University of Pune

Post Graduate Diploma in Computer Management (P.G.D.C.M)

For Academic Year 2013-2014

(I)   INTRODUCTION:

1. The name of the programme shall be Post Graduate Diploma in Computer Management (PGDCM).
2. The PGDCM Programme will be a part time one year's Diploma course in Computer Management, divided into two semesters. It will consist of 8 papers adding up to 800 marks (including Practicals and Project Work) as detailed later.
3. Ordinarily, in each class, not more than 60 students be admitted.

(II)   ELIGIBILITY FOR ADMISSION:

A student seeking admission to this course must have passed any one of the following qualifications

1. Bachelor's Degree of any statutory University or any other recognized foreign University.
2. Any Diploma awarded by Board of Technical Education of any state or Central Government - Post SSC three years Diploma with 1 year post Diploma experience or Post HSC two years Diploma with 1 year post –Diploma experience.

(III)   NUMBER OF LECTURES AND PRACTICAL:

Lectures and Practical should be conducted as per the scheme of lectures and practicals indicated in the course structure.

(IV)   PRACTICAL TRAINING AND PROJECT WORK:

As a part of the course, students will have to complete their practical & Project work under guidance of an internal guide. The project should consist of a practical problem related to an industrial / service organization. The practical and project work will be assessed by the institution offering the PGDCM Programme internally and the marks allotted for the project should be included in the marks for the paper titled "practicals" during the second semester of the PGDCM programme.

(V)   ASSESSMENT:

In total 32 credits for this PGDCM program.
1 credit = 15 lecture Hrs,   100 Marks SUBJETCT= 4 CREDITS

Semester – I	16 credits
Semester – II	16 credits

Credit hours are based on the number of "contact hours" per week in class, for one term; formally, Semester Credit Hours. One credit will represent 15 teaching hours.

The final total assessment of the candidate is made in terms of an internal (concurrent) assessment and an external (university) assessment for each course.

These marks will be considered for the declaration of the results

(VI)   EXAMINATION:

Examinations shall be conducted at the end of the semester i.e. during November / December and in April/ May.

(VII)   STANDARD OF PASSING:

Every candidate must secure at least Grade D in Concurrent Evaluation as well as University Examination as separate heads of passing for each course. Internal as well as external examination will be held in November and May.

Conversion of Marks to Grade Points & Grades: The marks shall be converted to grade points and grades using Table I below.

Table I: Points Grading System

Sr. No.	Marks	Grade	Grade Point
1	100 – 75	O – Outstanding	06
2	74 – 65	A – Very Good	05
3	64 -55	B – Good	04
4	54 – 50	C – Average	03
5	49 – 45	D – Satisfactory	02
6	44 – 40	E – Pass	01
7	39 – 0	F – Fail	00

(VIII)   REASSESSMENT OF INTERNAL MARKS:

In case of those who have secured less than passing percentage of marks in internal i.e. less than 40%, the institute will administer a separate internal test. The results of which may be conveyed to the University as the Revised Internal Marks.

In case the result of the revised internal test is lower than the original marks then the original marks will prevail. In short, the rule is higher of the two figures should be considered.

However, the institute will not administer any internal test, for any subject for those candidates who have already secured 40% or more marks in the internal examination.

(IX)   BACKLOG:

Candidates can keep terms for any semester of PGDCM, irrespective of the number of subjects in which he/she has failed in the previous PGDCM semester examinations.

(X)   BOARD OF PAPER SETTERS /EXAMINERS:

For each Semester and examination there will be one board of Paper setters and examiners for every course. While appointing paper setter /examiners, care should be taken to see that there is at least one person specialized in each unit course.

(XI)   CLASS:

The performance of a student will be evaluated in terms of two indices, viz.

  a. Semester Grade Point Average (SGPA) which is the Grade Point Average for a semester.
  b. Cumulative Grade Point Average (CGPA) which is the Grade Point Average for all the completed semesters at any point in time.

Semester Grade Point Average (SGPA): At the end of each semester, SGPA is calculated as the weighted average of GPI of all courses in the current semester in which the student has passed, the weights being the credit values of respective courses.

