Government of Karnataka

Department of Collegiate and Technical Education

Board of Technical Examinations, Bangalore

Course Code	20CS21P	**Semester**	II
Course Title	**MULTIMEDIA & ANIMATION**	**Course Group**	Core
No. of Credits	4	**Type of Course**	Lecture + Practice
Course Category	PC	**Total Contact Hours**	6Hrs Per Week 78Hrs Per Semester
Prerequisites	Nil	**Teaching Scheme**	(L: T:P) = 1:0:2
CIE Marks	60	**SEE Marks**	40

1. RATIONALE

Multimedia is one of the very effective forms of communication through which students can enhance their presentation skills. Learning multimedia enables the brain's ability to make connections between verbal and visual representations of content, leading to a deeper understanding, which in turn supports the transfer of learning to other situations. Animation is the broad field of study that allows one to show their creativity, amplify their imagination and exercise graphic and technical skills.

2. COURSE SKILL SET

The aim of the course is to help the student to attain the following industry identified competency through various teaching learning experiences

Perform jobs related to Multimedia – Text, Image, Audio, Video, and Animation.

3. COURSE OBJECTIVES

6. Explore Multimedia features and applications
7. Demonstrate various Photo editing techniques to enhance visual effects of the image
8. Construct graphic design.
9. Demonstrate animation principles.

4. JOB ROLE

SL.NO	LEVEL	JOB ROLES
1	3	Freelance Photo Editor and Graphic Designer
2	3	Junior Creative Designer/Digital Artist
3	3	Junior Animator

5. PREREQUISITES

STUDENT	Nil.
TEACHER	FDP training on Multimedia and Animation course.

6. COURSE OUTCOMES

On successful completion of the course, the students will be able to demonstrate industry-oriented COs associated with the above-mentioned competency:

COURSE OUTCOME		CL	LINKED PO	TEACHING HOURS
CO1	Identify basic Multimedia features and applications.	U	1,4	06
CO2	Compile various Photo Editing techniques to create excellent Images.	U,A	1,4,7	27
CO3	Construct graphic design / web design like Advertisement/logo/flyer/Invitation Card/Banner/web site.	U,A	1,4,7	09
CO4	Animate geometrical objects by applying different animation principles.	U,A	1,4,7	36

Legends: R = Remember; U = Understand; A = Apply and above levels (Bloom's revised taxonomy)

7. SUGGESTED SPECIFICATION TABLE WITH HOURS & MARKS(THEORY)

UNITNO.	UNIT NAME	TEACHING HOURS	DISTRIBUTION OF THEORY MARKS			
			R	U	A	TOTAL
1	Introduction to Multimedia Systems	6				
2	Image editing	24				
3	Graphic Design	12				
4	Animation	36				
	Total	**78**				**200**

8. INSTRUCTIONAL STRATEGY

These are sample strategies, which teacher can use to accelerate the attainment of the various course outcomes

1. Instructors should expose students to explore User Interface thoroughly.
2. Demonstration using visual/graphic content should be delivered. Emphasis should be given on presentational skills.
3. Arrange visits to nearby Photo studios/ Advertising Industries/ DTP centres/other related industries.
4. Students should be exposed to other relevant & similar software and their interfaces.

9. DETAILS OF COURSE CONTENT

The following topics/subtopics is to be taught and assessed in order to develop Unit Skill sets for achieving CO to attain identified skill sets

UNIT NO	TOPICS/SUBTOPICS	LEARNING OUTCOME (IN COGNITIVE DOMAIN)	HOURS L : P
1	**INTRODUCTION TO MULTIMEDIA SYSTEMS**		6

	1.1 Introduction ▪ Significant Features ▪ Classifications ▪ Applications 1.2 Multimedia Building blocks ▪ Text ▪ Audio ▪ Image ▪ Animation ▪ Video ▪ Image Data Types 1.3 Multimedia Image and Graphics ▪ Resolution, Size and Compression ▪ File formats 1.4 Multimedia Hardware ▪ Interfaces ▪ I/O Devices ▪ Storage ▪ Communication Devices.	1. Identity Multimedia features and Applications 2. Describe building blocks of multimedia 3. Classify multimedia data types and file formats 4. Discuss multimedia hardware	2:4
2	**IMAGE EDITING**		**24**
	2.1 Explore image editing tool interface. ▪ Customizing Workspaces. ▪ File Handling ▪ Setting size and resolution parameters. ▪ Importing files. ▪ Navigating open document 2.2 Working with Layers 2.3 Exploring Selection Tools	1. Explore interfaces of editing tool 2. Perform photo compositing 3. Create abstract art 4. Apply image editing techniques	1:2 11:22

	2.4 Exploring Layer Styles 2.5 Using filters 2.6 Image editing techniques ▪ Adjusting exposure(brightness) ▪ Adjusting color ▪ Cropping and adjusting aspect ratio ▪ Dodging and burning ▪ Retouching ▪ Sharpening and noise reduction		
3	**GRAPHIC DESIGN**		**12**
	3.1 Design a graphic ▪ Cards ▪ Flyer ▪ Banner ▪ Advertisement 3.2 Using blend modes create ▪ Logo ▪ Poster 3.3 Creating custom shape & text wrapping	1. Construct a graphic design for a theme 2. Create social media graphic (like emoji's)	
4	**ANIMATION**		**36**
	4.1 Exploring User Interface ▪ Installation & Configuration ▪ Getting to know about Editors, Scenes and Objects 4.2 Fundamentals of Animation.	1. Explore interfaces of Animation Tool. 2. Applying foundation principles of animation	3:6

	▪ Types of Animation. ▪ 12 Basic Principles of Animation. ▪ Keyframes, Timelines, Graph Editor, Dope Sheet 4.3 3D Object Animation. ▪ Creating/Importing Object. ▪ Texturing ▪ Lighting & Rendering ▪ Dynamics ▪ Animation ▪ Adding Sound effects ▪ Saving and Exporting.		4:8 5:10
	Note 1. **Emphasis to be given on Basic Animation principles - Squash & Stretch, Timing, Spacing, Arc, Overlapping, and Anticipation**		

10. SUGGESTED PRACTICAL EXERCISES

Sl No	**Suggested Practical Exercises (should be similar in skills to the ones enlisted)**	Unit No	PO	CO	L:P Hrs
1	Browse the Internet and find different Multimedia Presentations and identify the building blocks.	1	1,4	1	1:2
2	i) Identify the importance of Resolution, Size and compression of Images. ii) Classify file formats of various Multimedia files	1	1,4,7	1	1:2
	i) Practice setting the canvas on the workspace for different requirements. ii) Import an image from the browser / Picture folder and place it on the workspace. iii) Click and drag the image on the work space.	2	1,4	2	2:4

	iv) Scale the image up and down.				
4	Design a Greeting card. Use different Layers for image and text.	2	1,4,7	2	1:2
5	Practice using different Selection tools.	2	1,4,7	2	1:2
6	Practice using different painting tools.	2	1,4	2	1:2
7	Restore old monochrome photos to a new one. Apply suitable colors.	2	1,4,7	2	1:2
8	Import a similar picture from the internet. Erase unwanted parts in the image, retouch old photos into new. Color partially.	2	1,4,7	2	1:2
9	Import a picture of a stationary motorcyclist. Apply suitable masking filters and background. The image should appear as though the motorcyclist is speeding fast.	2	1,4,7	2	1:2
10	Create a professional web layout. Use different layers, textures, colors, text, blending features and filter masking.	2	1,4,7	2	1:2
11	Create an innovative logo for your Institute considering all the features of your Institute.	2	1,4,7	3	1:2
12	Design a flyer for a short term course that is supposed to commence from 3 weeks ahead from the current date.	2	1,4,7	3	1:2
13	i) Add different objects to the space. Practice with both shortcut keys and menus. ii) Perform Transformation operations on objects added in 14 (i)	3	1,4,7	4	1:2
14	Create primitive objects like an ice cream cone, snowman, house, tunnel and like.	3	1,4,7	4	2:4
15	Change the structure of objects by editing Vertices, Edges, Faces and transform the same and observe the changes.	3	1,4,7	4	1:2
16	Design a red ball lying on green grass. Apply suitable texture and render the same.	3	1,4,7	4	2:4

