Built Environment

CONS0025
Infrastructure Planning
Procurement and Finance

Martin Locke
Disclaimer
This abbreviated course outline is indicative of the outcomes, delivery and assessment. While Course Learning Outcomes will remain constant, other details may be subject to change. The full and most accurate course outline will be available in Moodle.

1. COURSE STAFF

<table>
<thead>
<tr>
<th>Course Convener</th>
<th>Martin Locke</th>
</tr>
</thead>
<tbody>
<tr>
<td>Email</td>
<td><a href="mailto:m.locke@unsw.edu.au">m.locke@unsw.edu.au</a></td>
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</tbody>
</table>

2. COURSE DETAILS

Credit Points:  6 UoC

<table>
<thead>
<tr>
<th>Learning Activity</th>
<th>Hours per week</th>
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<tbody>
<tr>
<td>Lecture</td>
<td>2</td>
</tr>
<tr>
<td>Tutorial</td>
<td>1</td>
</tr>
<tr>
<td>Online learning activity</td>
<td>1</td>
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Description
Increasing Australia’s global competitiveness will depend critically on the efficient procurement, finance, delivery and management of effective and high quality social and economic infrastructure. Experts from industry, government and academia will work with students to critically explore best practice from around the world in social and economic infrastructure planning, procurement and finance. Topics to be covered include domestic and international infrastructure markets and challenges; understanding the transformative role of new infrastructure design and delivery to growth, urban consolidation and renewal; the role of government in infrastructure planning and provision; project service definition; business case/feasibility; financing structures; procurement options and processes; tendering processes; public sector comparator and other ways of assessing value; delivery; commercial principles; risk management and; contract management.

Program Learning Outcomes (PLOs)

1. Demonstrate an advanced understanding of the construction project management body of knowledge, including established theories and recent developments relevant to the discipline or professional field.
2. Apply construction project management principles and practices to new or complex environments.
3. Critically evaluate contemporary debates and literatures in construction project management.
4. Demonstrate a high level of personal autonomy and accountability in the acquisition or application of knowledge or skills.
5. Demonstrate an understanding of international perspectives relevant to the construction management discipline and the construction industry.
6. Demonstrate and understanding of, and the ability to apply, the principles of teamwork and collaboration
7. Demonstrate cultural awareness, environmental and social responsibility, and a respect for diversity
## Course Learning Outcomes (CLOs) with Alignment to PLOs and Assessment

<table>
<thead>
<tr>
<th>CLO #</th>
<th>CLO Statement</th>
<th>PLO #</th>
<th>Related Assessment</th>
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<tbody>
<tr>
<td>1</td>
<td>Identify the interdependent roles and responsibilities of the many contributors to successful infrastructure projects over its entire life cycle</td>
<td>1 &amp; 6</td>
<td>Quiz, Assignment, Final Take-Home Exam</td>
</tr>
<tr>
<td>2</td>
<td>Contrast and critique current approaches to infrastructure procurement and finance around the world</td>
<td>1,2,3,5 &amp; 7</td>
<td>Quiz, Assignment, Final Take-Home Exam</td>
</tr>
<tr>
<td>3</td>
<td>Analyse and develop innovative ways to procure and finance new infrastructure projects using best practice knowledge from around the world and apply them in a case study setting</td>
<td>2,4,5 &amp; 7</td>
<td>Quiz, Assignment, Final Take-Home Exam</td>
</tr>
<tr>
<td>4</td>
<td>Identify, assess and manage the risks and opportunities at each stage of the infrastructure planning, procurement and finance life-cycle in order to optimise project outcomes for communities and the private sector</td>
<td>2, 4, 6 &amp; 7</td>
<td>Assignment, Final Take-Home Exam</td>
</tr>
<tr>
<td>5</td>
<td>Explain the significance of infrastructure provision as a defining function of, and framework to, urban planning activity</td>
<td>1, 3, 4, 6 &amp; 7</td>
<td>Quiz, Assignment, Final Take-Home Exam</td>
</tr>
<tr>
<td>6</td>
<td>Describe the effect of infrastructure provision on the use, development, management and value of land</td>
<td>1, 2, 4 &amp; 7</td>
<td>Quiz, Assignment, Final Take-Home Exam</td>
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### 3. ASSESSMENT

