Secondary Education Curriculum
Sculpture

Grade: 11 and 12

Subject code: Grade 11: Scu423   Grade 12: Scu424

Credit hour: 5Annual working hour: 160

1. Introduction

Sculpture is an important form of visual arts. It can be naturalistic and representational, abstract, and narrative. The history of sculpture reaches back in time from pre-historic humans and spans all cultures, continents, and millennia. The purpose of developing the curriculum of Sculpture is to produce human resource with basic skills in the field of Sculpture. The objective of developing sculpture curriculum is to provide students with practical and creative opportunities to acquire knowledge, skills and experience at the secondary (grade 11 and 12) level students in the sculpture.

This Curriculum of sculpture has been developed in line with the spirit of the National Curriculum Framework (NCF), 2076 BS. The students learn express themselves in varied and original ways related to the art through a practical and theoretical study of sculpture. They acquire new skills, learn specialized techniques and also have opportunities to engage in creative decision-making processes. They also examine impacts of new technologies and techniques in their chosen field of specialization and consider these in the context of the contemporary sculpture art. The curriculum addresses the creative and critical approaches with a prime focus on practical skills. The major contents of the curriculum are: introduction to sculpture, clay modeling, terracotta, plaster of Paris, armature, slip casting, cement as a sculptural medium, resin as a sculptural medium, preservation of art, principles of art, molds, stone carving, indirect carving, bronze sculpture, assemblage, junk art, soft sculpture, new media art.

The curriculum aims to impart basic knowledge and skills on sculpting. It emphasizes the use of materials, techniques, along with the elements and fundamentals of art stepwise, and systematically. For achieving the competences and learning outcomes; experimental and practice-based activities are highly emphasized. The curriculum has two parts – theoretical (25%) and practical (75%). The students are required to get through both the parts separately. The students undertake core studio practice units and core theoretical units throughout the curriculum. For appraising the learning outcomes, both internal as well as external assessment tools will be used.

2. Level-wise Competencies

With the completion of the curriculum, grade 11-12 students will be able to:

1. Demonstrate the understanding of basic skillsand knowledge of sculpture-making;
2. Develop a basic level of skill and knowledge of the elements and fundamentals of art in a variety of sculpture media;
3. Analyze and apply the mediums and techniques used in the sculpture-making process;
4. Perform skills in handling various tools and materials used in sculpture-making;
5. Develop a variety of objects from observation;
6. Analyze sculptures objectively, and interpret the intended meanings of visual images, themes, and ideas;
7. Identify and develop common concepts of form, shape, mass, volume, and space;
8. Demonstrate the skill to mold basic shapes and forms (cube, cylinder, sphere, cone, etc.);
9. Demonstrate the skill to make relief figures andmake objects like fruits, flowers, and patterns from observation;
10. Develop skills in self-expression and capabilities needed for vocational, polytechnic, and higher education in the future career as a sculptor, or molder.

3. Grade-Wise Learning Outcomes

Theoretical Part

S. N.	Grade 11		Grade 12	
	Content Area	**Learning Outcomes**	**Content Area**	**Learning Outcomes**
1.	Introduction to Sculpture	1.1 Introduce sculpture with appropriate examples 1.2 Describe the kinds of sculpture. 1.3 Explain various mediums used in sculpture. 1.4 Differentiate between a 3-D sculpture and a 2-D relief sculpture. 1.5 Explain common processes of sculpture-making. 1.6 Identify different tools used in different mediums.	Wood Carving	1.1 Introducewood carving 1.2 Identify the methods used in wood carving 1.3 Explain the techniques used in wood carving 1.4 Explain the basic tool set for wood carving 1.5 Analyze the salient features of the traditional Nepali wood carving
2.	Clay Modeling	2.1 Identify and explain types of clay. 2.2 Describe the techniques of clay modeling 2.3 Explain the process of working clay for long-lasting	Molds	2.1 Identify the process of making female mold 2.2 Describethe methods of waste mold and piece mold 2.3 Explain butterfly mold, mother mold, key hole, and lock
3.	Terracotta	3.1 Elaborate terracotta as a sculptural medium 3.2 Describe kilns commonly used for firing terracotta 3.3 Explain the advantages of terracotta as a sculptural medium	Stone Carving	3.1 Identify and explain the types of stone used for stone carving 3.2 Describethe tools used in stone carving 3.3 Explain the process of stone carving
4.	Plaster of Paris as a Sculptural Medium	4.1 Explain process of producing plaster of Paris 4.2 Identify and explain types of plaster of Paris 4.3 Describe plaster of Paris as a medium for art	Indirect Carving	4.1 Introduce the indirect carving 4.2 Explain the pointing machine
5.	Armature	5.1 Define armature with examples 5.2 Identify the necessity of armature 5.3 Explain the methods of making armature	Bronze Sculpture	5.1 Define bronze sculpture 5.2 Explain the lost-wax casting 5.3 Describe repousse with examples
6.	Slip-casting	6.1 Explain the methods of slip-casting	Assemblage	6.1 Introduce Assemblage

