



## Shanghai Jiao Tong University

### TR401 Engineering Project Management

<b>Instructor Information:</b>	Nazmul Huda Home Institution: Macquarie University, Sydney, Australia Email: Nazmul.huda@mq.edu.au Office Hours: Determined by Instructor		
<b>Term:</b>	December 16, 2019 - January 7, 2020	<b>Credits:</b>	4 units
<b>Class Hours:</b>	Monday through Friday, 160 mins per teaching day		
<b>Discussion Sessions:</b>	2 hours each week, conducted by teaching assistant(s)		
<b>Total Contact Hours:</b>	64 contact hours (1 contact hour = 45 mins, 2880 mins in total)		
<b>Required Texts (with ISBN):</b>	Project Management – The Managerial Process (7th E), by Erik W. Larson, Clifford F. Gray, ISBN: 9781259666094, McGrawHill Engineering Project Management by Nigel J. Smith, ISBN- 13: 978-1405168021		
<b>Prerequisite:</b>	N/A		



## Course Overview

This unit provides a comprehensive understanding of project management considering different aspects throughout a project life cycle. The unit is designed to cover the duties and deliverables of engineering managers from the project's initiation to successful completion. It will provide learning modules from basic understanding to advanced project management fundamentals considering an interdisciplinary and relevant to all fields of engineering practice. Topics to be covered include project management fundamentals and practices, project delivery with timing, costing and planning, risk mitigation and resources scheduling; progress, performance, and evaluation, building managerial and leadership skills, interorganizational relations, environmental and cultural considerations, agile project management and future of project management.

## Learning Outcomes

Upon successful completion of this unit, the students will be able to

1. Develop a comprehensive understanding of project management in engineering practices
2. Identify the responsibilities and deliverables of engineering managers from the project's initiation to successful completion
3. Compare different project delivery methods, assess the associated risks, and follow standard procedures for risk mitigation
4. Estimate project timelines and scheduling resources within required budgets
5. Evaluate progress and performance, and take necessary measures for optimum output
6. Develop concept and knowledge of various project management techniques project development, design, optimization, budgeting, planning scheduling, monitoring, supervising, recruiting, procurement
7. Build knowledge and skills on environmental and cultural factors for large scale international projects
8. Learning agile project management and the future of engineering project management



### Grading Policy

Mid term test	30%
Team Project	30%
Final Exam	40%

### Grading Scale is as follows

Number grade	Letter grade	GPA
90-100	A	4
85-89	A-	3.7
80-84	B+	3.3
75-79	B	3
70-74	B-	2.7
67-69	C+	2.3
65-66	C	2
62-64	C-	1.7
60-61	D	1
≤59	F (Failure)	0



### Class Schedule

Date	Lecture	Readings
Day 1	Introduction, Engineering Project Management Overview and definitions, Modern Project Management	To be advised
Day 2	Organization Strategy and Project Selection, Organization Structure and Culture	To be advised
Day 3	Defining the project, Project Appraisal - Estimating Project Time and Cost, Developing a Project Plan	To be advised
Day 4	Risk Management, Risk Evaluation, Engineering Risks, Uncertainty Management,	To be advised
Day 5	Scheduling Resources and Cost – Overview, Types of Resource Constraints, Scheduling problem, Resource allocation methods, Multiproject Resource Schedules	To be advised
Day 6	Reducing Project Duration – Accelerating Project Completions, Project Cost-Duration Graph, Practical Considerations	To be advised
Day 7	Building Managerial Skills, Managing Project Stakeholders, Managing vs Leading, Ethics and Project Management, Qualities of an Outstanding Project Manager	To be advised
Day 8	Midterm exam, team formation and project allocation	To be advised
Day 9	Managing project teams, Five stage team development model, Building high performance project teams, Minimizing risks and pitfalls	To be advised
Day 10	Managing Interorganizational relations, Outsourcing, Negotiations, Customer relations, Accounting and Contract Management	To be advised
Day 11	Project Evaluation, Progress and Performance Measurement, Monitoring time and resources allocation, Indexes to monitor progress	To be advised



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Day 12	Project Closure, Audits, Post Implementation Evaluation, Wrap up	To be advised
Day 13	Environmental considerations, Legal/Political, security and Geographic considerations, Cross-cultural considerations, Managing international projects	To be advised
Day 14	Introduction to Agile Project Management, Traditional vs Agile, Applying Agile project management to large projects, Limitations and Concerns, The future of Engineering Project Management	To be advised
Day 15	Summary, discussion, review and conclusion. Final Project Presentation and Discussion	To be advised