

## **ISE 4830/IHE 6830 – Engineering Project Management and Applications**

### **Course Description**

Introduction to the philosophy and practice of project management. Focus on an integrated approach to plan, control, and execute programs and projects. Introduces key concepts critical to effective project management, from initiation to closing actions and from qualitative to quantitative issues. Emphasis throughout the course on both the project management process and its tools. Provides sufficient background knowledge and basic tools to confidently manage a project or contribute effectively as a project team member. Introduces the PMBOK and the concept of Project Management Professional (PMP) certification.

Offered both face-to-face and online  
Undergraduate/Graduate level – 3 credit hours

### **Graduate Students:**

- a) For each of the exams, graduate students will be assigned two extra problems.
- b) In addition to the Group Project, graduate students will prepare a research-review article on a student selected Project Management topic.

### **Course Learning Objectives**

The overall objective of this course is for each student to understand the concepts of project management and be able to apply the various techniques and tools. Students will learn to:

- Define and discuss the concepts and philosophy by which management deals with projects;
- Analyze and explain the importance of system and organizational culture to an integrated project management approach;
- Develop and explain how work breakdown structures and project networks are used to plan, schedule, and control projects;  
Understand the different types of organizational structures and the factors to be considered before deciding on an appropriate organizational approach;
- Recognize resources constraints and apply allocation strategies;
- Apply Microsoft Project to help manage projects; and
- Understand the PMBOK and PMP emphasis areas.

### **Course Learning Outcomes**

After successful completion of this course, students will be able to:

- Define and discuss the concepts and philosophy by which management deals with projects;
- Analyze and explain the importance of system and organizational culture to an integrated project management approach;
- Develop and explain how work breakdown structures and project networks are used to plan, schedule, and control projects;

- Understand the different types of organizational structures and the factors to be considered before deciding on an appropriate organizational approach;
- Recognize resources constraints and apply allocation strategies;
- Apply Microsoft Project to help manage projects; and
- Understand the PMBOK and PMP emphasis areas.

### **Tentative Weekly Schedule**

- 1 Course Introduction & Processes and Knowledge Areas
- 2 Systems Engineering and Systems Development
- 3 Integration Management; Review MS Project Tutorials; Group Project Definition  
Due
- 4 Scope Management
- 5 Time Management (Basic, Advanced, TOC, and Resource Allocation)
- 6 Cost and Schedule Analysis (EVM)
- 7 Quality Management
- 7 Test 1 (Tentative)
- 8 Quality Management
- 9 Managing Risks & Project Organizations
- 10 Project Roles/Responsibility/Authority
- 11 Human Resource Management & Project Closeout
- 12 Test 2 (Tentative)
- 12 Group Project - Working Meetings
- 13 Group Project - Draft Files Due
- 14 Project Working Meeting  
Final Group Project Submission
- 15 PPT with audio, Word Report, MS Project

PM Research-Review Paper Due (Graduate Students only)