PLEASE READ THIS MEMORANDUM OF UNDERSTANDING THOROUGHLY BY AUGUST 19TH, 2004

COURSE NUMBER: SCM 302-03
COURSE TITLE: OPERATIONS MANAGEMENT
SEMESTER: FALL 2004
MEMORANDUM OF UNDERSTANDING (MU)

PLACE

Class sessions will be held at 128 Joseph M. Bryan School of Business and Economics.

TIME

8:00 A.M. to 9:15 A.M. on Tuesdays and Thursdays.

UNIVERSITY OPERATIONS DURING ADVERSE WEATHER CONDITIONS

The University of North Carolina at Greensboro will remain open during adverse weather conditions unless an administrative decision on schedule changes is made by the Chancellor. Students can receive details on those decisions contacting the Adverse Weather Line at (336) 334-4400 (telephone) or http://www.uncg.edu/iss/weather.htm (web site).

FACULTY MEMBER

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437, Joseph M. Bryan School of Business and Economics
Phone Numbers: (336) 334-4990 (Work) (336) 334-4083 (Fax) (336) 545-9263 (Home)

APPOINTMENT TIME

9:30 a.m. to 10:30 a.m. on Tuesdays and Thursdays only. You are encouraged to stop in during office hours to talk about any problems or suggestions you may have concerning the course, careers, graduate school, benefits of majoring in operations management, or things in general. If you want to talk to the faculty member and find the appointment hours to be inconvenient, feel free to schedule any other appointment time.

COURSE DESCRIPTION

This course is an introduction to the concepts, principles, problems, and practices of production/operations management. Emphasis is on managerial processes for achieving productive operations in both service- and goods-producing organizations. Topics to be covered include operations strategy, process design, capacity planning, facilities design, forecasting, operations planning and control, inventory management, and managing quality. To the extent to which it is relevant and feasible, the course coverage will include ethical and global issues, the influence of political, social, legal and regulatory, environmental and technological issues, and the impact of demographic diversity on the operations of an organization. The course material presents the topics in an integrated manner using a systems approach to the operations of an organization.

READING MATERIAL

Finch, B. J. (2003). OperationsNow.com. New York, NY: McGraw-Hill/Irwin.

Students should have the reading material available for each class session.

PRE-REQUISITE COURSES

Admission to the Bryan School of Business and Economics or other approved program. The material to be covered in the Operations Management (SCM 302) course will be built based on concepts learned in Financial Accounting (ACC 201), and Managerial Accounting (ACC 202), and Economics and Business Statistics (ECO 250). In particular, for a student to do well in the Operations Management course, the student should be able to:

1) Set up an algebraic equation with one unknown variable and solve for it.
2) Plot points on an X-Y grid using the location co-ordinates and compute the distances between those points.
3) Relate ratios and fractions in space (length, area, and volume) and time.
4) Compute the mean (average), median, and mode of a distribution.
5) Compute the mean and standard deviation of a normally distributed population and sample.
6) Understand the significance of standard deviation and variance of a population.
7) Understand the difference between a normal distribution and a binomial distribution.
8) Compute the standard deviation of a population having a binomial distribution.
9) Understand the significance of the Central Limit Theorem.
10) Understand revenues, fixed costs, variable costs, and profitability and compute Return on Sales (ROS) and Return on Investment (ROI).

GRADING

The course grade is based on three exams (including the non-comprehensive final exam), one individual written assignment, and a group term project. Each of the first two exams will consist of approximately 5 short-answer questions (i.e., multiple-choice, true/false, brief discussions, etc.) and 2 problems. The final exam will consist of approximately 10 short-answer questions (i.e., multiple-choice, true/false, brief discussions, etc.) and 4 problems. The total number of points on the short-answer questions will roughly equal the total number of points on the problems. All exams are closed-book, and closed-notes. Grades are based on the following "absolute" scale (i.e., there will not be any "curving").

	Points	Date
Exam # 1	50	9/16/2004
Exam # 2	50	10/14/2004
Individual Written Assignment	25	10/28/2004 (Due)
Term Paper	75	12/2/2004 (Due)
Final Exam	100	12/14/2004 (8:00 a.m. to 10:30 a.m.)
TOTAL	300	

A ≥ 270; A- ≥ 260; B+ ≥ 250; B ≥ 240; B- ≥ 230; C+ ≥ 220; C ≥ 210; C- ≥ 200; D+ ≥ 190; D ≥ 180; D- ≥ 170; F < 170.

Final grades for the course will neither be posted on the door of the professor's office nor will they sent by e-mail to the students. If students wish to know the final grades for the course (other than through the Registrar's Office), please provide the professor with a self addressed stamped envelope on the last day of class.

RE-EXAMINATION POLICY

As a rule, re-examinations will not be held. Absence from the examinations due to illness, summons to jury duty, or any other compelling reason should be backed by the appropriate documents (e.g., medical certificate, etc.) in order to qualify for re-examinations. If possible, meet/talk with the professor before missing any examination to discuss the circumstances.

WITHDRAWAL

The last date to drop courses without receiving academic penalty is October 8th, 2004 (Friday).