<table>
<thead>
<tr>
<th>Assessment Task</th>
<th>Weight</th>
<th>Course Learning Outcomes Assessed</th>
<th>Due Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quiz: Students will answer a series of questions in short form answers designed to cover introductory concepts.</td>
<td>20%</td>
<td>1,2,3,5,6</td>
<td>7 October 2019</td>
</tr>
<tr>
<td>Assignment: Students will review a current Australian infrastructure project and will assess the business case and procurement strategy.</td>
<td>40%</td>
<td>1,2,3,4,5,6</td>
<td>11 November 2019</td>
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<tr>
<td>Final Take-Home Exam: Students will answer a series of questions in short form answers and demonstrate an understanding of concepts discussed in the course and how these are applied in practice.</td>
<td>40%</td>
<td>1,2,3,4,5,6</td>
<td>2 December 2019</td>
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## 4. WEEKLY COURSE SCHEDULE

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Activity</th>
<th>Related CLOs</th>
</tr>
</thead>
</table>
| 1    | Introduction to Infrastructure Finance | Lecture, in-class discussion, tutorial and online learning and discussion on:  
• Basic principles of project finance  
• Application to Infrastructure SPVs  
• Strategic planning approach to Infrastructure | 1, 5 & 6     |
| 2    | Introduction to Business Cases | Lecture, in-class discussion, problem-based tutorial questions and online learning and discussion on:  
• Introduction to Business Cases  
• Distinction between social and economic infrastructure  
• Distinction between Economic and Financial Viability  
• Case Studies | 1 & 6         |
| 3    | Introduction to PPPs          | Lecture, in-class discussion, tutorial and online learning and discussion on:  
• Role of PPPs  
• Benefits  
• Challenges | 2 & 4         |
| 4    | Project Governance            | Lecture, in-class discussion, tutorial and online learning and discussion on:  
• Governance definition  
• Governance structures  
• Delivery issues | 3             |
| 5    | Procurement                   | Lecture, in-class discussion, problem-based tutorial questions and online learning and discussion on:  
• Overview of procurement methods: traditional, D&C, DBOM, BOOT, PPP, Alliancing etc.  
• Process of identifying best procurement approach for a project  
• Overview of Government process and guidelines  
• Use of Market Soundings | 2             |
| 6    | Risk                          | Lecture, in-class discussion, problem-based tutorial questions and online learning and discussion on:  
• Identification of risks and strategies to mitigate and allocate risks  
• Quantifying risk  
• What Risks can be managed by the Private Sector? | 3             |
| 7 | Commercial Principles | What Risks need to be retained by Government or shared with the Private Sector?  
What has gone wrong in practice? | 4 |
|---|---|---|---|
| 8 | Project Management | Lecture, in-class discussion, problem-based tutorial questions and online learning and discussion on:  
Role of Government, Contractor, Operator, Project Company and Financiers  
Structure of Project Deeds  
Assessment of Key Commercial Clauses  
Development of Payment Mechanisms | 2&3 |
| 9 | Financial Structuring | Lecture, in-class discussion, problem-based tutorial questions and online learning and discussion on:  
Packaging Strategy  
Interface Risk  
Contractor Perspective  
Development of Finance Plans  
Arranging Debt and Negotiating Term Sheets  
Sourcing Equity  
Role of Financial Sponsors/Super Funds  
Infrastructure financing trends and evolution of PPPs  
Alternative Hybrid Funding Models and Government Support Structures  
Value Capture  
Integrating with Property Development | 5&6 |
| 10 | Operations and Maintenance | Lecture, in-class discussion, problem-based tutorial questions and online learning and discussion on:  
Managing Projects in Practice  
Dealing with Payment Mechanism and Abatements  
Managing Variations  
Practical Examples from Case Studies | 3&4 |