

Subject Description Form

Subject Code	BRE442
Subject Title	Forecasting & Competition in the Built Environment
Credit Value	3
Level	4
Pre-requisite / Co-requisite/ Exclusion	Nil
Objectives	This subject is intended to help students acquire knowledge and skills to forecast and compete for work in the built environment.
Intended Learning Outcomes	<p>Upon completion of the subject, students will be able to:</p> <ol style="list-style-type: none"> 1. Select and employ appropriate techniques in price forecasting and strategies for improving survival and profitability. 2. Recognize the usefulness and limitations of competition and forecasting models. 3. Integrate risk management techniques with competition and forecasting models. 4. Analyze competitive performance and forecasting accuracy. 5. Draw conclusions and make recommendations on improving competitive performance and forecasting accuracy.
Subject Synopsis/ Indicative Syllabus	<p><i>Forecasting</i></p> <ul style="list-style-type: none"> • Microeconomic foundation and the efficient market hypothesis • Time series analyses and process of forecasting • Forecasting methods: theory and practice • Price estimation • Risk management in pre and post contract stages <p><i>Competition</i></p> <ul style="list-style-type: none"> • Introduction on the competitive built environment • Competitor analysis and competitiveness measurement • Bidding models: theory and practice • Tender assessment • Strategies for improving competitive advantage

Teaching/Learning Methodology	Lectures introduce the concepts and approaches in practice followed by discussion on background reading and forecasting and competition analyses in the tutorials based on case studies.																																												
Assessment Methods in Alignment with Intended Learning Outcomes	<table border="1"> <thead> <tr> <th rowspan="2">Specific assessment methods/tasks</th> <th rowspan="2">% weighting</th> <th colspan="6">Intended subject learning outcomes to be assessed</th> </tr> <tr> <th>a</th> <th>b</th> <th>c</th> <th>d</th> <th>e</th> <th></th> </tr> </thead> <tbody> <tr> <td>Tutorial tasks</td> <td>40%</td> <td>√</td> <td></td> <td></td> <td>√</td> <td>√</td> <td></td> </tr> <tr> <td>Examination</td> <td>60%</td> <td></td> <td>√</td> <td>√</td> <td></td> <td>√</td> <td></td> </tr> <tr> <td>Total</td> <td>100%</td> <td colspan="6"></td> </tr> </tbody> </table>							Specific assessment methods/tasks	% weighting	Intended subject learning outcomes to be assessed						a	b	c	d	e		Tutorial tasks	40%	√			√	√		Examination	60%		√	√		√		Total	100%						
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Student Study Effort Expected	<p>Class contact:</p> <ul style="list-style-type: none"> ▪ Lectures ▪ Tutorials <p>Other student study effort:</p> <ul style="list-style-type: none"> ▪ Student effort hours <p>Total student study effort</p>						<p>26 Hrs.</p> <p>13 Hrs.</p> <p>81 Hrs.</p> <p>120 Hrs.</p>																																						
Reading List and References	<p>Indicative Reading List:</p> <p>Adrian J. Smith (1995). <i>Estimating, tendering and bidding for construction</i>. Macmillan.</p> <p>Ashworth A. (1994) <i>Cost Studies of Buildings</i>, Longman; Harlow.</p> <p>Beeston, D.T. (1983). <i>Statistical methods for building price data</i>, E&FN Spon</p> <p>Brook M. (2004) <i>Estimating and Tendering for Construction Work</i>, Butterworth Heineman, Oxford.</p> <p>Carlidge D. (2004) <i>Procurement of Built Assets</i>, Elsevier Oxford.</p> <p>Chapman, C., & Ward, S. (1996). <i>Project risk management: processes, techniques and insights</i>. John Wiley.</p> <p>Clements, M. P., & Hendry, D. F. (Eds.). (2002). <i>A companion to economic forecasting</i>. Oxford: Blackwell.</p> <p>Ferry D. and Brandon P.S. (1999) <i>Cost Planning of Buildings</i>, Blackwell Science, Oxford.</p> <p>Friedman, L. (1956). A competitive-bidding strategy. <i>Operations research</i>, 4(1), 104-112.</p>																																												

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- Hillebrandt, P.M. (2000). *Economic theory and the construction industry* (3rd ed.). Macmillan Press, Basingstoke.
- Milgrom, P. (1989). Auctions and bidding: A primer. *Journal of Economic Perspectives*, 3(3), 3-22.
- Milgrom, P. R. (1987). *Auction theory*. In *Advances in economic theory: Fifth world congress* (Vol. 1, p. 32). Cambridge: Cambridge University Press.
- Milgrom, P. R., & Weber, R. J. (1982). A theory of auctions and competitive bidding. *Econometrica: Journal of the Econometric Society*, 1089-1122.
- O'malley, P. (2012). *Risk, uncertainty and government*. Routledge.
- Park W.R. & Chapin W.B. (1992) *Construction Bidding: Pricing for Profit*. John Wiley & Sons, New York.
- Seeley I. (1996) *Building Economics*, Macmillan, Basingstoke.
- Shmueli, G., & Lichtendahl Jr, K. C. (2016). *Practical time series forecasting with r: A hands-on guide*. Axelrod Schnall Publishers.