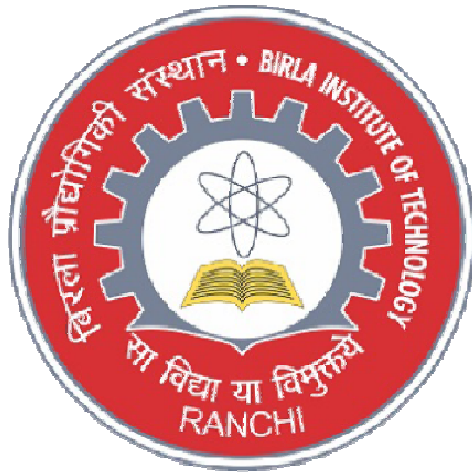# BIRLA INSTITUTE OF TECHNOLOGY

CHOICE BASED CREDIT SYSTEM (CBCS) CURRICULUM

(Effective from Academic Session: Monsoon 2018)

M.Sc. ANIMATION DESIGN

DEPARTMENT OF ANIMATION AND MULTIMEDIA

Department of Animation and Multimedia

Birla Institute of Technology, MESRA, Ranchi-835215 (India)

Institute Vision

To become a Globally Recognized Academic Institution in consonance with the social, economic and ecological environment, striving continuously for excellence in education, research and technological service to the National needs.

Institute Mission

- To educate the students at the Graduate, Post-graduate and Doctoral levels to effectively and efficiently perform challenging socially and economically relevant Scientific, Engineering and Managerial jobs in industry.
- To provide excellent research and development environment, infrastructure and facility to take up cutting edge Doctoral research programmes and relevant projects.
- To develop effective teaching-learning skills and state-of-the-art research potential, ability and attitude of the faculty.
- To bridge skill gaps, re-skill the learners and trainers in accordance to the emerging needs of Industry 4.0 education, and research and other emerging areas.

Department Vision

Pursuit of excellence in order to be recognized as a pioneer and frontrunner in the field of Animation and Multimedia studies in the country; to be in consonance with the emerging and current socio-economic reality and simultaneously be responsive to our ecological environment and remain motivated to contribute to the Nation building process through excellence in research and development activities and being alert and responsive to the needs of Industry 4.0 as a national and a global mandate.

Department Mission

- Enable students to achieve excellence both in skill and knowledge that is at par with industry especially Industry 4.0 standards and perform better in challenging situations
- To encourage cutting-edge, interdisciplinary and futuristic research in response to the needs of the Government, Industry and Society
- To nurture first generation entrepreneurs with innovative mind-set, responsive and adaptable to the broad range of industries including the fast-emerging Industry 4.0.
- To develop a curriculum where students will intrinsically understand the requirements and standards of the Industry and remain equipped to achieve the next level
- To provide excellent Consulting, and Research & Development facilities for faculty and students.
- To uphold the values of Personal Integrity and Social Responsibility

Graduate Attributes

1.Technical Expertise- Apply knowledge of Graphics, Aesthetics, Ergonomics and Perspective to solve complex design problems with simplicity and elegance.

2.Design Thinking- Identify, formulate, research, literature and analyze complex design problems. Packaging cryptic and voluminous content into simple and attractive packages that are accessible and user friendly.

3.Design/ Development of Solutions- Design solutions for complex engineering problems and design system components or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal and environmental considerations.

4.Understand the requirements of the client- using research-based knowledge and research methods including design of experiments, analysis and interpretation of data and synthesis of information to provide valid conclusions.

5. Modern Tool Usage- Have familiarity with cutting edge tools, techniques and processes. Be able to model, scale and predict relevant parameters of the project.

6.The Designer and Society- Apply reasoning informed by contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to professional design practice.

7.Environment and Sustainability- Understand the impact of professional design solutions in societal and environmental contexts and demonstrate knowledge of and need for sustainable development.

8.Ethics- Apply ethical principles and commit to professional ethics and responsibilities and norms of design practice.

9.Individual and Team Work- Function effectively as an individual, and as a member or leader in diverse teams and in multi-disciplinary settings.

10.Outreach- Communicate effectively on complex design activities with the professional community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations and give and receive clear instructions.

11.Project Management and Finance- Demonstrate knowledge and understanding of design principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

12. **Life-long Learning**- Recognize the need for and have the preparation and ability to engage in independent and life- long learning in the broadest context of technological change.

