Department of Computer Applications


Scheme and Syllabus
B.Sc. Animation and Multimedia

(Semester I – VI)
Session w.e.f 2021-2022

VISION

"J.C. Bose University of Science and Technology, YMCA Faridabad aspires to be a nationally and internationally acclaimed leader in technical and higher education in all spheres which transforms the life of students through integration of teaching, research and character building.

MISSION

- To contribute to the development of science and technology by synthesizing teaching, research and creative activities.
- To provide an enviable research environment and state-of-the art technological exposure to its scholars.
- To develop human potential to its fullest extent and make them emerge as world class leaders in their professions and enthuse them towards their social responsibilities.
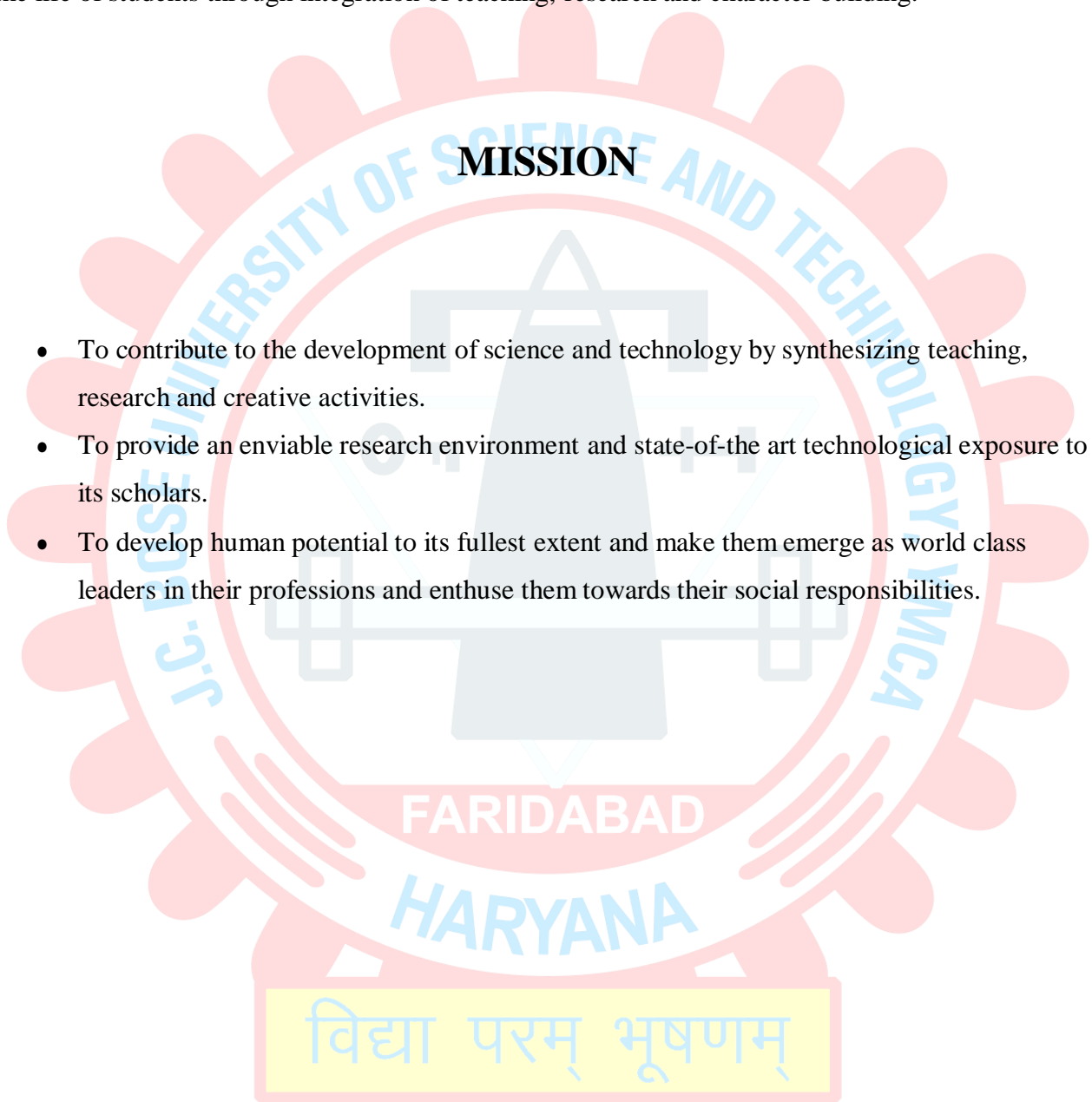
FACULTY OF LIBERAL ARTS AND
MEDIA STUDIES

VISION

The department aims to make a place at both national and international level by producing high quality ethically rich computer engineers and IT professionals conversant with the state-of-the-art technology with the ability to adapt the upcoming challenges in information technology and their applications to cater to the ever changing industrial and societal needs. It endeavours to establish itself as a centre of excellence in teaching and research to produce skilled human resources for sustainable nation's growth and having technological impact on the people's life.

MISSION

- To provide the future leaders in the area of computer application and information technology through the development of human intellectual potential to its fullest extent.
- To enable the students to acquire globally competence through problem solving skills and exposure to latest developments in area of computer application and information technologies.
- To educate the students about their professional and ethical responsibilities.

विद्या परम् भूषणम्

ABOUT THE PROGRAM

Animation and Multimedia program has now the strength, vigour and potential to step in as an exciting opportunity in terms of an academic choice and career especially for students with innate creativity and the flair to do something new and unconventional. The department is highly equipped with latest software and audio visual studio, and state of art lab for animation course.

This degree provides a solid foundation in core Graphic and Multimedia, Creative Visualization and animation and film production skills. Through the academic program, students also develop excellent written and oral communication skills; learn to work as a team and project management.
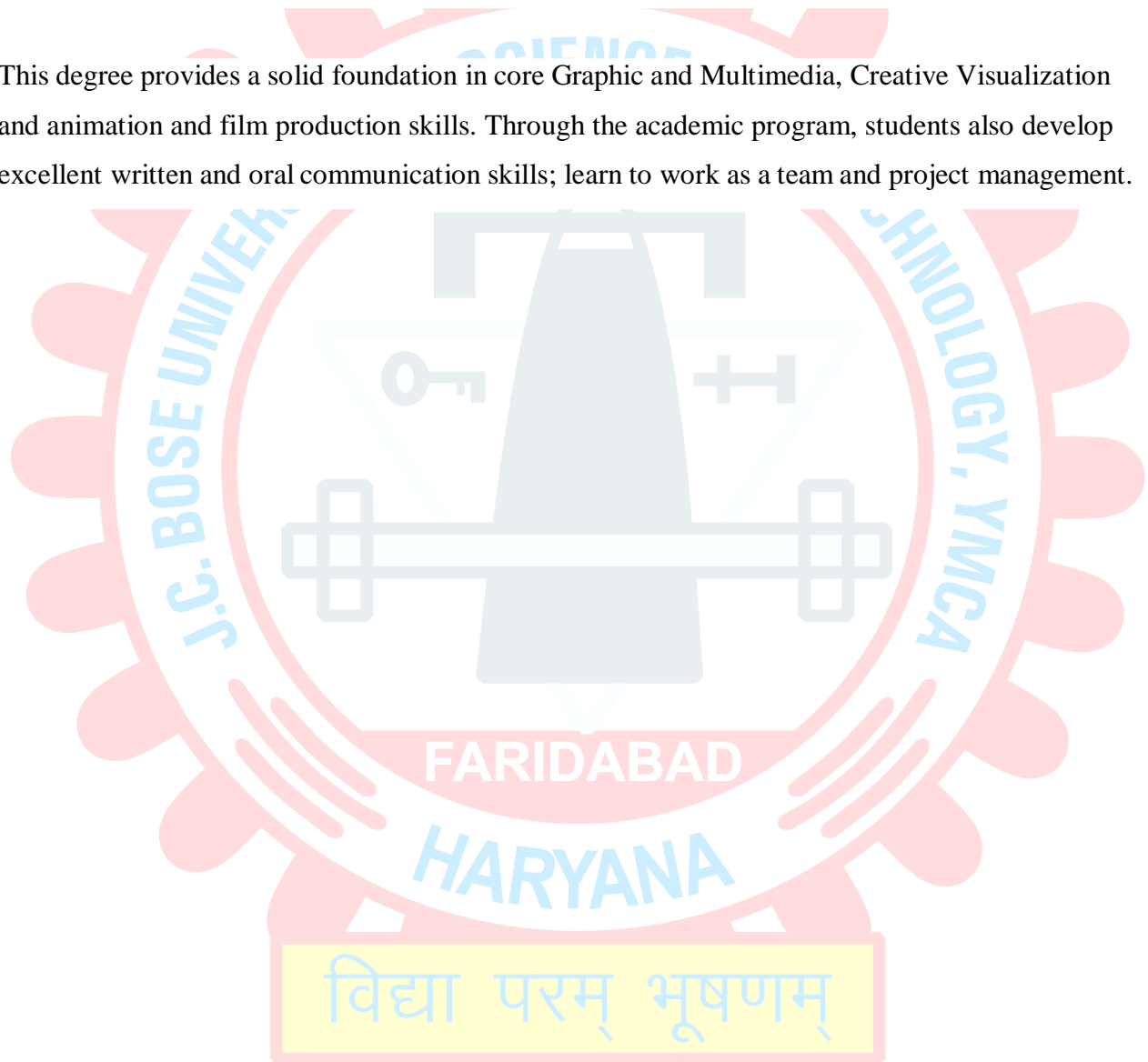
FACULTY OF LIBERAL ARTS AND MEDIA STUDIES

B.SC. IN ANIMATION AND MULTIMEDIA PROGRAMME

PROGRAMME EDUCATION OBJECTIVES

PEO1	To solidify foundation of design, animation, visual effects, gaming and problem solving methodology for effective implementation in the area of animation and multimedia.
PEO2	To impart advance knowledge about various sub-domains related to the field of animation and multimedia like game design and development.
PEO3	To acquaint students about upcoming technologies like augmented reality and virtual reality
PEO4	To inculcate effective communication skills combined with professional & ethical attitude.

PROGRAMME OUTCOMES

PO1	Apply the knowledge of designing, animation, visual effects, gaming to communicate any simple or complex information or message to the society or a particular group of people.
PO2	Visualize creatively to lead any communication, education or entertainment project
PO3	Design solutions for complex visual communicating problems with knowledge and practice of latest software, technology as well as strong academic knowledge of visual art and communication.
PO4	Provide high quality e-learning design and solutions to enhance cognitive skills of children and adult pupils.
PO5	Create audio visual or virtual models for complicated training programs in fields such as medical, defense, engineering, science and research.
PO6	Apply foundation and practical skills to initiate an entrepreneurship which creates number of job opportunities for the society.
PO7	Apply ethical principles and commit to professional ethics and responsibilities and norms of the educational and entertainment practices.

CHOICE BASED CREDIT SYSTEM SCHEME

	Program Core Courses (PCC)		
Sr. N.	**Name the Subject**	**No. of Lectures / Tutorial**	**No. of Credits**
1.	Visual Art I	4	4
2.	Basics of Communication	4	4
3.	Mathematics	4	4
4.	Introduction to Film Making	4	4
5.	Traditional Animation I	4	4
6.	Fundamentals of Information and Web Technology	4	4
7.	Visual Art II	4	4
8.	Creative Writing	4	4
9.	Photography & Film Studies	4	4
10.	Traditional Animation II	4	4
11.	Introduction to Programming Languages and Computer Graphics	4	4
12.	Visual Art III	4	4
13.	Fundamentals of Audio & Video	3	3
14.	Traditional Animation III	4	4
15.	Psychology for Interactive Media	4	4
16.	Visual Art IV	4	4
17.	Advertising and New Media	3	3
18.	Fundamentals of Compositing & Visual Effects	4	4
19.	Fundamentals of Rigging, Skinning and Animation	4	4

20.	Visual Art V	4	4
21.	Sociology for Animation	4	4
22.	Advance 2D Animation	4	4
Total Credits		**86**	**86**

Skill Enhancement Courses (SEC) :Labs			
Sr. No.	**Name the Lab**	**No. of contact hours**	**No. of Credits**
1.	Graphics and Visual Design Lab I	4	2
2.	Fundamentals of Information and Web Technology Lab	4	2
3.	Graphics and Visual Design Lab II	2	1
4.	3D Designing Lab I	4	2
5.	Programming Languages and Computer Graphics Lab	4	2
6.	Digital 2D Animation I Lab	4	2
7.	Graphics and Visual Design Lab III	4	2
8.	3D Designing Lab II	8	4
9.	Fundamentals of Audio & Video Lab	3	2
10.	Digital 2D Animation II Lab	2	1
11.	Graphics & Animation Lab	4	2
12.	Fundamentals of Compositing & Visual Effects Lab	4	2
13.	Fundamentals Rigging, Skinning and Animation Lab	4	2
14.	Fundamentals of Game Designing Lab	4	2

15.	Graphics and Visual Design Lab IV	4	2
16.	Advance 2D Animation Lab	4	2
Total credits		**63**	**32**

Discipline Specific Elective (DSE)

Sr. No.	Name the Subject	No. of contact hours	No. of Credits
DSE Group	Advance Compositing & VFX + Advance Compositing & VFX Lab	4+8	4+4
	3D Animation +3D Animation Lab	4+8	4+4
	Game Documentation + Game Design Lab II	4+8	4+4

Skill Enhancement Course (SEC) : Projects

Sr. No.	Name the Lab	No. of contact hours	No. of Credits
1	Major Project	32	16

General Elective Course (Courses offered by Animation and Multimedia)

Sr. No	Code	Name the Subject
1	GEC-1	Photoshop
2	GEC-2	Drawing and sketching
3	GEC-3	3D Modelling
4	GEC-4	Photo Editing
5	GEC-5	Video Editing

Mandatory Audit Course(MAC) (Mandatory to Qualify)

Sr. No	Code	Name the Subject	No. of contact hours
1.	AUD01	German-1	2
2.	AUD02	German-2(With German-1 as prerequisite)	2
3.	AUD03	French-1	2
4	AUD04	French-2(With French-1 as prerequisite)	2
5	AUD05	Sanskrit-1	2
6	AUD06	Sanskrit-2(With Sanskrit-1 as prerequisite)	2
7	AUD07	Personality Development	2
8	AUD08	Interview and Group discussion skills	2
9	AUD09	Yoga and Meditation	2
10	AUD10	Art of living/Living Skills	2
11	AUD11	Contribution of NSS towards Nation/role of NSS	2
12	AUD12	Physical Education	2

J.C. BOSE UNIVERSITY OF SCIENCE AND TECHNOLOGY, YMCA, FARIDABAD

SUMMARY OF SCHEME OF STUDIES & EXAMINATION
3 YEARS B.SC ANIMATION AND MULTIMEDIA SEMESTER I-VI (2021-2022)

Total Credits: 144+ 4 to 6 credits (MOOCH)
Total Theory Subjects: 23
Total Labs including Seminars, Projects and Mooch course): 20
Industrial Training: Industrial Training: 1 (In 6th semester 6 months internship)

Total Teaching Schedule:

Lectures	Practical	Seminar	Tutorial	Total
90	103	1	-	193

Total Marks:

Sessional	End Term	Total
1125	2700	3850

Itemized Break-up:

	No.	Hours	Marks	Credits
Theory Subjects	23	90	2300	90
Labs	17	103	1000	36
Seminar	1	2	50	2
Projects	1	-	500	16
Industrial Training	1	6 months	-	-
MOOCH	1	4		4 to 6
Total			3850	144+ 4 to 6

विद्या परम् भूषणम्

B.Sc. Animation and Multimedia
(Semester I)

PAPER CODE	COURSE	REQUIRMENT (HOURS)	CREDITS	UNIVERSITY EXAMS	INTERNAL ASSESMENT	TOTAL	COURSE TYPE
BSC-AM-19-101	Visual Art-I	4	4	75	25	100	PCC
BSC-AM-21-102	Basics of Communication	4	4	75	25	100	
BSC-AM-19-103	Mathematics	4	4	75	25	100	
BSC-AM-19-104	Introduction to Film Making	4	4	75	25	100	
BSC-AM-19-105	Traditional Animation I	4	4	75	25	100	
BSC-AM-19-106	Fundamentals of Information and Web Technology	4	4	75	25	100	
BSC-AM-19-107	Graphics and Visual Design Lab I	4	2	35	15	50	SEC
BSC-AM-19-108	Fundamentals of Information and Web Technology Lab	4	2	35	15	50	
	TOTAL	**32**	**28**	**520**	**180**	**700**	

विद्या परम् भूषणम्

B.Sc. Animation and Multimedia
(S.emester II)

PAPER CODE	COURSE	REQUIRMENT (HOURS)	CREDITS	UNIVERSITY EXAMS	INTERNAL ASSESMENT	TOTAL	Course Type
BSC-AM-19-201	Visual Art II	4	4	75	25	100	PCC
BSC-AM-21-202	Creative Writing	4	4	75	25	100	
BSC-AM-19-203	Photography & Film Studies	4	4	75	25	100	
BSC-AM-19-204	Traditional Animation II	4	4	75	25	100	
BSC-AM-19-205	Introduction to Programming Languages and Computer Graphics	4	4	75	25	100	
BSC-AM-19-206	Graphics and Visual Design Lab II	2	1	35	15	50	SEC
BSC-AM-19-207	3D Designing Lab I	4	2	35	15	50	
BSC-AM-19-208	Programming Languages and Computer Graphics Lab	4	2	35	15	50	
BSC-AM-19-209	Digital 2D Animation I Lab	2	1	35	15	50	
Mentioned above	Audit Course	2		75	25	100	MAC
	TOTAL	**34**	**26**	**515**	**185**	**700**	

B.Sc. Animation and Multimedia
(Semester III)

PAPER CODE	COURSE	REQUIRMENT (HOURS)	CREDITS	UNIVERSITY EXAMS	INTERNAL ASSESSMENT	TOTAL	Course Type
BSC-AM-19-301	Visual Art III	4	4	75	25	100	PCC
BSC-AM-19-303	Fundamentals of Audio & Video	3	3	75	25	100	
BSC-AM-19-304	Traditional Animation III	4	4	75	25	100	
BSC-AM-19-305	Psychology for Interactive Media	4	4	75	25	100	
BSC-AM-19-306	Graphics and Visual Design Lab III	4	2	35	15	50	SEC
BSC-AM-19-307	3D Designing Lab II	8	4	70	30	100	
BSC-AM-19-308	Fundamentals of Audio & Video Lab	3	2	35	15	50	
BSC-AM-19-309	Digital 2D Animation II Lab	4	2	35	15	50	
	TOTAL	**33**	**25**	**475**	**175**	**650**	

B.Sc. Animation and Multimedia
(Semester IV)

PAPER CODE	COURSE	REQUIRMENT (HOURS)	CREDITS	UNIVERSITY EXAMS	INTERNAL ASSESSMENT	TOTAL	Course Type
BSC-AM-19-401	Visual Art IV	4	4	75	25	100	PCC
BSC-AM-19-402	Advertising and New Media	3	3	75	25	100	
BSC-AM-19-403	Fundamentals of Compositing & Visual Effects	4	4	75	25	100	
BSC-AM-19-404	Fundamentals of Rigging, Skinning and Animation	4	4	75	25	100	
BSC-AM-19-405	Graphics & Animation Lab	4	2	70	30	100	SEC
BSC-AM-19-406	Fundamentals of Compositing & Visual Effects Lab	4	2	35	15	50	
BSC-AM-19-407	Fundamentals Rigging, Skinning and Animation Lab	4	2	35	15	50	
BSC-AM-19-408	Fundamentals of Game Designing Lab	4	2	35	15	50	
	General Elective	3	3	75	25	100	GEC
	TOTAL	**34**	**26**	**550**	**200**	**750**	

B.Sc. Animation and Multimedia
(Semester V)

PAPER CODE	COURSE	REQUIRMENT (HOURS)	CREDITS	UNIVERSITY EXAMS	INTERNAL ASSESSMENT	TOTAL	Course Type
BSC-AM-19-501	Visual Art V	4	4	75	25	100	PCC
BSC-AM-19-502	Sociology for Animation	4	4	75	25	100	
BSC-AM-19-503	Advance 2D Animation	4	4	75	25	100	
BSC-AM-19-504	Elective (Chosen from list of electives)	4	4	75	25	100	DSE
BSC-AM-19-505	Graphics and Visual Design Lab IV	4	2	35	15	50	SEC
BSC-AM-19-506	Advance 2D Animation Lab	4	2	35	15	50	
BSC-AM-19-507	DS Elective Lab	8	4	70	30	100	DSE
	TOTAL	32	24	440	160	600	

Electives/ DS Elective Lab

BSC-AM-19- 504-1 Advance Compositing and VFX
BSC-AM-19- 507-1 Advance Compositing and VFX Lab

BSC-AM-19- 504-2 3D Animation
BSC-AM-19- 507-2 3D Animation Lab

BSC-AM-19- 504-3 Game Design & Documentation
BSC-AM-19- 507-3 Game Design Lab II

B.Sc. Animation and Multimedia

(Semester VI)

PAPER CODE	COURSE	REQUIRMENT (HOURS)	CREDITS	UNIVERSITY EXAMS	INTERNAL ASSESMENT	TOTAL	Course Type
BSC-AM-19-604	Major Project: Show Reel	32	16	300	200	500	SEC
BSC-AM-19-606	Dissertation and Viva Voce		2	-	50	50	Seminar
	TOTAL	**32**	**18**	**300**	**250**	**550**	

Major Project: Procedure for Annual Examination and continuous Assessment of:

(A) Internal Assessment

1. **Project Evaluation**   **50 Marks**
2. **Project Seminar**   **50 Marks**
3. **Project Viva**   **100 Marks**

(B) University Assessment Mark

1. **Assessment by Institute Faculty**   **50 Marks**
2. **Assessment by Industrial Guide**   **200 Marks**
3. **Conduct Marks**   **50 Marks**

TOTAL   500 Marks

One MOOCH Subject to be qualified in any semester of B.Sc. Animation and Multimedia

Paper Code	Course	Course Requirements (Hrs)	Credits	University Exams	Internal Assessments	Total	Course Type
--------	MOOCH*	4	4 to 6				

* The Mooch subject can be qualified during the duration of the Programme (First to six semester) through Swayam platform (UGC)
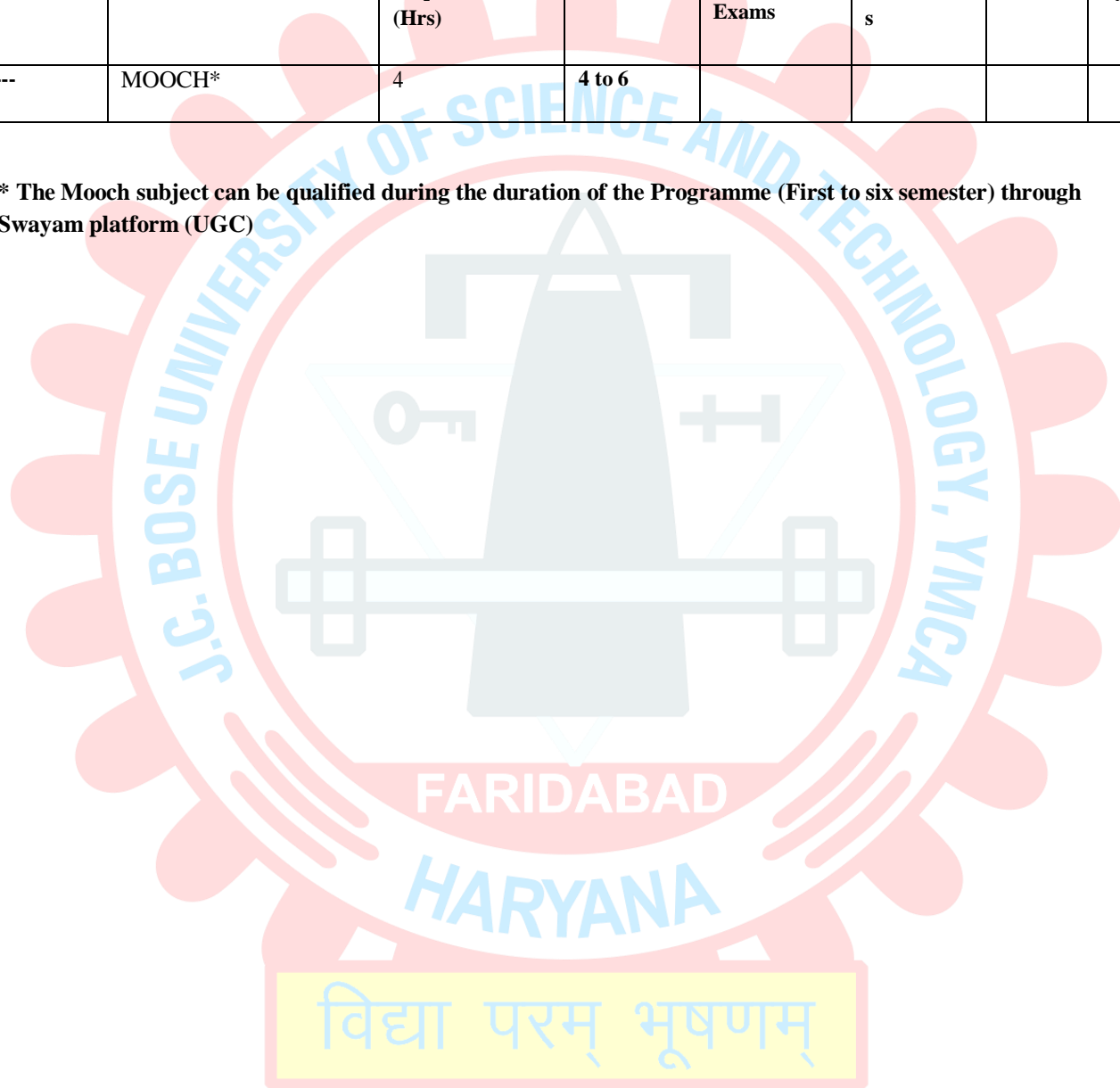
SEMESTER I

B.Sc. (Animation and Multimedia) 1st Semester

CODE: BSC-AM-19-101

SUBJECT NAME: Visual Art I

NO OF CREDITS: 4

		SESSIONAL:	25
L	**P**	**THEORY EXAM:**	**75**
4	**0**	**TOTAL:**	**100**

NOTE: Question paper has two parts. Part-1 has 10 questions each of 2 marks. It covers the entire syllabus. Attempt any four questions out of six from Part-2.

