KALINGA UNIVERSITY

RAIPUR | INDIA

SCHEME & SYLLABUS FOR

Bachelor of Vocational Studies (B. Voc.) Animation and VFX or Game Design

NAAC GRADE B+ Accredited University

nirf RANKING

Ranked in Top 151-2 Universiti

Kalinga University, Naya Raipur, Chhattisgarh

KALINGA UNIVERSITY
RAIPUR | INDIA

B.VOC IN ANIMATION AND VFX OR GAME DESIGN

Semester-I							
Subject Code	**Subject**	**L**	**T/P**	**Credits**	**Internal Marks**	**External Marks**	**Total**
BVAVFX101	Communication Skills	3	0	3	30	70	100
BVAVFX102	Fundamentals of Information Technology	3	0	3	30	70	100
BVAVFX103	Graphic Design	3	0	3	30	70	100
BVAVFX104	Illustration And Photo-Editing	3	0	3	30	70	100
BVAVFX105P	**On Job Training/ Internship/Workshop**	0	36	18	50	150	200
Total		**12**	**36**	**30**	**170**	**430**	**600**

Semester-II							
Subject Code	**Subject**	**L**	**T/P**	**Credits**	**Internal Marks**	**External Marks**	**Total**
BVAVFX201	Multimedia & Web Technology	3	0	3	30	70	100
BVAVFX202	Environmental Studies	3	0	3	30	70	100
BVAVFX203	Design & Innovation	3	0	3	30	70	100
BVAVFX204	Graphic Design (Basic Sketching and Human Anatomy in Drawing)	3	0	3	30	70	100
BVAVFX205P	**On Job Training/ Internship/ Workshop**	0	36	18	50	150	200
Total		**12**	**36**	**30**	**170**	**430**	**600**

Semester-III							
Subject Code	**Subject**	**L**	**T/P**	**Credits**	**Internal Marks**	**External Marks**	**Total**
BVAVFX301	Web Applications	3	0	3	30	70	100
BVAVFX302	Digital Compositing	3	0	3	30	70	100
BVAVFX303	Pre-Production	3	0	3	30	70	100
BVAVFX304	3 D Texturing	3	0	3	30	70	100
BVAVFX305P	**On Job Training/ Internship/ Workshop**	0	36	18	50	150	200
Total		**12**	**36**	**30**	**170**	**430**	**600**

Semester-IV							
Subject Code	**Subject**	**L**	**T/P**	**Credits**	**Internal Marks**	**External Marks**	**Total**
BVAVFX401	Audio Editing	3	0	3	30	70	100
BVAVFX402	Video Editing	3	0	3	30	70	100
BVAVFX403	Principles of Animation and Techniques of Animation	3	0	3	30	70	100
BVAVFX404	Basic of 3-D Modelling	3	0	3	30	70	100
BVAVFX405P	**On Job Training/ Internship/ Workshop**	0	36	18	50	150	200
Total		**12**	**36**	**30**	**170**	**430**	**600**

Semester-V							
Subject Code	**Subject**	**L**	**T/P**	**Credits**	**Internal Marks**	**External Marks**	**Total**
BVAVFX501	Texture and Lighting	3	0	3	30	70	100
BVAVFX502	Rigging	3	0	3	30	70	100
BVAVFX503	3 D Animation	3	0	3	30	70	100
BVAVFX504	Introduction to 3 D Motion Graphics & VFX	3	0	3	30	70	100
BVAVFX505P	**On Job Training/ Internship/ Workshop**	0	36	18	50	150	200
Total		**12**	**36**	**30**	**170**	**430**	**600**

Semester-VI							
Subject Code	**Subject**	**L**	**T/P**	**Credits**	**Internal Marks**	**External Marks**	**Total**
BVAVFX601	Introduction to Rendering	4	0	3	30	70	100
BVAVFX602	Muscle System	4	0	3	30	70	100
BVAVFX603	Soft Skills and Personality Enhancement	4	0	3	30	70	100
BVAVFX604P	**On Job Training/ Internship/ Workshop**	0	36	18	50	150	200
Total		**12**	**36**	**30**	**170**	**430**	**600**

KALINGA UNIVERSITY
RAIPUR INDIA

SEMESTER-I
COMMUNICATION SKILLS
BVAVFX101

Course Objective

The purpose of this course is to introduce students to the theory, fundamentals and tools of communication and to develop in them vital communication skills which should be integral to personal, social and professional interactions. One of the critical links among human beings and an important thread that binds society together is the ability to share thoughts, emotions and ideas through various means of communication: both verbal and non-verbal. In the context of rapid globalization and increasing recognition of social and cultural pluralities, the significance of clear and effective communication has substantially enhanced.

Course outcome:

1. The purpose of this course is to introduce students to the theory, fundamentals and tools of communication
2. To develop vital communication skills which should be integral to personal, social and professional interactions.
3. One of the critical links between human beings.
4. An important thread that binds society together is the ability to share thoughts, emotions and ideas through various means of communication: both verbal and non-verbal.
5. In the context of rapid globalization and increasing recognition of social and cultural pluralities, the significance of clear and effective communication has substantially enhanced.

CONTENTS

Unit I: Introduction:

Theory of Communication, Types and modes of Communication, Mediums and channels of communication, barriers to communication, English as a Global language, the Lingua Franca, Social influences on English

Unit II: Language of Communication:

Verbal and Non-verbal (Spoken and Written) Personal, Social and Business Barriers and Strategies Intra-personal, Inter-personal and Group communication, Varieties of English, Language, Accent, Dialect, Colloquialism, Historical influences on English

Unit III: Speaking Skills:

Monologue Dialogue Group Discussion Effective Communication/ Mis- Communication Interview Public Speech, Regional influences on English, Convergence and divergence, Linguistic Imperialism,

Unit IV: Reading and Understanding-

Close Reading, Reading analysis of a text - Audience and purpose, Content and theme, Tone and Mood, stylistic devices, structure Comprehension- Analysis and Interpretation Translation(from Indian language to English and vice-versa) Literary/Knowledge Texts

Unit V: Writing Skills

Documenting Report Writing Making notes Letter writing, Writing tabloids, diary entry, open letters, essays, newsletter and magazine articles, skits, short stories, impersonating characters.

