NAME OF COURSE	DURATION	BATCH	BOS DATED	STATUS
BSc A&GD	3 YEARS	2022	04/07/2022	ORIGINAL

B.SC A&GD (Animation and Graphics Designing)

MATS University, Raipur Chhattisgarh

Introduction

The main objective of this program is to inculcate among the students, the technical as well as the theoretical knowledge about the computers and its various applications in the different fields. This program is designed in such a way that the students can have a detailed knowledge of the subjects as well as the knowledge of the IT related applications. Throughout this program the students will go through the IT scenario, its scope, career and the essentials of the IT world. The students will be given chance to interact with the Corporate and other intellectuals in the field so as to enable them to grasp theoretical as well as technical knowledge from them and enhance their personality, skill and knowledge. The students will make use of the 24 hours internet facility and video conferencing to interact with the people in the IT field and share their knowledge and experience.

Program Objectives:

- To equip the students to meet the requirement of corporate world and Industry standard.
- To engage in professional development and to pursue post graduate education in the fields of Information Technology and Computer Applications
- To provide the students about computing principles and business practices in software solutions, outsourcing services, public and private sectors

Program Outcome:

- Understand the concepts of key areas in computer science.
- Analyze and apply latest technologies to solve problems in the areas of computer applications.
- Analyze and synthesis computing systems through quantitative and qualitative techniques.
- Apply technical and professional skills to excel in business.
- Communicate effectively in both verbal and written form.
- Develop practical skills to provide solutions to industry, society and business.

1. Scope and Content

The regulations documented here are applicable to the B.C.A. programme offered by the university.
The applicability of the Regulations must be understood in the context of the given Scheme of study and the Syllabus of the programme.
The Regulations given here are in addition to the rules and regulations notified at the time of the admission.
The authorities of University may modify, add, delete, expand or substantiate any part of the Regulations and syllabi, at any time.

2. Course Content

The programme shall be for duration of six semesters, spread out in three years. Each semester of the programme shall consist of either all or some of the following components:

- Core Subjects
- AECC (Ability Enhancement Compulsory Course)
- SEC (Skill Enhancement Course)
- DSE (Discipline Specific Electives) /Choice Based
- GE (Generic Electives)
- Lab Course
- Project Work

Core Subjects
Core subjects comprises of subjects that form an integral part of the programme. These subjects provide a strong ground in basic disciplines of study.

AECC (Ability Enhancement Compulsory Course)
The students who have not done English up to class XII are to opt for Hindi Communication. They can opt Environment studies and other languages also.

SEC(Skill Enhancement Course)
This will facilitate student mobility across institutions within and across countries and also enable potential employers to assess the performance of students.

DSE (Discipline Specific Electives) /Choice Based
Elective courses may be offered by the main discipline/subject of study is referred to as Discipline Specific Elective. The University/Institute may also offer discipline related Elective courses of interdisciplinary nature (to be offered by main discipline/subject of study)

GE(Generic Electives)
An elective course chosen generally from an unrelated discipline/subject, with an intention to seek exposure is called a Generic Elective. P.S.: A core course offered in a discipline/subject may be treated as an elective by other discipline/subject and vice versa and such electives may also be referred to as Generic Elective.

Lab Courses
These subjects are totally practical-based subjects. The learning of these subjects will be performed in laboratories/practical sites with equipment /resources. These subjects shall support the practical implementation of the core/core-bracket subjects. The processes of evaluation of their subjects will depend on the nature of that individual subject.

Project Work
The project work shall be done for a duration as specified by the Coordinator, in the area, related to the main subject of study or the specialization. The project work shall give the student an insight to the situations existing in the field/marked/industries, etc.

3. Eligibility for Admission and Mode of Selection

The minimum qualification required to be eligible for admission is a pass in the HSC or 10+2 examination of a Board of a State Government, or a course recognized as equivalent thereto buy the University, desirably with the relevant or related subjects as one of the subjects of study.
The method of selection for the course shall normally by means of a Personal interview. However, the admission might also by means of an entrance test.

4. Attendance and Examination

A student is eligible to appear for the term-end examinations, only if he/she has put in a minimum of 75%

attendance in each subject individually.

5. Assessment and Examination

Credits

- Credit Points will be awarded for all the subjects. One credit is equivalent to ten classroom contact hours.
- Each core subjects will carry either 6 or 4 or 2 credits, each core bracket subject will carry 3 credits and practical courses will carry either 6 or 4 or 2 credits depending on the number of hours of teaching and training.

Pattern of Assessment

- Assessment of student's performance will be based on two components i.e. Internal Assessment and Term-end Examination conducted at the end of each semester.
- A six-credit subject will comprises of an Internal Assessment component of30 marks and a Term-end Examination components of 70 marks.
- A four-credit subject will comprises of an Internal Assessment component of 30 marks and a Term-end Examination components of 70 marks.
- A two-credit subject will comprise of an Internal Assessment component of 15 marks and a Term-end Examination components of 35 marks.

Purpose of Internal Assessment

The Term-end Examination will be conducted as per the University regulations Sessional tests, assignment,mid- term examination, etc. will be conducted in each subject during the course of each semester, for the.

Assessment for Core Bracket Subjects

Depending on the participation and performance of students, the faculty of the Core Bracket subject will grad the student in term of a right-point scale as given below:

Marks Secured	Grade Point	Letter Grade
80 and above	10	Outstanding(O)
70 and above but below 80	9	Excellent (A+)
60 and above but below 70	8	Very Good (A)
55 and above but below 60	7	Good (B+)
50 and above but below 55	6	Above Average (B)
45 and above but below 50	5	Average (C)
40 and above but below 45	4	Pass(P)
Below 40	0	Fail (F)
	0	Absent (AB)

This assessment is purely based on internal assessment of the subject faculty/coordinator.

Assessment of Project Work

The project work will carry a total of 100 marks. Of this, 70% marks are for the external examination and 30% marks will be awarded for internal evaluation.

Eligibility to Appear for the Term-End Exam

Students, who have put in a minimum of 75% attendance in each subject, shall be eligible to appear for the Term-end examination.

6. Eligibility for Pass

A student shall be declared to have passed in a subject, if he/she secures at least 40% marks in the term-end examination and an aggregate of 40% including internal assessment.

When a student reappears for the failed subject(s), the internal assessment marks originally secured by him/her in the first appearance in the subject(s), if any, will be carried forward.

A student shall be declared to have passed in Core Bracket subject, if he/she secures at least a pass grade.

Promotion of the student to the next semester, is not automatic, but is dependent on certain other conditions.

7. Classification of Successful Students

On successful completion of the programme, the students will be classified as below:

- **Distinction** Those securing an aggregate marks of 75% and above in all the subjects;
- **First Class** Those securing an aggregate mark of less than 75%, but above 60% in all the subjects;
- **Second Class** Those securing an aggregate mark of less than 60%, but above 50% in all the subjects;
- **Pass** Those securing an aggregate mark of less than 50% in all the subjects;

Ranks

Only students, who have passed each of the semester examination at the first appearance, shall be eligible for award of Ranks. The first three ranks shall be notified.

8. Award of Qualification

Students will be awarded the Bachelor Degree of B.C.A., upon fulfillment of the following criteria:

a) Must have passed all the subjects of the six semester with a minimum of 40% in each subject including Internal assessment and secured 45% in aggregate;
b) Must have secured at least a pass grade in all the Core Bracket subjects.
c) Must have secured a minimum of 45% marks in the project work (wherever applicable).
d) Must have complied with all other assessment guidelines and criteria notified during the conduct of the programme.

9. Maximum period for the complement of the Programme

The maximum period for the completion of the programme shall be five years from the date of joining the programme.

10. General Guidelines

Academic Integrity and Ethics

- A student who has committed an act of academic dishonesty will be deemed to have failed to meet a basic requirement of satisfactory academic performance. Thus, academic dishonesty is not only a basic for disciplinary action but also is relevant to the evaluation of student's level of performance and progress.
- Where there has been violation of the basic ethos and principles of academic integrity and ethics, the Director/Board of Examiners/Course coordinator may use their discretion in terms of disciplinary action to be taken.

Academic dishonesty includes, but is not necessarily limited, to the following:

- Cheating or knowingly assisting another student in committing a act of cheating;
- Unauthorized possession of examination materials, destruction or hiding of relevant materials;
- Act of plagiarism;
- Unauthorized changing of marks or marking on examination records.

Attendance

a) Student are required to attend and participate in all scheduled class sessions, guest lecturer, workshops, outbound learning programs and club/forum activities of both academic and non-academic nature.
b) Students may be dropped from the programs due to excessive and non-intimated absences.
c) Students must notify the program coordinator in writing, the reasons for absence, if any, from class sessions, activities and assessment components.
d) On notification of absences (including anticipated absences), the Director/Programmer coordinator would determine whether the absences could be rectified or whether it is possible to satisfactorily complete the subject with the number of identified absences.

General

a) The students are expected to spend a considerable amount of time in research, reading and practice.
b) All students are expected to develop and maintain a positive profession attitude and approach throughout the Programme and in conduct of all other activities.
c) Attendance alone is not sufficient. Students are expected to participate, to help the class learn and understand the topics under consideration.
d) Food and drinks are not permitted in the classroom / conference hall.
e) All students are expected to dress as per stipulated dress code.

