4/4 B.Tech. SECOND SEMESTER
SERVICE ORIENTED ARCHITECTURE

CS8T2C **Credits: 4**

Elective – III

Lecture: 4 periods/week **Internal assessment: 30 marks**
Tutorial: 1 period /week **Semester end examination: 70 marks**

Course Context and Overview: This course introduces the fundamental concepts of .Service Oriented Architecgture. With this foundation students can take up engineering career in industry or research.

Prerequisites: C LANGUAGE, I/O ANALOG AND DIGITAL INTERFACING, AND PERIPHERALS

Learning Outcomes:

1. Understand fundamentals of SOA.
2. Learn various principles of service orientation
3. Identify the problems solved by service layers.
4. Learn the benefits of business centric SOA.
5. Understand the Service orientation design concepts.
6. Learn various SOA platforms.

UNIT I: Introduction: Fundamental SOA, common characteristics of comtemporary SOA,common misperceptions about SOA, common tangible benefits of SOA, common pitfalls adopting SOA

UNIT II: The Evolution of SOA:An SOA timeline, continuing evolution of SOA, roots ofSOA.

Web services and primitive SOA: Te web service frame work, services, mesaging

UNIT III: Principles of service orientation: service orientation and the enterprise, anatomy ofa service oriented architecture, common principles of service orientation, how service oriented principles interrelate, service orientation and object orientation, native web service support for service orientation.

UNIT IV: service layers: Service oriented and contemporary SOA Unsupported SOAcharacteristics, problems solved by layering services.

SOA delivery lifecycle phases: Basic phases of the SOA delivery lifecycle, the top-down strategy, the bottom-up strategy, the agile strategy.

UNIT V: Service oriented analysis: Introduction to service-oriented analysis, Benefits of abusiness- centric SOA, Deriving business services, Service modeling, service modeling guidelines, classifying service model logic.

UNIT VI: Service oriented design: introduction to service oriented design, XML schemalanguage basics, WSDL language basics, SOAP language basics, service interface design tools,

UNIT VII: Steps to composing SOA, consideration for choosing service layers,consideration for positioning core SOA standards, considerations for choosing SOA extensions, Service design overview, service design guidelines.

UNIT VIII: SOA platforms: SOA platform basics, SOA support in J2EE, SOA support in .NET, integration considerations.

Learning Resources

Text Book:

Service-Oriented Architecture: Concepts, Technology, and Design, Thomas Erl, Pearson Education.

References:

1. SOA Principles of Service Design ,Thomas Erl,Pearson Education.
2. Service-Oriented Architecture: A planning and implementation guide for business and technology ", Eric A Marks, Michael BELL, Wiley
3. Service Oriented Architecture (SOA) For Dummies , Judith Hurwitz, Robin Bloor, Marcia Kaufman, Fern Halper ,
4. Enterprise SOA Designing IT for Business Innovatio006E ,Dan Woods and Thomas Mattern,O'REILLY, First Edition, 2006