17	Animate the ball in Ex. 15 (both rigid and elastic) to bounce thrice and roll. Use suitable animation principles. Add a booing sound when the ball bounces.	3	1,4,7	4	2:4
18	Design two playing dice and animate the same. Add suitable sound for dice fall.	3	1,4,7	4	2:4
19	Show the animation of water flowing out from a pipe around a suitable environment.	3	1,4,7	4	2:4
Total Hours				**26**	**0:52 =78**

The **suggested practical exercises** specified above are demonstrated for the attainment of the competency. These practical activities can also be used for the student assessment in portfolio mode for awarding CIE marks. **The lecturer can enhance the competency level of the students by sketching more practical exercises.**

NOTES:

8. It is compulsory to prepare log book/record of exercises. It is also required to get each exercise recorded in logbook, checked and duly dated signed by the teacher
9. Student activities are compulsory and are also required to be performed and noted in logbook.
10. Student activity is compulsory and part of skill assessment. The activity enables student to explore the course, help student to demonstrate creativity & critical thinking.
11. Student activity report is compulsory part to be submitted at the time of practical ESE
12. Term work report is compulsory part to be submitted at the time of practical ESE.
13. Student activity and student activity reports must be uploaded to Learning management system.
14. For CIE, students are to be assessed for Skills/competencies achieved.

11. MAPPING OF CO WITH PO

COURSE	CO'S	PROGRAMME OUTCOMES (PO'S)						
		1	2	3	4	5	6	7
MULTIMEDIA & ANIMATION	CO1	3	-	-	3	-	-	2
	CO2	3	-	-	3	-	-	3

	CO3	3	-	-	3	-	-	3
	CO4	3			3			3
Level 3- Highly Mapped, Level 2-Moderately Mapped, Level 1-Low Mapped, Level 0- Not Mapped								

12. SUGGESTED LEARNING RESOURCES

	BOOKS
1	**The Illusion of Life / Frank Thomas and Ollie Johnston**
2	**The Animator's Survival Kit / Richard Williams**
3	**Animation For Beginners / Morr Meroz**
	URL'S
1	https://webneel.com/
2	https://clippingpathindia.com/
3	https://www.photoshopessentials.com/basics/https://www.befunky.com/
4	https://www.creativebloq.com/advice/understand-the-12-principles-of-animation
5	https://www.cgtarian.com/animation-tutorials/disney-animation-principles.html
6	https://ohmy.disney.com/movies/2016/07/20/twelve-principles-animation-disney/
7	https://wave.video/blog/12-basic-principles-of-animation/
8	https://www.youtube.com/watch?v=ILqOWe3zAbk&list=PLa1F2ddGya_-UvuAqHAksYnB0qL9yWDO6&index=2

9	https://www.youtube.com/watch?v=8XyIYRW_2xk&list=PLa1F2ddGya_-UvuAqHAksYnB0qL9yWDO6&index=3
10	https://www.youtube.com/watch?v=hTL6AKR8YDs&list=PLa1F2ddGya_-UvuAqHAksYnB0qL9yWDO6&index=4
11	https://www.youtube.com/watch?v=JSAobQPRLwc&list=PLa1F2ddGya_-UvuAqHAksYnB0qL9yWDO6&index=5
12	https://www.youtube.com/watch?v=7DNmaR7TKwU&list=PLa1F2ddGya_-UvuAqHAksYnB0qL9yWDO6&index=7

13. SUGGESTED LIST OF PROPOSED STUDENT ACTIVITYS

Note: the following activities or similar activities for assessing CIE (IA)

SL. NO	ACTIVITY
1	Create a Collage of college events with various layouts
2	Create a flyer or advertisement for social issue.
3	Create a matte painting of a mountain region
4	Create scenery with a mirror reflection and proper lighting effect.
6	Create colourful balls and apply animation effects such that balls fall from a table and roll in different directions.
7	Animate blossoming of a flower.
8	Leaf falling from a tree.

