

**School of Education Technology**  
**Jadavpur University**  
**Kolkata -700032**

**Six months Certificate course in Multimedia Development & Applications**

**OBJECTIVES**

After finishing this course, students will be able to

- Develop skills in digital imaging and creating rich Multimedia applications
- Develop skills for sound-recording and playback, software for composing, sequencing and editing music
- Develop skills in designing Web Applications.
- Develop awareness of current 3D modeling practices through diverse examples of 3-dimensional modeling, texturing, shading, animation

**Course Duration -** 6 months (3 days /week)

**Course Fees -** Rs. 21,240/- [18000+18% GST (as per Govt. rules)]  
[The course fees is subject to revision after every 2 years]

**Intake -** 20

**Eligibility -** Higher Secondary (10+2) (Appeared/Passed), Diploma in Fine Arts, Bachelor in Science, Arts, Commerce passed or equivalent

**Class Duration -** Theory classes – 2 days/week (1 hour/class)  
Lab classes - 2 days/week (2 hours/class) + 1 day/week (3 hours/class)  
Project classes – 3 days/week (3 hours/class)

**Payment Criteria –** Demand Draft (in favour of ‘Registrar’, Jadavpur University), Payment in cheque or cash not allowed

**Application Deadline –** May 21, 2018

**[Note: Batch can only be started when the cut-off criteria of 8 students is met]**

**Six months Certificate course in Multimedia Development &  
Applications**

**COURSE CURRICULUM**

**School of Education Technology**

SL.No.	Code	Subject Name	Contacts Periods/Week		Credit	Marks	
			Theory	Practical		Theory	Sessional
1.	SET-CCT-1	Multimedia System	1		2	50	
2.	SET-CCT-2	Principles of Multimedia Design and Presentation	1		2	50	
3.	SET-CCS-3	Web Analytics		3	3		50
4.	SET-CCS-4	Media Editing Laboratory		3	3		100
5.	SET-CCS-5	2D Animation & Authoring Laboratory		3	3		50
6.	SET-CCE-6	Web Designing & Applications	1	3	4		50
7.	SET-CCE-7	3D Modeling & Animation	1	3	4		50
8.	SET-CCS-8	Project		3	3		100
		<b>Sub Total</b>	<b>4</b>	<b>18</b>	<b>24</b>	<b>100</b>	<b>400</b>
		<b>Total</b>	<b>22</b>		<b>24</b>	<b>500</b>	

# Syllabus

## **SET-CCT-1: Multimedia System**

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**Introduction to multimedia** - Different media, characteristics and use

**Graphics and Text** - Advantage and use of graphics, Types of text, Text file formats

**Image** - Introduction and Image types, Color models, Scanner and digital camera, File formats

**Audio** - Analog signal, Digital signal, Conversion (ADC), Characteristics of sound, MIDI, Audio file formats

**Video and animation** - Analog and digital video, Transmission of video signal, File formats, Types of animation, characteristics and file format

**Basic output principles** - Principles of CRT, LCD and PDP, Raster scanning, flickering and aliasing effect

**Storage media and compression techniques** - CD and DVD, Lossy and lossless compression, Different compression techniques

## **SET-CCT-2: Principles of Multimedia Design and Presentation**

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**Authoring Metaphors** - Introduction, Definition & functions of Metaphors, Basic Categories - Slideshow metaphor, Timeline metaphor

**Scripts, flowcharts & Storyboards** - Creating scripts, storyboards and flowcharts, Advantages of Storyboarding, Interactive Storyboarding, Simple interactive flowcharts, Complex interactive flowcharts, Writing scripts, Case studies

**Introduction to HCI** - Human factors, Fundamentals of Human perception, Dialogues and tasks, Framework for HCI, Modeling Human Computer Interaction

**Human Computer Interface Design** - Guidelines for user interface design, Dialogue Design, Graphic Design and Style issues, Standard interface elements in windows

**Visual Design** - Introduction, Visual design methodology, Visual Coding, Layout Principles

## **SET-CCS-3: Web analytics**

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**Basics of Web Analytics** - Web Analytics Process, Web log file analysis vs Page Tagging, Data Sources – RSS Feeds, Web Analytics Tools and Technologies, Google Analytics Layout and Basic Reporting

**Search Engine Optimization** – Essential Tips and Techniques

**Basics of Digital Marketing** - Evolution of Internet Marketing, Marketing Strategies, Adwords Campaigning

## **SET-CCS-4: Media Editing Laboratory**

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### **Image Editing using Photoshop**

Work Area and Canvas, Image Size, Canvas Size, Rulers

Color modes, Basic and Advance Selection Method (Lasso, Polygonal lasso, Magnetic lasso, Pen tool, Magic Wand, Quick Selection Tool), Feather, Load Selection/Save Selection, Shapes, Transformation Methods, History/Art History Brush Tool, Slice, Crop, Blur, Sharpen, Smudge, Dodge, Burn, Sponge Tool, Basic Layer Concept, Layer Style, 3D Layer, Layer and Vector