SGPA = Grade Points divided by the summation of Credits of all Courses.

$$SGPA = \frac{\sum\{C * GPI\}}{\sum C} \text{ for a semester.}$$

Where GPI is the Grade and C is credit for the respective Course.

Cumulative Grade Point Average (CGPA): Cumulative Grade Point Average (CGPA) is the grade point average for all completed semesters. CGPA is calculated as the weighted average of all GPI of all courses in which the student has passed up to the current semester.

Cumulative Grade Point Average (CGPA) for the Entire Course

$$SGPA = \frac{\sum\{C * GPI\}}{\sum C}$$ for all semesters taken together.

Where GPI is the Grade and C is credit for the respective Course.

IMPORTANT NOTE:
If a student secures F grade in either or both of Concurrent Evaluation or University Evaluation for a particular course his /her credits earned for that course shall be ZERO.

Award of Grade Cards: The University of Pune under its seal shall issue to the learners a grade card on completion of each semester. The final Grade Card issued at the end of the final semester shall contain the details of all courses taken during the entire programme for obtaining the degree.

Final Grades: After calculating the SGPA for an individual semester and the CGPA for entire programme, the value shall be matched with the grade in the Grade Points & Descriptors Table as per the Points Grading System and expressed as a single designated GRADE (as per Table II) such as O, A, B, etc....

Table II: Grade Points & Descriptors

Sr. No.	Marks	Grade	Grade Point
1	100 – 75	O – Outstanding	06
2	74 – 65	A – Very Good	05
3	64 -55	B – Good	04
4	54 – 50	C – Average	03
5	49 – 45	D – Satisfactory	02
6	44 – 40	E – Pass	01
7	39 – 0	F – Fail	00

The description of the final grades shall be as follows:
O: Outstanding (Excellent Analysis of the topic - 75% and above)
Accurate knowledge of the primary material, wide range of reading, logical development of ideas, originality in approaching the subject. Neat and systematic organization of content, elegant and lucid style.
A: Very Good (Excellent Analysis of the topic - 65 to 74 %)

Accurate knowledge of the primary material, acquaintance with seminal publications, logical development of ideas. Neat and systematic organization of content, effective and clear expression.

B : Good (Good Analysis and treatment of the topic - 55 to 64 %)
Basic knowledge of the primary material, logical development of ideas. Neat and systematic organization of content, effective and clear expression.

C : Average (Some important points covered – 50 to 54%)
Basic knowledge of the primary material, logical development of ideas. Neat and systematic organization of content, good language or clear expression.

D: Satisfactory (Some points discussed – 45 to 49%)
Basic knowledge of the primary material, some organization of content, acceptable language or expression.

E: Pass (Any two of the above – 40 to 44%)
F: Fail (None of the above – 0 to 39%)

A student who secures grade E or above in a course is said to have completed /earned the credits assigned to the course. A student who completed the minimum credits required for the MCA programme shall be declared to have completed the programme.

NOTE:
The Grade Card for the final semester shall indicate the following, amongst other details:
a. Grades for concurrent and university evaluation, separately, for all courses offered by the student during the entire programme along with the grade for the total score.
b. SGPA for each semester.
c. CGPA for final semester.
d. Total Marks Scored out of Maximum Marks for the entire programme, with breakup of Marks Scored in Concurrent Evaluation and University Evaluation.
e. Marks scored shall not be recorded on the Grade Card for intermediate semesters.
f. The grade card shall also show the 10-point scale and the formula to convert GPI, SGPA, and/or CGPA to percent marks.

(XII)   MEDIUM OF INSTRUCTION:

The medium of Instruction will be English.

(XIII)   CLARIFICATION OF SYLLABUS:

It may be necessary to clarify certain points regarding the course. The syllabus Committee should meet at least once in a year to study and clarify any difficulties from the Institutes.

(XIV)   REVISION OF SYLLABUS:

As the computer technology is changing very fast, revision of the syllabus should be considered every 3 years.

