SUBMISSION DETAILS (PRACTICAL)
B. DESIGN ANIMATION YEAR IV

Semester – VIII

SUBJECT	SIZE	MINIMUM ASSIGNMENT	TOPIC & MEDIUM
Visual Effects II	-	1	On computer
3d Short Film Project	-	1	On computer

SCHEME OF EXAMINATION
B. DESIGN ANIMATION YEAR IV

Semester –VIII

Paper	Time	Size	External Marks	C.C.E.	Total
Motion Capture	3 Hrs.	-	70	30	100
Game Design	3 Hrs.	-	70	30	100
Game Engine	3 Hrs.	-	70	30	100
				Total	300
Practical			**External Marks**	**Internal Assignment**	
Visual Effects II	6 Hrs	-	110	90	200
3d Short Film Project	-	-	110	90	200
				Total	400
				Grand Total	**700**

B. DESIGN ANIMATION YEAR IV

SEMESTER – VIII

PAPER – I (THEORY) – MOTION CAPTURE

- History of motion capture – Early Attempts, rotoscoping, beginnings of digital mocap, Optical mocap systems, Magnetic mocap systems, Mechanical mocap systems.
- Marker Sets – What are the system limitations? What kind of motion will be captured? Knowing the Anotomy.
- Pipeline – Setting up a skeleton for a 3D character, System Calibration, Subject calibration, Capture Sessions, Cleaning data, Editing data, Applying motions to 3D character, Rendering & post production.
- Cleaning Marker Data – Types of data, What to clean and what not to clean, labeling, data cleaning methods, when to stop, applying marker data to skeleton.
- Mocap data & Math – How data is created, Data types & formats, Coordinates & Coordinate system, Order of transformation, Euler angle, Gimbal lock, Quaternions.

Suggested Reading

1. MoCap for Artists: Workflow and Techniques for Motion Capture by Midori Kitagawa

PAPER – II (THEORY) – GAME DESIGN

- People involved in game design – Roles of programmer, artist, designer, producer, tester, composer, sound designer, writer.
- Player psychology – Why do players play? – For challenge, socialize, emotional experience, dynamic solitary experience, to explore, to fantasize, to interact. What do players expect?
- Elements of Gameplay – Unique solutions, Non Linearity, Modeling reality, teaching the player, input/output, basic elements
- Game Design vs Level Design, Level Design Goals & Hierarchies,
- Level Design – levels in different games, level separation, level order, level flow. Who does level design?
- Components of a level – action, exploration, puzzle solving, story telling, aesthetics.
- Level Design Process – Preliminary, Conceptual & sketched outlines, Base architecture, base gameplay, refining gameplay, architecture, aesthetics, play testing
- Gameplay Working – The organic process, Building the game – core technology, incremental steps, fully functional area, going through the changes, programming.

Suggested Reading

1. Game Design: Theory and Practice (2nd Edition) (Wordware Game Developer's Library) 2nd Edition by Richard Rouse III (Author)
2. Level Up! The Guide to Great Video Game Design by Scott Rogers

PAPER – III (THEORY) – ANIMATION PRODUCTION & MANAGEMENT

- Production pipeline fundamentals for film – an overview of film production
- Stages of Production – Economics of film production, Pre-Production, production & Post-Production in the film pipeline.
- Asset creation for film.
- Basic Functionality of a Pipeline – What pipelines do, why pipelines change, Defining your goals, defining standards, Micro pipelines, Strategies for managing data, Directory Structure, Asset Review & Approval, Tracking Production Data.
- Systems Infrastructure – IT for film, Types of Hardware, Storage Cluster, Render Farm, Managing the Infrastructure
- Data Management – Directory Structures for film, Designing Directory Structures for Ease of Navigation, Planning Shared Asset Use, Incorporating Asset Templates, File Naming Conventions, Version Controls.
- Asset Management – What is asset management? Goals of Asset Management, What is Asset Dependency?
- Production Management – Production Management Strategies

Suggested Reading

1. Production Pipeline Fundamentals for Film and Games Paperback by Renee Dunlop

B. DESIGN ANIMATION YEAR IV

SEMESTER –VIII

PRACTICAL

PRACTICAL 1 – VISUAL EFFECTS II

COURSE OUTLINE

- Chroma Shoot – Green
- Tracking Points
- Camera Tracking
- 4 Point Tracking
- Face Tracking
- Motion Blur
- Particles Effect
- Advanced Lighting
- Matt Painting
- Roto
- Masking
- 3D Layer
- Learning to Implement Vfx in Live Action Video

PRACTICAL SUBMISSION

1. Shoot a live action video with chroma for the submission. Edit the video with the help of Visual Effects. Duration – 1:30 Mins. The Video Should Have a Story & Meaning Behind It.

PRACTICAL 2- 3D SHORT FILM PROJECT

COURSE OUTLINE

- Production Meeting #1 - Organization, Roles and Protocols, Contract, Requirements for Story Treatment
- WORKSHOP: Plan, Breakdown, Schedule, The process, Budgeting time.
- Story Reel
- Pitch Preparation
- Screenwriting & Script Preparation
- Production Meeting for Character Design Critique
- Story Board to Story Reel
- Character and Story
- Screening of final Leica Reels
- Softwares : Adobe Premiere, Adobe Flash, Maya, After Effects, Nuke, Fusion, Photoshop.
- Digital Mapping methods and types of maps. UV Texture editor
- Surface attributes, materials, shaders and shader networks
- Z- Brush

- Types of lights
- Typical lighting approaches
- Shadows
- Lighting for mood, time of day, realism
- Rendering editor
- Mental Ray renderer
- Global Illumination, Caustics HDRI
- Sun and sky settings, motion blur, atmosphere, render layers, Z depth
- AfterFX review for compositing, colour correction
- Rendering
- Mattes, transparency, file Management

PRACTICAL SUBMISSION

1. This is a group project. Students have to work in groups of 3-6 students.
2. Make a 3d animated short film using MAYA. VFX has to be used. Minimum - 30 Seconds
3. Live Action with an animated character can also be included in the short film. This is optional.