INDIVIDUAL WRITTEN ASSIGNMENT

Each student has to submit a critique of an organization-based article that you have read from journals (such as Production and Inventory Management Journal, Industrial Management & Data Systems, Quality Progress, Quality Digest, International Journal of Operations and Production, Industry Week, Managing Service Quality, International Journal of Service Industry Management, Managing Service Quality, or Industrial Management). The article should relate to one specific company and must have been published after June 30th, 2004. The written assignment should relate primarily to any one topic covered in sessions 1 through 20. It has been found, in the past, that magazines (such as Fortune, or Business Week,) and newspapers (such as the Wall Street Journal, the Washington Post, the New York Times, or the News & Record) have also carried articles relating to operations management. Students should make a habit of reading these journals/magazines/newspapers periodically.

Students should work on this written assignment on an individual basis (not in groups). Individuals should neither seek nor receive help from friends and family in completing this written analysis. The written assignment should be typed (maximum 12 point size lettering), double-spaced on 8.5" by 11" paper, and minimum 3 full pages in length. Each written assignment should not typically exceed 5 pages in length. The assignment should be stapled and paginated.

The analysis should be written for an audience that is not familiar with the concepts related to operations management. Please assume that you are writing this critique for the campus newspaper. The individual written assignment should include three sections. The first section should be the summary of the article and a description of which topic (of the course) the article relates to; the second section should relate to what you learnt about the issue/topic concerned from the Operations Management (SCM 302) course, and the last section should be an analysis and critique of the article from the view point of what you learnt from the course. The third section is an integration of the first two sections. That is, the analysis and critique should integrate the article with what you learnt from the course on that subject. To strengthen your analysis, you could use other information (published in other articles or from the company web site) on the organization referred to in the selected article. For the sake of clarity, please include a copy of the article and other information used in your submission. The article, text, and other materials should be appropriately referenced in your written assignment. Complete detailed bibliographical information (such as names of authors, name of publication, date of publication, and page numbers) should be provided at the end of your analysis. Prior to making your choice on a particular article, please feel free to consult with the faculty member on the relevance of the article to the Operations Management (SCM 302) course material. Please select the article of appropriate length (that is, one that is neither too short nor too long). Individuals are requested to refrain from repeating the details provided in the article (just to fill up space) in their written analysis. That is, individuals are requested to cover the topic thoroughly, but efficiently. Do not add verbiage for the sake of length. Oversized articles or drawings should be folded to the 8.5 " by 11" format. In preparing the written analysis, write from an objective view, in third person. Do not use the words "I", "We", or "You". Use subheadings to correspond with specific issues. The written assignment will be graded on organization, thoroughness, insight of analysis, and written communication skill.

The individual written assignment is to be submitted at the beginning of the class period on October 28th, 2004. Late submissions will not be accepted. Each student should attest (with a signature) that "I HAVE ABIDED BY THE ACADEMIC HONOR POLICY ON THIS ASSIGNMENT" on a separate cover page of the individual written assignment. The separate cover page should also include the title of the assignment, course title, course number (and section number), and name of the student.

TERM PAPER

Each student group (consisting of four students) is to write a paper analyzing the operations function of an organization (or part of a large one). You may need to interview line managers or staff personnel in the organization to obtain an understanding of the operations function and how it is managed. The interview process must include a visit to the facility where the operations (to be described in the term paper) are carried out. Each and every member of the group must make the visit to the facility. The paper should use the Operations Management (SCM 302) course outline as a guide in organizing the analysis. Feel free to use the objectives listed in the "Schedule of Sessions" section of this Memorandum of Understanding (MU) to create the outline/list of questions/issues for the visit to the organization. All major topics in the course outline (session 1 through session 29) that are applicable to the organization should be addressed, preferably in the order in which they appear in the outline. If some of the topics in the course are not applicable to the organization, the reasons for the same should be provided. The analysis should make use of the concepts presented in the course with respect to the various topics. If the organization deals with international suppliers or customers, then specific details of how the operations are different should be provided in the report.

In addition to analyzing the operations function as it exists in the organization, the paper should make one or two recommendations for improvement where appropriate. In general, the paper should be written from the point of view of an objective operations management professional, who is writing for an audience that is familiar with the principles, concepts, decision/problem areas, and techniques of operations management (at the level of SCM 302), but is not familiar with the specific organization being analyzed.

Each group is encouraged to develop the outline of each section of the paper prior to the visit to the organization. This approach will not only reinforce the learning in preparation for exams, but also distribute the work associated with the term project more evenly over the semester. Students should feel free to discuss the term paper project with the professor as it is being developed. The written paper should be typed (maximum 12 point size lettering), and double-spaced on 8.5" by 11" paper. No minimum or maximum length is specified, although the papers are typically 20 to 25 pages long. Cover the topics thoroughly, but efficiently. Do not add verbiage for the sake of length. Include diagrams, photos, sketches, or other types of illustrations that will clarify your presentation. The paper should be stapled (or placed in a binder) and paginated. Write the paper from an objective standpoint. That is, do not use the words "I", "We", or "You". Use subheadings to correspond with specific issues.

The term paper will be graded on organization, thoroughness, insightful of analysis/recommendations, process of executing the term paper assignment, and written communication skill. It is highly recommended that a project management approach be taken for ensuring the timely completion of the project. The detailed procedure for completing the term project is given in the last 4 pages of this memorandum of understanding (MU). During the semester, the faculty member would be seeking feedback on the progress of the term paper. Points on the term project will be deducted if the procedure described is not adhered to.

The term paper (along with an additional copy of the same which will be sent to the organization by the professor) is to be submitted at the beginning of the class period on December 2nd, 2004. Late submissions will not be accepted. Each member of the group should attest (with a signature) to the statement that "WE HAVE ABIDED BY THE ACADEMIC HONOR POLICY ON THIS ASSIGNMENT" on a separate cover page of the term project assignment. The separate cover page should also include the title of the assignment, course title and course number (including section number), and name of the student(s).