It will enhance Language of communication, various speaking skills such as personal communication, social interactions and communication in professional situations such as interviews, group discussions and office environments, important reading skills as well as writing skills such as report writing, note taking etc. While, to an extent, the art of communication is natural to all living beings, in today's world of complexities, it has also acquired some elements of science. It is hoped that after studying this course, students will find a difference in their personal and professional interactions.

Recommended Readings:

1. Fluency in English - Part II, Oxford University Press, 2006.
2. Business English, Pearson, 2008.
3. Language, Literature and Creativity, Orient Blackswan, 2013.
4. Language through Literature (forthcoming) ed. Dr. Gauri Mishra, DrRanjanaKaul, DrBrati Biswas

KALINGA UNIVERSITY
RAIPUR|INDIA

FUNDAMENTALS OF INFORMATION TECHNOLOGY

BVAVFX102

Unit-I

Computer characteristics: Speed, storage, accuracy, diligence; Digital signals, Binary System, ASCII; Historic Evolution of Computers; Classification of computers: Microcomputer, Minicomputer, mainframes, Supercomputers; Personal computers: Desktop, Laptops, Palmtop, Tablet; Hardware & Software; Von Neumann model.

Unit-II

Hardware: CPU, Memory, Input devices, output devices. Memory units: RAM (SDRAM, DDR RAM, RDRAM etc. feature wise comparison only); ROM-different types: Flash memory; Auxiliary storage: Magnetic devices, Optical Devices; Floppy, Hard disk, Memory stick, CD, DVD, CD/DVD-Writer; Input devices - keyboard, mouse, scanner, speech input devices, digital camera, Touch screen Voice Input, Joystick, Optical readers, bar code reader; Output devices: Display device, size and resolution; CRT, LCD, LED; Printers: Dot-matrix, Inkjet, Laser; Plotters, Sound cards & speaker.

Unit-III

Software: System software, Application software; concepts of files and folders, Introduction to Operating systems, Different types of operating systems: single user, multitasking, time-sharing multi-user; Booting, POST; Basic features of two GUI operating systems: Windows & Linux (Basic desk top management); Programming Languages, Compiler, Interpreter, Databases; Application software: Generic Features of Word processors, Spread sheets and Presentation software; Generic Introduction to Latex for scientific typesetting; Utilities and their use; Computer Viruses & Protection, Free software, open source.

Unit-IV

Computer Networks and Internet: Connecting computers, Requirements for a network: Server, Workstation, switch, router, network operating systems; Internet: brief history, World Wide Web, Websites, URL, browsers, search engines, search tips; Internet connections: ISP, Dial-up, cable modem, WLL, DSL, leased line Wireless and Wi-Fi connectivity ; email, email software features (send receive, filter, attach, forward, copy, blind copy); characteristics of web-based systems, Web pages, Web Programming Languages.

Unit-V

Information Technology And Society: Indian IT Act, Intellectual Property Rights, issues. Application of information Technology in Railways, Airlines, Banking, Insurance, Inventory Control, Financial systems, Hotel management, Education, Video games, Telephone exchanges, Mobile phones, Information kiosks, special effects in Movies.

Programming Concepts & Techniques: Program Concept, Characteristics of Programme, Stages in Program Development, Tips for Program Designing, Programming Aids, Algorithms, Pseudo code, Notations, Design, Flowcharts, Symbols, Rules, compiler & Interpreter. Introduction to programming techniques, Top-down & Bottom-up approach, Unstructured, & Modular programming, Cohesion, Coupling, Debugging, Syntax & Logical Errors, Linking and Loading, Testing and Debugging, Documentation.

Reference Books:

1. Programming in C, R.S. Salaria, Khanna Publishing House
2. Computer Concepts and Programming in C, R.S. Salaria, Khanna Publishing House
3. **Handbook of Computer Fundamentals, N.S. Gill, Khanna Publishing House**

KALINGA UNIVERSITY
RAIPUR | INDIA

GRAPHIC DESIGN

BVAVFX103

UNIT-I

Design Processes and Practices

1. Role of Design in Society
a) Functions of Design
b) Implications and Impact of Graphic Design
c) Role of Graphic Designer
d) Contemporary Graphic Design in India

2. Graphic Design Processes

a) Methodology of Graphic Design

UNIT-II

Principles and Elements of Design

1. Sketching and Drawing
a) Introduction to Drawing: an aid in visual representation
b) Types of drawing
- Drawing from memory and imagination
- Drawing from observation
- Drawing from Dimensional information

c) Virtues of drawing

2. Colour

a) Colours theories
b) Colour wheel
c) Colour Harmonies or Colour Schemes
d) Colour Symbolism

3. Fundamentals Visual Composition

a) Introduction
b) Principles and Elements of Composition

4. Typography

a) Classification
b) Anatomy of Font
c) Features of a Font
d) Text Formatting
e) Multilingual Typography

5. Principles of Layout Design

a) Theme and content
b) Types of Layout
c) Colours in Layout
d) Copy and Type
e) Design for Publication

UNIT-III

Media and Design

1. Digital Imaging and Printing

a) Types of Digital Images
b) Digital image Editing
c) Digital Printing

2. Advertising Design

a) What is Media Planning

3. Campaign Design

a) Kinds of Campaign
b) Planning a Campaign
c) Research & Data Collection
d) Creative Aspects
e) Developing a Concept
f) Departments of an Advertising Agency

