

CIS 8670

Enterprise Resource Planning Systems (ERP): Implementation and Management

Catalog Description

This course will explore the concepts, principles, and state-of-the-art methods in successfully integrating Enterprise Resource Planning (ERP) systems into extant enterprise architectures. The course will help both functional area and IT managers understand the respective role of users, enterprise architects, developers and managers in the selection, preparation, implementation and management of large and complex enterprise applications. THIS IS NOT A HANDS ON ERP tool-based course, rather it is a precursor to deeper involvement in ERP management, implementation and, if desired, administration.

COURSE PREREQUISITES: CSPs only.

Course objective and justification:

Successful business and governmental organizations must focus on managing and optimizing their key business processes. Many large and mid-sized organizations are focusing on accomplishing this goal through the installation of integrated business systems known originally as Enterprise Resource Planning (ERP) systems. These broad and complex applications, known today as enterprise systems (ES), now form the transaction backbone of many organizations in the private, governmental and non-governmental non-profit sectors. Gartner research reports that fully 85% of the fortune 500 firms have ERP implementations. Increasingly small to medium enterprises (SMEs) are finding ways to incorporate ERP systems into their portfolio of enterprise systems. Furthermore ERP systems are currently being extended to include customer relationship management (CRM), business warehouse (BW), strategic enterprise management (SEM) systems and services via the Internet.

This course will enable student understanding of issues and decisions that must be made when embarking upon a ERP selection and implementation journey. It will also lead to an understanding the challenges associated with managing extant ERP systems. In the process students will become familiar with the forces and organizational conditions leading to the acquisition of such enterprise wide systems. Students will have the opportunity to identify extant and missing organizational competencies that may be drawn upon to create an appropriate ERP implementation method. As such this course is suitable for students in either an IT technical track or in a management track.

At the conclusion of this course the student will have an understanding of many of the approaches that may be drawn upon in the implementation of an ERP system. In particular it will examine the places where formal development approaches can be fruitful and where they may not be so helpful and will need creative adaptation. No two organizations are identical. There are different organizational contexts each with different technology infrastructures, organizational strategies and assumptions. The astute developer knows these differences need to

be taken into account in any enterprise application development project. Thus every enterprise project is different. Yet despite these differences, systematic information systems development (ISD) approaches are believed to improve the likelihood of ERP project implementation success. This is because formal methods draw on professional standards, a rich history of previous development efforts, and sets of principles germane to different kinds of development environments. Nevertheless no single method is universal; no method fits all settings, rather they are often adapted to fit the setting. This re-creation of an implementation method is contextually shaped or engineered 'on site'. This process of creating development methods from stock methods components is sometimes called 'Methods Engineering.' A 'methods engineering' approach is one where a development team analyzes the business situation and, drawing from an inventory of method pieces, assembles method fragments using high-level analysis and assessment modeling techniques. Properly identified and configured those components comprise a customer or engagement specific methodology.

The course will also include an extensive competency assessment component designed so that each project management team may tailor its own inventory of approaches and begin to derive an effective ERP specific method engineering approach.

This course also gives explicit consideration to the notion of enterprise architecture in general terms as well as through the examination of well developed architectures, in the form of ERP systems, serving as an instance example of enterprise architecture. The course will provide a generalized understanding of the fundamentals of architectural themes and concepts. It will also introduce methods, formalisms and tools necessary for transferring architectural decisions to system designs and to successfully implemented systems.

The course will not focus solely on one ERP vendor's products. But by virtue of market share and the number of Atlanta area implementations many of the examples and hands-on activities will be drawn from the realm of SAP R3 and Oracle/PeopleSoft/Seibel solutions, the two markets leaders in ERP applications.

This course begins by defining and motivating the need for integrated systems. A brief technology primer will be presented. Key concepts in enterprise process modeling and in the implementation and management of ERP systems will follow. Hands-on experience will be provided NOT by interaction with any particular ERP system, this is simply too complex for a single course. Rather, the students will be using an enterprise process-modeling tool-- ArcMP. This will provide valuable insight and expertise later directly translatable into any ERP implementation or management setting.