SEMESTER I

Course Code	Title	Paper	Credit	Internal	External	Total Marks
AG101	BASIC OF COMPUTER ANDINFORMATION TECHNOLOGY (BCIT)	Theory	4.0	30	70	100
AG102	FOUNDATIONARTS - I (COLOURS, ARTS AND DESIGN THEORY) (FA)	Theory	4.0	30	70	100
AG103	MULTIMEDIA & COMPUTER GRAPHICS (MCG)	Theory	4.0	30	70	100
AG104	ART FOR ANIMATION (TRADITIONAL ANIMATION) (AFA)	Theory	4.0	30	70	100
AG105	ENVIRONMENTAL STUDIES (EVS)	Theory	2.0	15	35	50
AG106	BASIC OF COMPUTER ANDINFORMATION TECHNOLOGY LAB (BCIT LAB)	Practical	2.0	0	50	50
AG107	FOUNDATIONARTS - I (COLOURS, ARTS AND DESIGN THEORY) LAB (FA LAB)	Practical	2.0	0	50	50
AG108	MULTIMEDIA & COMPUTER GRAPHICS LAB(MCG LAB)	Practical	2.0	0	50	50
AG109	ART FOR ANIMATION (TRADITIONAL ANIMATION) LAB (AFA)	Practical	2.0	0	50	50
		Total :-	**26.0**	**135**	**515**	**650**

SEMESTER-II

Course Code	Title	Paper	Credit	Internal	External	Total Marks
AG201	DIGITAL ARTS - I (INTRODUCTIONTO GRAPHICS DESIGN) (DA-I)	Theory	4.0	30	70	100
AG202	FOUNDATION ART - II (DEVELOPMENT AND PREPRODUCTION CONCEPTS) (FA-II)	Theory	4.0	30	70	100
AG203	PHOTOGRAPHY(PG)	Theory	4.0	30	70	100
AG204	PRINT MEDIA(PM)	Theory	4.0	30	70	100
AG205	COMMUNICATIONSKILLS (CS)	Theory	2.0	15	35	50
AG206	DIGITAL ARTS - I (INTRODUCTIONTO GRAPHICS DESIGN) LAB (DA-I LAB)	Practical	2.0	0	50	50
AG207	FOUNDATION ART - II (DEVELOPMENT AND PREPRODUCTION CONCEPTS) LAB(FA-II LAB)	Practical	2.0	0	50	50
AG208	PHOTOGRAPHYLAB (PG LAB)	Practical	2.0	0	50	50
AG209	PRINT MEDIALAB (PM LAB)	Practical	2.0	0	50	50
		Total :-	26.0	135	515	650

SEMESTER-III

Course Code	Title	Paper	Credit	Internal	External	Total Marks
AG301	DIGITAL ARTS - II (ADVANCE GRAPHICS) (DA-II)	Theory	4.0	30	70	100
AG302	INTRODUCTION TO 3D (MODELING AND SHADING) (INTRO TO 3D)	Theory	4.0	30	70	100
AG303	COMPUTER ANIMATION CONCEPTS (CAC)	Theory	4.0	30	70	100
AG304	CINEMATOGRAPHY (CINEMA)	Theory	4.0	30	70	100
AG305	ENTREPRENEURSHIP (ESHIP)	Theory	2.0	15	35	50
AG306	DIGITAL ARTS - II (ADVANCE GRAPHICS) LAB (DA-II LAB)	Practical	2.0	0	50	50
AG307	INTRODUCTION TO 3D (MODELING AND SHADING) LAB (INTRO. TO 3DLAB)	Practical	2.0	0	50	50
AG308	COMPUTER ANIMATION CONCEPTS LAB(CAC LAB)	Practical	2.0	0	50	50
AG309	CINEMATOGRAPHY LAB (CINEMA LAB)	Practical	2.0	0	50	50
		Total :-	**26.0**	**135**	**515**	**650**

SEMESTER-IV

Course Code	Title	Paper	Credit	Internal	External	Total Marks
AG401	ELECTIVE - I(MATTE PAINTING / ADOBE ILLUSTRATOR)(E1)	Theory	4.0	30	70	100
AG402	ELECTRONICMEDIA (EM)	Theory	4.0	30	70	100
AG403	DIGITAL FILMMAKING PROCESS (DFMP)	Theory	4.0	30	70	100
AG404	3D TEXTURINGAND LIGHTING (3DT&L)	Theory	4.0	30	70	100
AG405	AUDIO & VIDEOEDITING (AVE)	Theory	4.0	30	70	100
AG406	ELECTIVE LAB– I (MATTE PAINTING / ADOBE ILLUSTRATOR) (E LAB-1)	Practical	2.0	0	50	50
AG407	ELECTRONICMEDIA LAB (EM LAB)	Practical	2.0	0	50	50
AG408	DIGITAL FILMMAKING PROCESS LAB (DFMP LAB)	Practical	2.0	0	50	50
AG409	3D TEXTURINGAND LIGHTING LAB (3DTL LAB)	Practical	2.0	0	50	50
AG410	AUDIO & VIDEOEDITING LAB (AVE LAB)	Practical	2.0	0	50	50
		TOTAL :-	30.0	150	600	750

SEMESTER-V

Course Code	Title	Paper	Credit	Internal	External	Total Marks
AG501	ELECTIVE II(E II) INTRODUCTIONTO CHARACTERMODELING (ICM)/ Z BRUSH (Z BRUSH)	Theory	4.0	30	70	100
AG502	ELECTIVE II LAB (E II LAB) INTRODUCTIONTO CHARACTERMODELING LAB (ICM LAB)/ Z BRUSH LAB (Z BRUSH LAB)	Practical	2.0	0	50	50
AG503	POST PRODUCTION PROCESS (PPP)	Theory	4.0	30	70	100
AG504	POST PRODUCTION PROCESS LAB(PPP LAB)	Practical	2.0	0	50	50
AG505	MOTION GRAPHICS(MG)	Theory	4.0	30	70	100
AG506	MOTION GRAPHICS LAB(MG LAB)	Practical	2.0	0	50	50
AG507	ADVANCE 3DMODELLING SHADING (A3DMS)	Practical	4.0	30	70	100
AG508	ADVANCE 3D MODELLING SHADING LAB(A3DMS LAB)	Practical	2.0	0	50	50
		Total :-	**24.0**	**120**	**480**	**600**

SEMESTER-VI

Course Code	Title	Paper	Credit	Internal	External	Total Marks
AG601	ELECTIVE - III (3D ANIMATION/VISUAL EFFECTS)	Theory	4.0	30	70	100
AG602	ADVANCE 3D TEXTURING AND LIGHTING	Theory	4.0	30	70	100
AG603	GAMING PRODUCTION	Theory	4.0	30	70	100
AG604	ELECTIVE - III (3D ANIMATION/VISUAL EFFECTS)	Practical	2.0	15	35	50
AG605	ADVANCE 3D TEXTURING AND LIGHTING	Practical	2.0	15	35	50
AG606	GAMING PRODUCTION	Practical	2.0	15	35	50
AG607	MAJOR PROJECT		4.0	0	100	100
		Total:-	**22.0**	**135**	**415**	**550**

AG101
FUNDAMENTALS OF INFORMATION TECHNOLOGY

Course Objective: The objective of the course is to introduce the concepts of computer fundamental & their applications for the efficient use of office technology.

MODULE I
Computer System Characteristics and Capabilities: Speed, Accuracy, Reliability, Memory capability, Repeatability. Computer Hardware and Software: Block Diagram of a Computer, Different Types of Software's. Data Processing: Data, Data Processing System, Storing Data, Processing Data. Types of Computers: Analog, Digital, Hybrid General and Special Purpose Computers. Computer Generations: Characteristics of Computer Generations Computer Systems – Micros, Minis & Main-frames. Introduction to a PC: The IBM Personal Computer Types of PC systems PC, XT & AT Pentium PC's Limitations of Micro Computer.

MODULE II
Introduction to Input Devices: Categorizing Input Hardware, Keyboard, Direct Entry – Card Readers, Scanning Devices – O.M.R., Character Readers, MICR, Smart Cards, Voice Input Devices, Pointing Devices – Mouse, Light Pen.). Computer Output :Output Fundamentals, Hardcopy Output Devices, Impact Printers, NonImpact Printers, Plotters, Computer output Microfilm/Microfiche(COM) systems, Softcopy Output Devices, Cathode Ray Tube, Flat Screen Technologies

MODULE III
Storage Devices :Storage Fundamentals, Primary and Secondary Storage, Data Storage and Retrieval Methods – Sequential, Direct & Indexed Sequential, Tape Storage and Retrieval Methods Tape storage Devices, characteristics and limitations, Direct access Storage and Microcomputers - Hard Disks, Disk Cartridges, Direct Access Storage Devices for large Computer systems, Mass storage systems and Optical Disks, CD ROM. Central Processing Module : The Microprocessor, control Module, A.L.U., Registers, Buses, Main Memory, Main Memory (RAM) for microcomputers, Read Only Memory(ROM).

