ANNA UNIVERSITY CHENNAI

CHENNAI – 600 025

M.Sc. INFORMATION TECHNOLOGY (DISTANCE MODE)

REGULATIONS - 2009

CURRICULUM

I SEMESTER

<table>
<thead>
<tr>
<th>Code No.</th>
<th>Course</th>
<th>Title Marks</th>
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</thead>
<tbody>
<tr>
<td>DIT 111</td>
<td>Probability and Queuing Theory</td>
<td>100</td>
</tr>
<tr>
<td>DSE 112</td>
<td>Software Engineering</td>
<td>100</td>
</tr>
<tr>
<td>DIT 113</td>
<td>High Speed Networks</td>
<td>100</td>
</tr>
<tr>
<td>DCS 114</td>
<td>Database Management Systems</td>
<td>100</td>
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<tr>
<td>DCS 115</td>
<td>Object Oriented Programming</td>
<td>100</td>
</tr>
<tr>
<td>DIT 116</td>
<td>Network Protocols</td>
<td>100</td>
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Practical

<table>
<thead>
<tr>
<th>Code No.</th>
<th>Course</th>
<th>Title Marks</th>
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<tbody>
<tr>
<td>DIT 117</td>
<td>Object Oriented Programming Lab</td>
<td>100</td>
</tr>
<tr>
<td>DCS 118</td>
<td>RDBMS Lab</td>
<td>100</td>
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II SEMESTER

<table>
<thead>
<tr>
<th>Code No.</th>
<th>Course</th>
<th>Title Marks</th>
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<tbody>
<tr>
<td>DCS 121</td>
<td>Mobile Computing</td>
<td>100</td>
</tr>
<tr>
<td>DSE 232</td>
<td>Software Project Management</td>
<td>100</td>
</tr>
<tr>
<td>DIT 123</td>
<td>Digital Signal Processing</td>
<td>100</td>
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<tr>
<td>DCS 124</td>
<td>Object Oriented Analysis and Design</td>
<td>100</td>
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<tr>
<td>DIT 125</td>
<td>Visual Programming</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>Elective I</td>
<td>100</td>
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<tr>
<td></td>
<td>Elective II</td>
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Practical

<table>
<thead>
<tr>
<th>Code No.</th>
<th>Course</th>
<th>Title Marks</th>
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<tbody>
<tr>
<td>DIT 126</td>
<td>Visual Programming Lab</td>
<td>100</td>
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</tbody>
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### III SEMESTER

<table>
<thead>
<tr>
<th>Theory</th>
<th>Code No.</th>
<th>Course</th>
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<tbody>
<tr>
<td>DIT</td>
<td>231</td>
<td>Network Administration</td>
<td></td>
<td>100</td>
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<tr>
<td>DIT</td>
<td>232</td>
<td>Graphics and Multimedia Systems</td>
<td></td>
<td>100</td>
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<tr>
<td>DIT</td>
<td>233</td>
<td>Network Security</td>
<td></td>
<td>100</td>
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<tr>
<td>DIT</td>
<td>234</td>
<td>Web Technology</td>
<td></td>
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<td></td>
<td></td>
<td>Elective III</td>
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<td>Elective IV</td>
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Practical

<table>
<thead>
<tr>
<th>Code No.</th>
<th>Course</th>
<th>Title</th>
<th>Marks</th>
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</thead>
<tbody>
<tr>
<td>DCS 235</td>
<td>Case Tools and UML Lab</td>
<td></td>
<td>100</td>
</tr>
<tr>
<td>DIT 236</td>
<td>Web Technology Lab</td>
<td></td>
<td>100</td>
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### IV SEMESTER

Practical

<table>
<thead>
<tr>
<th>Code No.</th>
<th>Course</th>
<th>Title</th>
<th>Marks</th>
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<tbody>
<tr>
<td>DIT 241</td>
<td>Project Work</td>
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<td>400</td>
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</tbody>
</table>

Total Marks: 2800

### LIST OF ELECTIVES

#### ENTERPRISE COMPUTING SERVICE TECHNOLOGY

<table>
<thead>
<tr>
<th>Code No.</th>
<th>Course Title</th>
<th>Marks</th>
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<tbody>
<tr>
<td>DIT 001</td>
<td>XML and Web Service</td>
<td>100</td>
</tr>
<tr>
<td>DIT 002</td>
<td>Client Server Computing</td>
<td>100</td>
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<tr>
<td>DIT 004</td>
<td>Supply Chain Management</td>
<td>100</td>
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<tr>
<td>DIT 005</td>
<td>E-Commerce</td>
<td>100</td>
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#### ENTERPRISE ANALYTICAL SERVICE TECHNOLOGY

