MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY, WB
Syllabus for B.Sc. in VFX Film Making (BVFM) Programme
(Effective for Students Admitted in Academic Session 2019-2020)

SEMESTER IV

Paper: LIVE ACTION FILM MAKING
Code: BVFM -401
Contacts Hours / Week: 3L+1T
Credits: 2
Marks: 100

Module	List Of Topics and Exercises
1	Live Film Exposure Introduction to film analysis, Initial script and shoot breakdown, Final script and shoot breakdown, Introduction to the job of assistant director. Production schedule, choice of scenery
2	Film Making Process • Introduction to shooting techniques, Introduction to audition and casting, Actor directing exercises, Shootings of the casting on set with the actors. Introduction to selection of rushes by screenings of takes, Rehearsals and indoor shooting (2 sets), Outdoor shooting 1st screenings of dailies. Retakes on set or outdoors, screenings of dailies, Editing: rough cut, Editing: fine cut Making 10 Minutes Short Film
3	Generate Income Advertising campaign planning: Art, Radio, T.V, Newspaper, Magazine outdoor 7. Corporate Identity systems - Packaging, Brochure

Suggested Readings: Equipment: DSLR Camera and Green Matte Studio

PRACTICALS

Paper: DIGITAL PHOTOGRAPHY
Code: BVFM -491
Contacts Hours / Week: 2T+6P
Credits: 4
Marks: 100

Module	List Of Topics and Exercises
1	Objectives: This course concentrates on techniques, aesthetics and communication in the • Photographic medium. Students learn the basics of digital photography through a series of • Invention Of Photography - Camera ,Choosing A Camera, Lenses: Type Of Lenses, Focusing, Focal Length, Aperture , Depth Of Field , Shutter Speeds, DSLR Camera, Image Sensor, ISO, Aspect Ratio, Full Frame, APS Sensors.
2	Image Composition: Rules For Composition, Subject Placement, Balance, Line Of Force, Vantage Point, Depth Etc. Working With Tripod And Other Supporting Accessories.

Suggested Readings: Equipment: DSLR Camera and Green Matte Studio

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Paper: RIGGING & CHARACTER ANIMATION
Code: BVFM-492
Contacts Hours / Week: 2T+6P
Credits: 4
Marks: 100

Module	List Of Topics and Exercises
1	Focuses on creating character setups. Create skeleton and attach them to character meshes. Students will be encouraged to create animation friendly Rigs
2	Constrains • Parenting and grouping objects using point, orient, Creating Skeletons • Creating joints, editing joints, parenting joints, orienting joints • Creating hierarchical structures and skeletons for biped and quadruped characters Skinning • Understanding Rigid Bind and Smooth Bind • Binding skeletons to characters • Painting skin weights, editing skin weights Adding influence objects and muscles • • Using IK solvers on skeletons, blending FK and IK • Creating facial setups, blend shape deformers
3	Focuses on students developing skills necessary to bring life to characters. Encouraged to study principles of animation. To explore the effect of volume, weight, inertia, gravity through step by step exercises Animating techniques • Learning animation tools • Motion path animation • Graph editor, tangents • Dope sheet, playback speed
4	Animating Characters • Creating bouncing ball Animation, pendulum animation etc. • Line of action, extremes and breakdowns Walk cycles, progressive walk, adding attitude in walks Body Mechanics • Animating small actions to familiarize body weight, volume, gravity etc. • Lifting heavy objects, pushing and pulling objects, • Character interaction with objects

Suggested Software: Autodesk Maya

Suggested Readings Book: Body Language: 3D Character Rigging Book by Eric Allen and Kelly L. Murdock

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Paper: ROTO PAINT & CHROMA KEYING
Code: BVFM-493
Contacts Hours / Week: 2T+6P
Credits: 4
Marks: 100

Module	List Of Topics and Exercises
1	This section focuses on understanding Visual Effects live action movies Introduction to Roto • Interface and Introduction • Strategies for Multiple Object Roto • Speeding Up Roto by Tracking • Circulated Motion, Spinning and Occlusion
2	Chroma Keying (Blue &Green matte) • Key light and Key Cleaner • Spill Suppressor, Cleaning up Keys with Masks • Roto scoping with AE, Roto Brush • Refining Roto Brush Paint & Rig Removals • Drawing Strokes, Editing Strokes • The Clone Tools, The Reveal Tool, The Blur Tool • Observing Various Techniques • Automated Rig Removals, Executing F_ Rig removal • Production Example, Establishing Finishing Touches

Suggested Software: Nuke & PF Track & Silhouette, Adobe after Effects

Suggested Readings: 1.Fundamentals and Techniques of Motion Design– by Austin Shaw ,

2. Nuke101: Professional Compositing and Visual Effects by Ron anbar

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Paper: DYNAMICS VFX
Code: BVFM-494
Contacts Hours / Week: 2T+6P
Credits: 4
Marks: 100

Module	List Of Topics and Exercises
1	This section focuses on understanding Visual Effects and adding VFX into an animation film Building a simulation • Understanding the rigid body & Soft Bodies solver, Setting animation references • Creating passive & active rigid bodies • Adding a field • center of mass, Setting an initial state, Imparting initial velocity Directing a Simulation • Improving performance with stand-ins • Disabling rigid body nodes with Ignore • Adding bounce, friction, mass • Tuning rigid body solver attributes • Limiting a field with Max Distance
2	particles & cloth • Basic particle simulation • Collision & Fields • Instances • Goals VFX in Gaming • Fume FX, Fluids • Lava, fire, Smoke, Blast, Debris effect • Understanding Sprites, Projection Textures • Baking of Textures and Lights

Suggested Software: Autodesk Maya

Suggested Readings: VFX Fundamentals by Jackson Wallace

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<u>**Sessional**</u>

Paper: INTERNSHIP
Code: BVFM -481
Contacts Hours / Week: 4P
Credits: 2
Marks: 100

Module	List Of Topics and Exercises
1	Internship Students have to undergo practical training for a period of 4 practical's, on their own choice, the student has to submit the copy of the work done during the training process to the department for his assessment. The final evaluation is done through Viva-voce based on the work done during practical training.