University of Pennsylvania, Wharton School
Operations, Information and Decisions Department

OIDD 101 – Introduction to Operations and Information Management

Spring 2017

Professors:	Gerard Cachon, cachon@wharton.upenn.edu
	Sergei Savin, savin@wharton.upenn.edu
Canvas:	https://canvas.upenn.edu/courses/1349795
Lectures:	Sec 001, Tuesday-Thursday, 1:30-3:00, JMHH, G06
	Sec 002, Tuesday-Thursday, 3:00-4:30, JMHH, G06
Exam 1:	Wednesday, March 1, 6:00 – 8:00 p.m.
Exam 2:	Thursday, May 4, 3:00 – 5:00 p.m.

Instructors:

Dawson Kaaua: kaaua@wharton.upenn.edu
Emily Swarr: eswarr@wharton.upenn.edu
Kristie Kalenka: kkalenka@wharton.upenn.edu
Francisco Taboada: taboadaf@wharton.upenn.edu
Alice Huck: huckr@wharton.upenn.edu
Chichi Okeke: cokeke@wharton.upenn.edu

Section	DOW	Time	Instructor	Location
214	W	1:30-3:00	Chichi Okeke	F75
212	W	10:30-12:00	Alice Huck	380
213	W	10:30-12:00	Emily Swarr	F75
211	W	12:00-1:30	Emily Swarr	F75
202	W	3:00-4:30	Dawson Kaaua	F75
203	W	4:30-6:00	Dawson Kaaua	F75
207	R	1:30-3:00	Emily Swarr	F75
208	R	1:30-3:00	Kristie Kalenka	380
204	R	12:00-1:30	Alice Huck	380
206	R	12:00-1:30	Kristie Kalenka	F75
201	R	3:00-4:30	Dawson Kaaua	380
209	R	3:00-4:30	Francisco Taboada	F75
205	R	4:30-6:00	Francisco Taboada	F75
210	R	4:30-6:00	Chichi Okeke	380

PhD TAs:

      Rowena Gan: ganj@wharton.upenn.edu
      Jiding Zhang: jiding@wharton.upenn.edu

Mentors:

      Jeff Sheng: shjeff@wharton.upenn.edu
      Ben Gendelman: genben@wharton.upenn.edu
      Danielle Clanaman: dclan@wharton.upenn.edu
      Madison Hendry: mhendry@wharton.upenn.edu
      Olivia Tan : otan@wharton.upenn.edu

TAs:

      Matthew Chen: mattchen@wharton.upenn.edu
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      Caleb Carter : calebcar@wharton.upenn.edu
      Namita Nandakumar: namitan@wharton.upenn.edu
      Casey Zucarello: caseyz@wharton.upenn.edu

Office Hours

Gerard Cachon	Tuesday, 10:30 – 12:00	JMHH 543
Sergei Savin	Tuesday, 10:30 – 12:00	JMHH 570
Dawson Kaaua	Thr 4:30 – 6:30	
Emily Swarr	TBD	
Kristie Kalenka	Wed 12:00 – 1:30	
Francisco Taboada	Tue 3:00 – 4:30	
Alice Huck	TBD	
Chichi Okeke	Wed 10:30 – 12:00	

Mentoring Sessions

All sessions meet for 1 hour on Wednesday:

Danielle Clanaman	4:30 – 5:30	G88
Danielle Clanaman	5:30 – 6:30	G88
Jeff Sheng	5:00 – 6:00	G86
Jeff Sheng	6:00 – 7:00	G86
Madison Hendry	6:00 – 7:00	F36
Ben Gendelman	7:00 – 8:00	G88
Madison Hendry	7:00 – 8:00	F36
Olivia Tan	7:00 – 8:00	G86
Ben Gendelman	8:00 – 9:00	G88
Olivia Tan	8:00 – 9:00	G86

Overview

In this course we explore a variety of common quantitative modeling problems that arise frequently in business settings, and discuss how they can be formally modeled and solved with a combination of business insight and computer-based tools. The key topics we cover include capacity management, service operations, inventory control, structured decision making, constrained optimization and simulation. Through this course you will learn to model complex business situations and you will master tools to improve business performance. The goal is to provide a set of foundational skills useful for future coursework at Wharton as well as providing an overview of problems and techniques that characterize disciplines that comprise Operations and Information Management.

