SUBJECT: COMPUTER GRAPHICS 3 YEARS COMPLETE SYLLABUS

Year	Semester	Paper Code	Subject	Hrs. per Week	Credits	IA	ES	Total
First Year	I	CG1	BASICS OF COMPUTER GRAPHICS	4	3	25	75	100
	I	CG -P	PHOTOSHOP - LAB	2	2		50	50
	II	CG 2	WEBDESIGN & APPLICATION	4	3	25	75	100
	II	CG 2-P	WEBDESIGN - LAB	2	2		50	50
Second Year	III	CG 3	INTRODUCTION TO 3D	4	3	25	75	100
	III	CG 3-P	MAYA - LAB	2	2		50	50
	IV	CG 4	PHOTOGRAPHY & VIDEOGRAPHY	4	3	25	75	100
	IV	CG 4-P	PHOTO & VIDEO SHOOT - LAB	2	2		50	50
	IV	CG 5	SCIENCE OF SOUND	4	3	25	75	100
	IV	CG 5-P	SCIENCE OF SOUND - LAB	2	2		50	50
Third Year	V	CG 6	AV EDITING	4	3	25	75	100
	V	CG 6-P	AV EDITING - LAB	2	2		50	50
	V	CG 7	YOUTUBE & ONLINE STREAMING	4	3	25	75	100
	V	CG 7 - P	YOUTUBE & ONLINE STREAMING - LAB	2	2		50	50

SUBJECT: COMPUTER GRAPHICS 3 YEARS COMPLETE SYLLABUS

BASICS OF COMPUTER GRAPHICS	
Semester : **I**	**Paper : I**
Category :**THEORY**	

Learning Outcomes: At the end of the course, the student will able to
➢ Identify basic computer graphics work flow
➢ Equip with the knowledge of adobe photo shop basics
➢ Develop the skill of computer graphics
➢ Analyze the difference between traditional and computer graphics

UNIT – I
What is Creativity- Creative Methods -WHAT IS MULTIMEDIA- IMPORTANCE OF MULTIMEDIA- DIFFERENCES BETWEEN GRAPHIC & MULTIMEDIA DESIGN

UNIT – II
Introduction to Graphic Design: colors -types of colors-working with strokes- shapesworking with 2d drawing-3d drawing –pixel, lines-drawing skils

UNIT – III
PENCIL STROKE- What is Graphic Design, What is Raster Graphic & Vector Graphic, shades- multimedia definition-pre production-post production-sign technology- type setting- digital typography- type setting

UNIT – IV
File formats- multimedia formats- sound formats- Basic Color Theory- Grayscale- Bitmap- RGB Color - CMYK Color - IndexedColor - LAB colour – typographic uses

UNIT – V
READABILITY AND LEGIBILITY- WHAT IS FINE ART PAPER- PRINTING TECHNIQUES- FLAT BED SCANNERMAKING LAYOUTS FOR REAL PRINTING- WHAT IS TEXTURE - COMPOSITION- SHAPES- COLOR OR COLOUR- PRINT PRODUCTION MANAGER DO- MEDIA PRODUCTION MANAGER- IMPACT PRINTER-NON IMPACT PRINTERS

Reference:
Introduction to Multimedia Systems (Communications, Networking and Multimedia) Fundamentals of Multimedia, 1st ed. Ze-Nian Li and Mark S. Drew ISBN: 0130618721, Prentice-Hall, 2004

Photoshop: Beginner's Guide for Photoshop - Digital Photography, Photo Editing, Color Grading & Graphic...19 February 2016 by David Maxwell

SUBJECT: COMPUTER GRAPHICS 3 YEARS COMPLETE SYLLABUS

Suggested Co-Curricular Activities:
*Book Reading
*Student Seminars, Debates
*Quiz Programmes
*Assignments
*Co-operative learning
*Individual / Group Field Studies
*Group Discussions on problems relating to topics covered by syllabus
*Creating multiple tasks with own creativity
Topics covered in syllabus
*Importance of Multimedia
* Introduction to Graphic Design
*Difference between Raster Graphic & Vector Graphic
*File formats of image, video and audio