4. Integrated Methods of Advertising

a) Kinds of Events
b) Public Relations
c) Media
d) Visual Communication and its Impact

5. Graphic Design for Interactive Media

a) Basic Concepts
b) Types of Websites
c) The Website Development and Management Process
d) Graphic Design Approach
e) Designing Navigation

Reference Books:

1. Engineering Graphic & Design, Pradeep Jain, Khanna Publishing House
2. Multimedia and Graphics, V.K. Jain, Khanna Publishing House

KALINGA UNIVERSITY
RAIPUR | INDIA

ILLUSTRATION AND PHOTO-EDITING

BVAVFX104

UNIT-I

Introduction to Adobe Illustrator: Introduction to Adobe Illustrator, work area and workspaces and tools. Opening files, importing art work, viewing art work, rulers and grids, Drawing in Illustrator, drawing lines and shapes, pencil tool, pen tool, editing drawing, tracing, symbols, colouring, applying colours, swatches, adjusting colour and colour settings.

UNIT-II

Painting with Illustrator, fills, strokes, brushes, transparency, blending, gradient, meshes and color blending. Selecting, transformation, scaling, grouping, reshaping, cutting, blending of object, creating 3D object, text and typing, special effects, filters, shadows, glow, feathering graphic styles.

UNIT-III

Photoshop and its interface, Navigation and All tools, Working with basic selections, advanced selections-1(on the basis of channels, color range, extract, filter etc.), Exercises on selections, Quick Masks, Layer Mask, Vector Mask, Layers & Layer Blending Modes, Play with Photoshop, Filter Gallery, Exercises, Bring some object and try to make it in computer, Make your own cartoon character.

Color Theory, Make a perfect cropping of some images using Photoshop, Prepare a cut-out of some images using Photoshop, Place nice background for those images, Prepare nice background using gradient tool, Scan various images, Color adjustment of those images (PHOTO RETOUCHING).

UNIT-IV

Make Nature scene (winter) digital painting, Make Nature scene (summer) digital painting. Make digital painting (Use brush, pencil, smudge etc.), Make something like modern art keeping in mind color combination, and make a collage of Indian art and culture. Make a collage of wildlife animals, Make a portrait of celebrity (Digital painting).Convert a B&W image into color (Use variation), “Choose a theme (Music, Festivals, Sports, Dance) and Design 5-8 graphics on them.”, Color Modes, Color Corrections, Advanced color correction techniques (levels, Curves, Hue, Saturation etc.), Design that Ad from your own style. Design motifs tribe art, Make an animal character, “Plan a story of that character & Make its backgrounds in three/four frames”, Make posters on nature/earth, Matte Painting- Composition, Creating images for the web: Exporting images from Photoshop.

Reference Books:

1. Learning Illustrator, Ramesh Bangia, Khanna Publishing House.

KALINGA UNIVERSITY
RAIPUR | INDIA

ON JOB TRAINING/INTERNSHIP/WORKSHOP

BVAVFX105P

KALINGA UNIVERSITY
RAIPUR INDIA

SEMESTER-II

MULTIMEDIA & WEB TECHNOLOGY

BVAVFX201

UNIT-1

Introduction to Database Management

- Introduction to database concepts and its need
- **Database Terminology:** Data, Record/Tuple, Table, Database, and field/attribute
- **Concept of Keys:** Candidate key, Primary key, Alternate key, and foreign key
- Examples of common Database Management System: MySQL, Ingres, Postgres, Oracle, DB2, MS-SQL Server, Sybase etc.
- **Database Tool:** Introduction to MySQL: Using MySQL creating Database and table, defining primary key, inserting records, displaying records using SELECT command, WHERE clause, modifying records using UPDATE, deleting records.

UNIT-2

Networking And Open Standards

- **Computer Networking:** Evolution of Networking: ARPANET, WWW, And Internet
- **Network Topologies:** Bus, Star, Tree
- **Types of Network:** PAN, LAN, WAN, MAN
- **Wired Technologies:** Twisted pair cable, coaxial cable, optical fiber
- **Wireless Technologies:** Bluetooth, infrared, radio link, microwave link, radio link and satellite link
- **Network devices:** MODEM, Hub, switch, repeater, gateway – and their functions
- Identifying computers and users over a network: Basic concept of domain name, MAC (Media Access Control) and IP Address, domain name resolution
- **Wireless/Mobile Communication:** GSM, CDMA, GPRS, WLL, 3G, 4G
- **Internet Applications:** SMS, Voice mail, e-Mail, Chat and Video conferencing
- **Network Security Concepts:** Cyber law, firewall, cookies, hackers and crackers
- **Open Source Concepts:** Proprietary and open source software (OSS), common FOSS/FLOSS examples (e.g. GNU/Linux, Firefox, Open Office, Linux, Mozilla web browser, Apache server, MySQL, Postgres, Pango, Tomcat, PHP, Python)
- **Indian Language Computing:** character encoding, UNICODE, different types of fonts (open type vs true type, static vs dynamic), Entering Indian Language Text – phonetic and key map based.