7.	Cement as a Sculptural Medium	7.1 Describe the processes of making sculpture by cement 7.2 Explain cement as a sculptural medium.	Junk Art	7.1 Define junk art. 7.2 Explain the junk art with examples.
8.	Resin as a Sculptural Medium	8.1 Identify the characteristics of resin 8.2 Explain the methods of making sculpture in resin	Soft Sculpture	8.1 Define soft sculpture 8.2 Explain the art of making soft sculptures
9.	Principles of Art	9.1 Identify the principles of art 9.2 Identify and explain form, volume, surface, balance, proportion, texture	New-Media Art	9.1 Introduce new media art 9.2 Explain the new-media art with examples
10.	Preservation of art	10.1 Identify the techniques of preserving art. 10.2 Explain the keep artworks safe and sound by properly storing and applying protective covers		

Practical and project work part

The practical work that students do during their curriculum is aimed at providing them learning opportunities to accomplish competency of the curriculum as well as reinforcing their learning of the theoretical subject content. This part of the curriculum focuses more on skill development than knowledge building. Students must spend lots of time for working with sculptural materials. Observations and investigations can enhance student learning. Project work may consist of activities designed to demonstrate the concepts and ideas through collecting, developing, analyzing and communicating constructed sculpture models.

S. N.	Grade 11		Grade 12	
	Content Area	Learning Outcome	Content area	Learning Outcome
1.	Modeling (Observation)	1.1 Demonstrate the structure of basic shapes and forms (cube, cylinder, sphere, cone, etc.) in clay, or polymer clay 1.2 Develop different objects (cup, bottle, fruit, etc.) in clay, or polymer clay	Modeling (Observation)	1.1 Select and construct everyday objects (bags, shoes, draperies etc.) in clay, or polymer clay 1.2 Replicate form, texture, folding and other details of the chosen subjects 1.3 Measure the proportion of a monumental subject and accurately minimize it proportionately 1.4 Measure the proportion of a small object such as peanut, paperclip etc. and accurately

				maximize it proportionately
2.	Relief	2.1 Prepare clay for relief work on a flat surface 2.2 Use grid to draw a pattern based on traditional or local motifs 2.3 Demonstrate process of casting a final outcome into plaster of Paris	Relief	2.1 Prepare a proper quantity of clay for a low relief ora high relief 2.2 Construct a landscape or daily activities in relief 2.3 Demonstrate confidence to apply perspective, proportion, form in the chose subject 2.4 Create a casting in plaster of Paris to preserve the finished relief work
3.	Sculpting (Additive Methods)	3.1 Reproduce parts of a human body in clay (eyes, nose, ears, mouth, hand, foot) 3.2 Produce a human head in clay by observing an antique model 3.3 Construct an armature while producing a sculpture 3.4 Demonstrate the basic understanding of human anatomy	Sculpting II (Subtractive Methods)	3.1 Construct a block of plaster or clay for subtractive sculpting methods 3.2 Use various chiseling and carving methods in subtractive methods 3.3 Demonstrate capacity to replicate people, animals, birds, objects, events, places, personal experiences etc.
4.	Soft Sculpture	4.1 Create soft sculptures through the experiment with various materials as fabric, rexine, foam, cotton etc. 4.2 Compose animals, birds or objects by replicating them in soft sculptures	Construction and Mixed Media	4.1 Construct a sculpture using various found materials (cardboard, ply board, Styrofoam, wire, corrugated cardboard etc.) 4.2 Develop confident inexperimenting with various materials to be used while creating sculptures 4.3 Apply various methods of joining different types of materials to construct a sculpture

