

OPM 3730 Business Process Analysis

Spring 2023

Semester	Spring 2023
Course	OPM 3730 Business Process Analysis
Section	ETRA Hybrid (<u>Tuesday online asynchronous/synchronous, Thursday in person</u>)
Class Days/Times	<u>Tuesday 2:30-3:45 PM</u> (online asynchronous/synchronous) <u>Thursday 2:30-3:45 PM</u> (in person, room: B – Vert 8-155)
Department	Narendra Paul Loomba Department of Management
Instructor	Ruth Beer, PhD
Email	Ruth.Beer@baruch.cuny.edu
Office	9-240, 9 th floor
Office Hours	Tuesday 4:00-5:30pm or by appointment (on Zoom).
Course Website	https://canvas.instructure.com/courses/4029900

IMPORTANT:

The course has a hybrid modality. Tuesday classes will be online (some classes will be asynchronous, and some will be synchronous, as indicated on the Canvas site) and on Thursdays we will meet in person. In order to keep the in-person sessions organized, the following rules are in place for this class:

- 1) The class starts on-time. Students are expected to arrive on time to avoid disturbing others.
- 2) Students are expected to attend all classes.
- 3) Office hours will be held online. Please, reach out to the professor by email to schedule a Zoom appointment or if you have any questions.

DESCRIPTION

This course involves the in-depth study of the design, management, and improvement of business processes in various service and production industries. Students will first model and understand processes and their flows, and then study the causal relationships between process structure and key operational and financial performance metrics. Value chain and lean management concepts are emphasized in the course. Students will learn to formulate the implications for managerial actions by understanding managerial “levers” and their impact on process performance. Finally, using a hands-on simulation tool (e.g., ProModel), students will apply the concepts of process analysis and design to more complex real-world situations. The course uses a data-driven, quantitative modeling approach. **3.0 hours; 3.0 credits.**

PREREQUISITES

OPM 3000 (formerly called MGT 3121)

COURSE OBJECTIVES

This course builds on the fundamentals of managing business processes in service and production operations that were introduced in OPM 3000. Students will learn how to analyze and improve the operational performance of business processes using analytical tools and conceptual frameworks. In particular, students will be able to:

- Apply process analysis skills to identify, model, and improve key business processes;
- Define clear operational and financial performance objectives and process measures;
- Identify bottlenecks, measure process capacity, and devise ways to increase capacity;
- Use business process improvement tools, data, and analytical tools to improve process effectiveness considering operational and financial performance metrics;
- Strengthen quantitative reasoning skills and develop quantitative models for a wide class of business decision problems. These problems include (but are not limited to) capacity management with and without uncertainty, quality management, and inventory management.
- Apply the above skills through an industry-standard business process modeling simulation software.

REQUIRED COURSE MATERIALS

- OPM 3730 Course Pack. Purchase an e-Book containing four book chapters, one reading, and three cases for \$48.22. ISBN 9781307751888. Title: Business Process Analysis. Available online at:
<https://create.mheducation.com/shop/>
(You can search it by Title, ISBN, Author, or State/School.)
Direct link:
<https://www.mheducation.com/highered/custom/product/9781307751888.html>
- Handouts and lecture slides (posted on Canvas)

Recommended (optional) materials:

The following are excellent references for the body of knowledge in this course:

1. Managing Business Process Flows, 3rd edition, by R. Anupindi, S. Chopra, S.D. Deshmukh, J.A. Van Mieghem, E. Zemel (Pearson, 2012, ISBN-13: 978-0-13-603637-1).2
2. Operations Management, 1st edition, by G. Cachon and C. Terwiesch (McGraw Hill, 2017). This is the book most of you used in OPM 3000.

COURSE REQUIREMENTS

The course requires students to prepare the following materials and deliverables. For more information see “Assurance of Learning” at the end.

- 1. After-class assessments (Individual):** Students will do after-class assessment homework online. Each after-class assessment homework corresponds to the major topics covered in class and is designed to enhance students on their understanding of the topic.
- 2. Group Assignments (Group):** There will be two case studies (National Cranberry Coop. and Sunwind AB) where students will work in groups to analyze the case using tools they learn in class. There will also be one graded group presentation (on the reading The Psychology of Waiting).
- 3. Exams (Individual):** The course further assesses student learning with two midterm exams. Dates and exam format are posted in advance by the instructor.
- 4. Final Project (Group):** The simulation project will be completed in groups. The objectives are to apply the principles of Operations Processes in practice. Teams will study a specific business operation and build simulation models to analyze performance and make a proposal(s) to improve the process. Teamwork is strongly encouraged to promote learning. Each member should actively respond to team emails, attend meetings, and contribute to report writing.
- 5. Non-graded Individual Assignments (Individual):** There are three assignments (Kristen Cookie’s case and two problem sets) that are required but not graded (do not count toward the final grade).

