

SYSTEM INTEGRATION (SE-C-05)

AIMS:

This module provides a comprehensive understanding of the technical issues involved in designing and implementing modern distributed systems through integration. It also introduces different concepts and approaches for system integration.

LEARNING OUTCOMES:

Upon successful completion of this module, the student will be able to:

- critically evaluate the different integration possibilities;
- appreciate the need and usefulness of different models and approaches for system integration;
- critically evaluate, design and use object-based distributed systems such as CORBA (Common Object Request Broker Architecture), Web Services Model, EJB (Enterprise Java beans), .NET Remoting...;
- implement a simple distributed system that can communicate effectively with existing and new architecture.

SYLLABUS CONTENT:

- Integration: overview.
- Middleware-oriented integration by (e.g.) CORBA: architecture, interfaces and IDL (Interface Description Language), clients, servers, CORBA vs. RMI & RPC (Remote Method Invocation & Remote Procedure Call).
- Introduction to XML (eXtensible Markup Language).
- Web-Services integration: model, architectures, XML-based protocols, UDDI (Universal Description, Discovery and Integration), WSDL (Web Services Description Language), SOAP (Simple Object Access Protocol), SWS (Simple Web-Services), service publication, service retrieval, service activation.
- Component-oriented Integration: model and architecture, transaction components (Transaction EJB).
- Semantics-oriented integration: architectures, agent-oriented approach, intelligent services, agent-service communication.
- Using a platform (e.g., .NET) to develop and test the Web service servers and clients, transactional components, and multi-component projects.

PREREQUISITES: None

RECOMMENDED ASSESMENT: Coursework and unseen paper