Course objectives:

1. To understand the basic elements of visual Art and Design
2. To inculcate the basic principles of visual Art and Design.
3. To understand the colour theory and the psychological, culture and other association with colour.
4. To understand the shading techniques using light and shadow.
5. To develop a basic understanding of using shapes in object drawing and nature.

UNIT I: Drawing with Basic shapes: Object drawing from surroundings, study of plants and trees, Visualizing objects in various angles.

UNIT II: Elements of Art: - Line - Colour - Shape - Texture - Space – Form - Value

UNIT III: Colour Theory: Primary & Secondary Colour, & Territory colour, warm & cool colour, psychological aspect of colour.

UNIT IV: Principles of Art: Unity, Balance, Rhythm, Contrast, Dominance, Movement, and Pattern

UNIT V: Introduction to Light & shade: Pencil shading techniques- hatching, Cross hatching, stippling, scribbling and smudging

Course outcome:

1. Students would be able to Create visual designs or artwork using visual art elements.
2. Students would be able to implement the acquired knowledge of the principles of design to create art composition.
3. Students would be able to implement the understanding of basic color theory to create an impactful composition to express or influence certain feelings or emotions through visual art.
4. Students would be able to draw light and shadow on objects with appropriate assessment and representation of the impact of light on simple forms and objects.
5. Students would be able to develop a basic understanding of using shapes in object drawing and nature study.

MAPPING OF COURSE OBJECTIVES AND COURSE OUTCOMES

		Course Outcomes				
		1	**2**	**3**	**4**	**5**
Course Objectives	**1**	✓				
	2		✓			
	3			✓		
	4				✓	
	5	✓				✓

REFERENCES

1. Universal principles of design by William led well
2. Design element: A graphic style manual by Timothy Samara
3. Geometry of design by Kimberly Elam
4. The principles of beautiful web design by Jason Beaird
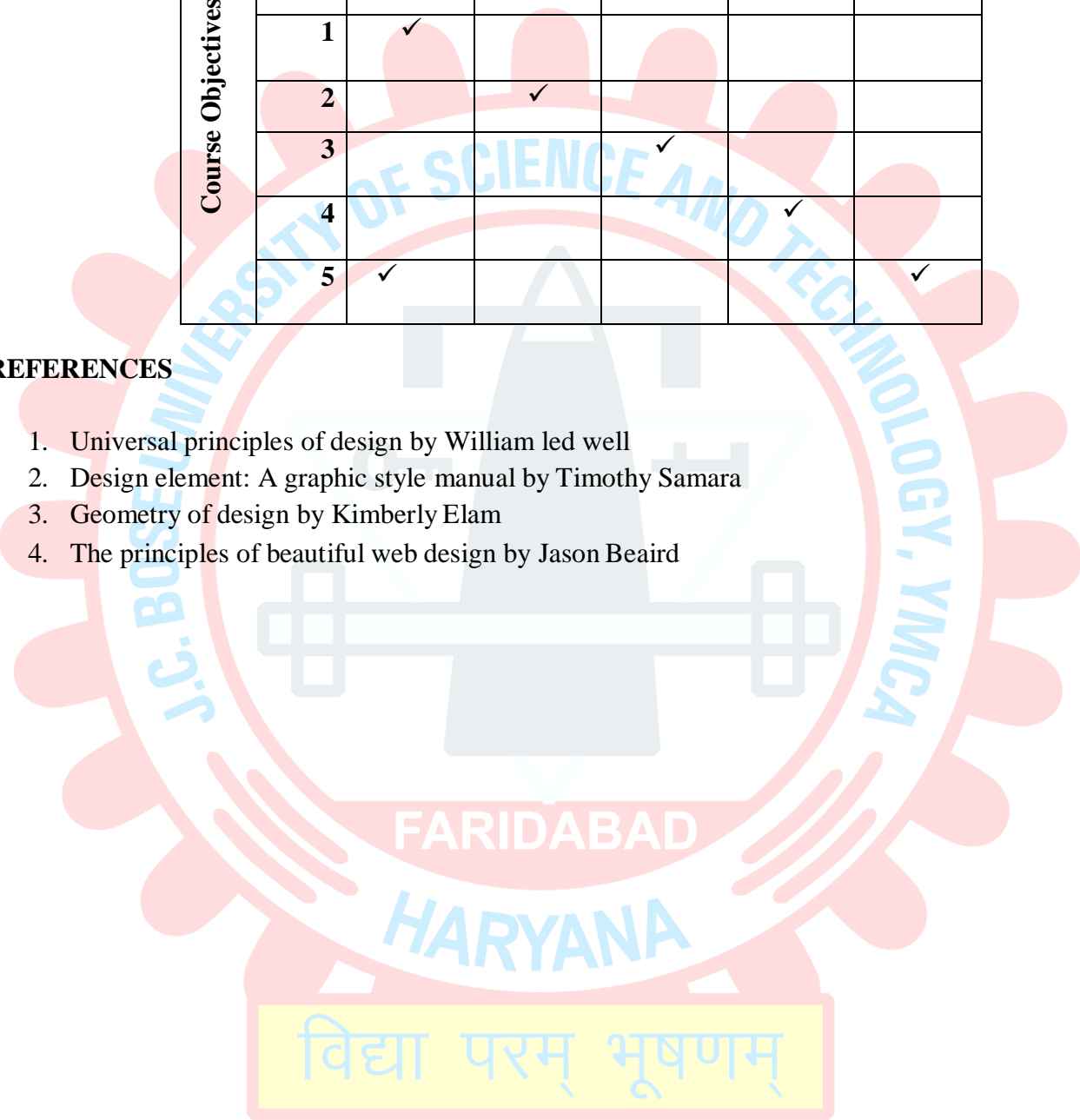
B.Sc. (Animation and Multimedia) 1st Semester
CODE: BSC-AM-21-102
SUBJECT NAME: Basics of Communication

NO OF CREDITS: 4   SESSIONAL: 25
L   P   THEORY EXAM: 75
4   0   TOTAL: 100

NOTE: Question paper has two parts. Part-1 has 10 questions each of 2 marks. It covers the entire syllabus. Attempt any four questions out of six from Part-2.

Course Objectives

1. To introduce to the process of Basics of Communication
2. To Improve listening, note taking and observational skills
3. To Familiarize about audience centered speaking
4. To Familiarize with basic etiquettes for public and private speaking
5. To encourage student to use critical thinking skills and problem solving strategies in all dimensions of animation development and production.

UNIT I: Introduction to Communication: Definition and Importance of communication, Effective Communication, Process of Communication, Objective of communication

UNIT II: Presentation Skills: Power point presentation (6 by 6 rules), Aesthetics of Power point, Extempore, Jam session, Stage Speaking,

UNIT III: Writing Skills: Application, Business Correspondence, Official Correspondence, Resume Writing. , Essay, Condensed, Expansion, Editing, Proof Reading.

UNIT IV: Etiquettes: Basic Etiquettes, Body language, Gestures, Sign language, International Signs and protocols
UNIT V: Barriers of Communication: Social, psychological and Physical Barriers.

COURSE OUTCOMES:

1. Students will be able to learn the knowledge of human communication and language processes as they occur across various contexts, e.g., interpersonal, intrapersonal, small group, organizational, media, gender, family, intercultural communication, technologically mediated communication, etc. from multiple perspectives.
2. Students will be able to analyze the audience to effectively deliver the message orally.
3. Students will be able to practice etiquettes and proper body language to communicate in society.

4. Students will be able to apply the knowledge, skills, and judgment around human communication that facilitates their ability to work collaboratively with others. Such skills could include communication competencies such as managing conflict, understanding small group processes, active listening, appropriate self-disclosure, etc.

5. Students will be able to analyze communicate effectively orally and in writing.

MAPPING OF COURSE OBJECTIVES AND OUTCOMES

		Course Outcomes				
		1	**2**	**3**	**4**	**5**
Course Objectives	**1**	✓				
	2		✓			
	3			✓		
	4				✓	
	5					✓

Reference:

1. Communication for Business by Suparna Dutta
2. The Oxford Guide to Effective Writing and Speaking by John Seely
3. Communication Skills 2015 by Sanjay Kumar
4. IyerVenkat, Mass Media Laws And Regulations in India- Published by AMIC, 2000
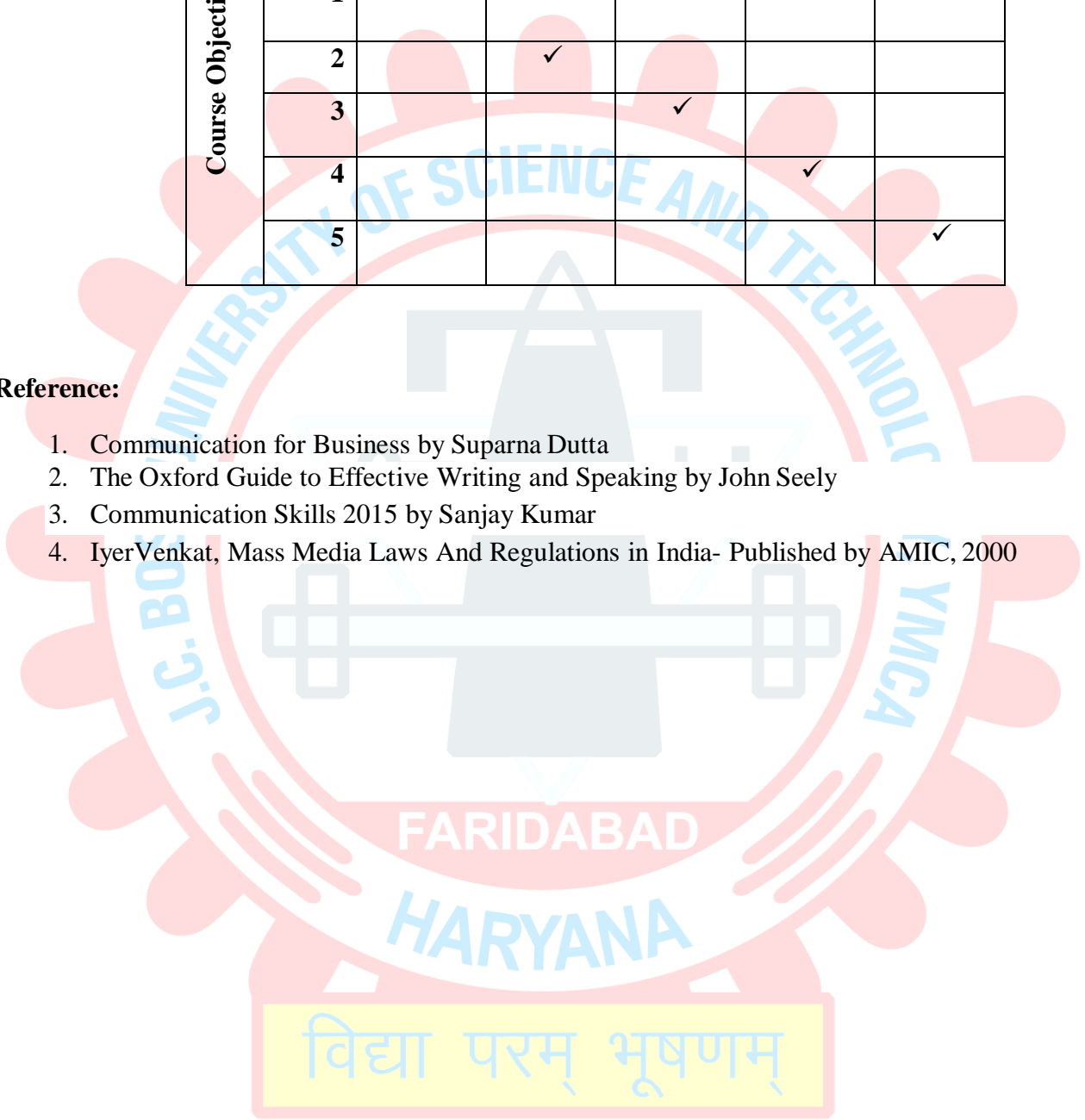
B.Sc. (Animation and Multimedia) 1st Semester
CODE: BSC-AM-19-103
SUBJECT NAME: Mathematics

NO OF CREDITS: 4

		SESSIONAL:	25
L	**P**	THEORY EXAM:	75
4	**0**	TOTAL:	100

NOTE: Question paper has two parts. Part-1 has 10 questions each of 2 marks. It covers the entire syllabus. Attempt any four questions out of six from Part-2.

Course Objectives

1. To introduce 2d and 3d coordinates in geometry.
2. To understand the dimensional concept in prospective.
3. To study basic Matrices and Vectors.
4. To Familiarize with basic understanding of mathematics in behind 3D.

UNIT I: 2D Coordinate Geometry: Cartesian and Polar coordinate system, Distance, Formula, Equation of Line, Circle, Ellipse etc.

UNIT II: 3D Coordinate Geometry: 3D coordinate System, Equation of Line, Circle, Ellipse and their attributes, Colour and Grayscale Levels, Area fill Attributes, Character Attributes, Bundled Attributes, Anti-aliasing. Basic of Transformations: translation, Scaling, Rotation etc.

UNIT III: Three-Dimensional Concepts: Three Dimensional Display Methods, 3D Transformations, Parallel Projection and Perspective Projection.

UNIT IV: Matrices and Vectors: Matrix definition and storage. Basic operations on Matrices: Addition, Multiplication, Transpose etc. Vectors and scalars, magnitude and direction of a vector, Direction cosines and direction ratios of a vector. Types of vectors (equal, unit, zero, parallel and collinear vectors), position vector of a point, negative of a vector, components of a vector, addition of vectors, multiplication of a vector by a scale.

COURSE OUTCOMES:

1. Students will be able to learn the knowledge2d and 3d coordinates in geometry.
2. Students will be able to analyze the dimensional concept in 3d prospective..
3. Students will be able to practice basic Matrices and Vectors.
4. Students will be able to apply the knowledge, skills in 3d concept.

MAPPING OF COURSE OBJECTIVES AND OUTCOMES

		Course Outcomes				
		1	2	3	4	5
Course Objectives	1	✓				
	2		✓			
	3			✓		
	4				✓	
	5					

REFERENCES

1. Plastock: Theory & Problem of Computer Graphics, Schaum Series.
2. M. D. Raisinghania, Vector Calculus, S Chand Co. Pvt. Ltd., 2013.
3. B Spain, Vector Analysis, ELBS, 1994.

B.Sc. (Animation and Multimedia) 1st Semester
CODE: BSC-AM-19-104
SUBJECT NAME: Introduction to Film Making

NO OF CREDITS: 4

		SESSIONAL:	25
L	P	THEORY EXAM:	75
4	0	TOTAL:	100

NOTE: Question paper has two parts. Part-1 has 10 questions each of 2 marks. It covers the entire syllabus. Attempt any four questions out of six from Part-2.

Course Objectives

1. To study about different films and film makers.
2. To understand about different states of films like pre-production, production and post production and the basic concept of films.
3. To acquire the knowledge of different statements like statements like story, script and storyboard.
4. To create an idea with experimental animation.
5. To create an idea with experimental film.

UNIT I: Introduction to the filmmaking process: The differences between film and video, basic film terminology, Film production steps, Film crew duties.

UNIT II: Production pipeline: Preproduction, production and post production.

UNIT III: About Script and storyboard.

UNIT IV: Looking at Movies: Film Analysis.

UNIT V: Experimental animation camera phone use only, must include a 1-page written "director's statement" of concept, 45 seconds minimum to 1-minute maximum. One thing you should keep in mind is that just as the story provides the foundation for a narrative film, a concept provides the foundation for an experimental film. The story is linear (even if the events in the story jump back and forth in time) whereas concept might be expressed simply as an impulse. It is still important to think about how you lead your audience into your experimental film and how you bring us out, the other side**.**

Course Outcomes:

1. Students will be able know about films, film-makers.
2. Students will be able know about production pipeline: pre-production, production, post-production
3. Students will be able know to Solve basic problems using different statements like story, script and storyboard.
4. Students will be able know to Apply script storyboard for experimental animation film.
5. Students will be able know about experimental films,

MAPPING OF COURSE OBJECTIVES AND OUTCOMES

<table>
<tr><td rowspan="2"></td><td rowspan="2"></td><td colspan="5" align="center">Course Outcomes</td></tr>
<tr><td align="center">1</td><td align="center">2</td><td align="center">3</td><td align="center">4</td><td align="center">5</td></tr>
<tr><td rowspan="5">Course Objectives</td><td align="center">1</td><td align="center">✓</td><td></td><td></td><td></td><td></td></tr>
<tr><td align="center">2</td><td></td><td align="center">✓</td><td></td><td></td><td></td></tr>
<tr><td align="center">3</td><td></td><td></td><td align="center">✓</td><td></td><td></td></tr>
<tr><td align="center">4</td><td></td><td></td><td></td><td align="center">✓</td><td></td></tr>
<tr><td align="center">5</td><td></td><td></td><td></td><td></td><td align="center">✓</td></tr>
</table>

REFERENCES

1. The Filmmaker's Handbook by: Steven Ascher and Edward Pincus
2. Film-making: An Introduction to the Craft of the Director (2005) by Alexander Mackendrick, edited by Paul Cronin

B.Sc. (Animation and Multimedia) 1st Semester
CODE: BSC-AM-19-105
SUBJECT NAME: Traditional Animation I

NO OF CREDITS: 4

	SESSIONAL:	25
L P	THEORY EXAM:	75
4 0	TOTAL:	100

NOTE: Question paper has two parts. Part-1 has 10 questions each of 2 marks. It covers the entire syllabus. Attempt any four questions out of six from Part-2.

Course Objectives:

1. To acquire knowledge about the Origins of Walt Disney Studios and the History of Animation .

2. To understand different techniques and equipments of animation drawing.

3. To encourage students to practice free hand drawing with animation related techniques.

4. To acquire knowledge about pose to pose drawing for animation.

5. To encourage students to practice draws from memory and practice indoor and outdoor sketching.

UNIT I: Origin of the art of Walt Disney style, History of animation, Studies of animation movies, Study of different animation style and industry, Study of old master work and style.

UNIT II: Development of free hand drawing through different techniques, controlling on drawing, controlling on line and weight in drawing, drawings with mannequins, animators tool and equipments.

Unit III: Visual and creative development, Understanding line of action, Making of gestures drawing and study of action and expressions.

Unit IV: Pose to pose sketching, rapid sketching and techniques.

Unit V: Drawing from live action and memory drawing, object drawing and nature drawing.

COURSE OUTCOMES:

1. Students will be able to classify any animation movie according to the respective animation school and eras.
2. Students will be able to create visually effective drawings for animation with acquire knowledge of drawing techniques.
3. Students will be able to implement the knowledge of gesture drawings.
4. Students will be able to drawing techniques to create realistic human action, gestures and moods.
5. Students will be able to implement knowledge of indoor and outdoor drawing to enhance observations skills.

MAPPING OF COURSE OBJECTIVE AND COURSE OUTCOMES

		Course Outcomes				
		1	2	3	4	5
Course Objectives	1	✓				
	2		✓			
	3			✓		
	4				✓	
	5					✓

REFERENCES

1. Disney Animation: The Illusion of Life by Thomas and Ollie Johnston
2. Figure drawing without a model by Ron Tiner
3. Drawing for Absolute and utter beginner by Claire Garcia
4. Pencil sketching by Thomas C Wang
5. Perspective Drawing Hand Book by Joseph D' Amelio

B.Sc. (Animation and Multimedia) 1st Semester
CODE: BSC-AM-19-106
SUBJECT NAME: Fundamentals of Information and Web Technology

NO OF CREDITS: 4

		SESSIONAL:	25
L	**P**	**THEORY EXAM:**	75
4	**0**	**TOTAL:**	100

NOTE: Question paper has two parts. Part-1 has 10 questions each of 2 marks. It covers the entire syllabus. Attempt any four questions out of six from Part-2.

COURSE OBJECTIVES:
1. To understand the major components of computer system and to learn about different Number Systems and their conversion .
2. To learn about different programming languages and their corresponding Translators.
3. To learn about the basic concepts of Networking.
4. To understand the concept of Internet and WWW and also to design web pages using HTML.
5. To understand the types and functions of OS.

UNIT I: AN OVERVIEW OF COMPUTER SYSTEM AND OPERATING SYSTEMS
Fundamentals: Evolution of computers, Hardware organization of a computer. Introduction to micro processors. Input/output Devices, Input/output ports and connectors.

UNIT II :   BASIC INTRODUCTION TO PROGRAMMING LANGUAGES: Machine Language, Assembly Languages, High level Languages, Types of high level languages, Complier, Interpreter, Assembler, Loader, Linker, Relationship between Compiler, Loader and Linker.

UNIT III: BASIC INTRODUCTION TO COMPUTER NETWORKS: Data Communication, Modulation, Network devices, LAN, LAN topologies, WAN, OSI Reference model Introduction to Internet and protocols: TCP/IP ref. model.

UNIT IV: Internet and WWW: Hypertext Transfer Protocol (HTTP), URL, HTML: Internet Language, Understanding HTML, Create a Web Page, Linking to other Web Pages, Publishing HTML Pages, Text Alignment and Lists, Text Formatting Fonts Control, E-mail Links and link within a page, Creating HTML Forms.

UNIT V: Different Number Systems:- Decimal Number System, Binary Number System, Octal Number System, Hexadecimal Number System, and their inter- conversions. Operating System Basics: Introduction to Operating system, Functions of an Operating Systems, Classification of Operating Systems

COURSE OUTCOMES:

1. Students will be able to analyze computer system components in detail. Also understand the types of format in which data can be stored in computer system's memory .
2. Students will be able to implement different types of programming languages and how with the help of translators computer understand human language.
3. Students will be able to apply and use the concept of networking and the use of Internet and World Wide Web.
4. Students will be able to design web pages using HTML.
5. Students will be able to familiar with various types of OS and various functions of OS.

MAPPING OF COURSE OBJECTIVES AND COURSE OUTCOMES

<table>
<tr><td rowspan="2"></td><td rowspan="2"></td><td colspan="5" align="center">Course Outcomes</td></tr>
<tr><td align="center">1</td><td align="center">2</td><td align="center">3</td><td align="center">4</td><td align="center">5</td></tr>
<tr><td rowspan="5">Course Objectives</td><td align="center">1</td><td align="center">✓</td><td></td><td></td><td></td><td></td></tr>
<tr><td align="center">2</td><td></td><td align="center">✓</td><td></td><td></td><td></td></tr>
<tr><td align="center">3</td><td></td><td></td><td align="center">✓</td><td></td><td></td></tr>
<tr><td align="center">4</td><td></td><td></td><td></td><td align="center">✓</td><td></td></tr>
<tr><td align="center">5</td><td></td><td></td><td></td><td></td><td align="center">✓</td></tr>
</table>

REFERENCES

1. Fundamental of Information Technology by A. Leon & M.Leon.
2. Fundamentals of Computers and Programming with C by A. K. Sharma Dhanpat Rai publications
3. Computer Networks (4th Edition) by Andrew S. Tanenbaum

B.Sc. (Animation and Multimedia) 1st Semester
CODE: BSC-AM-19-107
SUBJECT NAME: Graphics and Visual Design Lab I

NO OF CREDITS: 2

L T P TOTAL
0   0 4   4

Internal Practical: 15
External Practical: 35
TOTAL: 50
Duration of Exam: 3 Hours

Course Objectives
1. To acquire knowledge of Basic Pen Tool, Techniques, Bitmap Masking.
2. To Understand the visual elements and use them appropriately in their design also in different context.
3. To understand how to convert old black and white image to colour
4. To acquire knowledge of Experiment and use expressive styles of Type sets and effects.
5. To understand the color scheme and color balance.