(XV)   TEACHING AND PRACTICAL SCHEME:

**TOTAL CREDITS=32, 1 CREDIT = 15 LECTURE HRS,
100 MARKS SUBJECT= 4 CREDITS**

	PGDCM – Semester I				
Subject Code	Subject Name	Type	Marks	Hrs. (30 Sessions of 90 Min each)	Credits
101	Elements of Information Technology and Office Automation (Windows Operating System and MS Office)	C	100	45	4
102	Programming using Visual Basic	C	100	45	4
103	Introduction to C and C++ Language	C	100	45	4
104	Practicals	FI	100	45	4

	PGDCM – Semester II				
Subject Code	Subject Name	Type	Marks	Hrs. (30 Sessions of 90 Min each)	Credits
201	Web Technology including Ecommerce, HTML and Basic Java.	C	100	45	4
202	Software Engineering	C	100	45	4
203	Database Management System and Oracle	C	100	45	4
204	Practicals	FI	100	45	4

Detailed syllabus for Post Graduate Diploma in Computer Management (2 Semesters)

Semester - I

Sr. No.	Subject Code	Subject Title	Marks
1	101	Elements of Information Technology and Office Automation (Windows Operating System and MS Office)	100

Sr. No	Topic Details	Nos. of Session	%	Reference Books
1	**Introduction** 1.1 What is computer 1.2 Characteristics 1.3 Basic building blocks-CPU, 1.4 I/O memory 1.5 History and generation	1	5	1
2	**Data Representation** 2.1 Need for binary system 2.2 Conversion, representation of negative nos-ing magnitude 2.3 1's and 2's complement 2.4 Representation of fractions 2.5 Binary arithmetic – Add, Sub, Mul, Div. 2.6 Representations of characters- ASCII, EBCDIC	5	15	1,7
3	**Hardware** 3.1 Logic gates (AND, OR, NOT)-No Boolean algebra 3.2 Input device (types, working), keyboard, mouse, Special purpose i/p devices and applications MICR, Bar code scanner, OCR, Joystick etc. 3.3 Output devices (Types, working Application), monitor, printer, plotter 3.4 Memory devices, Primary memory- R/W ROM etc., Extended, Expanded memory, Secondary Memory – Floppy, HDD, CDROM, Tape, RAID, DVD etc. 3.5 Multimedia, Types of Data Processing-batch, online and real-time.	8	20	1,2,7
4	**Software** 4.1 Classification – systems / Application 4.2 System software - Compilers, Interpreters, 4.3 Programming languages - .exe, .com programs 4.4 Files – types, operations 4.5 DOS, Win 9x, Booting process / Device drivers / systems files operations (practical)	5	10	1,2,5

5	**Operating System Introduction**	1	8	8
6	**Miscellaneous**	1	8	1,2,3,6
	6.1 Viruses, Maintenance (Do's & Don't's)			
	Office Automation & MS Office			
7	**Introduction to MS Windows**	5	10	6
	7.1 What is GUI & Windows			
	7.2 Concepts of Toolbars, menus Title bar, controls, dialogue box, status bar, message box and mouse operations Program manager – all options			
	7.3 File Manager – All options			
8	**MS Word**	2	9	6
	8.1 Create and open documents			
	8.2 Edit your documents, Advanced editing-find text, replace text, check spelling, using autocorrect / auto-text)			
	8.3 Save and exit documents			
	8.4 Using multiple documents			
	8.5 Print documents			
	8.6 Formal documents			
9	**MS Excel**	2	15	6
	9.1 Start Excel, Open / Create spreadsheet, Save & exit spreadsheet			
	9.2 Edit spreadsheet using formulae and function			
	9.3 Format spreadsheet			
	9.4 Print spreadsheet			
	9.5 Using multiple spreadsheet			
10	**Introduction to Microsoft Outlook**			1,5

Reference Books		
1	Fundamentals of Computers	V.Rajaraman
2	Peter Norton's Introduction to Computers	Peter Norton
3	Computer Network	Andrew S Tanenbaum
4	Computer Networks and Distributed Processing	James Martin
5	Computer Studies	C S French
6	Manual for Ms Office	
7	Fundamentals of Digital Computer	Thomas Bartee
8	Operating System	Milan Milenkovic

