1	Peer discussion on Industrial assignment		4		QUARTZ GROUP Various types of quartz crystalline and			3

							cryptocrystalline				
			2	Other important stones Quartz and feldspars	2		2	GARNET AND FELDSPAR GROUPS			3
			3	Other important stones Non-transparent and unusual gems	2		2	OURMALINE, TOPAZ , PERIDOT			3
			4	Man Made Stones Plastic cameo Synthetic opal Synthetic emerald	2		2	IDENTIFICATION OF SYNTHETIC FLAME-FUSION GEMSTONE			3
			5	Developmental Assessment	2		2	Assessment Review and corrective action			3
			6	Industry Class+ AssignmentPLC programming			1				
Week	C O	P O	Days	1st session (9 am to 1 pm)	L	T	P	2nd session (1.30 pm to4.30 pm)	L	T	P
13	04, 05	1,2,4, 5,7	1	Peer discussion on Industrial assignment		4		IDENTIFICATION OF FLUX AND HYDROTHERMAL SYNTHETICS			3
			2	Gems for Carving	2		2	ORGANIC GEMSTONE Pearl Ivory			3
			3	Organic Gems	2		2	ORGANIC GEMSTONE Amber Coral			3
			4	Gem Cutting	2		2	ORGANIC GEMSTONE Jade Ammolite			3
			5	Developmental Assessment	2		2	Assessment Review and corrective action			3
			6	Industry Class+ AssignmentPLC programming			1				

Week	C O	P O	Days	1 st session (9 am to 1 pm)	L	T	P	2 nd session (1.30 pm to 4.30 pm)	L	T	P
14	01, 03	1,2,4, 5,7	1	Peer discussion on Industrial assignment		4		Gems and Jewellery Gem setting in Jewellery			3
			2	Dispersion , Causes of Gemstone dispersion	2		2	Gem Identification and Jewellery Metal Quality factors of gem stones			3
			3	Transparency of Gemstones	2		2	Appraisal and Valuation			3
			4	Mohs Hardness Scale Weight in Gem Grade	2		2	Handling Gemstone Jewellery Testing Gems in Jewellery			3
			5	Developmental Assessment	2		2	Assessment Review and corrective action			3
			6	Industry Class+ Assignment PLC programming			1				
Week	C O	P O	Days	1 st session (9 am to 1 pm)	L	T	P	2 nd session (1.30 pm to 4.30 pm)	L	T	P
15	03, 05	1,2,4, 5,7	1	Peer discussion on Industrial assignment		4		Inclusions in Gem stones			3
			2	Gem Properties Luminescence: Fluorescence and Phosphorescence	2		2	External Flaws, Internal flaw Solid Inclusion Liquid inclusion Gaseous Inclusion			3
			3	Use of Ultra violet Lamp	2		2	Importance of cutting in Gemstones			3
			4	Use of x rays in Gemmology	2		2				3
			5	Developmental Assessment	2		2	Assessment Review and corrective action			3
			6	Industry Class+ Assignment PLC programming			1				
Week	C O	P O	Days	1 st session (9 am to 1 pm)	L	T	P	2 nd session (1.30 pm to 4.30 pm)	L	T	P
16	05	1,2,4, 5,7	1	Peer discussion on Industrial assignment		4		Procedure and Identification of Natural stones			3
			2	Synthetic stone development	2		2	Procedure and Identification of Synthetic Stones			3
			3	Identification of flame-fusion	2		2	Procedure and Identification of Imitation			3

			synthesis				Stones			
		4	Imitation stones	2		2	Comparison between Natural, synthetic & Imitation stones			3
		5	Developmental Assessment	2		2	Assessment Review and corrective action			3
		6	Industry Class+ Assignment PLC programming			1				

CIE and SEE Assessment Methodologies

CIE Assessment	Assessment Mode	Duration In hours	Max Marks
Week 5	CIE 1– Written and practice test	4	30
Week 7	CIE 2– Written and practice test	4	30
Week 9	CIE 3– Written and practice test	4	30
Week 12	CIE 4– Written and practice test	4	30
Week 15	CIE 5– Written and practice test	4	30
	On line Course work (Minimum 10 hours online course with certification from (SWAYAM/NPTEL/Infosys Springboard)		40
	Profile building for Internship / Submission of Synopsys for project work		20
Portfolio evaluation (Based on industrial assignments and weekly developmental assessment) *			30
TOTAL CIE MARKS (A)			240
SEE 1 - Theory exam (QP from BTE) Conducted for 100 marks 3 hrs duration reduced to 60 marks		3	60
SEE 2 – Practical		3	100
TOTAL SEE MARKS (B)			160
TOTAL MARKS (A+B)			400

The industrial assignment shall be based on peer-to-peer assessment for a total of 10 marks (on a scale of 1 to 10) and in the event of a group assignment the marks awarded will be the same for the entire group, the developmental assessment will be for a total of 20 marks and based on MCQ/case study/demonstration and such other assignment methods