<table>
<thead>
<tr>
<th>Code No.</th>
<th>Course Title</th>
<th>Marks</th>
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</thead>
<tbody>
<tr>
<td>DCS 008</td>
<td>Data Mining and Data Warehousing</td>
<td>100</td>
</tr>
<tr>
<td>DCS 231</td>
<td>Design and Analysis of Algorithms</td>
<td>100</td>
</tr>
<tr>
<td>DSE 004</td>
<td>Extreme programming</td>
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</tr>
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#### ADVANCED SECURE COMMUNICATION

<table>
<thead>
<tr>
<th>Code No.</th>
<th>Course Title</th>
<th>Marks</th>
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<tbody>
<tr>
<td>DCS 232</td>
<td>Cryptography and Data Security</td>
<td>100</td>
</tr>
<tr>
<td>DIT 003</td>
<td>Satellite Communication</td>
<td>100</td>
</tr>
</tbody>
</table>
DIT 111 PROBABILITY AND QUEUING THEORY


UNIT III Tests of Hypothesis: Sampling distributions – Tests based on Normal, t and F distributions for means, variance and proportions, chi-square test for variance, independence and goodness of fit.


UNIT V Queueing Theory: Single and multi-server Markovian Queues – Stationary for queue size distributions – Little’s formula – Average measures.

TEXT BOOK


REFERENCES


DSE 112 SOFTWARE ENGINEERING


TEXT BOOK


REFERENCES


DIT 113  HIGH SPEED NETWORKS

UNIT I  High speed Networks: Fast Ethernet technology, FDDI, SONET and SDh standards, Performance of HIGH speed LAN- throughput, delay and reliability. Wave length division multiplexed LAN-routing and switching MDM networks, Gigabit LAN.

UNIT II  ISDN and Standards: Overview of ISDN – user interface, architecture and standards. Packet switched call over ISDN, B and D channels, link access procedure (LAPD) ISDN layered architecture, signaling. Limitations of Narrowband ISDN (N-ISDN) and evolution of broad band ISDN (B-ISDN).

UNIT III  Asynchronous Transfer Mode Networks: ATM protocol architecture, ATM adaption layer, fast packet switching techniques and VP/VC encapsulation. ATM cells, ATM cell header interpretation, source characteristics.

UNIT IV  ATM Traffic Management: Traffic management issues in ATM-resource management, connection management, policing and reactive control principles. Discrete time queue analysis and application to CAC, leaky bucket and ECN/ICN.

UNIT V  ATM signaling and Data communication over ATM: ATM signaling fundamentals and meta-signaling. TCP/IP over ATM-challengers and proposal LAN emulation over ATM. Performance of Data Communication over ATM.

TEXT BOOKS


REFERENCES

DCS 114 DATABASE MANAGEMENT SYSTEMS

UNIT I

UNIT II

UNIT III

UNIT IV

UNIT V

TEXT BOOK

REFERENCES

# DCS 115
## OBJECT ORIENTED PROGRAMMING

### UNIT I
C++ Programming: Introduction to C++ - Tokens, expressions and control structures – Functions in C++ - Classes and Objects – Constructors – Destructors – Operator Overloading and Type conversions.

### UNIT II

### UNIT III
Templates and Exception Handling: Templates – Function templates – class Templates – Overloading of Template Functions – Member function Templates – Exception handling – basics – Exception handing mechanism – Throwing mechanism catching mechanism – Rethrowing an exception – specifying exceptions.

### UNIT IV

### UNIT V

## TEXT BOOKS

## REFERENCES
DIT 116 NETWORK PROTOCOLS


UNIT II Internet Multicasting – Mobile IP – Bootstrap And Auto configuration (BOOTP, DHCP).

UNIT III The Domain Name System (DNS) – Applications: Remote Login (TELNET, Rlogin) – File Transfer and Access (FTP, TFTP, NFS).


UNIT V Applications: Internet Management (SNMP) – Internet Security and Firewall Design (Ipsec) – The Future of TCP/IP (IPV6).