MODULE IV
System Software :System software Vs. Application Software, Types of System Software, Introduction and Types of Operating Systems programs, Booting Loader, Diagnostic Tests, Operating Systems Executive, BIOS, Utility Programs, File Maintenance, Language Processors, Assembler, Compiler & Interpreter. Application Software: Microcomputer Software, Interacting with the System, Trends in PC software, Types of Application Software, Difference between Program and Packages.

MODULE V

Introduction, History and Version of DOS, Fundamentals of DOS: Physical Structure of the Disk, Compatibility of drives, Disks & DOS versions, Preparing Disks for use, Device Names. Getting Started with DOS : Booting Process, System Files and Command.com, Internal DOS Commands - DIR, MD, CD, COPY, DEL, REN, VOL, DATE, TIME, CLS, PATH, TYPE. Files & Directories, Elementary External DOS Commands - CHKDSK, MEM,XCOPY, PRINT, DISKCOPY, DISKCOMP, DOSKEY, HELP, TREE, SYS, LABEL, ATTRIB, Creating a Batch Files, Additional Commands - ECHO, PROMPT, MODE, GRAPHICS, EDIT, FORMAT, FDISK, BACKUP, RESTORE, MORE, SORT, APPEND.

Text /References Books:

1 "Fundamentals of Information Technology" by Alexis Leon and Mathews Leon
2 "Introduction to Information Technology" by S. Jaiswal
3 "Computer Science: An Overview" by J. Glenn Brookshear

AG102
FOUNDATION ARTS – I
(COLOURS, ARTS & DESIGN THEORY)
MODULE I

Introduction to Color Theory. Meaning of color. Definition of color. Concept of Color wheel, Color Schema, Color Models.

MODULE II

Aspects of Color. Terms Related to Color. General Distribution of Color. Psychological Implication of colors. Basics of Drawing (For animation & Graphics). Shapes of Geometry and types. Use of color in commercial/marketing use. Objectives for Students for the art aspect.

MODULE III

Art and Aesthetics: (Theory) An introduction to art and aesthetics. What is Art and Beauty? A definition of aesthetics. Types of Art & aesthetics. Short Aesthetic Theory. Art and Aesthetics in the Digital Age. The aesthetics of Nature, Visual Arts (Digital), Digital Media. Example of Digital Media art (implemented through practical)

MODULE IV

Elements of Art: Intro to basic Elements of arts. Composition in Art. Learning the Principles of Art. Learning to Draw the Line Flow, Straight, Spiral, Clockwise, Anti Clockwise. Contents of art (Texture, Space, Shape, Color, Tone/Value, Line). Vocabulary of Art. Memory Drawing. Facial Drawing. Nature Drawing. Historical Place Drawing.

MODULE V

Principles of Design: Introduction to Principles of Design, (Contents of designs) Vocabulary, Review, Balance, Symmetrical, Asymmetrical, Radial balance, Vertical. Principles of Design in Graphics (theory lab). Freehand drawing.

Text/References Books:

1. "Interaction of Color" by Josef Albers
2. "Color: A Course in Mastering the Art of Mixing Colors" by Betty Edwards
3. "The Elements of Color" by Johannes Itten
4. "The Design of Everyday Things" by Don Norman

AG103
MULTIMEDIA TECHNOLOGY

MODULE I

Introduction to Multimedia, Definition of Multimedia, Need and uses of Multimedia, Development Platforms for Multimedia, Identifying Multimedia Elements, Types of Multimedia, Multimedia Hardware and Software requirement, Future of Multimedia, Career in Multimedia Production, Virtual Reality, Types of virtual reality, Applications of Virtual Reality (VR), Introduction to HMD (Head-Mounted Display), Multimedia authoring Tools.

MODULE II

Sound in Multimedia, Sound and it Attributes, Mono V/s Stereo Sound, Sound Channels, Analog vs Digital Sound, Concept of MIDI (Musical Instrument Digital Interface), MIDI COMPONENTS, MIDI Requirements, Overview of Various sound file formats, Software for Sound editing and mixing, 3D Sound.

MODULE III

Importance of graphics in multimedia,Vector and RasterGraphics, Vector V/s Raster, Attributes of Image, image capturing methods – scanner, digital camera etc., Various attribute of Images – size, colour, depth etc., Basics of Image compression Techniques. Various Image file format – BMP, DIB, EPS, CIF, PEX, PIC, JPG, TGA, PNG and TIF

format – their features and limitations, graphic file formats conversions, processing images with common software tools such as Photoshop, Paint Shop pro, Corel draw etc.

MODULE IV

Basics of Video, Characteristics of Video, Types of video Signal, Types of Video, Various video Standards, Video File Formats, Video editing Software, Introduction to video capturing Media & instrument, Introduction to graphics accelerator cards, Introduction to digital video compression techniques and various file formats,

MODULE V

Basic of Animation, Types of Animation, Software for Creating animations, Multimedia Applications, Making simple presentation with PowerPoint, Introduction to PowerPoint, Text as a component of Multimedia (Text, Fonts, Typeface, Font effects, Font Size, Types of fonts), Concept of plaintext and Formatted text, RTF and HTML texts,

Text / Reference Books

1. Multimedia: Making It Work" by Tay Vaughan
2 "Introduction to Multimedia Systems" by R. K. Gupta
3. "Multimedia Systems" by Ralf Steinmetz and Klara Nahrstedt

AG104
TRADITIONAL ANIMATION

MODULE I

Introduction to Traditional animation (cel animation), Types of traditional animation (Flipbook animation, Stop motion animation, Cut-out Animation, Clay animation), Experimental Animation, The 12 principles of animation

MODULE II

Character Development, Cartoon Construction, Skeleton Foundation, Construction of head, Facial Expression, Hands, Different Types of characters (Cute characters, Heavy Characters, Musical characters, Animal characters, Bird characters, Dominant characters, loose/lazy characters, Kids, young heroine, Heroes, Super heroes, Willian etc.) Foreshortening Perspective.

MODULE III

Animation and Principles of Movement, The laws of motion in the context of animation.Understanding the meaning of Movement. Movement in Nature and what movement expresses. Awareness of how mood and feeling can be conveyed through movement. Animate and Inanimate object behaviour. Cause and effect thrown objects, rotating, force, oscillating movement, friction, resistance. Studying the tendency of weight to move in a particular manner.

MODULE IV

Character Movement, Line of Action, Line of action in animation, Rhythm and design in cartoon art, Movement of body masses, two-legged movement figure, Run and Walk Cycle, Basic Bouncing ball, four-legged movement, Front and rear movement, Sneak, Fly of birds.

MODULE V

Animation, Sketching basic short hand art, Balance and tilt in movement, straight ahead and rhythm animation. Anticipation action reaction. Pose and Dramatics, Action paths, secondary action, Expression and attitude, Emotion gesture reactions, Overlapping and Follow through action. More animation practices.

Text/References Books:

1."The Animator's Survival Kit" by Richard Williams
2 "The Art of 2D Animation" by Tom Sito
3. "Animation: The Mechanics of Motion" by Chris Webster
4. "Timing for Animation" by Harold Whitaker and John Halas

AG105
ENVIRONMENTAL STUDY

MODULE I

Multidisciplinary nature of Environmental Studies. Definition, scope and importance.
Natural Resources: Renewable and Non-Renewable Resources.

MODULE II

Environmental Pollution Definition: Cause, effects and control measure of - Air pollution, water pollution, Soil pollution, Marine pollution, Noise pollution, Thermal pollution, Nuclear hazards.

MODULE III

Ecosystem: Structure and function of an ecosystem. Ecological succession. Food chains.Food Webs and Ecological Pyramids.

MODULE IV

Water Conservation, Global Warming, Acid Rain, And Ozone Layer Depletion. Environment and human health. Women and Child Welfare. Role of Information Technology in Environment and human health.

MODULE V

Biodiversity: - Definition, Types, and Value of biodiversity: Hot-sports of Biodiversity. Threats to biodiversity. Conservation of biodiversity.

Text/Reference Books:

1. Agarwal K.C. 2001 Environmental Biology Nidi Publ. Ltd. Bikaner.
3. Bruinner R.C., 1989, Hazardous Waste Incineration, McGraw Hill Inc. 480p.
4. Clark R.S., Marine Pollution, Clanderson Press Oxford (TB).
5. Cuningham, W.P. Cooper, T.H. Gorhani, E & Hepworth, M.T. 200,

AG201
DIGITAL ARTS – I
Introduction to Graphics Design

MODULE I – Introduction to Graphics Design

Introduction to Graphics Design, Fundamental types of graphic design – Visual Identity, Marketing& advertising graphic design,User Interface graphic design , Publication graphic design, Packaging graphic design ,Motion graphic design, Environmental graphic design 8. Art and illustration for graphic design. Role of design in society, Graphics design tools and applications, Career Prospectus and job Opportunities.

MODULE II – Theory and Concepts

Elements of Design – (Line, shape, value, colour, space, texture), Principles of design – (Unity, Harmony, Balance, Rhythm, Perspective, Emphasis, Orientation, Repetition and Proportion), Colour Models (RGB CMYK), Calligraphy and Typography, Introduction to typography, Fonts, types of fonts. Colour pallets, Page layout.