S.NO.	INTRODUCTION TO GRAPHICS PRACTICAL
1.	Create visual art with tools (Introduction to digital tools, power and limitations)
2.	Create Background with filters
3.	Create wallpaper filters and blending modes
4.	Create artwork with Layers (basic principles: pixel, vector, layers, resolution, color mode)
5.	Create 3D effects with Layer blending option
6.	Photo retouching
7.	Color editing / Color balance
8.	Black and white to colour convert.
9.	Masking
10	Create Text Styles and effect

Course Outcomes:

1. Students will be able to implement knowledge of Raster (Bitmap) graphics by using adobe Photoshop software.
2. Students will be able to understand the concept of creating textures, brushes, abstract and thematic designs.
3. Students will be able to explore the aesthetical aspects of color.
4. Students will be able to colour old images
5. Students will be able to typography and its power for expressive qualities

MAPPING OF COURSE OBJECTIVES AND COURSE OUTCOMES

		Course Outcomes				
		1	**2**	**3**	**4**	**5**
Course Objectives	**1**	✓				
	2		✓			
	3			✓		
	4				✓	
	5					✓

REFERENCES
1. Adobe CC Classroom in a Book (2017) by Andrew Faulkner
2. Adobe Photoshop CC for Dummies by Peter Bauer
3. Corel DRAW X8 in Simple Step

विद्या परम् भूषणम्

B.Sc. (Animation and Multimedia) 1st Semester
CODE: BSC-AM-19-108
SUBJECT NAME: Fundamentals of Information and Web Technology Lab

NO OF CREDITS: 2

L	**T**	**P**	**TOTAL**
0	**0**	**4**	**4**

Internal Practical: 15
External Practical: 35
TOTAL: 50
Duration of Exam: 3 Hours

Course objectives

1. To understand the basics of computer hardware, software and use basic utilities of computer like paint; printing, saving and scanning of documents.
2. To be able to use platforms like MS word, Excel and PowerPoint.
3. To be able to use the basic commands of HTML.
4. To design a webpage, forms and frames using HTML
5. To execute basic system and file commands using MS-DOS.

| S.NO.	PRACTICAL
1.	Introduction to computer, its peripherals, Maintenance of computers using antiviral programs, formatting computers, Handling of computer files and folders use of DOS command, directory & file name & path.
2.	Introduction to various packages and software's and Installation of software on Computer.
3.	Use of MS DOS commands including system commands, creation of batch files and various editors. System booting, Formatting disk, back process, File making and protecting files, Directory, file name and path.
4.	Word Basics: Starting Word, Creating Documents, Parts of Word Window, Some 'Don'ts', Formatting Features, Menus, Commands, Toolbars and their Icons, Mail merge, Creating different sections in word file.
5.	Excel Basics :The interface, Auto-complete Formatting , Basic calculations, Charts and Pivot, Tables, Charts, Pivot tables, Conditionals and Lookup Tables, Conditional functions, IF functions, Lookup functions, Conditional Formatting and Lists , Conditional formatting, Sorting lists, Filtering lists, Drop-Down Lists and Dynamic Charts, Drop-down lists, OFFSET function, Dynamic chart.
6.	Scanning, Saving and Printing of documents
7.	Power Point Basics: Introduction, Toolbars, Their Icons and Commands.
8.	Using design software's, paint brush, toolbar and various commands.

9.	Develop static pages (using Only HTML) of an online Book store. The website should consist the following pages: Home page, Registration and user Login User Profile Page and Books catalogue Shopping Cart and Order Conformation
10.	To create the several frames using HTML and display to the web browser.

Course Outcomes

1. Students will able to understand the basics of computer hardware, software and use basic utilities of computer like paint; printing, saving and scanning of documents .
2. Students will learn to execute basic system and file commands using MS-DOS.
3. Students will able to use platforms like MS word, Excel and PowerPoint.
4. Students will able to use the basic commands of HTML.
5. Students will able to design a webpage, forms and frames using HTML

MAPPING OF COURSE OBJECTIVES AND COURSE OUTCOMES

		Course Outcomes				
		1	2	3	4	5
Course Objectives	1	✓				
	2		✓			
	3			✓		
	4				✓	
	5					✓
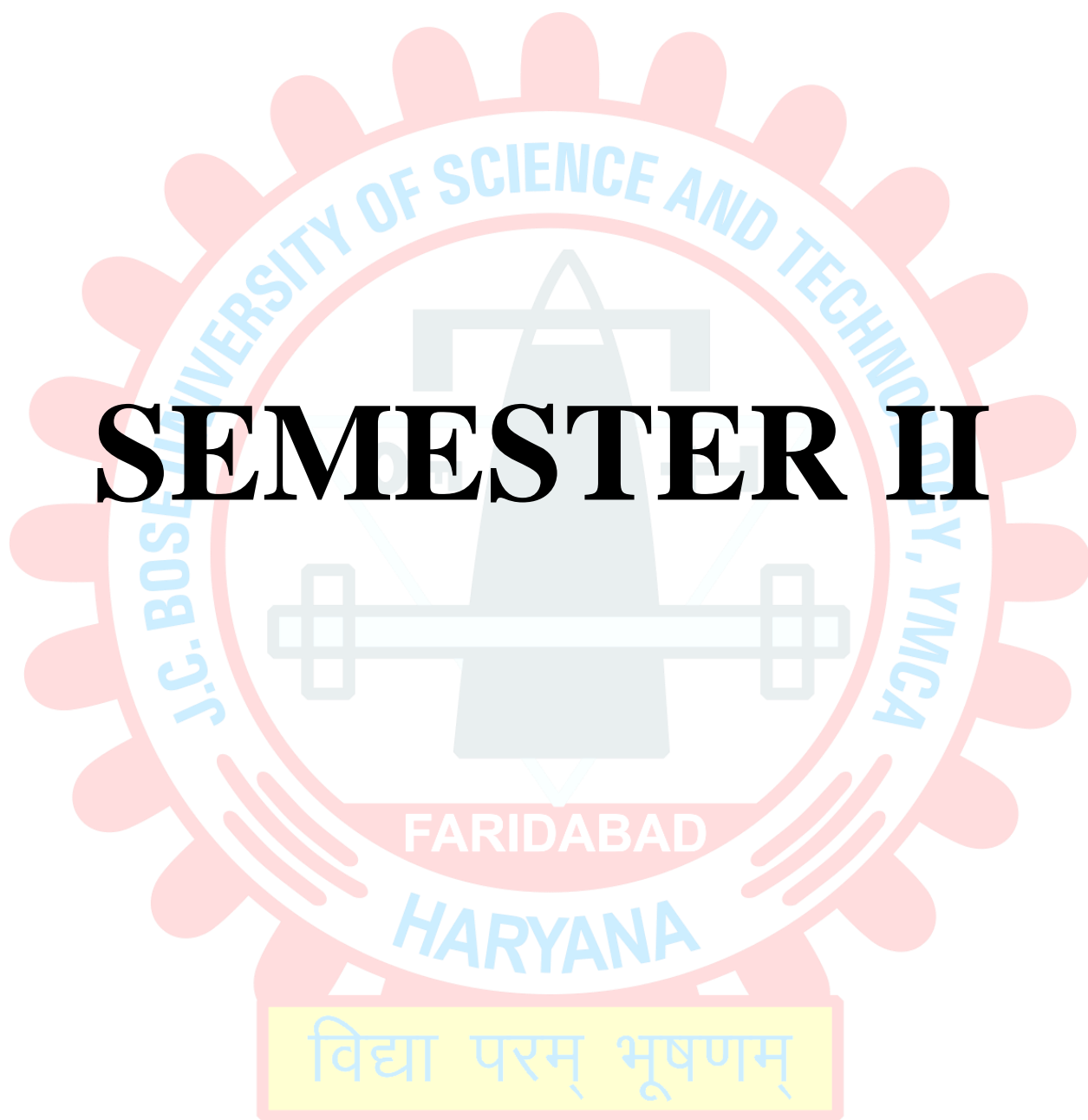
SEMESTER II

B.Sc. (Animation and Multimedia) 2nd Semester
CODE: BSC-AM-19-201
SUBJECT NAME: Visual Art II

NO OF CREDITS: 4

		SESSIONAL:	25
L	P	THEORY EXAM:	75
4	0	TOTAL:	100

NOTE: Question paper has two parts. Part-1 has 10 questions each of 2 marks. It covers the entire syllabus. Attempt any four questions out of six from Part-2.

Course objectives:

1. To understand various aspects of the design process,conceptualization, and visualization of the design.
2. To understand the basic perspective views in the drawing.
3. To learn the importance of Human figure study and animal study through anatomy.
4. To acquaint practical application of the color theories, focusing on the interaction and relativity of color.
5 To analyze dynamic poses of figures, figures in action and in movement.

UNIT I: Advance Volume Construction, human and animal anatomy, Study of human part face, hands, foot, torso, nose, lips,

UNIT II: Balance and perspective applied to figures, study dynamic poses of figures, figures in action and in movement.

UNIT III: Introduction to Perspective Drawing (Introduction to Perspective - Different types of Perspective - Different types of Eye Levels) , forshortening

UNIT IV: Color scheme; monochromatic, analogous, complementary, split complementary, triadic and rectangle, (Or tetradic)

UNIT V: Introduction to Visual Design, Visual Hierarchy, Line type, Line Weight

Course outcome:

1. Students will be able to visualize their drawings using perspective.
2. Students learn to draw Human anatomy and animal anatomy using basic proportion.
3. Students will be able to demonstrate simple Color designs and compositions, value of colors in a given composition, including color systems and scheme.
4. Students will be able to apply different design concepts, targeted audience and visibility of the style, shape and content.
5. Students will be able to understand the figures in action and in movement, dynamic poses.

MAPPING OF COURSE OBJECTIVES AND COURSE OUTCOMES

		Course Outcomes				
		1	**2**	**3**	**4**	**5**
Course Objectives	**1**	✓				
	2		✓			
	3			✓		
	4				✓	
	5					✓

NO OF CREDITS: 4

B.Sc. (Animation and Multimedia) 3rd Semester
CODE: BSC-AM-21-202
SUBJECT NAME: Creative Writing

COURSE OBJECTIVE :
1. To work on the diction of the students.
2. To make students aware about the basic genres of writing and help them to blend it with animation.
3. To make students aware about some basic elements of creative writing.
4. To hone students skills in self-expression through execution of creative writing.
5. To make them aware about different structures of writing.

UNIT I : Introduction to creative writing – Fiction & Non-fiction, Literary devices.

UNIT II : Commercial writing – Report writing, Advertisement writing, Tag lines, Product description writing.

UNIT III : Story Writing – What is story?, Types of stories – fantasy, adventure, travel writing, gothic etc., Narrative device, Types of characters.

UNIT IV : Poems, Dialogue Writing, Drama, Figures of speech

UNIT V : Script Writing and Screenplay

COURSE OUTCOME

1. Students will understand principles of creative writing, including form, technique, and style.
2. Students will be able to apply principles of creative writing to improve communication in a variety of contexts, including personal, academic, and public life.
3. Students will be able to understand and creatively develop different writing styles.
4. Students will be able to create their own scenarios and stories.
5. Students will be able to imply variant literary techniques in their writings.

MAPPING OF COURSE OBJECTIVES AND COURSE OUTCOMES

<table>
<tr><td rowspan="2"></td><td colspan="5">Course Outcomes</td><td></td></tr>
<tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td></tr>
<tr><td rowspan="5">Course Objectives</td></tr>
</table>

		Course Outcomes				
		1	2	3	4	5
Course Objectives	1	✓				
	2		✓			
	3			✓		
	4				✓	
	5					✓

References

REFERENCE
1. IyerVenkat, Mass Media Laws And Regulations in India- Published by AMIC, 2000
2. Introduction to mass Communication : Medial Literacy & Culture By Stanley Baran The Tata McGraw Hill
3. The Media in your life -By Jean Folkerts & Stephen Lacy by PEARSON PUBLICATION.

B.Sc. (Animation and Multimedia) 2nd Semester
CODE: BSC-AM-19-203
SUBJECT NAME: Photography & Film Studies

NO OF CREDITS: 4

	SESSIONAL: 25
L P	THEORY EXAM: 75
4 0	TOTAL: 100

NOTE: Question paper has two parts. Part-1 has 10 questions each of 2 marks. It covers the entire syllabus. Attempt any four questions out of six from Part-2.

Course Objectives

1. To study the history of photography, camera and Indian history of cinema.
2. To understand about films, theme, cinematography.
3. To acquire knowledge the camera's components and function of digital camera.
4. To learn about camera angles, shot sizes, Camera movements
5. To acquire knowledge of outdoor photography.

UNIT I: History: Brief History of Photography and chronicle of Development of Camera.

UNIT II: Film appreciation: about film, Theme, Story and screen play, cinematography, Sound and editing, Short film, Documentary and feature film, Movie genres, Western film, History of Indian cinema, Others forms, Impact of film in society and Analysis.

UNIT III: Camera fundamentals: Working of Camera: Components, Functions & Types of Camera, Camera and lens, Element of photography, Understating light, Compositing rules.

UNIT IV: Essentials of screen: Camera angles, Shot sizes, Camera movements.

UNIT V: Outdoor study of photography- capture silhouette image, monochromatic image

विद्या परम् भूषणम्

Course Outcomes:

1. Students will be able to know about photography and camera.
2. Students will be able to use of camera in films and videos.
3. Students will be able to solve basic problems in cinematography using different statements like lights, camera angles, movements, shots
4. Students will be able to apply lights and camera fundamentals and for films and photography.
5. Students will be able to acquire knowledge of outdoor photography.

		Course Outcomes				
		1	**2**	**3**	**4**	**5**
Course Objectives	**1**	✓				
	2		✓			
	3			✓		
	4				✓	
	5					✓

REFERENCES

1. The beginner's photography guide by Chris Gatcum
2. Digital photography for beginners by Angela Pierce.
3. Film direction Shot by shot, by Steve Katz

B.Sc. (Animation and Multimedia) 2nd Semester
CODE: BSC-AM-19-204
SUBJECT NAME: Traditional Animation II

NO OF CREDITS: 4

	SESSIONAL: 25
L P	**THEORY EXAM:** 75
4 0	**TOTAL:** 100

NOTE: Question paper has two parts. Part-1 has 10 questions each of 2 marks. It covers the entire syllabus. Attempt any four questions out of six from Part-2.

Course Objectives:

1. To understand advance drawing techniques for animation with the help of mannequins.
2. To acquire knowledge of Timing for animation.
3. To understand Animation principle.
4. To understand the use of light box equipment for animation.
5. To understand the principles of animation with the help of basic cell animation exercises.

UNIT I: Drawing Skill development for animation.

UNIT II: Understanding: Principles of Animation: Timing, Slow Out & Slow In.

UNIT III: Principles of Animation: Squash & Stretch.

UNIT IV: Principles of Animation: Arc, Follow through & Overlapping Action.

UNIT V: Principles of Animation: Straight Ahead Action and Pose to Pose.

Course Outcomes:-

1. Students will be able to create human action figures with enhanced drawing skills.
2. Students will be able to implement knowledge of light box equipment to create flipbook animation.
3. Students will be able to implement knowledge of basic animation principles to create cell animation exercises like bounce ball animation, paper fly animation and various similar animations.
4. Students will be able to develop Pendulum animation using principle of arc.
5. Students will be able to develop a foundation for understanding the advance animation Principles and body mechanics.

MAPPING OF COURSE OBJECTIVE AND COURSE OUTCOMES

		Course Outcomes			
	1	**2**	**3**	**4**	**5**
1	✓				
2		✓			
3			✓		
4				✓	
5					✓

(Row labels: Course Objectives 1–5)

REFERENCES

1. Sketching for Beginners: Step-by-step Guide to Getting Started With Your Drawing
2. Timing for animation by Harold Whitaker
3. Animation survival kit by Richard Williams
4. Cartoon Animation by Preston Blair
5. Cartooning: Animation 1 with Preston Blair: Learn to Animate Cartoons Step by Step

B.Sc. (Animation and Multimedia) 2nd Semester
CODE: BSC-AM-19-205
SUBJECT NAME: Introduction to Programming Languages and Computer Graphics

NO OF CREDITS: 4

		SESSIONAL:	25
L	**P**	**THEORY EXAM:**	**75**
4	**0**	**TOTAL:**	**100**

NOTE: Question paper has two parts. Part-1 has 10 questions each of 2 marks. It covers the entire syllabus. Attempt any four questions out of six from Part-2.

COURSE OBJECTIVES:

1. To understand the building blocks of C language like variables, data types, managing I/O etc and different statements like sequential, decision making, iterative such as if-else, loops.
2. To understand the concept of arrays and string, pointers and understand functions also.
3. On completing this course students will be able to analyse where to apply computer graphics.
4. To analyse different display systems and their techniques.
5. To design the algorithms for generating geometric shapes and colour filling algorithms, two-dimensional Geometric Transformations and clipping.

UNIT I: AN OVERVIEW OF C: Constants, Variables and Data types, operators and Expressions, managing I/O operations, Decision Making and branching, Decision Making and looping, Arrays, Character Arrays and Strings, User Defined Functions.

UNIT II: POINTERS IN C: Introduction, Understanding Pointers, Accessing the address of a variable, Declaring Pointer Variables, Initialization of Pointer Variables, Accessing a variable through its pointer.

UNIT III: An Introduction Graphics System: Computer Graphics and Its Types, Application of computer graphics, Graphics Systems : Video Display Devices, Raster Scan Systems, Random Scan Systems, Graphics Monitors and Work Stations, Input Devices, Hard Copy Devices, Graphics Software.

UNIT IV: Output Primitives and Attributes of Output Primitives : Output Primitive Points and Lines, Line Drawing Algorithms, Circle Generating Algorithms, Scan-Line Polygon Fill Algorithm, Inside-Outside tests, Boundary-Fill Algorithm, Flood Fill Algorithm, Cell Array, Character Generation.

UNIT V: Two-dimensional Geometric Transformations: Basic Transformations, Matrix Representation and Homogeneous Coordinates, Composite Transformations, Reflection and Shearing. Two-Dimension Viewing : The viewing Pipeline, Window to view port coordinate transformation, Clipping Operations, Point Clipping, Line Clipping, Polygon Clipping, Text Clipping, Exterior Clipping.

COURSE OUTCOMES:

1. Students will be able to learn how to write instructions in C language.
2. Students will be able to analyze their own modules with the help of functions, pointer
3. Students will be able to solve recursive problems, concepts of array and strings.
4. Students will be able to have the clear idea regarding the applications of the computer graphics, Design algorithms for different geometric shapes
5. Students will be able to implement scan line polygon filling, boundary filling, create transformations (rotation, scaling, translation, shearing) on geometric objects, draw line clipping and polygon clipping by different techniques

MAPPING OF COURSE OBJECTIVES AND COURSE OUTCOMES

		Course Outcomes				
		1	**2**	**3**	**4**	**5**
Course Objectives	**1**	✓				
	2		✓			
	3			✓		
	4				✓	
	5					✓

REFERENCES

1. Gill, Nasib Singh : Essentials of Computer and Network Technology, Khanna Books Publishing Co., New Delhi
2. Donald Hearn and M. Pauline Baker : Computer Graphics, PHI Publications.
3. Plastock: Theory & Problem of Computer Graphics, Schaum Series.
4. Foley & Van Dam : Fundamentals of Interactive Computer Graphics, Addison-Wesley.
5. Newman : Principles of Interactive Computer Graphics, McGraw Hill

B.Sc. (Animation and Multimedia) 2nd Semester
CODE: BSC-AM-19-206
SUBJECT NAME: Graphics & Visual Design Lab II

NO OF CREDITS: 2

L	**T**	**P**	**TOTAL**		
0	**0**	**2**	**2**		

Internal Practical: 15
External Practical: 35
TOTAL: 50
Duration of Exam: 3 Hours

Course Objectives

1. Introduction to Graphic Design to discuss the visual communication process
2. Use simple visual elements in communication successfully.
3. To Aesthetically explore the design concepts using typography
4. Create illustrations for print media
5. To learn character illustration based on real images.

S.NO.	Illustration and Info-graphics PRACTICAL
1.	Layout Designing (Principles of composition & layout, Types of Layout)
2.	Design an illustration (Color Scheme)
3.	Design a vector art (Introduction to Graphic, Print Art)
4.	Design a letterhead.
5.	Design a logo (Golden Ratio)
6.	Design a pamphlet/Flyer/Brochure (Visual Hierarchy)
7.	Design a poster (Visual Hierarchy)
8.	Design a headline for different industries (Legibility & Readability)
9.	Design your favorite cartoon character
10.	Product and character illustration
11.	Design an unique font (A to Z) (Understanding Fonts, Express Through Typography)

Course Outcomes:

1. Students will be able to learn vector graphics by using adobe illustrator software.
2. Students will be able to design a symbol or a logo with specific objective.
3. Students will be able to create Different aspects of Letter format.
4. Students will be able to take up design problems in designing Visiting cards, Letterheads, Envelope Design, Greetings Designs Invitation Cards etc.
5. Students will be able to learn character illustration based on real images.

MAPPING OF COURSE OBJECTIVES AND COURSE OUTCOMES

		Course Outcomes				
		1	**2**	**3**	**4**	**5**
Course Objectives	**1**	✓				
	2		✓			
	3			✓		
	4				✓	
	5					✓

REFERENCES

1. Adobe CC Classroom in a Book (2017) by Andrew Faulkner
2. Adobe Photoshop CC for Dummies by Peter Bauer

B.Sc. (Animation and Multimedia) 2nd Semester
CODE: BSC-AM-19-207
SUBJECT NAME: 3D Designing Lab I

NO OF CREDITS: 2

L T P TOTAL
0 0 4 4

Internal Practical: 15
External Practical: 35
TOTAL: 50
Duration of Exam: 3 Hours

Course Objectives

1. To acquire knowledge about 3ds software
2. Introduction to 3D designing discuss the 3d Modeling process
3. To aesthetically explore the design concepts using modeling tools.
4. To create 3d model for movies and games.
5. To understand the difference between low poly and high poly.

S.NO.	PRACTICAL
1.	Introduction to 3D interface
2.	Modeling tools
3.	Polygon and nurvs modeling
4.	Basic Inorganic and organic modeling
5.	Hard surface modeling
6.	Create interior and exterior scene
7.	Props modeling and Low poly modeling for gaming.

Course Outcomes:
1. Students will be able to learn 3D modeling by using 3D software.
2. Students will be able to design 3D model with specific objective.
3. Students will be able to create Different type of model for movies and games.
4. Students will be able to take up modeling problems in 3d Models.
5. To understand the difference between low poly and high poly.

MAPPING OF COURSE OBJECTIVES AND COURSE OUTCOMES

		Course Outcomes				
		1	**2**	**3**	**4**	**5**
Course Objectives	**1**	✓				
	2		✓			
	3			✓		
	4				✓	
	5					✓

REFERENCES:
1. Autodesk 3ds Max 2014 Bible By Kelly L. Murdock, Publisher: Wiley
2. Autodesk Maya 2018 Basics Guide By Murdoch Kelly, Publisher: SDC Publications
3. 3D Modelling and Animation By: Michael G. Publisher : Igi Publishing

B.Sc. (Animation and Multimedia) 2nd Semester
CODE: BSC-AM-19-208
SUBJECT NAME: Programming Languages and Computer Graphics Lab

NO OF CREDITS: 2

Internal Practical:			15

L T P TOTAL
0   0   4   4

Internal Practical: 15
External Practical: 35
TOTAL: 50
Duration of Exam: 3 Hours

Course objectives
1. To explain basic concepts and syntax of computer programming so that student can test and execute the program and correct syntactical as well as logical errors.
2. To Learn implement Conditional branching, iteration and recursion.
3. To learn array, strings, functions, structures etc in C programming
4. To learn to draw some graphical objects like line, circle .
5. To make some graphical transformations (rotation, scaling etc) and color filling in graphical objects using C programming.

S.NO.	PRACTICAL
1.	Write a Program to find largest among three numbers
2.	Write a Program to check if number is Prime
3.	Write a Program to print sum of digits of a number
4.	Write a Program to print even numbers from 2 to 100
5.	Write a Program to print the reverse of a number entered by user
6.	Write a Program to print table of a number
7.	Write a Program to calculate roots of a quadratic equation
8.	Write a Program to print the Fibonacci series
9.	Write a Program to calculate factorial of a number
10.	Write a Program to find largest and smallest element in an array
11.	Write a Program to find sum of two 2-D arrays
12.	Write a Program to multiply two 2-D arrays
13.	Write a Program to use inbuilt string functions.
14.	Write a Program to check whether entered string is palindrome
15.	Write a Program to calculate factorial of a number using functions
16.	Write a Program to find factorial using recursion
17.	Write a Program to find length of a string using pointers
18.	Write a Program to calculate marks using array of structures.