PEDAGOGIC APPROACH

Lectures, video films, and situation vignettes will be used. The "lecture" sessions will rely on the "Socratic" method to the extent possible. All students are expected to attend each class session. If a student misses a specific class session, it is her/his responsibility to cover the topics so missed. Material covered in a previous class will not be repeated in a subsequent class. The schedule of sessions on the memorandum of understanding (MU) contains a listing of topics and assignments to be covered in the respective sessions. For a better

understanding of the course content, each student should prepare for the topics and assignments (listed in the MU) prior to the appropriate class session. Each student should be prepared to discuss the assigned readings for each class session. On an individual basis, each student may wish to work on the problems and questions and turn it in for checking by the professor. This would certainly assist you in preparing better for the course and exams. The assigned questions given in the MU are only representative of the type of questions that can be expected on the exams. The list of questions is not an exhaustive one. The MU provides a general plan for the course; deviations may be necessary.

COGNITIVE COURSE OBJECTIVES

Upon completing the course, the student should be able to:

1) Differentiate between project, job shop, mass production, and continuous process operations.
2) Understand the difference between productivity, effectiveness, and efficiency in operations management.
3) Use Statistical Process Control for Total Quality Management and continuous improvement.
4) Enumerate the operations criteria by which and organization competes in the market place.
5) Identify the role of the main components of a Computer Integrated Manufacturing System.
6) Understand the concept of Group Technology and its role in developing a Cellular Manufacturing system.
7) Define capacity of an operating system and differentiate it from the output of the operating system.
8) Distinguish between product layout, process layout, and cellular layout.
9) Develop a forecast using exponential smoothing.
10) Understand the three extreme strategies by which the aggregate demand is met.
11) Describe the important decisions related to inventory management (perpetual and periodic) systems.
12) Develop a Material Requirements Plan.
13) Understand the role of job releasing and job dispatching in operations control.
14) Describe a Just in Time (JIT) production system and a Manufacturing Resource Planning (MRP II) system.
15) Differentiate between Material Requirements Planning (MRP), Manufacturing Resource Planning (MRP II), and Enterprise-wide Resource Planning (ERP) systems.
16) Understand the role of operations in a business environment, and the inter-relationships between the operations function and other functional areas such as marketing, finance, accounting, etc.
17) Work in a team and achieve the desired objective.
18) Use project management techniques to execute a project.
19) Manage one's time effectively and efficiently.
20) Develop skills to become self learners (i.e., learning to learn).

TECHNOLOGY APPLICATIONS

There would be some coverage of technological advances relating to Operations Management in the course.

ETHICAL PERSPECTIVES

There would be minimal coverage of the ethical issues as they relate to the course.

GLOBAL PERSPECTIVES

The global environment and its impact on operations is being felt more and more as we move towards the next century. There would be some coverage of these global perspectives in this course.

POLITICAL, SOCIAL, LEGAL, ENVIRONMENTAL, AND REGULATORY ISSUES

Political, social, legal, environmental, and regulatory issues, to the extent applicable, will be covered in this course. It is anticipated that the coverage would be minimal.

IMPACT OF DEMOGRAPHIC DIVERSITY

There would be minimal coverage of this issue in the course.

STATEMENT OF STUDENTS' RIGHTS AND RESPONSIBILITIES

As a student in this class you have explicit rights and responsibilities. Your full understanding and acceptance of the following rights and responsibilities can lead to more useful time in the class and more effective learning.

You have the right to expect:

a) Your professor to be prepared for each class, to start class promptly at the designated time and to end the class at the designated time.
b) Your professor to teach all scheduled classes or arrange for a qualified substitute if it is necessary to miss class because of illness or University approved commitments.
c) Clear statements of course expectations, policies, testing, and grading practices and student performance.
d) Your professor to hold a reasonable number of office hours to discuss assignments or to assist you with course matters.
e) Knowledgeable assistance from your professor regarding class assignments and course content.
f) Your professor to behaviors reflecting equitable treatment, ethical practices, and respect for human rights.
g) Opportunities to challenge ideas and defend your beliefs in a professional manner.
h) To be challenged so as to grow both academically and professionally.
i) Your professor to abide by University policies and to have fairness and clarity in the evaluation of your performance.
j) Adequate opportunity to appeal any perceived violations of the above rights.

You have specific responsibilities to:

a) Plan your study and work schedule appropriately to allow sufficient time to do quality work in the course. (Please review "Suggested Academic Workload Guidelines" for the Bryan School of Business and Economics published in the UNCG Undergraduate Bulletin).
b) Attend each class on time and be prepared to discuss readings and participate in discussions.
c) Complete assignments by due dates and submit quality work.
d) Understand and follow course policies as explained in class and in the syllabus.
e) Commit yourself to grow both academically and professionally.
f) Work effectively and cooperatively as a team member on group projects as assigned.
g) Practice ethical behaviors and display respect for the rights of others. Please refrain from eating, drinking, and chewing gum in the classroom.
h) Contact your professor and discuss circumstances that may prevent you from achieving acceptable performance and to make contact on a timely basis.
i) Fully understand and abide by the UNCG Honor Policy and other University policies on student conduct.
j) Report observed violations of the UNCG Honor Policy.