MODULE III – Introduction to Photoshop

An Introduction to Adobe Photoshop, Photoshop Panels and Tools, Basic Operations, Navigation and Zooming, Simple Global Adjustments, Layers, Simple Selections, Choosing Colours, Guides and Rulers, Cropping, Basic Photo Corrections, Rotating and Scaling, distorting with transformations, Feathering and Info Palette, Correcting and enhancing Digital Photographs, Touch up tools.

MODULE IV – Introduction to Corel Draw

Introduction to Coral Draw, Corel Draw features, Corel Draw Interface, Tool Box, Common tasks, Selecting Objects, creating basic Shapes, Reshaping Objects, organising objects, applying colour fills and outlines, working with text, Introduction to text tools, typographic design, embedding objects into text, wrapping text around objects, working with bitmaps.

MODULE V – Introduction to Adobe Illustrator

Introduction to Adobe Illustrator Interface, Workspace, tools, tools galleries, artboard, drawing basics, Colour, Painting, Brushes, Gradient, selecting and arranging objects, reshaping objects, importing, exporting and saving, type, creating text, fonts, formatting text and paragraphs, creating special effects.

Text/Reference Books:

1. "Graphic Design: The New Basics" by Ellen Lupton and Jennifer Cole Phillips
2. "The Elements of Graphic Design" by Alex W. White
3. "A Designer's Art" by Paul Rand
4. "Graphic Design: The New Basics" by Ellen Lupton and Jennifer Cole Phillips

AG202
FOUNDATION ARTS – II
Development and Pre-Production Concepts

MODULE I – Development

Developing the idea, The Script, Types of Genres, Fictions and non-fictions, Film Format (Animation, Commercials, Documentaries, Feature Films, Industrial/corporate, music video, short films), Plot type, Story Structure, Writing the script – (Title theme logline treatment), creating characters, writing about budget, Story boarding.

MODULE II – Pre-Production

Introduction, phases of preproduction, Budgeting, managing the budget, budget categories, Cast and crews, Scheduling, breaking down the script and scene, Locations, Auditioning Actors, The Crew departments and their positions, Union and guilds.

MODULE III – Production Design

The Equipment – Cameras, video vs film, film formats, camera supports, Lighting, Lighting supports, Microphones types of microphones, Introduction to production design, Props, wardrobe, building sets, set dressings, special effects, Visualizations of a screen play, the

psychological nature of production design, atmospheric qualities of production design, Establishing an environment for cinematic storytelling.

MODULE IV - Introduction to Production
Introduction, getting ready for production, production schedule. Acting – Introduction, tips for director, Activities, Tips for actor, Acting Techniques. Directing – Introduction, directing during pre-production, rehearsing actors, working with crew during preproduction, Directing during production, directing during post productions.

MODULE V - Short film making development, preproduction and shooting. Mobile film making, reels shorts etc.

Text/Reference Books:
1. Power Filmmaking Kit – Jason J. Tomaric
2. "Drawing on the Right Side of the Brain" by Betty Edwards
3. "Art Fundamentals: Theory and Practice" by Otto G. Ocvirk

AG 203
PHOTOGRAPHY
MODULE I: Introduction to Photography
History of Photography, Digital Photography, Types of cameras, Parts of camera, types of camera sensors, Types of camera lenses, types of lens filters, camera support equipment.

MODULE II: Camera working
Zoom in zoom out, Focal length, focal point, Aperture, Iris, Sutter speed, Depth of field,ISO settings, camera menu settings, Introduction to lighting, Rules of composition in photography, Types of shots in photography, Principles of photography, Framing and composition.

MODULE III:Light writing
Types of lights, Lighting support lighting kits, 3 Point lighting, outdoor lighting, working with shadows, the qualities of light, lighting a scene. Light trails, Studio and lights, Studio lighting techniques.

MODULE IV: Documentary research and project work
Studio and Lights,Portrait photography, Fashion photography, Architectural photography, Sports Photography, Photojournalism, Food Photography, Commercial photography, Travel

Photography, still life photography, Events photography, Creative photography, Automobile photography and many more.

MODULE V:Photo editing

Introduction to Lightroom, basic photo corrections,The lightroom catalogue, Advance photo corrections, Introduction to photoshop camera raw filters, Portfolio making, Photo Exhibitions.

Text/Reference Books:

1. "The Digital Photography Book" by Scott Kelby
2. "Understanding Exposure" by Bryan Peterson
3. "The Photographer's Eye" by Michael Freeman
4 "The Moment It Clicks" by Joe McNally

AG 204
PRINT MEDIA

MODULE I: Communication Technologies

Print Media, Books, Magazines, Newspapers, Brochures, Other Print Media. Production of Print Media: Layout, Typography, Graphic Design, Prepress, Printing.

MODULE II: Printing Technologies

Overview of Printing Technologies, Letterpress/Flexographic Printing, Gravure Printing, Lithographic/Offset Printing, Screen Printing, Ink Jet.

MODULE III: Print Quality

Color Measurement, Color Register, Measurement of Gloss, Surface Finishing, Surface Finishing Techniques.

MODULE IV: Print Media Material

Printing Inks, Offset Printing Inks, Gravure Printing Inks, Flexographic Printing Inks, Letterpress Printing Inks, Screen Printing Inks.

MODULE V: Printing Presses

Sheet-fed Printing Presses, Web-fed Printing Presses, Packaging Printing Presses. Drying Methods: Physical Drying (Absorption), Infrared (IR) Drying, Evaporative Drying.

Text/Reference Books:

1. "Print Handbook" by Mark Beach
2. "The Art of Printing" by Philip B. Meggs
3. "The Elements of Graphic Design" by Alex W. White
4. "Graphic Design: A New History" by Stephen J. Eskilson

AG 205
COMMUNICATION SKILLS

MODULE I:

- What is Communication (An introduction)
- The Communication Process (communication cycle)
- Objectives of communication (types)
- Media of communication (oral, written, audio, audiovisual, face to face)
- Types of communication (Downward, upward, horizontal, grapevine, consensus)
- Principles of communication
- Barriers of communication

MODULE II:

- Body language (facial expressions, gestures)
- Listening and its advantage
- Written presentation of technical material
- Punctuation & use of capital letters (practical exercises)

MODULE III:

- Abstract preparation
- Précis writing
- Agenda of meeting (definition, draft for a given occasion)
- Minutes of meeting (jotting down, minutes book)
- Tools of internal communication – (memo, circular, notes, orders)
- Basic structure of letter (an introduction to different formats)

MODULE IV:

- Requisition letters
- Quotations
- Acknowledgements
- Applications

- Project proposal

MODULE V:

- Interview skills
- Project Reports
- Resume writing
- Report writing
- Feature write-ups

Text/Reference Books :

1. Business Communication – K.K.Sinha.
2. Effective Business communication – Herta.A.Murphy,HERBER.W.
3. Effective Business Communication – AshaKaul.
4. Business Correspondence and report writing – R.C. Sharma and Krishna Menon.

AG 301
Digital Arts – II
Advance Graphics Designing

MODULE I

Image and colour basics - Resizing images, Image essential, acquire image from cameras and scanners, viewing multiple images, Invalid JPEG marker error | opening images, customize colour pickers and swatches, match, replace, and mix colours, Colour modes, erase parts of an image, blending modes, Colour and monochrome adjustment using channels. Layers, create manage layers and groups, place images into frames, layer opacity and blending, Mask layers, Edit layer mask, layer effects and style, adjustment layer. Selections advance.

MODULE II

Image adjustments, Camera Raw, Image repair and restoration, Image Transformations, Drawing and painting, Text, Filters and effects, Video and animation, Printing, Colour management

MODULE III

Photoshop advance skills tutorials, Photoshop keyboard shortcuts, advance brush tool in photoshop, create a pop art, create a glitch effect, sketch effects, water colour effects,

dispersion effects, photo manipulation, illusion arts, creatively blend two images, Etc.

MODULE IV

CorelDRAW basics, CorelDRAW workspace advance, Lines Shapes and outlines, Drawing shapes, Shaping objects, object symbols and layers, working with objects, Inserting and editing QR Codes, working with layers, working with symbols, Linking and embedding objects, colour fills and transparencies, using colour management, special effects, text, adding and manipulating text, formatting text, working with text in different languages, using writing tools.

MODULE V

Templates and styles, working with templates, working with styles and style sets, working with colour style, pages and layout, working with tables, working with bitmaps, working with bitmap colour modes, tracing bitmaps and editing, working with RAW camera files, web graphics, file formats, supported file formats, customizing and automating.

Text/Reference Book:

1. "Graphic Design: The New Basics" by Ellen Lupton and Jennifer Cole Phillips
2. "The Designer's Dictionary of Color" by Sean Adams
3. "Interaction of Color" by Josef Albers
4. "Design Elements: A Graphic Style Manual" by Timothy Samara

AG 302
Introduction to 3D
Modelling and Shading

MODULE I: Introduction to Computer Graphics and 3D

Introduction to computer Graphics and 3D, a preview of the CG process, the CG production workflow, Digital Images, file formats, Resolution, Aspect ratio, and frame rate, The Autodesk Maya Interface, navigating in maya, exploring maya layout, the main menu bar, Work panels and navigation, the manipulators, QWERTY tools and mouse controls, channel box, attribute editor, Building a Decorative Box.