19.	Write a Program to copy the contents of one file to another file
20.	Write the program to draw a landscape using inbuilt graphics functions
21.	Write the program to draw a line using DDA algorithm.
22.	Write the program to draw a landscape using inbuilt graphics functions.
23.	Write the program to draw a circle using Bresenham's circle drawing algorithm
24.	Write the program to translate a polygon.
25.	Write the program to rotate a polygon.

Course Outcomes:
1. Students will able to explain basic concepts and syntax of computer programming so that student can test and execute the program and correct syntactical as well as logical errors.
2. Students will able to implement Conditional branching, iteration and recursion.
3. Students will able to use array, strings, functions, structures etc in C programming
4. Students will able to draw some graphical objects like line, circle etc and
5. Students will able to make some graphical transformations (rotation, scaling etc) and color filling in graphical objects using C programming.

MAPPING OF COURSE OBJECTIVES AND COURSE OUTCOMES

		Course Outcomes				
		1	**2**	**3**	**4**	**5**
Course Objectives	**1**	✓				
	2		✓			
	3			✓		
	4				✓	
	5					✓

B.Sc. (Animation and Multimedia) 2nd Semester
CODE: BSC-AM-19-209
SUBJECT NAME: Digital 2D Animation I Lab

NO OF CREDITS: 2

L T P TOTAL
0 0 2 2

Internal Practical: 15
External Practical: 35
TOTAL: 50
Duration of Exam: 3 Hours

Course Objective

1. To recognize, locate and navigate through user interface, various panels and tools.
2. To understand, create, and edit symbols and uses.
3. To learn about filters and instances to understand perspective view.
4. To explore the possibilities of interactive media through the software.
5. To create social media animated posters

S.NO.	PRACTICAL
1.	Activity to learn Interface and workspace
2.	Draw scene to learn document settings, alignment, tools and keyboard shortcuts
3	Draw and animate a simple object to save, publish and test the file
4	Create graphic art in digital animation tool.
5	Create sky – Movie clip, sun and moon – single graphic, and a button of any shape
6	Create ball bounce animation with classic tween
7	Create morphing objects animation with shape tween
8	Create Pendulum animation with motion tween
9	Create cutout animation using sketches.
10	Create gif and Loop Animation. Using Posters.

COURSE OUTCOMES:

1. Students will be able to learn the overview and working of the software by creating simple object and converting them to different modes and symbols.
2. Students will be able to understand utilization of various tools, techniques and concepts of symbols and tweens to create simple and attractive animation for web or screen.
3. Students will be able to analyze an interactive scene with animation.
4. Students will be able to apply tools and techniques for create basic digital 2D animation
5. Students will be able to create Gif and loop animation for social media platform.

MAPPING OF COURSE OBJECTIVES AND COURSE OUTCOMES

		Course Outcomes				
		1	**2**	**3**	**4**	**5**
Course Objectives	**1**	✓				
	2		✓			
	3			✓		
	4				✓	
	5					✓

References:

1. Flash Professional Bible Published by Wiley Publishing (Robert R & Snow D.)
2. Labrecque: Learn Adobe Ani CC Mul by Joseph Labrecque and Rob Schwartz
3. Adobe Animate CC Classroom in a book (2018)

B.Sc. (Animation and Multimedia) 2nd Semester
CODE: AUD -01
SUBJECT NAME: GERMAN- I

NO OF CREDITS: 0

		SESSIONAL:	25
L	**P**	**THEORY EXAM:**	**75**
2	**0**	**TOTAL:**	**100**
		Duration Exam:	**3 hours**

Unit-I   Introduction

Basic Greetings in German

Unit-II   Counting 1-100

Basic questions in German

Introduce yourself

Unit-III   Personal Pronouns

Verb conjugations (regular verbs)

Unit-IV   Articles- der, die, das

Vocabulary (classroom objects with articles)

Unit-V   Days, months, seasons + im/am

Time (formal & informal)

Counting 1000+

Unit-VI   Verb Conjugations (Irregular verbs)

Separable Verbs

Reference Books:

1. Netzwerk A1 by Paul Rusch

2. Studio d A1 by Funk, Kuhn, Demm

B.Sc. (Animation and Multimedia) 2nd Semester
CODE: AUD -02
SUBJECT NAME: GERMAN- II

NO OF CREDITS: 0

SESSIONAL:	**25**

L   P
2   0

THEORY EXAM:	**75**
TOTAL:	**100**
Duration Exam:	**3 hours**

Unit-I   Hobbies

Professions

Unit-II   Family

Possesive pronouns and articles

Unit-III   Nominative and Accusative case

Definite and indefinite articles in German

Unit-IV   Articles- der, die, das

Vocabulary (classroom objects with articles)

Unit-V   Modal Verbs

Imperative

Unit-VI   W-questions

Introduction

Reference Books:

1. Netzwerk A1 by Paul Rusch
2. Studio d A1 by Funk, Kuhn, Demme

B.Sc. (Animation and Multimedia) 2nd Semester
CODE: AUD -03
SUBJECT NAME: FRENCH I

NO OF CREDITS: 0

		SESSIONAL:	25
L	**P**	**THEORY EXAM:**	**75**
2	**0**	**TOTAL:**	**100**
		Duration Exam:	**3 hours**

Each lesson is divided into three parts which consist of Dialogue, Vocabulary and Grammar.

Description du materiel

Unit I:　　　　**OBJECTIFS COMMUNICATIFS**

- S'initiera'laculturefrancaise
- De'crirelinepersonne
- Direlanationalite'
- Parler des saisons
- Localizer des objects
- Demander l donner des goûts et des préférences
-

Unit II:　　　　**GRAMMAIRE/VOCABULAIRE**

- Les verbes en(er)
- Les pronoms sujels
- Les articles definis
- Le corps humain
- Les verbes en(ir)
- Lesarticlesinde'finis
- La negation
- Les verbes en (ger)
- Lefe'minimetlepluriel
- Les expressions avec faire
- Les (nombres) (1-100)
- Les prepositions
- L'interrogations
- Les verbs en (re) et irreguliers
- Les repas francais
- Les adjectifs possessifs
- De'crireuneville

References:

1. APPRENONS LE FRANCAIS   Methode de Francais by Mahitha Ranjit , Monica Singh

2. LE NOUVEAU SANS FRONTIERES Methode de Francais by Philippe Domonique, Jacky Girardet

3. Took reference from Bhartia Vidya Bhawan institute of foreign languages.

B.Sc. (Animation and Multimedia) 2nd Semester
CODE: AUD -04
SUBJECT NAME: FRENCH II

NO OF CREDITS: 0

	SESSIONAL: 25
L P	**THEORY EXAM:** 75
2 0	**TOTAL:** 100
	Duration Exam: 3 hours

Each lesson is divided into three parts which consist of Dialogue, Vocabulary and Grammar.

Description du materiel

Unit-I: **OBJECTIFS COMMUNICATIFS**

- S'initiera'laculturefrancaise
- Salut
- Parler dela quantite
- Decrire une personne
- Parler de la famille
- Decrire la journee
- Direl'heure
- Parler des saisons
- Interroger sur/ Parler de la Sante

Unit-II: **GRAMMAIRE/ VOCABULAIRE**

- Les verbes en(er, ir, re)
- La negation
- Les articles
- Les adverbes de quantite
- Le feminin et le pluriel des noms et des adjectifs
- La position des adjectifs
- L'infinitifapresunautreverbe
- Les membres de la famille
- Les verbes pronominaux
- Les nombres cardinaux et ordinaux
- Les saisons, les jours de la semaine et les mois de l'annee

- Troisformesd'interrogation
- L'interrogationnegativeet(si)
- Les expressions avec (avoir)
- Les animaux
- Les couleurs

References:

1. a) APPRENONS LE FRANCAIS Methode de Francais by Mahitha Ranjit , Monica Singh

   b) LE NOUVEAU SANS FRONTIERES Methode de Francais by Philippe Domonique, Jacky Girardet

2. Took reference from Bhartia Vidya Bhawan institute of foreign languages.

B.Sc. (Animation and Multimedia) 2nd Semester
CODE: AUD -05
SUBJECT NAME: SANSKRIT- I

NO OF CREDITS: 0

SESSIONAL:	**25**
THEORY EXAM:	**75**
TOTAL:	**100**
Duration Exam:	**3 hours**

L P
2 0

Duration of Exam: 3 hrs.

ईककई-1: सकककत वककककककक, वकक-ववककछ्द, स ंोकक शककद- न ◌�, ककलरग,

ननसकलश,सवककभ, ◌�कक-नद.

कक- १ स ५०, ककत◌�न- र ◌�ककय एव र ◌�ककय (अस, नकक, गभ), अककमम नरयचम .

ईककई-3: ककत◌�न- र ◌�ककय (अस, नकक, क), पर ◌�ककभ, सल◌ककजम◌�क ककभ, न◌ककष्◌म◌� क ककभ,

ईशवककदकक

(कवरअकक).

कक.

ईककई-5: शककद ◌�न- ककरक, क ◌ांकक   , नकक, सववकक, पर , व ◌ां'

, ककत◌�न- कक◌�ककय(अस, नकक, गभ), सभम रखन.

ईककई-6: सककस –त◌ककन ◌�, अ◌ठत गदककश, अशद्धध-ककधन, ककतम-यचकक.

◌�ककक्फ:

क. लर., ककडकक.

2

.

भ

ण

कक

कक

क

स

कक

B.Sc. (Animation and Multimedia) 2nd Semester
CODE: AUD -06
SUBJECT NAME: SANSKRIT- II

NO OF CREDITS: 0

			SESSIONAL:	25
L	**P**		**THEORY EXAM:**	**75**
2	**0**		**TOTAL:**	**100**
			Duration Exam:	**3 hours**

ककस एव सककजन, एक-दवव -अनक, ककवय सलककध(ककघ सलककध, गककसलककध, ककई-2.सलकसंख्वत्मक्क सलककध, नव � न सलककध). ।ँ ककन , सककक्क- १ स ४ ककत ननसकलरग.

ककककक्क एवभ ववनमकककककक्क, कककक्कठहक्कठदन� क ककभ, सककक्क- ५० स १००, ईशवककदक्क (कवरअक्क).

ईकक**ई-4:** � ककमम - ककमन्न, तककमत, सभम रखन, सककस- कभककयम.
ककय सधध, छककवभ सधध,जककतककवभ सधध, ककतचककवभ सधध, � ककवभ सधध.

ईकक**ई-6:** अन�ठत गदककश, अशदधध-ककधन,कककककककन, ककतम-यचकक, कककक्कमन्नर यवतन.

�⊡⊡⊡:
क. लर., ककडकक.

2
.

भ
ण
कक
कक
क

स
कक
क
क
त

कक
कक

JCB UST, YMCA, FARIDABAD

क

B.Sc. (Animation and Multimedia) 2nd Semester
CODE: AUD -07
SUBJECT NAME: PERSONALITY DEVELOPMENT

NO OF CREDITS: 0

		SESSIONAL:	25
L	**P**	**THEORY EXAM:**	75
2	**0**	**TOTAL:**	100
		Duration Exam:	3 hours

1. To learn to achieve the highest goal happily

2. To become a person with stable mind, pleasing personality and determination

3. To awaken wisdom in students

Unit-I: Neetisatakam-Holistic development of personality   Verses- 19,20,21,22 (wisdom)

Verses- 29,31,32 (pride& heroism)

Verses- 26,28,63,65 (virtue)

Verses- 52,53,59 (dont's)

Verses- 71,73,75,78 (do's)

Unit-II: Approach to day to day work and duties.

Shrimad BhagwadGeeta : Chapter 2-Verses 41, 47,48,
Chapter 3-Verses 13, 21, 27, 35,

Chapter 6-Verses 5,13,17, 23, 35,
Chapter 18-Verses 45, 46, 48.

Unit-III: Statements of basic knowledge.

Shrimad Bhagwad Geeta: Chapter2-Verses 56, 62, 68

Chapter 12 -Verses 13, 14, 15, 16,17, 18

Personality of Role model. Shrimad Bhagwad Geeta:
Chapter2-Verses 17,   Chapter 3-Verses 36,37,42,
Chapter 4-Verses 18, 38,39

Chapter18 – Verses 37,38,63

References:

1. "Srimad Bhagavad Gita" by Swami SwarupanandaAdvaita Ashram (Publication Department), Kolkata

2. Bhartrihari's Three Satakam (Niti-sringar-vairagya) by P.Gopinath,

3. Rashtriya Sanskrit Sansthanam, New Delhi.

B.Sc. (Animation and Multimedia) 2nd Semester
CODE: AUD -08
SUBJECT NAME: INTERVIEW AND GROUP DISSCUSSION SKILLS

NO OF CREDITS: 0

L	**P**
2	**0**

SESSIONAL: 25
THEORY EXAM: 75
TOTAL: 100
Duration Exam: 3 hours

Quality of Content

- Comprehension of core idea
- Real life examples
- Data generation
- Reasoning

Vision /Goal Orientation

- Driving towards issue resolution
- Intelligent use of others' content

Personality

- Attitude
- Leadership
- Influencing ability
- Rapport building
- Participation
- Team

Confidence

- Motivation
- Activeness
- Energy
- Sense of humour
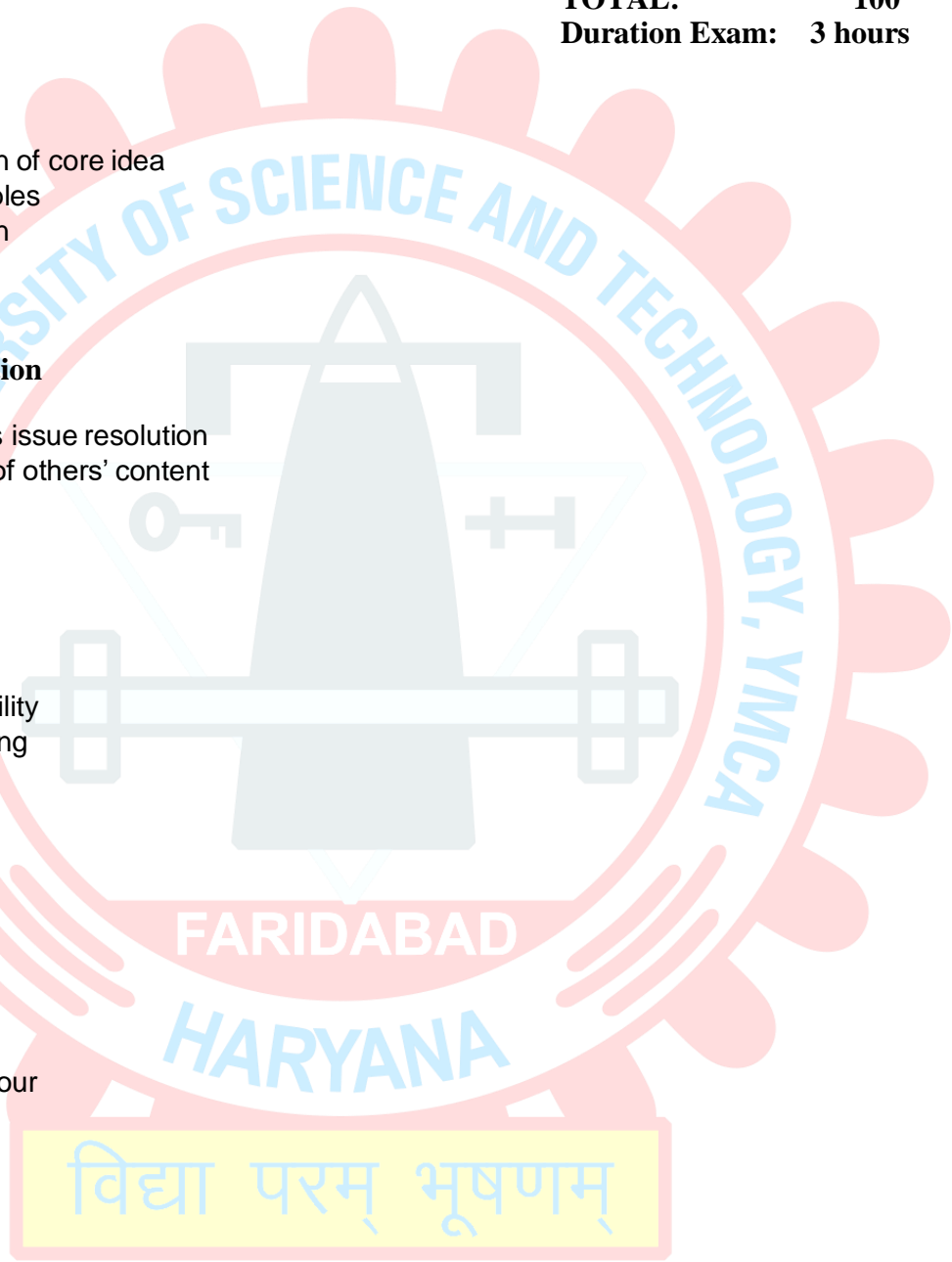
Communication

- Articulation
- Fluency
- Listening
- Body language
- Eye Contact

Types Of G.D

- Factual Topics
- Controversial Topics
- Abstract Topics

Interview Skills

- Common Interview Questions
- What Employers Want
- Attitude and Effort
- Body Language
- Research
- The Mock Interview
- Phone Interviews
- Behavioral Interviews
- Closing the Interview
- Thank You Notes

B.Sc. (Animation and Multimedia) 2nd Semester

CODE: AUD -09
SUBJECT NAME: YOGA AND MEDITATION

NO OF CREDITS: 0

		SESSIONAL:	25
L	**P**	**THEORY EXAM:**	75
2	**0**	**TOTAL:**	100
		Duration Exam:	3 hours

Unit-I: Introduction to yoga and its different levels, food habits, Sanskar of a yogi, Patanjali Yogsutra, its importance in life, benefits and history of yoga.

Unit-II: Meditation and its relation with yoga, mind relaxation, development of morality and ethics, prayer and its meaning, its importance in life, benefits and history of meditation.

Unit-III: Pranayam and its introduction, types of pranayam, breathing exercises, preliminary preparation before pranayam, its importance and benefits in life.

Unit-IV: Practice of different types of Pranayam: Anulom-Vilom, Kapalbhati, Nadi Shodhan, Agni Sar, Bhastrika, Bharamari etc.

Unit-V: Mantra and their importance, introduction to some chanting mantras, practicing some of mantras Gayatri Mantra, Namokar Jaap etc.

Unit-VI: Aasan and their types, benefits of different aasans, practicing of different aasans: Padamaasan, surya-namaskar, tadaasan, navaasan, gomukh aasan, bhujang aasan etc.

Reference Books:

1. Patanjali Yogsutra

2. Yog Manjari

B.Sc. (Animation and Multimedia) 2nd Semester
CODE: AUD -10
SUBJECT NAME: ART OF LIVING

NO OF CREDITS: 0

L	**P**	SESSIONAL:	25
2	**0**	THEORY EXAM:	75
		TOTAL:	100
		Duration Exam:	3 hours

Pre-requisites:

1. Getting up early in the morning, bathing, and meditation before sunrise

2. Following of five **Yamas** and five N**iyamas**

3. Avoiding 7 great sins

4. Some control over food (avoiding wine etc.)

5. Knowledge of Sanskritam

Unit-I: **IMPORTANCE** Solution to present day problems: terrorism, pollution, personal, family, social, health, mental etc.; attainment of physical comforts, security, good governance, healthy environment etc.; bliss (ananda) of Yoga, getting rid of all miseries forever (Moksha); Why Vedic way? Vedas the oldest scriptures, word of the creator, fountain head of all religions; virtuous actions/Dharma, Pure ("Shudha") Manusmriti; practical example – Valmiki Ramayanam (pure); evidences from Veda, Manusmriti (pure), Valmiki Ramayanam (pure), NASA findings etc.

Unit-II: *VEDIC ROUTINE DAILY* Brahma yajnya : Sandhyā- vandanam - Place, time, duration, dress, posture, achamanam, pranayama, japa, benefit, evidences, reading of veda/sāstra; Deva-yajnya: place, time, material; Balivaisvadeva yajnya; daily livelihood / or as per āshrama requirement; "Yamas" – Ahinsa, satya, asteya, brahmacharya, aparigraha; "Niyamas" – shaucha, santosha, tapah, swadhyaya, ishwara pranidhanam; significance and impact on personal and social life.

Unit-III: *GENERAL MANNERS* Respecting the elders (specially the parents and the teacher), not to throw excreta or other impure things into water or fire, avoiding anger with an angry person etc.

Unit-IV: **VEDIC LIFE ROTINE** Four ashramas – brahmacharya, grihastha, vanaprastha, sanyāsa, duties in each.

Unit-V: **SANSKARAS:** 16 sanskāras (from conception till death) for the betterment of physical (sthūla sariram)and mental health (Sūkshma Sariram), institution of marriage – virginity, age difference, sincerity towards each other etc.

Unit-VI: **Great sins ("Mahā Pātaka") and "Prāyaschittam":** Seven great sins – abortion, adultery, drinking wine, livelihood on interest, speaking lie after lie in the court of virtuous men, stealing gold, killing a scholarly person.

Unit-VII: **Self Realization**: The greatest achievement, becoming immortal (Moksha), ashtanga yoga.

Unit-VIII: **Vedic Science and Technology**: Proper town planning as per the Vedic texts to meet the above objectives (good governance), some fundamentals from Vedic science to understand the Vedic art of living.

Unit-IX: **Tips from Ayurveda for good health**: Drinking water after getting up from bed, very light dinner, fresh warm food, cow's products etc.

Reference books:

1. Rigveda- Sakal sakha, Yajurveda- Madhyandin Sakha

2. Satapatha Brahmanam

3. Manusmriti ("Shudha")

4. Valmiki Ramayanam ("Shudha")

5. Samarangana Sutra Dhara

6. Vaiseshika Darsanam, Yoga Darsanam

7. Susrut Sanhita

B.Sc. (Animation and Multimedia) 2nd Semester
CODE: AUD -11
SUBJECT NAME: ROLE OF NSS IN NATION BUILDING

NO OF CREDITS: 0

		SESSIONAL:	**25**
L	**P**	**THEORY EXAM:**	**75**
2	**0**	**TOTAL:**	**100**
		Duration Exam:	**3 hours**

Unit-I: **Understanding youth**

- Definition, profile of youth, categories of youth
- Issues, challenges and opportunities for youth
- Youth as an agent of social change
- National youth Policy

Unit-II: **Importance and Role of Youth Leadership**

- Meaning and types of leadership
- Qualities of good leaders; traits of leadership
- Importance and role of youth leadership
- Youth-focused and Youth-led organizations

Unit-III: **Life Competencies**

- Definition and Importance of life competencies
- Communication –process, types & barriers
- Motivation – Concept & Cycle
- Problem Solving and Decision Making

Unit-IV: **Social Harmony and National Integration**

- Indian history and culture
- Role of youth in peace-building and conflict resolution
- Role of youth in Nation building
- Youth development programmes at the National Lever, State Level and voluntary sector

B.Sc. (Animation and Multimedia) 2nd Semester
CODE: AUD -12
SUBJECT NAME: PHYSICAL EDUCATION

NO OF CREDITS: 0

		SESSIONAL:	25
L	**P**	**THEORY EXAM:**	75
2	**0**	**TOTAL:**	100
		Duration Exam:	3 hours

Unit-I: **Concept of Physical Education:** Meaning and definition of Physical Education, its aim and objectives Need and importance of Physical Education, Misconceptions about Physical Education & its relevance in Inter Disciplinary Context

Unit-II: **Career Aspects in Physical Education:** Career Options in Physical Education, Avenues for Career Preparation, Motivation & Self Assessment for career choices

Unit-III: **Physiological Aspects of Physical Education:** Warming up - General & Specific & its Physiological basis, Effects of Exercise on Muscular & Digestive systems, Effects of Exercise on Respiratory & Circulatory systems

Unit-IV: **Psychological Aspects of Physical Education:** Definition & role of Sports Psychology, Motivation and Achievements in Sports, Adolescent Problems & its Management.

Unit-V: **Health Concepts of Physical Education**: Role of Physical Education Programme on Community Health Promotion(Individual, Family & Society), Effects of Alcohol, Tobacco and Drugs on Sports Performance, Obesity, Causes & Preventive Measures and Role of diet on Performance

Unit-VI: **About Games**: History of the Game/Sport, Latest General Rules of the Game/Sport, Measurement of Play Fields and Specifications of Related Sports Equipments, Important Tournaments and Venues, Sports Personalities

Unit **VII: Skill Development**: Fundamental Skills of the Game/Sport, Specific Exercises of Warm-up and Conditioning, Related Sports Terminologies, Sports Awards, Common Sports Injuries & its Prevention

SEMESTER III

B.Sc. (Animation and Multimedia) 3rd Semester
CODE: BSC-AM-19-301
SUBJECT NAME: Visual Art III

NO OF CREDITS: 4

L **P**	SESSIONAL: 25
4 **0**	THEORY EXAM: 75
	TOTAL: 100

NOTE: Question paper has two parts. Part-1 has 10 questions each of 2 marks. It covers the entire syllabus. Attempt any four questions out of six from Part-2.