4. Scope, Sequences and Contents

Theoretical

S. N.	Grade 11		Working Hours	Grade 12		Working Hours
	Content Area	**Elaboration of Contents**		**Content Area**	**Elaboration of Contents**	
1.	Introduction to Sculpture	1.1 An introduction to 2-D relief sculpture, and 3-D sculpture 1.2 Popular media in sculpture: clay, terracotta, plaster of Paris, resin, cement, wood, stone, bronze 1.3 Common processes of sculpture-making: modeling, firing, carving, chiseling, molding, casting, welding 1.4 Basic tools used in different mediums: carving knife, gouge, coping saw, chisel, claw chisels, lettering chisel, claw or toothed chisel, v-tool, mallets, axes, adzes, toothed hammers, feathers and wedges, points, pitching tools, drills, saws, grinding and cutting wheels, *boucharde* or bush hammer, etc.	10	Wood Carving	1.1 An introduction to wood carving 1.2 Methods and style: chip carving, relief carving, chainsaw carving 1.3 Techniques: pattern, blocking, detailing, surfacing, and smoothening 1.4 Basic tool set: carving knife, gouge, coping saw, chisel, v-tool, u-gauge, sharpening equipment 1.5 An introduction to the salient features of the traditional Nepali wood carving	5
2.	Clay Modeling	2.1 Types of clay: modeling clay, firing clay, oil-based clay, polymer clay, paper clay 2.2 Techniques of clay modeling: forming clay (hand-	5	Molds	2.1 An introduction to female mold and its usage 2.2 Methods of waste mold and piece mold 2.3 An introduction to butterfly mold, mother mold, key hole, and lock	5

		building, slab building, coiling), roughing out, adding clay, removing clay, maneuvering, cutting and repositioning, detailing, 2.3 Ways to make a clay work long-lasting				
3.	Terracotta	3.1 An introduction to terracotta as a sculptural medium: a brief history and its usage 3.2 Kilns commonly used for firing terracotta: bone fire or pit fire, up-draft kiln, down-draft kiln, cross-draft kiln 3.3 The advantages of terracotta as a sculptural medium	5	Stone Carving	3.1 Types of stone used for stone carving: marble, alabaster, limestone, sandstone, granite 3.2 Tools used in stone carving: point chisel, tooth chisel, flat and rondel chisel, hammers, rasp, banker, grinder	5
4.	Plaster of Paris as a Sculptural Medium	4.1 A brief introduction to plaster of Paris 4.2 Types of plaster of Paris: gypsum plaster, lime plaster, cement plaster 4.3 Plaster of Paris as a medium for art: piece molds, waste molds, direct plaster	5	Indirect Carving	4.1 An introduction to indirect carving 4.2 An introduction to pointing machine	5
5.	Armature	5.1 An introduction to armature and 5.2 Importance of armature especially while using a plastic material such as wax, newspaper or clay 5.3 Methods of making armature	5	Bronze Sculpture	5.1 An introduction to bronze sculpture 5.2 An introduction to lost-wax casting 5.3 An introduction to repoussé	10
6.	Cement as a Sculptural Medium	6.1 Process of making sculpture in cement	2	Exploration in Sculpture	6.1 Introduction to the various possibilities of sculpture as 3-dimensional art form,	8

#	Topic	Subtopics	Hours			Hours
					Overview of artists exploration, Birth of new medium and ideas in art, Examples of various art forms • Assemblage • Readymade Objects • Junk Art • Soft Sculpture • Kinetic • Installation • New media • Performance	
7.	Resin as a Sculptural Medium	7.1 An Introduction to resin: usage and safety measures 7.2 Characteristics of resin: water resistance, chemical resistance and environmental adaptability, poor resistance to heat 7.3 Types of resin: epoxy resin, polyester resin and polyurethane resin. 7.4 Process of casting sculpture in resin	5	Preservation of art	7.1 Ways to keep artworks safe and sound	2
8.	Principles of Arts	8.1 Introduction to form, volume, surface, balance, proportion, texture	3			
Total			40			40

