

Subject Code	MM548
Subject Title	System Dynamics for Business Policy
Credit Value	3
Level	5
Normal Duration	1-semester
Pre-requisite / Co-requisite/ Exclusion	None
Role and Purposes	This subject contributes to the achievement of the MBA Outcomes by enabling students to: <u>think critically and creatively</u> (Outcome 2) and <u>manage change</u> (Outcome 5) with the systems concepts; and <u>apply the concepts</u> (Outcome 1) to solve real world problems.
Intended Learning Outcomes	Upon completion of the subject, students will be able to: a. develop a mindset for systems thinking and system dynamics; b. explain the concepts of causal loop diagrams and systems archetypes; c. apply systems concepts to improve business policy.
Subject Synopsis/ Indicative Syllabus	<p><u>Concepts of Systems Thinking</u> The Language of Systems Thinking, System Dynamics, Viable System Model, Soft Systems Methodology, Critical System Thinking, Issues of Instability and Unknown, Forecasting and Feedback.</p> <p><u>Systems Thinking for Senior Management</u> The Importance of Business Policy, Rethinking Management Tools, Interactions of Operations, Strategy and Human Resources.</p> <p><u>Causal Loop Diagrams</u> Mapping the Stock and Flow Structure of Business Systems, The Balancing Loop and the Reinforcing Loop, Time Delay, Building Theory with Causal Loop Diagrams.</p> <p><u>Systems Archetypes</u> Fixes that Fail, Shifting the Burden, Drifting Goals, Escalation, Tragedy of the Commons, Success to the Successful, Limits to Success, Growth and Under-Investment.</p>
Teaching/Learning Methodology	This subject is designed according to the principles of action learning. Students will master the concepts of systems thinking and system dynamics through a series of experiential exercises and case studies. Simulations will be used to illustrate the dynamic concepts. Students are expected to participate actively in class discussion. They have to complete both individual and group assignments as coursework.

Assessment Methods in Alignment with Intended Learning Outcomes	Specific assessment methods/tasks	% weighting	Intended subject learning outcomes to be assessed (Please tick as appropriate)		
			a.	b.	c.
	Continuous Assessment*	100%			
	1. Individual assignment	50%	✓		✓
	2. Group assignment	50%		✓	✓
	Total	100 %			
<p><i>*Weighting of assessment methods/tasks in continuous assessment may be different, subject to each subject lecturer.</i></p> <p>To pass this subject, students are required to obtain Grade D or above in the Continuous Assessment components.</p> <p>Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:</p> <p>Students are required to apply systems concepts to improve the business policy of a selected organization in the real world. They have to think critical and creatively for the challenges facing the organization and apply systems concepts to justify their proposed recommendation. They have to submit a written report and make a presentation to the class for discussion. They are required to demonstrate their ability to think critically and creatively (Outcome 2) to manage change (Outcome 5). Moreover, their recommendations to solve the real world problems should be justified by the application of systems concepts (Outcome 1).</p>					
Student Study Effort Expected	Class contact:				
	▪ Lectures and in-class activities		39 Hrs.		
	Other student study effort:				
	▪ Self-study		81 Hrs.		
	Total student study effort		120 Hrs.		
Reading List and References	Sterman, J.D. (2000). <i>Business Dynamics: Systems Thinking and Modeling for a Complex World</i> , Boston: Irwin/McGraw-Hill.				
	Butler, J.E. and Mak, W.M. (2007). Organizational growth and population dynamics: Strategies for success, Paper presented to <i>25th International Conference of the System Dynamics Society</i> , held at Seaport Hotel, Boston, 29 July to 2 August.				
	Checkland, P.B. (1985). From optimizing to learning: A development of systems thinking for the 1990s, <i>Journal of Operational Research Society</i> , 36(9): pp. 757-767.				
	Flood, R.L. (1999). <i>Rethinking the Fifth Discipline: Learning within the Unknown</i> , London : Routledge.				
	Gary, M.S., Kunc, M., Morecroft, J.D.W. and Rockart, S.F. (2008). System dynamics and strategy, <i>System Dynamics Review</i> , 24 (4): pp. 407-428.				
	Jackson, M.C. (2006). Creative holism: A critical systems approach to complex problem				

situations, *Systems Research and Behavioral Science*, 23(5): pp. 647-657.

Jackson, M.C. (2010). Reflections on the development and contribution of critical systems thinking and practice, *Systems Research and Behavioral Science*, 27(2): pp. 133-139.

Mak, W.M. (2002). Rethinking business strategy with complexity theory. In G. Ragsdell, D. West and J. Wilby (eds.) *Systems Theory and Practice in the Knowledge Age*, New York: Kluwer Academic/Plenum Publishers, pp. 321-328.

Morecroft, J.D.W. (1985). The feedback view of business policy and strategy, *System Dynamics Review*, 1(1): pp. 4-19.

Murray, P.J. (2003). So what's new about complexity? *Systems Research and Behavioral Science*, 20(5): pp. 409-417.

Pedler, M., Burgoyne, J. and Boydell, T. (1997). *The Learning Company: A Strategy for Sustainable Development*, Second Edition, London: McGraw-Hill.

Senge, P.M. (2006). *The Fifth Discipline: The Art and Practice of the Learning Organization*, Revised Edition, New York: Doubleday Currency.

Sherwood, D. (2002). *See the Forest for the Trees: A Manager's Guide to Applying Systems Thinking*, London: Nicholas Brealey.

Warren, K. (2004). Why has feedback systems thinking struggled to influence strategy and policy formulation? *Systems Research and Behavioral Science*, 21(4); pp. 331-347.

Warren, K. (2005). Improving strategic management with the fundamental principles of system dynamics, *System Dynamics Review*, 21(4): pp 329-350.

Warren, Kim (2008). *Competitive Strategy Dynamics*, Second Edition, London: John Wiley.