

MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY, WB
Syllabus of B. Sc. In Multimedia Animation & Graphics
(Effective for 2020-2021 Admission Session)
Choice Based Credit System
140 Credit (3-Year UG) MAKAUT Framework
w.e.f 2020-21

4th Semester Structure

Subject Type	Course Name	Course Code	Credit Points	Credit Distribution			Mode of Delivery			Proposed Moocs
				Theory	Practical	Tutorial	Offline #	Online	Blended	
CC 8	2D Animation Production	BMAGD(T) 401	6	4	0	0	✓			As per MAKAUT Notification
		BMAGD 491		0	2	0				
CC 9	3D Animation Production	BMAGD(T) 402	6	4	0	0	✓			
		BMAGD 492		0	2	0				
CC 10	Digital post production	BMAGD(T) 403	6	4	0	0	✓			
		BMAGD 493		0	2	0				
GE 4	Students have to select from the GE Basket		6						✓	
SEC 2	New Media Skills	BMAGD 455	2	0	2	0	✓			
Semester Credits			26							

Only in case offline classes are not possible due to reasons like COVID Pandemic the classes will be in synchronous online mode

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CC 8: 2D Animation Production
Code- BMAGD 401
Credits- 4L+2P

Course Objective: The course is designed to provide an introduction of 2d animation production. Students will be able to develop an in-depth understanding of Production methods for 2d digital and classical animation process.

Sl	Course Outcome (CO)
1	Understand the Fundamentals, and process of 2d animation production.
2	Explain the methods and principal to develop an in-depth understanding of processes to help create better 2d animation.
3	Apply tools and techniques to create Traditional and digital 2d animation.
4	Understand the culture and practice of 2D animation and its industry
5	Understand the process of Post production for 2d animation
6	Organize the need for and have the preparation and ability to engage in independent and life-long learning in the 2D animation process and social delivery.

Theory- BMAGD(T) 401

CO	Blooms Level	Modules	%age of questions
CO1	1,2	M1,M2	40
CO3	2,3	M4, M5	60
			100

Practical- BMAGD 491

CO	Blooms Level	Modules	%age of questions
CO1	2,3,4	M2	15
CO2	2,3,4	M2	15
CO3	2,3,4	M3	15
CO4	2,3,4	M3	15
CO5	2,3,4	M5	15
CO6	2,3,4	M6	25
			100

Module 1- History and evolution of 2d animation Production. (10L +8P)

An overview of the history and theory of animation including the origin of animation forms, Hollywood Studio animation, a sample of World Animation and contemporary animation. Persistence of Vision, Early Animation Devices, Modern day animation.

Module 2- Methods and Process of 2D animation. (10P)

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This Course is designed to instill an understanding of animation principles and produce quality 2D animations

Implementing these principles and exploring various techniques. Using different methods like, Cut out animation, sand animation, Cell animation

Module 3- 2D animation Industry (10L +8P)

A brief introduction of world animation and its industry,
The traditional process of Walt Disney.
Culture and practice of Japanese Animation, Studio Ghibli.
Development of animation industry in India.

Module 4- Post production process of 2D animation (10P)

Introduction to various new age tools and techniques for 2d animation post production.

Compositing for 2d animation.

Understanding of different medium and technique for experimental animation.

Music and sound for 2D animation.

Module 5- Tools and Techniques for digital animation. (10P)

Understanding the new age tools and techniques for Digital animation.

Student should design to produce the required quantity of animation using digital tools, at the right time, and at minimal costs.

An in depth idea of digital technique for modern day animation.

Module 6 – Animation Studio: (10P)

Execution and culmination of the knowledge gathered from all the other modules of the semester into animation project.

Student should learn the hands-on process of 2D animation film making.

Suggested Readings:

1. Animation art - Beck, Jeny ed.
2. Timing for animation - Whitaker, Marold and malab, John
3. Character Animation Fundamentals: Developing Skills for 2D and 3D Character Animation by Steve Roberts
4. Animation background layout by Mike S Fowler. Fowler Cartooning Ink Publishing
5. Making Comics: Storytelling secrets of comics, Manga and Graphic Novels
6. Animated Storytelling: Simple Steps For Creating Animation and Motion Graphics 1st Edition by Liz Blazer
7. Character Animation Fundamentals: Developing Skills for 2D and 3D Character Animation by Steve Roberts
8. Animation background layout by Mike S Fowler. Fowler Cartooning Ink Publishing

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CC 9- : 3D Animation Production

Code- BMAGD 402

Credits- 4L +2P

Course Objective: The course is designed to provide an introduction of 3d animation production. Students will be able to develop an in-depth understanding of Production methods for 3d animation production process.