Sr. No.	Subject Code	Subject Title	Marks
2	102	Programming using Visual Basic	100

Sr. No	Topic Details	Nos. of Session	%	Reference Books
1	**Introduction**	6	15	1,2
	1.1 Event driven programming			
	1.2 Starting & Exiting VB			
	1.3 Understand VB Environment - Project explorer, Properties window, Toolbox, Form layout window, Property pages			
	1.4 Getting help			
	1.5 Saving project			
	1.6 Printing project			
	1.7 Running application			
2	**Adding Code And events**	3	10	1,2
	2.1 Code window			
	2.2 Naming Conventions, Variables (all datatypes – byte, Boolean, integer, long, long integer, single, double, currency, decimal, date object (fixed/variable), variant (with numbers/ characters) user – defined (using types), Strings.			
	2.3 Scope(global, local, static)			
	2.4 Constants			
3	**Visual Basic controls**	7	20	1,2
	3.1 Label and Text box			
	3.2 Command button			
	3.3 Frame, check box, option button			
	3.4 List box, combo box			
	3.5 Drive list box and Dir list box, file list box			
	3.6 Formatting			
	3.7 Control arrays			
	3.8 Tab order			
4	**Working with functions**	4	10	1,2
	4.1 String			
	4.2 Mathematical			
	4.3 Date			
	4.4 Data type conversions			
5	**Control statements and loop structure**	3	15	1,2
	5.1 IF & IIF statement			
	5.2 Select case			
	5.3 Do			
	5.4 For			

6	**Dialog Boxes** 6.1 Message box 6.2 Input box 6.3 Common Dialog Box(Microsoft-Common Dialog Box 6.0)	3	5	1,2
7	**Menus** 7.1 Creating menus 7.2 Adding code to menu 7.3 Toolbars 7.4 Other Common Controls(MS Windows Common Controls 6.0)	4	25	1,2

Reference Books		
1	Visual Basic 6.0 in 21 days	Peter Greg
2	Complete Reference on Visual Basic	

Sr. No.	Subject Code	Subject Title	Marks
3	103	Introduction to C and C++ Language	100

Part A: Introduction to C

Sr. No	Topic Details	Nos. of Session	%	Reference Books
1	**An Overview of C** 1.1 Brief History of C 1.2 Compilation & Execution of C. Program	1	2	1,3,4
2	**C Fundamentals** 2.1 Variables, Data Types, Operator & Expression 2.2 Character Set 2.3 C Token, Identifier & Keyword, Constant, Integer, Floating Point, Character, String, Enumeration 2.4 Data Types in C, Data Declaration & Definition 2.5 Operator & Expression-Arithmetic, Relational, Logical, Increment & Decrement, Bitwise, Assignment, Conditional, Precedence & Associativity of Operators.	2	8	1,3,4
3	**Console I/O** 3.1 Introduction 3.2 Character Input & Output 3.3 String Input & Output 3.4 Formatted Input / Output (scanf/printf), sprintf & sscanf	1	2	1,3,4
4	**Control Statement** 4.1 Introduction 4.2 Selection Statements – if, Nested if, if-else-if, The ? Alternative, the Conditional Expression, switch, Nested switch 4.3 Jump Statements – goto & label, exit() function	2	8	1,3,4
5	**Loop control Structure** 5.1 The for statement; Nested for Loop; for loop variants; the while statement; Increment / decrement operators 5.2 Use of Break and Continue; the do-while loop	3	8	1,3,4
6	**Array** 6.1 Single Dimension Arrays, Accessing array elements, Initializing an array, Multidimensional Arrays, Initializing the arrays 6.2 Memory Representation, Accessing array elements 6.3 Passing Single Dimension array to Function	3	10	1,3,4

7	**Storage Classes**	2	5	1,3,4
	7.1 Automatic, Register, Static (local and global), External, scope rules			
8	**Functions**	2	10	3
	8.1 Introduction			
	8.2 Arguments & local variables			
	8.3 Returning Function Results by reference & Call by value			
	8.4 Recursion			
9	**Character Strings**	1	5	1,3,4
	9.1 What are strings, standard library string functions: strlen(), strcat(), strcpy(), strcmp()			

Reference Books		
1	C : The Complete Reference	Herbert Schildt
2	Art of 'C'	Schildt
3	Let us C	Y.P. Kanetkar
4	Spirit Of "C"	Moolish Kooper
5	The C Programming Language	Kernighan & Ritchie.