TEXT BOOK


REFERENCES


PRACTICALS

DIT 117  OBJECT ORIENTED PROGRAMMING LAB

1. Create a complex number class with all possible operators
2. Create a vector class
3. Create a string class
4. Create a time class
5. Create a data class
6. Create a matrix class
7. Create an employee class with derived classes
8. Create Lists

DCS 118  RDBMS LAB

1. Data Definition, Manipulation of base Tables and views.
2. High level programming language extensions.
3. Front and tools.
5. Reports.
II SEMESTER

DCS 121 MOBILE COMPUTING


TEXT BOOK


REFERENCE

**DSE 232 SOFTWARE PROJECT MANAGEMENT**

**UNIT I**  

**UNIT II**  

**UNIT III**  
Project initiation – Project Planning and tracking – what, cost, when and how – organisational processes – assigning resources – project tracking – project closure – when and how.

**UNIT IV**  

**UNIT V**  
Project Management in testing phase – in the maintenance phase – Impact on internet on project Management.

**TEXT BOOK**


**REFERENCE**

DIT 123 DIGITAL SIGNAL PROCESSING

UNIT I

UNIT II

UNIT III

UNIT IV

UNIT V

TEXT BOOK

REFERENCE
DCS 124 OBJECT ORIENTED ANALYSIS AND DESIGN


UNIT II Object Oriented Methodologies: Rumbaugh object Model, Booch methodology Jacobson methodology, patterns, frame works and unified approach.


UNIT V UML and Programming: Introduction to unified modeling language – UML diagrams – class diagrams and use case diagrams – State and dynamic models. Case study to inventory, sales and banking.

TEXT BOOK


REFERENCES


DIT 125 VISUAL PROGRAMMING

UNIT I

UNIT II

UNIT III

UNIT IV
Database Connectivity – Min Database Applications – Embedding Controls in View – Creating user defined DLL’s – Dialog Based Applications – Dynamic Data Transfer Functions – Data Base Management with ODBC – Communicating with other applications – Object Linking and Embedding.

UNIT V

TEXT BOOKS

REFERENCES
PRACTICALS

DIT 126 VISUAL PROGRAMMING LAB

1. Building Simple Applications.

2. Working with Intrinsic Control and ActiveX Controls.

3. Application with multiple forms.

4. Application with Dialogs.

5. Application with Menus.

6. Application with Data Controls.


8. Drag and Drop Events.

9. Database Management.

10. Creating ActiveX Controls
III SEMESTER

DIT 231 NETWORK ADMINISTRATION


TEXT BOOK


REFERENCES

DIT 232  GRAPHICS AND MULTIMEDIA SYSTEMS

UNIT I  Introduction: I/O devices – I/O primitives – DDA – Bresenham technique – Circle drawing algorithms – Interactive input methods.


TEXT BOOK


REFERENCES


DIT 233  NETWORK SECURITY


TEXT BOOK

REFERENCES
MSc (Distance Mode)

DIT 234 WEB TECHNOLOGY


UNIT V Online Applications and Emerging technologies - Online Shopping – Online databases – Monitoring user events – Need for .NET - Overview of .NET Framework – Web services.

TEXT BOOK


REFERENCES


DCS 235 CASE TOOLS AND UML LAB

1. Familiarization of features of any one of the standard UML case tool.

2. Capturing key functional requirements as Use cases and class diagram for online ticket / hotel reservation systems, student information system, sales and marketing system, banking system and inventory tracking system.

3. Interacting diagrams, state chart diagrams etc for systems in 2.

4. Implementation using any one of object oriented languages like Java, C++ for systems in 2.

5. Component diagrams, deployment diagrams for system in 2.

6. Unit test case, integration test case for systems in 2.

DIT 236 WEB TECHNOLOGY LAB

1. Write a program in HTML to display different styles of heading text.

2. Write a program to display the processes to be followed for a patient when he enters for a complete checkup. Use ordered lists and unordered lists.

3. Write a program to display a traditional Newspaper with the use of table tags.

4. With the help of “IMAGE” tags write a program to display the image along with some contents.

5. Use “Anchor” tag to write a program for displaying various Menus.

6. Use mapping technique, to map a particular part of image and move the control corresponding to that area. For eg. In an image, if there are bat, ball, stamp etc. When you click stump control should move to a file call St.htm.

