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# YORK UNIVERSITY

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## School of Administrative Studies

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AP/ADMS 3345 3.0 - Section A

### Systems Thinking and Modeling for Management

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Day: Wednesday Time: 4:00pm – 7:00pm Location: RS – 205 (Ross South Bldg)

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Instructor: S. Abdullah

Email: [sabdulla@yorku.ca](mailto:sabdulla@yorku.ca)

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**Office hours\*:** Monday, Appointment time slot: 5:30pm- 6:00pm  
(office hours last 1.5 hours) in Atkinson Bldg, 2<sup>nd</sup> Fl. 242

Course web site on Moodle: <https://moodle.yorku.ca>

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#### **Course Description:**

Introduces system dynamics, a dynamic modeling and simulation based study of managerial problems. Focuses on the construction and application of qualitative causal loop diagrams and quantitative simulation models of dynamic decision making to better manage the business enterprises.

#### **Prerequisites:**

AP/ADMS 2320 3.00 or (AP/ECON 2500 3.00 and AP/ECON 3480 3.00). PRIOR TO FALL 2009:  
AK/ADMS 2320 3.00 or AK/ADMS 3320 3.00 (prior to Summer 2005) or (AK/ECON 3470 3.00 and AK/ECON 3480 3.00). Course credit exclusion: AK/ADMS 3345 3.00

#### **Required Textbook:**

"Business Dynamics: Systems Thinking and Modeling for a Complex World",  
(J. Sterman), McGraw Hill, 2000.

Photocopying more than 10% of copyrighted material is illegal, and may involve penalties.  
Do not duplicate textbook, course kits or any copyrighted material used in this course or obtain photocopies.

#### **Marking Scheme:**

3 Quizzes	21 % (7% each)
2 Assignments (Individual/Group Work)	12%
Class participation & Project Presentation participation	22%
Final Project & Presentation	<u>45 %</u>
Total	100 %

**\* Send email at least 24 hours before the office hours to make an appointment.**

### Course Outline:

The following tentative course outline (all inclusive) is subject to "in class" changes as considered necessary by the Course Director.

Session	Date	Topic	Readings
1	Sep 04	Perspectives and Process Learning about Complex Systems: What is Systems Thinking? What is a dynamic decision problem? Difficulty in Dynamic Decision Problems	Chapter 1
2	Sep 11	Application of System Dynamics Why simulation is Essential?	Chapter 2
3	Sep 18	The Purpose of Modeling: Modeling Process Structure and Behavior of dynamic System Fundamental modes and Interaction	Chapter 3 Chapter 4*
4	Sep 25	Tools for Systems Thinking Causal Loop diagrams Notations, Guidelines, and Developing CLD	Chapter 5      Quiz -1
5	Oct 02	Stock and Flow Accumulation, Identifying and Mapping	Chapter 6
6	Oct 09	Stock and Flow (continued .....) Understanding of modeling Software	Chapter 6 TBA
	<b>Oct 16</b>	<b>No-Class Reading Week</b>	
7	Oct 23	Modeling using software Numerical Integration Technique Dynamics of Stocks and Flows	App-A Chapter 7*      Assignment-1
8	Oct 30	Dynamics of Simple Structures	Chapter 8*
9	Nov 06	The dynamics of Growth Modeling S-shaped Growth	Chapter. 9      Quiz -2
10	Nov 13	Delays : Material and Information Path Dependence and Positive Feedback Validation and Model Testing	Chapter 11* Chapter 10* Chapter 21*
11	Nov 20	Project Presentation – Session 1	Quiz -3 Assignment 2
12	Nov 27	Project Presentation – Session 2	
13	Dec 09	Project Submission	

\* These chapters will be covered in parts and information will be provided in class.

You may need Microsoft Excel and some of the programs on the CD that comes with your text book (Sterman)

You need to bring laptop for session 6 and onward.