SUBJECT: COMPUTER GRAPHICS 3 YEARS COMPLETE SYLLABUS

PHOTOSHOP	
Semester : **I**	
Category :**PRACTICAL**	

interface - Using Tool Box – working with feather- add selection –subtract selection- intersect selection- fill- stroke- working selection with transform- working paint tools- type tool-wrap options -mode-background- rural-grids- Status bar

Working with clone and healing tools- working pen tool-custom shapes- direction tools- solid and gradient colors-blur-dodge-burn tool- working screen modes

Working with layers-new layer-delete layer- color filling tools-color adjustment- working with brightness and contrast –working cuves- color balance-hue and saturation- photo filtersworking with blending options

Working with vector mask-sets- saving files, reverting files, closing files, working with imagesimage size and resolution-image editing- converting layers

back grounds- making selections - grow and similar commands- editing selections -color modes & adjustments -lighting effects- moving a portion of image

File menu- saving file-save for web –browse-bridge-saving type- exporting types-printingTypes of printing technologies

Working edit menu-undo-redo-cut –copy-paste- paste multiple-copy merge-define custom shapes- find and replace options-preset mangers-working with modes- adjustments-- Image and canvas sizes-trim and crop options-apply and calculations- calculations

Layers-duplicate layers- layers properties-layer styles-change layer content-vector maskworking with type options-rasterizing-group layers-ungroup layers-laye alignments-distribute layer- layer merge –layer visible- flatting image

Selection- deselect selection inverse selection save selection-load selection- similar and grow image masking- filters – the filter menu-proof setup-proof color setting-zoom-guidelines-show options-working with navigation –paragraphs-tool presets

SUBJECT: COMPUTER GRAPHICS 3 YEARS COMPLETE SYLLABUS

WEBDESIGN & APPLICATION	
Semester : **II**	**Paper : II**
Category : **THEORY**	

Learning Outcomes: At the end of the course, the student will able to
➢ Get complete knowledge on webapplications
➢ Equip with the knowledge of adobe photo shop advanced
➢ Develop the skill of webpage creation

Unit 1

Introduction to the Internet- History of internet- World Wide Web -Computers in Business – Networking-internet – E-mail – chat rooms- browsers- WWW – W3c- URL- Web browserHTTP- Tag- Protocol- TCP / IP- SMTP- URL- Usenet – Telnet. EXPLAIN ROLE OF MULTIMEDIA OBJECTS IN WEB PAGES - IMAGE MAP – Web Browsers - Electronic Mail (E-Mail) -hyperlink, hypertext- IMAGE MAP- WEB - SITE ADVANTAGES

Unit 2

Documenting the project - Development Life Cycles - Analyzing the Project - planning the structure, contents and navigation. Site Type and Architectures: General Website Types - Static and Dynamic sites – specific type of websites. Introduction to HTML: HTML Documents Designing- Basic structure of an HTML document - Creating an HTML document - Introduction to elements of HTML - a home page - HTML document

Unit 3

Anchor tag – Hyperlinks – Head and body section - Header section - Title – Prologue – links - colorful pages – comment - body section - heading horizontal ruler – paragraph – tabs. Electronic publishing - lists and their types - nested lists - table handling- Working with Hyperlinks, Images and Multimedia- Frames: Frameset definition – frame definition – nested framesets.

