

COMPUTER GRAPHICS

Semester	Subject Code	Category	Lecture Hrs		Theory Hrs		Practical		Credits
			Per week	Per Sem	Per week	Per Sem	Per week	Per Sem	
IV		ELECTIVE II PAPER-2	5	75	5	75	0	0	3

COURSE OBJECTIVE

- This paper helps the students to learn basics of computational problems and prepare them for Python programs.

COURSE OUTCOME

On the successful completion of the course, students will be able to

CO Number	CO Statement	Knowledge Level (K1-K4)
CO1	Develop algorithmic solutions to simple computational problems	K1
CO2	Read, write, execute by hand simple Python programs. Structure simple Python programs for solving problems.	K2
CO3	Decompose a Python program into functions	K3 & K4
CO4	Represent compound data using Python lists, tuples, dictionaries	K3 & K4
CO5	Read and write data from/to files in Python programs	K4

Knowledge Level – K1-Remember, K2- Understand, K3-Apply, K4-Analyze

MAPPING WITH PROGRAMME OUTCOMES

COS	PO1	PO2	PO3	PO4	PO5	PO6
CO1	M	M	S	S	S	M
CO2	S	M	S	M	S	M
CO3	S	S	S	M	S	S

C04	M	S	S	S	S	S
C05	M	M	S	M	S	M

S- Strong

M- Medium

L- Low

SYLLABUS

UNIT I : INTRODUCTION TO COMPUTER GRAPHICS

15 Hrs

Introduction to Computer Graphics – Video display devices – Raster Scan Systems – Random Scan Systems – Interactive input devices – Hard copy devices – Graphics software – Output primitives – Line drawing algorithms –initializing lines – line function – circle Generating algorithms.

UNIT II : OUTPUT PRIMITIVES

14 Hrs

Attributes of output Primitives – line attributes – Color and Grayscale style– Area filling algorithms – Character attributes inquiry functions.

UNIT III : 2D TRANSFORMATION

16 Hrs

Two-dimensional transformation – Basic transformation – Composite transformation – Matrix representation – Other transformations.

UNIT IV : INTERACTIVE INPUT METHODS

15 Hrs

Two dimensional viewing – Window – to view port co-ordinate transformation – clipping algorithms – Interactive input methods – Physical input devices – logical classification of input devices – interactive picture construction methods.

UNIT V : THREE DIMESTIONAL CONCEPTS

15 Hrs

Three – dimensional concepts – Three-dimensional display methods – Parallel Projection – Perspective Projection – Depth Cueing – Visible line and surface identification – Three dimensional transformation.

Distribution of Marks: Theory 80% and Applications: 20%

TEXT BOOKS:

S. No	Authors	Title	Publishers	Year Of Publication
1	Allen B.Downey	Think Python: How to	Shroff/O'Reilly Publishers, 2 nd edition, Updated for Python 3	2016
2	Guido van Rossum and Fred L.Drake Jr.	An Introduction to Python- Revised and updated for Python 3.2	Network Theory Ltd	2011

REFERENCE BOOKS:

S. No	Authors	Title	Publishers	Year Of Publication
1.	Robert Sedgewick, Kevin Wayne, Robert Dondero	Introduction to Programming in Python: An Inter-disciplinary Approach	PearsonIndia Education Services Pvt. Ltd	2016
2.	Timothy A. Budd	Exploring Python II	Mc- Graw Hill Education (India) Private Ltd	2015

3.	D.Hearn and M.P.Baker	Computer Graphics	Prentice Hall of Education	1997
4.	W.M.Newman and R.F.Sproull	Principles of Interactive Computer Graphics	Mc- Graw Hill Education (India) Private Ltd	1979
5.	D.Hearn and M.P.Baker	Computer Graphics C Version	Pearson Education	2011
6.	Xiang and Plastock	Schaum Outline Computer Graphics	MHE Publications	2003
7.	Charanjith Singh, Nand an Pankaj	Computer Graphics and Multimedia	Kalyani Publications	2015
8.	D.P.Mukherjee	Fundamentals of Computer Graphics and Multimedia	Prentice Hall of Education	1999

WEB SOURCES:

1. <http://greenteapress.com/wp/think-python/>

TEACHING METHODOLOGY:

- Class room teaching
- Assignments
- Discussions
- PPT Presentations
- Home test

SYLLABUS DESIGNER

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