Practical and Project works

S. N.	Grade 11		Working Hour	Grade 12		Working Hours
	Content Area	**Practical and Project work**		**Content area**	**Practical and Project work**	
1.	Modeling	1.1 Studies of basic shapes and forms (cube, cylinder, sphere, cone, etc.) in clay, or polymer clay 1.2 Still-life studies of different objects (cup, bottle, fruit, etc.) in clay, or polymer clay	30	Modeling	1.1 Everyday objects (bags, shoes, draperies etc.) in clay, or polymer clay 1.2 Texture, folding and details study of the chosen subject 1.3 Minimizing a monumental subject (Proportionately minimize a monumental subject such as temples, trees, houses etc.) 1.4 Maximizing a small object (Proportionately maximizing a small object such as peanut, paperclip, watch etc.)	30
2	Relief	2.1 Preparation of clay on a flat surface to create a relief work 2.2 Grid to draw a pattern based on traditional or local motifs 2.3 Casting (the final outcome into plaster of Paris for the longevity of the work)	30	Relief	2.1 Preparation of clay for allow relief or high relief 2.2 Grid, measurement and drawing a composition (toreplicate various subjects like landscape, daily activities etc.) 2.3 Perspective, proportion and form for a relief 2.4 Casting (the final outcome into plaster of Paris for the longevity of the work)	30
3	Sculpting (Additive Methods)	3.1 Antique studies of parts of a human body in clay (eyes, nose, ears, mouth, hand, foot) 3.2 human head from antique in clay 3.3 use of armature 3.4 basic human anatomy	30	Sculpting (Subtractive Methods)	3.1 Preparation of a block of plaster of Paris or clay for subtractive sculpting methods 3.2 Chiseling and carving methods in subtractive methods 3.3 Subjects such as people, animals, birds, objects, events, places etc.	30

4	Soft Sculpture	4.1 Soft Sculpture (using various soft materials as fabric, rexine, foam, cotton etc.) 4.2 Animals, birds or objects as subjects	30	Construction and Mixed Media	4.1 Exploration and experimentation with materials (cardboard, plyboard, Styrofoam, wire, corrugated cardboard etc.) 4.2 Stitching, gluing, interlocking, stapling, joining various materials 4.3 Subjects such as objects, events, people, personal experiences etc.	30
		Total Hours	120		Total Hours	120

4 Learning Facilitation Methods and Process

Sculpture is itself a practical subject, so practical and project work activities should be done during the facilitation. Though theoretical and practical part mentioned separately above both of its parts should be facilitated together. The following approaches are vital and backbone to the teaching-learning process of Sculpture. Therefore, the facilitation process is structured through the inclusion of three approaches to achieve a balance in focus.

(a) Theoretical approach

In a broader sense, this component will be addressed during the theory lessons. These lessons aim to provide an understanding of the fundamentals, mediums, and techniques of sculpture. However, duringthe practical sessions also, the students will look at the art-making process in critical and productive perspectives.

(b) Critical approach

This component will be decisive for personal growth and is required to be included as a part of teaching pedagogy to develop students' ability to respond critically to their own and others' works. This should be in the form of continuous practice during and inside the class interactions between the tutor and peers. This could also continue during their visits to museums and art galleries, out-of-class discussions, peer reviews, and discussions with other like-minded people. This will help students to interact regarding their work process and be responsive to feedback, be empathetic to their peers' development, and be able to provide constructive feedback. This will also allow the students to be informed individuals while appreciating the arts.

(c) Creative and Innovative Approach

This component will mainly be addressed during practical lessons. This includes the exploration, construction, development, and expression of ideas using sculpture materials, forms, and styles. The students will be actively engaged in the art-making process as well as the thinking process under the guidance of the tutors. The students will learn the required skill for sculpture-making and generate ideas to develop personal expressions. Personal reflection is a vital part of the

creative process, hence allowing the students to evaluate their growth in their practical works is important.

Besides the above mentioned three approaches, following and techniques method can be applied in learning facilitation process:

a. Question-answer method
b. Demonstration method
c. Discussion method
d. Problem-solving method
e. Field visit method
f. Project work method
g. Discovery method
h. Experiment method
i. Think-Pair-Share technique
j. Brain-storming technique
k. Exit slip technique
l. Misconception checking technique
m. Gallery walk technique
n. One stay other stray technique etc.

