

Objective: - Students will learn the basic concepts and skills required to develop effective graphics for the Web and various business publications. Students will learn the basic tools used in image editing and/or image creation software with specific attention to practical applications, including tools and techniques of photo correction, enhancement and editing. Students will learn how to apply animation and give effects using animating software.

Prerequisite: NA

Credits Earned: 4 Credits

Course Outcomes: After completion of this course, student will be able to

- Identify fundamentals of graphics and making use of various tools
- Use basic Photo enhancing skills and concepts to develop effective graphics for web
- Demonstrate proficiency with layers (naming, organizing, adjustment layers)
- Use animation tools and techniques to develop different animation.
- Produce animation using action script.
- Construct, edit, and manipulate animation using several animation tools and techniques.

Teaching and Examination Scheme

Teaching Scheme (Hours)			Credits	Theory Marks			Tutorial/ Practical Marks		Total Marks
Theory	Tutorial	Practical		ESE (E)	Mid Sem (M)	Internal (I)	Viva (V)	Term work (TW)	
2	0	4	4	50	30	20	25	25	150

Contents:

Unit	Topics	Contact Hours
1	Introduction to Graphics Introduction to multimedia, concept of graphics-bitmap images, vector graphics, Color channels, Bit depth, Image size and resolution, graphic file format, vector based format, optimizing web graphics, aliased text vs. anti-aliased text, tolerance and opacity in image, floating, selection (move, rotate, scale), set tolerance and opacity in image with different tools Different color mode-RGB mode (millions of colors), CMYK mode (four-printed colors), Index mode (256 colors), Grayscale mode (256 grays), Bitmap mode (2 colors), LAB color mode, Adjust color hue, saturation, and brightness, browser safe colors, Shadows, highlights and midtones of an image	4
2	Fundamentals of Image editing Basics of Image editing, the Image editing interface, need of image editing, create documents(new, save different format, modify, search), Image editing palettes, The Image editing Toolbox and Options bar, Using Guides and Ruler Different file formats for file importing and exporting, modes of image in image editing (open image, create image, save file, modify file), modes of image editing (open, copy, rotate, brightness, contrast, color balance, crop, resize), color in image editing with numeric values and hexadecimal values, different transformation tools(free, rotate, skew, distort and perspective, move, flip horizontal and flip vertical)	4
3	Advanced features of Image editing Different Image editing tools-Selection tools, Crop and slice tools, Measuring tools, retouching tool, painting tools, Drawing and type tools Introduction to layer, different types of layers-background layer, image layer, adjustment layer, text/line layer, fill layer, shape layer, Empty layer, duplicate layers, Neutral Layers, Layer Pallets and actions, layer features, Image composting using layers Restoration and enhancement of images - Color balance with image, adjust/change brightness and contrast, Changing hue saturation and brightness, Histogram, Gradient map, Desaturate, Invert, color replace, selection of different color, Equalize, Threshold, Channel mixer, Posterize	5



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	Editing and special effects of Text- Text Tool-vertical and horizontal text tool, point and paragraph text creation, Using horizontal and vertical type mask tools, Using character palette for text editing, choosing a font, changing the type color, choosing a type size- Specifying kerning and tracking, using fractional character widths, specifying baseline shift, Applying underline and strikethrough, Text alignment and justification, Specifying anti-aliasing, creating text wrap or adding effects to text, Rasterizing type	
4	<p>Fundamentals of Animation software</p> <p>Introduction to Animations, software Interface- Start page, Creating custom workspace layouts, import formats, keyboard shortcuts, Timeline, frames, Tools Panel, library, property inspector, rulers, grids, guides, Layers, color-swatches, color-mixer, movie explorer</p> <p>Drawing in software-Using shape tools- oval tool, polystar tool, Using drawing tools-pencil tool, eraser tool, brush tool, drawing lines and curves using Pen tool, selection tools – lasso tool, selection tool, subselection tool, design and align element –snapping, design panel, navigation tools, free transform tool, Commands- copy, move, delete</p> <p>Working with colors- color swatches panel, creating custom palettes, using gradient fill, using dropper, ink bottles and paint bucket</p> <p>Working with text- using text tool and property panel, text field types, creating font symbol, using font symbols in runtime shared libraries, modifying text manually</p>	4
5	<p>Symbols, Instances and Animations</p> <p>Working with layers, properties of layers, renaming layers, grouping of layers, guide layer, motion guide layer, masking layer, instances, symbol library, types of symbol- graphic symbols, button symbols, movieclip symbols, editing symbols, modifying instances properties, 9-slice scaling for movie clip</p> <p>Animation – Introduction to frame-by-frame animations- adding keyframes, creating frame-by-frame animation, onion skinning to modify multiframe sequence, using shape tweening ,adding shape hints, motion tweening , working with sound and videos</p>	4
6	<p>Actionsript</p> <p>Introduction to actionsript, navigating actionpanel, different actions – stop(), play(), navigating between frames , navigating between scenes, navigating to URLs, Loadmovie and Unloadmovie action, working with variables, naming conventions, working with operators, string operators, working with statements- if, switch, for, while , do while , object properties, creating movie clip, working with movie clip objects</p>	3
	Total Hours	24