Programme Educational Objectives (PEOs)

1.To develop Animation, Multimedia and Communication competence of the students to enable them to take up eminent and gainful position in the Industry and/or foray as first-generation entrepreneurs in the domain;

2.To impart professional education and training in the field of 2D & 3D Animation, Digital Games, Film Making, Post-production, Graphic Designing, User Interface Designing, Web & Apps Designing and Communication Education especially keeping in mind the needs of Industry 4.0;

3.To disseminate knowledge and information by facilitating industry-academia interface and continuing interaction with Alumni to meet the demand of quality education and creating an ecosystem relevant to the Nation building process;

4.To produce graduates who are socially responsible and capable of engaging in Lifelong learning; and

5.Create scholars involved and engaged in futuristic research and quality consulting.

(A)Programme Outcomes (POs)

On successfully completing the program, a graduate should be able to:

1.**Technical Expertise**- Apply knowledge of Graphics, Aesthetics, Ergonomics and Perspective to solve complex design problems with simplicity and elegance.

2.**Design Thinking** - Identify, formulate, research, literature and analyse complex design problems. Packaging cryptic and voluminous content into simple and attractive packages that are accessible and user friendly.

3.**Design/ Development of Solutions**: Design solutions for complex engineering problems and design system components or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal and environmental considerations.

4.**Understand the requirements of the client:** using research-based knowledge and research methods including design of experiments, analysis and interpretation of data and synthesis of information to provide valid conclusions.

5.**Modern Tool Usage** – Have familiarity with cutting edge tools, techniques and processes. Be able to model, scale and predict relevant parameters of the project.

6.**The Designer and Society**: Apply reasoning informed by contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to professional design practice.

7.**Environment and Sustainability**: Understand the impact of professional design

solutions in societal and environmental contexts and demonstrate knowledge of and need for sustainable development.

8. **Ethics**: Apply ethical principles and commit to professional ethics and responsibilities and norms of design practice.

9. **Individual and Team Work**: Function effectively as an individual, and as a member or leader in diverse teams and in multi-disciplinary settings.

10. **Outreach:** Communicate effectively on complex design activities with the professional community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations and give and receive clear instructions.

11. **Project Management and Finance**: Demonstrate knowledge and understanding of design principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

12. **Life-long Learning**: Recognize the need for and have the preparation and ability to engage in independent and life- long learning in the broadest context of technological change.

(B) Programme Specific Outcomes (PSOs)

13. Apply the basic concepts of classical and emerging notions of Animation, Multimedia and Communication Studies and interdisciplinary knowledge to identify & analyse complex issues and arrive at solutions affecting contemporary organisations and the Industry.

14.Identify suitable resources and utilise them optimally to respond efficiently to the needs of society, economy and the Nation building.

15.Become effective decision makers committed to professional & personal ethics as well as social responsibility and be abreast of and qualified to respond to the needs and demands of Industry 4.0. Initiate and participate in the change process and value creation across all levels.

FRAMEWORK/ CHOICE BASED CREDIT SYSTEM (CBCS)

The structure of M.Sc. Animation Design (MAD) programme will have the following components:

1. Programme Core (PC)

2. Programme Elective (PE)

3. Open Elective (OE)

4. Research Project (RP)

   The distribution of credits will be as follows:

SL. NO	CATEGORY	CREDITS
1	Programme Core (PC)	46
2	Programme Electives (PE)	10
3	Open Electives (OE)	06
3	Research Project (RP)	18
	TOTAL CREDITS	**80**

SEMESTER WISE CREDIT DISTRIBUTION

The Total minimum credits for completing M.Sc. in Animation Design is 80

S. No	Semester	Course Category	Credits	Total
1	FIRST	Programme Core	19	21
		Programme Electives	02	
2	SECOND	Programme Core	14	21
		Programme Electives	04	
		Open Elective	03	
3	THIRD	Programme Core	09	22
		Programme Electives	04	
		Open Elective	03	
		Research Project	06	
4	FOURTH	Programme Core	04	16
		Research Project	12	
			Total	**80**

BIRLA INSTITUTE OF TECHNOLOGY- MESRA, RANCHI
NEWCOURSE STRUCTURE - *To be effective from academic session 2018- 19*
Based on CBCS & OBE model
Recommended scheme of study for M.Sc. Programme in Animation Design

