# CBSE | DEPARTMENT OF SKILL EDUCATION

## CURRICULUM FOR SESSION 2023-2024

## MULTI MEDIA (SUBJECT CODE – 415)

**JOB ROLE: TEXTURE ARTIST**

**CLASS – IX & X**

### INTRODUCTION:

Texturing Artists also known as a Shading Artists use variety of software, platforms, and environments to create textures for environments, characters, objects, and props for animated films, television shows, and video games. Individuals at this job are responsible to add textures to models to create photorealistic models that can be used for animation and adding shade to the artwork. This job requires the individual to create textures using software such as Autodesk Maya, 3D Studio Max, Mud Box and brush. The individual should also have a good understanding of the principles of color theory, photography, multi-pass rendering and lighting. Texture artist works in animation studios, film and video production studios, game production companies, web design companies, graphic design firms, advertising firms, mobile technology companies, etc.

### COURSE OBJECTIVES:

On completion of the course, students should be able to:

1. Apply effective oral and written communication skills to interact with people and customers;
2. Identify the principal components of a computer system;
3. Demonstrate the basic skills of using computer;
4. Demonstrate self-management skills;
5. Demonstrate the ability to provide a self-analysis in context of entrepreneurial skills and abilities;
6. Demonstrate the knowledge of the importance of green skills in meeting the challenges of sustainable development and environment protection;
7. Demonstrate the knowledge of basics of color theory
8. Demonstrate the knowledge of fundamentals of digital design
9. Demonstrate the knowledge of composition and lighting for photography
10. Describe surfaces and materials
11. Explain the essentials of 3D Modeling
12. Describe the fundamental concepts of shading and texturing
13. Explain the basic concepts on texturing in Photoshop
14. Describe the basic concept of shading and lighting
15. Describe the basic concept of rendering
16. Recognize the benefits of great customer service;
17. Provide customers necessary information appropriately and systematically;
18. Use techniques to provide services based on customer's needs and wants;
19. To analyse the vital importance of mass media in the functioning of a secular, liberal, democracy like India.
20. To understand the convergence of mass media as the futuristic trend opening up more and more exciting and creative opportunities.

### CURRICULUM:

This course is a planned sequence of instructions consisting of Units meant for developing employability and Skills competencies of students of Class IX and X opting for Skills subject along with other subjects.

# MULTI MEDIA (CODE NO. – 415)

## CLASS – IX (SESSION 2023-2024)

**Total Marks: 100 (Theory-50 + Practical-50)**

| | UNITS | No. of Periods for Theory and Practical 260 | | Max. Marks for Theory and Practical 100 |
|---|---|---|---|---|
| Part A | **Employability Skills** | | | |
| | Unit 1: Communication Skills-I | 10 | | 2 |
| | Unit 2: Self-management Skills-I | 10 | | 2 |
| | Unit 3: Information and Communication Technology Skills-I | 10 | | 2 |
| | Unit 4: Entrepreneurial Skills-I | 15 | | 2 |
| | Unit 5: Green Skills-I | 05 | | 2 |
| | **Total** | **50** | | **10** |
| Part B | **Subject Specific Skills** | **Theory** | **Practical** | |
| | Unit 1: Colour Theory | 35 | 10 | 10 |
| | Unit 2: Digital Design | 30 | 20 | 10 |
| | Unit 3: Composition and Lighting of Photography | 30 | 25 | 20 |
| | **Total** | **95** | **55** | **40** |
| Part C | **Practical Work** | | | |
| | Practical Examination | -- | | 15 |
| | Written Test | -- | | 10 |
| | Viva Voce | -- | | 10 |
| | **Total** | -- | | **35** |
| Part D | **Project Work/Field Visit** | | | |
| | Practical File/Student Portfolio | -- | | 10 |
| | Viva Voce | | | 05 |
| | **Total** | -- | | **15** |
| | **Grand Total** | | | **100** |

## DETAILED CURRICULUM/TOPICS:

### Part-A: EMPLOYABILITY SKILLS

| S. No. | Units | Duration in Hours |
|---|---|---|
| 1. | Unit 1: Communication Skills-I | 10 |
| 2. | Unit 2: Self-management Skills-I | 10 |
| 3. | Unit 3: Basic Information and Communication Technology Skills-I | 10 |
| 4. | Unit 4: Entrepreneurial Skills-I | 15 |
| 5. | Unit 5: Green Skills-I | 05 |
| | **TOTAL** | **50** |

**NOTE:** **Detailed Curriculum/ Topics to be covered under Part A: Employability Skills can be downloaded from CBSE website**.