Course objectives:
1. To understand Character body type and basic shapes of character.
2. To understand and apply the Principles of perspectives, one point two point and three point perspective.
3. Perspective as applied to objects, furniture, interior and exteriors of the buildings etc, study of outdoor perspective.
4. To Study fantasy characters, mixing human and animals feature and parts to design a character.
5. To implement the Character Designing based on Age

UNIT I: Introduction to character design: Shape language- circle, triangle and circle, drawing from basic shapes

UNIT II: Types of character, character body type, and drawing from imagination.

UNIT III: Creating different character: Draw animal character, Anthropomorphism (mixing human and animals feature and parts

UNIT IV: Character Designing based on different age like baby, children, youngsters and old people.

UNIT V: Advanced Perspective Drawing: Perspective as applied to objects, furniture, interior and exteriors of the buildings etc.

COURSE OUTCOMES:

1. Students will be able to analyze visualization for drawings using principles of perspective.
2. Students will be able to apply drawing skills to draw different character.
3. Students will be able analyze Character body type and basic shapes of character.
4. Students will be able to understand various character according to age like baby, children, youngsters and old people.
5. Students will be able to learn mixing characters feature and parts to design a character.

MAPPING OF COURSE OBJECTIVES AND COURSE OUTCOMES

		Course Outcomes				
		1	**2**	**3**	**4**	**5**
Course Objectives	**1**	✓				
	2		✓			
	3			✓		
	4				✓	
	5					✓

References

1. Victor Perard, Anatomy and Drawing, 2012

2. McDaniel, Richard, The Drawing Book: Materials and Techniques for Today's Artists, 1995

3. Dynamic Figure Drawing, Burne Hogarth 5. Perspective Drawing Handbook By Joseph D'Amelio

B.Sc. (Animation and Multimedia) 3rd Semester
CODE: BSC-AM-19-303
SUBJECT NAME: Fundamentals of Audio & Video

NO OF CREDITS: 3

		SESSIONAL:	25
L	P	THEORY EXAM:	75
3	0	TOTAL:	100

NOTE: Question paper has two parts. Part-1 has 10 questions each of 2 marks. It covers the entire syllabus. Attempt any four questions out of six from Part-2.

Course Objectives

1. To study about digital audio and video.
2. To understand the editing of audio in editing software.
3. To acquire the knowledge about shoot a video for production.
4. To learn video editing software and different types of outputs for broadcasting.
5. To learn video Compression Basics-Redundancy

UNIT I: Digital Audio Understanding Digital Data, Digital Audio, The Sound Card Basic composition and Anatomy of a sound card, functions and features of sound card.

UNIT II: Audio Editing tool -Introduction to Audio Editing Tool, The Main Screen, The Data Window and its Basics, Standard and Transport Toolbar, Common Edit Operations, Status Format, Editing Sound Formats, Recording, Applying sound processing functions, Operations available under File, Edit, Process, Effects and Tools menu.

UNIT III: Digital Video Production Video Production for Multimedia-Pre-production, Production & Post - Production, Employing Video in Multimedia Applications Content Video & Incidental Video, Basics of Video Recording Video Shooting equipment, Camera, Camera movement, lighting and backgrounds, shooting tips etc.

UNIT IV: Introducing Digital Video Introducing Digital Video Characteristics of video-Interlacing and progressive scanning, Digital video-sampling, Quantization, Luminance and Chrominance, Colour Models, Colour Depth,

UNIT V: Video Compression Rational for compression, Compression Basics-Redundancy, Lossy and Lossless compression, CODECs ,Video compression standards-MPEG1,MPEG2,MPEG4

COURSE OUTCOMES:

1. Students will be able know about audio and video.
2. Students will be able know about different styles and treatment of content in audio and video production and editing.
3. Students will be able to analyze the films and videos and importance of codec and format for final output to broadcasting.
4. Students will be able to Compression Basics-Redundancy
5. Students will be able to apply the acquired knowledge of audio and video editing for films and videos.**.**

MAPPING OF COURSE OBJECTIVES AND COURSE OUTCOMES

		Course Outcomes				
		1	**2**	**3**	**4**	**5**
Course Objectives	**1**	✓				
	2		✓			
	3			✓		
	4				✓	
	5					✓

REFERENCES:

1. Editing Digital Video (Digital Video and Audio Series) by Robert Goodman, Patrick McGrath
2. Multimedia – Sound & Video by: Jose Lozano, Pub: Prentice Hal

B.Sc. (Animation and Multimedia) 3rdSemester
CODE: BSC-AM-19-304
SUBJECT NAME: Traditional Animation III

NO OF CREDITS: 4

		SESSIONAL:	25
L	**P**	**THEORY EXAM:**	**75**
4	**0**	**TOTAL:**	**100**

NOTE: Question paper has two parts. Part-1 has 10 questions each of 2 marks. It covers the entire syllabus. Attempt any four questions out of six from Part-2.

Course Objectives:

1. To understand Theory of traditional animation.
2. Draw the biped walk, run and jump to create animation.
3. To draw the quadruped walk to create animation.
4. To understand the basic emotions of human with the basic knowledge of acting.
5. To understand speaking of character and analyse mouth charts, to use of storyboard for production animation scene.

UNIT I: Understanding Classical Animation & Principles of Animation - Staging, Anticipation, Secondary Action.

UNIT II: Principles of Animation - Exaggeration, Solid drawing, Appeal.

UNIT III: Body mechanics - Walk, run, jump cycle

UNIT IV: Dialogue, Acting for animation and Basic effects.

UNIT V: Story board for Animation.

COURSE OUTCOMES:

1. Students will be able to learn simple or complex animation with the animation principles.
2. Students will be able to understand the walk, run, jump cycle for character with the knowledge of biped and quadruped body mechanics.
3. Students will be able to analyze acting, human behaviour, emotions and expression for

creating life-like and impactful animation.
4. Students will be able to apply the acquired knowledge of animation principles.
5. Acting, human behaviour, emotions and expression to create traditional animation.

MAPPING OF COURSE OBJECTIVE AND COURSE OUTCOMES

<table>
<tr><td rowspan="2"></td><td colspan="5" align="center">Course Outcomes</td><td></td></tr>
<tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td></tr>
<tr><td rowspan="5">Course Objectives</td></tr>
<tr><td>1</td><td>✓</td><td></td><td></td><td></td><td></td></tr>
<tr><td>2</td><td></td><td>✓</td><td></td><td></td><td></td></tr>
<tr><td>3</td><td></td><td></td><td>✓</td><td></td><td></td></tr>
<tr><td>4</td><td></td><td></td><td></td><td>✓</td><td></td></tr>
<tr><td>5</td><td></td><td></td><td></td><td></td><td>✓</td></tr>
</table>

REFERENCES

1. Timing for animation by Harold Whitaker
2. Animation survival kit by Richard Williams
3. Cartoon Animation by Preston Blair

B.Sc. (Animation and Multimedia) 3rd Semester
CODE: BSC-AM-19-305
SUBJECT NAME: Psychology for Interactive Media

NO OF CREDITS: 4

		SESSIONAL:	25
L	**P**	THEORY EXAM:	75
4	**0**	TOTAL:	100

NOTE: Question paper has two parts. Part-1 has 10 questions each of 2 marks. It covers the entire syllabus. Attempt any four questions out of six from Part-2.

Course Objectives:

1. To introduce the students to the subject of psychology, nature, scope and schools of psychology.
2. To familiarize the methods used in psychology and to facilitate their knowledge about causes of behavior.
3. To provide the knowledge of basic concepts in psychology.
4. To develop an understanding of psychology of human behavior.
5. To understand the Basic Concept, Social Cognitive Theory.

UNIT I: Perception: Definition, goals and scope of psychology; Approaches: biological, psychodynamic, behaviouristic, and cognitive, Perception, Factors affecting the Perception, Principles of Perceptual Organisation, Constancies in Perception - Size, Shape, Form, Space, Movement etc., Depth Perception, Psychophysics, Life-span Changes in Perception, Extra Sensory Perception (ESP), Illusions, Plasticity of Perception

UNIT II: Memory and Forgetting: Definition of memory; Processes involved in memory; Methods of measuring retention; Types of memory: sensory memory, short-term memory, and long-term memory, Process of forgetting; Determinants or causes of forgetting; Interference: proactive and retroactive interference, Ziegarnik effect.

UNIT III: Behavior: (1) Biological Bases of Behavior (Heredity): Human Evolution, Behavior Genetics, Phenotype, Genotype, Studies on the Effect of Hormones on Behavior, Genetics and Behavior, (2) Social cultural Bases of Behaviour (Environment): Environment and Behavior, Natural Internal Environment (physical or maternal environment) and Behavior, Man-made Environment (subjective environment), How these two affect behavior? Heredity Vs Environment.

UNIT IV: Cognition: Cognitive Approach: Basic Concept, Assumptions, and Major Contributors, Social Cognition: Basic Concept, Social Cognitive Theory, Culture and Social Cognition, Perceiving Self, Self Concept, Self Esteem

UNIT V: Gestalt: Gestalt theory of perception: figure and ground, Laws of perceptual organization.

COURSE OUTCOMES:

1. Students will be able to understand nature, scope and schools of psychology.
2. Students will be able to understand methods used in psychology and to facilitate their knowledge about causes of behavior.
3. Students will be able to understand basic concepts in psychology.
4. Students will be able to understand the Basic Concept, Social Cognitive Theory.
5. Students will be gain psychology of human behavior.

MAPPING OF COURSE OBJECTIVES AND OUTCOMES

		Course Outcomes				
		1	2	3	4	5
Course Objectives	1	✓				
	2		✓			
	3			✓		
	4				✓	
	5					✓

REFERENCES

1. Baron, R.A. (1996). Psychology. 3ed. New Delhi: Prentice Hall.
2. Lahey, B. B. (1998). Psychology: An Introduction. New Delhi: Tata Mc Graw Hill.
3. Feldman, R. S. (2002). Understanding Psychology. New Delhi: Tata Mc Graw Hill.
4. Bootzin, R. R., Bower, G. H., Crocker, J., & Hall, E. (1991). Psychology Today. London: Mc Graw Hill.NCERT (2002).
5. Introduction to Psychology- Part-I. New Delhi: NCERT.

B.Sc. (Animation and Multimedia) 3rd Semester
CODE: BSC-AM-19-306
SUBJECT NAME: Graphics and Visual Design Lab III

NO OF CREDITS: 1

L	T	P	TOTAL
0	0	2	2

Internal Practical: 15
External Practical: 35
TOTAL: 50
Duration of Exam: 3 Hours

Course Objectives

1. To understand the line of art and grayscale values for a character design.
2. To acquire knowledge of making character design and of its hair and weapon.
3. Study and making of texture for a character.
4. To create a suitable background for character.
5. Making of animal character and fantasy.

S.NO.	DIGITAL PAITNING PRACTICAL
1.	Line art of an object
2.	Paint an object in grayscale
3.	Paint cloths for characters
4.	Create a basic character
5.	Create hairstyle for a character
6.	Create a metallic weapon
7.	Create different textures (fur, wooden, grunch, etc)
8.	Create a background
9.	Create fantasy character
10.	Semester portfolio on digital paintng.

COURSE OUTCOMES:

1. Students will be able to learn character design using line art and grayscale design.
2. Students will be able to understand tools to making texture.
3. Students will be able to background for a character.
4. Students will be able to analyze fantasy characters.
5. Students will be able to apply the concept and design to create textures.

MAPPING OF COURSE OBJECTIVES AND OUTCOMES

		Course Outcomes			
		1	**2**	**3**	**4**	**5**
Course Objectives	**1**	✓				
	2		✓			
	3			✓		
	4				✓	
	5					✓

REFERENCE:-

1. Beginner's Guide to Digital Painting in Photoshop by Aleksander & Tilbury, 2012
2. Digital Painting Techniques: Practical Techniques of Digital Art Masters By 3dtotal publishing, 2009

B.Sc. (Animation and Multimedia) 3rd Semester
CODE: BSC-AM-19-307
SUBJECT NAME: 3D designing lab II

NO OF CREDITS: 4

				Internal Practical:	30
L	**T**	**P**	**TOTAL**	External Practical:	70
0	0	8	8	TOTAL:	100

Duration of Exam: 3 Hours

Course Objectives

1. To know about 3D software interface.
2. To know about different type of 3d modeling like polygon, nerves modeling, curve based modeling, Patch modeling,
3. To understand the basic blocking of 3D Inorganic and organic modeling,
4. To understand high poly modeling, unwrapping texturing.
5. To understand the fundamentals of lighting and camera, learn about rendering

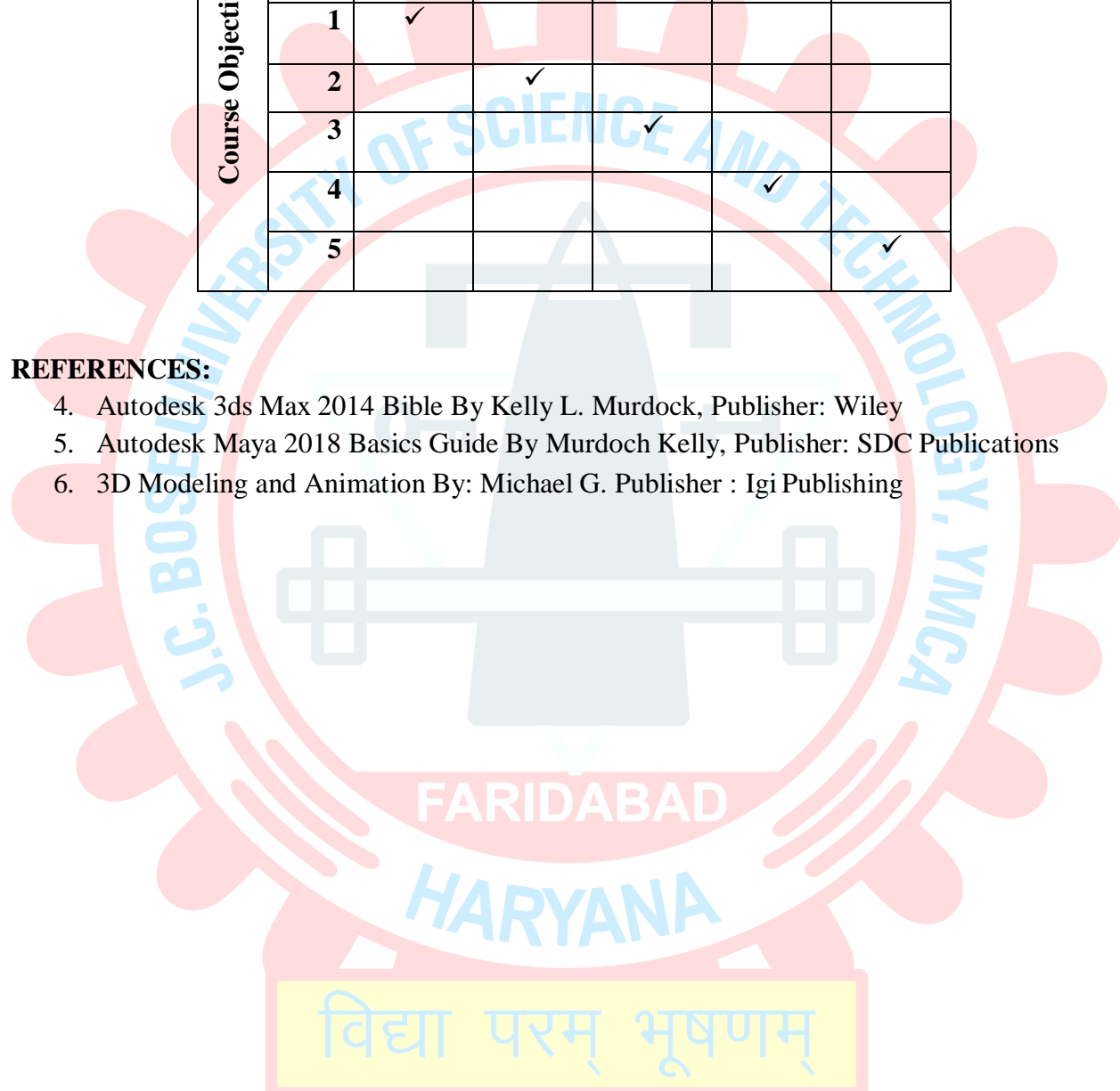| S.NO.	PRACTICAL
1.	Un-wrapping UVs.
2.	Understanding Material and Different types Shader
3.	Understating texturing concept, texture mapping.
4.	Fundamentals of lighting design, Computer generated lighting
5.	Fundamental of Camera.
6.	Rendering techniques with different type of render engine
7	Basic lighting, point light. Direction light,
8	Image based mapping for texture,
9	Create character blocking,
10	Create animal character blocking

COURSE OUTCOMES:

1. Students will be able to learn modelling, texturing, and lighting.
2. Students will be able to understand different styles and treatment of content in 3d model creation.
3. Students will be able to analyze the importance of cognitive 3d designing.
4. Students will be able to apply tools to create effective 3D modelling texturing and lighting.

MAPPING OF COURSE OBJECTIVES AND COURSE OUTCOMES

		Course Outcomes				
		1	**2**	**3**	**4**	**5**
Course Objectives	**1**	✓				
	2		✓			
	3			✓		
	4				✓	
	5					✓

REFERENCES:
4. Autodesk 3ds Max 2014 Bible By Kelly L. Murdock, Publisher: Wiley
5. Autodesk Maya 2018 Basics Guide By Murdoch Kelly, Publisher: SDC Publications
6. 3D Modeling and Animation By: Michael G. Publisher : Igi Publishing

B.Sc. (Animation and Multimedia) 3rd Semester
CODE: BSC-AM-19-308
SUBJECT NAME: Fundamentals of Audio & Video Lab

NO OF CREDITS: 2

L T P TOTAL
0 0 3 3

Internal Practical: 15
External Practical: 35
TOTAL: 50
Duration of Exam: 3 Hours

Course Objectives

1. To know about audio and video editing.
2. To know about different type of audio and video file importing in editing software.
3. To understand the editing like cutting, pasting, removing unwanted part of clip.
4. To apply audio and video effects and transitions on audio and video,
5. To understand rendering in different formats for broadcasting.

S.NO.	PRACTICAL
1	Introduction to Audio Editing Tool and interface
2	Importing audio file, the Main editing Screen, The Data Window and its Basics, Standard and Transport Toolbar, Common Edit Operations, Status Format,
3	Editing, Sound Formats, Recording, Applying sound processing functions, Edit, Process, Effects and Tools menu.
4	Crate a Audio (Story) with appropriate background music and sound effect .
5	Merge to different types of audio tracks .
6	Digital Video Post-Production Tool interface. Workspace, timeline, effects control window, properties of the video.
7	Basics of Post Production Concepts-Editing, Mixing, Resizing video, editing tools, transitions effects.
8	Adding video effects, sound, Title making, making video footage into final video. Adobe Premiere video post- production.
9	Create a teaser by Films.
10	Create a documentary Movie.

COURSE OUTCOMES:

1. Students will be able to know about audio and video editing.
2. Students will be able to know about different styles and treatment of content in video editing.
3. Students will be able to analyze the importance of films, videos and audio and video editing.
4. Students will be able to apply tools to create effective audio and video editing.
5. Students will be learn mixing of audio and video.

MAPPING OF COURSE OBJECTIVES AND COURSE OUTCOMES

		Course Outcomes			
		1	2	3	4	5
Course Objectives	**1**	✓				
	2		✓			
	3			✓		
	4				✓	
	5					✓

REFERENCES

1. Maya for Games: Modeling and Texturing Techniques with Maya and Mudbox by Michael Ingrassia
2. 3ds Max Modeling for Games: Insider's Guide to Game Character, Vehicle, and Environment Modeling by Andrew Gahan

B.Sc. (Animation and Multimedia) 3ʳᵈ Semester
CODE: BSC-AM-19-309
SUBJECT NAME: Digital 2D Animation II Lab

NO OF CREDITS: 1

L T P TOTAL
0 0 2   2

Internal Practical: 15
External Practical: 35
TOTAL: 50
Duration of Exam: 3 Hours

Course Objectives

1. To learn advance techniques of animation such as masking, motion guide and motion curve editor.
2. To work on animation by various methods like frame by frame and mixing tweens to achieve high quality animation in short period of time.
3. To study advance functions of ActionScript like keyboard event and if-else loop.
4. To ... programming language.

PRACTICAL

S.NO.	
1.	Create a scene animation with masking and motion guide
2.	Create a simple frame by frame animation
3	Create an animation scene of butterfly animation.
4	Create a scene using in graphic symbol.
5	Create a scene with panning background
6	Create animation using animation principle – Timing, Ease in and ease out.
7	Create animation using animation principle – Stretch and squash.
8	Create animation using animation principle – Arc.
9	Create animation using animation principle – Follow through and overlapping
10	Use of sounds in digital animation.

COURSE OUTCOMES:

1. Students will be able to learn the techniques and software to achieve animation like 3d rotation, motion following a path, etc.

2. Students will be able to analyze different methods of animation used in production studios.
3. Students will be able to Create interactive scenes.

4. Students will be able to apply incorporate visual art and creativity.

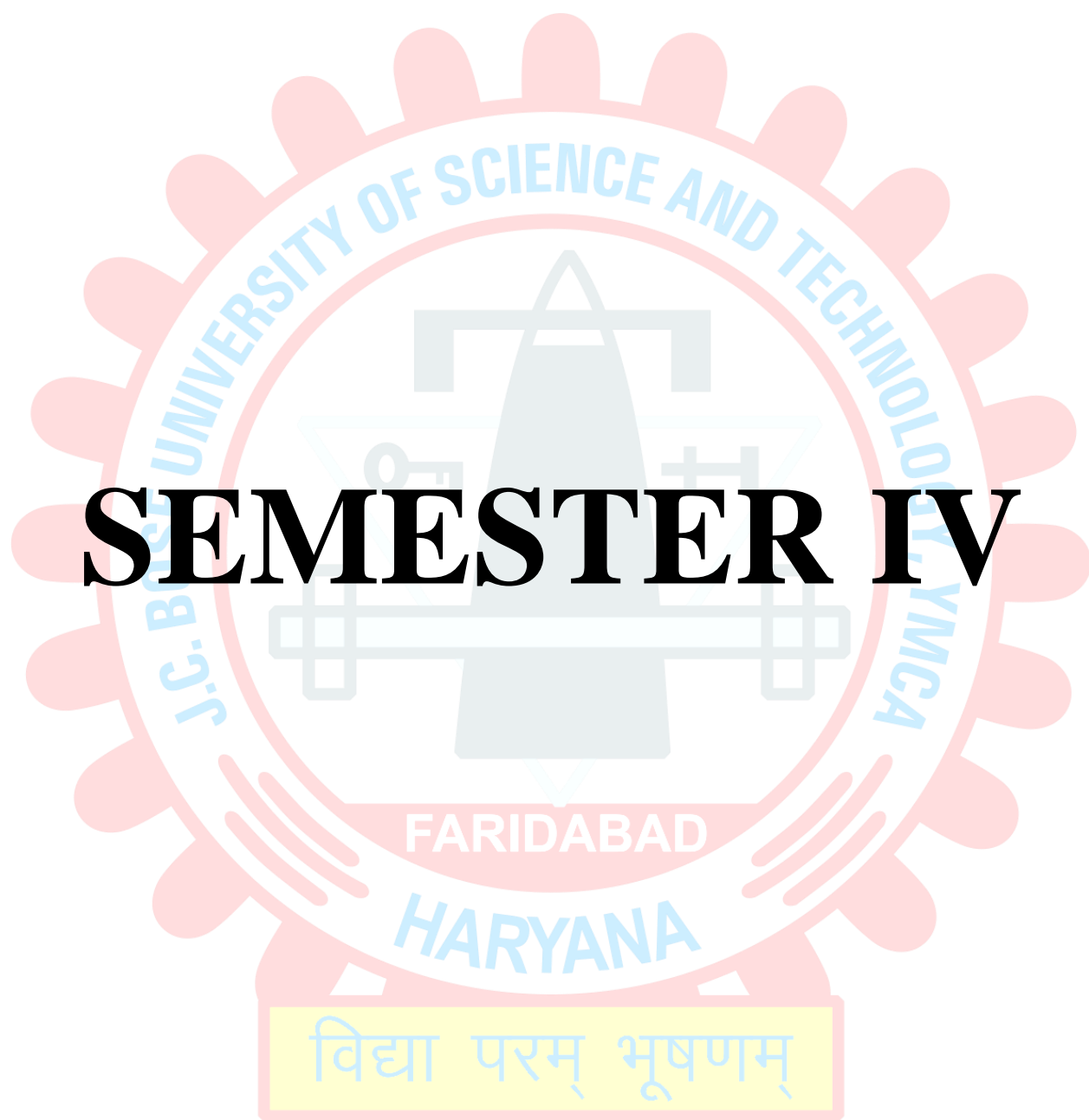5. Student will learn to synchronize sound with animation.