Part B: Introduction to C++

Sr. No	Topic Details	Nos. of Session	%	Reference Books
1	**Principle of OOP's**	1	2	1,2
	1.1 Introduction			
	1.2 Procedural Vs Object Oriented Programming			
	1.3 Classes, Object, Data Abstraction,			
	1.4 Encapsulation, Inheritance, Polymorphism			
	1.5 Dynamic Binding, Message Passing			
	1.6 Object Oriented Languages, Object Based languages			
2	**Basics of C++**	1	2	1,3
	2.1 A Brief History of C & C++			
	2.2 C Vs C++, A Simple C++ Program			
	2.3 Application of C++			
	2.4 Structure & Class			
	2.5 Compiling & Linking			
3	**Expression**	2	5	1,3
	3.1 Tokens, Keywords, Identifiers & Constants, Basic Data Types, User-Defined Data Types, Symbolic Constant, Type Compatibility, Reference Variables			
	3.2 Operator in C++, Scope Resolution Operator, Member De-referencing Operators, Memory Management Operators, Manipulators, Type Cast Operator			

4	Functions In C++	2	8	1,2
	4.1 The Main Function			
	4.2 Function Prototyping, Call by Reference, Call by Address, Call by Value, Return by Reference			
	4.3 Inline Function, Default Arguments, Const Arguments, Function Overloading, Friend Function			
5	**Classes & Object**	3	10	1,2
	5.1 A Sample C++ Program with class			
	5.2 Defining Member Functions			
	5.3 Making an Outside Function Inline			
	5.4 Nesting of Member Functions, Private Member Functions			
	5.5 Arrays within a Class			
	5.6 Memory Allocation for Objects			
	5.7 Static Data Members, Static Member Functions			
	5.8 Arrays of Objects			
	5.9 Object as Function Arguments, Friendly Functions, Returning Objects			
	5.10 Const member functions, Pointer to Members, Local Classes			
6	**Constructor & Destructor**	2	8	2,5,6
	6.1 Constructor – Parameterized Constructor, Multiple Constructor in a Class, Constructors with Default Arguments			
	6.2 Dynamic Initialization of Objects, Copy Constructor Dynamic Constructor, Const Object			
	6.3 Destructor			
7	**Inheritance**	2	7	6
	7.1 Defining Derived Classes, Single Inheritance, Making a Private Member Inheritable, Multilevel Inheritance, Hierarchical Inheritance, Multiple Inheritance, Hybrid Inheritance			
	7.2 Virtual Base Classes, Abstract Classes			
	7.3 Constructor in Derived Classes, Nesting of Classes			

Reference Books		
1	C++: The Complete Reference	Herbert Schildt
2	Let us C++	Kanetkar
3	Object Oriented Programming with C++	E. Balagurusamy
4	C++	Primer Stanley Lippman & Lajoi
5	C++ Programming Language	Bjarne Stroustrup
6	C++ Programming Bible	Stevens & Clayton Walnum

Sr. No.	Subject Code	Subject Title	Marks
4	104	Practicals	100

The praticals should be based on the subject covered during the Semester. This should be evaluated based on submission of assignment and viva-voce examination.

