Postgraduate Initiative in Project Engineering
IX7203: Time and Cost Engineering

IX7203 Aims

IX7203-AI:
- Specify and develop the critical skills required in committing project dates.

IX7203-A2:
- Specify and develop the critical skills for effective project time and cost control.

IX7203-A3:
- Specify and develop the critical skills to define effective communication for project performance status.

IX7203 Learning Outcomes

IX7203-LO1:
- Review and analyse, design and organize process to construct resource-limited schedule for the project.

IX7203-LO2:
- Critically analyse tools for project planer and cost controller.

IX7203-LO3:
- Evaluate communication for project performance review.

IX7203 Expected Student Learning Task

Total Learning time 200 hours:
- 36 hours contact time
- 164 hours independent study (team construction and real case analysis)

Students are expected to attend all lectures/seminars and actively engage with online learning resources.

IX7203 Assessment

Learning outcome IX7203-LO1 is assessed through:
- individual construction (1,000 words) of project resource limited versus resource unlimited schedules (25%),
- and individual critical analysis (1,000 words) of similar construction by someone else (25%).

Learning outcome IX7203-LO2 is assessed through:
- a group presentation (equivalent 1,000 words - 25 minutes presentation and 5 minutes Q&A) of project S-curve and Earned Value Management System (25%).

Learning outcome IX7203-LO3 is assessed through:
- reflective report (1,000 words) to analyse group presentation (by other groups): 25%.

IX7203 Contents

IX7203-C1: Time deviation at data date
- Professional practice to control time during project execution: broken line and related methods.
- Presentations and labs.

IX7203-C2: Impact Analysis
- Critical review of time deviation at data date: types of logical relationships.
- PERT/CPM based methodologies to analyze time at completion: forward and backward date analysis in projects.
- Presentations, labs and preparation of independent analysis of project time analysis.

IX7203-C3: Float analysis
- Critical review of floats in project schedule based upon a case study.
- Methodologies to consider negative floats in projects.
- Presentations, labs and preparation of independent analysis of project time analysis.

IX7203-C4: Time deviation at completion
- Professional practice to analyze trends of time deviation at completion: Milestone Trend Chart and related methods.
- Presentations and labs.
- Methodologies to integrate time and trend analysis reviewed through case study.

IX7203-C5: Task driven resource scheduling
- Methodologies to identify dimensions and parameters of resource assignment.
- Professional practice to integrate project schedule and analytical estimates for construction of S-curve.
- Presentations, labs and preparation of independent analysis of project S-curve.

IX7203-C6: Resource driven scheduling
- Professional practices and methodologies to analyze resource-limited schedule for the project.
- Critical review of resource levelling versus resource smoothing.
- Presentations, labs and preparation of independent analysis of project resource limited schedule.

IX7203-C7: Earned Value Management
- Professional practices and methodologies for EVM (Earned Value Management) metrics.
- Presentations and labs.

IX7203-C8: Integrating EVM and time management
- Critical analysis and communication skills to integrate deviation at data date and at completion for both time and cost: case study.