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

OIDD 1010: An Introduction to Operations, Information And Decisions

Spring 2023 Course Syllabus

Last updated: December 5, 2022

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All office hours are by appointment.

Canvas   TBD

Lectures   Sec 001, Tuesdays and Thursdays, 8:30am-10:00am, VANC 112
              Sec 002, Tuesdays and Thursdays, 10:15am-11:45am, VANC 112
              Sec 003, Tuesdays and Thursdays, 1:45pm-3:15pm, VANC 112
              Sec 004, Tuesdays and Thursdays, 3:30pm-5:00pm, VANC 112
              Sec 005, Tuesdays and Thursdays, 10:15am-11:45am, ARB 140
              Sec 006, Tuesdays and Thursdays, 1:45pm-3:15pm, ARB 140

Exam 1   Thursday, March 2, 7:00pm – 9:00pm, Location TBD. [Make-up on March 15.]
Exam 2   TBD [To be assigned by the University registrar by sometime in March.]

PhD TA   Borja Apaolaza Emparanza, apaolaza@wharton.upenn.edu

UG TAs   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 provide an overview of problems and techniques that characterize disciplines covered in the Operations, Information and Decisions Department.

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.

Incidentally, in case you are wondering, the preferred pronunciation for the OID Department's name is to say each letter rather than to try to say something that might rhyme with "android" or "avoid". Think the communications giant AT&T, as in "A," "T," "and," "T".

Course Format

Course sessions iterate between a lecture and a recitation format. The lecture is designed to introduce concepts. The recitation reinforces the concepts through recitation exercises that provide hands-on practice and are graded. During the recitation sessions, we will work through calculations introduced in the lecture, and then you will complete a "recitation exercise" that is graded. To promote learning, you are free to ask questions regarding the exercise while working on it.

Electronics:
To encourage learning, electronic devices (e.g., mobile devices, tablets, laptops) during lectures are not allowed unless explicitly directed by the instructor. Electronic devices may be used during the time in which you are working on recitation exercises.

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 optional. The mentoring problems/slides will be posted on Canvas after all mentoring sessions are completed so that they are available to all students in the course. The schedule of mentoring sessions will be posted on Canvas.

TA support:
The course has several Teaching Assistants (TA) to help you with any aspect of the course. The schedule of TA office hours will be posted on Canvas.

Course Materials

Textbook:
We have a custom textbook for this course that is available as a printed book for $60 or as an e-book for $49. 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 print version is available at the Penn Bookstore entitled: OIDD 101: Introduction to Operations, Information & Decisions Department, ISBN # 9781307738537.

The e-book version is available at: https://www.mheducation.com/highered/custom.html. Enter the ISBN #: "9781307740400 " or "OIDD 101" in the "Search Here for new materials" area. You can pay via credit card and you will need to create an account. If you encounter any issues purchasing the eBook, technical assistance is available at McGraw-Hill support line: 1-800-331-5094, press 2, press 2 (Create), press 1.

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

Slides:
All slides will be posted on Canvas before they are used in class.

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://apps.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 or disseminating or discussing in any manner or form solutions to 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. 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 <u>ALL</u> 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.
- Completing the attendance survey if you did not attend the lecture.

Deliverables and Grades

Partial credit is not given on recitation exercises, assignments, or exams. The following weights apply to determine your final score % in the course:

Attendance	.10
Recitation exercises	.10
Assignments	.20
Exam 1	.30
Exam 2	.30

A letter grade is evaluated for both your final course score and your class rank percentile based on the following table:

Course Grade	Course Score	Class Rank Percentile
A+	95 – 100	
A	90 – 95	75 % - 100 %
A-	85 – 90	55 % - 75 %
B+	80 – 85	40 % - 55%
B	75 – 80	25 % - 40 %
B-	70 – 75	15 % - 25 %
C+	65 – 70	5 % - 15 %
C or Lower	0 - 65	0 % - 5 %

We do not round final scores to determine either grade. The grade you receive for the course is the better of those two letter grades. (Grades lower than C are based on instructor judgment.)

To illustrate how your final course grade is determined, suppose your course score is 84.9 and your class rank percentile is 77.5% (i.e., your final score is greater than the score of 77.5% of the other students). Based on the course score, your grade is a B+. Based on the class rank percentile, your grade is an A. Your final course grade is an A, which is the better of the two.

Consider a second example in which your course score is 84.9 (same as above) and your class rank percentile is 26%. Based on your course score, your grade is a B+. Based on your clas rank percentile, your grade is a B. Again, your final grade is the greater of the two, which is a B+.

Attendance:

We will use PollEverywhere to take attendance in each class session. You must be registered with the course's PollEverywhere to be able to submit your poll responses. You receive 1 point for completing the poll (i.e., you are not graded for accuracy) and 0 otherwise. There are 25 class sessions, but only the highest 21 scores are considered (i.e., you can miss 4 sessions during the semester without consequence). To state the obvious, it is an ethics violation if you complete a poll without actually attending the session. Furthermore, if you complete the poll, you are expected to remain throughout the session to receive credit.