BIOGRAPHIC SKETCH OF FACULTY MEMBER

Vidyaranya B. Gargeya is an Associate Professor in the Department of Information Systems and Operations Management Department in the Joseph M. Bryan School of Business and Economics at the University of North Carolina at Greensboro. He currently teaches in the undegraduate, graduate, and executive programs. He holds a bachelor's degree in Chemical Engineering from Andhra University (India), a Post Graduate Diploma in Management from the Indian Institute of Management, Bangalore, and a Ph.D. in Business Administration from Georgia State University. He has considerable work experience as an engineer, and manager in the petroleum industry. Dr. Gargeya has taught previously at the University of Hartford and Georgia State University. His teaching and research interests include Operations Management, Global Operations Strategy, Total Quality Management, and Service Operations Management. He has published in journals such as *Journal of Operations*

Management, International Journal of Production Research, Omega, Industrial Management & Data Systems, International Journal of Quality and Reliability Management, Case Research Journal, etc. Dr. Gargeya has served on the Board of Examiners of the North Carolina Quality Leadership Award and has also consulted with several "Fortune 500" companies.

SCHEDULE OF SESSIONS

SESSION #	DATE	TOPICS AND ASSIGNMENTS
1	8/17	INTRODUCTION TO OPERATIONS MANAGEMENT Chapter 1 (Introduction): Review Questions 1-3, and 11-14. Discussion Question 10. 1) What are the main elements in an "Operations Systems" Model? 2) What are the primary differences between manufacturing and service operations? 3) How are strategic decisions different from tactical decisions?
2	**8/19**	**READ THE MEMORANDUM OF UNDERSTANDING BY THIS DATE** JOURNEY TO EXCELLENCE Chapter 2 (Profitability): Review Questions 1, 4, and 13. Discussion Questions 3 and 5. Problems 7 and 8. Video Film: U. S. Postal Service (6 minutes) 1) Briefly describe the Journey to Excellence Model. 2) Explain the difference between productivity, effectiveness, and efficiency. 3) Differentiate between a partial measure of productivity and total productivity (also called as total factor productivity). 4) By making use of the facts presented in the video film on the U. S. Postal Service, identify the inputs and outputs of the system. Does the system represent a manufacturing or service operation? What is the productivity of the system being described in the film? 5) Be prepared to compute the productivity, effectiveness, and efficiency of a system.

SESSION #	DATE	TOPICS AND ASSIGNMENTS
3	**8/24**	**SUBMISSION OF NAMES OF GROUP MEMBERS** OPERATIONS STRATEGY FOR COMPETITIVE ADVANTAGE Chapter 3 (Value): Review Questions 6-12. Discussion Questions 2 and 8. Chapter 4 (Strategy, pp. 96-122): Review Questions 5 and 8. Discussion Questions 3. Chapter 5 (Processes and Capabilities, pp. 130-137): Review Questions 1-3. Discussion Question 3. Video Film: Federal Express (12 minutes). 1) Identify and discuss the role of competitive priorities (qualifiers and order winners) in manufacturing and service organizations. 2) Describe the different strategic decisions related to operations. 3) Making use of the facts presented in the video film on Federal Express, identify the current qualifiers and order winners of FedEx. How is FedEx gearing its operations to meet those competitive priorities? Over the years, have the mechanisms by which Federal Express competes in the market place changed? If so, give your reasons.
4	8/26	CHARACTERISTICS OF CONVERSION/TRANSFORMATION PROCESSES Chapter 4 (Strategy, pp. 122-125): Review Questions 9-10. Video Film: Manufacturing Processes (10 minutes). Video Film: Service-System Design Matrix for First National Bank of Chicago (12 minutes). 1) Making use of the facts presented in the video film, compare and contrast the different conversion processes (i.e., project, job shop, batch process, mass production, and continuous process). Also, relate them to the different market orientations. 2) Based on the facts presented in the video film on Service-System Design for First National Bank of Chicago, discuss the degree of labor intensity, interaction, and customization in the various operations of the bank. Also, describe how automation could enhance the operations in the bank.
5	**8/31**	**SUBMISSION OF IST, 2ND, AND 3RD CHOICE OF ORGANIZATIONS FOR TERM PAPER PROJECT** INTRODUCTION TO PROJECT MANAGEMENT Chapter 8 (Timeliness, pp. 245, 257-259): Review Questions 13, 19, and 20. 1) Understand the importance of project management. 2) Identify the three fundamental objectives in managing projects. 3) Differentiate between Gantt charts and networks. 4) What is the difference between Activity-On-Node and Activity-On-Arrow networks.

SESSION #	DATE	TOPICS AND ASSIGNMENTS
6	9/2	PROJECT MANAGEMENT Chapter 8 (Timeliness, pp. 260-263 and 265-269): Review Questions 21 and 22. Problems 17, 18, 22, and 23. 1) For the timely completion of your term paper: a) Identify all the activities in completing the term paper. b) Estimate the activity times of those activities. c) Draw a precedence diagram (network) of those activities. d) Develop a critical path for your network and then identify the critical activities. e) List the early start, late start, early finish, late finish, total slack, and free slack for each of those activities. 2) Given the requisite information, be prepared to developed an Activity on Node or Activity on Arrow network, identify the critical path(s) for a project, and discuss mechanisms for "crashing" a project.
7	9/7	TOTAL QUALITY MANAGEMENT Chapter 16 (Total Quality Management): Review Questions 1-7 and 9-11. Discussion Questions 3 and 4. Chapter 7 (Quality, pp. 182-200, and 216-220): Review Questions 1-6. Video Film: Manufacturing Quality at Honda (12 minutes). Video Film: Quality (14 minutes). 1) What are the important facets of Total Quality Management? 2) What were the contributions made by Deming, Juran, and Crosby? 3) Describe the differences between ISO 9000 standard and the Malcolm Baldrige National Quality Award. 4) Based on the video films, describe the facets of Total Quality Management seen at Honda, Motorola, Zytec, and Hewlett-Packard. 5) Identify and describe the eight tools of continuous improvement.
8	9/9	ACCEPTANCE SAMPLING AND STATISTICAL PROCESS CONTROL Chapter 7 (Quality, pp. 200-216): Review Questions 7-10. Problems 11-14 and 20. Handout problem. 1) Briefly explain the difference in the usage of acceptance sampling and statistical process control charts. 2) Describe in your own words the operating characteristic curve. 3) Be prepared to develop a process control chart (x-bar chart, R chart, and p chart) and understand the situations under which further investigation is required.

SESSION #	DATE	TOPICS AND ASSIGNMENTS
9	9/14	PLANNING AND FORECASTING Chapter 9 (Resource Planning, pp. 286-298 and 315-321): Review Questions 2, 3, and 8. 1) Describe the role of forecasting for effective planning. 2) Distinguish between forecasting and prediction. 3) Describe the role played by forecasting in operations management. 4) Understand the difference between short-range, medium-range (also called as intermediate-range), and long-range forecasting. 5) Distinguish between forecasting and prediction.
10	**9/16**	**IN-CLASS WRITTEN EXAM # 1**
11	9/21	TIME SERIES ANALYSIS, REGRESSION ANALYSIS, AND MOVING AVERAGES Chapter 9 (Resource Planning, pp. 298-305): Review Questions 9-12. Problems 1-3 and 4-7. 1) Describe how regression analysis and time series analysis are used for forecasting. 2) Be prepared to develop a forecast using linear regression. 3) Distinguish between simple moving average and weighted moving average methods of forecasting. 4) Be prepared to compute a forecast using a simple moving average and a weighted moving average.
12	9/23	EXPONENTIAL SMOOTHING TECHNIQUE AND FORECAST EVALUATION Chapter 9 (Resource Planning, pp. 305-315): Review Questions 12-15. Discussion Question 5. Problems 8-10, and 20-23. 1) Distinguish between simple moving average, weighted moving average, and simple exponential smoothing methods of forecasting. 2) Be prepared to compute a forecast using an exponential smoothing average. 3) What are the methods by which the accuracy of the forecast can be measured? 4) What is the impact of using a large value of "α" in computing an exponentially smoothed forecast? What would be the impact if a small one were used? 5) Be prepared to compute the error, mean absolute deviation, bias, and tracking signal.

SESSION #	DATE	TOPICS AND ASSIGNMENTS
13	**9/28**	**SUBMISSION OF SCHEDULED DATE OF VISIT TO FACILITY** PROCESS DESIGN AND LONG RANGE CAPACITY PLANNING Video Film: Vought Aerospace (10 minutes). 1) Making use of the facts presented in the video film on Vought Aerospace, what characteristics of Computer Integrated Manufacturing did you witness? 2) Differentiate in your words the concepts of capacity and output. 3) Differentiate between short-range, intermediate-range (also called as medium-range), and long-range capacity planning. 4) Understand the concepts of "capacity leading demand" and "capacity lagging demand". 5) Distinguish between "economies of scope" and "economies of scale". 6) Understand the difference between volume economy, capacity economy, and technology economy.
14	9/30	FACILITY LOCATION Chapter 13 (Facilities, pp. 457-481): Review Questions 1-12. Discussion Questions 1, 2, 5, and 8-10. Problems 1-10. 1) Distinguish between macro-level factors for facility location and micro-level factors for site selection. 2) Differentiate between the most important factor for locating a manufacturing facility and the same for locating a service organization. 3) What are the primary factors that affect the location of paper mill, textile mill, aluminum can making facility, and an automated teller machine? 4) Be prepared to solve the facility location problem using the multi factor rating method, "Center of Gravity" method, and break-even analysis method.
15	**10/5**	**SUBMISSION OF LIST OF QUESTIONS/ISSUES FOR VISIT TO FACILITY** INTRODUCTION TO FACILITY LAYOUTS AND PROCESS LAYOUTS Chapter 13 (Facilities, pp. 481-490 and 496-498): Review Questions 13, 16, and 19. Discussion Questions 4 and 7. 1) Describe a fixed-position layout and a cellular layout. 2) Distinguish between a process layout and a product layout. DISCUSSION ON PROGRESS OF TERM PAPERS