Sl	Course Outcome (CO)
1	Understand the world history of 3d animation.
2	Define & Understand Concept of 3D animation and its understanding.
3	Demonstrate basic tools and techniques of 3D animation production.
4	Explain & Make use of 3D animation and its industry
5	Explain & Make use of Post production process for 3D animation
6	Assess & Design the need for and have the preparation and ability to engage in independent and life-long learning in the 2D animation process and social delivery.

Theory- BMAGD (T)402

CO	Blooms Level	Modules	%age of questions
CO1	1,2	M1,M2	20
CO2	1,2	M1,M2,M3	50
CO3	1,2	M3,M4	30
			100

Practical- BMAGD 492

CO	Blooms Level	Modules	%age of questions
CO4	2,3,4	M3,M5	30
CO5	2,3,4	M5	20
CO6	4,5,6	M6	50
			100

Module 1- History of 3D animation (8L)

In this course, you will develop an understanding of animation in its historical context. Discover the pioneers, innovators, adapters, and the followers of animation as they explored the limits of this evolving art form. Examine the major events in animation to understand how trends, technological advancements as well as stylistic and cultural developments affect the industry. Lessons include lectures and the examination of milestone cartoons followed by discussions.

Module 2- 3D animation production pipeline (8L)

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Understanding the process of shot design as a team experience. Building on a solid foundation of research, this class teaches students how to work within a brief to create designs for characters, props, and locations. Students gain first-hand experience of how to visualize, communicate an idea, and create better animation.

Module 3- 3D animation tools and technique (10L)

Understanding the different tools and technique for 3D animation process. In this course, students learn fundamental tools and techniques for prop modelling Character modelling and set modelling. Students learn the importance of matching reference, and how to leverage reference to convey story ideas and contexts. Students also learn hard surface modelling techniques and how to model accurately (and to scale). A full production style “pipeline” is applied to each model, taking the reference from design to proxy, and on to the final model.

Students work through the process of rigging a proxy character. Emphasis is on creating a solid skeletal structure, including position, freezing and orienting joints, and building on top of this.

This course covers the basic principles of animation, and provides students with the basic understanding of timing. Students learn the fundamentals of weight and its direct relation to timing.

Module 4- 3D animation industry (12L+10P)

A brief introduction of world 3D animation and its industry,
The traditional process of Walt Disney.
Culture and practice of Pixar animation.
Development of animation industry in India.

Module 5- Editing, Sound Design & Compositing for 3D Animation (10L+ 8P)

The purpose of this course is to digitally edit and composite 3D-generated assets, which are typically used during editing and compositing in the film industry. Students will continue to learn the methods by which computer generated elements can be integrated into live action plates, specifically, how these elements are digitally composited. This is a hands-on class where students will learn through practical experience. This course includes comprehensive practical exercises that simulate current industry pipelines.

Module 6 – Animation Studio: (10P)

Execution and culmination of the knowledge gathered from all the other modules of the semester into animation project.

Student should learn the hands-on process of 2D animation film making.

Suggested Readings:

- 1.Introducing Autodesk Maya by Dariush Derakhshani
2. The Art of 3D Computer Animation and Effects by Isaac Kerlow
3. Mastering Autodesk Maya by Dariush Derakhshani
4. Getting Started in 3D with Maya: Create a Project from Start to Finish - Model, Texture, Rig, Animate, and Render in Maya by Adam Watkins
5. Autodesk Maya Essentials by Paul Naas

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CC 10: Digital Post Production

Code- BMAGD 403

Credits- 4L +2P

Course Objective: This advanced class will teach industry quality, non-linear video editing and post-production techniques. Students will work with professional visual effects software to apply animations and high-level visual effects to their video projects, and use production and image editing software to professional quality.

Sl	Course Outcome (CO)
1	Understand the the process of post-production
2	Apply and assess different medium and methods of post-production.
3	Demonstrate & make use of Tools and technique for post-production process.
4	Understanding the Importance of visual effects.
5	Understanding the process and tools for Visual effects.
6	Analyze, evaluate and construct the post production process and social delivery.

Theory- BMAGD(T) 403

CO	Blooms Level	Modules	%age of questions
CO1	1,2	M1,M2	30
CO2	1,2	M2,M3	30
CO3	2,3	M2,M4	40
			100

Practical- BMAGD 493

CO	Blooms Level	Modules	%age of questions
CO4	3,4	M3,M4	50%
CO5	3,4,5	M5	25%
CO6	3,4,5	M6	25%
			100

Module 1- Introduction to post-production (8L)

This advanced class will teach industry quality, non-linear video editing and post-production techniques and fully plan and execute a Visual Effects production, from conception to final execution and compositing.