MODULE II: Beginning Polygonal Modelling

planning your model, Polygonal basics, using primitives, polygon tools, Poly editing tools, modelling toolkit, poly extrusion tools, modelling toolkit interface, the Wedge tool, poke tool, bevel tool, modelling toolkit Bevel, Putting the tools to use: Making a cartoon hand, creating areas of detail on a poly mesh, Modelling a catapult,

MODULE III: Modeling with NURBS Surfaces and Deformers

NURBS for Organic Curves, using NURBS surfacing to create polygons, converting a NURBS model to polygons, using Artisan to Sculpt NURBS, creating a pair of Glass candle holders, modeling with simple deformers, the lattice deformer, animating through a lattice.

MODULE IV: - Practical Experience

Toy plane, building landing pontoons, modelling the body of the toy plane etc, creating various projects of polygon and NURBS modelling, Project window, saving files organising folders etc.

MODULE V: - Autodesk Maya Shading

Maya shading, Shaders types, all types of shaders, Shader Attributes, colour, transparency, ambient colour, Incandescence, bump mapping, diffuse, translucence, glow intensity, matte opacity, raytraced options, specular colour, reflectivity, reflected colour, etc, & mental ray attributes. Shading and texturing the toy plane. Introducing Maya 2015.

Text/References Book:

1. "Introduction to Computer Graphics and the Vulkan API" by Kenwright
2. "Blender For Dummies" by Jason van Gumster
3. "Digital Modeling" by William Vaughan
4. "The Animator's Survival Kit" by Richard Williams

AG 303
Computer animation concept

MODULE I:

Experimental Animation. Flip Books. Cut-Out Animation (Cardboard Sets, Houses, Layouts Designing). Clay Animation. Stop Motion Shooting Technique. Animation Set Designing (Table Top). Clay Character Modelling. Table-Top Model. Lighting Clay Modelling. Clay Animation. Experimental Animation Work with Different Media, Water Colors, Poster Colors, Water Proof Colors, Oil Pastel Colors, Pencil Colors, Charcoal, Pen and Ink Using Dry Brush.

MODULE II:

View Stop Motion Animations. Introduction to Stop Motion Animation. Introduction history of Stop-Motion feature films. Building Puppets. Plug-In Wire and Sockets. Hands and Feet. Puppet Anatomy. Silicone. Casting a Silicone Puppet. Making a Silicone Mold. Plastic Casting. Face Armatures. Replacement Faces and Rapid Prototyping. Replacement Animation Puppets.

MODULE III:
Object Animation Intro to Claymation. Claymation Project 1. Claymation Project 2. Intro to Professional Armatures. Armature Animation. Puppet Building. Wire Armatures. Sets and Lights. Final Project Pre-production. Final Project Production and Post-production.

MODULE IV:
Tangents, Dope Sheet, Present and Future Work, Introduction to subject, theme, plot. Definition and explanation of story writing. Presentation of the plot for Animation. Characterization. Case studies with successful writers (Animation Movie). Reference Sheets. Computer Generated Animation Workflow

MODULE V:
Digital Creativity, The high-tech role of Computer Animation, A guide to advanced Computer Animation Techniques. Performance Animation. Inverse-Kinematics. Dynamic Equations Of Motion. Morphing Technique. Facial Animation. Cloth Animation. Task-Level Animation System. Passive Dynamics. Active Dynamics. Motion Capture Animation. Motion Capture Animation Technology. Motion Capture Animation. Software's Keyframe Animation.

Text/Reference Books:
1. "The Animator's Survival Kit" by Richard Williams
2. "Digital Animation and Digital Culture" by Stephen J. Finney
3. "3D Animation for the Raw Beginner Using Maya" by Roger King
4. "Foundations of 3D Computer Graphics" by Steven J. Gortler

AG 304
Cinematography

Module I: - Camera Angles
History of Cinematography, Camera angle introduction, scene shots and sequences, Types of camera angles (objective Subjective and point of view), subject size, subject angle & camera hight, Subjects size details, subject angles details, and Camera hight details, employing camera angles, area, viewpoint, how to select area and viewpoint, depicting the action, change camera angle, lens or both. Scene requirements, problems camera angles, conclusion.

Module II: - Continuity
Introduction, Cinematic time & space continuity, Filming the action, types of action, Filming techniques, Directional continuity, Screen direction – Dynamic (Bodies in motion,) Static (Bodies at rest), Transitions Pictorial and sound, conclusion

Module III: - Cutting

Introduction, Types of film editing, Continuity cutting, Compilation cutting, Cross cutting, cutting on action, cutting and continuity, cutting and composition, moving and static shots, dissolves. Sound editing, editorial requirements,

Module IV: -Close-ups

Introduction, closeup size, extreme closeup, over the shoulder closeup, types of closeups, cut in & cut away, closeup choice, closeup look, closeup camera angle and image size, the actor or player movement into & out of closeup, closeup tempo, closeup camera setups, background for closeups, closeup for sequence opener, closeup for transitions, Conclusions.

Module V: - Compositions

Introduction, still vs. Motion picture composition, good camera work begins with composition, composition rules, compositional languages, balance, types of balance, Unity, Do's & Don'ts, one centre of interest, Lighting tonal value and colours, selective focusing, eye scan, image placement, integrated composition and camera angles, Perspective, backgrounds, frames, compositional variety, compose in depth, simplicity, conclusion.

Text/Reference Book:

1. "Cinematography: Theory and Practice" by Blain Brown
2. "The Five C's of Cinematography" by Joseph V. Mascelli
3. "The ASC Manual" (American Society of Cinematographers)
4. "Master Shots" Series by Christopher Kenworthy

AG 401
Digital Film making process

MODULE I: **Production**

Introduction, a day on set, production schedule on set commands, safety, organization of shots, acting – Introduction to Acting tips for director, tips for actor, acting techniques. Directing – Introduction, directing during preproduction, Rehearsing Actors, working with the crew during preproduction, directing during production, Directing during post production.

MODULE II: **Cinematography**

Introduction, working with director of photography, shooting styles, the camera, choosing lens, the five rings of power, lens care, camera settings, Box: Colour temperatures, working with the frames, rules of composition, shot type, camera angles, camera movement,

working with a production monitor, lighting, getting film look, shooting the scene, keeping organized.

MODULE III

Writing with motion, the tools of cinematography, shooting methods, what is cinematic? The frame, cinema as language, the shooting methods, involving the audience, Visual Language, Language of the lens, visual storytelling, cinematic continuity, shooting for editing, the prime directive, screen direction, planning coverage, the tools of lighting, HD cinematography – definitions, digital video, shooting formats, digital compression, monitoring on set, video latitude, video signal, White balance, exposure. Camera Movement – Motivation and Invisible technique, types of moves, moving shots, camera mounting, crab dolly, cranes, car shots, Aerial shots, other types of camera mount, motion control.

MODULE IV

Audio Recording, Introduction, Analog vs Digital, Microphones types, Prepping audio, Role of sound team on set before action, recording to the camera, sync sound, boom with a shotgun, recording with a shotgun micro phone, boom handling techniques, Using lavalieres, wireless microphones, ambient sound, Sound logs. Introduction to Audio Tools & Techniques, Introduction to Sound Card, Sound standards on PC, Fundamentals of digital audio in Film/Video/Digital Media,

MODULE V

Introduction to hair & makeup, introduction to craft services and catering. Multi Camera video production, Green/blue screen shooting, shooting for visual effects, A mystery with special effects (green screen). Documentary Script Writing, Screen writing, structure and styles. Read screenplays. Work on synopsis and treatment. Discuss adaptations and original screenplays. Write synopsis, treatment and short 10-minute screenplay.

Text/Reference Books:

1. "Rebel without a Crew" by Robert Rodriguez
2. "The Visual Story: Creating the Visual Structure of Film, TV and Digital Media" by Bruce Block
3. "The Complete Digital Film Production Handbook" by Mark Brindle
4. The DSLR Filmmaker's Handbook" by Ben Long and Sonja Schenk

AG 402
3D texturing and lighting

MODULE I: - Textures and Surfaces,

UV Mapping, Using Projections, texture nodes, colour balance, effects, Place 2DTexture

nodes, Ramp texture, Fractal, Noise, and Mountain Textures, (Bulge, Cloth, checker, grid, and water Texture), The File node, Importing and image file as a texture, using photoshop files: The PSD file node, 3D and Environment Textures, Disconnecting a texture, Texture and UV's Practical, Toon Shading.

MODULE II: - Autodesk Maya Lighting

Basic Lighting Concepts, Three-Point Lighting, using three-point lighting, Maya Lights, Common light attributes, Light Types, lighting a Scene, Light Linking, Adding Shadows, Creating Shadows in Maya, Controlling shadows, Raytracing soft shadows.

MODULE III: Assembling and Lighting a Scene

Introduction to Mental ray Lighting, Image-based lighting, mental ray Physical Sun and Sky, Lighting Effects, Lens Flare, Shader Glow Effects, Assembling and lighting a Scene. Assembling, Creating the Lights, Reflection and Shadows, Making Glass.