The course requirements #1-4 are graded and count toward the final grade. Course requirements #5 are required but do not count toward the final grade.

CLASS RECORDINGS

Important consideration in case a class is delivered synchronous on Zoom.

To accommodate students who were not able to attend the online classes, I may record some of the lectures and make the link to the recording available to the class. Therefore, students should understand that their comments during the online classes may be recorded.

Note that this class (either in person or online) may be video or audio recorded by students only with the written permission of the instructor. Surreptitious or covert video recording of class or unauthorized photos or audio recording of class is prohibited. In order to accommodate students with disabilities some students may be given permission to record class lectures and discussions.

*****Important notice on privacy for online sessions recordings (in case a class is delivered synchronously on Zoom)*****

Students who participate in this class with their camera on or use a profile image are agreeing to have their video or image recorded solely for the purpose of creating a record for students enrolled in the class to refer to, including those enrolled students who are unable to attend live. If you are unwilling to consent to have your profile or video image recorded, be sure to keep your camera off and do not use a profile image. Likewise, students who un-mute during class and participate orally are agreeing to have their voices recorded. If you are not willing to consent to have your voice recorded during class, you will need to keep your mute button activated and communicate exclusively using the "chat" feature, which allows students to type questions and comments live.

Note: Not all the classes will be recorded. Some classes (for example, classes where we discuss case studies) will NOT be recorded. If a student misses the class, it is the student’s responsibility to make up for the missed class by consulting the class slides and other assigned materials, consulting with teammates, or consulting with the instructor.

DELIVERABLES AND GRADING

The course deliverables are as follows:

Deliverable	Type	Weight
After-class assessments	Individual	10%
Group Assignments <ul style="list-style-type: none"> • National Cranberry Case • Sunwind AB • Psychology of Waiting Presentations 	Group	20%
Midterm 1	Individual	25%
Midterm 2	Individual	25%
Final Project	Group	20%
Total:		100%

Accumulated points will be calculated as a percentage and reported as a letter grade using the following scale:

% of Points	Grade
93-100	A
90-92.9	A-
87-89.9	B+
83-86.9	B
80-82.9	B-
77-79.9	C+

73-76.9	C
70-72.9	C-
67-69.9	D+
60-66.9	D
Below 60	F

GRADING POLICIES ***Important, read carefully***

- No extra credit is given in this class.
- All assignments are due on time. Late assignments will NOT be accepted. Please start your assignment early.
- Grades are posted on Canvas. If you suspect a grading error, notify the instructor within two weeks of the grade posting.
- Make-up midterm exams will only be given in extraordinary circumstances when arranged with the instructor in writing.

OVERVIEW CLASS SCHEDULE (tentative, subject to minor changes)

Date	Meeting	Topic	Reading from Course Pack
Thursday, January 26, 2023	1	Process and Operation Strategy	Process Design and Analysis
Tuesday, January 31, 2023	2	Process Analysis	
Thursday, February 2, 2023	3	Case: Kristen's Cookie Company	Kristen's Cookie
Tuesday, February 7, 2023	4	Basic Tools of Process Design	Facility Layout
Thursday, February 9, 2023	5	Non-steady Process: Capacity Analysis	
Tuesday, February 14, 2023	6	Problem Set 1 - Basic Tools of Process Design	
Thursday, February 16, 2023	7	Case Preparation: National Cranberry Cooperative	
Tuesday, February 21, 2023		***College Closed***	
Thursday, February 23, 2023	8	Case Discussion: National Cranberry Cooperative	National Cranberry Coop.
Tuesday, February 28, 2023	9	Midterm 1 Review	
Thursday, March 2, 2023	10	Midterm 1	
Tuesday, March 7, 2023	11	Intro to Lean and TPS	Lean Supply Chains
Thursday, March 9, 2023	12	Lean and TPS I	
Tuesday, March 14, 2023	13	Lean and TPS II	
Thursday, March 16, 2023	14	Case: Sunwind AB	Sunwind AB
Tuesday, March 21, 2023	15	Intro to Waiting Line Models	Waiting Line Analysis and Simulation
Thursday, March 23, 2023	16	Waiting Line Models I	
Tuesday, March 28, 2023	17	Waiting Line Models II	
Thursday, March 30, 2023	18	Variability and OM Triangle	
Tuesday, April 4, 2023	19	Problem Set 2 - Waiting Models	
Thursday, April 6, 2023		***Spring Recess***	
Tuesday, April 11, 2023		***Spring Recess***	
Thursday, April 13, 2023		***Spring Recess***	
Tuesday, April 18, 2023	20	Midterm Review (2) & Psychology of waiting	Psychology of Waiting Lines
Thursday, April 20, 2023	21	Midterm 2	
Tuesday, April 25, 2023	22	Introduction to Computer Simulation	
Thursday, April 27, 2023	23	Simulation Modeling Concepts I	
Tuesday, May 2, 2023	24	Simulation Modeling Concepts II	
Thursday, May 4, 2023	25	Simulation Modeling Concepts III	
Tuesday, May 9, 2023	26	Simulation Project Consulting I	
Thursday, May 11, 2023	27	Simulation Project Consulting II	
Tuesday, May 16, 2023	28	Final Project Presentations	