Semester - II

Sr. No.	Subject Code	Subject Title	Marks
1	201	Web Technology including Ecommerce, HTML and Basic Java.	100

Part A: Web Technology including ECommerce

Sr. No	Topic Details	Nos. of Session	%	Reference Books
1	**E-commerce** 1.1 What is Electronic Commerce? 1.2 Benefits of electronic commerce 1.3 How E-commerce works? 1.4 Web Hosting, Obtaining a Digital Certificate 1.5 Handling Money on the net, Transaction on the Internet, Requirements of Payments, Procedure followed by cyber cash, Verifone & First Virtual	5	15	1,2

Part B: HTML

Sr. No	Topic Details	Nos. of Session	%	Reference Books
1	**HTML** 1.1 Introduction To HTML, WWW, web publishing 1.2 Introduction to XML 1.3 Introduction to JavaScript	3	13	3,7,10

Part C: OOD Concepts & Basic Java

Sr. No	Topic Details	Nos. of Session	%	Reference Books
1	**Object Oriented Programming-Basics** 1.1 Overview of Programming Paradigms 1.2 Structure and classes, Encapsulation, Polymorphism. 1.3 Inheritance.	4	15	4,5,6
2	**Introduction to Java Programming** 2.1 Features of Java –As Programming Language 2.2 JDK Environment and Tools	2	7	4,5,6
3	**Java-Programming Fundamentals** 3.1 Structure of Java Program 3.2 Data types, variables, operators, keyword, Naming conventions. 3.3 Flow of control-Decision, Iteration. 3.4 Arrays.	3	7	4,5,6

4	**Classes & Objects** 4.1 Class-Members, access Modifiers 4.2 Objects 4.3 Constructors	**3**	**10**	**4,5,6**
5	**Interface-need/function** 5.1 Abstract classes 5.2 Abstract Method	**2**	**7**	**4,5,6**
6	**Packages** 6.1 Importing packages 6.2 Java Lang-String, String Buffer, System. 6.3 Wrapper class	**2**	**6**	**4,5,6**
7	**Event Programming** 7.1 Java awt Components (Window, Frame, Panel, Text Field, Label, Button). 7.2 Layout Manager, Border, Flow, Grid.	**3**	**10**	**4,5,6**
8	**Applet** 8.1 Java Applet-Applet Life Cycle	**3**	**10**	**4,5,6**

Reference Books		
1	The E-Business	Daniel Amor
2	E-Commerce	S.Jaiswal
3	The Complete Reference HTML	Thomas A. Powell
4	The Complete Reference Java 2	Patrick Naughton, Herbert Schildt
5	The Java Tutorial	Mary Compione, Kathy Walrath
6	Core Java2 vol1 and vol2	Cay S.Horstmann, Gary Cornell
7	JavaScript Bible	
8	Beginning XML	Wrox Press

Sr. No.	Subject Code	Subject Title	Marks
2	202	Software Engineering	100

Sr. No	Topic Details	Nos. of Session	%	Reference Books
1	**System concepts ,Integrated systems, sub-systems, modules**	2	6	2
2	**Role of systems analysis and others in system development**	1	7	4,5,6
3	**General Phase of System** Development Life cycle, feasibility study, Requirements capture, detailed Systems analysis, Systems design, testing, On-site Implementation and Maintenance	3	20	2
4	**Fact Finding Methods**	2	7	2,7
5	**Different approaches to Software Development** 5.1 Classic Method: Waterfall Model 5.2 Prototyping 5.3 Spiral Model 5.4 4 GL or Data Oriented Approach	3		2,7
6	**Structured analysis and Design method and software** 6.1 Engineering techniques, Tools and Methodologies in systems Development 6.2 Application System Modeling – Data Modeling: Entity Relationship method, Process Modeling: Data Flow Diagrams 6.3 Database Design Methods – Mapping E-R model to arrive at the Database Design 6.4 Normalization Technique for Database Design, Controlled De-Normalization 6.5 System Documentation Techniques – Introduction, System Flow Charts, Logic Representation Techniques, Decision Trees, Decision Tables 6.6 Pseudo code and structured English	15	40	1,3,4,6
7	**User Interface Design** 7.1 Menu ,screen and Report Layouts designing 7.2 The mode / style of interaction between the system and user	4	10	1,2,6

Reference Books		
1	Analysis and Design of Information Systems	Senn
2	Software Engineering Practioner's Approach	Roger Pressman
3	Introduction to System Analysis and Design	Hawryszkiewycz
4	System Analysis and Design	Elias M Awad
5	Introducing System Analysis and Design	Lee
6	System Analysis and Design	Perry Edwards
7	Software Engineering Concepts	Richard Fairley

