MASTER SYLLABUS
QANT610: OPERATIONS MANAGEMENT

1. Course Details

Semester:	
Course Code:	QANT610
Course Name:	Operations Management
Course Prerequisites:	MGMT 501, QANT510
Course Co-requisites:	None
Credits Hours:	One and one-half (1.5) credit hours
Classroom:	
Class Timing:	(18.75 contact hours)
Final Exam Period:	

2. Instructor Details

Professor:	
Office Location:	
Office Hours:	
Email:	
Course website:	
Phone (Office):	

3. Catalog Course Description
Contemporary issues in Operations Management and their relevancy are discussed, including: Operations Strategy, Production Planning and Control (PPC), Total Quality Management (TQM) and Green Initiatives. The impact of these areas on the business environment is discussed and the use of technology as a decision support tool is included.

4. Course Overview
As a contemporary introduction to Operations Management, this course familiarizes students to some of the most relevant methodologies utilised in becoming an effective manager in today's global environment. The topics chosen include:

a. Operations Strategy: This module introduces the critical operations tasks necessary to support the organization's overall mission. It begins with the discussion of productivity and the key strategies used by various organizations today to improve productivity. It also describes various strategies for gaining advantage in today's global competitive scene. Product selection and role of Operations managers in various stages of Product Life Cycle is discussed I detail..
b. Process Strategies and Sustainability: having decided upon the product, the operational focus shifts to the selection of Process strategies. Different process strategies such as Job Shop, Batch, and Assembly mine are discussed along with various documents and technology used in the manufacturing processes. In this module, the emphasis is on the delivery of the product or service by the correct transformation processes. The criteria for determining suitability of the transformation processes would include: low cost, high quality, responsiveness and variability. The discussion of technology includes CAD, CAM, FMS, CIM, and ERP.
The Green Initiatives and Business Process Reengineering are discussed as part of process strategy.
c. Aggregate Production Planning (APP): This module includes the concepts and topics relating to aggregate production planning (APP). The multiple input data required for solving APP for each final product includes sales forecast, costs and capacities of regular work force, overtime rules and wages, subcontractor costs and capacities, hiring and firing costs. Students need to process all the relevant data and then use various pure and mixed strategies to develop the most effective solutions. Microsoft Excel is incorporated as a decision support tool for analysis.
d. Supply Chain Management (SCM): This module provide an overall discussion of what is SCM partnership and the key elements necessary for the success of SCM. The unrestricted flow of cash, material, and information among SCM partners is discussed along with key suggestions for improvements in the area of Inventory, Logistics, and administrative functions. Well known examples of opportunities such as direct shipping, drop shipping, postponement, channel assembly, invoice-less purchasing, blanket orders, and vendor managed inventory will be discussed.

Although not considered in the context of Assurance of Learning, the class also includes a final examination, requires referenced readings, and includes a mid-term examination (or quizzes).

5. Course-Level Learning Goals[1]

(A) Invariant Learning Goals (In support of the MBA Programmatic Learning Goal(s)):

Upon the successful completion of this course, the student will be able to:

1. Identify operations strategies used by different organizations and evaluate the impact of the selected strategy on the actions of operations managers;
2. Develop solution to Aggregate Planning Problems (APP) using different strategies and link the APP implementation to SCM and ERP initiatives;
3. Construct SPC charts and analyze the implication of using SPC on TQM of an organization; and

Assurance of Learning Validations (Linked to the MBA Programmatic Learning Goal(s))[2]:

A1. Statistical Quality Control Project or CPM: Study the Bayfield Mud Company case appearing at the end of Supplement 6 or a similar case assigned by the instructor containing a large data set. Prepare various control charts and identify the cause of the process going out of control. Student team should discuss role of various people at Bayfield who can improve quality. In addition to the answering questions in the case, you should make a clearly present a plan to ensure future quality at Bayfield. Your team is expected to write 4 page paper (supplemented by Control Charts as exhibits) which summarizes your analysis and conclusions.