14. COURSE ASSESSMENT AND EVALUATION CHART

SL.NO	ASSESSMENT	DURATION (in minutes)	MAX MARKS	CONVERSION
1	CIE Assessment 1 (Written Test -1 TH) - At the end of 3 d week	**60**	**20**	Average of two written tests 20
2	CIE Assessment 2 (Written Test -2 TH) - At the end of 13 week	**60**	**20**	
3	CIE Assessment 3 (Skill Test) - At the end of 5 week	**3 hrs**	**20**	Average of three skill test 20
4	CIE Assessment 4 (Skill Test) - At the end of 7 week	**3 hrs**	**20**	
5	CIE Assessment 5 (Skill Test) - At the end of 9 week	**3 hrs**	**20**	
6	CIE Assessment 6 (Student activity)- At the end of 11 week	**-**	**20**	**20**
7	**Total Continuous Internal Evaluation (CIE) Assessment**			**60**
8	Semester End Examination(SEE) Assessment (Practical Test)	**3 hrs**	**100**	**40**
TOAL MARKS				**100**
Note: CIE written test is conducted for 100 marks (Two sections). Each section shall have two full questions of same CL, CO. Student shall answer one full question from each section.				

15. RUBRICS FOR EVALUATION OF ACTIVITY

RUBRICS FOR ACTIVITY						
Dimension	**Poor**	**Below Average**	**Average**	**Good**	**Exemplary**	**Student Score**
	2	**4**	**6**	**8**	**10**	
Project Guidelines Compliance	Guidelines have not been followed.	Guidelines have been followed with little noise.	Guidelines have been followed to an average extent.	Guidelines have been followed and executed to maximum extent.	All guidelines have been exceptionally followed and executed.	8
Concept/ Idea	No thought given to the subject. No idea or concept presented in the work.	Cliché idea or concept. Needs to brainstorm and apply fresh ideas.	Average idea or concept. Subject is presented in a typical manner	Good idea or concept. Subject is presented in a competent manner.	Good use of an idea or concept. Presented the idea in a unique and novel way.	6
Editing Techniques	Lacks demonstration of qualities and characteristics of various techniques and processes.	Demonstrates few qualities and characteristics of various techniques and processes, but unreliable.	Demonstrates some qualities and characteristics of various techniques and processes.	Good demonstration of qualities and characteristics of various techniques and processes	Excellent demonstration of qualities and characteristics of all techniques 8and processes expected.	8
Graphic Design	Limited or no expression of creative ideas and thoughts.	Designing needs more planning and creativity.	Competent development of creative ideas.	Excellent approach to creative thinking and expression.	Refined and sophisticated approach to original and unique presentation.	8

Animation & Rendering	3D animation / rendering is not done at all. Lacks knowledge on saving and appropriately naming files.	3D animation / rendering is incomplete. Expected to improve in techniques. Saved in appropriately named file	3D animation / rendering is completed. Works/looks satisfactorily and saved in an appropriately named file.	3D animation / rendering is done well, works/looks properly and saved in an appropriately named file.	3D animation / rendering is done extremely well, works/looks properly and is saved in an appropriately named file.	7
Appeal	Messy and confusing.	Presentation can be better.	Good.	Excellent show.	Exemplary. Very well organized.	7
Average / Total Marks: (8+6+8+8+7+7)/6						**7.3 = 8 marks**

16. RUBRICS FOR SKILL TEST EVALUATION (CIE & SEE)

Sl. No.	Parameter to be observed	Marks Allotted
1	Selection of suitable tool	10
2	Comfort level of working on UI	
3	Techniques Applied	30
4	Completion of task	40
5	Appeal	20
Total		100

Note: Execution of task Image Editing & Graphic Design / Animation.

17.SYSTEM REQUIREMENTS:

Sl. No.	Specification	Quantity
1.	Computers with HD Graphics Card	20
2.	Software: GIMP, KRETA, BLENDER, PHOTOSHOP or any other relevant open-source software.	-
3.	Internet Connectivity,	-

Note: Above specification is for a batch of 20 students