SESSION #	DATE	TOPICS AND ASSIGNMENTS
16	10/7	DESIGNING PRODUCT LAYOUTS AND ASSEMBLY LINE BALANCING Chapter 13 (Facilities, pp. 490-496): Review Questions 17 and 18. Discussion Question 6. Problems 17-20. 1) What is cycle time? What is its role in designing an assembly line? 2) What is the relationship between the production rate of a line and the cycle time? 3) Be prepared to develop a precedence diagram, balance a line and compute its efficiency. 4) What is the significance of "Efficiency Balance" in an Assembly Line? 5) List some non-quantitative considerations in the assembly line balancing problem.
17	**10/14**	**IN-CLASS WRITTEN EXAM # 2**
18	10/19	AGGREGATE PLANNING Chapter 12 (Capacity, pp. 416-433): Examples 12.1 and 12.2. Review Questions 13-15. Discussion Questions 1 and 2. Problems 1-6. 1) Be prepared to compute the total cost using the three strategies for a given aggregate planning problem.
19	10/21	AGGREGATE PLANNING (Continued) 1) Why does the aggregate planning problem exist? What are the objective function, planning period, and planning horizon in the aggregate planning problem? 2) Is the aggregate planning problem long range, medium range, or short range in nature? Please give an explanation for your conclusion. 3) What are the three typical strategies available for a manager in developing an aggregate production plan, i.e., what are the controllable variables? 4) What are the typical costs affected by the aggregate production plan? 5) Understand the specific characteristics of industries where the three extreme strategies could be applied.
20	10/26	INTRODUCTION TO INVENTORY MANAGEMENT Chapter 10 (Inventory, pp. 338-350 and 370-373): Review Questions 1, 6, and 12 -14. 1) Identify the different functions served by inventory. 2) What are the different types of inventory? 3) What is the role of inventory in supply chain management? 4) What are safety stock and service level? How are they related? 5) What are cycle counting and physical inventory? What purpose do they serve? 6) What are the two fundamental questions answered by an inventory policy? 7) Explain the "ABC" classification scheme for inventory analysis. Why is it important? 8) Define inventory turnover ratio.

SESSION #	DATE	TOPICS AND ASSIGNMENTS
21	**10/28**	**SUBMISSION OF INDIVIDUAL WRITTEN ASSIGNMENT** INVENTORY MANAGEMENT DECISIONS (PERPETUAL SYSTEMS) Chapter 10 (Inventory, pp. 350-357): Review Questions 2-4, and 15. Problems 8-10. 1) Given the required data, be prepared to compute the Economic Order Quantity, the Reorder Point, and Total Cost in a perpetual ordering system. 2) Understand the relationship between the annual inventory holding cost fraction for each item and the annual inventory holding cost for each item.
22	11/2	INVENTORY MANAGEMENT DECISIONS (PERIODIC SYSTEMS) Chapter 10 (Inventory, pp. 357-360): Problems 13 and 14. Handout problems. 1) Given the required data, be prepared to compute the Economic Order Interval (i.e., the time between orders), and the quantity to be ordered at a given point in time in a periodic ordering system. 2) Under what assumptions would a fixed order quantity system be chosen over a fixed order interval system, i.e., what practical considerations would encourage the use of a fixed order quantity system over the use of a fixed order interval system? 9) How do these two systems relate to the concepts of "continuous review" and "periodic review"? Which one is event triggered and which one is time triggered? Which of the two systems requires more careful monitoring? 10) Describe a hybrid system (as compared to perpetual and periodic systems).
23	11/4	MASTER SCHEDULING Chapter 12 (Capacity, pp. 433-434). 1) What are the four steps in developing a Master Schedule? 2) What are the trade-offs in developing a Master Schedule? 3) What are the constraints encountered while developing a Master Schedule? How are these resolved?
24	11/9	MATERIALS REQUIREMENTS PLANNING Chapter 12 (Inventory, pp. 360-370): Review Questions 11 and 16. 1) Differentiate between independent and dependent demand inventory. 2) What is a Material Requirements Planning system and what is its purpose? 3) What is the significance of low level coding in developing an MRP?

SESSION #	DATE	TOPICS AND ASSIGNMENTS
25	11/11	MATERIALS REQUIREMENTS PLANNING (Continued) Problem 19. Handout problem. 1) What are the primary inputs and outputs in a MRP analysis? 2) Distinguish between "planned order release" and "planned order receipt". 3) Be prepared to develop a Material Requirements Plan. 4) Distinguish between Material Requirements Planning (MRP), Manufacturing Resource Planning (MRP II), and Enterprise-wide Resource Planning (ERP).
26	11/16	INVENTORY MANAGEMENT IN ACTION Video Film: Wheeled Coach: Inventory Management and Materials Requirement Planning. 1) After viewing the video film, describe the following issues you have seen in the film. If you did not see a specific aspect, please indicate as such. a) Describe the different types of inventory at Wheeled Coach. b) How is Wheeled Coach managing its inventories? c) Describe any other aspects that you might have seen (such as ABC classification of inventory, Bill of Material, cycle counting and physical inventory, etc.). CAPACITY REQUIREMENTS PLANNING (CRP) Chapter 12 (Capacity, pp. 437-446): Review Questions 17-19. Handout exercise. 1) What are the inputs and outputs in a Capacity Requirements Planning exercise? 2) What methods are used in resolving capacity imbalances in a CRP? 3) How does detailed capacity requirements planning relate to services?
27	11/18	OPERATIONS CONTROL AND SCHEDULING Chapter 8 (Timeliness, pp. 246-257): Review Questions 14 -18. Discussion Questions 3 and 6. Problems 4-10. 1) Identify and describe the primary functions of an operations control system. 2) Define job releasing and job dispatching in connection with operations control. 3) Identify and describe at least four different scheduling rules.