Sr. No.	Subject Code	Subject Title	Marks
3	203	Database Management System & Oracle	100

Part A: Database Management System (DBMS)

Sr. No	Topic Details	Nos. of Session	%	Reference Books
1	**Introduction** 1.1 History –advantages and limitations of DBMS, Uses of DBMS 1.2 Software modules in DBMS, architecture of DBMS	1	5	1,2,3,6
2	**Modelling Techniques** 2.1 Different types of models , ER model	2	8	1,2,4,7
3	**Introduction to Hierarchical and Network databases**	1	5	
4	**Relational Database** 4.1 Introduction Codd's 12 rules, concepts of domain, tuple, cardinality	2	10	1,4,5,7
5	**Normalization** 5.1 Advantages & disadvantages of Normalization 5.2 1NF,2NF,3NF, rules with examples 5.3 Anomalies	4	10	1,3,4,5
6	**Usage of MS Access, without programming**	4	10	8

Reference Books		
1	Introduction to Database Systems	C.J.Date
2	Database System Concept	Korth
3	Principles of Database Management	James Martin
4	Computer Database Organization	James Martin
5	Database Management Systems	Bipin Desai
6	Database Management Systems	Ramakrishnan & Gehrke
7	Fundamentals of Database Systems	Elmasri Navathe
8	For Microcomputers Application	Jackson

Part A: Oracle

Sr. No	Topic Details	Nos. of Session	%	Reference Books
1	**Overview of RDBMS, Oracle introduction - Architecture, Processes (Background list)**	1	-	1,2
2	**Overview with Tools of Oracle** 2.1 SQL* Plus, PL/SQL, Forms, Report, Pre-compilers (SQL Loader, Import, Export) 2.2 Introduction of SQL, DDL, DML, DTL(TCL) 2.3 Basic Data Types- Char, Varchar/varchar2, Long, Number, Column-name number, Column-name number(P)-fixed point, Column –name number(p,s)-floating point Fixed Date data type, Raw data type, Long raw data type	2	5	1,2,3,4
3	**Table** 3.1 Constraint Definition 3.2 Domain, Entity, Referential 3.3 Create table, Alter table, Drop table, Normalization	2	10	2,3,4
4	**Commands and Clause** 4.1 Insert ,update, delete with 'where' clause 4.2 Queries and SQL functions 4.3 Select with all options 4.4 Operations and operators - Arithmetic, Comparison Logical, in, not, between, like, all, not, like, %, any, exists, not exists, is null, and, or, not 4.5 Query Expression operators - Union, intersect, minus	3	10	2
5	5.1 Operators Precedence 5.2 SQL Functions **Date:** Sys_date, new time, next_day, add_months, Last_day, months_between **Numeric:** round, trunk, abs, ceil, cos, exp, floor **Character:** initcap, lower, upper, trim, translate, Length, char **Conversion:** to_char, to_date, to_number **Miscellaneous:** uid,User, nvi, vsize **Group Function:** Avg, max, min, sum, count, Group by clause Having clause	2	8	2,4
6	**Expression** 6.1 Set operations - Union ,union all, intersect, minus 6.2 Relating data through join concept 6.3 Join theory - Simple join, equi join, non equi join, self join, outer join 6.4 Table aliases, query and sub queries case	3	10	2

7	**Introduction to PL/SQL**	3	7	1,2
7.1	Cursor Management - Static cursor, Dynamic cursor, Explicit & implicit cursor			
7.2	Cursor for loop, Parametric cursor			

Reference Books		
1	Understanding ORACLE	Perry J. & Later J.
2	Oracle 7	Ivan Byrass
3	SQL	Scott Urman
4	Oracle-One on One	Wrox

Sr. No.	Subject Code	Subject Title	Marks
4	204	Practicals / Project	100

The practicals should be based on the subjects covered during the semester. The students are expected to complete a mini project which will give them an understanding of a real life business which will give them an understanding of a real life business situation. Both practical assignments and the mini project should be evaluated internally, based on submission of assignments and a viva-voce examination.