

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

OIDD 101: Introduction to OIDD

Fall 2018 Course Syllabus

Professors	Hummy Song, hummy@wharton.upenn.edu Ken Moon, kenmoon@wharton.upenn.edu		
Canvas	https://canvas.upenn.edu/courses/1417729		
Lectures	[Before Thanksgiving] [After Thanksgiving]	Tuesdays, 10:30am-12:00pm Thursdays, 10:30am-12:00pm	JMHH G06 JMHH G06
Recitations	[Before Thanksgiving] [After Thanksgiving]	Sec 201, Thursdays, 9:00am-10:30am Sec 202, Thursdays, 10:30am-12:00pm Sec 203, Thursdays, 1:30pm-3:00pm Sec 204, Thursdays, 3:00pm-4:30pm Sec 201, Tuesdays, 9:00am-10:30am Sec 202, Tuesdays, 10:30am-12:00pm Sec 203, Tuesdays, 1:30pm-3:00pm Sec 204, Tuesdays, 3:00pm-4:30pm	VANC 112 VANC 112 VANC 112 VANC 112 VANC 112 VANC 112 VANC 112 VANC B11
Exam 1	Thursday, October 18, 6:00pm-8:00pm, Location TBD		
Exam 2	Thursday, December 20, 3:00pm-5:00pm, Location TBD		
PhD TA	Tan Lekwijit, slek@wharton.upenn.edu		
TAs	Min Choi, minschoi@wharton.upenn.edu Elana Fortson, efortson@wharton.upenn.edu Amy Lin, amylin3@wharton.upenn.edu Max Norleans, mnorl@wharton.upenn.edu Shreya Subramanian, sbsub@wharton.upenn.edu Samuel Xu, samuelxu@seas.upenn.edu		
Mentors	Sravya Alla, sravya@wharton.upenn.edu Luca Cocito, lcocito@wharton.upenn.edu		
Recitation Helpers	Sec 201, Shreya Subramanian, sbsub@wharton.upenn.edu Sec 202, Amy Lin, amylin3@wharton.upenn.edu Sec 203, Elana Fortson, efortson@wharton.upenn.edu Sec 204, Neha Nayak, nehan@sas.upenn.edu		

Faculty Office Hours

Hummy Song, Tuesdays 1:30pm-3:00pm, JMHH 560
Ken Moon, TBD

Mentoring Sessions

TBD

TA Office Hours

TBD

Course Description

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 you 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 compose Operations, Information, and Decisions.

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, which don't necessarily match with the calendar weeks due to holidays and breaks. Each week has two class sessions. 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 ask questions regarding the exercise while you are working on it.

Mentoring:

There are weekly mentoring sessions. During the mentoring session, the mentor (an experienced 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 optional. The mentoring problems/slides will be posted on Canvas so that they are available to all students in the course.

Course Materials

Textbook:

There is a Custom Coursebook for this course available at the Penn Bookstore. 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 Fall 2018 book may be different from books in previous iterations 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, we post notes online; 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.

If you are a non-Wharton student and want to use the software in the computing labs, then you will need to create (if you haven't already done so) a 'Wharton Class Account' that links

to your PennKey account. It takes about 15 minutes for a Wharton Class Account to sync with a user's PennKey account. Go to this link for details:
<https://app.wharton.upenn.edu/accounts/class.cfm>.

Academic Integrity

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

The following actions are a subsample of some of the ethical violations specific to this course:

- Informing students of the content of a recitation exercise before the student has attended their recitation.
- Completing any portion of a recitation exercise that is not your own.
- Broadcasting, disseminating, or discussing in any manner or form solutions to any graded content without actual collaboration. Put more simply, if you are sharing solutions with other students who may merely be copying your solutions, then that is an ethical violation. For the avoidance of doubt, this also applies to recitation sessions: You should not be using smartphones or similar technologies to disseminate or record questions and answers in lieu of actual collaboration. As discussed later, you are allowed to collaborate with other students as long as you are all making a good faith effort to do the work individually.
You cannot and should not violate the spirit of this privilege.
- Falsely or inaccurately claiming activity on assignments or recitation exercises or other graded content. You should be aware that Canvas tracks ALL of your on-line activity, including each time you have logged on, each click you have made, each assignment/quiz you have opened, etc. Therefore, do not claim that you logged into an assignment and submitted it before the due date when in fact you did not because it is clear in Canvas that you did not.
- When in doubt about whether an action would constitute an ethical violation, ask your professor.

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 may 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 schedule summary). Late assignments are not accepted for credit (even partial credit). You submit your assignments electronically via Canvas.

Be sure to leave sufficient time in advance of when an assignment is due in case you experience technical difficulties (e.g., the power on your laptop dies, Wifi is down, etc.). *In other words, technical difficulties do not excuse you from submitting on time.*

Recitation Exercises:

You must attend the class sections in which you are registered. If you do not attend the section you are registered in, then you receive zero credit for the recitation exercise. Recitation exercises are distributed as a hard copy, but your answers must be submitted during class time using Canvas. Please bring a device to recitations (laptop, tablet, etc.) that will allow you to submit your recitation exercise answers via Canvas during the recitation session.

There are 12 recitations and 13 recitation exercises. The first recitation exercise, R0, is based on the course syllabus and is submitted outside of class via Canvas. R0 is due Tuesday, September 4 by 11:30pm. However, to accommodate students who add the course late, R0 is accepted up to Tuesday, September 11 by 11:30pm. All other recitation exercises (R1-R12) are due in class at the end of the session.

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.

To be clear, we do not grant more than 2 “free passes”, including if you add the class late (missing recitations because you are not in the class is a reason to use some of your free passes). The only time we make exceptions to the 2 “free passes” rule is when a student experiences a very serious and sustained medical situation that prevents the student from participating in class for more than two weeks. If that unfortunately happens to you, please have your academic advisor contact us.

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. During the exam, you may not use 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 will 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 (around November 1), or, if that is not possible, when Exam 1 is offered in Spring 2019. 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 time, which usually occurs in early January.

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) 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 (Song for the first half, Moon for the second). Your entire document will be reviewed. You may submit a request to review your assignment, recitation exercise, or exam only within the two-week period after the assignment/recitation 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.

Course Schedule Summary

Week	Lecture	Recitations	Topic	Assignments and recitations	Canvas submissions
1	28-Aug	30-Aug	Process performance metrics Read Chapters 2, 10 and 3.1-3.2		
2	4-Sep	6-Sep	Process improvement - capacity management Read Chapters 3.3-3.5, and 4	R0	4-Sep
3	11-Sep	13-Sep	Multiple flow units + setup costs Read Chapters 5, and 12	A1	11-Sep
4	18-Sep	20-Sep	Process interruptions - setup times Read Chapter 7		
5	25-Sep	27-Sep	Queuing dynamics and management Read Chapter 16	A2	25-Sep
6	9-Oct	11-Oct	Structured decision making	A3	13-Oct
7	16-Oct	-	Exam review		
EXAM 1 – Oct 18 @ 6:00pm – 8:00pm					
8	23-Oct	25-Oct	Modeling business decisions		
9	30-Oct	1-Nov	Linear modeling examples		
10	6-Nov	8-Nov	Sensitivity analysis	A4	6-Nov
11	13-Nov	15-Nov	Integer models		
12	20-Nov	27-Nov	Decision modeling under uncertainty	A5	20-Nov
13	29-Nov	4-Dec	Simulation examples		
14	6-Dec	-	Comparing alternative decisions using simulation	A6	6-Dec
EXAM 2 – Dec 20 @ 3:00pm – 5:00pm					