TEXT:

Implementation of an Integrated Business Solution The Dolphin Group and The University of South Dakota School of Business—complete details.

Detailed Learning Objectives and Course outcomes:

A student completing this course will:

- Understand and gain insight into process views of organizations and tools and techniques used to model both as-is and to-be models.
- Apply the process modeling techniques in one or more modeling environments.
- Know and be able to apply key technical terminology in enterprise information systems as they apply in different ERP products and development methods

- Understand key differences between the major ERP applications (such as SAP R/3, and Oracle/PeopleSoft/Sibel) and issues specific to these applications their configuration and management.
- Analyze a current architecture and perform an effective gap analysis before an ERP implementation
- Be able to map enterprise architectural resources to a contemporary Enterprise Architecture mapping tool.
- Understand and be able to articulate the life cycle stages of any ERP implementation.
- Effectively describe problems typical of ERP implementation projects and translate this information and use this information to anticipate and articulate the challenges associated with post-implementation management of ERP systems.
- Synthesize prior theoretical and experiential knowledge in IT development and project management with the current literature on Enterprise System development.
- Be able to evaluate the progress of an on going ERP implementation project.

Course schedule and topics:

Week #:	Topic(s)
1	Introduction and Overview and review of Enterprise Level and ERP Concepts
2	Business and IT Integration Trends Case : To be determined
3	Review of Project Planning & Management concepts Case on ERP Project Planning: “NIBCO’s ‘Big Bang’” by Brown and Vessey
4	Case #1: “Adopting SAP at Siemens Power Corporation”
5	Life Cycle concepts: 1) development life cycle rationale. 2) traditional ERP life cycles 3) accelerated ERP life cycles
6	Enterprise process modeling concepts. Enterprise process modeling tools and techniques
7	ERP Implementation Challenges and Success Factors
8	Business Process Reengineering (BPR and ERP) ERP Fits and Misfits Analysis
9	ERP Requirements Management
10	ERP Project Team Selection, Development and Project Communications
11	Change Management & Control ERP Configuration and Control
12	Data migration and Data Cleansing
13	Quality Assurance
14	ERP Risk Management
15	ERP Method Engineering

Course Evaluation, Assignments and Exams:

I. Class discussion and participation (25%)

II. Case brief write-up (5) (30% -6% each)

III. Mid Term (take-home) exam (20%)

Assesses the understanding of fundamental enterprise architecture themes and concepts.

IV. Class team project (25%)

In-depth treatment of a topic in ERP implementation or management. It will involve some use of the modeling tool. The project will be conducted by teams of three students. Smaller or larger teams, as well as individual projects will be allowed under special circumstances. Depending on the nature of the project, it may involve implementation.

Conduct of Course: Lecture/Discussions, Demos, and Labs:

Class sessions will be divided between: (1) lecture/discussion of certain software concepts and features, (2) instructor demonstrations of these same software concepts and features, and (3) student laboratory sessions working with these same software concepts and features.

The purpose of this pedagogical approach is to introduce and reinforce ideas and skill sets so that students can master these on their own after class hours. To bring this knowledge to a highly proficient, professional level, students will have to spend time and effort outside of class working in the GSU computer labs or on their own micros.

To ensure that you have the basic knowledge that will allow you to function on your own after class, be sure to ask the instructor questions during class, either during the lecture/discussion, demo, or lab.

Course Software: Students will be required to use one or more Enterprise modeling and Infrastructure management tools. The first will be an enterprise process-modeling tool-- ArcMP. This will provide valuable insight and expertise later directly translatable into any ERP implementation or management setting. ArcMP is a locally developed web-based and cross-platform tool to help identify, model and manage enterprise infrastructural resources. Accordingly students will need access to a reasonably equipped computer with high speed internet access.