Enterprise Application Development

By: Dr. Balaji Raman, Dr. Rakesh Kumar Sanodiya, and other faculty
IIIT Sri City
Chittoor - 517 646, AP, India

Course Outline:

This course is intended for computer science undergraduates who have already acquired a basic background in software architecture, business requirements, fundamentals of web technologies, service oriented architectures and some scripting languages. The primary idea is to introduce students to the concepts of enterprise application development. This course will not only focus on learning how to create enterprise applications but also how to develop the knowledge and skills necessary to create enterprise applications in practice.

Course Objectives:

At the completion of this course, students will have an understanding of:

- the fundamental concepts that are critical to enterprise application development
- information architecture and its use to develop large-scale applications
- the ways to integrate knowledge from different functions to create a business plan
- the process for developing large scale enterprise applications
- the ways to develop multi-tier architecture
- approaches that hone critical thinking for developing Scalable Enterprise Applications
- enterprise-level security issues
- enterprise-level performance and optimization issues

Syllabus (Topics):
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4 weeks:

- Generation / Evaluation of Ideas
- Group Formation
- Feasibility & Financial Analysis
- Requirement Analysis
- Implementation & Technology
- Business Plan and Review
- Enterprise Architecture Design
- Database Design & Connectivity
- User Interface Design
- Advanced Server Design
- Developing Use Cases

8 weeks:

- Connecting the 3-Tiers - MVC and Other Approaches

- Developing Subsystems
- Integrating Subsystems into a framework
- Unit / Integration Testing - Individual Component and the System
- Deploying the Application
- Debugging Application Components

- Case Study - 1
        - Open Source Architectures

- Case Study - 2
        - Big Data Frameworks

- Team Project

Books:
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1) Peter Morville, Louis Rosenfeld, Information Architecture for the World Wide Web: Designing Large-Scale Web Sites, O'Reilly & Associates, 3rd Edition, 2007, ISBN:978-0-596-52734-1

2) Covello & Hazelgren, The Complete Book of Business Plans, Sourcebooks Inc, Illinois, 1995, reprinted in 2006 ISBN: 988-1-4022-1484-4

3) Kroenke, David M. (2005). Database Concepts, 2nd Edition. Prentice Hall. ISBN: 0131451413

Course Assessment:

Grades in this course will be based on the following assessment components:

Exams and Assignments: 50%
        - Mid-semester: 15% (only mid - 1 exam and NO mid - 2 exam)
        - End-semester: 25%
        - Assignments - 10%

Team Project: 50%
        - Proposal Evaluation - 5%
        - Design & Implementation - 30%
        - Final Evaluation - 10%
        - Documentation - 5%

In addition, the final project grades may be scaled according to individual assessments of team members.

Additional Resources:
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1) Sanjay Goel and Bill Brigham
   ITM 602: Enterprise Application Development,
   University at Albany, State University of New York

web: https://www.albany.edu/~goel/classes/spring2007/itm602/index.shtml

2) Rania Hodhod
   CPSC 6176 Enterprise Web Application Development
   Columbia State University
   http://csc.columbusstate.edu/hodhod/Syllabi/CPSC%206176%20-%20Summer%202014.pdf