MAPPING OF COURSE OBJECTIVES AND COURSE OUTCOMES

<table>
<tr><td rowspan="2"></td><td colspan="5">Course Outcomes</td><td></td></tr>
<tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td></tr>
<tr><td>1</td><td>✓</td><td></td><td></td><td></td><td></td></tr>
<tr><td>2</td><td></td><td>✓</td><td></td><td></td><td></td></tr>
<tr><td>3</td><td></td><td></td><td>✓</td><td></td><td></td></tr>
<tr><td>4</td><td></td><td></td><td></td><td>✓</td><td></td></tr>
<tr><td>5</td><td></td><td></td><td></td><td></td><td>✓</td></tr>
</table>

(Course Objectives — rows 1–5)

REFERENCES

1. Adobe Animate CC Classroom in a Book by Russell Chun
2. Foundation Flash Cartoon Animation by Jones Tim
3. Learn Adobe Animate CC for Interactive Media

SEMESTER IV

B.Sc. (Animation and Multimedia) 4th Semester
CODE: BSC-AM-19-401
SUBJECT NAME: Visual Art IV

NO OF CREDITS: 4

L	**P**	SESSIONAL:	25
4	**0**	THEORY EXAM:	75
		TOTAL:	100

NOTE: Question paper has two parts. Part-1 has 10 questions each of 2 marks. It covers the entire syllabus. Attempt any four questions out of six from Part-2.

Course objectives:

1. To understand how to construct storyboards as a brief form of storytelling

2. To create the mechanics of storyboarding by producing characters, objects

3. To develop the knowledge of camera angles and terminology conducive to storyboard.

4. To identifying the elements of a script and defining characters and setting for a story.

5. To understand background, utilizing movement indicators to specify actions.

UNIT I: Storyboarding: Thumbnails, Perspective Drawing, and drawing from a Script

UNIT II: Story to Shortlist to Storyboards, Midterm and Digital Storyboards, Animatic Basics

UNIT III: Environmental Design: Background and Set Design, Placing Cameras, Overhead Views

UNIT IV: Basic camera moves (zoom, tilt, dolly, truck in, pan, etc) with some examples of how they are used

UNIT V: Sketch out Storytelling: Visual narratives, Elements of storytelling, Focal points, Mood, Portraying Ideas, Cropping and Framing

COURSE OUTCOMES:

1. Students will be able to demonstrate how to construct storyboards as a brief form of storytelling
2. Students will be able to create the mechanics of storyboarding by Producing characters, objects
3. Students will be able to develop the knowledge of camera angles and terminology conducive to storyboard
4. Students will be able to demonstrate the knowledge of storyboard narrative
5. Students will be able to understand background, utilizing movement indicators to specify actions.

MAPPING OF COURSE OBJECTIVES AND COURSE OUTCOMES

		Course Outcomes			
		1	**2**	**3**	**4**	**5**
Course Objectives	**1**	✓				
	2		✓			
	3			✓		
	4				✓	
	5					✓

References

1. Victor Perard, Anatomy and Drawing, 2012

2. McDaniel, Richard, The Drawing Book: Materials and Techniques for Today's Artists, 1995

3. Dynamic Figure Drawing, Burne Hogarth 5. Perspective Drawing Handbook By Joseph D'Amelio

B.Sc. (Animation and Multimedia) 4th Semester
CODE: BSC-AM-19-402
SUBJECT NAME: Advertising and New Media

NO OF CREDITS: 3

		SESSIONAL:	25
L	P	THEORY EXAM:	75
3	0	TOTAL:	100

NOTE: Question paper has two parts. Part-1 has 10 questions each of 2 marks. It covers the entire syllabus. Attempt any four questions out of six from Part-2.

Course Objective:

1. To inculcate the knowledge of Culture and Society
2. To introduce students the fundamentals of advertising and ethics.
3. To familiarize students with the concept of diverse Demographics.
4. To broaden and deepen the students understanding of various kind of media and emerging trends
5. To understand Promotional activity through campaign.

Unit I : Culture: Society, Social continuum (tribe caste Paradigm), Big Society, Small Society

Unit II : Advertising : Advertising and Culture, Ethics Censorship, Gender, push and pull factor

Unit II : Demographics : Population Pyramids, Migration, Marginalization, Census

Unit IV Media : Media Definition, Folk Media, Mass Media, Emerging Media, Media Activism, Media Consumption, Digital Media, Emerging Trends, Social Media

Unit V Campaign: Promotional activity which aims to sell a product or service to a target audience.

COURSE OUTCOMES:

1. Students would be able to understand the Culture and Society
2. Student would be able to the fundamentals of advertising and ethics.
3. Student will have the knowledge of diverse Demographics.

4. Learner would know about various kinds of media and emerging trends
5. Learner would know about promotion activity

MAPPING OF COURSE OBJECTIVES AND COURSE OUTCOMES

		Course Outcomes				
		1	2	3	4	5
Course Objectives	1	✓				
	2		✓			
	3			✓		
	4				✓	
	5					✓

REFERENCE

1. Business for communication by Suparna Dutta
2. IyerVenkat, Mass Media Laws And Regulations in India- Published by AMIC, 2000
3. Introduction to mass Communication : Medial Literacy & Culture By Stanley Baran The Tata McGraw Hill
4. The Media in your life -By Jean Folkerts & Stephen Lacy by PEARSON PUBLICATION.

विद्या परम् भूषणम्

B.Sc. (Animation and Multimedia) 4th Semester
CODE: BSC-AM-19-403
SUBJECT NAME: Fundamentals of Compositing & VFX

NO OF CREDITS: 4

		SESSIONAL:	25	
L	**P**	THEORY EXAM:	75	
4	**0**	TOTAL:	100	

NOTE: Question paper has two parts. Part-1 has 10 questions each of 2 marks. It covers the entire syllabus. Attempt any four questions out of six from Part-2.

Course Objectives
1. To study about different about basic knowledge of visual effects, compositing and motion graphics.
2. To analyze and apply different types of methods and different types of software.
3. To create motion graphics using different types animation.
4. To acquire the knowledge of removing background by using rotoscopy and rotopaint for films.
5. To multilayer compositing in digital compositing software, colour correction in final for films and videos.

UNIT I: INTRODUCTION to Compositing and Visual Effects, and motion graphics, use of VFX and Compositing and motion graphics, Types of Composting(layer based and node based), History of visual effects.

UNIT II: Introduction to the Digital Compositing Software (Adobe after effects) layer based, User Interface Basics and importing images into Compositing Software - Playing back Videos and changing project settings.

UNIT III: Motion Graphics (Use of layers, shape layer, solid layer and text layer, Logo Animation, animation presets, key frame animation, layer linking, typography)

UNIT IV: Rotoscoping, Use of Rotoscoping, RotoPaint

UNIT V: Basic layer based compositing, Colour Correction, Adjustment layers, Multi-layer compositing.

COURSE OUTCOMES:

1. Students will be able know about visual effects compositing and motion graphics.
2. Students will be able know about different styles and treatment of content in visual effects, compositing and motion graphics.
3. Students will be able to analyze the importance of cognitive in visual effects, compositing and motion graphics in films and videos.
4. Students will be able to apply to create effective visual effects, compositing and motion graphics for films and videos.
5. Students will be able know about multilayer compositing in digital compositing software

MAPPING OF COURSE OBJECTIVES AND COURSE OUTCOMES

		Course Outcomes				
		1	**2**	**3**	**4**	**5**
Course Objectives	**1**	✓				
	2		✓			
	3			✓		
	4				✓	
	5					✓

REFERENCES:

1. The Visual Effects Arsenal: VFX Solutions for the independent Filmmaker by Bill Byme
2. The Art and Science of Digital Compositing, Second Edition: Techniques for Visual Effects, Animation and Motion Graphics (The Morgan Kaufmann Series In Computer Graphics) by Ron Brinkman
3. The Visual Effects Producer: Understanding the Art and Business of VFX by Charles Finance
4. After effects for designer by Chris Jackson

B.Sc. (Animation and Multimedia) 4th Semester
CODE: BSC-AM-19-404
SUBJECT NAME: Fundamentals of Rigging, Skinning & Animation

NO OF CREDITS: 4

		SESSIONAL:	25
L	**P**	THEORY EXAM:	75
4	**0**	TOTAL:	100

NOTE: Question paper has two parts. Part-1 has 10 questions each of 2 marks. It covers the entire syllabus. Attempt any four questions out of six from Part-2.

Course Objectives

1. To know about basic fundamentals of rigging and 3D animation in 3d characters.
2. To know and learn about different types of bones, IK/FK handles, Joints/bones, Joints chains, Skeleton hierarchy
3. To understand and apply the Skinning on character.
4. To understand and use the difference animation principles for 3d animation, 3D animation for films and videos.
5. To understand Nonlinear animation tools.

UNIT I: Introduction to use of rigging and animation in films. Explain basic fundamentals of rigging and animation. Brief explain Joints/bones, hierarchy, and basic tools.

UNIT II: Rigging Skeletons components (Joints/bones, Joints chains, Skeleton hierarchy), Building Skeleton (setting up joints for posing and animation) posing skeletons, IK handles, IK solvers, IK/FK blending. Setup joint chain, pose with forward or inverse kinematics (pose and animate with FK, setup a IK handle, use single chain IK, use rotate plane IK, use multi chain IK, use Spine IK and use 2 bone IK). Blend FK and IK, Skeletons and IK nodes.

UNIT III: Skinning understanding skinning, deformable objects and skin objects, direct and indirect skin methods, bind poses, double transformation effects, editing skin point set membership, point tweaking skinned objects. Smooth skinning, rigged skinning, and rigged objects and points, rigged skin points weights and sets, flexors binding rigid skin, deformers, constraints, character sets.

UNIT IV: Introduction to animation in 3D software (Autodesk Maya), animation principles (Squash and Stretch, Anticipation, Staging, Straight Ahead Action and Pose to Pose, Follow Through and Overlapping Action, Slow In and, Slow Out, Arc, Secondary Action, Timing, Exaggeration, Solid drawing, Appeal)

UNIT V: Using animation feature (edit animation preferences and animation control), window and editors setting, timeline, animation, sound, key frame animation (key, auto key, key in attribute editor,, channel box, graph editor and dope sheet.), cutting, coping and pasting key,

UNIT VI: Nonlinear animation tools in Maya, Nonlinear animation components in Trax editor. Path animation, position object on the path curve, orienting object on path, manipulating object, path markers, motion capture animation**.**

COURSE OUTCOMES:

1. Students will be able to learn about rigging and 3D animation.
2. Students will be able to understand different types of rigging components, Skinning and animation principles.
3. Students will be able to learn about Nonlinear animation tools and technique,
4. Students will be able to analyze the importance of rigging and skinning in 3d animation and rigging.
5. Students will be able to apply to create effective rigging and skinning.

MAPPING OF COURSE OBJECTIVES AND COURSE OUTCOMES

		Course Outcomes				
		1	2	3	4	5
Course Objectives	1	✓				
	2		✓			
	3			✓		
	4				✓	
	5					✓

REFERENCES:

1. The Animator's Survival Kit by Richard Williams
2. The Illusion of Life: Disney Animation by Ollie Johnston & Frank Thomas
3. Acting for Animators by Ed Hooks

B.Sc. (Animation and Multimedia) 4th Semester

CODE: BSC-AM-19-405
SUBJECT NAME: GRAPHICS AND ANIMATION LAB

NO OF CREDITS: 4

L T P TOTAL
0   0   4   4

Internal Practical: 30
External Practical: 70
TOTAL: 100
Duration of Exam: 3 Hours

Course Objectives

1. To understands the Lip-sync.
2. To understands the principles and methods of designing process.
3. To understands the campaign planning and implementation.
4. To understand basics of digital character animation and rotoscopy.
5. To understand basics of animatics.

S.NO.	GRAPHICS PRACTICAL
1.	Create magazine cover (Page Layout)
2.	Create packaging for a product
3.	Create branding for a company
4.	Create artwork for story book.
5.	Create cartoons for newspaper.

S.NO.	ANIMATION PRACTICAL
1.	Create character Lip-sync for explainer video.
2.	Add voice over for character Lip-sync.
3	Paper/leaf drop follow through animation.
4	Fire animation with sound.
5	Create animatic from story board.

COURSE OUTCOMES:

1. Students will be able to analyze the importance of unity and continuity, structure, function and operations in an advertising agency.
2. Students will be able to learn campaign planning, branding.
3. Students will be able to apply the knowledge of traditional animation to create digital character animation and rotoscopy.
4. Students will be able to apply software and traditional animation knowledge to create complex animation and effects like fire, paper drop, leaf drop, etc.

MAPPING OF COURSE OBJECTIVES AND COURSE OUTCOMES

		Course Outcomes			
	1	**2**	**3**	**4**	**5**
1	✓				
2		✓			
3			✓		
4				✓	
5					✓

REFERENCES

1. Brand Bible: The Complete Guide to Building, Designing, and Sustaining Brands by Debbie Millman, Rockport publisher
2. Adobe Animate CC Classroom in a Book by Russell Chun
3. Foundation Flash Cartoon Animation by Jones Tim
4. Learn Adobe Animate CC for Interactive Media

B.Sc. (Animation and Multimedia) 4th Semester

CODE: BSC-AM-19-406
SUBJECT NAME: Fundamentals of Compositing & Visual Effects Lab

NO OF CREDITS: 2

L T P TOTAL
0 0 4 4

Internal Practical: 15
External Practical: 35
TOTAL: 50
Duration of Exam: 3 Hours

Course Objectives

1. To create the basic motion graphics and fundamentals of visual effects
2. To analyze the different types of text and logo animation.
3. To Create Morphing mutate, recast.
4. To acquire the knowledge of video matte by using rotoscopy and roto paint.
5. To create stabilized the video footage, color correction in raw footage

S.NO.	PRACTICAL
1.	Basic shapes animation
2.	Create lyrics video song, text animation
3.	Create explainer video
4.	Create object matte in a video by using rotoscoping
5.	Create object matte in a video by using roto paint
6.	Create movie title
7.	Create logo animation
8.	Add text in live action footage in live action footage
9.	Stabilize camera in video footage
10	Cinematic color correction in a video
11	Create fire effect in text layer
12.	Morphing, create face transform one to another

COURSE OUTCOMES:

1. Students will be able know about visual effects, compositing and motion graphics.
2. Students will be able know about different styles and content in visual effects, compositing and motion graphics.
3. Students will be able to analyze the importance of cognitive in visual effects.
4. Students will be able to apply to create effective visual effects and motion graphics for films and videos.
5. Students will be able to learn compositing and motion graphics for films and videos.

MAPPING OF COURSE OBJECTIVES AND COURSE OUTCOMES

		Course Outcomes				
		1	**2**	**3**	**4**	**5**
Course Objectives	**1**	✓				
	2		✓			
	3			✓		
	4				✓	
	5					✓

REFERENCES

1. Adobe after effects classroom in a book by:
2. After effects visual effects and compositing by : Mark Christiansen
3. After effects apprentice by Trish and christener

B.Sc. (Animation and Multimedia) 4th Semester
CODE: BSC-AM-19-407
SUBJECT NAME: Fundamentals Rigging, Skinning and Animation Lab

NO OF CREDITS: 2

L T P TOTAL
0 0 4 4

Internal Practical: 15
External Practical: 35
TOTAL: 50
Duration of Exam: 3 Hours

Course Objectives

1. To create the rigging and skinning
2. To create the different types rigging like mechanical and character rigging.
3. To understand the basic principles of animation
4. To change the character expression
5. To understand the controllers with connection,

S.NO.	PRACTICAL
1.	Rigging fundamentals
2.	Biped Character setup, bind and Skinning
3.	Quadruped Character setup, bind and Skinning
4.	Mechanical Rigging
5.	Basic understanding of animation principals
6.	Ball Bouncing with different timing and weight
7.	Character head turn blinking and thinking
8.	Change in Character emotions
9.	Exercise based on flour sag
10.	Channel controls and connection editor.

COURSE OUTCOMES:

1. Students will be able to learn rigging, skinning and basic principles of animation.
2. Students will be able to understand rigging, skinning and basic principles of animation.
3. Students will be able to analyze the importance of rigging, skinning and basic principles of animation for films.
4. Students will be able to apply tools to create effective rigging, skinning and basic principles of animation.
5. Students will be able to apply controller on object or character.

MAPPING OF COURSE OBJECTIVES AND COURSE OUTCOMES

		Course Outcomes			
	1	**2**	**3**	**4**	**5**
1	✓				
2		✓			
3			✓		
4				✓	
5					✓

(Course Objectives)

B.Sc. (Animation and Multimedia) 4th Semester
CODE: BSC-AM-19-408
SUBJECT NAME: Game Designing Lab

NO OF CREDITS: 2

			Internal Practical:	15
L	**T**	**P TOTAL**	External Practical:	35
0	0	4 4	TOTAL:	50
			Duration of Exam: 3 Hours	

Course Objectives

1. To know about different video games.
2. To understand the different aspects of game like game player, machine, game world,
3. creative and expressive play Character development, storytelling, key concept, the storytelling engine.
4. To understand about game interface, game complexity etc.
5. To apply general principle of game level design. Key design principles, layout design.

UNIT I: Games and Video Games, Conventional game versus Video games, Game Genres.

UNIT II: Understanding Player, Machine, Game World, creative and expressive play Character development, storytelling, key concept, the storytelling engine.

UNIT III: Creating the user experience, Play centric interface design,

UNIT IV: General principle of game level design. Key design principles, layout design.

UNIT V: Managing complexity, Infraction model, Allowing for customization.

COURSE OUTCOMES:

1. Students will be able to learn the pipeline to create video games.
2. Students will be able to understand different styles and treatment of content in game creation like modeling texturing, animation and lighting.
3. Students will be learn Understanding Player, Machine
4. Students will be able to analyze the importance of cognitive environment and game level design, layout design principles in game designing.
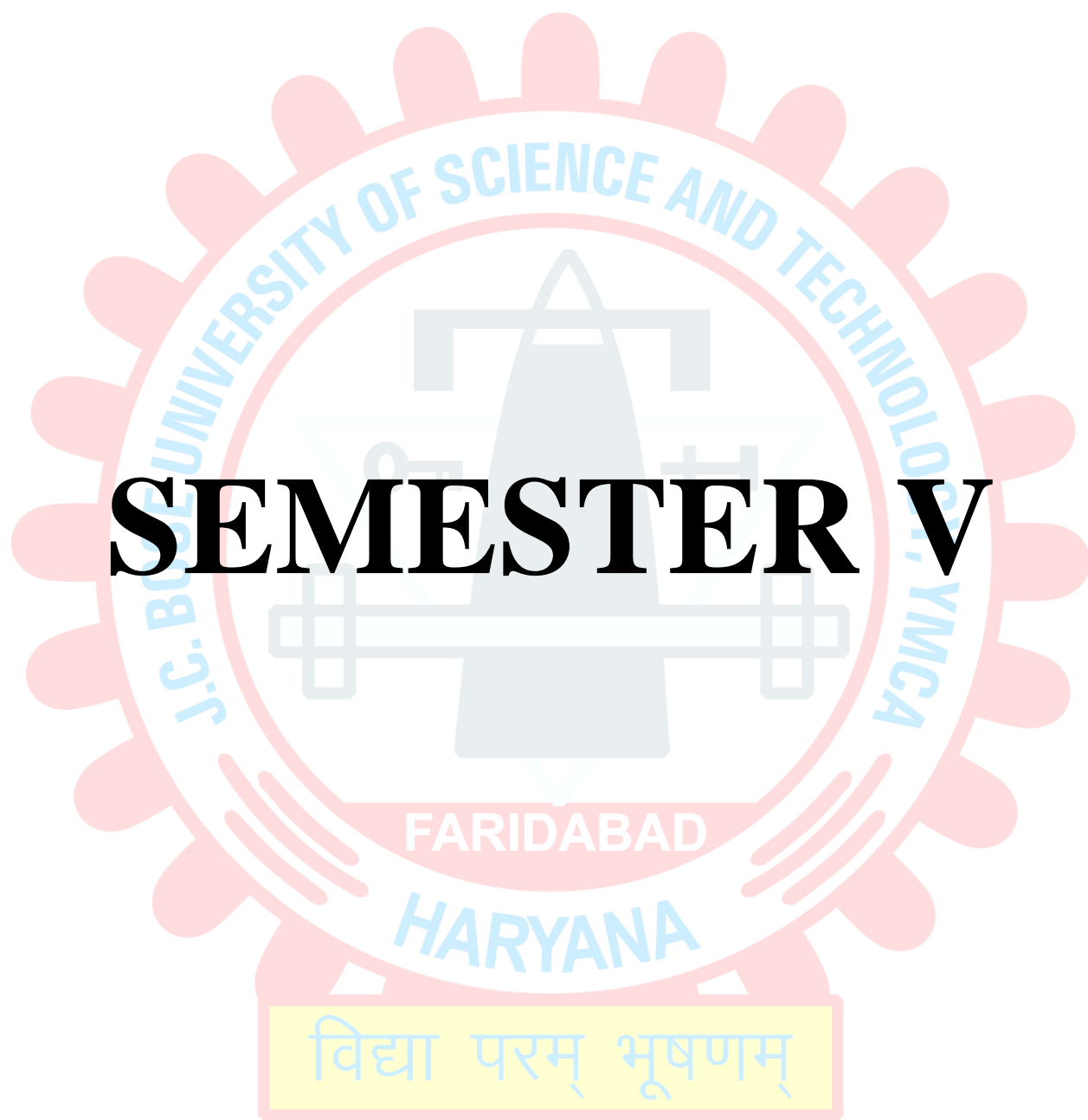5. Students will be able to apply tools that help to create effective games.

MAPPING OF COURSE OBJECTIVES AND COURSE OUTCOMES

		Course Outcomes				
		1	**2**	**3**	**4**	**5**
Course Objectives	**1**	✓				
	2		✓			
	3			✓		
	4				✓	
	5					✓

REFERENCES

1. The Art of Game Design by: Jesse Schell
2. A Theory of Fun for Game Design by Raph Koster
3. Fundamentals of Game Design by Zion Gibson
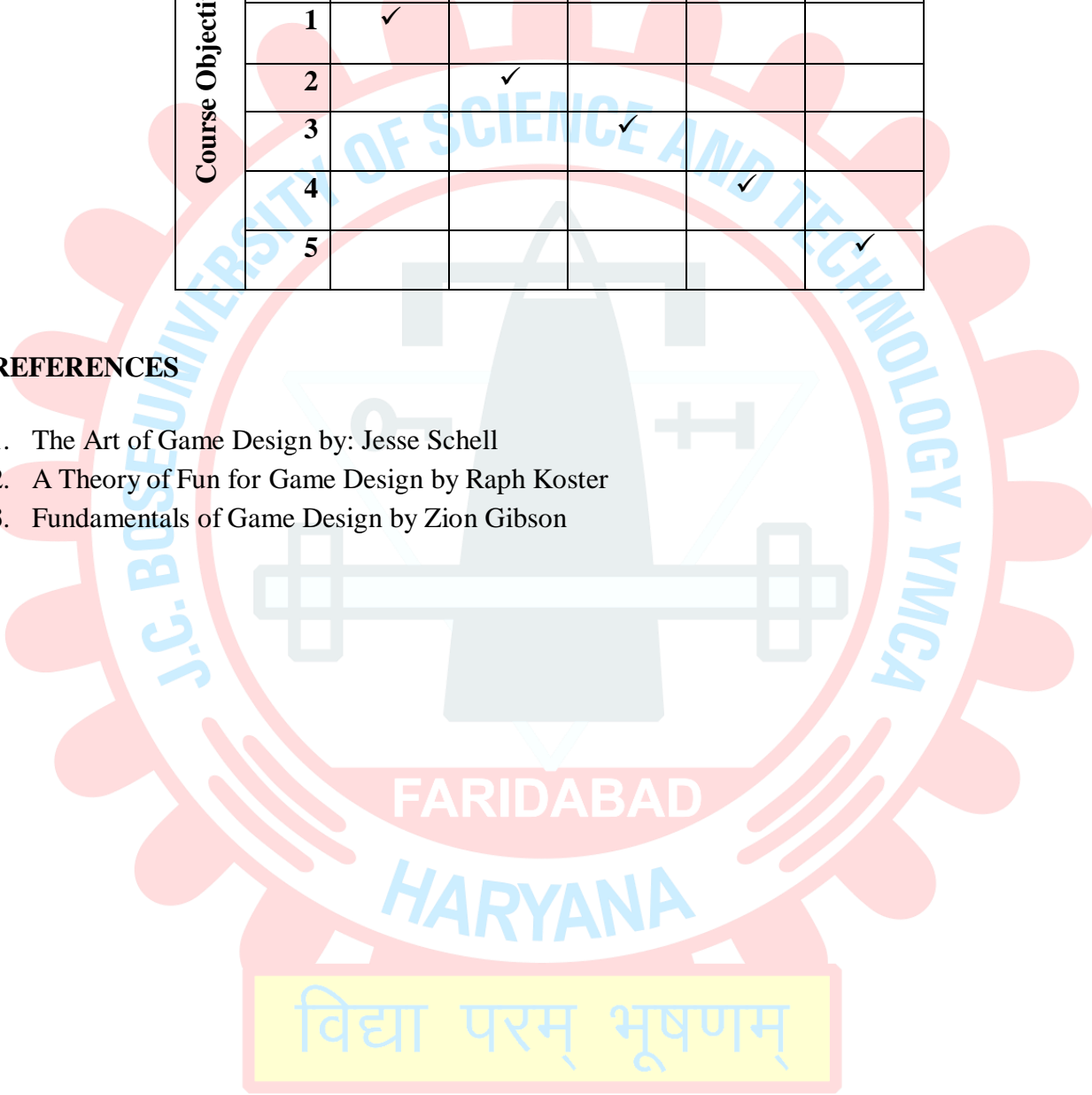
SEMESTER V

B.Sc. (Animation and Multimedia) 5th Semester
CODE: BSC-AM-19-501
SUBJECT NAME: Visual Art V

NO OF CREDITS: 4

		SESSIONAL:	25
L	**P**	THEORY EXAM:	75
4	**0**	TOTAL:	100

NOTE: Question paper has two parts. Part-1 has 10 questions each of 2 marks. It covers the entire syllabus. Attempt any four questions out of six from Part-2.

