Course Name:- Diploma in Mining Engineering

Year: First

Subject Title: Computer Fundamentals & Programming

Subject Code; M107/M115

Teaching and Examination Scheme:

Teaching Scheme			Examination Scheme					
L	T	P	Full Marks.	External Exam Marks	Internal Exam Marks	External Pas Marks	Total Pass Marks	Duration of External Exams
02	0		100	80	20	26	40	3 Hrs
Sessional		2	50	30	20		25	

NOTE:

Internal marks will be allotted on the basis of two snap tests and 2 assignment of equal marks to be conducted by the faculty teaching the subject.

RATIONALE:

In Engineering Education role of computers and its knowledge is day by day increasing and every documentation and analysis requires basic fundamentals of computers. The accessibility to internet and presentation techniques are essential elements these days which is fully dependent on knowhow of computers irrespective of branches or discipline.

Every engineer is expected to work on software and have skill of programming. The fundamental language at this level is C.

CONTENTS : Theory

Chapter	Name of Topic	Hr	Marks
1.	**Fundamentals of Computer** 1.1 Introduction 1.2 Type of Computer and units. 1.3 Different types of Memory used in Computer 1.4 Operating system , Types 1.5 Introduction to WINDOWS, UNIX, Android etc OS	4	2
2.	**Introduction to Office Suit** 2.1 Word Processing : Introduction, Starting Word Screen and its Components, Elementary Working with Word Processing Software. 2.2 Spread Sheet : Introduction, Starting Spread Sheet, Basics of Spreadsheet, Spread Sheet Screen and its Components, Elementary Working with Spread Sheet. 2.3 Power Point Presentation : Introduction, Starting	8	6

	PowerPoint Presentation, Basics of PowerPoint, PowerPoint Screen and Its Components, Elementary Working with PowerPoint Presentation.		
3.	**Introduction to Internet** 3.1 Internet , Computer Communication. 3.3 Protocols, WWW and Web Browsers. 3.4 Creating own Email Account. 3.5 Networking and types.	3	2
4	**Introduction to HTML and Software** 4.1 Introduction to HTML. Working of HTML 4.2 Creating and loading HTML pages, tags. 4.3 Structure of on HTML, Document, Stand Alone Tags. 4.4 Formatting text, Adding Images, Creating hyper Links, Tables. 4.5 Cyber security. 4.6 Computer virus.	6	4
5	**Emerging trends in IT** 5.1 Current IT Tools. 5.2 Social networking, mobile computing, cloud computing,Global positioning System. 5.3 Imminent Technology, Nano technology, DNA computing, Quantum Computers, Holographic Memory. 5.4 Introduction of IOT and IOE 5.5 Computer Application in various fields like Data analysis, database management, artificial intelligence.	4	2
6	**C Programming** **Basics of C** 6.1Introduction to number system 6.2 Introduction to flowchart and algorithm 6.3 History of C, where C stands 6.4 C character set ,tokens ,constants ,variables, keywords 6.5 C operators (arithmetic, Logical, assignment, relational, increment and decrement, conditional, bit wise, special, operator precedence),C expressions data types. 6.6 Formatted input, formatted output. 6.7 **Decision making** 6.8 Decision making and branching if statement (if, if-else ,else-if ladder, nested if-else) Switch case statement ,break statement. 6.9 .Decision making and looping while, do, do-while statements	8	6

	for loop, continue statement**.**		
7	**Arrays and Strings** 7.1 Arrays Declaration and initialization of one dimensional, two dimensional and character arrays, accessing array elements. 7.2 Declaration and initialization of string variables, string handling functions from standard library (strlen(), strcpy(), strcat(), strcmp()).	8	6
8	**Functions, Structures** 8.1 Functions Need of functions, scope and life time of variables, defining functions, function call (call by value, call by reference), return values, storage classes. category of function (No argument No return value, No argument with return value, argument with return value), recursion 8.2 Structures Defining structure, declaring and accessing structure members, initialization of structure, arrays of structure.	8	6
9	**Pointers & File Handling** 9.1 Understanding pointers, declaring pointer variable, initialization of pointer variable, accessing address of a variable, pointer expressions, Pointers arithmetic, pointers and arrays, array of pointers **9.2 File Handling** File System Basics, opening and closing of files, reading and writing in files, File opening modes, string I/O in files.	8	6
Total		60	40