UNIT-3

Web Page Development

- Review of HTML/DHTML, JavaScript covered in Class XI
- **Installation and Managing WEB-Server:** IIS/XAMPP/LAMP;
- **PHP:** Concept of PHP, features of PHP, other equivalent tools – JSP, PHP

- Including PHP in web page
- **Data types:** integer, double, string, Boolean, null, array, and object
- **Variables:** Using variables in PHP
- **Constants:** Using constants in PHP, constant () function
- Output data to Screen: echo and print statements
- **Operators:**

a) Arithmetic operators: +, - (Unary and Binary), *, /, %, **
b) Assignment operators : =,+=,- =,*=,/=.%=
c) String operator: . , . =
d) Comparison operators: <, >, <=, >=, !=, ==,===.!===
e) Incrementing/Decrementing operators:++,--
f) **Logical operators:** !,&&,||;
g) **Array Operators:** union(+),equality ==,inequality <>,!=

- Operator precedence
- **Built In Functions:**
- **String Manipulation Functions:** strtoupper(), strtolower(), strlen(), ltrim(), substr(), rtrim(), trim() ,strrev(), strcasecmp(),strcmp(),stripslashes(), strchr(), strpos(), stripos()
- Time & Date Functions: Date(),getdate(),gettimeofday(),Mktime(),strtotime(),cal_ days_in_month()
- **Arrays:** Declaration and use of indexed arrays(1 dimensional), inbuilt functions sort(),rsort()
- **Conditional statements:** if, if else, if...elseif....else, switch
- **Loops:** while, do while, for, for each
- Unconditional exit from loop /switch using break
- **User Defined Functions:** Defining a function, calling/invoking a function,
- Passing parameters/arguments, Pass by value, pass by reference, return value, default value
- Global Variables – Superglobals $GLOBALS,$_SERVER,$_REQUEST,$_POST,$_GET,$_FILES,$_ENV,$_COOKIE,$_SESSION
- **Elements of $_SERVER :** PHP_SELF, SERVER_NAME, HTTP_HOST, HTTP_USER_AGENT
- PHP Forms
- Form Handling, Form Validation, Form URL/E-mail
- **Text Files:** Opening a file, Reading a file, Writing a file, Closing a file
- **Other Features:** PHP File Upload, Cookies, Sessions (start, modify and destroy), Error Handling
- **Working on Database:** (Using MySQL i Procedural API)Connecting with Databases, opening and closing databases, Inserting, retrieving, modifying/updation , deleting of records from tables

UNIT-4

Multimedia and Authoring Tools

- **Movie File Formats:** AVI, MPEG, SWF, MOV, DAT
- **Embedding:** Audio/Video on the web page
- **Multimedia Authoring Using Macromedia Flash:** Making of simple movie, setting properties, frame rate, dimensions, and background color
- **Movie Frames:** Concept of frame, frame buffer, and frame rate, creating a key frame, Inserting text into the frame, inserting graphical elements into the frame, converting text/graphics to symbol, inserting symbol into the frame, setting symbol property (graphics/button/movie), inserting blank key frame, selecting all/specific frames of a layer, copying/pasting selected frames

- **Scene:** Concept of scene, duplicate scene, add scene, delete scene, and navigating between scenes
- **Layers:** Concept of layer, layer properties, layer name, show/hide/lock layers, viewing layer as outline, adding/deleting a layer
- **Types of Layer -** normal/guide/mask
- **Special Effects:** Motion Tweening, Shape Tweening, Inserting Sound Layer
- Testing a Scene and Movie
- **Multimedia Application:** Education (use of CAL tool), entertainment, edutainment, virtual reality, digital libraries, information kiosks, video on demand, video phone, video conferencing and telemedicine.

REFERENCE BOOKS:

1. Multimedia & Web Technology, Ramesh Bangia, Khanna Publishing House
2. Internet and Web Technology, Soma Das Gupta, Khanna Publishing House

KALINGA UNIVERSITY
RAIPUR | INDIA

ENVIRONMENTAL STUDIES

BVAVFX202

Unit 1 : Introduction to Environmental Studies

- Multidisciplinary nature of environmental studies;
- Scope and importance; Concept of sustainability and sustainable development.

Ecosystems

- What is an ecosystem? Structure and function of ecosystem; Energy flow in an ecosystem: food chains, food webs and ecological succession. Case studies of the following ecosystems :

a) Forest ecosystem

b) Grassland ecosystem

c) Desert ecosystem

d) Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries)

Unit 2 : Natural Resources : Renewable and Non--renewable Resources

- Land resources and landuse change; Land degradation, soil erosion and desertification.
- Deforestation: Causes and impacts due to mining, dam building on environment, forests, biodiversity and tribal populations.
- Water: Use and over--exploitation of surface and ground water, floods, droughts, conflicts over water (international & inter--state).
- Energy resources : Renewable and non renewable energy sources, use of alternate energy sources, growing energy needs, case studies.

Unit 3 : Biodiversity and Conservation

- Levels of biological diversity : genetic, species and ecosystem diversity; Biogeographic zones of India; Biodiversity patterns and global biodiversity hot spots
- India as a mega--biodiversity nation; Endangered and endemic species of India
- Threats to biodiversity: Habitat loss, poaching of wildlife, man--wildlife conflicts, biological invasions; Conservation of biodiversity : In--situ and Ex--situ conservation of biodiversity.
- Ecosystem and biodiversity services: Ecological, economic, social, ethical, aesthetic and Informational value.

Unit 4 : Environmental Pollution

- Environmental pollution : types, causes, effects and controls; Air, water, soil and noise pollution
- Nuclear hazards and human health risks
- Solid waste management : Control measures of urban and industrial waste.
- Pollution case studies.

Environmental Policies & Practices

- Climate change, global warming, ozone layer depletion, acid rain and impacts on human communities and agriculture
- Environment Laws: Environment Protection Act; Air (Prevention & Control of Pollution) Act; Water (Prevention and control of Pollution) Act; Wildlife Protection Act; Forest Conservation Act. International agreements: Montreal and Kyoto protocols and Convention on Biological Diversity (CBD).
- Nature reserves, tribal populations and rights, and human wildlife conflicts in Indian context.