Course objectives:
1. To understand faces and feature according to character's nature
2. To implement the Character Designing based on model sheet,
3. The Study of fantasy character to design a character.
4. To analyze the Character Turnaround, Props and personality of a character.
5. To implement the skills to composition drawing

UNIT I : Create a minor project based on story boarding,(script)

UNIT II: Creating a Model Sheet: Turnaround Sheet, Expressions of character, different type of Poses of the same character, costumes and props of the character.

UNIT III: Composition drawing based on live photography

UNIT IV: Draw a same character in different personality and change objects into a character

UNIT V: Draw a Fantasy character from real life image

COURSE OUTCOMES: After completing this course students will be able:
1. Students will be able to apply drawing skills to draw various styles of character designing for different platforms.
2. Students will be able to learn about complete story boarding,
3. Students will be able to learn fantasy character to design a character.
4. Students will be able to learn the Character Designing based on model sheet,
5. Students will be able to apply them into real composition.

MAPPING OF COURSE OBJECTIVES AND COURSE OUTCOMES

		Course Outcomes				
		1	**2**	**3**	**4**	**5**
Course Objectives	**1**	✓			✓	
	2		✓			
	3			✓		
	4				✓	
	5					✓

REFERENCES

1. Creating Character with personality by Tom Bancoft
2. Animator by Nick hunter
3. Cartoon Animation by Preston Blair
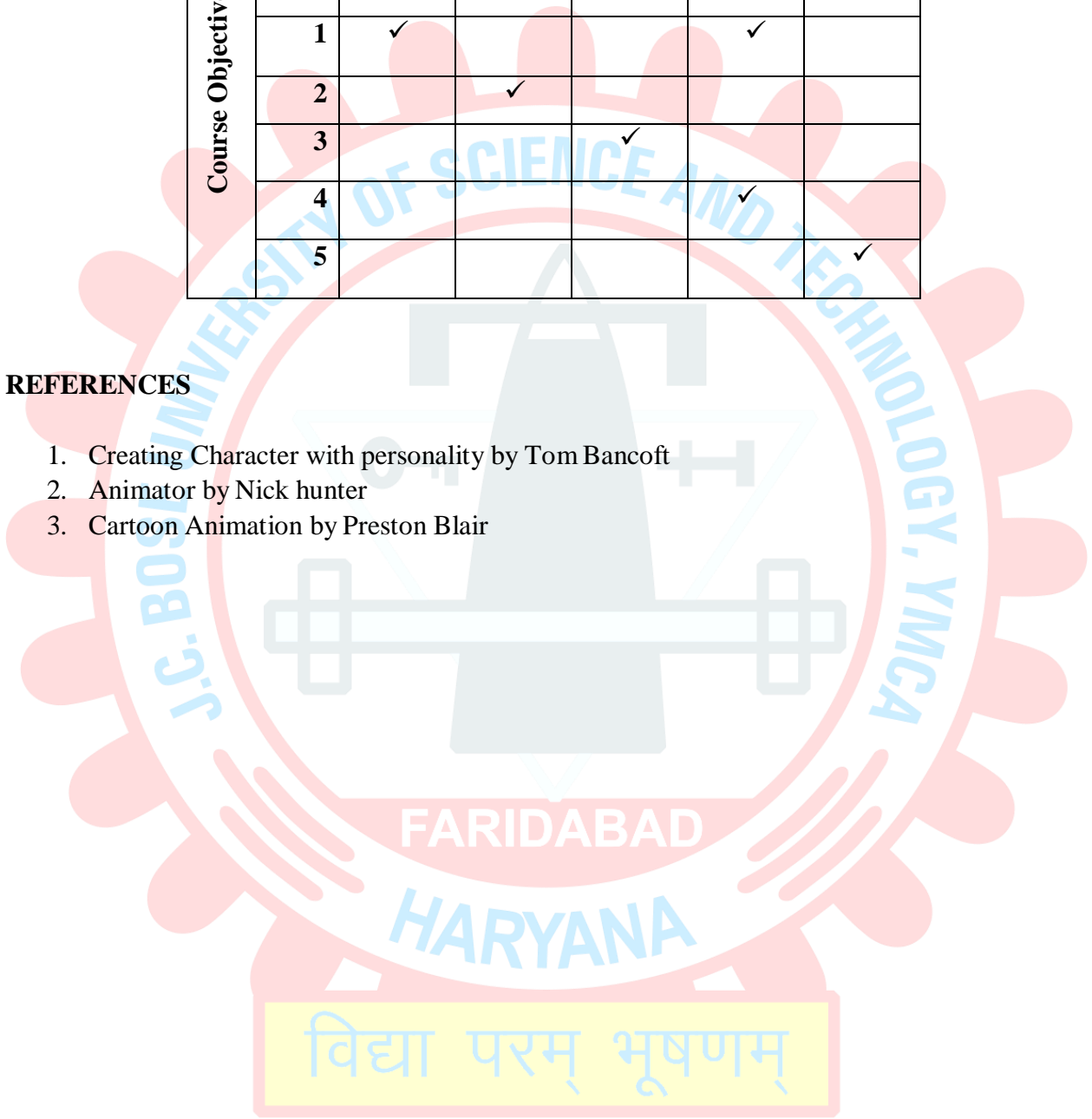
B.Sc. (Animation and Multimedia) 5th Semester

CODE: BSC-AM-19-502
SUBJECT NAME: Sociology for Animation

NO OF CREDITS: 4

	SESSIONAL: 25
L P	THEORY EXAM: 75
4 0	TOTAL: 100

NOTE: Question paper has two parts. Part-1 has 10 questions each of 2 marks. It covers the entire syllabus. Attempt any four questions out of six from Part-2.

Course Objective:

1. To teach students the concepts, theories, and methods of the behavioral and social services.
2. To introduce students to the basic social processes of society, social institutions and patterns of social behavior.
3. To train students to understand and to interpret objectively the role of social processes,
4. To understand social institutions and social interactions in their lives.
5. To enable students to cope effectively with the socio-cultural and interpersonal processes of a constantly changing complex society.

Unit I: Sociology for Animation: Definition, Modernity and Change in society,

Unit II: Research Mythology: Qualitative, Quantitative methods, Techniques of data collection, variables, sampling, hypothesis, reliability and validity

Unit III: Stratification and Mobility: Concept of equality and inequality, Hierarchy, exclusion, Poverty deprivation

Unit IV: Social Dimensions: Social Stratification of class, Status groups, Gender, Ethnicity and Race

Unit V: Scope of sociology, sociology and common sense

COURSE OUTCOMES: After completing this course students will be able:

1. Students will be able to demonstrate familiarity with the sociological imagination.
2. Students will be able to understand sociological theory.
3. Students will be able to gain facilities with sociological methods.
4. Students will be able to describe hoe social structures, culture and institutions operate.
5. Students will be able to understand Scope of sociology, sociology and common sense

MAPPING OF COURSE OBJECTIVES AND COURSE OUTCOMES

		Course Outcomes				
		1	**2**	**3**	**4**	**5**
Course Objectives	**1**	✓				
	2		✓			
	3			✓		
	4				✓	
	5					✓

REFERENCES

1. Basic concepts in sociology by Max weber
2. Sociology: The Basics by Martin Albrow
3. A Complete Resource Manual Sociology by J K Chopra
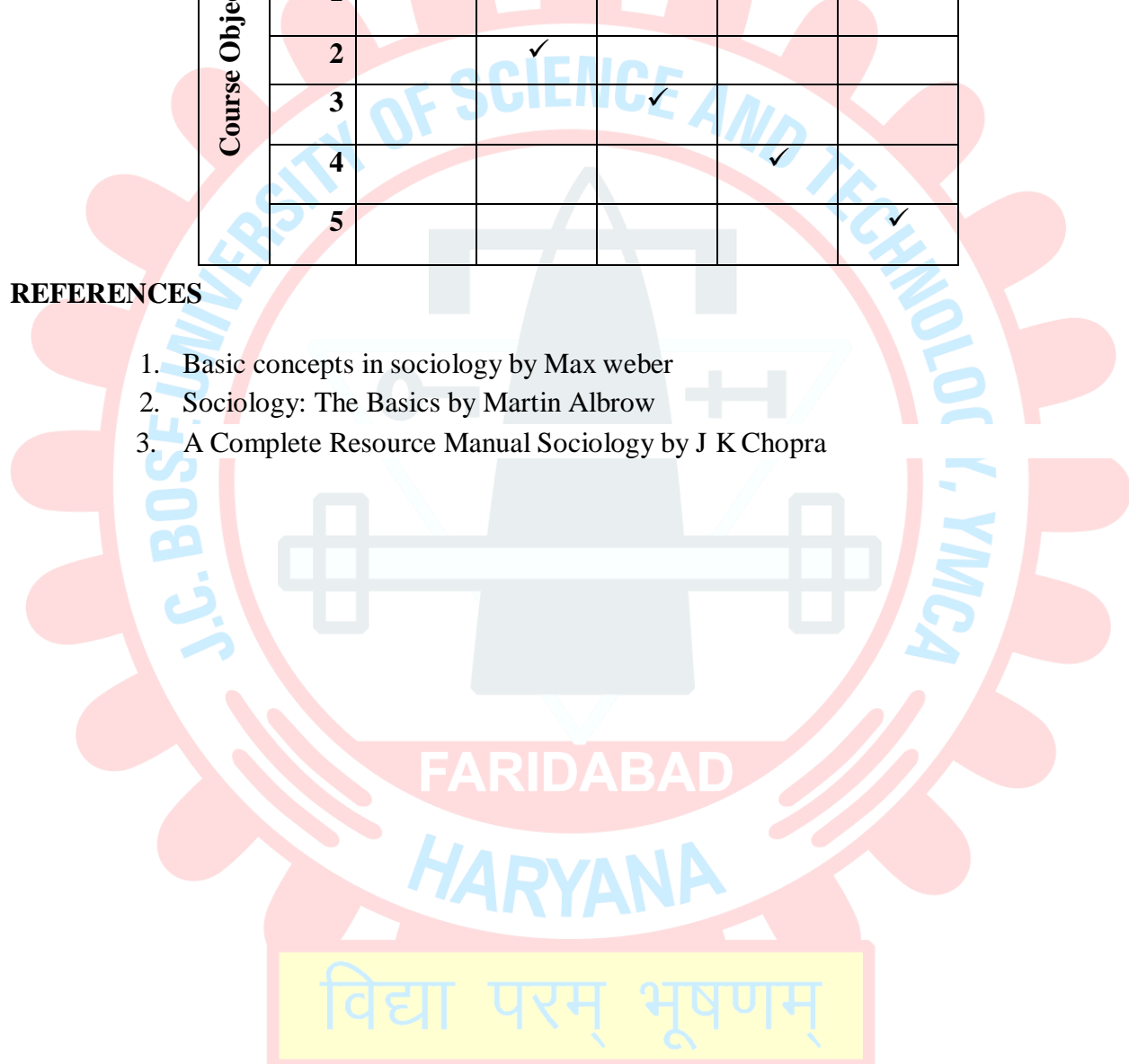
B.Sc. (Animation and Multimedia) 5th Semester

CODE: BSC-AM-19-503
SUBJECT NAME: Advance 2D animation

NO OF CREDITS: 4

		SESSIONAL:	25
L	**P**	**THEORY EXAM:**	**75**
4	**0**	**TOTAL:**	**100**

NOTE: Question paper has two parts. Part-1 has 10 questions each of 2 marks. It covers the entire syllabus. Attempt any four questions out of six from Part-2.

Course Objectives

1. Learn advance techniques of animation such as rotation of planet through masking,
2. To learn production pipeline and industry quality of 2D animation by creating Animatics, walk cycles, etc
3. To implement advance principles of traditional animation in Adobe animate to create high quality animation for production.
4. To create animation with special visual and audio effects to create engaging and interesting environment.

UNIT I: – Advance Animation Techniques Custom Ease Graph, motion editor, masking, rigging tool, camera tool, working with sound, create a planet/ globe rotation animation with masking, create growing vine animation,

UNIT II: Introduction to character animation Create Animatix, Walk cycle, Eye blink, Lip Sync basics, facial expression, body poses, create animation video on song,

UNIT III: Advance Character Animation: Mood Walk Cycles, Jump with anticipation, create character action sequence with facial expression, create a dialog delivery.

UNIT IV: Special Effects and Environment: Create flowing water animation, camera animation, magic sequence with effects, water splash animation, bomb explosion animation, rocket/airplane animation.

COURSE OUTCOMES:

1. Students will be able to learn various tools of digital 2d animation.
2. Students will be able to understand production pipeline to create 2d animation.
3. Students will be able to analyze special effects in animation to bring interest and awe in the scenes and backgrounds.
4. Students will be able to apply the tools to create 2D animation for films and videos.

MAPPING OF COURSE OBJECTIVES AND COURSE OUTCOMES

		Course Outcomes				
		1	**2**	**3**	**4**	**5**
Course Objectives	**1**	✓				
	2		✓			
	3			✓		
	4				✓	
	5					✓

REFERENCES
1. Adobe Animate CC Classroom in a Book by Russell Chun
2. Learn Adobe Animate CC for Interactive Media by Labrecque Joseph
3. Foundation Flash Cartoon Animation by Jones Tim

B.Sc. (Animation and Multimedia) 5th Semester
CODE: BSC-AM-19-504 (1)
SUBJECT NAME: Advance Compositing and VFX (Elective)

NO OF CREDITS: 4

		SESSIONAL:	25
L	**P**	THEORY EXAM:	75
4	**0**	TOTAL:	100

NOTE: Question paper has two parts. Part-1 has 10 questions each of 2 marks. It covers the entire syllabus. Attempt any four questions out of six from Part-2.

Course Objectives

1. To study about different types of digital composing, node based tool for compositing.
2. To understand the physical, dynamic simulation like water, fire smoke etc.
3. To acquire the knowledge of different types of camera tracking for adding some other contents in raw footage, to adding CGI elements in live action footage.
4. To create matte painting, rotoscopy visual effects
5. To create . Film Techniques - add/remove film grain, rope removal,

UNIT I: Introduction node based composting, Introduction to basic compositing in node base software import sequence, timeline.

UNIT II: Exploring Dynamics - understanding the use fluid dynamic, particles dynamics & Deformers in Autodesk Maya.

UNIT III: Compositing and visual effects - Learn how to integrate 3D animation and live motion video, and composite multiple video sources to create fantastic visual effects. **Camera Tracking** - 2d and 3d tracking using different type of tracking software. **Film Techniques** - add/remove film grain, rope removal, set extension, rig removal.

UNIT IV: Stereo Scoping - learn to convert 2d to 3d tricks using much software.

UNIT V: Environment Creation - In this structure you will understand the use of matte painting using industries top digital environment creation software to bring your imagination to reality.

COURSE OUTCOMES:

1. Students will be able know about visual effects and match moving.
2. Students will be able different type of content use in high end visual effects.
3. Students will be able to understand Film Techniques - add/remove film grain, rope removal,
4. Students will be able to analyze importance of visual effects in films and videos
5. Students will be able to apply tools to create high end visual effects for films and videos.

MAPPING OF COURSE OBJECTIVES AND COURSE OUTCOMES

		Course Outcomes				
		1	**2**	**3**	**4**	**5**
Course Objectives	**1**	✓				
	2		✓			
	3			✓		
	4				✓	
	5					✓

REFERENCES
1. Maya Manual By: Lavender Daniel
2. Autodesk Maya 2018 basics guide by Kelly Murdoch
3. Digital Compositing with nuke by: lanier Lee lanier

B.Sc. (Animation and Multimedia) 5th Semester
CODE: BSC-AM-19-504 (2)
SUBJECT NAME: 3D Animation (Elective)

NO OF CREDITS: 4

		SESSIONAL:	25
L	P	THEORY EXAM:	75
4	0	TOTAL:	100

NOTE: Question paper has two parts. Part-1 has 10 questions each of 2 marks. It covers the entire syllabus. Attempt any four questions out of six from Part-2.

Course Objectives

1. To know about animation principles, different tools for 3d animation
2. To understand the deformers, blend shape, clusters, jiggle.
3. To understand the difference constrains**:** parent, point, orient, scale, Aim, pole vector, motion path.
4. To learn 3D character animation, and understand Curve Editor, time editor,
5. To learn trax editor, pose editor and Expression editor.

UNIT I: Animation principles, The 12 Principles of Animation: Squash and stretch anticipation staging straight ahead action and pose to pose follow through and overlapping action slow in and slow out, arc, secondary action, timing, exaggeration, solid drawing, appeal.

UNIT II: Animation tools in 3d software, deformers, blend shape, clusters, jiggle.

UNIT III: Constrains**:** parent, point, orient, scale, Aim, pole vector, motion path.

UNIT IV: Curve Editor, time editor, trex editor, pose editor, Expression editor.

UNIT V: Create a 30 second animation based on applied all principle animation.

COURSE OUTCOMES:

1. Students will be able to learn 3D animation.
2. Students will be able to understand different styles and tools to create 3D animation.
3. Students will be able to analyze the important of 3D animation tools to create animation for films and videos.
4. Students will be able to apply animation tools to create 3D animation for films and videos
5. . Students will create a animation Demo reel as a project.

MAPPING OF COURSE OBJECTIVES AND COURSE OUTCOMES

		Course Outcomes				
		1	**2**	**3**	**4**	**5**
Course Objectives	**1**	✓				
	2		✓			
	3			✓		
	4				✓	
	5					✓

REFERENCES
4. Maya Manual By: Lavender Daniel
5. Autodesk Maya 2018 basics guide by Kelly Murdoch
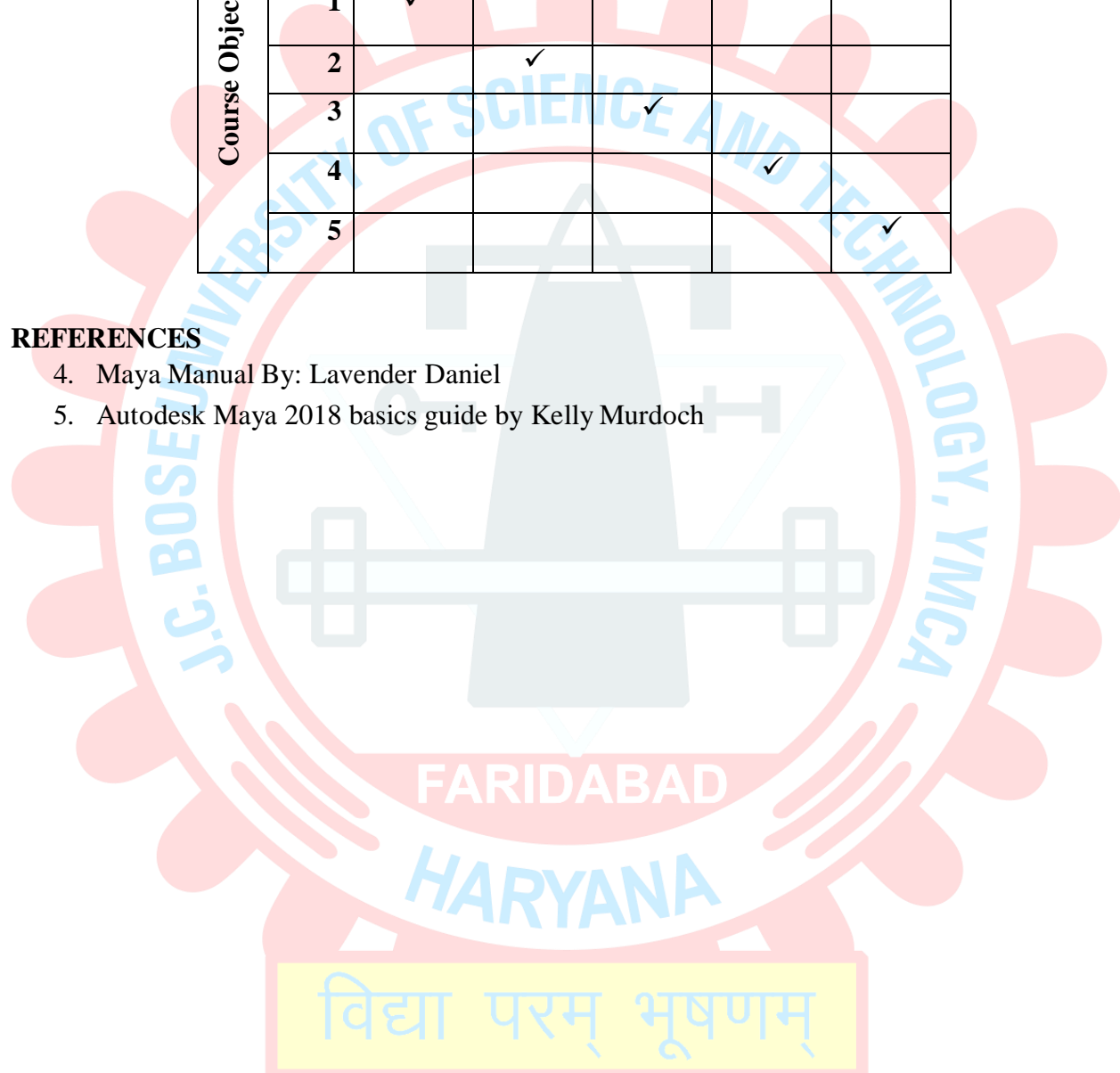
B.Sc. (Animation and Multimedia) 5th Semester
CODE: BSC-AM-19-504 (3)
SUBJECT NAME: Game Design and Documentation (Elective)

NO OF CREDITS: 4

			SESSIONAL:	25
L	**P**		**THEORY EXAM:**	**75**
4	**0**		**TOTAL:**	**100**

NOTE: Question paper has two parts. Part-1 has 10 questions each of 2 marks. It covers the entire syllabus. Attempt any four questions out of six from Part-2.

Course Objectives

1. To understand the concept of creating games.
2. To understand the pipeline of game design.
3. To know about game project layout.
4. To lean for case study of different types of games.
5. To learn design for games.

UNIT I: Introduction to Game Design Documentation**,** Game Design Overview, Detailed Design Doc, Story Overview,

UNIT II: Technical Design Doc, Pipeline Overview, System Limitations, Art Bible , Concept Art Overview,

UNIT III: Game Budget, Project Schedule, Story Bible, Script, Walkthroughs

UNIT IV: Study Game Design Documents**:** Case study of Game Design Documentation,
UNIT V: Example study, Create Low poly assets for game ,

COURSE OUTCOMES:

1. Students will be able to understand the concept of creating games.
2. Students will be able to understand the pipeline of game design.
3. Students will be able to know about game project layout.
4. Students will be able to analyze and solve the problems of games.
5. Students will be able to design low poly model for games,

MAPPING OF COURSE OBJECTIVES AND OUTCOMES

		Course Outcomes				
		1	**2**	**3**	**4**	**5**
Course Objectives	**1**	✓				
	2		✓			
	3			✓		
	4				✓	
	5					✓

REFERENCES
1. Chris Crawford on Game Design
2. Fundamentals of Game Design by Ernest Adams

B.Sc. (Animation and Multimedia) 5th Semester
CODE: BSC-AM-19-505
SUBJECT NAME: Graphics and Visual Design Lab IV

NO OF CREDITS: 2

			Internal Practical:	**15**
L	**T**	**P TOTAL**	**External Practical:**	**35**
0	**0**	**4 4**	**TOTAL:**	**50**
			Duration of Exam: 3 Hours	

Course Objectives

1. To understand the concept of creating textures, brushes, abstract and thematic designs.
2. Experiment and use expressive styles of Type sets and effects.
3. To understand the color theory and color balance, visual elements and use them appropriately in their design
4. Design background layouts and characters using 2D animation principles.