DETAILED CLASS SCHEDULE (tentative, subject to minor changes)

Module 1 – Process Design and Analysis		
Class	Preparation for this class	In this class
1 01-26-2023	Join the Canvas course site. Download the course syllabus. Read “Process Design and Analysis”	Introduce the course. Understand the relationship between process design and firm strategy. Compare different types of manufacturing processes.
2 01-31-2023	Read “Process Design and Analysis”	Introduce process analysis. Understand concept of bottleneck.
3 02-02-2023	Prepare “Kristen's Cookie” Case	Apply business analysis tools to Kristen Cookies case. Understand concept of bottleneck.
4 02-07-2023	Read “Facility Layout”	Understand basic tools for process design: line balancing.
5 02-09-2023	Re-read “Process Design and Analysis” with focus on capacity analysis and little’s law	Learn the basics of capacity and flow time analysis: inventory build-up, throughput rate, utilization profile, and flow time. Introduce Little’s Law.
6 02-14-2023	Review topics of line balancing	Work on problem set 1 individually. Apply concepts of process design to more complex problems.
7 02-16-2023	Prepare “National Cranberry” Case with team	Read National Cranberry case.
8 02-23-2023	Solve “National Cranberry” Case	Discuss National Cranberry case. Practice bottleneck analysis, use inventory build-up diagrams, discuss capacity investments.
9 02-28-2023	Solve practice problems for the midterm	Summarize unit on process design and analysis. Work on review problems.
10 03-02-2023	Study for midterm exam	Take midterm exam 1.

Module 2 – Variability, Buffering, and Process Improvement		
Class	Preparation for this class	In this class
11 03-07-2023	Read “Lean Supply Chains”	Introduce the main principles of Lean Operations and JIT. Analyze video “Virginia Mason”.
12 03-09-2023		Understand the characteristics of Lean Processes. Identify the Seven Types of Waste. Analyze the effect of batch sizes.
13 03-14-2023		Understand the characteristics of Lean Processes. Identify the Seven Types of Waste. Focus on managing product variety
14 03-16-2023	Prepare “Sunwind AB” Case	Learn to innovatively apply the ideas of TPS to complex situations. Learn to propose implementable solutions to improve the performance of the complex system.
15 03-21-2023	Read “Waiting Line Analysis and Simulation”.	Intro to waiting models. Learn to identify various forms of variability.

16 03-23-2023	Read "Waiting Line Analysis and Simulation". Prepare worksheet #1 for waiting models to use in class.	Analyze waiting models. Learn how to make capacity decisions using queueing analysis.
17 03-28-2023	Prepare worksheet #2 for waiting models to work in class.	Analyze waiting models. Learn how to make capacity decisions using queueing analysis.
18 03-30-2023		Understand the effects of variability and utilization on congestion and delays. Think about strategies for managing variability.
19 04-04-2023	Review Waiting Models	Work on problem set 2 individually. Apply concepts of waiting line models to more complex problems.
20 04-18-2023	- Read "Psychology of Waiting Lines". - Complete practice problems for the midterm.	Discuss course pack reading: "Psychology of Waiting Lines". Summarize unit on variability and buffers. Work on review problems.
21 04-20-2023	Study for midterm exam	Take midterm exam 2.