### Part-B – SUBJECT SPECIFIC SKILLS

**Unit 1: Colour Theory**

| LEARNING OUTCOMES | THEORY | PRACTICAL |
|---|---|---|
| **1. Identify the principles for using color theory** | • Principles of color theory<br>• Different terms of coolers, available on texturing software | • Demonstration of color abstraction |
| **2. Demonstrate the use of artistic colour wheel** | • The types of colour wheels<br>• Types of colours | • Identification of the primary, secondary and tertiary colours<br>• Demonstration of using artistic colour wheel |
| **3. Demonstrate the use of digital wheel colour** | • Digital colour wheel<br>• Print media colour wheel<br>• Transparency and(Alpha) X-Channel for background transparency | • Identification of primary and secondary colours of RGB and CMYK colour wheel<br>• Identification of additive and subtractive colour<br>• Demonstration of creating background transparency with and without (Alpha) X- Channel in Adobe Photoshop |
| **4. Describe the RGB display mechanism** | • Pixel<br>• Resolution | • Demonstration of the cutaway rendering of a colour CRT<br>• Demonstration of RGB display mechanism |
| **5. Use different colours schemes** | • Analogous, monochromatic and complementary colour schemes<br>• Colour harmony | • Demonstration of the use of warm and cool colours, colour temperature<br>• Classification of different colour schemes |

**Unit 2: Digital Design**

| LEARNING OUTCOMES | THEORY | PRACTICAL |
|---|---|---|
| **1. Demonstrate the use Adobe Photoshop** | • Workspace of Adobe Photoshop<br>• Interface of Adobe Photoshop | • Demonstration of customizing the workspace of Photoshop |
| **2. Demonstrate the use different drawing and painting tools** | • Selection and manipulation of tools<br>• Painting and retouching tools<br>• Text and shape tools | • Draw paint tool for any specific design<br>• Draw the desired shape using appropriate drawing tool<br>• Paint desired shape using appropriate drawing tool |
| **3. Describe the use of colour correction** | • Advantage of histogram in colour correction, colour curve, Hue and saturation<br>• Colour balance and variations | • Show the use of colour balance, variation and photo filter<br>• Demonstration of adjusting highlight and shadow of the image<br>• Demonstration of setting up of mid tone of the scanned graphics for colour correction in texture and Motifs |
| **4. Identify the steps for Digital Painting and Matte Painting** | • Steps of digital painting<br>• Process and purpose of matte painting | • Paint a shape using Digital Painting<br>• Paint a shape using Matte Painting<br>• Demonstration of the use of brush pallet |
| **5. Use different blending modes** | • Use of blending modes<br>• Blending modes:<br>(i) Multiply<br>(ii) Screen<br>(iii) Overlay<br>(iv) Various other modes | • Demonstration of the use of various blending modes<br>• Tabulate and identify difference between various blending modes and their use in texture designing |
| **6. Describe various colour modes** | • Various colour modes - RGB, CMYK Grey<br>• Scale, Bitmap and Index colour Modes | • Demonstration of the use of the following colour modes:<br>○ Index<br>○ Grey scale<br>○ Bitmap<br>○ RGB<br>○ CMYK<br>• Tabulation of the difference between various colour modes<br>• Use of RGB for texturing of objects and models |

**Unit 3: Composition and Lighting for Photography**

| LEARNING OUTCOMES | THEORY | PRACTICAL |
|---|---|---|
| **1. Describe composition-1** | • Purpose of Composition<br>• Rule of third and balancing element<br>• Golden Point Rule | • Demonstration of the knowledge of the following:<br>○ Leading lines<br>○ Symmetry<br>○ Patterns<br>○ Viewpoint |
| **2. Demonstrate composition-2** | • Use of background and depth<br>• Framing and cropping<br>• Use of CRAP Designing Technique for Pattern and Textures: C-Contrast, R-Repetition, A- Alignment, P-Proximity in lines, colours, fonts and shapes | • Demonstration of performing experiment with the photographs<br>• Demonstration of the process of framing and cropping<br>• Implement CRAP techniques and design 5-6 pattern of textures |
| **3. Use effective lighting for photography-1** | • Significance and importance of lighting in photography<br>• Main objectives of lighting in photography<br>• Key Light<br>• Fill Light<br>• High Light<br>• Back Light | • Demonstration of the lighting which can affect the quality of photography<br>• Demonstration of effect of different colours of lights in photography |
| **4. Use effective lighting for photography-2** | • Side lighting or fill lighting<br>• Diffuse lighting, rim lighting and spotlighting<br>• One point, 2 point, 3 point and 4 point lighting in studio<br>• Chroma background (Green-Screen) Photography<br>• Digital photography using RAW file format | • Identification of types of lighting and their effect in photography<br>• Preparation of a chart showing different types of lighting and their effects on photography<br>• Digital Photo Editing- retouching, composing, manipulating RAW file, removing Green Screen for Background Transparency in Adobe Photoshop |