Classroom Environment and Facilities

(i) Classroom as a Creative Space

Sculpture, by its very nature, is one subject in which individuality of each student can be accommodated. Hence the teacher's role in the classroom must be to cultivate a creative environment that fosters diversity. The teacher should provide a supportive environment for the students during their sculpture-making process. Openness, acceptance, flexibility, appreciation, encouragement and constructive feedback are the keywords to self-expression. These are conducive to a creative environment that provides students with a sense of security and vital to their progress.

Teacher should not expect from their students the artistic excellence of a professional artist. If any student is having a great difficulty in learning and enjoying the class yielding a very low improvement in overall, a personal counseling is advised. Regular classrooms may not be appropriate space to operate practical classes. School should provide a separate space as a dedicated classroom for sculpture class. Running an art program would require tremendous variety of visual support materials, tools and other consumable materials. Hence, a dedicated space would help teachers and students to effectively organize the classroom.

(ii)   Labs and Studio Facilities
There should be the following labs and studios equipped with the following materials and equipment in each of the schools offering sculpture course to their students:

1.   Clay preparatory lab
     -     Clay
     -     Clay mixer, or pug mill
     -     Hammer
     -     Mallet
2.   Clay modeling lab
     -     Basic shapes (cube, cylinder, sphere, cone, etc.)
     -     Cast, or real fruits and commonly used objects
     -     Antiques (eyes, nose, ears, hand, foot, etc.)
     -     Head (cast)
     -     Bust (cast)
     -     Torso (cast)
     -     Stand
     -     Sculpture wheel for each student
     -     Revolving board for each student
     -     Clay texture tools (clay mats, press tools, rubbing plates)
     -     Rollers
     -     Clay cutters (made from wire, nylon, or plastic-coated steel)
     -     Various modeling, and carving tools (readymade, or handmade)

(iii)   Materials required for practical activities

The sculpture curriculum requires basic studio materials. The students may not need all items listed below in all classes but will require these supplies to complete assigned projects. Without proper materials, the desired curricular outcomes may not be attained. Also, the teacher should encourage students to use materials economically and effectively.

The following list of materials must be included as the course requirement.
     -     Kneaded clay
     -     Polymer clay
     -     Paper pulp
     -     Plaster of Paris
     -     Metal foil
     -     Paper board
     -     Polythene sheet
     -     Used or second hand cloth, thread, cotton, rags, etc. for soft sculpture

(iv) **Display area and storage**

Teacher must organize display areas where students can showcase their works. These could be in corridors, classroom, library or other space which provide many opportunities of peer response. Regularly changing art displays would refresh the school space. Also providing a viewer's book could be helpful where other students and teachers could write positive and constructive comments about the works. Art classes will require dedicated materials, tools and consumable goods, hence proper storage is vital. A dedicated space to store art materials and other teaching materials will help organize the art classes to run smoothly.

6. **Student Evaluation**

Evaluation is an integral part of learning process. Both formative (internal) and summative types of evaluation are emphasized. Formative evaluation will be conducted so as to provide regular feedback for students, teachers and parents/guardians about how student learning is. Practical work activities, classwork assignments, oral question-answer, etc, are some ways of formative evaluation. There will be separate evaluation of theoretical and practical learning. Summative evaluation embraces theoretical examination, practical examination and evaluation of practical work or innovative work.

(a) **Internal Evaluation**

Out of 100 full marks, internal evaluation (formative evaluation) covers 75 marks. Internal evaluation consists of participation, practical activities and trimester test. Practical work should be based on list of activities mentioned in this curriculum. Mark distribution of internal assessmentwill be as follows:

S. N.	Criteria	Elaboration of criteria	Marks
1	Participation	Attendance and participation in practical activities	**5**
2	Practical Activities	Object modeling	30
		Composition	15
	Viva-voce	Understanding of objective of the practical activities	5
		Skills of the handling of apparatus in use	5
	Practical work records and attendance	Records (number and quality)	5
3	Trimester exam	Trimester test should be based on grid	10
		Total	**75**

Note:
(i) Practical examination will be conducted in the presence of internal and external supervisors. Evaluation of practical activities will focus both the product of work and skills competencies of student in using materials.

