

DAYANANDA SAGAR UNIVERSITY

Shavige Malleshwara Hills, Kumaraswamy Layout, Bengaluru -560078, Karnataka.

SCHOOL OF DIGITAL TRANS-MEDIA AND DESIGN



SYLLABUS

FOR

BACHELOR OF DESIGN (B.Des.) – 2021

PRODUCT DESIGN AND USER EXPERIENCE DESIGN

(WITH EFFECT FROM 2021-22)

60:40 SCHEME

III SEM - B.DES.**COMPUTER AIDED DESIGN**

SEMESTER	III					
YEAR	II					
COURSE CODE	22BD2301					
TITLE OF THE COURSE	COMPUTER AIDED DESIGN					
SCHEME OF INSTRUCTION	Lecture Hours	Tutorial Hours	Practical Hours	Seminar/Projects Hours	Total Hours	Credits
	3	-	2	-	65	4

Pre-requisite Courses (if any)			
#	Sem/Year	Course Code	Title of the Course

COURSE OBJECTIVES :

- To learn about applications of various kinds of curves and understand how curves are modeled in computer aided software
- To learn about applications of various kinds of solid modeling approaches in CAD and understand the same
- To learn about applications of various surface modeling approaches in CAD
- To learn about applications of mesh-based approaches in CAD
- To learn about standard file exchange formats in CAD

COURSE OUTCOMES :

CO No.	Outcomes	Bloom's Taxonomy Level
CO1	Explain various kinds of curves in CAD and apply it in CAD software	L2
CO2	Explain various kinds of solids and their modeling in in CAD and apply it in CAD software	L3
CO3	Explain various kinds of surfaces and their modeling in in CAD and apply it in CAD software	L3
CO4	Explain mesh modeling in CAD and apply it in CAD software	L3
CO5	Explain various standard file exchange formats in CAD	L2

COURSE CONTENT:	
MODULE 1	
Modeling of curves, Analytical, Synthetic curves with advantages, Disadvantages, Comparison with parametric curves, Geometric modeling curves and surfaces parametric curves, Bezier curves, B-Splines.	

MODULE 2	
Solid models, Fundamentals of solid modeling, Different solid representation schemes, Boundary representation (B-rep), Constructive solid geometry (CSG), Feature based modeling, parametric/ variational modeling, Solid Manipulation in detail, Extrude, Revolve, Sweep, Loft,	
MODULE 3	
Surface Manipulation in detail, Bezier Surfaces, B-Spline Surfaces, NURBS, Extrude, Revolve, Sweep, Loft, Fill. Quality of surfaces.	
MODULE 4	
Mesh based modeling, File formats - stl, obj, 3mf, Mesh manipulation.	
MODULE 5	
Product data exchange standards, Studio exercise in virtual products and systems	

List of Laboratory/Practical Experiments activities to be conducted (if any):	
1.	Modeling of curves - 10 exercise
2.	Modeling of solids - 10 exercises
3.	Modeling of surfaces - 10 exercises
4.	Modeling of meshes - 10 exercises

TEXT BOOKS :

1. CAD/CAM: Theory and Practice, by Zeid, McGraw Hill

REFERENCES :

1. CAD/CAM, by Groover and Zimmers, Prentice Hall India Ltd.

PHOTOGRAPHY AND VIDEOGRAPHY

SEMESTER	III					
YEAR	II					
COURSE CODE	22BD2304					
TITLE OF THE COURSE	PHOTOGRAPHY AND VIDEOGRAPHY					
SCHEME OF INSTRUCTION	Lecture Hours	Tutorial Hours	Practical Hours	Seminar/Projects Hours	Total Hours	Credits
	2	-	4	-	78	4

Pre-requisite Courses (if any)			
#	Sem/Year	Course Code	Title of the Course
1.			

COURSE OBJECTIVES:

- To build equipment familiarity and impart basic skills in photography
- To build equipment familiarity and impart basic skills in videography
- To develop familiarity and impart basic skills in video-editing

COURSE OUTCOMES :

CO No.	Outcomes	Bloom's Taxonomy Level
CO1	Explain how camera works and use it	L2
CO2	Explain how to photograph in different scenarios like nature photography, photography for product marketing and illustrate it.	L3
CO3	Explain how to light the subjects with flash and natural lighting and illustrate it.	L3
CO4	Explain how to compose images using photography rules and illustrate it.	L3
CO5	Explain basic concepts of videography and illustrate it	L3

COURSE CONTENT:	
MODULE 1	
Fundamentals of photography, Photographic equipment used, controls and tools. The Camera: Types, Functions and accessories. Camera Mounts: Tripods, Dollies, Jibs, Hand held, crane and others. Camera stabilization systems and other considerations. Lenses: types and functions. Image Sensors: Tube, Single CCD and 3CCDs. Interlace and progressive scanning. PAL and NTSE Systems. Design Studio assignments on these topics.	

MODULE 2	
Picture composition; Framing, Centering, Screen direction, Head room, Fields of view, moving shot, Rule of thirds, Shot- Wide shot, Establishing shot, Establishing the geography. Character Shot- Full shot, two shot, MS, CU, OTS, Cutaways, Reaction, Connecting, Eye sweeps, Chase scenes. Continuity shots- Continuity of content, movement, position, time. Design Studio assignments on these topics.	
MODULE 3	
Lighting: Products and objects, Conventional, Soft and Diffused, Bounce, Source, Hard and creative lightings, Day effect, Night effect, Three-point lighting, Types of lights- Incandescent lamps, Tungsten halogen, HMI, PAR lights, Kinoflo etc. Lighting meters. Design Studio assignments on these topics.	
MODULE 4	
Colours; Primary, Secondary and complementary colours, White and black balance, Standardization and colour reproduction. Filters- Contrast filters, Colour conversion filters, Polarized filters, Enhance filters, Colour filters, Graduated colour and ND filters, Effect filters, etc. Design Studio assignments on these topics.	
MODULE 5	
Camera Movement: Types of moves, Moving shots - Tracking, countermove, reveal with movement, Circle track moves, Crane moves, Rolling shot, Vehicle to vehicle shooting, Ariel shots, Data management and role of cinematographer from pre- production to post production. Videography and digital media, Introduction to videography, video editing. Design Studio assignments on these topics.	

TEXT BOOKS:

1. Langford, Michael. Basic Photography. Delhi: Focal Press, 2000
2. Blain Brown, Cinematography: Theory and Practice: Image Making for Cinematographers, Directors, and Videographers, New York, Focal Press, 2016

REFERENCES:

3. Millerson, Gerald. The Technique of Television Production. Delhi: Focal Press, 1990
4. Millerson, Gerald. Basic Lighting Techniques. New Delhi: Focal Press, 1998
5. Zettl, Herbert. Television Production. Delhi: Wadsworth, 2000
6. David E. Elkins, The Camera Assistant's Manual, Focal Press, 1993
7. David Samuelson, Motion Picture Camera Techniques, Focal press, 2014
8. Verne Carlson, The Professional Lighting Handbook, 1991
9. Peter Ettedgui, Cinematograph, Focal press, 1998
10. William Hines, Operating Cinematography for Film and Video, 1997
11. Kris Malkeiwicz, Cinematography-A Guide for Filmmakers and Film Teacher, Prentice