Module 2- Method and process for post-production (8L)

The purpose of this course is to familiarize students with the core skills used in the Visual Effects (VFX) industry. Students continue to gain practical experience through editing, compositing, and

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VFX, integrating computer graphics and 3D components with live action plates. Visual Effects 2 includes comprehensive practical exercises that simulate current industry pipelines.

Module 3- Editing tools and Technique (8L)

Students will understand the knowhow of the Editing techniques

Describe what Adobe Premiere Pro is and how it can help you with your video making needs.

Module 4- VFX for film making (12L+8P)

This class introduces the fundamental techniques of digital compositing. It also introduces students to the design, planning and production workflows of a modern VFX project, through a VFX story written, planned and produced in class. Understand the difference between a visual effect and a special effect. Understand basic image processing techniques. Pull mattes using various image processing techniques including chroma-keying. Track motion data using various techniques including 2D pixel tracking, planar tracking, and camera tracking

Module 5- Tools and techniques for VFX (8L+8P)

Introduction to Compositing and After Effects: Fundamental concepts of Compositing, Introduction to the AE Interface & Tools. Student will learn to composite real time footage / animated render footage. Create 2.5D composites in order to build composites that incorporate virtual cameras and real-world depth cues. Describe and use the compositing process and identify major applications used in industry. Develop a visual effects pipeline for integration in the filmmaking process

Module 6 – Design Studio (4L+12P)

Execution and culmination of the knowledge gathered from all the other modules of the semester into animation project.

Student should learn the hands-on process of post-production process in film making.

Suggested Readings:

1. Compositing Visual Effects: Essentials for the Aspiring Artist –Steve Wright
2. Digital compositing for film & video –Steve Wright
3. Visual Effects and Compositing – Jon Gress

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SEC 2 - NEW MEDIA SKILLS

Code: - BMAGD 455

Credits- 2P

Course Objective: The course is designed to make students understand how new media is a break away from traditional media and to make them further understand the true scope and potential of digital media in this global village

Course Outcome:

Sl	Course Outcome (CO)	Mapped Module
1	Explain and relate the basic concepts related to internet & new media	M1
2	Remember and understand the basic concept of blog writing	M2
3	Demonstrate the basic concept of online reporting and ethics in new media	M3

Syllabus:

Module Number	Headline	Total Hours	%age of Questions	Blooms Level	Remarks (if any)
Module 1	Internet as a medium of communication	10	25	1, 2	N.A.
Module 2	Blogs: Blogosphere	8	25	1, 2,3	N.A.
Module 3	Online reporting, editing & Ethics in new Media	10	50	1, 2, 3	N.A.
		28	100		

Detailed Syllabus:

<p>Module 1: Characteristics of new media Internet as a medium of communication: history and evolution of internet Characteristics of new media: The Advanced Research Project Agency – ARPANET – Cyberspace – The World Wide Web – Characteristics of New Media – Interactivity, Speed, Computer Mediated Communication, Digital Journalism Platform, Digital Marketing – New Media Aesthetics etc.</p>
<p>Module 2: Blogs: Blogosphere Techniques of Blog writing and creating a Blogging portal What is Blog? Definition of Blog – Blogging – Blogger History: Origins – Technology – Rise in Popularity – Impact – Mainstream Popularity Types Techniques of Blog writing and creating a Blogging portal Blurring with the Mass Media Blog versus Vlog Consumer Generated Advertising Legal and Social consequences</p>
<p>Module 3: Online reporting: Language and style of Online Journalism on Social Media –Twitter, Instagram, YouTube,</p>

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Facebook

Online Editing - Styles and Techniques

Ethics in New Media

Cyber Ethics (Defamation, Litigation, Misinformation, Regulations on Bulletin Board, Copyright on net etc.) Issues related to 'big data' and data theft

Suggested Readings

- Lev Manovich, The Language of New Media
- Manuel Castells, The Internet Galaxy
- Anuel Castells, Networks of Outrage and Hope: Social Movements in the Internet Age
- Interactive Design for New Media and the Web, Juppa
- Online News Gathering: Research and Reporting, Quinn & Lamble
- Convergent Journalism: An Introduction, Quinn & Filak
- Journalism in the Digital Age, Herbert
- Breaking News: The Craft and Technology of Online Journalism, Sunil Saxena