Unit 5 : Human Communities and the Environment

- Human population growth: Impacts on environment, human health and welfare.
- Resettlement and rehabilitation of project affected persons; case studies.
- Disaster management : floods, earthquake, cyclones and landslides.
- Environmental movements : Chipko, Silent valley, Bishnois of Rajasthan.
- Environmental ethics: Role of Indian and other religions and cultures in environmental conservation.
- Environmental communication and public awareness, case studies (e.g., CNG vehicles in Delhi).

Suggested Readings:

1. Carson, R. 2002. Silent Spring. Houghton Mifflin Harcourt.
2. Gadgil, M., & Guha, R.1993. This Fissured Land: An Ecological History of India. Univ. of California Press.
3. Gleeson, B. and Low, N. (eds.) 1999.Global Ethics and Environment, London, Routledge.
4. Gleick, P. H. 1993. Water in Crisis. Pacific Institute for Studies in Dev., Environment & Security. Stockholm Env. Institute, Oxford Univ. Press.
5. Groom, Martha J., Gary K. Meffe, and Carl Ronald Carroll.Principles of Conservation Biology. Sunderland: Sinauer Associates, 2006.

6. Grumbine, R. Edward, and Pandit, M.K. 2013. Threats from India's Himalaya dams. Science, 339: 36--37.

7. McCully, P. 1996. Rivers no more: the environmental effects of dams(pp. 29--64). Zed Books.

8. McNeill, John R. 2000. Something New Under the Sun: An Environmental History of the Twentieth Century.

9. Odum, E.P., Odum, H.T. & Andrews, J. 1971.Fundamentals of Ecology. Philadelphia: Saunders.

10. Pepper, I.L., Gerba, C.P. & Brusseau, M.L. 2011. Environmental and Pollution Science. Academic Press.

11. Rao, M.N. & Datta, A.K. 1987. Waste Water Treatment. Oxford and IBH Publishing Co. Pvt. Ltd.

12. Raven, P.H., Hassenzahl, D.M. & Berg, L.R. 2012.Environment. 8th edition. John Wiley & Sons.

13. Rosencranz, A., Divan, S., & Noble, M. L. 2001. Environmental law and policy in India. Tripathi 1992.

14. Sengupta, R. 2003. Ecology and economics: An approach to sustainable development. OUP.

15. Singh, J.S., Singh, S.P. and Gupta, S.R. 2014. Ecology, Environmental Science and Conservation. S. Chand Publishing, New Delhi.

16. Sodhi, N.S., Gibson, L. & Raven, P.H. (eds). 2013. Conservation Biology: Voices from the Tropics. John Wiley & Sons.

17. Thapar, V. 1998. Land of the Tiger: A Natural History of the Indian Subcontinent.

18. Warren, C. E. 1971. Biology and Water Pollution Control. WB Saunders.

19. Wilson, E. O. 2006.The Creation: An appeal to save life on earth. New York: Norton.

20. World Commission on Environment and Development. 1987.Our Common Future. Oxford University Press.

KALINGA UNIVERSITY
RAIPUR | INDIA

DESIGN & INNOVATION

BVAVFX203

UNIT-1

Introduction to Design Session–1: Concept of Design

- Design Definition.
- Design versus Art.
- Design and Environment.
- The basis of Design Process.
- Use Design in today's scenario.

Design Fundamental

- Principles of Design.
- Elements of Design.
- Colour Theory.
- Understanding of Color wheel.
- To increase and build sensitivity to the forms around them.
- To identify the revolving still life and outdoor in vicinity of environment.
- To relate the elements of design to understand design process for their projects.
- Understanding the colour quality, intensity, relationship with other colours, textures, shape.

UNIT-2

Design Tools and Techniques

Produce Drawing

- Defining Drawing.
- Different techniques of drawing.
- Exploration of medium.
- Compositions and Perspectives.
- Tonal Techniques.
- Use of Dreams and Music for creative Drawing.
- To identify the use of tone and value, Texture/Frottage.
- Identify to use contour line drawing (continuous or cross contour).

UNIT-3

Occupational Health and Safety

Work Safe Review Module

- Safety and Health responsibility.
- Role of War safe Inspector.
- Hazard identification, Risk assessment and Risk control.
- PPE.
- Dealing with emergency.
- Design a promotional poster advertising what students need to know about Safety and Dangers, or be warned about while working at College.

GRAPHIC DESIGN (BASIC SKETCHING AND HUMAN ANATOMY IN DRAWING) BVAVFX204

UNIT-1

Orientation into visual art form. The Basics of traditional 2D animation, Introduction to the skill required thereof, beginning life drawing, Use of simple shapes. How to draw sketches with the help of basic shapes Learning to draw lines, circles, ovals, scribbles, zigzag (random) patterns etc. Background elements, trees, mountains, clouds, water bodies, meadows, perspective drawing Lights and shadows day night scenes, layers (concept and implementation) layout design and staging. An intro on how to make drawings for animation, shapes and forms, about 2D and 3D drawings, Caricaturing-fundamentals, Exaggeration, Attitude, Silhouettes, Boundary breaking exercises and warm-ups.

UNIT-2

HUMAN ANATOMY: Structure of man, proportion of body parts, drawing from basic form, Line of action, balance Rhythm, turnings, twisting, drawing plane surfaces, torso, face, eyes, nose, ears, mouth, hand and feet.

FEMALE ANATOMY: Proportion and construction of female body, twisting of female body, chest, torso, face, parts of face, hands, hands in action, feet and gestures, curves, curls, rhythm and twist.

UNIT-3

CHILD ANATOMY: Understanding child's figure, proportion and construction of child body, face, chubbiness, hand, feet and gestures.

ANIMAL ANATOMY: Animals from basic forms, understanding motion and grace of animals, turning animals to character, face, legs, tails, perspectives.