Unit -4

Pseudo-elements – defining Styles – elements of styles – linking a style sheet to a HTML document – inline styles – External style sheets – internal Style sheets – Multiple Styles – Web page Designing. Concept of CSS -Creating Style Sheet - CSS Properties - CSS Styling(Background-Text Format- Controlling Fonts) - Working with block elements and objects -Working with Lists and Tables

Unit -5

CSS Advanced(Grouping, Dimension, Display, Positioning, Floating, Align, Pseudo class, Navigation Bar, Image Sprites, Attribute sector) -CSS Color -Creating page Layout and Site Designs. Forms and form elements- Creating the Web Site -Saving the site -Working on the web site - Creating web site structure -Creating Titles for web pages -Themes—Div- SPAN-tablefarames

SUBJECT: COMPUTER GRAPHICS 3 YEARS COMPLETE SYLLABUS

Reference Books

Raj kamal ,internet and web technologies , tata Mcgraw Hill(2007) Joel sklar , principles of web design ,Thomson(2007)

Suggested Co-Curricular Activities:

*Book Reading

*Student Seminars, Debates

*Quiz Programmes

*Assignments

*Co-operative learning

*Individual / Group Field Studies

*Group Discussions on problems relating to topics covered by syllabus

*Creating multiple tasks with own creativity

Topics covered in syllabus

*Pre press tips for perfect print

* Publishing planning print production

* Characteristics of multimedia

* Electronic Media- Motion Graphics

WEBDESIGN - LAB	
Semester : **II**	
Category : **PRACTICAL**	

domain name registrar - Name and Surname, Company name, Address, Phone Number and email address. DNS manager, A Record Connects an IP Address to a host name CNAME Record Allows more than one DNS name for a host MX Record Ensures email is delivered to the right location NS Record Contains the name server info TXT Record Provides additional info about a host or more technical info to servers SRV Record Finds computers that host specific services AAAA Record Provides IP addresses that do not fit a standard A Record format SPF Record Used to help prevent against spam

Design website temple and pages in Photoshop

SUBJECT: COMPUTER GRAPHICS 3 YEARS COMPLETE SYLLABUS

INTRODUCTION TO 3D	
Semester : **III**	**Paper : III**
Category : **THEORY**	

Learning Outcomes: At the end of the course, the student will able to
➢ Get basic knowledge on 3D Maya software
➢ Equip with the knowledge of Maya user interface
➢ Develop the skill of using Autodesk Maya
➢ Able to create 3D models in Maya

UNIT – I

Introduction to Computer Graphics and 3D – Art? - Computer Graphics - The Stages of Production - The CG Production Workflow - Core Concepts - Basic Film Concepts.

UNIT – II

Jumping in Maya software - You Put the U in UI - Project Overview: The Solar System - The Preproduction Process: Planning - Creating a Project - The Production Process: Creating and Animating the Objects - Hierarchy and Maya Object Structure - Outputting Your Work: Play blasting

UNIT - III

The Autodesk Maya 2014 Interface - Navigating in Maya - Exploring the Maya Layout - Building a Decorative Box - Mapping the Box's Reference Planes with Hyper shade - Organizing Workflow with the Layer Editor - Modeling the Decorative Box - Editing the Decorative Box Model Using the Shelf - Continuing the Decorative Box Model - Finishing the Decorative Box Model

UNIT - IV

Beginning Polygonal Modeling - Planning Your Model - Polygon Basics - Poly Editing Tools - Putting the Tools to Use: Making a Simple Hand - Creating Areas of Detail on a Poly Mesh - Modeling a Catapult - Suggestions for Modeling Polygons

UNIT - V

Modeling with NURBS Surfaces and Deformers - NURBS! NURBS! - Using NURBS Surfacing to Create Polygons - Converting a NURBS Model to Polygons - Editing NURBS Surfaces - Patch Modeling: A Locomotive Detail - Using Artisan to Sculpt NURBS - Modeling with Simple Deformers - The Lattice Deformer - Animating Through a Lattice

SUBJECT: COMPUTER GRAPHICS 3 YEARS COMPLETE SYLLABUS

Reference:

1. Auto desk maya 2014 sybex ISBN:978-81-265-2711-3

2. The Art of Maya: An Introduction to 3D Computer Graphics (Paperback) Autodesk Maya Press (ISBN: 978-1897177471)

Suggested Co-Curricular Activities:
*Book Reading
*Student Seminars, Debates
*Quiz Programmes
*Assignments
*Co-operative learning
*Individual / Group Field Studies
*Group Discussions on problems relating to topics covered by syllabus
*Creating multiple tasks with own creativity
Topics covered in syllabus
*Over view of 3D environment
* Maya Interface
* Basic modeling in Maya software
* Basic 3D project creation

