MIDDLEWARE TECHNOLOGIES

(Professional Elective-III) / (Common to CSE & IT)

Course Code : 15CT1129

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Course Outcomes:

At the end of the Course, the Student will be able to:

CO 1 Define object middleware

CO 2 Discuss the use of web services

CO 3 Describe technical issues in middleware

CO 4 Discover the use of middleware in building distributed technologies

CO 5 Associate security issues with distributed applications

UNIT-I **(10 Lectures)**

INTRODUCTION:

Moving to e-business, what is IT architecture? Why is this differentfrom what we did before? Rewrite or evolve?, Who develops thearchitecture?, Early days, Preliminaries, Remote procedure calls,Remote database access, Distributed transaction processing, Messagequeuing, Message queuing versus distributed transaction processing,what happened to all this technology

UNIT-II **(08 Lectures)**

OBJECTS, COMPONENTS, AND THE WEB:

Using object middleware, Transactional component middleware,COM, EJB, Final comments on TCM, Internet Applications.WEB SERVICES: Service concepts, Web services, and Using Webservices: A pragmatic approach.

UNIT-III (12 Lectures)

A TECHNICAL SUMMARY OF MIDDLEWARE:

Middleware elements, The communications link, The middlewareprotocol, The programmatic interface, Data presentation, Servercontrol, Naming and directory services, Security, System management,Comments on Web services, Vendor architectures, Vendor platformarchitectures, Vendor-distributed architectures, Using vendorarchitectures, Positioning, Strawman for user target architecture,Marketing, Implicit architectures, Middleware interoperability.

UNIT-IV (10 Lectures)

USING MIDDLEWARE TO BUILD DISTRIBUTED APPLICATIONS:

What is middleware for? Support for business processes, Informationretrieval, Collaboration, Tiers, The presentation tier, The processingtier, The data tier, Services versus tiers, Architectural choices,Middleware bus architectures, Hub architectures, Web servicesarchitectures, Loosely coupled versus tightly coupled.

UNIT-V (10 Lectures)

SECURITY:

What security is needed, Traditional distributed system security, Webservices security, Architecture and security.

APPLICATION DESIGN AND IT'S ARCHITECTURE :

Problems with today's design approaches, Design up front or asneeded?, The role of business rules, Existing systems, Reuse, Siloand monolithic development, The role of architecture, Levels ofdesign, Reconciling design approaches.

TEXT BOOK:

Chris Britton and Peter Eye, "IT Architectures and Middleware: Strategies for Building Large, Integrated Systems", 2nd Edition, Pearson Education, 2004.

REFERENCES:

1. Qusay H. Mahmoud, “Middleware for Communications”, 1st Edition, John Wiley and Sons,2004.
2. Michah Lerner, “Middleware Networks: Concept, Design and Deployment of Internet Infrastructure”, 1st Edition, Kluwer Academic Publishers, 2000.