CARTOON ANATOMY: Understanding cartoon characters, drawing from basic shapes, line of action, distortion of proportion, cartoon faces, eyes, mouths, hairs, nose, hands, feet, gestures and poses.

REFERENCE BOOKS:

Internet and Web Technology, Soma Das Gupta, Khanna Publishing House

KALINGA UNIVERSITY
RAIPUR | INDIA

ON JOB TRAINING/INTERNSHIP/WORKSHOP

BVAVFX205P

KALINGA UNIVERSITY
RAIPUR INDIA

SEMESTER-III

WEB APPLICATIONS

BVAVFX301

UNIT-1

Movie Editing Tools.

- Familiarization of interface components.
- Importing pictures.
- Importing Audio and Video Files.
- Splitting and Joining Movie Clips.
- Adding Titles and publishing.

UNIT-2

Customizing and Embedding Multimedia components in Web Pages.

- Compatible Multimedia file formats for Web Pages.
- Embedding Audio file.
- Embedding Video file.
- Embedding Flash file.

UNIT-3

Web Scripting – Java Script.

- Java Script review.
- Functions – user defined.
- String Object.
- Math Object.
- Array Object.
- Events.
- Case Studies.

UNIT-4

Work Integrated Learning IT – WA-II.

- Advanced Features of Web Design.
- Code view, Add-ins / Snippets and Page Transitions.
- Dynamic Web templates.
- SEO - Search Engine Optimization.
- Forms - Advanced.
- Publishing webpages or websites-I.

REFERENCE BOOKS:

1. Internet & Web Development, Soma Das Gupta, Khanna Publishing House.

KALINGA UNIVERSITY
RAIPUR INDIA

DIGITAL COMPOSITING

BVAVFX302

UNIT-1

- Introduction to Compositing software
- Principles of compositing

UNIT-2

- Basic techniques
- Transparency

UNIT-3

- Rotoscoping
- Wire Removal

UNIT-4

- Chroma key
- Layer based compositing

UNIT-5

- Compositing modes
- Animating layers

KALINGA UNIVERSITY
RAIPUR INDIA

PRE-PRODUCTION

BVAVFX303

UNIT-1

- Research, brainstorming & story concept creation: Intention / purpose & audience (what you intend to say & why).

UNIT-2

- Story structure & character development: Narrative structure and character back story.

UNIT-3

- Sequence & shot analysis: Analysis and re-creation of timing and shot composition from professionally produced film/video productions.

UNIT-4

- Storyboards: Visual design (layout/composition, style, color, lighting etc.); Language of cinema (narrative structure, shot composition, spatial/directional continuity).

UNIT-5

- Animatics / pre-viz: Timing and transitions Audio layering (music, ambient sound, narration) Budgeting and planning: Consideration of schedules, costs and other planning issues.

KALINGA UNIVERSITY
RAIPUR INDIA

3D TEXTURING

BVAVFX304

UNIT-1

Introduction to basic material types & Procedurals. Study of concepts: Opacity, Smoothness, Specularity, and color, Working with Maya Surface Nodes-Blinn, Phong & Lambert, Working with Transparency, Reflection & Refraction, Bump & Displacement Maps, Introduction to unwrapping, Unwrapping the maps for various 3D characters.

UNIT-2

Working with 2D and 3D Texture, Introduction to the mapping and advanced texturing techniques, Shadow maps; ray traced shadows and radiosity, Creating photo real environments and textures, Basics of Utilities-Reverse, Stencil, Condition, Sampler Information.

KALINGA UNIVERSITY
RAIPUR|INDIA

ON JOB TRAINING/INTERNSHIP/WORKSHOP

BVAVFX305P

KALINGA UNIVERSITY
RAIPUR INDIA

SEMESTER-IV

AUDIO EDITING

BVAVFX401

UNIT-1

Sonic Sound Forge: Manipulating audio: Auto trim/crop, mute, DC offset, resample, reverse, smooth/ enhance, Fade in/out, insert silence, bit depth converter etc, understanding various digital audio formats like .WAV, .AIFF, .MP3, swf, WMA etc, understand audio plug-in, importing and exporting into multiple audio file formats like MP3, real audio, QuickTime formats, etc.

UNIT-2

Event tool: move, split, slip and trim multiple events, create fades, apply ASR (Attack/Sustain/Release). Understanding script editor window, Spectrum analysis tools, scrub tool etc, statistics tool (Max, RMS, DC offset, zero crossings), sampler tool etc, Audio editing: workflow, real time editing, event based editing, waveform volume and pan envelopes, Edit, record, encode and master digital audio, editing audio by drag and drop options, cross fading audio tracks, balancing sound levels, creating smooth fades etc.

UNIT-3

Understanding Multichannel audio recording, synchronize audio and video. Understanding regions and play lists, editing of fields, name markers, loops, and regions, Timing basis: absolute frames, measures and beats, Time and frames. Audio effects like: Equalizer, Volume, chorus, distortion, Delay/ echo, pitch, bend/shift, reverb, vibrato, normalize etc Insert track markers, adding multiple tracks, adjusting track time, musical instrument file processing.

REFERENCE BOOKS:

1. Audio & Video Systems, Bali & Bali, Khanna Publishing House.

KALINGA UNIVERSITY
RAIPUR INDIA

VIDEO EDITING

BVAVFX402

UNIT-1

- Adobe Premiere: Concept of non-linear editing,
- The basics of editing: Overview, Importing and Exporting: various audio, video and graphics in various formats, Edit, manipulate and arrange these elements in visual timeline, understand all Tools of toolbox for editing clips. Titling and superimposing.