# MULTI MEDIA (CODE NO. – 415)

## CLASS – X (SESSION 2023-2024)

**Total Marks: 100 (Theory-50 + Practical-50)**

| | UNITS | No. of Periods for Theory and Practical 260 | | Max. Marks for Theory and Practical 100 |
|---|---|---|---|---|
| Part A | **Employability Skills** | | | |
| | Unit 1: Communication Skills-II | 10 | | 2 |
| | Unit 2: Self-Management Skills-II | 10 | | 2 |
| | Unit 3: ICT Skills-II | 10 | | 2 |
| | Unit 4: Entrepreneurial Skills-II | 15 | | 2 |
| | Unit 5: Green Skills-II | 05 | | 2 |
| | **Total** | **50** | | **10** |
| Part B | **Subject Specific Skills** | **Theory** | **Practical** | |
| | Unit 1: Surfaces and Materials | 30 | 15 | 10 |
| | Unit 2: Shading and Texturing | 30 | 15 | 10 |
| | Unit 3: Texturing in Photoshop and Autodesk MAYA | 35 | 25 | 20 |
| | **Total** | **95** | **55** | **40** |
| Part C | **Practical Work** | | | |
| | Practical Examination | -- | | 15 |
| | Written Test | -- | | 10 |
| | Viva Voce | -- | | 10 |
| | **Total** | -- | | **35** |
| Part D | **Project Work/Field Visit** | | | |
| | Practical File/Student Portfolio | -- | | 10 |
| | Viva Voce | | | 05 |
| | **Total** | -- | | **15** |
| | **Grand Total** | | | **100** |

## DETAILED CURRICULUM/TOPICS:

### Part-A: EMPLOYABILITY SKILLS

| S. No. | Units | Duration in Hours |
|---|---|---|
| 1. | Unit 1: Communication Skills-II | 10 |
| 2. | Unit 2: Self-management Skills-II | 10 |
| 3. | Unit 3: Information and Communication Technology Skills-II | 10 |
| 4. | Unit 4: Entrepreneurial Skills-II | 15 |
| 5. | Unit 5: Green Skills-II | 05 |
| | **TOTAL** | **50** |

**Note: The detailed curriculum/ topics to be covered under Part A: Employability Skills can be downloaded from CBSE website**.

### Part-B – SUBJECT SPECIFIC SKILLS

**Unit 1: Surfaces and Materials**

| LEARNING OUTCOMES | THEORY | PRACTICAL |
|---|---|---|
| **1. Identify the characteristics of the real life surfaces** | • Real life surfaces in the context of texturing | • Demonstration of characteristics of real life surfaces |
| **2. Describe the various 3D surfaces and material** | • 3D surfaces and material in the context of texturing | • Demonstration of the characteristics of real 3D surfaces and material |
| **3. Identify the properties of the surface and material** | • Properties of surfaces and material in the context of texturing | • Explanation of the properties of material and their effect on texturing |
| **4. Explain the effect of lighting conditions on surfaces** | • Reaction of surfaces to varying lighting conditions | • Demonstration of effects of lighting conditions on different surfaces |

**Unit 2: Shading and Texturing**

| LEARNING OUTCOMES | THEORY | PRACTICAL |
|---|---|---|
| **1. Identify surface shading properties** | • Types of surface shading properties | • Differentiation of colour and transparency, specular and reflection |
| **2. Describe Maya material** | • Surface, displacement and volumetric materials | • Explanation of the Maya material<br>• Demonstration of double side shaded surface, layer texture and layer shader |
| **3. Describe assigning and creation material** | • Creation and assigning materials by the use of hyper shade in MAYA or 3Ds MAX | • Demonstration of texturing using hyper shade in MAYA<br>• Assigning separate material to a group of faces |
| **4. Describe various texture maps** | • Realistic texturing | • Demonstration of the use of texturing maps |

| LEARNING OUTCOMES | THEORY | PRACTICAL |
|---|---|---|
| **5. Describe shading network** | • Shading network in MAYA | • Demonstration of the use of shading network in MAYA |

**Unit 3: Texturing in Photoshop and Autodesk Maya**

| LEARNING OUTCOMES | THEORY | PRACTICAL |
|---|---|---|
| **1. Create colour map** | • Process of creating diffuse map in photoshop<br>• Un rapping the 3D Polygon Object | • Differentiation of pixels and resolution<br>• Demonstration of creating diffuse map |
| **2. Create bump map and use desaturate command** | • Creating bump in MAYA map in MAYA<br>• Use of desaturate command and high pass filter | • Demonstration of the process to desaturate and high pass filter |
| **3. Create specular map** | • Use of specular maps<br>• Process of creating specular maps in photoshop and MAYA<br>• Export the UV map to Adobe Phtoshop and paint the Texture on UV map<br>• Return to MAYA and observe the Texture on 3D objects | • Demonstration of texturing using hyper shade<br>• Assignment of separate material to a group of faces |
| **4. Demonstrate knowledge of creating seamless textures** | • Diffuse and opacity map, specular, reflection and glow map, hump, normal and displacement map | • Demonstration of the process of displacement, normal, bump map, reflection, specular and glow map<br>• Create textured and painted 3D object, like Pen, Pencil, Chair, House, Tree, Human Face, Human Body in MAYA |