S.NO.	UI/UX Design PRACTICAL
1.	Introduction to UI Design
2.	Understanding UI Layouts
3.	Designing UI's
4.	Introduction to Web & Mobile UI Design
5.	Color and Typography
6.	UI Design Patterns/Components
7.	Introduction and Understanding to UX Design
8.	Introduction to Web & Mobile UX Design
9.	Learning UX Tools & Techniques
10.	UI Design & Components

COURSE OUTCOMES:

1. Students will be able to learn illustrations with line art, Black and white and colors.
2. Students will be able to develop a foundation for understanding the individual style of illustration.
3. Students will be able to analyze Classify anyIllustrations for educational, corporate, Science and industrial purpose.
4. Students will be able to apply all the tools and art and technical illustrations for UI/UX.

MAPPING OF COURSE OBJECTIVES AND OUTCOMES

<table>
<tr><td rowspan="2"></td><td colspan="5">Course Outcomes</td><td></td></tr>
<tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td></tr>
<tr><td rowspan="5">Course Objectives</td><td></td><td></td><td></td><td></td><td></td></tr>
</table>

Course Objectives	1	2	3	4	5
1	✓				
2		✓			
3			✓		
4				✓	
5					✓

REFERENCES

1. UI/UX designer's sketchbook by: David Williams
2. UI/UX design by: Terri Jones
3. UI/UX Design for Designers & Developers 2018 by Nathan Clark

B.Sc. (Animation and Multimedia) 5th Semester
CODE: BSC-A-19-506
SUBJECT NAME: Advance 2D Animation Lab

NO OF CREDITS: 2

L T P TOTAL
0   0   4   4

Internal Practical: 15
External Practical: 35
TOTAL: 50
Duration of Exam: 3 Hours

Course Objectives

1. To learn advance techniques of masking and motion guide.
2. To acquire knowledge about production pipeline and industry quality of 2D animation by creating Animatics, walk cycles, etc
3. To implement advance principles of traditional animation in Adobe animate to create high quality animation for production.
4. To create animation with special visual and audio effects to create engaging and interesting environment.

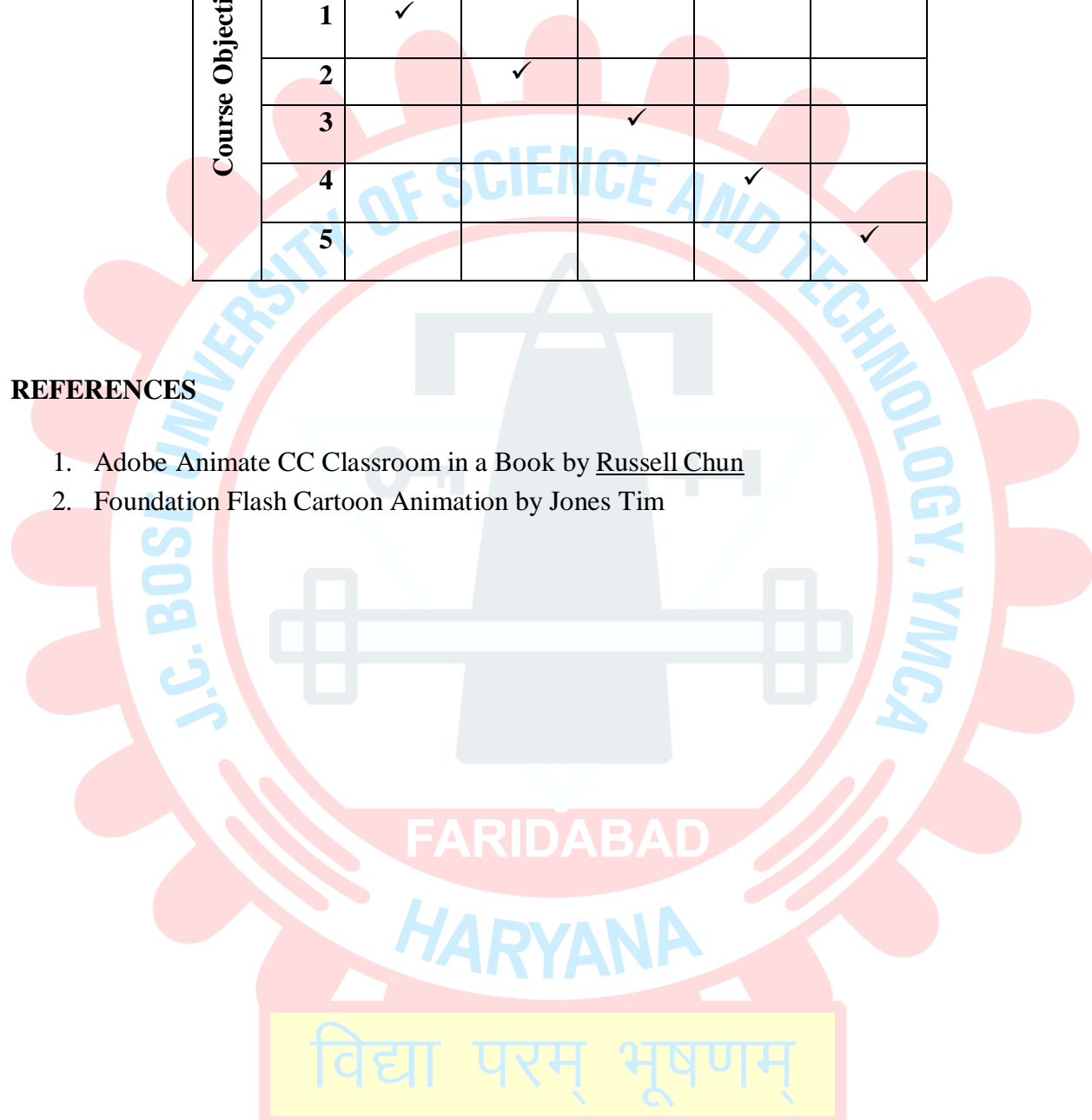| S.NO.	PRACTICAL
1.	Create Writing/ Drawing with hands/ pen animation
2.	Walk cycle with background panning
3.	Lip Sync and facial expression animation
4.	Sync animation clip with sound
5.	Create Mood walk cycle
6.	Create Jump with anticipation
7.	Create character action sequence
8.	create a dialog delivery
9.	Create water splash animation
10.	Create magic sequence with effects

COURSE OUTCOMES:

1. Students will be able to learn techniques of animation such as rotation of planet through masking.
2. Students will be able to understand the animation principles for character animation.
3. Students will be able to analyze the technical and character animation, expression animation, and special effects in 2d animation.
4. Students will be able to apply tools and principles to create 2D animation for films and videos.

MAPPING OF COURSE OBJECTIVES AND COURSE OUTCOMES

		Course Outcomes				
		1	**2**	**3**	**4**	**5**
Course Objectives	**1**	✓				
	2		✓			
	3			✓		
	4				✓	
	5					✓

REFERENCES

1. Adobe Animate CC Classroom in a Book by Russell Chun
2. Foundation Flash Cartoon Animation by Jones Tim

B.Sc. (Animation and Multimedia) 5th Semester
CODE: BSC-AM-19-507 (1)
SUBJECT NAME: Advance Compositing and VFX Lab (Elective)

NO OF CREDITS: 4

L T P TOTAL
0   0   8   8

Internal Practical: 30
External Practical: 70
TOTAL: 100
Duration of Exam: 3 Hours

Course Objectives

1. To create effects by using particles, create ocean, hair and fur etc.,
2. To learn to adding CGI elements in live action footage using tracking data.
3. To learn the difference types of render passes of CGI elements for composting.
4. To understand the high end compositing.

S.NO.	PRACTICAL
1.	Create particles effects, fireworks effects, rain effects, snowfall.
2.	Heavy particles simulation create chocolate and honey
3.	Advance fluid simulation, create heavy smoke with fire
4.	Create bomb blast effect
5.	Create shock waves
6.	Create ocean
7.	Create dust effects
8.	Create hair and fur
9.	Add CGI elements in live action footage
9.1	Track live action footage and tracking date to 3D software
9.2	Create CGI elements according to the live action footage
9.3	Render CGI elements in passes
9.4	Compose with all passes in live action footage

COURSE OUTCOMES:

1. Students will be able to learn high end visual effects content like dynamic simulation, CGI effects and camera tracking.
2. Students will be able to understand the different styles and treatment of content using in high end visual effects.
3. Students will be able to analyze importance dynamic simulation, CGI effects camera tracking and add CGI elements in live action footage.
4. Students will be able to apply tools to create dynamic simulation and CGI effects to help create effective high end visual effects.

MAPPING OF COURSE OBJECTIVES AND COURSE OUTCOMES

		Course Outcomes				
		1	2	3	4	5
Course Objectives	1	✓				
	2		✓			
	3			✓		
	4				✓	
	5					✓

REFERENCES

1. Maya Manual By: Lavender Daniel
2. Autodesk Maya 2018 basics guide by Kelly Murdoch
3. Digital Compositing with nuke by: lanier Lee lanier

B.Sc. (Animation and Multimedia) 5th Semester
CODE: BSC-A-19-507 (2)
SUBJECT NAME: 3D Animation Lab (Elective)

NO OF CREDITS: 4

L	T	P TOTAL
0	0	8 8

Internal Practical: 30
External Practical: 70
TOTAL: 100
Duration of Exam: 3 Hours

Course Objectives

1. To know about Animation basic blocking, Body Mechanics
2. To know about different advance Acting, Facial expression and Emotions.
3. To understand the 3d Animation according to storyboard.
4. To understand and use the Animation according to live action footage, Direction for animation.

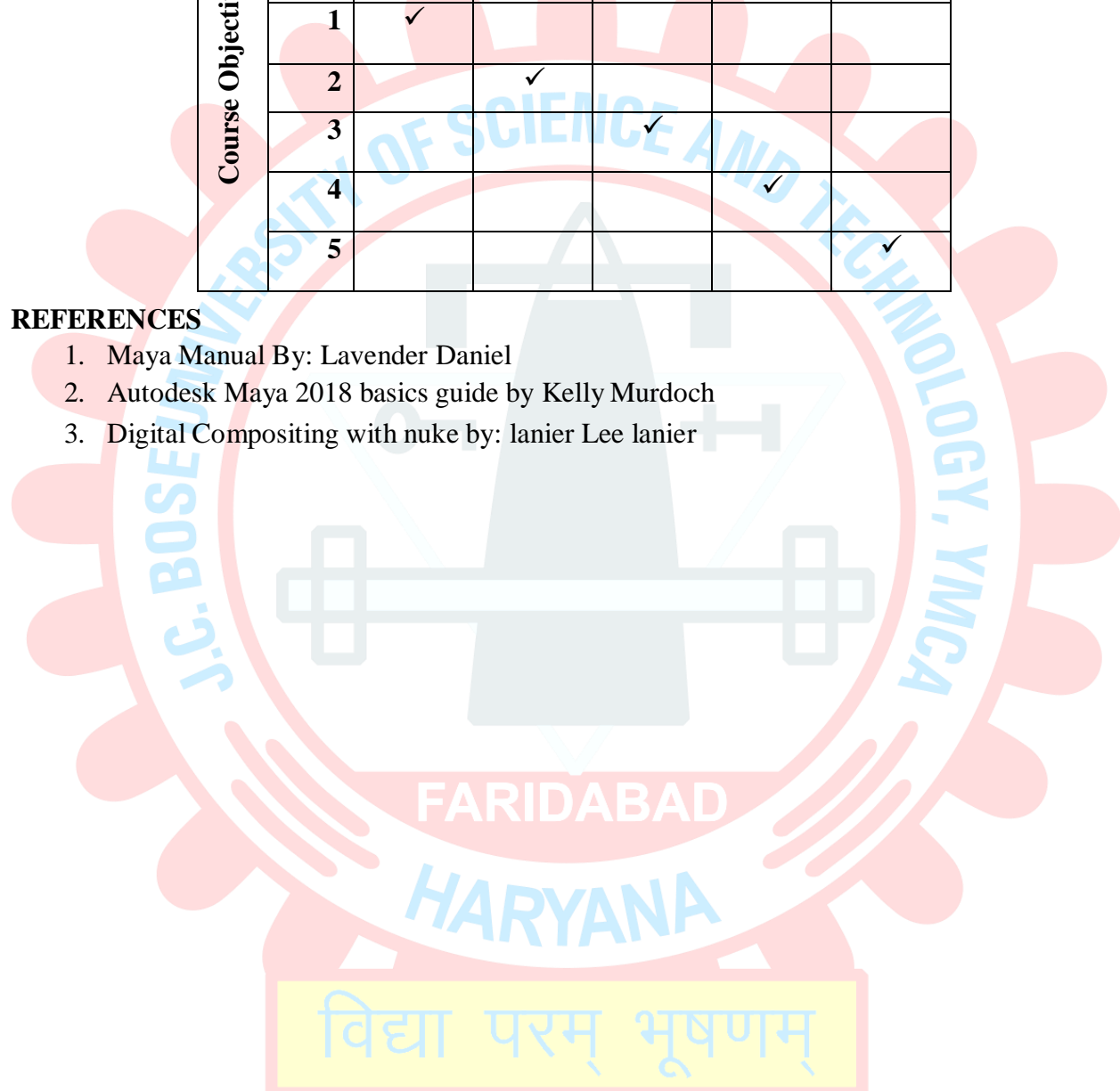| S.NO.	PRACTICAL
1.	Animation basic blocking
2.	Body Mechanics
3.	Advance Body Mechanics
4.	Acting, Facial expression and Emotions
5.	Animation from Storyboard
6.	Animation from live action video
7.	Walk through and Camera animation
8.	Direction for animation

COURSE OUTCOMES:

1. Students will be able to learn 3D animation tools and techniques.
2. Students will be able to understand different tools, animation principles and facial expression.
3. Students will be able to analyze the 3d animation like Body Mechanics, Acting, Facial expression and Emotions.
4. Students will be able to apply tools and acquired knowledge to create 3d animation for films and video.

MAPPING OF COURSE OBJECTIVES AND COURSE OUTCOMES

		Course Outcomes				
		1	**2**	**3**	**4**	**5**
Course Objectives	**1**	✓				
	2		✓			
	3			✓		
	4				✓	
	5					✓

REFERENCES

1. Maya Manual By: Lavender Daniel
2. Autodesk Maya 2018 basics guide by Kelly Murdoch
3. Digital Compositing with nuke by: lanier Lee lanier

B.Sc. (Animation and Multimedia) 5th Semester
CODE: BSC-A-19-507 (3)
SUBJECT NAME: Game Design Lab II (Elective)

NO OF CREDITS: 4

				Internal Practical:	30

L T P TOTAL
0 0 8 8

Internal Practical: 30
External Practical: 70
TOTAL: 100
Duration of Exam: 3 Hours

Course Objectives

1. To create the gaming characters with texturing.
2. To create the different types of props, and environment.
3. To understand the game engines workflow.
4. To create game assets and effects lighting and camera in game engine.

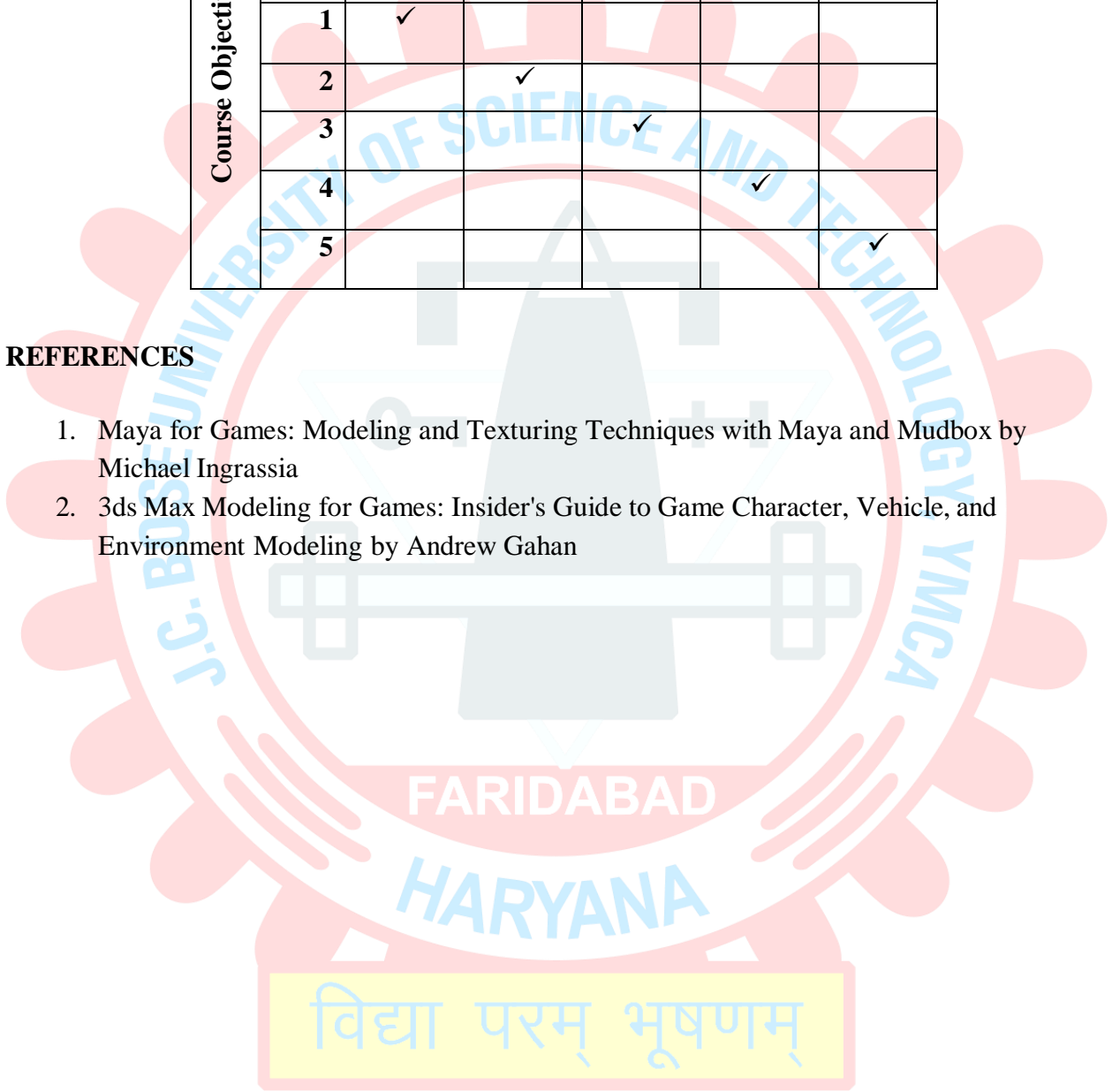| S.NO.	PRACTICAL
1	Create low poly models
2	Texturing
3	Create game props.
4	Create game characters
5	Create game environment
6	Introduction to game engine.
6.1	Importing assets in game engine.
6.2	Lighting, camera.

COURSE OUTCOMES:

1. Students will be able to learn modelling, texting for game designing.
2. Students will be able To understand the different styles and treatment of content in game designing
3. Students will be able to analyze the importance of modelling texturing lighting and effects in game designing.
4. Students will be able to apply tools in game designing to create modelling, texturing and lighting.

MAPPING OF COURSE OBJECTIVES AND COURSE OUTCOMES

		Course Outcomes				
		1	**2**	**3**	**4**	**5**
Course Objectives	**1**	✓				
	2		✓			
	3			✓		
	4				✓	
	5					✓

REFERENCES

1. Maya for Games: Modeling and Texturing Techniques with Maya and Mudbox by Michael Ingrassia
2. 3ds Max Modeling for Games: Insider's Guide to Game Character, Vehicle, and Environment Modeling by Andrew Gahan

SEMESTER VI

PAPER CODE	COURSE	REQUIRMENT (HOURS)	CREDITS	UNIVERSITY EXAMS	INTERNAL ASSESMENT	TOTAL	Course Type
BSC-AM-19-604	Major Project: Show Reel	32	16	300	200	500	SEC
BSC-AM-19-606	Dissertation and Viva Voce		2	-	50	50	Seminar
	TOTAL	**32**	**18**	**300**	**250**	**550**	

Major Project: Procedure for Annual Examination and continuous Assessment of:

(A) Internal Assessment
1. **Project Evaluation**   50   **Marks**
2. **Project Seminar**   50   **Marks**
3. **Project Viva**   100   **Marks**

(B) University Assessment Mark
1. **Assessment by Institute Faculty**   50   **Marks**
2. **Assessment by Industrial Guide**   200   **Marks**
3. **Conduct Marks**   50   **Marks**

  Total   500   **Marks**

SUBJECT NAME: PHOTOSHOP
SUBJECT CODE: GEN-1

Course Objectives
1. To understand of basic tools of Photoshop.
2. To understand the layer and filters and effects.
3. To understand the visual elements and uses.
4. To understand the digital design and the uses.

S.NO.	PRACTICAL
1.	Productively utilize the Photoshop environment, including the use of Layers, Panels, Channels, Paths, the Toolbox, and the Options Bar
2.	Apply painting, retouching, filters, and adjustment and layer style methods
3.	Understand the difference between raster and vector graphics,
4.	Introduction of advanced theories including the mask and clipping Path.
5.	Printing And Exporting Your Work

Course Outcomes: At the end of program the student able…
   a. To create digital design.
   b. To develop effective graphics for both web and print media.
   c. To apply the concept and design to create art works.

SUBJECT NAME: Drawing and Sketching
SUBJECT CODE: GEC-2

Course Objectives
1. Learn drawing with basic shapes and object drawing.
2. Perspective study.
3. Anatomy study(Basic)

S.NO.	PRACTICAL
1.	Define perspective, proportion, horizon line, vanishing point.
2.	Illustrate a word in 1-point perspective.
3.	Draw architecture using 2-point perspective.
4.	show 3-D objects on a flat surface using one vanishing point.

\
Course Outcomes: At the end of program the student acquire knowledge about:
a. Students will learn to draw simple forms (cubes and rectangular prisms, etc.) using one-point perspective and then progress to drawing block letters of their name using one-point perspective.
b. The letters of the name can be drawn in any creative way; horizontal, vertical, diagonal, circular (as shown in the picture above), etc.
c. Students will have the choice of using a variety of media: Sharpie marker, watercolor paint, color pencil, color stick, pastel, and crayon to add a variety of color and design to their name artwork.
d. The background paper around the name drawing may remain white or take on a simple design in order to contrast with the main name drawing.

SUBJECT NAME: 3D Modeling
SUBJECT CODE: GEC-3

Course Objectives

1. To introduce the workflow of 3D designing.
2. To understand use of 3D Modeling in various industrial work process.
3. To introduce interface of 3D softwares.
4. To understand fundaments and techniques of 3D modeling.

UNIT I: Overview of 3D Modeling Uses of 3D mdelding in Industries, Introduction to 3D software.
UNIT II: Introduction to diffident types of 3D modeling, understanding 3D components and geometry for modeling, transform tools, fundaments of polygon modeling extrude for model creation, edge loops and rings, connecting, bridge etc.
UNIT III: Advance tools for 3d modeling.
UNIT IV: High poly modeling, vehicle, export for different platforms.

Course Outcomes
a. Student will be aware and familiarized with 3D design process.
b. Implement 3D modelling in the industrial feilds related to their course or subjects.
c. Student will be able to work on different platforms of 3D designing.
d. Understand and implement modeling tools and techniques to create simple or complex objects for visual display like prototype, etc.

SUBJECT NAME: PHOTO EDITING
SUBJECT CODE: GEC-4

Course Objectives
1. To acquire knowledge of photo editing, techniques
2. To apply techniques for darkening and lightening parts of an image.
3. To understand Correct colour and overall colour balance in digital photographs.

S.NO.	PRACTICAL
1.	Easily navigate Photoshop interface to find what you need
2.	Crop and resize images
3.	Work with color to edit and manipulate images
4.	Work with layers
5.	Add text to images
6.	Create and use gradients
7.	Photo retouching
8.	Content-Aware feature to remove objects from images.

Course Outcomes: At the end of program the student acquire knowledge about:
a. Use specialized techniques for knocking out and modifying a subject.
b. Apply the sharpening routine in appropriate situations.
c. To implement a realistic composite photo by superimposing a subject on a background with appropriate shadows and perspective.

SUBJECT NAME: Video Editing
SUBJECT CODE: GEC-5

Course Objectives

1. To know about basic digital video.
2. To understand the editing fundamentals
3. TO learn digital video editing software.
4. To learn video editing software and different types of outputs for broadcasting.

UNIT I: Introduction and fundamental of digital video.

UNIT II: Difference between linear and non linear editing.

UNIT III: Digital Video Editing tools Interface, editing tools, timeline, trimming, slow motion, video effects and transitions etc. Supporting digital editing tool: Adobe Premiere.

UNIT IV: Color correction, Video export for different platform. Different broadcasting formats.

COURSE OUTCOMES: After completing this course students will be able:

a. To learn fundamental of digital video
b. To understand different styles and treatment of content in video production and editing
c. To analyze the films and videos and importance of codec and format for final output to broadcasting.
d. To apply the acquired knowledge of video editing for films and videos.