PONDICHERY UNIVERSITY

RAMANUJAN SCHOOL OF MATHEMATICS AND COMPUTER SCIENCE

DEPARTMENT OF COMPUTER SCIENCE

CURRICULUM

FOR

POST GRADUATE DIPLOMA
IN
COMPUTER APPLICATION

(Effective from the academic year 2009-2010)
**Aim of the Course**
The Post Graduate Diploma in Computer Application (PGDCA) aims to introduce the students to the Computer applications. At the end of the course, the students are expected to have good working knowledge in Computer Systems and Applications.

**Eligibility for Admission**
Candidates for admission to PGDCA shall be required to Bachelor’s degree with a minimum of 45% marks with Computer Science/Mathematics/Statistics/Business Mathematics as one of the subjects of study or an examination accepted as equivalent thereto, subject to such conditions as may be prescribed therefore.

**Duration of the Course**
The course shall be of one year duration spread over two semesters. The maximum duration to complete the course shall be 2 years.

**Medium**
The medium of instruction shall be English.

**Passing Minimum**
The candidates should get minimum of 40% in internal and in external examinations.
**PONDICHERRY UNIVERSITY**  
**POST GRADUATE DIPLOMA IN COMPUTER APPLICATION CURRICULUM**  
(Effective from the academic year 2009 – 2010)

### FIRST SEMESTER

<table>
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<tr>
<th>Code</th>
<th>Paper</th>
<th>Credit</th>
<th>Lect.</th>
<th>Pract.</th>
<th>Total Hours per Semester</th>
<th>Int.</th>
<th>Ext.</th>
<th>Max. Marks</th>
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<td>Data Structures using C++</td>
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<td>48</td>
<td>40</td>
<td>60</td>
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<td>102</td>
<td>Basics of Information Technology</td>
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<td>32</td>
<td>40</td>
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<td>Operating System</td>
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### SECOND SEMESTER

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</table>
PGDCA 101 : DATA STRUCTURES USING C++

UNIT I

UNIT II

UNIT III
More on Linked Lists – Double Linked Lists – Dynamic storage Management garbage collection and compaction

UNIT IV

UNIT V

TEXT BOOK

REFERENCE
Bhagat Singh And Thomas L.Nayos, “Introduction to Data Structure”, Galgotia Book Source
PGDCA 102 : BASICS OF INFORMATION TECHNOLOGY

Unit I
Introduction to IT – Data Vs Information – Components of Information Technology – Applications of Information Technology in various domains – Introduction to various information systems.

Unit II

Unit III

Unit IV

Unit V

Text Books:

3. Dennis P. Curtin, et.al., Information Technology - The Breaking View, TMH.
PGDCA 103 : OPERATING SYSTEMS

Unit I


Unit II


Unit III


Unit IV


Unit V


Text Book


Reference

UNIT I
Introduction to Object Oriented Programming (OOP), C++ programming basic, Loops and decisions: Relational operators, loops, decision, logical operators, precedence.

UNIT II
Structures, enumerated data types. Function: simple functions, passing argument to functions, returning values from functions, reference arguments, overloaded functions, inline functions, variable and storage classes.

UNIT III
Objects and classes: Classes and Objects, Specifying the class, using the class, constructors, destructors, object as function arguments, returning object from function. Arrays: Arrays fundamentals, Array a Class member data, Array of objects, Strings. Operator overloading: unary operator, overloading binary operators, Data conversion.

UNIT IV
Inheritance: Derived Base class, derived class constructors, overloading member functions, class hierarchies, public and private inheritance, levels of inheritance multiple inheritance. Pointers: Address and pointers, pointers and arrays, pointers and functions, pointers and strings, Memory management, pointer to objects.

UNIT V
Virtual functions and other functions: Virtual functions, Friend functions, Static functions, this pointer. Files and Stream: String I/O, Object I/O with multiple objects, file pointer, disk I/O with member functions.

TEXT BOOK

REFERENCE
E.Balagurusamy, Object Oriented Programming with C++”
PGDCA 201: DATABASE MANAGEMENT SYSTEMS

UNIT I

UNIT II

UNIT III

UNIT IV

UNIT V
Data-Dictionary Storage. Indexing and Hashing: Basic Concepts – Ordered Indices – B*-Tree Index Files – B-Tree Index Files – Static Hashing – Dynamic Hashing Index Definition in SQL – Multiple-Key Access

TEXT BOOK

REFERENCES
PGDCA 202 : COMPUTER NETWORKS

Unit I

Unit II
Physical Layer - Transmission media - Wireless Transmission - the telephone system - ISDN - Narrowband ISDN - Broadband ISDN - Communication Satellite

Data Link Layer - Error Correction and Detection - Elementary and Sliding window Protocols.

Unit III


Unit IV
Application Layer - DNS - E-mail - World Wide Web – Multimedia - Introduction to Digital Audio – Audio Compression – Voice Over IP – Introduction to Video – Video Compression

Unit V

Text Books

References
PGDCA 203 : WEB TECHNOLOGY

Unit – I

Introduction to Internet – Resources of Internet – H/w & S/w requirements of Internet – Internet Service Providers – Internet Services – Protocols – Concepts – Internet Clients and Internet Servers

Unit – II


Unit – III


Unit – IV


Unit – V


Text Books:
7. XML – how to program by Deitel and Deitel, Pearson Education, 2001
PGDCA 204 : SOFTWARE ENGINEERING

Unit I


Unit II

Software process and Project Metrics, Risk Management, Quality Assurance and Configuration management.

Unit III


Unit IV

Software Testing, Test-case Design, White Box Testing, Black Box testing, Testing GUI and Client/ Server Architecture, Testing Strategies, Unit Testing, Integration testing, Validation testing, System testing, Software Maintenance.

Unit V


Text Book


References

1. Ian Somerville, “Software Engineering”, Addision Wesley