SEMESTER / Session of Study (Recommended)	LEVEL	Category of course	Course Code	Courses	Mode of delivery & credits *L-Lecture; T-Tutorial;P-Practicals*			Total Credits *C- Credits*
					L *(Periods/ week)*	T *(Periods/ week)*	P *(Periods/ week)*	C
				THEORY				
FIRST/ **Monsoon**	Fourth	Programme Core (PC)	AM401	Traditional Animation	3	1	0	4
			AM402	Writing and Storyboarding	3	1	0	4
			AM403	Character Design	3	1	0	4
			AM404	Communication- 1	3	0	0	3
				LABORATORIES				
		PC	AM405	3D Studies-I	0	0	4	2
		PC	AM406	Life Study	0	0	4	2
		PE		Lab Based on PE 1	0	0	4	2
				TOTAL (Theory + Lab)				**21**
				THEORY				
SECOND/ **Spring**	Fourth	Programme Core (PC)	AM409	Advertising & New Media	3	1	0	4
			AM410	Animation Theory	3	1	0	4
			AM411	Western Art	3	1	0	4
		OE		OE 01	3	0	0	3
				LABORATORIES				
		PC	AM412	Field Study	0	0	4	2
		PE		Lab Based on PE 2	0	0	4	2
				Lab Based on PE 3	0	0	4	2
				TOTAL (Theory + Lab)				**21**
				GRAND TOTAL M.Sc. I YEAR				**42**
				THEORY				
THIRD/ Monsoon		PC	AM501	Indian Art & Animation	3	0	0	3
		OE		OE 02	3	0	0	3
				LABORATORIES				
	Fifth	PC	AM502	Digital Painting	0	0	4	2
			AM503	Compositing and Editing Techniques	0	0	4	2
			AM504	Graphics	0	0	4	2
		PE		Lab Based on PE 4	**0**	0	4	2
				Lab Based on PE 5	**0**	**0**	**4**	2
		RP	AM514	Project- I				6
				TOTAL(Theory + Lab)				**22**

			Theory					
FORTH/ Spring		**PC**	AM515	Modern Art & Animation	4	1	0	4
		LAB						
		RP	AM516	Project-II				12
				TOTAL				**16**
				GRAND TOTAL M.Sc. II YEAR				**38**
				GRAND TOTAL (M.Sc. I To IV Sem. 42+38)				**80**

DEPARTMENT OF ANIMATION & MULTIMEDIA
PROGRAMME ELECTIVES (PE)* FOR M.Sc. Level
OFFERED FOR LEVEL 4-5

PE / LEVEL	Code No	Name of the PE Course		L	T	P	Credit
		Programme Elective-I					
PE/4 (MO)	AM407	Mix-Media Animation		0	0	4	2
PE/4 (MO)	AM408	Animatics		0	0	4	2
		Programme Elective-II and III					
PE/4 (SP)	AM413	Documentary Animation-I		0	0	4	2
PE/4 (SP)	AM414	Narrative Animation –I	Animation	0	0	4	2
PE/4 (SP)	AM415	Experimental Visual Effects-I		0	0	4	2
PE/4 (SP)	AM416	Experimental Motion Graphics-I	Film Making	0	0	4	2
PE/4 (SP)	AM417	Game Design-I		0	0	4	2
PE/4 (SP)	AM418	Programming for Games-I	Game	0	0	4	2
PE/4 (SP)	AM419	3D Sculpting & Texturing-I		0	0	4	2
PE/4 (SP)	AM420	3D Rigging & Animation	3D	0	0	4	2
		Programme Elective-IV & V					
PE/5 (MO)	AM505	Documentary Animation-II		0	0	4	2
PE/5 (MO)	AM506	Narrative Animation -II	Animation	0	0	4	2
PE/5 (MO)	AM507	Experimental Visual Effects-II		0	0	4	2
PE/5 (MO)	AM508	Experimental Motion Graphics-II	Film Making	0	0	4	2
PE/5 (MO)	AM509	Game Design-II		0	0	4	2
PE/5 (MO)	AM510	Programming for Games-II	Game	0	0	4	2
PE/5 (MO)	AM511	3D Sculpting & Texturing-II		0	0	4	2
PE/5 (MO)	AM512	3D Dynamics & Rendering	3D	0	0	4	2

Notes:

● Programme Electives To Be Opted Only By The Department Students
● Open Elective refers to subjects hosted by other Departments, and students need to take a subject (having appropriate credit) of their own choice.

Note: Other than open elective subjects, students may choose any MOOC course related to the Animation & Multimedia stream offered by any prestigious university (recommended by Departmental Academic Committee only). Or the following Skill Enhancement courses may be elected by the animation students:

Skill Enhancement Courses

LEVEL	Code No	Name of the Course	L	T	P	Credit
(SP)	AM421	Fundamentals of Research	3	0	0	3
(SP)	AM422	Writing for Animation	3	0	0	3
(MO)	AM513	Entrepreneurship	3	0	0	3