UNIVERSITY POLYTECHNIC
B.I.T., MESRA, RANCHI

Syllabus of Diploma in Engineering (Computer Engineering) (Semester VI)

COURSE STRUCTURE
(W.E.F. 2011 Batch Students)
(Total Unit 7.0)

Course Code	Theory	Unit	Course Code	Sessional	Unit
DCP 6001	Web Technology and E-Commerce	1.0	DCP 6002	E-Commerce Lab.	0.5
DEC 6005	Computer Hardware	1.0	DEC 6006	Computer Hardware Lab.	0.5
DCP 6003	System Analysis & Design	1.0	DCP 6012	Project – II	1.0
DCP 6005	Software Engineering	1.0			
MBA 6003	Total Quality Managment	1.0		Seminar/Industrial Visit (Non-Credit)	
		5.0			**2.0**

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Subject: - Web Technology & E-Commerce **Course Code : DCP 6001**

Module 1: **06 Lectures**

The Internet: Basic of internet, Addresses and names for the internet, E-mail, World Wide Web.

Module 2: **06 Lectures**

Web servers Browsers and Security: web and proxy server the fast ready connection on the web, Web Browsers, The Virus menace in the Internet.

Module 3: **06 Lectures**

Introduction to E-Commerce: Overview of Internet applications, Internet protocols, Domain Name System, Corporate information System, Extranet, The bandwidth problem.

Module 4: **08 Lectures**

VB Script: Data types, Variables and Constants, Operator, Control Statements, Arrays, Functions, Procedures, Introduction to ASP. Client-Server communication.

Module 5: **06 Lectures**

Network Security: Firewall, Introduction to Cryptography

Module 6: **05 Lectures**

Electronic Data Interchange (EDI): Architecture of EDI, Benefits of EDI, Software Implementation, EDI Standards,

Module 7: **05 Lectures**

Electronic Payment System: Digital token-based system, electronic cash, Electronic cheques, Smart cards.

Text Book:

S. Raj Kamal, "Internet and Web Technologies", TMH

Reference Book:

A.S. Godbole, A.Kahate, "Web Technology", TMH

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Subject : Computer Hardware **Course Code : DEC 6005**

Module 1: **06 Lectures**

Motherboard: Motherboard form factors; Layout of motherboard; Components of motherboard ─ chipset, processor socket, expansion slots, power supply connectors, ROM BIOS, CMOS, ports etc.

Module 2: **04 Lectures**

Microprocessor: Processor Specification, FSB; Evolution of Processor; Overview of Modern Microprocessors; Processor Socket and Slots.

Module 3: **06 Lectures**

Memory: Logical memory Configuration─ Conventional memory, UMA, Extended Memory & Expanded Memory; Memory Physical Packaging; SIMM, DIMM & RIMM memory modules; Memory Banks; Types of Dynamic RAM─ FPM, EDO, BEDO, SDRAM, RD RAM, DDR RAM etc; Laptop Memory; Memory Installation/upgradation rules.

Module 4: **08 Lectures**

Secondary Storage devices: Hard Drives─ Hard Drive Construction and Interfaces; Disk Partitioning; File System; Disk Formatting ─ Low Level and High Level; Hard Drive Fragmentation; CD-ROM and DVDs: CD-ROM Formats; Compact Disk Media; Laser and Head Assembly; CD-R (Compact Disk Recordable), CD-RW (CD Rewritable), Writing to a CD, DVD Technology.

Module 5: **06 Lectures**

Power Supply and Electrical Issues: Power Problems─ Spike, Surge, Brownout and Blackout; EMI (Electromagnetic Interference); Static Electricity and ESD; SMPS─ SMPS form factors, connectors and voltages; Power supply problems; UPS─ Purpose of UPS, Online and offline UPS.

Module 6: **04 Lectures**

Printer: Printer types; Printing technology─ Dot Matrix Printer, Inkjet Printer, Laser Printer.

Module 7: **06 Lectures**

Maintenance and Troubleshooting: Preventive Maintenance ─ HDD, CDROM, FDD, Viruses detection and Protection; Logical Troubleshooting ─ Troubleshooting Overview; Re-create the Problem; Divide and Conquer; Repair the Problem or go back to test another theory.

Textbook:

Ron Gilster, "PC Hardware: A Beginner's Guide", TMH

Reference Books:

C.A.Schmidt, "The Complete Computer Repair Textbook", 3e, Dreamtech
David Groth, "A+ Complete Study Guide", 3e

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Subject: - System Analysis & Design **Course Code : DCP 6003**

Module 1: **06 Lectures**

Overview of system analysis and design: System development life cycle, Project selection feasibility analysis, Design, Implementation testing and evolution.