## TEACHING ACTIVITIES

The teaching and training activities have to be conducted in classroom, laboratory/ workshops and field visits. Students should be taken to field visits for interaction with experts and to expose them to the various tools, equipment, materials, procedures and operations in the workplace. Special emphasis should be laid on the occupational safety, health and hygiene during the training and field visits.

### CLASSROOM ACTIVITIES

Classroom activities are an integral part of this course and interactive lecture sessions, followed by discussions should be conducted by trained teachers. Teachers should make effective use of a variety of instructional or teaching aids, such as audio-video materials, colour slides, charts, diagrams, models, exhibits, hand-outs, online teaching materials, etc. to transmit knowledge and impart training to the students.

## PRACTICAL WORK IN LABORATORY/WORKSHOP

Practical work may include but not limited to hands-on-training, simulated training, role play, case based studies, exercises, etc. Equipment and supplies should be provided to enhance hands-on learning experience of students. Only trained personnel should teach specialized techniques. A training plan that reflects tools, equipment, materials, skills and activities to be performed by the students should be submitted by the teacher to the Head of the Institution.

## FIELD VISITS/ EDUCATIONAL TOUR

In field visits, children will go outside the classroom to obtain specific information from experts or to make observations of the activities. A checklist of observations to be made by the students during the field visits should be developed by the Teachers for systematic collection of information by the students on the various aspects. Principals and Teachers should identify the different opportunities for field visits within a short distance from the school and make necessary arrangements for the visits. At least three field visits should be conducted in a year.

## SKILL ASSESSMENT (PRACTICAL)

Assessment of skills by the students should be done by the assessors/examiners on the basis of practical demonstration of skills by the candidate, Practical examination allows candidates to demonstrate that they have the knowledge and understanding of performing a task. This will include hands-on practical exam and viva voce. For practical, there should be a team of evaluators. The same team of examiners will conduct the viva voce.

**Project Work** (individual or group project) is a great way to assess the practical skills on a certain time period or timeline. Project work should be given on the basis of the capability of the individual to perform the tasks or activities involved in the project. Projects should be discussed in the class and the teacher should periodically monitor the progress of the project and provide feedback for improvement and innovation. Field visits should be organised as part of the project work. Field visits can be followed by a small-group work/project work. When the class returns from the field visit, each group might be asked to use the information that they have gathered to prepare presentations or reports of their observations. Project work should be assessed on the basis of practical file or student portfolio.

**Student Portfolio** is a compilation of documents that supports the candidate's claim of competence. Documents may include reports, articles, photos of products prepared by students in relation to the unit of competency.

**Viva voce** allows candidates to demonstrate communication skills and content knowledge. Audio or video recording can be done at the time of viva voce. The number of external examiners would be decided as per the existing norms of the Board and these norms should be suitably adopted/adapted as per the specific requirements of the subject. Viva voce should also be conducted to obtain feedback on the student's experiences and learning during the project work/field visits.

## ORGANISATION OF FIELD VISITS/ EDUCATIONAL TOURS

In a year, at least 3 field visits/educational tours should be organised for the students to expose them to the activities in the workplace.

Visit a News channel's Motion Graphics Studio where 3D digital studios and 3D Backgrounds are designed for New Room Anchors. Visit a Film Production studio with Chroma Background and observe following:

1. Creation of Computer Generated Graphics
2. Removing of chroma (Green Background) behind anchor or News Reader: Replacing it with a new 3D Virtual Set, Video Backgrounds
3. Composing Work
4. Colour Correction
5. Lighting

## LIST OF EQUIPMENT/ MATERIALS:

The list given below is suggestive and an exhaustive list should be prepared by the Skill teacher. Only basic tools, equipment and accessories should be procured by the Institution so that the routine tasks can be performed by the students regularly for practice and acquiring adequate practical experience.

**1.** Drawing sheets
**2.** Computer System
**3.** Printer
**4.** Scanner
**5.** Local Area Network (LAN)
**6.** Internet Connection
**7.** Whiteboard
**8.** Marker/Chalk
**9.** Demonstration Charts
**10.** Non-Photo Blue Pencils
**11.** Drawing Pencil Sets
**12.** 3-Hole Punched Paper
**13.** Art Gum Eraser
**14.** Cells/Transparencies
**15.** Paints
**16.** Brushes
**17.** Water colors, Markers, and Pastels