UNIT-2

- Panels: Tools panel, Project,
- Monitors: Source and program, Timeline, Audio meters,

UNIT-3

- Misc. Tasks and functions: Titles, Transitions, speed and duration, Effects, Key frames, Types of edit, Opacity, trimming,
- Adding Special effects like: Star trek transporter effect, Blur part of an image, Ghost effect, Highlight part of an image etc.

REFERENCE BOOKS:

Audio & Video Systems, Bali & Bali, Khanna Publishing House.

KALINGA UNIVERSITY
RAIPUR INDIA

PRINCIPLES OF ANIMATION AND TECHNIQUES OF ANIMATION BVAVFX403

UNIT-1

Drawings with the help of basic shapes, Animal study, Human anatomy, Shading techniques, Live model study, Introduction- Importance of confidence, Difference between "looking at the drawing" and "seeing the drawing", What is observation, Procedure- How to approach, Importance of Guideline- Line of action, Overcome the fear, Drawing for animation,

UNIT-2

An Introduction on how to make drawings for animation, Shapes and forms, About 2d and 3d drawings, Caricaturing – fundamentals, Exaggeration, Attitude, Silhouettes, Boundary- breaking exercises and warm ups, gesture drawing, Line drawing and quick sketches, Drawing from Observation, memory and imagination.

UNIT-3

Drawing for Animation, Exercises and warm ups on pegging sheet, Quick Studies from real life, Sequential movement drawing, caricaturing the Action. Thumbnails, Drama and psychological effect, Motion Studies, Drawing for motion,

UNIT-4

The Body language, Re-defining the drawings, Introduction to animation production process, Basic Principles in animation, Squash and stretch, Anticipation, Staging, Straight ahead and pose to pose, Follow through and overlapping action, Slow in and slow out, Arcs, Secondary action, Timing, Exaggeration, Solid drawing, Appeal, Mass and weight, Character acting, Volume, Line of action, Path of action, Walk cycles-animal and human.

REFERENCE BOOKS:

1. Multimedia and Animation, V.K. Jain, Khanna Publishing House.

KALINGA UNIVERSITY
RAIPUR INDIA

BASIC OF 3D MODELLING

BVAVFX404

UNIT-1

Interface of 3DS max, Understanding the concept of four view ports, Aligning object in the each view port in X, Y, Z axis, Hot keys, User defined hot keys, Using the menus, Floating and docking. Command panel, customizing the interface, Using drag and drop feature, Introduction to different workspaces, “Geometry, Sub objects, Extruding, Welding, bridging etc, Recognizing the workspaces”.

UNIT-2

Introduction to standard and extended primitives. “Introduction to creating complex objects with Standard and extended primitives”, Understanding the spline tools. Introduction to polytools. Using modifier stack, navigating the modifier stack, File navigation, Introduction to Connection (Hierarchy, Group, and Link).

UNIT-3

Introduction to the 3d elevators and walk through, “Introduction to modifiers and modifier gizmos, Familiarity with Modifiers like Bend, edit poly, X form, wave, lathe symmetry etc.

UNIT-4

Advanced 3DS Max, Modelling objects with lathe, loft, extrude etc, Creating 3D objects from 2D spline shapes, Organic and inorganic modelling.

KALINGA UNIVERSITY
RAIPUR|INDIA

ON JOB TRAINING/INTERNSHIP/WORKSHOP

BVAVFX405P

KALINGA UNIVERSITY
RAIPUR INDIA

SEMESTER-V

TEXTURE AND LIGHTING

BVAVFX501

UNIT-1
Introduction to texturing, working with Diffuse, Opacity and Reflection.

UNIT-2
Basics of UV unwrapping, creating texture maps, Bump and Displacement Mapping.

UNIT-3
Introduction to Video post, Introduction to standard lights.

REFERENCE BOOKS:

1. Mastering Photoshop, Web Tech Solutions, Khanna Publishing House

KALINGA UNIVERSITY
RAIPUR INDIA

RIGGING

BVAVFX502

UNIT-1

Introduction to constraints and implementation to rigging, maintaining proper hierarchy, grouping and creating controls, Rigging the characters.

UNIT-2

Introduction to Muscle system, working with Muscle rigging, Introduction to automated rigging systems and methods.

UNIT-3

“Embedding small scripts in the hierarchy control system, to save time and facilitate handling”, Advanced rigging, Vertex weighting techniques, Rigging solutions to Anatomical Problems, Using advanced rigging to archive natural articulation of character.

KALINGA UNIVERSITY
RAIPUR|INDIA

3D ANIMATION

BVAVFX503

UNIT-1

Students learn to use principles of traditional animation within the context of 3D animation by effectively applying them onto the character.

Part of good acting for animation is planning. The students learn to create or collect

authentic visual references (both still and video) for animating body mechanics and understanding acting.

Good poses are not only essential to create believable physicality but also it helps to clearly convey the character emotion for storytelling. They learn the importance of balance and weight, checking the silhouette all the time to make clearer poses.

They learn to act out body mechanics, learn the effect of physics (gravity/friction etc.) and artistic Presentation (composition, staging, silhouette etc.)

Students learn to convey Emotion not only in the facial expression but also in the body language.

UNIT-2

Foundation of good facial expression depends upon the reference and pre-planning. Detailed expression chart and voice recording is used as a starting point for any facial animation. Students learn to internalize the dialogue and they rehearse the sounds to match the shapes. They also need to draw out key poses before starting to pose in 3D.

A good animator needs more skillset than just to be able to animate how to create lip-synch. Students explore how to create the subtle facial expressions to suit the personality of the character and the accent style of the pre-recorded dialogue.

UNIT-3

Exploration of the diverse ways in which the human form takes shape in animated films, from highly photorealistic representations to stream-of-consciousness movement. Specific examples from 2D, 3D, stop-motion and hybrid work will be examined in order to shed light on the construction and animation of the body in contemporary film.