(b) External Evaluation

Out of 100 marks theoretical evaluation covers 25 marks. The tool for external evaluation of theoretical learning will be a written examination. Questions for the external examination will be based on the specification grid developed by Curriculum Development Centre. Examination question paper will be developed using various levels of revised Bloom's taxonomy including remembering level, understanding level, application level and higher ability (analyzing, evaluating, creating).

External Evaluation
Specification Chart/Grid, 2077
Subject: Sculpture   Grade 11

Full Marks: 25   **Time: 1 Hour**

S.N.	Area/Unit	WH	Marks	Remembering			Understanding			Application			Higher abilities			No.of questions			Total marks		
				VSQ	SQ	LQ	VSQ	SQ	LQ	VSQ	SQ	LQ	VSQ	SQ	LQ	VSQ	SQ	LQ	VSQ	SQ	LQ
1	Introduction to sculpture	10	7	4	-	-	2	1	-	1	1	-	-	-	1	7	2	1	7	10	8
2	Clay modeling	5	3																		
3	Terracotta	5	3																		
4	Plaster of Paris as a sculptural medium	5	3																		
5	Armature	5	3																		
6	Cement as a sculptural medium	2	1																		
7	Resin as a sculptural medium	5	3																		
8	Principles of arts	3	2																		
Total		40	25	4	-	-	2	1	-	1	1	-	-	-	1	7	2	1	7	10	8

SN	Types of questions	Number of questions	Marks per question	Full Marks	Time
1	Very Short Questions (VSQ)	7	1	7	
2	Short Questions (SQ)	2	5	10	**1 Hour**
3	Long Questions (LQ)	1	8	8	
Total		**10**		**25**	

Remarks:

- Item format in composite should be met as per the specification grid.
- Weightage in the combined cell should be met, but ±2 marks variation will be allowed within the combined cells. But cannot be nil.
- In total cognitive distribution should met. ±2 marks variation will be allowed within the cognitive levels.
- SQ and LQ can be structured (have two or more sub-items). SQ and LQ can be distributed to two or more cognitive behaviours.
- The distribution of questions based on cognitive domain will be nearly 15% knowledge/remembering, 30% understanding, 25% applying and 30% higher ability level. Higher ability covers analyzing, evaluating and creating levels.
- In the case of short question there will be 1 "OR" questions and in the case of long question there will be 1 "OR" question

Grade 12

S.N.	Area/Unit	WH	Marks	Remembering/knowledge			Understanding			Application			Higher abilities			Number of questions			Total marks		
				VSQ	SQ	LQ	VSQ	SQ	LQ	VSQ	SQ	LQ	VSQ	SQ	LQ	VSQ	SQ	LQ	VSQ	SQ	LQ
1	Wood carving	5	3																		
2	Molds	5	3																		
3	Stone carving	5	3																		
4	Indirect carving	5	3	4	-	-	2	1	-	1	1	-	-	-	1	7	2	1	7	10	8
5	Bronze sculpture	10	7																		
6	Exploration on in sculpture	8	5																		
7	Preservation of art	2	1																		
Total		40	25	4	-	-	2	1	-	1	1	-	-	-	1	7	2	1	7	10	8

Question and Mark Distribution

SN	Types of questions	Number of questions	Marks per question	Full Marks	Time
1	Very Short Questions (VSQ)	7	1	7	
2	Short Questions (SQ)	2	5	10	**1 Hour**
3	Long Questions (LQ)	1	8	8	
Total		**10**		**25**	

Remarks:

- Item format in composite should be met as per the specification grid.
- Weightage in the combined cell should be met, but ±2 marks variation will be allowed within the combined cells. But cannot be nil.
- In total cognitive distribution should met. ±2 marks variation will be allowed within the cognitive levels.
- SQ and LQ can be structured (have two or more sub-items). SQ and LQ can be distributed to two or more cognitive behaviours.
- The distribution of questions based on cognitive domain will be nearly 15% knowledge/remembering, 30% understanding, 25% applying and 30% higher ability level. Higher ability covers analyzing, evaluating and creating levels.
- In the case of short question there will be 1 "OR" questions and in the case of long question there will be 1 "OR" question