THE OHIO STATE UNIVERSITY
COLLEGE OF ENGINEERING

Applied Enterprise Architectures and Services

CSE 5235

Credit Hours:
3.00

Course Levels:
Undergraduate (1000-5000 level)
Graduate (5000-8000 level)

Course Components:
Lecture

Course Description:
Modeling/analysis of complex enterprise architectures; enterprise patterns (workflow, broker, warehousing); methods for service performance (lean, ontologies, data mining, etc.); emerging topics in semantic cyber-infrastructures, social computation.

Prerequisites and Co-requisites:
Prereq: 5911 (758 and 762), 5912 (786), 5913 (682), 5914 (731), 5915 (772), or 778.

Course Goals / Objectives:

- Master enterprise architecture modeling concepts such as external context, service goals, workflows, roles, service and operating level performance, complex components, service provisioning, metrics, and performance measurement
- Be competent with conceptual enterprise modeling, goals and trade-offs, and gap analysis to identify service changes and needed performance improvement
- Be competent with developing specifications for service improvement leading to design
- Be competent with related governance and technology standards (Federal Enterprise Architectures, ISO20000, W3C, and OMG
- Be familiar with the applications of broker, data warehousing, and workflow architecture patterns and their performance improvement through industry cases
- Be familiar with tools and methods for service improvement like data mining tools, social network services, ontologies/OWL/RDF
- Be familiar with the industry practice of applying architecture knowledge for developing strategic options using IT solutions
- Be familiar with techniques to develop a business case for the stakeholders by articulating priorities and their ability to meet service goals

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Course Topics:

- Syllabus and course administration, process of research, identifying references, and ethics.
- Introduction to vocabulary – HCI, business processes, supply chains, enterprise architectures and systems, and symbiotic computing; declarative modeling and analysis methods using case studies.
- Use of performance linkages between services in-the-large and in-the-small, for service level and policy formulation, and evaluation; service life-cycle.
- Patterns and principles for co-engineering Adaptive Complex Systems to achieve behaviors like Lean, chargeback and capacity alignment, accountability, competitiveness, and innovation.
- Role of emerging technologies (sensors, mobile, service-oriented architectures) in achieving performance objectives; enterprise architecture patterns (warehousing, mining of operational data, symbiotic computing, social computing, standards).
- Portfolio development and program management; project specific presentations of research and best practices; guest lecturers from industry representing IT operations management and middleware technologies.
- Edge-to-enterprise case studies covering trends such as social networking services and their impact on enterprise architectures.
- Team project methodology, team meetings, and project-relevant research presentations.

Designation:
Elective