For the purpose of measuring the learning goals each student team project will receive 4 scores.
Score 1: The quality of technical analysis (MBA -1M);
Score 2: The appropriateness and scope of data analysis and observations (MBA-2M);

[1] A note on School of Management Course-Level Learning Goals: Learning goals are partitioned into those that are in support of the programmatic learning goals (Invariant), specific to the localized region of delivery (Contextualized), and specific to the domain expertise of the instructor (Instructor-Specific). The former two categories are required for all courses. Invariant "Assurance of Learning Validations" are specifically linked to the associated programmatic learning goal and objective, with course-level learning goals representing the programmatic goal as it applies to the context of the course. Learning goals that focus on knowledge acquisition (Bloom's Taxonomy) are not specifically or necessarily included into the course-level learning goals, although it is assumed that knowledge acquisition of all relevant business core fundamentals is addressed within each course. Examinations in class are used to provide feedback concerning knowledge and comprehension for the purpose of ensuring that students who have not mastered these will not advance through the curriculum. Attainment of knowledge within each core area is assessed by way of standalone testing of each student as a required part of the instructional program prior to graduation (e.g. ETS).

[2] A note on School of Management Assurance of Learning Scoring: Scores form the metric for the degree to which the validation (e.g. learning outcome) satisfies the associated learning goal or objective. Assurance of learning validation descriptions identify the criteria for each score that is to be given. Scores are scaled using program or concentration rubrics. It must be noted that scores are to be differentiated from grades. Scores form a criterion from which an instructor will ascertain an overall grade for any instrument of assessment, and the overall assessment the student receives for an instrument is a "grade." A score is an extraction that specifically measures the degree of attainment of a learning goal and/or objective.

Score 3: The relevance of technical analysis leading to effective management decisions (MBA-MGMT); and
Score 4: The demonstration of collaborative decision making and empowering participants (MBA – 3G).

A2. Supply Chain Management case study: Based on the "Dell's Value Chain" Case appearing at the end of the "Supply Chain Management" chapter of the textbook and the references sited at the end of the case or a similar case assigned by the instructor containing a large data set, answer the questions raised in the case study. In addition to answering these questions, you must identify some of the other SCM initiatives undertaken by Dell and other companies. Your 4 to 6 page paper should present the big picture of Supply Chain Management and the marketing implications of engaging in SCM.

For the purpose of measuring the learning goals, each paper will receive 3 scores.

Score 1: The quality of the analysis of business issues and overall conclusions (MBA -3M);
Score 2: The analysis of opportunities and impact on management strategy (MBA-MGMT); and
Score 3: The evaluation of SCM principles on the strategy for managing distribution channels (MBA-MRKT).

A3. Aggregate Planning Assignment: Each student will be required to analyze various Aggregate Planning strategies which could be used by "Cornwall Glass" or a similar case assigned by the instructor containing a large data set. To access this Cornwall Glass case study, go to www.prenhall.com/heizer and select the companion website for the textbook. Click on the "Additional case Study" link for chapter 13. Use the data for Cornwall Glass case and evaluate aggregate production plans using different strategies. Evaluate economics and feasibility of each strategy and recommend the best strategy. Submit a 3 to 5 page report. You may submit an Excel file with your report if you want.

For the purpose of measuring the learning goals each student team project will receive 4 scores.

Score 1: The scope of technical analysis and comparisons (MBA -1M);
Score 2: The quality of data analysis, assumptions and observations (MBA-2M);
Score 3: The accuracy of evaluations, decision making, and conclusion (MBA-QANT); and
Score 4: The financial analysis of different strategies and recommendations (MBA – FINC).

(B) Contextualized (Globalized) Learning Goal(s):
Upon the successful completion of this course, the student will be able to:
1. See Invariant Learning Goal 1 above.

