

Assessment Rubrics:

- Quiz / Assignment/ Quiz/ Discussion / Seminar
- Midterm Exam
- Programming Assignments
- Final Exam

Mapping of COs to Assessment Rubrics :

	Internal Exam	Assignment	Quiz	Lab Assessment	End Semester Examinations
CO 1	✓		✓		✓
CO 2	✓		✓	✓	✓
CO 3	✓	✓		✓	✓
CO 4		✓		✓	✓

14. ANIMATION USING BLENDER

Discipline	COMPUTER SCIENCE				
Course Code	UK1MDCCSC104				
Course Title	ANIMATION USING BLENDER				
Type of Course	MDC				
Semester	I				
Academic Level	1				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	3	2 hours	-	2	4 hours
Pre-requisites	Nil				
Course Summary	This course provides a comprehensive journey through the Blender interface, mastering vital navigation skills. It explores fundamental modelling techniques enabling the creation of 3D objects and characters.				

Detailed Syllabus:

Module	Unit	Content	Hrs (L+P)
I	Introduction to Blender		12
	1	Introduction to Blender, Commercial Software vs Open-source Software	
	2	History of Blender, Downloading and Installing Blender	
	3	Blender UI: Splash screen, Top bar and Status bar, Default Editors	
	4	Understanding Areas and Editors: Resizing areas, Splitting and joining areas, Understanding the types of editors	
II	Blender Objects		12
	5	Interface Elements: Panels, Pie Menus; 3D Viewport, 3D Scene	
	6	Creating Object, Moving, Rotating, Scaling, Active Tools, Manipulators, Menus	
	7	Modifiers, Workbench, Light options, Rendering	
	8	Stages of a Project, Defining the Stages, Character-Creation plan	
	9	Character Design: Description, Designing Character, adding colour, Finalizing the design	
III	Modelling in Blender		12
	10	Modelling tools: Vertices, Edges, Faces, making selections, Mesh modelling tools, Modelling Add-ons, LoopTools	
	11	Character Modelling: Mesh topology, modelling methods: Box Modelling, Poly to poly, Sculpt and Retopology, Modifiers	
	12	Hot air balloon modelling, Cartoon Giraffe modelling, Kite Modelling	
IV	Rigging		12
	13	Unwrapping, Painting, Shading, Character Rigging, Skinning	
	14	Lighting the scene, Analysing the real footage	
	15	Creating and Testing lights	

V	Flexi Module : Not included for End Semester Exams		12
	16	Animating the character	
	17	Showing/Hiding objects in Render	
	18	Exporting the final Render	

References

1. Oliver Villar, Learning Blender: A Hands-On Guide to Creating 3D Animated Characters, Third Edition, Addison-Wesley, 2021.
2. James Chronister, Blender Basics, Second Edition, 2006.
3. James Chronister, Blender Basics: A Classroom Tutorial Book, 5th Edition, cdscholls.org, 2017.

LAB EXERCISES

Design following models

1. Chair
2. Table
3. Pizza in Blender
4. Coffee Mug
5. French Fries
6. Piggy Bank
7. Donut
8. Table lamp in Blender
9. Penguin
10. Toy

Course Outcomes

No.	Upon completion of the course the graduate will be able to	Cognitive Level	PSO addressed
CO-1	Outline fundamental aspects of Blender	U	PSO-1
CO-2	Develop knowledge of Blender interface elements, such as panels, menus, and editor.	Ap	PSO-1, 3
CO-3	Use basic modelling techniques in Blender	Ap	PSO-1,2,3
CO-4	Develop models of various objects	Ap	PSO-1,2, 3

R-Remember, U-Understand, Ap-Apply, An-Analyse, E-Evaluate, C-Create

Note: 1 or 2 COs/module

Name of the Course: ANIMATION USING BLENDER

Credits: 2:0:1 (Lecture: Tutorial: Practical)

CO No.	CO	PO/PSO	Cognitive Level	Knowledge Category	Lecture (L)/ Tutorial (T)	Practical (P)
CO-1	Outline fundamental aspects of Blender	PO-3, 6, 7 PSO-1	U	F, C	L	-
CO-2	Develop knowledge of Blender interface elements, such as panels, menus, and editor.	PO-3, 6, 7 PSO-1,2,3	Ap	F, C, P	L	P
CO-3	Use basic modelling techniques in Blender	PO-1, 3, 6, 7 PSO- 1, 2, 3	Ap	F, C, P	L	P
CO-4	Develop models of various objects	PO-1, 3, 6, 7 PSO-1,2, 3	Ap	F, C, P	L	P

F-Factual, C- Conceptual, P-Procedural, M-Metacognitive

Mapping of COs with PSOs and POs :

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4
CO 1	-	-	1	-	-	2	2	-	2	-	-	-
CO 2	-	-	2	-	-	2	2	-	2	1	2	-
CO 3	1	1	3	-	1	2	2	-	2	1	2	-
CO 4	1	1	3	-	1	2	2	-	2	1	2	-

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

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