3D MAYA LAB	
Semester : **III**	
Category : **PRACTICAL**	

- Project Overview: The Solar System

- The Preproduction Process: Planning

- Creating a Project

- The Production Process: Creating and Animating the Objects

- Saving Multiple Versions of Your Work, Increment al Saving, and Auto Save

SUBJECT: COMPUTER GRAPHICS 3 YEARS COMPLETE SYLLABUS

PHOTOGRAPHY & VIDEOGRAPHY	
Semester : **IV**	**Paper : IV**
Category : **THEORY**	

Learning Outcomes: At the end of the course, the student will able to
➢ Get basic knowledge on video production
➢ Equip with the knowledge of Video shooting
➢ Develop the skill of using DSLR Cameras
➢ Able to create Video presentation

UNIT – I

Camera control and creativity –about digital photography-automatic all the way working with digital camera-selection image size and quality-definition shutter speed in detail-aperture – using shutter speed-definition of aperture types of lenses- photographing people-studio setting –outdoor and indoor –using selective focus –exposure effect your image-controlling and bright and contrast – product photo grapy interior and exteriors –architectural photography-industrial shootin

UNIT – II

Close up photography – uses deferent types of angle lenses –land sc ape photography – sports photography. To capture the action –in deferent ways to know the game first selecting the equipments according to the game. Various zooms – tele lenses phto shoot star to finish to select the equipment the location and finally shooting

UNIT – III

Overview of video production What is video production? FIRST STEP IN VIDEO PRODUCTION   The need for "know-how" It's designed for you learning basics Remember the purpose Equipment What equipment is needed. Equipment performance. Organizing the production Art conceals craft Shot selection The problem of familiarity The problem of quality The problem of "bigger and Commu better" nication can be elusive. Start with an idea (concept) Goals and objectives Target audience Research Covering the subject Production methods The empirical approach The planned approach Storyboards.

UNIT – IV

Production techniques Single- and multi camera production Multi camera ISO Multi camera production without a switcher The illusion of reality The camera's role The camera as an observer The persuasive camera Beginning and ending Production methods How do you visualize something that does not exist?

SUBJECT: COMPUTER GRAPHICS 3 YEARS COMPLETE SYLLABUS

UNIT – V

The camera A range of models Cameracraft CAMERA FEATURES Main features The lens system. Focal length and lens angle The prime lens The zoom lens Zoom lens control The aperture of the camera Lens accessories The image sensor Sensitivity The viewfinder Indicators Audio Power CONTROLLING THE CAMERA Handling the camera Supporting the camera Handheld cameras The monopod The pan head (panning head or tripod head) The rolling tripod/tripod dolly The pedestal Jib arms Specialty camera mounts Handling care

Reference Books:

• Digital Photography: The Missing Manual by David Pogue's

• Advanced Videography Techniques

Suggested Co-Curricular Activities:
*Book Reading
*Student Seminars, Debates
*Quiz Programmes
*Assignments
*Co-operative learning
*Individual / Group Field Studies
*Group Discussions on problems relating to topics covered by syllabus
*Creating multiple tasks with own creativity
Topics covered in syllabus
*Over view of video equipment
* Handling of video equipment
* Basic video shooting techniques
* Video shooting workflow

PHOTO & VIDEO SHOOT	
Semester : **IV**	
Category : **PRACTICAL**	

1. USING THE CAMERA

2. CONTROLLING THE ZOOM

3. EXPOSURE

4. HANDLING THE CAMERA

5. THE BASICS OF SHOOTING

6. COMPOSING

SCIENCE OF SOUND	
Semester : **IV**	**Paper : V**
Category : **THEORY**	

Learning Outcomes: At the end of the course, the student will able to

➢ Get basic knowledge on recording sound

➢ Equip with the knowledge of Audio recording equipment

➢ Develop the skill of using DAW

➢ Able to create different formats of Sound

UNIT – I

Introduction to Sound – Theory of Recording – Fundamentals of Electronic Sound Spectrum andFrequencies – Elements of Recording.Definition and nature of sound; sound and its relevance useand importance in communication