7. Create frames that has details above various cities.

8. Create a form to display the kinds of food available in a Restaurant. (Use checkboxes wherever necessary)

9. Write a program to “reload” a page automatically once in 5 seconds.

10. Write a program using CSS to set the background colour, font, paragraph.

11. Write a program to change the font color using class and reflect the change in h1.

12. Write a program for a) Using external CSS, to import classes for h1 (use link and import)

13. Write a program to link images using style sheets.

14. Write a program to align a text in various styles sheets.

15. Write a program to align a text in various styles.
PRACTICAL

DCS 241  PROJECT WORK
DIT 001  XML AND WEB SERVICES


TEXT BOOKS


REFERENCE

UNIT I

UNIT II

UNIT III

UNIT IV

UNIT V

TEXT BOOKS

REFERENCES
### UNIT I
Orbit Dynamics: Keeler’s Law, Newton’s Law, Orbit Parameters, Orbital perturbation, Station keeping, Geo stationary and non-Geo stationary orbits. Frequency allocation, frequency co-ordination and regulatory services, Sun transit outages, Limits of visibility, Launching vehicles and propulsion.

### UNIT II
Space Segment: Space craft configuration, Communication payload and supporting sub systems, Satellite up link – down link, Link power budget, C/No, G/T, Noise temperature, System noise, Propagation factors, Rain and Ice effects, Polarization.

### UNIT III

### UNIT IV
Earth Segment: Transmitter, Receivers, Antennas, Terrestrial interface, TVRO, MATV, CATV, Test equipments, Measurements on G/T, c/No. EIRP, Antenna Gain.

### UNIT V
Satellite Applications: INTELSAT series, INSAT, VSAT, Facsimile system, Weather Service, Remote sensing, Mobile Satellite Service: GSM, GPDM, INMARSAT, SARSAT, LEO, MEO, Satellite navigation System, Direct Broadcast Satellites (DBS), Direct to Home broadcast (DTH, Digital Audio Broadcast (DAB), Business TV(BTV), GRAMSAT, Specialized services – E-mail, Video conferencing, Internet.

### TEXT BOOKS

### REFERENCES
DIT 004 SUPPLY CHAIN MANAGEMENT


UNIT II Supply Chain Inventory Management: Economic Order Quantity Models – Reorder Point Models – Multichelon Inventory Systems.


UNIT V Case Studies: Digital Equipment Case Study – IBM Case Study.

TEXT BOOK


REFERENCES


UNIT II  Core Technology: Electronic Commerce Models - Shopping Cart Technology - Data Mining - Intelligent Agents – Internet Marketing - XML and E-Commerce


TEXT BOOK

REFERENCES
UNIT I

UNIT II

UNIT III

UNIT IV
Hardware and operational design of data warehouse – Hardware architecture – Physical layout – Security – Backup and recovery – Service level agreement – Operating the data warehouse.

UNIT V
Capacity planning – Tuning the data warehouse – Testing the data warehouse – Data warehouse features.

TEXT BOOKS

REFERENCES
DCS 231 DESIGN AND ANALYSIS OF ALGORITHMS


UNIT IV Backtracking – General Method – 8 Queens Problem – Graph Coloring Branch and Bound – Method – 0/1 Knapsack Problem


TEXT BOOK


REFERENCES


DMS 232 CRYPTOGRAPHY AND DATA SECURITY

UNIT I

UNIT II

UNIT III
Public key cryptography and Digital Signatures: Modular Exponentiation- RSA algorithm- Diffie-Hellmann key exchange- Digital Signature – Authentication protocols- Digital Signature Algorithm and Digital Signature standard.

UNIT IV

UNIT V

TEXT BOOK

REFERENCES
1. Menezes A.J. Van Ooschot and Vanstrone S.A, Handbook of Applied


DSE 004 EXTREME PROGRAMMING


UNIT II Decision Making, Branching and Looping – if, if…else, switch, …?: operators, while, do, for, foreach and jump in loops, Methods in C# - declaring methods, the main method, invoking methods, nesting methods, method parameters, pass by value and pass by reference, output parameters, Variable argument lists – Overloading methods.

UNIT III Arrays – Creating an array, Variable size arrays, Array list class – Manipulating Strings – Structures, Nested Structures – Enumerations, Initialization, base types and type conversion.

UNIT IV Classes and Objects – Definition, Creating objects, Constructors and destructors, Nesting, Overloaded constructors, Inheritance and Polymorphism – classical, multilevel, hierarchical inheritances, Subclass, Subclass constructors, Overriding methods, Abstract Classes and Methods, Interfaces, Interfaces and Inheritance – Operator Overloading.

UNIT V Delegates – Declaration Methods, Initialization and Invocation, Multicast delegates, I/O operations – Console Input/Output, Formatting, Errors and Exceptions, Type of Errors – Exceptions – Exception for debugging.

TEXT BOOK


REFERENCES


