System Analysis and Design - Video course

Module 1
Data and Information – Types of information: operational, tactical, strategic and statutory – why do we need information systems – management structure – requirements of information at different levels of management – functional allocation of management – requirements of information for various functions – qualities of information – small case study (3 lectures)

Module 2

Module 3
Information gathering – strategies – methods – case study – documenting study – system requirements specification – from narratives of requirements to classification of requirements as strategic, tactical, operational and statutory. Example case study (3 lectures)

Module 4

Module 5
Tools for systems analysts – data flow diagrams – case study for use of DFD, good conventions – leveling of DFDs – leveling rules – logical and physical DFDs – software tools to create DFDs (3 lectures)

Module 6
Structured systems analysis and design – procedure specifications in structured English – examples and cases – decision tables for complex logical specifications – specification oriented design vs procedure oriented design (3 lectures)

Module 7
Data oriented systems design – entity relationship model – E-R diagrams – relationships cardinality and participation – normalization relations – various normal forms and their need – some examples of relational data base design. (3 lectures)

Module 8
Data input methods – coding techniques – requirements of coding schemes – error detection of codes – validating input data – input data controls interactive data input (3 lectures)

Module 9
Designing outputs – output devices – designing output reports – screen design – graphical user interfaces – interactive I/O on terminals. (2 lectures)

Module 10

Module 11
Control – audit and security of information systems – why controls are needed – objectives of control – techniques used in control – auditing information systems – auditing around, through and with the computer – testing information systems – types of tests – how to generate tests – security of information systems – disaster recovery – business process continuity (4 lectures).

Module 12

Module 13
Electronic data interchange – EDI standards – virtual private networks – XML and EDI. (2 lectures)

Module 14
Module 15
Payment systems in e-commerce – cheque payment, credit card payments, e-cash payments. (2 lectures).

Module 16
Complete system analysis and design case studies – a system for journal acquisition in libraries – walk through the entire life cycle (5 lectures)

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