MODULE IV: - Autodesk Maya Rendering

Rendering Setup, previewing your Render: The Render view Window, Setting the Default Renderer, Using Cameras, Motion blur, Batch rendering.

MODULE V: - Rendering

Rendering the Wine Bottle, Mental ray for maya, Render Layers, Final Gather, Ambient Occlusion, HDRI, Displacement mapping, Rendering Scene with Mental Ray.

Text/Reference Books:

1. "Digital Texturing & Painting" by Owen Demers
2. "The Art of 3D Computer Animation and Effects" by Isaac V. Kerlow
3. "Lighting for Animation: The Art of Visual Storytelling" by Jean-Claude Hsu
4. "Mastering Autodesk Maya 2020" by Todd Palamar

AG 403
Audio and Video Editing

MODULE I: Basics of digital sounds

Sampling, Frequency, Sound Depth, Channels, Sound, Principles of Audio Editing, Broadcast/Narrative Sync Sound Techniques, The Basic Characteristics of Sound, Velocity, Wavelength, Musical Notation and Frequency. Understanding the dynamics of sound design and use of sound as a key. The Decibel, A musical scale, MIDI Basic Concept, MIDI Interface Components, MIDI Devices, Synthesizer.

MODULE II: Introduction to Adobe Audition

Installing and starting, Audition interface basics, Mac OS X audio setup, Testing inputs and outputs, using external interfaces, the audition environment, basic editing, Signal processing, audio restoration, Mastering, Sound design, Creating and recording files, multitrack editor, orientation, mixer view, editing clips, creating music with sound libraries, recording in multitrack, automation, Mixing. Audio/video applications.

MODULE III: Introduction to Digital Video

Digital Video Understanding the Benefits, Characteristics of Video Streams, Video Editing Tools, audio & video format extensions, Video Principles, Sampling – Rate Conversion, Video Editing Grammar, Digital Video Compression Method, Making Pipeline. Brief Introduction to video editing and movie making tools – Quick Time, Video for Windows & Adobe Premier.

MODULE IV: Introduction To Premier Pro

workspace and workflow, project setup, importing footage, managing assets, monitoring assets, editing sequences and clips, titling and title, effects and transitions, animation and keyframes, compositing, exporting.

MODULE V: Post Production

Multi Camera video production & post production, Mixing Video Clips & Audio Tracks, Video Dialogue Editing, Adjustment Layers & Nesting, Compositing & masking, Green Screen Techniques, basic Timeline Editing, keyboard Shortcuts, Creating Credits & Title, Warp Stabilizer, Project Manager, Syncing Audio & Video, Type of Cuts & Transitions.

Text/Reference Books:

1. "The Art of Digital Audio Recording: A Practical Guide for Home and Studio" by Steve Savage
2. "Color Correction Handbook: Professional Techniques for Video and Cinema" by Alexis Van Hurkman
3. "Digital Media: A Handbook for the 21st Century" by Manuel Castells

AG 404
Mini Project

AG 405
Elective – I
Matte painting

Module I: - What is Matte Painting
Matte Painting defined 1, A brief history of Matte painting, Paint vs Pixels. Matte painting for 3D, Matte painting for set extensions, Matte painting for Films, Photoshop Workspace, tools, and custom brushes, the digitizing tablet, pen tablet, setting up workspace, using custom brushes, working with image-based brushes.

Module II: - Composition and Concept
Creating a Castle on a hill, understanding 16-bit colour, rules of composition, creating a concept sketch, create your own castle concepts, Perspective basics, The three types of perspective, perspective drawings, Adding detail to the castle. **Texturing and colour correction**, blending modes, texturing the castle, finding reference photos, levels and curves in colour corrections, working with reference photos, lighting the scene, creating the sky, the top painting layer.

Module III: - Camera Projection in Maya
Preparing your psd. file for camera projection, what is camera Projection? Getting Started in Camera Projection, setting up for camera projection, adding image plane, positioning the camera using the reference grid, Assignment: Prepare your castle for camera projection, and setup the maya file.

Module IV: - Building Geometry
Building geometry for camera projection in maya, lining up the reference box, Sculpting the foreground hill in maya, adding the sky, Projecting textures in maya, Projecting Textures, Adding materials to geometry.

Module V: - Lighting techniques
Day-for-Night, preparing day time plate, preparing the night time plate, adding life to the city, relighting, changing seasons, the summertime plate, the winter time plate, Adding details with high-contrast mattes.
The Digital MATTE Painting handbook.

Text/Reference Books:
1. "Digital Matte Painting: A Guide to the Process" by David B. Mattingly
2. "The Art of Matte Painting" by Arnold Arreola
3. "Digital Art Masters: Volume 3" by 3DTotal Publishing
4. "The Art of VFX" by 3DTotal Publishing

AG 405
Elective – I
Adobe Illustrator

MODULE I
Introduction to adobe illustrator vector graphics, Workspace overview, Hide or show all panels, Customizing the workspace Tools panel Tools panel overview, View hidden tools, View tool options, Move the Tools panel, View the Tools panel in double-stack or single-column, Hide the Tools panel, Select a tool, Change tool pointers, Tool galleries, Selection tool gallery, Drawing tool gallery, Type tool gallery, Painting tool gallery, Reshaping tool gallery, Symbolism tool gallery, Graph tool gallery, Moving and zooming tool gallery.(make the assignments)

MODULE 1I
User interface colour and brightness, Panels, Slicing and cutting tool gallery, Artboard overview, Viewing artboards and the canvas, Printing and saving artboards, Files and templates, Create new documents, About templates, Rulers, grids, guides, and crop marks, Use rulers, Change the unit of measurement, Use the grid, Use guides, Smart Guides, Measure the distance between objects, Using multiple artboards Artboard options, Viewing artwork, Specify Document Setup options, About print tiling, Zoom in or out.(Related assignments)

MODULE III

Drawing basics, vector graphics, paths, direction lines and direction points, Specify direction line and direction point appearance, Specify anchor point size preferences, Drawing modes, Draw Behind mode, Draw Inside mode, Drawing simple lines and shapes, Draw straight lines with the Line Segment tool, Draw rectangles and squares, Specify the corner radius of a rounded rectangle, Draw ellipses, Draw polygons, Draw stars, Draw arcs, Draw spirals, Draw grids, Draw rectangular grids, Draw circular (polar) grids, Drawing pixel-aligned paths for web workflows, Aligning new objects to pixel grid, Editing paths, Select paths, segments, and anchor points. Adding and deleting anchor points.

MODULE IV
Symbolism tools and symbol sets, About symbol sets, Create symbol sets, To the top Modify symbol instances in a symbol set, Apply a graphic style to symbol instances, Symbolism tool options, Symbols, About symbols, Symbols panel overview, Change the display of symbols in the panel, Place or create a symbol, Add sublayers for symbols, Work

with symbol instances, Modify a symbol instance, Expand a symbol instance, Duplicate a symbol instance on the artboard ,Edit or redefine a symbol, Symbol libraries.

MODULEV

Colours in digital graphics, RGB, CMYK, HSB, and Lab colour models Grayscale Color spaces and gamut , spot and process colours, Comparing colours in InDesign and Illustrator, Painting, Painting with fills and strokes, Painting methods, Apply a fill colour to an object, About fills and strokes, Fill and Stroke controls, Blob Brush tool guidelines, Blob Brush tool options, Convert strokes to compound paths Brushes, About brushes, Brushes panel overview, Work with brush libraries, Copy brushes from a brush library to the Brushes panel, Apply brush strokes, Paintbrush tool options, Convert brush strokes to outlines, Create a brush, Modify a brush, Brush options, and Calligraphic brush options, Importing artwork files.

Text/Reference Books:

1. "Adobe Illustrator Classroom in a Book" by Brian Wood
2. "Adobe Illustrator for Graphic Design and Illustration" by Sandeep Kaur
3. "Adobe Illustrator CC: The Complete Guide" by Daniel M. Miller

AG 501
MOTION GRAPHICS

Module I

Introduction to Adobe After Effects **:**Introduction, workspaces, projects and compositions, importing footages, views and previews, layers and properties, animation and keyframes, colour, drawing, painting and paths, text, transparency and compositing, markers, memory storage and performance, rendering and exporting, expressions and automation, Motion graphics.

Module II

Introduction of Motion graphics, Types of motion graphics. 2D and 3D motion graphics, Getting started with AE, importing files and adding/trimming layers, adding solids, drawing masks, transforming properties, animating keyframes, editing a keyframe Bezier handles, copying and pasting keyframes, adding effects, rendering, Motion Typography – creating basic text,animating text properties, text on path, adding wiggle adding sound, using waveform. Advance animation – easy ease, using graphic editor, motion sketch, pan behind tool, motion blur, time stretching and looping, blending modes, puppet tool.

Module III

Advanced layers and mask – free transform points and animating a mask, mask feather and expansion, animating a mask path, review rendering. Camera and Nesting – Enabling layers for 3D, manipulating 3D properties, camera settings, moving and animating the camera, manipulating, creating tracking points and motion tracking, nesting compositions, parenting null objects, precomposing.