REFERENCE BOOKS:

1. Multimedia and Animation, V.K. Jain, Khanna Publishing House.

KALINGA UNIVERSITY
RAIPUR | INDIA

INTRODUCTION TO 3D MOTION GRAPHICS & VFX BVAVFX504

UNIT-1

Concepts for Broadcast animation for logos, channel IDs and montages, Multi-layer compositing, Special effects, Super imposition and titling, Exporting various file formats outputs as per the end user requirements.

UNIT-2

Introduction to batch render & work group, Adding cameras & lights to a simple scene to make a complex compositing, Adding 2D back ground and elements into a 3D character layers, Creating object, material IDs for further adding special effects, Effects for digital video 2D layers and 3D layers for more effective outputs, adding particle effects into a scene.

UNIT-3

Introduction to colour character and keying, "Editing the real time video with CG based scene and merging both of them to create a final output, Exporting various file format, output as per the end user requirements.

UNIT-4

Introduction to the batch rendering and work groups, Introduction to the concepts of editing in terms of compositing, Adding special effects in built in compositing software to make a simple shot into a perfect output.

UNIT-5

Chroma keying, Luma key, blue screen, Key frame text & layer animation & 3D particles, Effects etc. Color correction, Introduction to 3D compositing concepts i.e. Layers and masking, Rot scoping, Rig removal, Morphing.

REFERENCE BOOKS:

1. Engineering AutoCAD, Pradeep Jain & A.P. Gautam, Khanna Publishing House.

KALINGA UNIVERSITY
RAIPUR|INDIA

ON JOB TRAINING/INTERNSHIP/WORKSHOP

BVAVFX505P

KALINGA UNIVERSITY
RAIPUR INDIA

SEMESTER-VI

INTRODUCTION TO RENDERING

BVAVFX601

UNIT-1
This unit teaches students about rendering concepts; formats and resolutions.

UNIT-2
This unit teaches students the advantages of different render software such as mental ray, v-ray, render man etc.

UNIT-3
This unit teaches students the benefits of layer based rendering. This process enhances the image quality without need of re-rendering the images again.

UNIT-4
The rendered layers or passes need to be composited to get the final output.

KALINGA UNIVERSITY
RAIPUR INDIA

MUSCLE SYSTEM

BVAVFX602

UNIT-1
Introduction to bone system/Joints and IK handles, creating bone system and maintaining naming conventions.

UNIT-2
Skinning: types, import and export of skin weights, IK and FK basics, IK and FK switch, stretchy IK and FK.

UNIT-3
Introduction to Deformers: attics, wrap, cluster, riggle, wire etc. Use of deformers in rigging process.

KALINGA UNIVERSITY
RAIPUR | INDIA

SOFT SKILLS AND PERSONALITY ENHANCEMENT

BVAVFX603

Course Outcome

1. To facilitate Personality Development.
2. To improve Soft skill.
3. To improve Presentation skill.
4. To prepare multimedia presentation.
5. To facilitate in an Interview and being successful nit.

Unit – I

(I) Team Building – The magic of synergy, characteristics of an effective team, essentials of an effective team, Team Dynamics, Team Leading, Managing a Team.

(II) Art of Negotiation –To understand what is negotiation, Ways of negotiating and being successful in it, To understand the power of language and non-verbal communication.

(III) Grooming –To learn selection of proper attire as per the place, Practiced perception, How to carry one's self, How to project one's self in the positive frame and spirit.

Unit – II

(I) Organising Meetings – How to announce, call and organize a meeting in a smooth manner, How to design Agenda and prepare Minutes of Meeting

(II) Telephonic Etiquettes –Learn the tone and pitch of voice while speaking over phone, How to send a voice mail.

(III) Business Etiquettes –What does business etiquettes mean, Professional and Cultural expectations, Effective writing, Corporate Communication, Interaction with foreign clients.

Unit –III

(I) Stress Management –Types of stress, Symptoms and causes of Stress, Power of perception, Reaction to stress, Stress Management techniques.

(II) Time Management – Importance of Time Management, Prioritising Tasks, Goal setting, Barriers to Time Management , Planning Routine and Time Tables.

(III) Self Management –Self evaluation, Self discipline, Self criticism, SWOT analysis, Self Awareness, Development of the Self.

Unit – IV

(I) Presentation Skills –How to prepare a presentation, Knowing the audience and their requirements, Effective ways to deliver presentation, How to prepare Multimedia presentation.

(II) Organisational Skills – How to understand the nature and structure of organisation, To understand hierarchy and communication channel of the organisation, Clarity about the roles and responsibilities in an organisation, How to be a team member, How to draft reports

(III) Leadership Skills

Unit – V

(I) Group Discussion – Understanding the nature of discussion, Difference between debate and discussion, Ways to form and present arguments, Ways to defend your point.

(II) Personal Interview –To learn the skills of appearing in an interview and being successful in it.

(III) Public Speaking – Art of public speaking, To know the rhetoric of making a public speech, exploring rhetorical elements through various ideas..

(IV) Conference and Meeting, Participation and Technical clarity in conference and meeting, Learning to listen and respond, Final Report drafting.

Reference Books:-

1. Soft Skill for everyone –Jeff Butterfield
2. Soft Skill for-S.I. Hariharan -MJP Publications
3. Personality Development & Soft skill – Goyal Brothers Prakasan

KALINGA UNIVERSITY
RAIPUR | INDIA

ON JOB TRAINING/INTERNSHIP/WORKSHOP

BVAVFX604P

RAIPUR|INDIA

KALINGA UNIVERSITY

KALINGA UNIVERSITY, KOTNI , NEAR MANTRALAYA, NAYA RAIPUR - 492101, CHHATTISGARH

CALL: +91-9907252100