Masking, Blending, Modes, Filters, Hue/Saturation, Brightness/Contrast, Levels/Curves, Photo Filter, Pattern Fill, Gradient Fill, Gradient Tool/Paint-bucket Tool, De-saturate, Clone Stamp Tool, Spot Healing, Healing Brush, Patch Tool, Web Elements Designing, Image Save for Web and Devices

### **Image Editing using Illustrator**

Introduction to Adobe Illustrator, Exploring the workspace, Changing the view of artwork, Navigating artboards, Selecting objects using the Selection, Aligning objects, Working with groups, Exploring object arrangement, Working with basic shapes, Working with the Shaper tool, Eraser tool, Editing paths and shapes, Working with the Shape Builder tool, Combining objects using Pathfinder effects, Reshaping path, Working with artboards, Working with rulers and guides, Drawing with Pen tool, Adding type to a poster, Artwork with layers, Gradients, Blends and Patterns

### **Audio Editing**

Introduction to Audition, Setting up your Audio Input and Output, Importing and managing media files, Recording of audio (commentary, dubbing, music), Sound Selection, Insertion, Marker, Working with sound files (Sound Cut, Paste, Copy, Paste Special), Noise Removal, Making standard waveform audio adjustments, Adding special effects to a file, Concept of Tracks Multi-track editing

### **Video Editing using Premier Pro**

Performing non linear editing in Premiere Pro, Expanding the workflow, Creating a project, Importing assets, Working with the Media Browser panel, Project panel, Working with Bins, Monitoring footage, Modifying clips, Using Source Monitor, Navigating Timeline, Using Program Monitor controls, Setting the playback resolution, Using markers, Finding gaps in Timeline Selecting clips, Moving clips, Extracting and deleting segments, Transitions, Adding video transitions, Using A/B mode to fine-tune a transition, Adding audio transitions, Performing four-point editing Changing playback speed, Replacing clips and footage, Nesting sequences, Performing regular trimming Performing advanced trimming, Editing and Mixing Audio, Adding video Effects, Creating titles, Exporting frames, Clips And Sequences

## **SET-CCS-5: 2D Animation & Authoring Laboratory**

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**Introduction to Animate** - Basic Drawing, Onion Skinning, Concept of Symbols, Frame by Frame Animation, Types of Tweening, Orient to Path, Masking, Path Animation, Character Animation

**Action Script** - Introduction to Action Script, Variables, Data types, Functions, Methods, Parameters, Comments, Communicating with Symbol Instances, Instance Properties and Methods, Dynamic Text, Input Text, Custom Functions, Events (Button event handling), Conditional statements, Looping Objects

## **SET-CCE-6: Web Designing & Applications**

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Web Design Concept (Basic Principles, Navigation Bars, Page Design, Home Page Layout, Design Concept)

**Concepts on HTML 4** - Structure of HTML Doc, Meta Tags, Links, Text, Lists, Tables, Inclusions (Objects, Images and Multimedia Content), Forms, Frames, Div, Hyperlinks, Image Maps

**Introduction to Cascading Style Sheets** - Concept of CSS (Creating Style Sheet, CSS Properties), CSS Styling (Background, Text Format, Controlling Fonts, Positioning), CSS Advanced (Working with block elements and objects, working with Lists and Tables, CSS Id and Class)

**Introduction to Java Script** - JavaScript (Document Object Model, Object References - Objects, Methods, Properties, Event Handlers, Language Constructs, Statements & Operators)

**Introduction to HTML 5** - HTML5 (Introduction, Support, Elements, Semantics, Migration, Style Guide, Canvas, SVG, Google Map, Media, APIs)

## **SET-CCE-7: 3D Modeling & Animation**

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### **Basic 3D Modeling**

Viewing and Navigating 3D Space: Zooming, Panning, Standard Primitives, Compound Primitives, Extended Primitives, AEC Extended, Selecting Objects: Freeze, Hide, Isolate Selection, Transformation: Translation, Rotation and Scaling of Objects, Cloning Objects, Exploring Important Modifiers, 2D Splines (Lines, Arc) into 3D Objects using Lofting and Lathing, Editing Edge, Vertex, Border, Polygon, Editing Polygons using Extrude, Outline, Bevel, Inset, Bridge, Modeling Interior, Exterior of a building

### **Material Scene Composition & Light**

Exploring Some Common Materials/Maps and adding texture to objects, Types of Lighting, Shadows, Rendering using Mental Ray Settings

### **Animation and Special Effects**

Keyframe Animation, Camera Walkthrough, Particle System, Smoke, Fire, Fog, Space Wraps

## **SET-CCS-8: Project**

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Developing a multimedia product using all media components