Assurance of Learning Validation (In support of the Contextualized (Globalized) Learning Goal(s)):
B1. Supply Chain Management Case Study: Students must also evaluate SCM principles on the strategy for managing global distribution channels (MBA- INTL).

(C) Instructor Specific Learning Goal(s) (Optional):
None
Assurance of Learning Validation (In support of the Instructor Specific Learning Goal(s)):
None

6. Teaching and Learning Methodology
The School of Management's teaching and learning strategy is informed by contemporary indicators/sources that derive from its target market, specifically the millennial generation. In particular, behavioral traits for this generation are identified and form the basis of emphasis for the schools' teaching and learning methodologies. These methodologies are reflected in the school's mission statement by way of its TEMPOS campaign[3]. In addition, teaching and learning strategies are informed by institutional indirect assessment results, periodically collected and reviewed by the Office of Planning and Assessment and the school's faculty[4]. Teaching and learning strategies are also externally referenced systematically (e.g., the Annual Stakeholder's Conference) through continuing consultations with non-board key stakeholder groups, including employers, business and community leaders, accreditation and ministerial agencies, alumni, students, peer institutions, and business and governmental agency representatives.

A component of all courses, as a part of the teaching and learning strategies, is to maintain academic rigor and to be intellectually challenging. This is validated in institutional survey results. However, School of Management faculty members utilize an overall collective portfolio of strategies/initiatives that obtain from the aforementioned sources in delineating those that are most appropriate or emphasized in the courses they lead.

In this course (QANT610), four (4) prioritized teaching and learning strategies focus on:

1. relevant content to student future career/goals;
2. active student engagement into the learning process;
3. innovative and creative thinking; and

[3] Teaching and Learning Strategies: "TEMPOS and the Millennials," revised September 2008.

[4] E.g., Student Survey on Teaching Quality – Quantitative Data: School of Management.

4. in-class interactive discussions.

All faculty members that instruct this course should consider how to execute the course to emphasize these key components of the strategies considered. Following a review of learning outcomes, faculty members consider how re-orientation of teaching and learning strategies might result in strengthening these outcomes, and adjustments are made, accordingly. Faculty members also consider how the School of Management Triple Platforms of Excellence (Professional Enrichment, Experiential Education, and Student Advancement) might be leveraged as a part of this strategy, and provide recommendations to the Directors of those platforms. The school also reviews the distribution of identified teaching and learning strategies periodically to ensure comprehension and the integration of each (from the designated list of approximately 20-25 strategies) within the curriculum. Finally, results from student teaching evaluations also provide indications of how various teaching and learning strategies are integrated into the course delivery. The following issues (indicator number is provided) are among those in the evaluations that bear on this review and analysis:

7. The instructor was responsive to student questions.
8. The instructor was available for course related consultation and advice.
9. The instructor graded and returned student work and exams promptly.
10. The instructor incorporated information technology (e.g. computer or the Internet) in the course.
18. The instructor was responsive to student needs and concerns.
21. The instructor assigned challenging course work.
22. The instructor provided helpful, constructive feedback on assignments and course work.
23. The instructor acknowledged cultural differences and diversity among students.
24. The instructor helped me understand the subject matter.

Along with teaching and learning strategies, the notion of student effort/time on task is also considered, although it is not necessarily driven by metrics. It is noted that the notion of student effort, specifically metric driven, is not a universally adopted approach[5]. However, if an instance occurs where student learning outcomes do not meet targeted academic standards, the School of Management utilizes indirect inputs in this area to explore the interdependencies between factors including the amount of work required in the course, the degree of challenge in the coursework, and level of critical analysis, among others[6].

[5] See the Victorian TAFE Association Response – Strengthening the AQF: Proposal, June 2009. East Melbourne, Victoria, Australia, retrieved from **http://www.vta.vic.edu.au/docs/PositionDiscussion%20Papers/VTA_Response_Strengthening_the_AQF.pdf on February 22, 2010.**

[6] Sample data regularly collected through the New York Institute of Technology Student Rating of Courses/Teaching Form.

The course is taught by a combination of lectures, discussions, and homework assignments. Each student is expected to be prepared before hand on the material to be covered during the class period. Whenever possible, lecture notes or handouts will be distributed to facilitate the learning process. Lectures and discussion material will be primarily based upon the material from the text and other sources. The student is responsible for all material outlined in the course unless otherwise instructed. Exams and other grading methodology will be entirely reflective on the material in the syllabus. Therefore, it is absolutely essential that you pay close attention to the syllabus. This course is primarily Socratic in teaching style and relies on applications that are brought forward by both the instructor and the students. The team project requires interactive dialog in determining criteria for inclusion and additional student inputs with the end result being presented by each team at the end of the semester with oral reflection from the team and the class. The use of computer software (Excel etc.) where appropriate, is integrated into the course as a support tool. While the course is balanced between a qualitative and quantitative approach, additional emphasis on problems that reflect current and contemporary issues are embedded into the instruction and the student learning outcomes. Readings are assigned weekly; the timing of the Assurance of Learning Validations is provided in Section 17.

7. Required Resource(s)
   Heizer, J. and Render, B. (2013). *Principles of Operations Management*. 9th Edition. Prentice Hall, ISBN- 13: 978-0-13-296836-2.

8. Reference Resource(s)
   i. Porter, Michael E. (1996, Nov). "What is strategy?" *Harvard Business Review*, Vol. 74(6), pp.61-78;
   ii. Scholey, C. (2005) "Strategy maps: a step-by-step guide to measuring, managing and communicating the plan." *The Journal of Business Strategy,* Vol. 26(3) pp. 12-19
   iii. Dennis, D. and Meredith, J. (2000, Aug). "An empirical analysis of process industry transformation systems." *Management Science,* Vol. 46(8), pp. 1085-1099;
   iv. Quinn, F.J. (1997, Feb) "What's the Buzz? Supply Chain Management; Part 1." *Logistics Management,* Vol. 36, pp. 43-46;
   v. Jabbarifar, T. (2009). "Ignorance of Total Quality Management in Higher Education in the 21st Century." *International Journal of Management and Information Systems,* Vol. 13(2), pp. 49-57;
   vi. Eltayeb, T., Zailani, S., and Filho, W. (2010) "Green business among certified companies in Malaysia towards environmental sustainability: benchmarking on the drivers, initiatives and outcomes." *International Journal of Environmental Technology and Management,* Vol. 12(1), pp. 95; and
   vii. Williams, S. (2009, Summer). "Green Initiatives Reap Positive Benefits." *New Jersey Banker*, pp. 24-25.

9. Assessment Methodology and Grading Guidelines

Instrument	Points (i.e. weights)
Midterm Examination (or multiple quizzes)	100 points
Final Examination	140 points
Statistical Quality control (see A1)	40 points
Supply chain Management (see A2)	40 points
Aggregate Planning (see A3)	40 points
TOTAL	360 points

10. Grading Guidelines: The final grade for the course will be calculated using the relevant grading scale: N/A

11. Attendance Policy: Students are expected to attend every class session. Instructors will inform students of the exact number of absences and late-arrivals permitted during the semester. Students who exceed these limits may be subject to failure. If a student misses any class or test, the instructor has the right to either

grant or deny an opportunity to make up the work that was missed. In such cases, the instructor shall be the sole judge of the validity of a student's explanation for having missed the class or test.

12. Deductions for Late Arrival, Early Departure, and Unexcused Absences:

13. Policy for Make-Up Assignments or Quizzes:

14. Classroom Behavior: Behavior that disrupts, impairs, interferes with, or obstructs the orderly conduct, processes, and functions within an academic classroom or laboratory violates the student code of conduct and may result in disciplinary action. This includes interfering with the academic mission of NYIT or individual classroom or interfering with a faculty member's or instructor's role to carry out the normal academic or educational functions of their classroom or laboratory, including teaching and research.