UNIT – II

Units of Sound – Structure of Recording – Types of Formats – True Sound Reproduction – Conversion

UNIT – III

Sources of sound, microphones and their types and uses, assessment of quality of sound

UNIT – IV

Sound engineering techniques, dead air, sound and silence, integration of sound and visual, soundmessaging.

UNIT – V

Sound in the era of multimedia – application in the media platforms and formats – sound bytes and AV clips on Internet, SMS and MMS etc.

Reference:
1. Alten Staley, Audio in Media. New Jersey, Belmont, 1981.
2. Nisbett Alec, The Technology of Sound Audio. London, Focal Press, 1979.
3. Glyn Alkin, Sound Recording and Reproduction, London, Focal Press, 2000.

Suggested Co-Curricular Activities:
*Book Reading
*Student Seminars, Debates
*Quiz Programmes

SUBJECT: COMPUTER GRAPHICS 3 YEARS COMPLETE SYLLABUS

*Assignments
*Co-operative learning
*Individual / Group Field Studies
*Group Discussions on problems relating to topics covered by syllabus
*Creating multiple tasks with own creativity
Topics covered in syllabus
*Over view of Audio Equipment
* Handling of Audio equipment
* Basic sound recording techniques
* sound recording workflow

SCIENCE OF SOUND LAB	
Semester : **IV**	
Category : **PRACTICAL**	

☐ Studio setup
☐ Acoustics
☐ Sound isolation material
☐ Studio wiring
☐ DAW
☐ Mikes & preamps
☐ Audio interface
☐ **B**asics of recording

SUBJECT: COMPUTER GRAPHICS 3 YEARS COMPLETE SYLLABUS

AV EDITING	
Semester : **V**	**Paper : VI**
Category : **THEORY**	

Learning Outcomes: At the end of the course, the student will able to
➢ Get basic knowledge on recording sound and editing video
➢ Equip with the knowledge of Audio recording equipment
➢ Develop the skill of using DAW
➢ Able to create different formats of Sound & Video render.

UNIT – I

Premiere Pro Creating custom workspaces - Workflow enhancements - Changes to exporters - AAC Audio ("Audio Only" in previous versions) H.264 H.264 Blu-ray MPEG4 Windows Media (Windows only) For compatibility reasons, Dolby Digital Surcode audio encoding is not available in the new exporter. 11 H.264 Blu-ray (Legacy) MPEG4 (Legacy)

UNIT – II

About workspaces - Working with Panels - Tools panel and Options panel - Source Monitor and Program Monitor overview - Setting display quality for the Source and Program Monitors - Navigate clips in the Source menu in the Source Monitor - Viewing Source and Program Monitor controls (CS6)

UNIT – III

Change Project panel views - Select format for timecode display in the Project panel - Start or open a project - Capture and import video and audio - Assemble and refine a sequence - Add titles - Add transitions and effects

UNIT – IV

. Mix audio – Audio Hardware preferences - Audio Output Mapping preferences - Change the Auto Save settings

UNIT – V

Setting up your system - Setting up your system To the top To the top Premiere Pro trial versions Set up a DV or HDV system Set up an SD-SDI, HD-SDI, or component system Set up a file-based system Set up an S-Video or composite system Specify the default audio device Specify ASIO device settings (Windows only) Specify whether to render audio when rendering video Specify the duration for preroll and postroll pauses.

