

Postgraduate Initiative in Project Engineering

OA7203: Time and Cost Engineering

OA7203 Aims

- OA7203-A1:**
- Specify and develop the critical skills required in committing project dates.
- OA7203-A2:**
- Specify and develop the critical skills for effective project time and cost control.
- OA7203-A3:**
- Specify and develop the critical skills to define effective communication for project performance status.

OA7203 Learning Outcomes

- OA7203-LO1:**
- Review and analyse, design and organize process to construct resource-limited schedule for the project.
- OA7203-LO2:**
- Critically analyse tools for project planner and cost controller.
- OA7203-LO3:**
- Evaluate communication for project performance review.

OA7203 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.

OA7203 Assessment

- Learning outcome OA7203-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 OA7203-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 OA7203-LO3** is assessed through:
- reflective report (1,000 words) to analyse group presentation (by other groups): 25%.

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OA7203 Contents

- OA7203-C1: Time deviation at data date**
- Professional practice to control time during project execution: broken line and related methods.
 - Presentations and labs.
- OA7203-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.
- OA7203-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.
- OA7203-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.
- OA7203-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.
- OA7203-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.
- OA7203-C7: Earned Value Management**
- Professional practices and methodologies for EVM (Earned Value Management) metrics.
 - Presentations and labs.
- OA7203-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.