

## CS439 SOFTWARE PROJECT MANAGEMENT (ELECTIVE IV)

### Course Description & Objective:

Students will be introduced to the following aspects of project management related to managing small software development and To describe activities of SPM highlights and train in the planning and implementation of project management. It brings a specific project to complete on time and on budget.

### Course Outcomes:

- identify and describe the impact different project contexts will have upon all aspects of a software development project, including an understanding of the role professional ethics plays in the conduct of successful software development
- identify and describe the key phases of project management and the key skills associated with each
- determine an appropriate project management approach through an evaluation of the business context and project scope and knowledge of agile and traditional project management approaches
- demonstrate through application, knowledge of the key project management skills, such as product and work break-down structure, schedule; governance including progress reporting, risk and quality management
- as part of a small team research and produce a concise piece of writing suitable for presentation to senior management demonstrate an ability to present their ideas both formally and informally to a group of their peers.

### UNIT I - Software Management & Software Economics

The waterfall model, conventional software Management performance. Evolution of Software Economics : Software Economics, pragmatic software cost estimation.

Improving Software Economics , Reducing Software product size, improving software processes, improving team effectiveness, improving automation, Achieving required quality, peer inspections.

**UNIT II - The old way and the new & Life Cycle Phases**

The principles of conventional software Engineering, principles of modern software management, transitioning to an iterative process.  
Life cycle phases : Engineering and production stages, inception, Elaboration, construction, transition phases.

**UNIT III - Artifacts of the process**

The artifact sets, Management artifacts, Engineering artifacts, programmatic artifacts.

Model based software architectures : A Management perspective and technical perspective.

**UNIT IV - Project Organization and Planning**

Work breakdown structures, planning guidelines, cost and schedule estimating, Iteration planning process, Pragmatic planning.

Project Organizations and Responsibilities, Line-of-Business Organizations, Project Organizations, evolution of Organizations.  
Process Automation : Automation Building blocks, The Project Environment.

**UNIT V - Project Control and Process instrumentation**

The seven core Metrics, Management indicators, quality indicators, life cycle expectations, pragmatic Software Metrics, Metrics automation.

Future Software Project Management, Modern Project Profiles, Next generation Software economics, modern process transitions.

**TEXT BOOK :**

1. Walker Royce ,"Software Project Management", 1<sup>st</sup> ed., Pearson Education, 2005.

**REFERENCES BOOKS :**

1. Bob Hughes and Mike Cotterell, "Software Project Management", 3<sup>rd</sup> ed.,Tata McGraw - Hill Edition, 2005.
2. Joel Henry, "Software Project Management", 1<sup>st</sup> ed., Pearson Education, 2006.
3. Pankaj Jalote, "Software Project Management in practice", 1<sup>st</sup> ed., Pearson Education, 2005.