## General Policy

1. Concerns regarding marks **will not be accepted after a week** from the posting of the result not from collecting the work.
2. You are only allowed to attend lectures if you are not enrolled.
3. In case of a fire alarm, students are to get up instantly, collect their personal belongings and leave the building. (They should not wait until a Professor or an invigilator tells them to do so.)
4. Students will not be allowed to write the quizzes, or submit assignments, unless they are on the class list / sign in sheet. There will be no exceptions. It is the student's responsibility to ensure that they are properly enrolled.
5. If you must miss a class, it is suggested that you try to obtain any missed notes from a classmate. NOT all class material will be available online. Please note that you are responsible for everything discussed in class (whether mentioned/included in the textbook or not).
6. **You are not allowed to take pictures or record any content of the lecture.**
7. Due to unavoidable circumstances if any lecture missed, date for make-up lecture will be announced on course web site.
8. **Missed Quizzes, and Assignments** - There will be no deferrals.

## Assignments

1. Assignments must include a cover sheet signed by student. Assignments that do not include the signed cover sheet will not be accepted. The cover sheet will be provided. Cheating will result in zero for all involved students and necessary disciplinary measures outlined in the Senate Policy on Academic Honesty will be applied .
2. Please be advised that Assignments are due on the day and time designated at the BEGINNING of classes. Late Assignments will NOT be accepted and no extensions will be granted.
3. Assignments must be TYPED, if you need to draw graph, chart, diagram it must be done by using computer. Hand written/drawn part of Assignments will NOT be considered for marking. Instructions will be provided in Assignments.
4. No Plenty for early submission, For some reason if you are unable to attend lecture of the day Assignments are due, you can submit your work earlier (till 1pm of the due date) to room 282, Atkinson building in my attention and must send me email after submission.
5. **LATE or NON-TYPED Assignments will NOT be accepted under any circumstance.**
6. Make sure to sign the list after submission of Assignments.

## **RELEVANT UNIVERSITY/LA&PS/SCHOOL REGULATIONS**

### **Applicable to all ADMS and DEMS courses**

**Deferred Exams:** Deferred standing may be granted to students who are unable to write their final examination at the scheduled time or to submit their outstanding course work on the last day of classes. Details can be found at <http://myacademicrecord.students.yorku.ca/deferred-standing>

Any request for deferred standing on medical grounds must include an Attending Physician's Statement form; a "Doctor's Note" will not be accepted.

DSA Form: [http://www.registrar.yorku.ca/pdf/deferred\\_standing\\_agreement.pdf](http://www.registrar.yorku.ca/pdf/deferred_standing_agreement.pdf)

Attending Physician's Statement form: <http://registrar.yorku.ca/pdf/attending-physicians-statement.pdf>

In order to apply for deferred standing, students must register at

<http://apps.eso.yorku.ca/apps/adms/deferredexams.nsf>

Followed by handing in a completed original Deferred Standing Agreement (DSA) form and supporting documentation directly to the main office of the School of Administrative Studies (282 Atkinson) and add your ticket number to the DSA form. The DSA and supporting documentation must be submitted no later than five (5) business days from the date of the exam. These requests will be considered on their merit and decisions will be made available by logging into the above mentioned link. No individualized communication will be sent by the School to the students (no letter or e-mails).

Students with approved DSA will be able to write their deferred examination during the School's deferred examination period. Deferred exams might take place during the regular exams period or in subsequent weeks depending on the course; precise dates are known when the Office of the Registrar publishes the final exam schedule of the term. No further extensions of deferred exams shall be granted. The format and covered content of the deferred examination may be different from that of the originally scheduled examination. The deferred exam may be closed book, cumulative and comprehensive and may include all subjects/topics of the textbook whether they have been covered in class or not.

