Module 1: Overview of ERP (Lectures : 9)

a) The evolution of ERP systems: A historical perspective
Evolution through Payroll system, Inventory Control system, Materials Requirement Planning (MRP I) system, Manufacturing Resource Planning (MRP II) system, Their advantages and disadvantages. Definition and Concept of ERP, Business reasons for rise and popularity of ERP system – Benefits of an ERP system

b) Business processes supported by ERP systems
Various business functions in an Organization – Purchasing, Materials Management, Manufacturing, Sales & Distribution, Plant Maintenance, Quality Management, Finance & Accounting including Costing, Human Resources etc. ERP market place – SAP, Oracle, Peoplesoft, JD Edwards, Baan, Microsoft’s suit of products etc.
Business modules in these ERP packages – a brief comparative description of business function modules and sub-modules.

Overview of key end-to-end business processes supported in two major ERP systems (preferably SAP and Oracle) – Order to Cash, Procure to Pay, Plan to Produce and Despatch.

Module 2: Information Technology and ERP systems (Lectures : 9)

1. The evolution of Information Technology (IT): A historical perspective
Evolution of computer generations (hardware and software) – Operating systems, File systems to Database Management systems, Communication Networks. Enabling of ERP systems by IT evolution.

2. The evolution of ERP systems architecture

3. Related technology concepts
ERP and Supply Chain Management (SCM), and Customer Relationship Management (CRM), ERP and Business Intelligence (some of the popular tools like Cognos, Business Objects should be mentioned), ERP and Data warehousing (Data Mart, Data Mining and On-line Analytical Processing - OLAP), ERP and E-business.

Module 3: Implementation of ERP system (Lectures : 11)

1) ERP implementation approach
Single vendor versus Best-of Breed ERP implementation, Big Bang versus Phased (by module/ site) implementation, Using ERP of Application Service Provider (ASP).

2) ERP implementation life cycle
Planning different aspects (Economic viability, Senior Management commitment, Resource requirements, Change management etc.), Understanding requirements and Process preparation – Gap analysis and Business Process Engineering, User Acceptance criteria, Design, Configuration, Customization (difference between Configuration and Customization, advantages and disadvantages), Extensions, Data migration, End-user training, User Acceptance, Going live, Roll-out.

Differences between ERP implementation life cycle and Custom Software development phases. Drawbacks of ERP system.

3) Organizing implementation

4) Post-implementation Support, Review, Maintenance and Security of ERP systems

Module 4: Emerging Trends and Future of ERP systems (Lectures : 7)

1. Emerging Technologies and ERP
Service-oriented Architecture (SOA): Enterprise SOA layers – Business processes, Business services, Components and
Integration services, Advantages and Drawbacks of SOA, When to use SOA, Difference between multi-layered Client-
server architecture and SOA, basic awareness of NetWeaver from SAP, Websphere from Oracle and .Net from Microsoft.

Enterprise Application Integration (EAI): Basic understanding of the concept, Types of EAI (levels) – User Interface,
Method (logic), Application Interface, Data.

EAI architecture – Typical framework (Business Processes, Components & Services, Messaging service, and Transport
service. Mention of some of the leading EAI vendors – IBM, Microsoft, Oracle, SAP, TIBCO.

Radio Frequency Identification (RFID) and ERP: awareness of RFID technology, Benefits of RFID integrated with ERPs.

M-Commerce: basic concept and applications, difference with E-Commerce, benefits of integration with ERPs.

2. Future of ERP
Technology transformation to SOA, more E-Commerce features, Growing mobile applications, Economical and Easy
models of ERP deployment etc.

Books Recommended:

References: