



BUSINESS SCHOOL

Course Outline 2020

BUSMBA 702: MANAGING CAPACITY AND INVENTORY (7.5 POINTS)

Quarter 1 (1202)

Course prescription

Develops effective strategies for determining and allocating capacity and inventories to match supply and demand consistent with business strategy, cost factors, and uncertainty. Considers both manufacturing and services utilising perspectives from operations, accounting, and finance.

Goals of the course

To enable the effective creation and distribution of products and services, an important function of management is to establish and implement policy to determine the nature, amount, and timing of physical resources (e.g., labour, materials, equipment, capital, information, and technology).

The course shows how these capacity and inventory decisions relate to performance measures, constraints and uncertainty in the internal and external environment. Students will discover how trade-offs should be made and how they relate to an organisation's strategy and competitive position. They will become familiar with using key concepts, models, and tools to formulate and justify recommendations.

Learning outcomes (LO)

By the end of the course, it is expected that students will be able to:

#	Learning outcome	Graduate profile capability*
LO1	illustrate the key concepts of managing capacity and inventory and justify how operations and supply chain management can be used to improve the competitive position of both manufacturing and service organisations.	1. Disciplinary knowledge and practice 3. Solution seeking
LO2	design effective capacity and replenishment models, technologies, and strategies (e.g., to reduce working capital requirements and/or improve customer service) appropriate to business strategies, cost considerations, and uncertainty.	1. Disciplinary knowledge and practice 3. Solution seeking
LO3	articulate and apply important linkages between the management of inventory and capacity with other areas of the firm: in particular human resources, marketing, and finance.	1. Disciplinary knowledge and practice 3. Solution seeking

* See the graduate profile this course belongs to at the end of this course outline.

Content outline

Session Week	Date/ Time	Topic	Relevant learning resources/activities ¹	Assessment due this period
1. Week 2	Fri. Jan. 24 4:30-8:30pm	Overview Process Analysis	Laseter (2009) Shapiro (2013) Bohn (1986) [C+T: 1.1, 2.2, 2.3, 3.1-3.5]	
2. Week 2	Sat. Jan. 25 1:00-5:00pm	Theory of Constraints Queueing Models	Mabin (1994) C+T 9.1-9.7, 9.9-9.11 [C+T: 10.1, 11.5] V3-V7	
3. Week 4	Fri. Feb. 07 12:00-4:00pm	Capacity Management in Practice Forecasting	Buell (2017) [C+T: 13.1-13.7]	Individual Assignment (25%) Due Feb. 04
4. Week 4	Sat. Feb. 08 8:30-12:30pm	Inventory Practice and Models	Hammond (2013) Robb (2019) Watson (2004) [C+T: 2.4, 2.5, 5.6,5.7 14.1-14.8, 16.1-16.9] V8, V9	
5. Week 6	Fri. Feb. 21 4:30-8:30pm	Integrating Capacity and Inventory - Simulation	Kumar and Wood (2009)	Group Simulation (25%) Report due Feb. 17
Week 8	Fri. Mar. 06			Test (50%)

Learning and teaching

The class will meet in Room 325 for each 4 hour session. Class time will be used for a combination of lectures and applied discussions of case studies and exercises. In addition to attending classes, students should be prepared to spend an average of 11 hours **per session** on activities related to this course, viz., approximately evenly split between preparatory reading, assignments, and reflection/self-study (standard workload for courses is 10 hours per point). These activities include carrying out the required readings and assignments, viewing video material, and preparing for the simulations and the test. Note that numerous examples (mostly with model answers) and recorded worked solutions are provided on CANVAS. Mock tests will be made available before the test.

Through linked lectures, cases, videos, exercises and readings, the course will show how, by utilising frameworks and tools, and thinking critically and creatively, capacity and inventory management can solve practical problems and generate innovative ideas

¹ C+T refers to Cachon and Terwiesch (2019). Chapter 9 is provided in digitised format on CANVAS. All the other references to C+T are strictly optional (supplementary) and as such as shown in square brackets. Vx refers to short videos provided on CANVAS.

to establish valuable organisational capabilities (including those providing sustainable competitive advantage) aligned with business strategy, and integrated with marketing, people, information systems, and finance.

A variety of instructional methods will be employed, including lecture, case discussion, worked examples, simulations, and video (some for a “flipped classroom”). The course content presents both practice (from illustrations and examples in class) and contemporary research (primarily from journal articles) in Operations and Supply Chain Management and closely-related fields. There are four case studies in the course representing a variety of industries.

It is essential to have read and reflected on the prescribed material before each session to ensure class discussion is well informed and productive.

Student feedback will be sought throughout the course – informally, via evaluation, and student representatives. I also welcome questions you may have after any session.

I endeavour to provide feedback on all submissions within 3 business days at most. This feedback should prove helpful for subsequent assessment. I am also most happy to correspond via e-mail, phone, skype, wechat, whatsapp, or in person.

Teaching staff

David Robb

Title: Professor of Operations and Supply Chain Management

Phone: 09-923-2812

Office: 260-346 (overlooks Grafton Road)

Office Hours: by appointment

Email: d.robb@auckland.ac.nz Skype: davidjrobb Wechat: davidrobb

Learning resources

An online coursepack is available at Harvard Business School Publishing, which includes 3 case studies, and 2 introductory readings (Shapiro (2013), and Hammond (2013)).

Cases, articles, and chapters listed in this document provide fundamentals, applications, illustrations, and extensions. The case study questions (see CANVAS) should be contemplated before the appropriate class. I recommend that, for each chapter and journal article, you record (e.g., on a single sheet of paper) the key issues, features (positive and negative), and perhaps a question you would like answered in class.

The following text is strictly **optional**: Cachon, G., and Terwiesch, C. (2019) Matching Supply with Demand: An Introduction to Operations Management (4e). McGraw-Hill Education: New York (ISBN 978-1-260-08461-0). Digital copies are available for purchase or rent at [amazon.com](https://www.amazon.com), or for purchase from <http://www.mheducation.com.au/9781308166483-aus-cust-ebook-matching-supply-with-demand>. Paperback copies are available for around NZ\$85 with free shipping from <http://www.bookdepository.com/Matching-Supply-with-Demand-Introduction-Operations-Management-Gerard-Cachon/9780071326223>. There are also copies in the General and Engineering Libraries as well as a short loan (3 day) copy in the Kate Edgar Information Commons. *I would only recommend purchasing the book if you would like a good comprehensive guide to Operations Management beyond the course material (which focuses only on several aspects). Note that Canvas readings include a digitised chapter (Chapter 9) from this text.*

As a reference source you may like to refer to the APICS Operations Management Body of Knowledge (free download at www.apics.org/ombok) or the glossary at <http://www.lindo.com/library/glossary.pdf>. For some good discussion on current topics in

operations management take a look at www.operationsroom.wordpress.com and <http://www.oprules.com/> . There is a list of some good Operations Management blogs at http://www.poms.org/om_blogs/.

Information on assignments, copies of lecture slides, case studies, sample questions, worked examples, and course readings will be distributed electronically on CANVAS.

Cases and Reading List:

Bohn, R. (2007). *Kristen's Cookie Company (Abridged)*, Boston, MA, Harvard Business Publishing.

Buell, R. (2017). *Breakfast at the Paramount*. Boston, MA, Harvard Business Publishing.

Hammond, J. H. (2013). *Managing Inventory*. Boston, MA, Harvard Business Publishing.

Kumar, S. and S. Wood (2009). *Managing a Short Product Life Cycle at Littlefield Labs*. Stanford, Stanford Graduate School of Business.

Laseter, T. M. (2009). "An Essential Step for Corporate Strategy." *strategy+business* 57.

Mabin, V. J. (1994). "Goulds Fine Foods."

Robb, D. J. (2019). *Setting the Reorder Point using Business Intelligence*.

Shapiro, R. (2013). *Process Analysis*. Boston, MA, Harvard Business Publishing.

Watson, N. (2009). *Paper and More (A)*, Harvard Business Publishing.

Assessment information

Assessment task	Weight %	Group and/or individual	Submission
Individual Assignment	25	Individual	Via Canvas
Group Simulations	25	Group	Via Canvas and Simulation Software
Test	50	Individual	Test venue

Description of assessment tasks

Assessment task	Learning outcome to be assessed
Individual Assignment. Applies and reflects on the materials in the Sessions 1 and 2. To be submitted on CANVAS.	L01, L02, L03
Group Simulation. Your group should be comprised of 4 members, and workload should be distributed approximately equally. The simulation will run in our last session (Week 6). In the days beforehand your group should meet to discuss your strategy. Further details will be provided on CANVAS. Your grade will be comprised of two components: (i) a document answering some questions about your team's plan/strategy (to be submitted on CANVAS before the simulation runs) and (ii) your team's final cash position. The weighting on these two components will be either 1:2 or 2:1, which ever gives the highest value.	L01, L02, L03
Test. Examinable material includes all material covered in class (including cases), along with assigned readings, cases, and coursework. You should bring a calculator (without text storage or communication capability). The test is a 75-minute open book test in Week 8 (from 9:30-10:45am on Friday March 06). It will cover material throughout the course, and the application and integration of concepts. You may bring your notes, documents posted on CANVAS, and the textbook (annotations allowed).	L01, L02, L03

Inclusive learning

Students are urged to discuss privately any impairment-related requirements face-to-face and/or in written form with the courses convenor/lecturer and/or tutor.

Academic integrity

The University of Auckland will not tolerate cheating, or assisting others to cheat, and views cheating in coursework as a serious academic offence. The work that a student submits for grading must be the student's own work, reflecting his or her learning. Where work from other sources is used, it must be properly acknowledged and referenced. This requirement also applies to sources on the worldwide web. A student's assessed work may be reviewed against electronic source material using computerised detection to provide an electronic version of their work for computerised review.

Student feedback

The University of Auckland evaluates the quality of teaching and of courses by using the Summative Evaluation Tool, or SET. Summative evaluation is formal, summative evaluation of teaching undertaken according to University policy and is conducted at the end of a semester/quarter through the use of the formal University SET instruments. Summative evaluation is used by teachers to reflect on their teaching practice, and is also used by the University for quality assurance of teaching and courses.

In the event of an unexpected disruption

We undertake to maintain the continuity and standard of teaching and learning in all your courses throughout the year. If there are unexpected disruptions, the University has contingency plans to ensure that access to your course continues and your assessment is fair, and not compromised. Some adjustments may need to be made in emergencies, In the event of a disruption, the University and your course coordinators will make every effort to provide you with up to date information via Canvas and the University website.

Graduate profile for Master of Business Administration

The following six themes represent the capabilities that the Business School seeks to foster in all of its graduates. The development of these capabilities does not come all at once, but rather is expected to build from year to year. Each course is not expected to contribute to all capabilities, but each course will have its own goals and learning outcomes that relate to the overall development of this profile.

Graduate Profile	
1. Disciplinary knowledge and practice	Building on their existing experience, graduates will be able to demonstrate advanced knowledge of general management theory and apply this effectively in a range of contexts.
2. Critical thinking	Graduates will be able to effectively evaluate and synthesise evidence from multiple sources to develop coherent and evidence-based arguments.
3. Solution seeking	Graduates will be able to identify, prioritise, frame and analyse complex problems, develop creative and practical solutions, and understand the impact and implications of planned implementation.
4. Communication and engagement	Graduates will be able to work effectively in teams, influence and lead others, and engage varied audiences by communicating professionally using multiple formats.
5. Independence and integrity	Graduates will be able to engage in independent and ethical decision-making and behaviour, demonstrating self- reflection and self-management in complex and ambiguous situations.
6. Social and environmental responsibility	Graduates will recognise, in relation to their field, the potential significance of the principles underpinning the Treaty of Waitangi and sustainability, and demonstrate capability to shape business practice accordingly where appropriate.