Computer Engineering**Reference Books:**

1. Lesa Snider, Image editing CC: The missing manual, O'Reilly Media
2. Fuller, Laurie Ulrich, Image editing CS3 Bible, Wiley
3. Todd Perkins, Adobe Flash Professional CS5/CS6 Bible, Wiley India Edition.
4. Robert Reinhardt and Joey Lott, Flash MX 2004 Actionscript Bible , Wiley
5. Adobe Flash Professional CC Help
6. Tom Green and David Stiller, Flash CS3 for Designers, Green Stiller Foundation

Suggested Theory distribution:

The suggested theory distribution as per Bloom's taxonomy is as per follows. This distribution serves as guidelines for teachers and students to achieve effective teaching-learning process.

Distribution of Theory for course delivery and evaluation					
Remember	Understand	Apply	Analyze	Evaluate	Create
40%	40%	10%	10%	0%	0%

Suggested List of Experiments:**Image editing Experiments**

1. Construct an image using various shape tools and fill color using color palate.
2. Construct an image to make frame with photos of various persons (Use move, cut, copy, paste, transform etc functionality of image editing).
3. Produce a scene using various tools available and demonstrate the use of layers.
4. Remove various objects in photo using various tools like clone stamp tool, healing tool, patch tool, etc.
5. Capture 10 photos and improve them using various tools available in image editing which helps to learn about white balance, sharpness, noise reduction, basic levels black, white, shadow, highlight, contrast, curve adjustments, HSL etc.
6. Use transformation tools to straighten and adjust for lens correction the architectural photo.
7. Change the photo of sky to learn morph, merge and overlapping of images.
8. Cut your photo using various selection tools available in image editing and put it in some other image.
9. Apply various filters to turn your photo into sketch/drawing.
10. Construct an image to demonstrate the use of Liquify
11. Construct a banner of recent event/festival of your institute.
12. Construct an action that resize any photo for PC wallpaper and add your name as a watermark.

Flash Experiments

1. Draw a scene using various tools available in animation software.
2. Draw a person using various tools available in animation software, draw each part of body on separate layer.
3. Produce an animation to blink an object.
4. Produce an animation that demonstrate motion tween.
5. Produce an animation of car going on the road.
6. Produce an animation to change the shape of objects (e.g. circle to square to star to rectangle etc).
7. Construct an animation of natural scene (clouds moving, sun rising, moon rising etc).
8. Produce an animation using keyframe.
9. Produce an animation by merging multiple frame one by one. (Draw each frame on paper and merge them into animation)
10. Produce an animation bird flying over a scene (going close to far).
11. Construct an animation which starts when user click on the start button and should stop when user click on stop button.
12. Construct a quiz type animation with question and four buttons with answer when user click on answer, he/she should see message he/she correct or not.

Instructional Method:

- a. The course delivery method will depend upon the requirement of content and need of students. The teacher in may be using following teaching approaches: black board, or use of any of tools such as demonstration, role play, Quiz, brainstorming, MOOCs etc.
- b. The internal evaluation will be done on the basis of continuous evaluation of students in the laboratory and class-room.
- c. Practical examination/Viva will be conducted at the end of semester for evaluation of performance of students in laboratory.
- d. Students will use supplementary resources such as online videos, NPTEL videos, e-courses, Virtual Laboratory

Supplementary Resources:

- https://www.adobe.com/support/documentation/archived_content/en/flash/cs3/flash_cs3_help.pdf
- <https://helpx.adobe.com/in/image-editing/user-guide.html>
- [https://www.udemy.com/Design/Graphic Design/Image editing](https://www.udemy.com/Design/Graphic%20Design/Image%20editing)
- <https://www.it.iitb.ac.in/lakshya/workshopContent.html?workshopid=Z7PLmVRto9HRdFsg5ld8Rw>
- http://www.nptelvideos.com/adobe/adobe_image_editing_tutorials.php
- <http://www.nptelvideos.com/video.php?id=1778&c=22>