SESSION #	DATE	TOPICS AND ASSIGNMENTS
28	11/23	JUST-IN-TIME SYSTEMS Chapter 15 (Just-in-Time Management): Review Questions 1-16. Discussion Questions 1-9. Video Film: Styro, Inc. (25 minutes). 1) What are the disadvantages or limitations in adopting a JIT system? 2) Is JIT more applicable to repetitive manufacturing or job shop operations? 3) Differentiate between Manufacturing Resource Planning (MRP II) and Just-in-Time (JIT) systems. 4) "JIT relates to reduction of inventory. One cannot inventory services. Hence, JIT is not applicable to services." Take a position and defend. 5) Using the facts presented in the video film on Styro, Inc., answer the following questions: a) Why did the large lot size run produce stock-outs even though WIP inventory was high? b) How did small lot sizes help customer service? c) Why was production lead time reduced when the lot size was decreased? d) What is meant by the statement "Reduced inventory is the not the major benefit of JIT production"?
29	12/2	SUPPLY CHAIN MANAGEMENT (Chapter 18): Review Questions 1-6, 8, and 9. Discussion Questions 2 and 3. 1) Understand the strategic implications of supply chain management. That is, why is it important? What is its role in enhancing performance of an organization? 2) Discuss the impact of globalization on the supply chain. 3) How does supply chain management relate to a service organization?
30	**12/4**	**SUBMISSION OF TERM PAPER** THE FUTURE OF OPERATIONS MANAGEMENT 1) Describe the challenges in managing operations in the future. 2) Identify three important things you learnt in this course. Would those issues affect your professional life? If so, how so? If not, why not?
31	**12/14 (8:00 a.m.)**	**FINAL EXAM (150 Minutes)**

SCM 302-03
OPERATIONS MANAGEMENT
FALL 2004

PROCEDURE FOR TERM PAPER ASSIGNMENT

1) Form a project group of four members. Notify professor of the constitution of the project group by August 24th, 2004. It would be appropriate for each member to take on a different role. A time-keeper could keep the team members focused in the meetings as well as ensuring that the assigned work is being completed so that appropriate deadlines are met. A visit co-ordinator could serve as a liaison in fixing the visit as well as making telephone calls for collecting additional materials as necessary. A scribe/editor could be taking notes at each meeting as well as editing the materials submitted by the members of the group. A material organizer could ensure that all the materials (including references, appendices, and letters) are complete (in terms of content and coverage as per the schedule of sessions given in the memorandum of understanding). A project management approach in doing the assignment would certainly go a long way in enhancing the quality of the work as well as the timely completion of the term paper.
2) Determine group availability for meeting times and places. Schedule a group meeting (even if it were for a very short time period) every day. If this is not feasible exchange ideas/messages electronically. Assess group interests on the type of organization to be studied. Research potential organizations based on agreed-upon interests. A partial list of organizations that students have visited in the past are on the reverse of this sheet.
3) Identify first, second, and third choices of the organization to be studied. In order to obtain a rich experience, the organization should be large enough to employ at least 40 people. Some exceptions may be made depending on the type of industry. The deadline for submission of your first, second, and third choices of the organization to be studied for the professor's approval is August 31st, 2004. Make the organization where you work or have contacts as your first choice.
4) Call the plant/facility to get the name and address of the plant/facility manager. Address a letter to the individual explaining the class assignment and requesting a visit to the facility. This is mandatory. A sample letter is attached. If you call to request for a visit without having sent the letter, there is a strong likelihood that your request will be denied. Fix a date for your visit by calling the plant/facility manager. Please avoid being assigned to a standard public tour. Public tours will not provide you with adequate information to write the project report. Inform the contact personnel (at the facility) that if any questions about the specifics of the class assignment should arise, they are welcome to call up the professor. Please try to schedule the visit to the facility sometime during the last week of October, 2004. This should enable you to get sufficient exposure to the SCM 302 material for preparing a fairly detailed outline of your term project. The faculty member should be intimated of the scheduled date of the visit by September 28th, 2004.
5) Over the first couple of months, it would be appropriate to prepare a detailed outline of your report. Before making the visit to the facility, as a group, "brainstorm" and make a list of questions that you would like to ask during your visit. This will help you to include all the key issues. Feel free to use the list of objectives provided in the Schedule of Sessions section of the MU in creating the list of questions/issues prior to the visit. Submit a list of your questions/issues to the professor one week before you take the tour and latest by October 5th, 2004.
6) Once your request for a visit has been approved by the facility manager, call in advance to confirm the visit. Visit the facility. Be well prepared for this visit. Spend the time fruitfully in touring the facility, as well as interviewing key individuals. There should not be any inhibitions in asking the relevant questions about the issues concerned. If permission is granted by the organization, tape record or video tape your visit. This would aid in the accurate gathering of information for the term paper.
7) Send a "letter of thanks" to the individual(s) concerned one day after the visit. In this letter you need to indicate that a copy of the paper will be sent by December, 2003. A copy of this letter needs to be turned in with your paper. This is mandatory.
8) Meet (as a group) as soon as you can after the visit to discuss the issues that you have learned. If there are any unanswered questions, call the contact person in the organization for a telephonic interview.
9) Meet as a group to discuss the preparation of the final paper.
10) The original and a copy (for the organization) of the term paper (along with copies of the two letters mentioned earlier) should be handed over to the faculty member (at the beginning of the class period) on December 2nd, 2004. Late submissions will not be accepted.