Module IV

Advanced layers and masks II – Image sequences and sequence layer assistant, write-on tool, keying, alpha and luma track matte, creating and editing roto Bezier masks, audio spectrum effects, adjustment layers. Expressions – Using the pick whip tool, time remapping, altering and manipulating expressions.

Module V

Advance motion graphics, 3D motions graphics, plugins and pre-sets, 3D packs, Stock FX, Video co-pilot,Effect basics. Animating effects. 3D capabilities and limitations. Creating 3D layers. Using multiple viewports. Understanding 3D transform. Animating 3D layers. Creating and using lights. Creating Lighting qualities. Changing lighting direction. Changing light strength. Creating reflections.

Text/Reference Books:

1. "The Animator's Survival Kit" by Richard Williams
2. "Creating Motion Graphics with After Effects" by Chris and Trish Meyer
3. "Adobe After Effects Classroom in a Book" by Adobe Creative Team

AG 502
ADVANCE 3D MODELING AND SHADING

MODULE I

Introduction and Advancement of 3D, Getting in Control of 3D Space, Introduction of 3D Basics, Learning the Interface and Basic Tools , Objects, NURBS modeling overview, Components of NURBS curves, Draw curves, Degree of NURBS curves and surfaces, ,Parameterization of NURBS curves and surfaces, Periodic, closed, and open geometry , Surface, NURBS Product Model, Nurbs Architectural Model, Nurbs Landscape, NURBS Simple Character.

MODULE II

Working with Polygon geometric polygonal sculpting, Surfaces, Menu Select Mesh, Poly modeling – Basic Session on Anatomy Human AnimalInsect Bird Character 3d male anatomy, head, Ear, Torso, Hand, Legs, Clothing, Character 3d female anatomy, Model the Basic Body structures of Male and Female. Modeling Basic Blocking Structure of Animal, Horse, Camel, Elephant, Deer, Modeling the Insect Structure

MODULE III

Modeling the Basic Structure of Background, Buildings, Landscape, Terrains, 3D, Environment Design Set Design. Game Environment. Mechanical Objects Modeling, Guns | Robots | Toy Cars | Multi-Functional Machines.

MODULE IV

Exploring Types of Materials and Maya Default Material, Understanding Materials Attributes, Learning Basics of Shade, Texturing Theory, Types of Textures, Basic Shaders,Ex: Plastic, Ceramic, Wood Rough, Wood Polished, Paint, Shading Map, Surface Shading. Use Background, Bitmap & Procedural Maps & Basic UVW Mapping and its attributes, Bitmap, 2D Maps, 3D Maps, Furniture, Room/Hall, Packaging Cover, Working with Shader, Material Assigning

MODULE V

Using the Hyper shade Window, Properties & UVW Mapping-II, Transparency, Ambient, Incandescence, Bump Mapping, Diffuse,Create Composition Using Textures & Advanced UVW Mapping, Layer Shader, Dirty Surfaces Wall/Ground/Floor, Working with Special Maps, Fluid Texture 2D & 3D, Working with Utilities-I, Advanced Metals ,Steel , Silver,

Gold, Chrome, x: Utensils, Gadgets, Metal Accessories, Working with Utilities-II, Ex: Glass Shader, Colored Glass Bottles, Working with Utilities-III, Ex: Complex Shaders with Color correction.

Text/Reference Books:

1. "The Art of 3D Computer Animation and Effects" by Isaac V. Kerlow
2. "Mastering Autodesk Maya 2020" by Todd Palamar
3."CGI 3D: Computer Graphics & Interactive Techniques" by Rick Parent
4. "3D Modeling for Games: Volume 1: Developing a Workflow for 3D Modeling and Texturing" by Andrew Gahan

AG 503
NON-LINEAR EDITING

MODULE I

Introduction of Electronic Media, Types of Electronic Media, Electronic Display, Electronic Streaming, Advertising Introduction of the language of News Media, Television News Production Process. Live News & Event Production Process, Floor management & Studio Management Single & Multiple Camera Production.

MODULE II

Introduction to video capturing Media & instrument – Videodisk, DVCAM, Camcorder, Introduction to digital video compression techniques and various file formats – AVI, MPEG, MOVE Real Video, Brief Introduction to video editing and movie making tools – Quick Time, Video for Windows & Adobe Premier.

MODULE III

Introduction to Digital Video, Digital Video Understanding the Benefits, Characteristics of Video Streams, Film making Fundamentals, Video Editing Tools, audio & video format extensions, Video Principles, Sampling – Rate Conversion, Video Editing Grammar. Making Pipeline

MODULE IV

Digital Video Compression Method, Keying, Masking, Using Video Transitions, Motion Graphics, types of Recording Media, Disk in Digital Video, Type of Disk, Non-Liner Video Editing Tools & Shortcut.

MODULE V

Multi Camera video production & post production, Mixing Video Clips & Audio Tracks, Video Dialogue Editing, Adjustment Layers & Nesting, Compositing & masking, Green Screen Techniques, basic Timeline Editing, keyboard Shortcuts, Creating Credits & Title, Warp Stabilizer, Project Manager, Syncing Audio & Video, Type of Cuts & Transitions.

Text /Reference Books:

1. An Introduction to Digital Video" John Watkinson Multimedia System Design - by K. Andleigh, K. Thakkar (PHI Pub.)
2. "The Art of Editing in the Age of the Internet" by Michael T. Morkes
3. "In the Blink of an Eye: A Perspective on Film Editing" by Walter Murch
4. "Final Cut Pro X For Dummies" by Randy M. H. Bodek

AG 504
POSTPRODUCTION PROCESS

Module I –Timeline and Editing

Concept of editing, relationship between shots, editing systems, The Editing systems, The editing Process, Editing Techniques, Editing Tips, Activities, Continuity, cutting on motion, montages, edit types, using transitions, colour corrections, titles and Graphics, Compression, Credits.

Module II – Digital Effects

Introduction, Compositing, Box: definitions, Chroma Key, 3D. animations,Adjustment Layers & Nesting, Compositing & masking, Green Screen Techniques, basic Timeline Editing, keyboard Shortcuts, Creating Credits & Title, Warp Stabilizer, Project Manager, , Keying, Masking, Using Video Transitions, Motion Graphics.

Module III – Postproduction Audio

Introduction, The five audio Tracks (Dialog, ADR, the foley, the ambience, the sound effects track, The Music Tracks). Mixing the audio, M&E Tracks,

Module IV – Music

Introduction, Stock music, using copyrighted music, finding composer, working with a composer, spotting the film, sample scores, temp tracks, Working with MIDI, Finishing the score, activities.

Module V – Distribution
Timeline, Introduction to distribution, foreign distribution, domestic distribution, Box: some distribution in foreign, Distribution categories, Attracting Distributors, Payment, Deliveries, Film Festivals, Self-distribution, Press releases, Online Platforms.

Text/Reference Books:
1. "In the Blink of an Eye: A Perspective on Film Editing" by Walter Murch
2. "Color Correction Handbook: Professional Techniques for Video and Cinema" by Alexis Van Hurkman
3. "The Visual Effects Producer: Understanding the Art and Business of VFX" by Charles Finance and Susan Zwerman
4. "The Art of Digital Audio Recording" by Steve Savage

AG 505
Elective – II
2D Animation

MODULE I
Introduction to flash, user interface, Workspace Layout panel, use tools to create Flash content, Timeline, change background and Stage size, add graphics to the Stage, Add video, object properties, video control behaviours, Use the Movie Explorer to view the document structure, Basic Tasks: Creating a banner. Examine the completed FLA file, Review the completed FLA file. Ball bouncing.

MODULE II
Adding text, creating a symbol, adding animation to a timeline, creating a button, Inserting Flash on a Dreamweaver site, using roundtrip editing, checking for Flash Player, Basic Tasks: Create Accessible Flash Content. Basic Tasks: Work with Layers, select a layer Hide and show layers lock a layer Add and name a layer Change the order of layers Organize layers in a folder Add a mask layer Add a guide Editing audio Phonemes - Lip Syncing.

MODULE III

Use Layout Tools, Use guides to align an object Change the Stage size Resize objects to match the Stage size Specify snap alignment settings Align an object using the alignment guides Align objects using the Align panel Snap objects to each other Align objects using the Property inspector Align objects using the grid and arrow keys. Walk Cycle.

MODULE IV

Create Symbols and Instances, create a graphic symbol Duplicate and modify an instance of a symbol Modify a symbol Create a movie clip symbol Assign an instance name to the movie clip Add an effect to the movie clip, Add Button Animation and Navigation, Test the SWF file. Designing a character for Flash Animation.

MODULE V

Writing simple Write Action Script, Test the application, Action Script: Work with Objects and **Classes**, Set up your workspace Learn about classes and object types Create an object from a class Create a custom class Create two objects from the Product class Learn about extending existing classes Extend the Movie Clip class to create a new class. Run Cycle. Final project short movie clip in flesh.

