SARDAR PATEL UNIVERSITY
Programme & Subject: M.Sc (Mathematics)
Semester: IV
Syllabus with Effect from: November-2013

Paper Code: PS04EMTH28	Total Credit: 4
Title Of Paper: C Programming & Mathematical Algorithms - II	

Unit	Description in detail	Weighting (%)
I	Function definition; calling a function; automatic, static and external variables; recursive functions; function prototype – forward reference; pointers in functions; passing by values and passing by reference. File management: opening a file; closing a file; reading from a file; fscanf() and fprintf() functions writing to a file; standard streams in C, file name; binary files; fread() and fwrite() functions.	25%
II	Structures & unions: declaration of structures, accessing structure members; structure initialization, nested structure, array of structures; structure assignment, structure as a function arguments; unions. typedef declaration. Graphics: setting the mode; setgraphmode, getmaxx, drawpoly, initgraph, getmaxy, putimage, putpixel, rectangle, setbkcolor, setcolor, setfillpattern, setfillstyle, setlinestyle, setpalette functions; line, circle, ellipse, arc, bar charts.	25%
III/IV	List of practical to be performed on computers: Operations on matrices, Gauss elimination method and its applications. Sequences– sorting, searching, merging. Newton's form of polynomial, interpolation polynomial, divided difference table, numerical integration, numerical solutions of differential equations, elementary graphics.	50%

Basic Text & Reference Books:-

➢ P. B. Mahapatra, Thinking in C Including object orientated programming with C++, Wheeler Publishing, New Delhi
➢ B. W. Kernighan and D. M. Ritchie, The C programming Language, Prentice Hall of India Pvt. Ltd. 1990.
➢ V. Rajaraman, Computer Programming in C, Prentice Hall of India Pvt. Ltd. 1995.