15. Students with Physical or Educational Challenges:
    - It is the policy of New York Institute of Technology to provide reasonable accommodations for students who are otherwise qualified but have disabilities, including learning disabilities, health impairments, and other disabling conditions. Possible accommodations include, but are not limited to, test schedule modifications, class relocation, and possible assistance in acquisition of necessary equipment.
    - The college has an interest in helping students with disabilities to be competitive in this academic environment. Therefore, reasonable accommodations will be made upon proof both of disability and need for the accommodations. It must be understood that accommodations are meant to facilitate educational opportunities. Admission to NYIT and accommodations do not guarantee success. Therefore, in addition to accommodations, the college encourages utilization of auxiliary services available to all students to maximize opportunities for success. Students whose disabilities may require some type of accommodation must complete a request for accommodations form and an intake interview with their campus services coordinator prior to the academic semester. Accommodations maybe requested at any time during the semester; however, accommodations cannot be applied to past failures, only to future academic endeavors. Appropriate modifications of accommodations will be worked out on a case-by-case basis and will not necessarily incorporate all requested changes.
    - Students for whom auxiliary services—such as readers, interpreters, note takers, etc.—have been approved should arrange these with their campus services coordinator. In addition to discussing appropriate educational modifications, the campus services coordinator will serve as a liaison with other college faculty and administration on behalf of students with disabilities.

16. Academic Integrity:
    - Each student enrolled in a course at NYIT agrees that, by taking such course, he or she consents to the submission of all required papers for textual similarity review to any commercial service engaged by

NYIT to detect plagiarism. Each student also agrees that all papers submitted to any such service may be included as source documents in the service's database, solely for the purpose of detecting plagiarism of such papers.

- Plagiarism is the appropriation of all or part of someone else's works (such as but not limited to writing, coding, programs, images, etc.) and offering it as one's own. Cheating is using false pretenses, tricks, devices, artifices or deception to obtain credit on an examination or in a college course. If a faculty member determines that a student has committed academic dishonesty by plagiarism, cheating or in any other manner, the faculty has the academic right to 1) fail the student for the paper, assignment, project and/or exam, and/or 2) fail the student for the course and/or 3) bring the student up on disciplinary charges, pursuant to Article VI, Academic Conduct Proceedings, of the Student Code of Conduct. The complete Academic Integrity Policy may be found on various NYIT Webpages, including: http://www.nyit.edu/images/uploads/academics/AcademicIntegrityPolicy.pdf.

17. 8 Week Topical Class Schedule

Week	Topic	Readings
Wk 1	Introduction, Productivity, Operations Strategy, Software Access, Team Formation, Assign CPM Problems	Chap 1, 2, 3
Wk 2	CPM with three time estimates, Product & Process Strategy, Sustainability, Documentation, Technology	Chap 3, 5, 7
Wk 3	TQM, Statistical Quality Control, Xbar, R, and p charts	Chap 6, 6s
Wk 4	Mid-Term examination Capacity planning and Layout	 Chap 7s, 8
Wk 5	Aggregate Planning, Lot Sizing Techniques, Inventory Management, Supply chain Management	Chap 11, 12
Wk 6	Supply chain Management and Material requirement Planning (MRP), Use of Software	Chap 13, 14
Wk 7	Review and Group Presentations Short term Scheduling (Optional)	Chap 15
Wk 8	Final Examination	

18. Using the NYIT Library

All students can access the NYIT virtual library from both on and off campus at www.nyit.edu/library. The same login you use to access NYIT e-mail and NYITConnect will also give you access to the library's resources from off campus.

On the left side of the library's home page, you will find the "Library Catalog" and the "Find Journals" sections. In the middle of the home page you will find "Research Guides;" select "Video Tutorials" to find information on using the library's resources and doing research.

Should you have any questions, please look under "Library Services" to submit a web-based "Ask-A-Librarian" form.