The course assumes no specific background beyond basic mathematics skills. Familiarity with the basic operations of Excel is helpful, but not required – we will provide tutorials for the needed Excel skills. Furthermore, no prior experience with programming or statistics is expected.

Course Format

The course is divided into 14 weeks. Each week generally has two class sessions (weeks 7 and 14 only have one session). The first class session is a lecture designed to introduce concepts. The second class session, which we will refer to as the "recitation", reinforces the concepts introduced in the week's lecture. Those sessions are divided roughly into two halves: in the first half we will work through calculations first introduced in the lecture, and in the second half you complete a "recitation exercise" that is graded. To promote learning, you are free to work in teams and ask questions regarding the exercise while you are working on it.

Mentoring:

There are weekly mentoring sessions. During the mentoring session the mentor (an experience undergraduate student) will work through several practice problems related to the week's lecture materials. Mentoring sessions are intended to supplement rather than replace attending course sessions. Mentoring is strictly <u>optional</u>. The mentoring problems/slides will be posted on canvas so that they are available to all students in the course.

Course Material

Textbook:
There is a Custom Coursebook for this course available at the Penn. The book covers the material in the class. As the lectures/slides also cover the course material, the book is not strictly required. However, it is a useful resource to provide additional support, reference reading and practice problems. The Spring 2017 book is different than books from previous versions of OIDD 101.

Online:
Canvas is a web-based application that houses online materials for enrolled students across Wharton. You can access our course by logging into our Canvas page listed at the front of this syllabus.

The course Canvas will be the definitive source for all assignments and deadlines. You will not have access to Canvas until you officially register for the course.

Lecture notes:
Lecture notes are posted on Canvas. If we were to print lecture notes for distribution in-class, every student would be charged on their Bursar's bill. Because not all students use physical notes, for cost and environmental reasons, we post notes on-line; you can choose whether or not to print the lecture notes yourself.

Software:
In this course we use Excel, and in particular two Excel add-ins: Solver and Crystal Ball. All software required for the course is available through the Wharton computing labs in Huntsman Hall.

Academic Integrity

Students are expected to adhere to the principles of the **University's Code of Academic Integrity**.

Deliverables and Grades

The following weights apply to determine your final score % in the course:

Six graded assignments   .30
Recitation exercises   .10
Exam 1   .30
Exam 2   .30

Final grades will be awarded approximately in the following proportions: 3% A+, 15% A, 25% A-, 24% B+, 18% B, 9% B-, 6% C+ or lower. The average final grade in the course will approximately equal a B+.

Partial credit is not given on recitation exercises, assignments or exams.

Assignments:
You are required to complete six graded assignments during this course. The questions on these assignments are similar in nature to the questions on the exams. To promote learning, you <u>may</u> collaborate and/or consult with other students registered this semester in OIDD 101 on these assignments. In other words, you are not cheating if you discuss your solutions to these assignments with other students in this course. However, each student must submit his or her own assignment.

All assignments are due by 11:30 p.m. of the assigned due date (see the course summary). Late assignments are not accepted for credit (even partial credit). You submit your assignment electronically via Canvas.

Recitation Exercises:
You must attend the class sessions you are registered in. If you do not attend the section you are registered in, then you receive zero credit for the recitation exercise.

There are 12 recitations and 13 recitation exercises. The first recitation exercise, R0, is based on the course syllabus and is submitted via Canvas. R0 is due Friday, January 20th. However, to accommodate students who add the course late, this recitation is accepted up to Tuesday, January 31st.

Your recitation grade is the average of your top 11 recitation exercises (out of 13). Thus, you can miss up to two for any reason without penalty.