Recitation Exercises:

There are 13 recitation exercises, one for each week of the class. Your score on each recitation is 10 minus the number of incorrect responses. For example, suppose there are 9 questions on the recitation exercise and you answer 2 incorrectly. In that case, your score is 8 even though Canvas will report your score as "7". We are aware of this and will adjust your score properly before calculating your grade. Recitation exercises are submitted via Canvas and are due at 11:00 p.m. ET on the day of the recitation. Late submissions receive zero credit. We drop the lowest two recitation scores before computing your final recitation score.

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. Like recitation exercises, on each assignment, you receive 10 points minus the incorrect number of responses.

All assignments are due by 11:00 p.m. of the assigned due date (see the course 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.*

Exams:

There are two, non-cumulative examinations. Your exam score is 30 minus the number of incorrect responses.

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 handwrite 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. 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.

This sheet of paper is called a "reference sheet" because you refer to it and you are certainly not cheating when you use it.

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 1010 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 1010 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, or, if that is not possible, when Exam 1 is offered in the next semester. 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 early in the next semester.

Grading:

Partial credit is not offered.

This means that you receive full credit for a response or zero credit and this applies for all graded materials (e.g., recitation exercises, assignments, lectures).

Why do we do this? For one, we believe it is fair because it eliminates judgment calls as to how "wrong" a response is. Second, it forces us to focus our questions on one concept rather than trying to string a bunch of learning objectives into one question. Consequently, the answer to one question is not needed as an input to another to avoid situations in which getting one question wrong implies you get subsequent questions wrong as well (that would be slimy, so we don't do it). Put another way, we decouple questions to avoid that issue. Finally, while there is a correct answer, we always allow for some tolerance to account for minor rounding issues in the calculations. For example, we generally accept answers within 1% of the correct answer. To avoid being marked incorrect because of rounding, avoid rounding intermediate calculations. For example, 1/3 and 0.3 are reasonably far off, and one shouldn't be used for the other. We expect you to report your answers with at least two decimal places.

Collaboration:

To promote learning, you may collaborate and/or consult with other students registered this semester in OIDD 1010 on recitation exercises and assignments, although each student must submit his or her own assignment. In fact, collaboration on recitation exercises and assignments is encouraged. In other words, you are not cheating if you discuss your solutions to recitation exercises or assignments with other students in this course. You may not collaborate with another student on either of the exams.

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.

Concerns with Grading

If you have a question about your grade, please contact in writing (e.g., an email) the appropriate Professor (i.e., the professor who taught you the material in question). 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 1010 except for M&T students and dual degree students who are receiving a degree from Engineering in addition to Wharton.

Schedule Summary

2023 January

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
26	27	28	29	30	31	01
02	03	04	05	06	07	08
09	10	11 **First Day of Classes**	12 Recitation 0	13	14	15
16	17 Lecture 1	18	19 Recitation 1	20	21	22
23	24 Lecture 2	25	26 Recitation 2	27	28	29
30 Assigment 1	31 Lecture 3	Notes:				

2023 February

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
30	31	01	02 Recitation 3	03	04	05
06	07 Lecture 4	08	09 Recitation 4	10	11	12
13 Assigment 2	14 Lecture 5	15	16 Recitation 5	17	18	19
20	21 Lecture 6	22	23 Recitation 6	24	25	26
27 Assigment 3	28 Review Session Exam 1 [in evening]	01	02	03	04	05
06	07	Notes:				

2023 March

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
27	28	01 Review Session Exam 1 [in evening]	02 **Exam 1**	03	04 Spring Break	05 Spring Break
06 Spring Break	07 Spring Break	08 Spring Break	09 Spring Break	10 Spring Break	11 Spring Break	12 Spring Break
13	14 Lecture 7	15 **Make Up for Exam 1**	16 Recitation 7	17	18	19
20	21 Lecture 8	22	23 Recitation 8	24	25	26
27 Assigment 4	28 Lecture 9	29	30 Recitation 9	31	01	02
03	04	Notes:				

2023 April

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
27	28	29	30	31	01	02
03	04 Lecture 10	05	06 Recitation 10	07	08	09
10 Assigment 5	11 Lecture 11	12	13 Recitation 11	14	15	16
17	18 Lecture 12	19	20 Recitation 12	21	22	23
24 Assigment 6	25 Review Session Exam 2 [in evening]	26 Review Session Exam 2 [in evening]	27	28	29	30
01	02	Notes:				

2023 May

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
01 Penn Exam Days	02 Penn Exam Days	03 Penn Exam Days	04 Penn Exam Days	05 Penn Exam Days	06	07
08 Penn Exam Days	09 Penn Exam Days	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	01	02	03	04
05	06	Notes:				