

Course Structure

Course Code : SM7102

Course Title : Industrial Project Management

Credit Hours : 3

Course Description

characterize the project management activity into a systemic behaviour, and to interact with different internal and external factors; construct basic project management artefacts like WBS, GANNT, PERT tries, and different report types; describe the different phases, what documents to prepare and what processes to sequence control and management; apply a specific type of project management that is neither the PMBOK, nor any other but a combination of them all, namely exploring the abilities of Critical Chain and Agile; implement and control a EVM system; evaluate the multiple facets of risk management, enrolling the basic notions of decision making; Know the differences between PMBOOK and Critical Chain.

Course Objectives

The student should become acquainted with:

- Provide the fundamentals of Project Management in a contextual view (resource scarcity, risk, stakeholders).
- Learn how to prepare a project plan, scheduling, resource allocation, monitor and control in way that enables them to develop skills that allow a better management of projects.
- Gain an enlarged culture on Project Management and some expertise on the use of Project Management integrated tools, namely Microsoft Project

Course Topics

- Project Management Specificities: organizational context, technological context, Engineering Process, Project Management knowledge areas. Engineering process and Management process.
Activities, processes, tasks, managing the part and managing the whole (system).
Process view.
- Project phases (life cycle): origin, start, planning, execution, control and closing.
Performance evaluation, learning cycle, team learning.
Teams and Groups (team choice, team building, communication in the team, leadership, enrolling, processes of work, work division, delegation, alignment, effectiveness and efficiency control (effectiveness/efficiency matrix), collaborative work, agile planning and conflict management)
- Communication competencies. Organizational communication (informal, formal, oral and written).
Communication validation (type 2). Reports on options taken, problems and Project evolution. Support infrastructure to information and communication in a project.
- Different projects (dimension, extension and scientific domain. Portfolio management)

M.Sc. in Smart Control Systems for Energy Management

Course Structure

Key competences to manage a project (planning and scope, governance, change management, stakeholders management, risk management, resource management, quality management, communication reports, control, evaluation and closing)

- Project scope. Benefits (long term and bottom line outcomes). Clients broadly addressed (stakeholders as all that can affect or are affected by the project). Results (products and/or services), work (activities and tasks) and resources (human, material, technology and finance)
WBS Work Breakdown structure
Planning with PERT and GANT, critical path. Time management
- Resource allocation. Costs and estimates, cost control
Exercises with PERT and GANT
- Introduction to Project Management Tools
Exercises with MS Project
- Project control, overall and phase to phase
Risk management (identification, qualification, quantification, response and control).
- Decision trees, decision tables, expected value, utility functions
Detailing issues occurred (describing, when, what, who and state)
- Earned Value and buffers. Reports and log books. Managing by anticipation.
Cooperation (inside, outside, inter group). Coopetition
- Decision making processes, leadership and decision, communication and decision.
Managing change (scanning the environment and preparing the change investing in it).
- Contracting, Procurement, Negotiation
Conclusion (closing) and learning (Lessons learned).
Social and Ethical responsibility. Organizational culture, work context, organizational structure, job description and responsibilities, delegation, competence, motivation, Organizational policies and standards, processes workflow, integrated management of heterogeneous resources (human, technological and finance)

References

- **A Guide to the Project Management Body of Knowledge:** PMI 2008 PMBOK Guide
- **Critical Chain:** Eliyahu M. Goldratt 1997 North River Press