



BUSINESS SCHOOL

Course Outline 2019

INFOSYS740: SYSTEM DYNAMICS FOR COMPLEX MODELLING (15 POINTS)

Semester 2 (1195)

Course prescription

The concepts, theories and modelling tools of system dynamics are used to deal with the dynamic complexities arising from interdependencies and interactions amongst various parts and functions within organisations and societies alike. Qualitative and computer modelling are used to gain insight and to foresee the intended outcomes as well as unintended consequences of policies and strategic decisions. All aspects of organisations including HR, IT, operations, marketing and strategy are considered and their interdependencies explored.

Course advice

You cannot enrol in this course if you have taken or intend to take the following course:

Restriction: OPSMGT765

Goals of the course

The course will utilise a variety of teaching and learning approaches including, lecture/discussion, modelling workshops, and strategy laboratories. The main objective is to introduce and to reinforce a holistic approach to understand and manage business and other organisations, in a dynamic manner.

Learning outcomes (LO)

By the end of this course it is expected that the student will be able to:

#	Learning outcome	Graduate profile capability*
LO1	Understand the systems paradigm	1. Disciplinary knowledge and practice
LO2	Express ideas and communicate in systems terms	4b. Communication (Written) 4a. Communication (Oral)
LO3	Describe common phenomenon and identify leverages to problems using standard systems archetypes	2. Critical thinking 3. Solution seeking

#	Learning outcome	Graduate profile capability*
L04	Dynamically model real world phenomenon using computer simulation	1. Disciplinary knowledge and practice 6a. Social responsibilities 6b. Environmental responsibilities
L05	Identify underlying mental models of issues and problem symptoms	2. Critical thinking

* See the graduate profile this course belongs to at the end of this course outline.

Content outline

Week	Topic	Relevant learning resources/activities	Assessment due this period
1	Models and Reality, Decision Making, Principles of Systems Thinking	Class Notes Week 01	
2	Systems Thinking and Systems Methodology (An Overview)	Class Notes Week 02	
3	Patterns and Systemic Structure	Class Notes Week 03	
4	Systemic Structure (Cont'd)	Class Notes Week 04	
5	Leverages – Mental Models	Class Notes Week 05	Group Project Part I
6	Test		Test
7	Systemic Structure Revisited – Stock and Flow Simulation Models	Class Notes Week 07	
8	Stock and Flow Simulation Models II	Class Notes Week 08	
9	Stock and Flow Simulation Models III	Class Notes Week 09	
10	Systems Thinking and System Dynamics	Class Notes Week 10	
11	Group Project Finalisation and Presentations		
12	Group Project Finalisation and Presentations		Group Project Part II

Learning and teaching

Classes will be held at the City campus.

A variety of instructional methods will be employed, including lectures, computer labs, management flight simulators, videos, and case studies. To make the class more lively and valuable for everyone, all students are expected to have read and contemplated on the material assigned for each day.

The procedures and the course schedule are subject to change though all effort has been taken to plan lectures according to the schedule given. In the spirit of continuous improvement, feedback and ideas on this course are welcomed. The expectation is that students spend a total of 150 hours learning time over a semester including:

- 36 contact hours;
- 24 hours preparatory reading; and
- 90 hours of self-study

Teaching staff

Lecturer: Anson Li

Email: akt.li@auckland.ac.nz

Learning resources

The prescribed textbook for this course is Maani & Cavana, Systems Thinking, System Dynamics, Pearson Prentice Hall, 2010. **Readings and/or handouts may be distributed in class. You are advised to familiarise yourself with the class material before lectures in order to facilitate discussions.**

Assessment information

Assessment task	Weight %	Group and/or individual	Submission
Mid Semester Test	15%	Individual	Test venue, on paper
Group Project Part I	25%	Group	Online via Canvas
Group Project Part II	15%	Group	Online via Canvas
Exam	45%	Individual	Exam venue, on paper

Pass requirements

To pass this course, a student must achieve over 50% in the final exam and 50% across all course assessments.

Description of assessment tasks

Assessment task	Learning outcome to be assessed
Mid Semester Test	LO1, 2, 3 and 5
Group Project Part I	LO1, 2, 3, and 5
Group Project Part II	LO1, 4, and 5

Assessment task	Learning outcome to be assessed
Exam	LO1, 2, 3, 4 and 5

Inclusive learning

Students are urged to discuss privately any impairment-related requirements face-to-face and/or in written form with the courses convenor/lecturer and/or tutor.

Academic integrity

The University of Auckland will not tolerate cheating, or assisting others to cheat, and views cheating in coursework as a serious academic offence. The work that a student submits for grading must be the student's own work, reflecting his or her learning. Where work from other sources is used, it must be properly acknowledged and referenced. This requirement also applies to sources on the worldwide web. A student's assessed work may be reviewed against electronic source material using computerised detection to provide an electronic version of their work for computerised review.

Student feedback

We regularly seek feedback from students in order to shape and improve this and all courses on the programme. Students will be asked to complete formative fast feedback early in the semester, and course and teaching evaluations at the end of the course. In addition, each course will seek volunteers to serve as class reps.

In the event of an unexpected disruption

We undertake to maintain the continuity and standard of teaching and learning in all your courses throughout the year. If there are unexpected disruptions, the University has contingency plans to ensure that access to your course continues and your assessment is fair, and not compromised. Some adjustments may need to be made in emergencies, In the event of a disruption, the University and your course coordinators will make every effort to provide you with up to date information via Canvas and the University website.

Graduate profile for

The following six themes represent the capabilities that the Business School seeks to foster in all of its graduates. The development of these capabilities does not come all at once, but rather is expected to build from year to year. Each course is not expected to contribute to all capabilities, but each course will have its own goals and learning outcomes that relate to the overall development of this profile.

Graduate Profile

Disciplinary knowledge and practice

Graduates will be able to demonstrate and apply a breadth of knowledge across disciplines, as well as specialist knowledge within one or more of them, while recognising the relevancy of this knowledge within a global context.

Graduate Profile

Critical thinking

Graduates will be able to analyse and critique theory and practice to develop well-reasoned arguments.

Solution seeking

Graduates will be able to identify and frame problems using analytical skills to create and evaluate innovative solutions.

Communication and engagement

Graduates will be able to collaborate and communicate effectively in diverse contexts using multiple formats.

Independence and integrity

Graduates will be able to respond professionally and ethically, demonstrating a capacity for independent thought and learning.

Social and environmental responsibility

Graduates will recognise the significance of the principles underpinning the Treaty of Waitangi and consider their obligations in relation to sustainability, whilst displaying constructive approaches to diversity.