Sample Introductory Letter

STUDENT NAME AND ADDRESS

Date

Name of Plant/Facility Manager
Name of Organization
Street Address of Organization
Town, and Zip Code

Dear _____:

I am a student in the Bryan School of Business and Economics at the University of North Carolina at Greensboro, and I am writing to inquire whether it would be possible for a small group of students to visit your facility as part of a class assignment. We are enrolled in an Operations Management course taught by Dr. Vidyaranya B. Gargeya. He has assigned us to visit local manufacturing/service facilities, and then prepare written papers. The course covers topics such as operations strategy, product and process design, facility location and layout, forecasting, capacity planning, inventory management and purchasing, scheduling, operations planning and control, quality management, and just-in-time operating systems. We would like to have an opportunity to interview you or any one of the members on your staff to learn about how these topic areas relate to your organization. We would like to also tour your facility so that we could observe the operating processes.

If permission is granted to us to visit your facility, we will be happy to provide you with a copy of our written report. I will be calling you personally within the next ___ working days to discuss the possibility of our making a visit to your facility. In the meantime, if you have any questions, please call me at _____. Also, Dr. Vidyaranya B. Gargeya has indicated that he will be happy to answer any questions you may have with regard to the term project assignment. His office telephone number is (336) 334-4990.

On behalf of the members in my group, I look forward to talking to you in the near future.

Sincerely yours,

_____
Name of Student

cc: Dr. Vidyaranya B. Gargeya
479, Bryan Building
University of North Carolina at Greensboro

SCM 302-03
OPERATIONS MANAGEMENT
FALL 2004

The following is a partial list of organizations visited by students for the term project assignment in the recent past. This is to give you an idea of the type of firms that you could visit. Please first make attempts to visit organizations not given in this list.

	NAME OF ORGANIZATION	LOCATION (All are in North Carolina)
1)	Amoco Foam Products	Greensboro
2)	ALPZ Screenprinting	Greensboro
3)	Anna M. Gove Student Health Service (UNC-Greensboro)	Greensboro
4)	Black & Decker (U.S.) Inc.	Asheboro
5)	Boiling Company	Siler City
6)	Bradley Screen Print	Greensboro
7)	Carolina Cast Stone Company	Greensboro
8)	Creighton Industries	Reidsville
9)	Cross Creek Apparel	Mt. Airy
10)	Deere-Hitachi Construction Machinery Corporation	Kernersville
11)	Dillard Paper Company	Greensboro
12)	Dixie Sales	Greensboro
13)	Dow Corning Corp.	Greensboro
14)	Endura Products	Colfax
15)	Eveready Battery	Asheboro
16)	Forest City Tool	Hickory
17)	Georgia-Pacific	Asheboro
18)	Gilbarco, Inc.	Greensboro
19)	Guilford Mills, Inc.	Greensboro
20)	Image Technology	Greensboro
21)	Intellitec Inc.	Greensboro
23)	Jockey International	Randleman
24)	Konica Manufacturing USA, Inc.	Whitsett
25)	Lampart	High Point
26)	Liberty Screenprinting	Stokedale
27)	Lorillard Tobacco Company	Greensboro
28)	Metal Stamping Works, Inc.	High Point
29)	McLeod Belting Company	Greensboro
30)	Moses H. Cone Memorial Hospital	Greensboro
31)	Namco Controls	Newton
32)	Newman Whitney (Division of Newman Machine Co., Inc.)	Greensboro
33)	Owens-Brockway Glass	Winston-Salem
34)	Patch Rubber Company	Roanoke Rapids
35)	Precision Fabrics	Jamestown
36)	R. J. Reynolds Tobacco Company	Winston-Salem
37)	Roadway Package System	Kernersville
38)	Shamrock Gravure Products, Inc.	Greensboro
39)	Spencer Infant & Children's Wear	Mt. Airy
40)	The Sherwin Williams Company	Greensboro
41)	Thomas Built Buses	High Point
42)	UNCG Bookstore (UNC-Greensboro)	Greensboro
43)	United Parcel Service (UPS)	Greensboro
44)	U.S. Label Corp.	Greensboro
45)	U.S. Postal Service	Greensboro

PEER EVALUATION FORM (TO BE SUBMITTED ON DECEMBER 2ND, 2004)

Your Name: _____ Team Number: _____

Please use this form to rate the performance of your project team members. These ratings will be used to adjust (if necessary) the grade received by individual team members on the term project. Please do not rate your own performance. Feel free to make any written comments on the reverse of this sheet. Your ratings and comments on this form will be strictly confidential and hence please turn in this form individually (not in a group). Use the following scale for circling the performance of each team member:

1) Absolutely dissatisfied 2) Dissatisfied 3) Satisfied 4) More than satisfied 5) Delighted

Name of Team Member #1: _____

Name of Team Member #2: _____

Name of Team Member #3: _____

A. Punctuality and participation in group meetings (including visit to facility):

Team Member # 1	1	2	3	4	5
Team Member # 2	1	2	3	4	5
Team Member # 3	1	2	3	4	5

B. Dependability to complete assigned work to meet dead lines at each stage of the project:

Team Member # 1	1	2	3	4	5
Team Member # 2	1	2	3	4	5
Team Member # 3	1	2	3	4	5

C. Quality of work done at each stage of the project:

Team Member # 1	1	2	3	4	5
Team Member # 2	1	2	3	4	5
Team Member # 3	1	2	3	4	5

D. Based on the ratings in categories A-C, the overall contribution in the completion of the project:

Team Member # 1	1	2	3	4	5
Team Member # 2	1	2	3	4	5
Team Member # 3	1	2	3	4	5

If a team member receives an average rating of 2 or less on category D (overall contribution), then 8 points will be deducted from the group score on the term paper for that individual. If a team member receives an average rating of 1 on category D (overall contribution), then 15 points will be deducted from the group score for that individual.