**Academic Honesty:** The Faculty of Liberal Arts and Professional Studies considers breaches of the Senate Policy on Academic Honesty to be serious matters. The Senate Policy on Academic Honesty is an affirmation and clarification for members of the University of the general obligation to maintain the highest standards of academic honesty. As a clear sense of academic honesty and responsibility is fundamental to good scholarship, the policy recognizes the general responsibility of all faculty members to foster acceptable standards of academic conduct and of the student to be mindful of and abide by such standards. Suspected breaches of academic honesty will be investigated and charges shall be laid if reasonable and probable grounds exist.

Students should review the York Academic Honesty policy for themselves at:

<http://www.yorku.ca/secretariat/policies/document.php?document=69>

Students might also wish to review the interactive on-line Tutorial for students on academic integrity, at:

<https://spark.library.yorku.ca/academic-integrity-what-is-academic-integrity/>

**Grading Scheme and Feedback Policy:** The grading scheme (i.e. kinds and weights of assignments, essays, exams, etc.) shall be announced, and be available in writing, within the first two weeks of class, and, under normal circumstances, graded feedback worth at least 15% of the final grade for Fall, Winter or Summer Term, and 30% for 'full year' courses offered in the Fall/Winter Term be received by students in all courses prior to the final withdrawal date from a course without receiving a grade, with the following exceptions:

*Note: Under unusual and/or unforeseeable circumstances which disrupt the academic norm, instructors are expected to provide grading schemes and academic feedback in the spirit of these regulations, as soon as possible.* For more information on the Grading Scheme and Feedback Policy, please visit:

<http://www.yorku.ca/univsec/policies/document.php?document=86>

**In-Class Tests and Exams - the 20% Rule:** For all Undergraduate courses, except those which regularly meet on Friday evening or on a weekend, tests or exams worth more than 20% will not be held in the two weeks prior to the beginning of the official examination period. For further information on the 20% Rule, please visit: <http://secretariat-policies.info.yorku.ca/policies/limits-on-the-worth-of-examinations-in-the-final-classes-of-a-term-policy/>

**Reappraisals:** Students may, with sufficient academic grounds, request that a final grade in a course be reappraised (which may mean the review of specific pieces of tangible work). Non-academic grounds are not relevant for grade reappraisals; in such cases, students are advised to petition to their home Faculty. Students are normally expected to first contact the course director to discuss the grade received and to request that their tangible work be reviewed. Tangible work may include written, graphic, digitized, modeled, video recording or audio recording formats, but not oral work. Students need to be aware that a request for a grade reappraisal may result in the original grade being raised, lowered or confirmed. For reappraisal procedures and information, please visit the Office of the Registrar site at: <http://myacademicrecord.students.yorku.ca/grade-reappraisal-policy>

**Accommodation Procedures:** LA&PS students who have experienced a misfortune or who are too ill to attend the final examination in an ADMS course should not attempt to do so; they must pursue deferred standing. Other students should contact their home Faculty for information. For further information, please visit: <http://ds.info.yorku.ca/academic-support-accomodations/>

**Religious Accommodation:** York University is committed to respecting the religious beliefs and practices of all members of the community, and making accommodations for observances of special significance to adherents. For more information on religious accommodation, please visit: <https://w2prod.sis.yorku.ca/Apps/WebObjects/cdm.woa/wa/regobs>

## **Academic Accommodation for Students with Disabilities (Senate Policy)**

The nature and extent of accommodations shall be consistent with and supportive of the integrity of the curriculum and of the academic standards of programs or courses. Provided that students have given sufficient notice about their accommodation needs, instructors shall take reasonable steps to accommodate these needs in a manner consistent with the guidelines established hereunder. For more information, please visit the Student Accessibility Services (formerly known as Counselling and Disability Services) website at <https://accessibility.students.yorku.ca>

York's disabilities offices and the Registrar's Office work in partnership to support alternate exam and test accommodation services for students with disabilities at the Keele campus. For more information on alternate exams and tests please visit <http://www.yorku.ca/altexams/>

Please alert the Course Director as soon as possible should you require special accommodations.