Text/Reference Books:

1. Flash MX Action Script For Designers BY dougsahlin
2. Adobe Flash Professional CS6 Classroom in a Book by Adobe Creative Team
3."The Animator's Survival Kit" by Richard Williams

AG 505
ELECTIVE – II
ZBRUSH

MODULE I

An Introduction to Digital Sculpting and Illustration, Learning the Basics about Interface | Tools | Sculpting, Introduction to Sculpting using ZBRUSH.

MODULE II

Learning to sculpt using Advanced Tools/Options, Working with Sculpting - Head Study, Sculpting the Head Details (Human/male/female/Animal/Creature/etc).

MODULE III

Working with Sculpting -Body Study, Sculpting the Body Details (Human/ male/female /Animal/Creature/etc). Poly Meshes inside ZBRUSH.

MODULE IV

Advanced Sculpting using ZBRUSH – I, Sculpting the Basic Details on Models from Other Applications, Advanced Sculpting using ZBRUSH – II, Sculpting Details like Skin Pores | Marks | Wrinkles | Modeling& Sculpting using Zsphere Technique.

MODULE V

Texture Painting – I, Learning to Paint Texture using Polypaint Technique, Texture Painting – II, Learning to Paint Texture using Polypaint Technique, Learning to Paint Texture using Projection Master Technique, Baking High-End Sculpting Details to Texture, Learning to Generate Normal Map & Displacement Map, Integration with Other Application.

Text/ Reference Books:

1. ZBrush4R7_Getting_Started_Guide
2. ZBRUSH STARTING GUIDE by pixologic
3."ZBrush Digital Sculpting Human Anatomy" by Scott Spencer

AG 601
ADVANCE 3D TEXTURING AND LIGHTING

MODULE I

Introduction to Arnold. File Structure. Arnold as a Render Engine. Sampling. Ray Depth. Environment. Motion Blur. Light Settings. Gamma Correction. Texture Settings. System Settings. AOV's (Arbitrary Output Variables). Diagnostics. Overrides. Shadows and Visibility. Export Option. SSS (Subsurface Scattering) Options. Subdivision Options. Displacement Options. Render Curves.

MODULE II

Point Lights. Spot Lights. Directional Lights. Area Lights. Arnold Area Lights. Mesh Lights. Sky dome Lights. Shader Compatibility. Standard Shader. SSS (Subsurface Scattering) Skin Shader. Hair Shader. Ray Switch Shader. AO (Ambient Occlusion) Shader. Wireframe Shader. Utility Shader. Shadow Catcher Shader. Displacement Mapping. Physically-Based Sky Shader.

MODULE III

Perspective Camera. Cylindrical Camera. Spherical Camera. Fisheye Camera. Orthographic Camera. Volume Fluids. Particles. Stand-Ins. Make. Tx. Tx Manager. Kick. ass.

MODULE IV

Volumetric lighting, fog and light shafts. Render elements, lighting and shading deconstruction, Render layers / setup split. Rendering per light methods. Rendering strategies for final rendering: batch rendering or command lines. Final rendering quality settings. Slap compositing with Compositing Software.

MODULE V

Text/Reference Books:

1. "Digital Lighting and Rendering" by Jeremy Birn
2. "The Art of 3D Computer Animation and Effects" by Isaac V. Kerlow
3. "Advanced Maya Texturing and Lighting" by Lee Lanier

AG 603
Gaming Production

MODULE I
Introduction to game development, first plan, game development software, military and sports simulations, role-playing games, youth making games

MODULE II
The Game Project Survival Test, Game Requirements, Planning, Project Control, Risk Management, Game Production Parts, Design Parts, Level and Mission Designers, Story and Dialogue Writers Coding Parts, Lead Programmers and Technical Directors,

MODULE III

Game Mechanics Programmer, 3D Graphics Programmer, Artificial Intelligence Programmer, User Interface Programmer, Audio Programmer, Tools Programmer, Mission/Level Editor Programmer, Network, Server, or Client Programmer,

MODULE IV

Art Parts, Art Director, Concept Artist, 2D Artist/Interface Designer, 3D Modeler, Character Modeler, Texture Artist, Animator/Motion Capture Studio, Storyboarded. Audio Parts, Voice-Overs, Sound Effects, Music

MODULE V

Game design document, defining the gameiculate game possibility, core gameplay, core player activity, the controller diagram, contextual gameplay, character backgrounds, level, mission, and area design, cut scene descriptions, cover your assets, 2d sprites or 3d models, voice, keyframing and motion capture, sound effects, music, special effects, The Art of War and Games, gambling games, puzzle, and parlour games.

Test/ Reference Book:

1. The game artist guide to MAYA-Michael McKinley.
2. "The Art of Game Design: A Book of Lenses" by Jesse Schell
3 "Game Production Handbook" by Heather Chandler

AG 604
ELECTIVE III
3D ANIMATION

MODULE I

Principles of Animation, Squash and stretch, Anticipation, Staging, straight ahead and pose to pose animation, follow through and overlapping action, Slow out and slow in, Arcs, Secondary-Action, Timing, Exaggeration, Solid drawing, Appeal. Detail Introduction to 3D Animation. Details of 3D transforms (translation, rotation, scaling) and animation. Camera Attributes, Advance Camera Techniques, Placing Cameras in the Scene.

MODULE II

Detail study of Motion Path Animation. Detail study of Camera Animation, Joint Labelling, Biped Rigging, Facial Rig, Advance Skinning Techniques, Biped Animation. Simple Walk Cycle.animation with deformer. Advance Animation with muscle system, texture animation and blend other texture and map,

MODULE III

Human Push – Pull Animation. Understanding details of Human walk and Human run cycle of different age. Toon Walk Cycle. Human Facial Animation. Basic Study of Creature Walk Cycle, Creature Facial Animation

MODULE IV

Demonstrate competence in matching camera settings with live action based on applying true perspective. Rotomation.

MODULE V
Assignment: Short Clip on Animation / Rotomation.

OR

Product Pack Shot.

Text /Reference Book

1. "3D Animation for the Raw Beginner Using Maya" by Michael R. Lewis
2. Supplemental learning resources and recommended reading Reading: Maya 2008
3. "The Animator's Survival Kit" by Richard Williams

AG 604
ELECTIVE III
ADVANCE VIDEO COMPOSITING

MODULE I

What Is Advance Compositing? Digital Compositing And Visual Effect Today,Digital Compositing With CGI.CGI Compositing, Set Extension, Match Move, Compositing Visual Effects, Bluescreen Compositing, Motion Tracking, Warping And Morphing, Bullet Time Shots, Crowd Duplication, Atmospherics, Rotoscoping, Wire Removal, Scene Salvage, Compositing Programs,Node-Based Compositors, Layer-Based Compositors, digital image,Structure of Digital Images, The Pixel, Grayscale Images, Color Images, Four-Channel Images, Attributes Of Digital Images, Digitizing Images. Image Resolution,Image Aspect Ratio, Pixel Aspect Ratio,Bit Depth.

MODULE II

CompositingCGI,the CGI composite, scaling the background, semi-transparent pixels, Multipass compositing, diffuse and specular passes, occlusion and shadow passes, reflection pass, depth compositing, multiplane compositing, sims, particle systems, working with premultiplied CGI, color correcting, transformations and filters, the common mistake. Using the 3d camera tracker Compositing 3d graphics with video.

MODULE III

Blue/Green screen Compositing :The Bluescreen Composite, Pulling The Matte, The Basic Composite, About Keyers, How Keyers Work, Using key light, Refining a matteDespill, Color Correction, Scaling The Foreground And Background, Sum The Layers, The Final Composite, Helping The Keyer, Garbage Mattes, Procedural Garbage Mattes, Holdout Mattes, Degrain, Compositing Outside The Keyer, Merging Multiple Mattes, Performing The Despill, The Composite,shooting Bluescreens (And Greenscreens), Bluescreen Vs. Greenscreen, Bluescreen Floors, Film Issues, Video Issues, Photography Tips.

MODULE IV

Creating A Mask,Key, Mat Te, Alpha, And Mask, Creating A Luma-Key, Creating A Chroma-Key, The Difference Mask, The Color Difference Mask, Geometric Primitives, Drawing Shapes, Painting A Mask, Combo Masks,Rotoscoping, About Rotoscoping, Splines, Articulated Roto's, Interpolation, Keyframes, On 2's, Bifurcation, Extremes, Final Inspection, Motion Blur, Semi-Transparency,images.Creating fog, smoke, mist, wind, precipitation. Making realistic fire and heat distortion. Creating explosive effects.

MODULE V

Imageblending,The Mix Operation, The Multiply Operation, The Screen Operation, The Add Operation, The Subtract Operation, Adobe Photoshop Blending Modes, Motion Tracking, Stabilizing A Shot, Match Move, The Magic Of Morphs,Art Of Compositing, Color Correcting, The Black And White Points, Color, Capture Vs. Display Formats, Academy And Full Aperture, Projection Formats, Cinemascope, Vistavision, 70 Mm Film, Super 16 Film, Title Safe, Digitizing Film, USING Media management, Managing multiple projects, Optimizing system performance, Optimizing render speed.

Text/Reference Books:

1. Advance Visual Effects Compositung "Lee Lanier
2. Digital Visual Effects and Compositing 1st Edition "Jon Gress"
3. "The Art and Science of Digital Compositing" by Ron Brinkmann