SUBJECT: COMPUTER GRAPHICS 3 YEARS COMPLETE SYLLABUS

Reference:

1. Adobe Premiere Pro Focal press

2. Adobe premiere 101.

Suggested Co-Curricular Activities:
*Book Reading
*Student Seminars, Debates
*Quiz Programmes
*Assignments
*Co-operative learning
*Individual / Group Field Studies
*Group Discussions on problems relating to topics covered by syllabus
*Creating multiple tasks with own creativity
Topics covered in syllabus
*Over view of Premiere Pro
* Handling of video editing software
* Basic editing techniques
* Video editing workflow

AV EDITING LAB	
Semester : **V**	
Category : **PRACTICAL**	

Nuendo. it is possible to record both audio and MIDI tracks, both recording methods are covered in this chapter. Before you start This chapter assumes that you are reasonably familiar with certain basic recording concepts, and that the following initial preparations have been made: • You have properly set up, connected and calibrated your audio hardware. • You have opened a project and set the project setup parameters to your specifications. Project setup parameters determine the record format, sample rate, project length etc. that affect the audio recordings you make during the course of the project. See "The Project Setup dialog" • If you plan to record MIDI, your MIDI equipment should be set up and connected correctly. Basic recording methods This section describes the general methods used for recording. However, there are additional preparations and procedures that are specific to audio and MIDI recording respectively. Make sure to read these sections before you start recording (see "Audio recording specifics" and "MIDI recording specifics". Record-enabling a track Nuendo can record on a single track or on several tracks (audio and/or MIDI) simultaneously. To make a track ready for recording, click the Record Enable button for the track in the Track list, in the Inspector or in the mixer. When activated, the button(s) turn red, indicating record ready mode. Final premier Project creation.

SUBJECT: COMPUTER GRAPHICS 3 YEARS COMPLETE SYLLABUS

YOUTUBE & ONLINE STREAMING	
Semester : **V**	**Paper : VII**
Category : **THEORY**	

Learning Outcomes: At the end of the course, the student will able to
➢ Get basic knowledge on YouTube channel & live streaming
➢ Equip with the knowledge of streaming equipment
➢ Develop the skill of using OBS
➢ Able to create streaming studio

UNIT – I

Introduction to youtube – working with youtube – creating youtube channel – youtube terms & conditions to generate revenue – youtube content creation hardware.

UNIT – II

Introduction to OBS Studio -   comprehensive environment for professional streamers and involved people to create sophisticated video broadcasting and recordings for Web services.

UNIT – III

Installing OBS Studio - System requirements - An Overview of Open Broadcaster Software Studio - Canvas Preview - Studio Mode - Layers

UNIT – IV

unlimited creative options Filters - Plugin Sources – Transitions - Hardware acceleration - Encoding acceleration - Studio Mode - Multi-Track - Multi-Output

UNIT – V

Menu bar - Canvas preview area - Post OBS Studio log-file online - Tools menu - Scene Collections menu - Profile menu

Reference:
1. Open Source Broadcast software for beginners

Suggested Co-Curricular Activities:
*Book Reading
*Student Seminars, Debates
*Quiz Programmes
*Assignments
*Co-operative learning
*Individual / Group Field Studies

SUBJECT: COMPUTER GRAPHICS 3 YEARS COMPLETE SYLLABUS

*Group Discussions on problems relating to topics covered by syllabus
*Creating multiple tasks with own creativity
Topics covered in syllabus
* Introduction to youtube
* Introduction to OBS Studio
* Streaming Hardware acceleration

YOUTUBE & ONLINE STREAMING LAB	
Semester : **V**	
Category :**PRACTICAL**	

- Camera setup for live stream

- composition -

- Quickie

- Setting up three point lighting

- Audio testing for live

- Creating Scenes in OBS Studio

- Switch scene's layout

- Scene transitioning

- Switching into live

INTERNSHIP	
Semester : **VI**	
Category : **PRACTICAL**	

For a period of two months, student will be attached to the media industry on an internship basis, with the objective to expose them to actual situations and day-day functioning of media industry. The interns will be exposed to the particular area of specialization. The faculty of the department in coordination will closely monitor progress of the interns with the guides in the media industry. A report and Viva-voce will complete the process of evaluation.