Module 2: **06 Lectures**

System requirement specification and analysis: Fact finding techniques, Data flow diagrams, Data dictionaries, process organization and interactions. Decision analysis, Decision trees and table.

Module 3: **04 Lectures**

Detailed design: Modularization, module specification, file Design, System Development involving databases.

Module 4: **06 Lectures**

System Implementation: Implementation and S/w maintenance.

Module 5: **06 Lectures**

System Control and Quality Assurance: Software design and documentation tools, Top down, Bottom up and variants, Units and integration testing practices and plans controls.

Module 6: **06 Lectures**

H/W & S/W Selection: System Administration and training. Hardware &Software Selection, Benchmarking, Software Selection.

Module 7: **06 Lectures**

Project Scheduling & S/W: Introduction , Project management, System Security.

Textbook:

Awad,E.M., " System Analysis and Design ", Galotia Publication

Reference Books:

1. James, A. S. "Analysis of Design of Information System", McGrawHill Pub.
2. Richard, D. "System Analysis Design", Irwin Inc.

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Subject: - Software Engineering **Course Code : DCP 6005**

Module 1: **04 Lectures**

Introduction: Software development projects; Emergence of software engineering, Modern software development practices. Software life cycle models ─ classical waterfall model, prototyping model and evolutionary model.

Module 2: **06 Lectures**

Software Project Management: Major responsibilities; Important project parameters; Project scheduling; Risk management.

Module 3: **06 Lectures**

Requirements Analysis: Requirement gathering and analysis; Software requirement specification; Formal system specification

Module 4: **06 Lectures**

Software Design: Characteristics of software design; Cohesion and coupling; Layered arrangement of modules; Function-oriented and object-oriented design approach.

Module 5: **06 Lectures**

User Interface Design: Characteristics of good user interface; Command-based interface and graphical user interface; User interface inspection.

Module 6: **06 Lectures**

Coding and Testing: Coding standard and guidelines; Code review, Software documentation; Testing ─ unit testing, black-box testing and white-box testing; Debugging; Integration testing; System testing.

Module 7: **06 Lectures**

Quality Management and Maintenance: Software reliability metrics; Software quality parameters; Basic idea of CASE; Maintenance and its types; Software evolution.

Textbook:

Rajib Mall, "Fundamentals of Software Engineering", 3e, PHI

Reference Books:

A.Behforooz, F.J. Hudson, "Software Engineering Fundamentals", Oxford University Press

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Syllabus of Diploma in Engineering (Computer Engineering) (Semester VI)

Subject : Total Quality Management **Course code : MBA 6003**

Module 1
Introduction : Concept of Total Quality Management, Objective of TQM, Scope of TQM, Components of TQM, Evolution of TQM, Definition of Quality and its important. (4)

Module 2
Components of Total Quality Management : Customer Supplier Relationship in TQM System, Management, Leaders in TQM System, Managerial Role in TQM. (6)

Module 3
Practices for TQM : TQM and Human Resource Development, Need and Significance of TQM, Process of TQM. (6)

Module 4
Quality Systems : Need for ISO 9000 and other Quality Systems, ISO 9000:2000 Quality System – Elements, Implementation of Quality System, Documentation, ISO 14000 – Concept, Requirement and Benefits. (6)

Module 5
Benchmarking : Reasons to Benchmark, Benchmarking Process, Quality Function Development (QFD) – Cost of Quality, QFD Process, Six Sigma. (6)

Module 6
Quality Circle : Purpose, Benefits, Problem in implementation of quality circles, Requirements of Elective Circle. (6)

Module 7
Statistical Tools and Techniques : Role of Statistics in Business, Common Statistical Tools, Flow Diagram, Check Sheets, Correlation or Scatter Diagram. (6)

BOOKS:

1. Feigenbaum A.V. "Total Quality Management, McGraw-Hill, 1991.
2. Total Quality Management, Principles & Practice – S. K. Mandal, Vikas Publishing House, Pvt. Ltd.
3. Oakland J.S. "Total Qualaity Management Butterworth – Heinemann Ltd., Oxford,1989.
4. Narayana V. and Sreenivasan, N.S. Quality Management – Concepts and Tasks, New Age International, 1996.
5. Zeiri, "Total Quality Management for Engineers Wood Head Publishers, 1991.