Module 3 – Business Process Simulation		
Class	Preparation for this class	In this class
22 04-25-2023	Install ProModel and test base model 1.	Learn the major steps in simulation. Understand the conditions for simulation. Start to build the first ProModel model (design your own layout, build locations, interpret simulations results).
23 04-27-2023	Build simulation models.	Introduce three fundamental models based on the number of entity types and locations: <ul style="list-style-type: none"> • Single entity type, single location • Single entity type, multiple locations Multiple entity types, multiple locations.
24 05-02-2023	Build simulation models.	<ul style="list-style-type: none"> • Focus on the models with single entity type and multiple locations • Implement various routing rules • Enhance the model presentation
25 05-04-2023	Build simulation models.	<ul style="list-style-type: none"> • Focus on the models with multiple entity types and multiple locations • Processing involving multiple entities.
26 05-09-2023	Work on simulation for course project. Prepare your final project presentation.	Work on course projects in groups. Consult with the instructor on course project.
27 05-11-2023	Work on simulation for course project. Prepare your final project presentation.	Work on course projects in groups. Consult with the instructor on course project.
28 05-16-2023	<u>Turn in final project.</u>	Course wrap-up and course project presentations

EXPECTATIONS AND GETTING HELP

The instructor is committed to the success of every student. Likewise, the instructor has high expectations of every student.

Attendance

Class participation, including case discussion (in small groups or class as a whole) and classwork is an essential part of this course. Every student is expected to attend every class. Class will start and end on time. Tardiness is distracting for other students. Once you arrive at class, you should leave early only in an emergency.

During class, students are expected to be engaged in class-related activities only. Pursuing non-class activities is distracting to other students and to the instructor.

Note that, while some classes will be on-line, the same expectations about attendance, engagement, and participation in class hold.

Excessive Absences

I will follow the attendance grading policies for excessive absences outlined in the faculty handbook at <https://provost.baruch.cuny.edu/faculty-handbook/> and <https://www.baruch.cuny.edu/registrar/#grades>.

Failure to attend at least one of the first four class meetings may result in non-certification of your enrollment verification, which will affect your financial aid.

Getting Help

If you need help, send the instructor an email or go to office hours. Only *you* can tell if you are struggling—don't wait until it is too late or rely on the instructor to contact you.

Students with disabilities

Students with disabilities may be eligible for a reasonable accommodation to enable them to participate fully in courses at Baruch. If you feel you may be in need of an accommodation, please contact the staff at the Office of Services for Students with Disabilities, Newman Vertical Campus, Room 2-271, by phone at (646) 312-4590. For more information, see <https://studentaffairs.baruch.cuny.edu/student-disability-services/>

Academic Integrity

I fully support Baruch College's policy on Academic Honesty, which states, in part:

“Academic dishonesty is unacceptable and will not be tolerated. Cheating, forgery, plagiarism and collusion in dishonest acts undermine the college’s educational mission and the students’ personal and intellectual growth. Baruch students are expected to bear individual responsibility for their work, to learn the rules and definitions that underlie the practice of academic integrity, and to uphold its ideals. Ignorance of the rules is not an acceptable excuse for disobeying them. Any student who attempts to compromise or devalue the academic process will be sanctioned.”

Any academic dishonesty will result in a zero on the affected assignment(s). A report of suspected academic dishonesty will be sent to the Office of the Dean of Students. Additional information and definitions can be found at:

https://www.baruch.cuny.edu/academic/academic_honesty.html

BBA LEARNING GOALS ADDRESSED

The faculty of the Zicklin School of Business has adopted seven (7) “Learning Goals” for BBA students. The purpose of these goals is to create a common understanding between students, faculty and potential employers of the core objectives for a business education. The seven goals, together with assessment criteria, can be viewed at

<https://zicklin.baruch.cuny.edu/faculty-research/faculty-staff/assurance-of-learning/>

The following Zicklin BBA Learning Goals will be addressed in this course:

1. **Analytical Skills:** Students will possess the analytical and critical thinking skills to evaluate issues faced in business and professional careers.
2. **Technological Skills:** Students will possess the necessary technological skills to analyze problems, develop solutions and convey information.
3. **Communication Skills: Oral:** Students will have the necessary oral communication skills to convey ideas and information effectively and persuasively.
4. **Communication Skills: Written:** Students will have the necessary written communication skills to convey ideas and information effectively and persuasively.
5. **Civic Awareness and Ethical Decision-making:** Students will have the knowledge base and analytical skill to guide them when faced with ethical dilemmas in business. Students will have an awareness of political, civic and public policy issues affecting business.
6. **Global Awareness:** Students will know how differences in perspectives and cultures affect business practices around the world.
7. **Proficiency in a Single Discipline:** Students will possess a deep understanding of and intellectual competence in at least one business discipline.

ASSURANCE OF LEARNING

This course emphasizes the BBA learning goals as follows:

BBA Learning Goal	Significant Part of Course	Moderate Part of Course	Minimal Part of Course	Not Part of Course
Analytical Skills	X			
Technological Skills	X			
Oral Communication			X	
Written Communication		X		
Civic Awareness and Ethical Decision Making			X	
Global Awareness			X	
Proficiency in a Single Discipline	X			