Exams:
There are two, non-cumulative examinations. You may use during either exam *one* 8.5"x11" sheet of paper that contains your name and whatever notes you wish to write on either side. You may hand write your notes or have them printed. You may only bring one sheet of paper – it is not acceptable to bring two pieces of paper stapled together even if you write on only the outside of each sheet. You are required to submit your note sheet

along with your exam. You may not use during the exam any other notes, books, slides, handouts, etc – your only source of reference material is your one 8.5"x11" sheet of paper.

You may use a calculator (which includes graphing or programmable calculators) during the exam. However, you may not use a computer, smart phone, iPod or any electronic device that runs Excel or can communicate with another electronic device.

Both exams are common exams - all sections take their exam at the same time.

If you have an exam or regularly scheduled course that conflicts with an OIDD 101 exam, then you should submit a request for an alternative time via a Canvas (non-graded) quiz. You should submit your request no later than two weeks before the exam. In general, you will take the OIDD 101 exam in the two hours after the scheduled time for the exam, and if that is not possible, you will take it during the two hours prior to the scheduled time.

If you cannot attend an exam for any other reason, then you must provide documentation as to why you are not be able to attend (or were not able to attend). In general, excused absences are given only for serious health issues. If you are granted an excused absence from exam 1, then you will need to make up the exam (shortly after Spring Break), or, if that is not possible, when exam 1 is offered in Fall 2017. If you are granted an excused absence from exam 2, then you will take a make-up exam during the university's scheduled make-up exam, which usually occurs in early September.

Support Questions and Assistance

The mentoring sessions provide a regular meeting for the discussion of the weekly course content. In addition to mentoring sessions there are regular Teaching Assistant (TA) that office hours. A TA office hours schedule will be posted on Canvas shortly after the beginning of the semester.

Concerns with Grading

If you have a question about your grade, please contact in writing (e.g., an email) the appropriate Professor (Cachon for the first half, Savin for the second). Your entire document will be reviewed. You may submit a request to review your assignment, exercise or exam only within the two-week period after the assignment/exercise was due or the exam was taken.

Waivers and Prior Experience

Many of you have significant experience with computer technologies. A potentially dangerous strategy is to assume that because you are technologically literate, you know everything you need to know about business modeling and quantitative analysis. While our goal is to make this class as accessible as possible to all students, it is very difficult to do well if you rely only on prior knowledge and/or doing the readings on your own.

As a rule, we do not grant waivers of OIDD 101 except for M&T students and dual degree students who are receiving a degree from Engineering in addition to Wharton.

Schedule Summary

Week	Lecture	Recitations	Topic	Canvas submissions What	Due
0	-		**No lecture or recitations the week of 1/9**		
1	Jan 17	Jan 18-19	Process performance metrics	R0	Fri, Jan 20
			Read Chapters 2, 10 and 3.1-3.2		
2	Jan 24	Jan 25-26	Process improvement - capacity management		
			Read Chapters 3.3-3.5, and 4		
3	Jan 31	Feb 1-2	Multiple flow units + setup costs	A1	Tue, Jan 31
			Read Chapters 5, and 12		
4	Feb 7	Feb 8-9	Process interruptions - setup times		
			Read Chapter 7		
5	Feb 14	Feb 15-16	Queuing dynamics and management	A2	Tue, Feb 14
			Read Chapter 16		
6	Feb 21	Feb 22-23	Structured decision making		
7	Feb 28	none	Exam review	A3	Sat, Feb 25
			Mar 1 - Exam 2 - 6:00 - 8:00		
8	Mar 14	Mar 15-16	Modeling business decisions		
9	Mar 21	Mar 22-23	Linear modeling examples		
10	Mar 28	Mar 29-30	Sensitivity analysis	A4	Tue, Mar 28
11	Apr 4	Apr 5-6	Integer models		
12	Apr 11	Apr 12-13	Decision modeling under uncertainty	A5	Tue, Apr 11
13	Apr 18	Apr 19-20	Simulation examples		
14	Apr 25	none	Comparing alternative decisions using simulation	A6	Tue, Apr 25
	-		**May 4 - Exam 2 - 3:00 - 5:00**		