OM 320-001: SUPPLY CHAIN MANAGEMENT IN A GLOBAL ECONOMY
Spring 2016

COURSE: OM 320-001, Supply Chain Management in a Global Economy (3 Credits)
Prerequisite: C or higher in OM 301/OM 303

CLASS MEETING: Tuesdays 10:30 AM – 1:10 PM
Enterprise Hall 173

INSTRUCTOR: Dr. Cheryl Druehl, Associate Professor of Operations Management
Office: Enterprise Hall 152 Phone: 703-993-9760
E-mail: cdruehl@gmu.edu Fax: 703-993-1809

OFFICE HOURS: Tuesdays 1:10-1:30 pm, Wednesdays 4:30-5:30 pm, and by appointment

Digital books are acceptable:
https://www.vitalsource.com/textbooks?term=9781305465145

Note: The text is required reading but it is not a substitute or replacement for classroom instruction.

WEB SITE: https://mymasonportal.gmu.edu/
Note: Powerpoint lecture notes (and the answers to in-class problems) will be posted throughout the semester. For the ease of taking notes, please print the slides and bring them to class. These notes are only a supplement and do not substitute or replace attendance.

COURSE DESCRIPTION: This course studies supply chain management involving the movement and storage of materials, work-in-progress and finished goods through multiple tiers of supply chain entities. To gain competitive advantage, companies must manage the entire supply chain, not only the portion they own. This requires planning as well as execution and collaboration with supply chain partners. We will study various aspects of the supply chain and best practices in use today.

UNDERGRADUATE 1) Our students will be competent in their discipline.
PROGRAM 2) Our students will be aware of the uses of technology in business.
LEARNING 3) Our students will be effective communicators.
GOALS: 4) Our students will have an interdisciplinary perspective.
5) Our students will be knowledgeable about global business and trade.
6) Our students will recognize the importance of ethical decisions.
7) Our students will be knowledgeable about the legal environment of business.
8) Our students will be knowledgeable about team dynamics and the characteristics of effective teams.
9) Our students will understand the value of diversity and the importance of managing diversity in the context of business.
10) Our students will be critical thinkers.
COURSE OBJECTIVES: By the end of the course, students will be able to:

- Understand the components of global supply chain management and how they are related to other major business decision areas.
- Use and develop tools to analyze, manage, and improve supply chain processes in order to increase competitiveness.
- Develop logic and analytical thinking required in handling real-world business processes.
- To help students become more effective managers in today’s competitive, global environment.

REQUIREMENTS:
You may earn up to 100% throughout the course. A resume and picture is due 1/19. Details will be posted on BB. Grades in this course will be computed as follows:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Midterm Exam</td>
<td>20%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>30%</td>
</tr>
<tr>
<td>Project</td>
<td>10%</td>
</tr>
<tr>
<td>Quizzes (4)</td>
<td>16%</td>
</tr>
<tr>
<td>News Update</td>
<td>5%</td>
</tr>
<tr>
<td>In-Class Exercise</td>
<td>5%</td>
</tr>
<tr>
<td>BB Reading Questions</td>
<td>8%</td>
</tr>
<tr>
<td>Resume/Picture</td>
<td>1%</td>
</tr>
<tr>
<td>Class Participation</td>
<td>5%</td>
</tr>
</tbody>
</table>

GRADING SCALE:
- A = 92.0 – 100
- A– = 90.0 – 91.99
- B+ = 88.0 – 89.99
- B = 82.0 – 87.99
- B– = 80.0 – 81.99
- C+ = 78.0 – 79.99
- C = 72.0 – 77.99
- C– = 70.0 – 71.99
- F = Others

ACADEMIC INTEGRITY:
Mason shares in the tradition of an honor system that has existed in Virginia since 1842. The Honor Code is an integral part of university life. On the application for admission, students sign a statement agreeing to conform to and uphold the Honor Code. Students are responsible, therefore, for understanding the code’s provisions. In the spirit of the code, a student’s word is a declaration of good faith acceptable as truth in all academic matters. Cheating and attempted cheating, plagiarism, lying, and stealing of academic work and related materials constitute Honor Code violations. To maintain an academic community according to these standards, students and faculty must report all alleged violations to the Honor Committee. Any student who has knowledge of, but does not report, a violation may be accused of lying under the Honor Code.

The University's Honor Code is designed to ensure that the principles of academic honesty and integrity are upheld. All students are expected to adhere to this code. All acts of academic dishonesty will be dealt with in accordance with the provisions of this code. For more information on the University's Honor Code, please visit http://catalog.gmu.edu/content.php?catoid=22&navoid=4792.

The complete Honor Code is as follows:
To promote a stronger sense of mutual responsibility, respect, trust, and fairness among all members of the George Mason University community and with the desire for greater academic and personal achievement, we, the student members of the university community, have set forth this honor code: Student members of the George Mason University community pledge not to cheat, plagiarize, steal, or lie in matters related to academic work.
SAFE ASSIGN:
In order to develop student writing skills, and teach students more about plagiarism, SafeAssign will be used in this class. Students are expected to submit their project assignments to SafeAssign.

CAMPUS CLOSURE:
In the case the university is closed (for snow for example), we will have an online class using the Collaborate Function in BB. Please logon to BB and check your email for further information in case campus is closed during our class time.

ACCOMMODATIONS FOR DISABILITIES:
If you have a documented learning disability or other condition that may affect academic performance, you should: 1) make sure this documentation is on file with Office for Disability Services (SUB I, Rm. 2500; 703-993-2474; http://ods.gmu.edu) to determine the accommodations you need; and 2) talk with me to discuss your accommodation needs by the second week of class.

CLASS PROCEDURE:
Students will receive the greatest benefit by completing all the reading assignments in advance of class, attending class, and being active participants in classroom discussions. Sharing of opinions, ideas and questions is strongly encouraged and greatly benefits all participants. Lectures and discussion are the predominant class form of presentation and a full interchange between the professor and the student is expected. Games and in class exercises will also be used and credit depends on being present during the class the activity occurs.

CLASS PARTICIPATION AND ATTENDANCE:
Every student is expected to prepare for and attend each class and to constructively participate in class discussions. Let the instructor know in advance, should you have to plan on missing a class. Students are particularly encouraged to share their views and work experiences on various topics. Constructive actions and superior in-class discussion and participation in activities will be recorded and rewarded with a higher class participation grade. On the other hand, any destructive actions or failure to attend classes can adversely affect your class participation grade. Note that playing with cell-phone/tablet, checking e-mail, browsing the Internet, doing irrelevant work, and frequently leaving your seat are considered destructive actions. Missing classes and tardiness will negatively affect your class grade as well.

BB READING QUESTIONS/HOMEWORK EXERCISES:
Each week questions and problems based on the assigned reading(s) and online lectures will be assigned. They are designed to give you valuable practice and enable your understanding of the quantitative techniques and qualitative concepts used in supply chain management. Each week before class, an assignment will be posted on BB and is due by 10 am each Tuesday. No late assignments will be accepted. For the BB reading questions, you have three tries and unlimited time to finish the questions (as long as they are completed by 10 am each Tuesday).

Each student is responsible for learning and understanding the material and should be able to do these assignments individually. Additional problems and solutions will be posted on BB. Students are encouraged to stop by office hours to assure full understanding of course materials and assigned questions.

NEWS UPDATE:
Each week, one or more groups of two students (assigned previously) will present a news article related to supply chain management and the course. The article must come from the last two weeks or the latest issue of one of the following: New York Times, Washington Post, Wall Street Journal, BusinessWeek, The
**Economist, Time, Fortune, Financial Times or Forbes.** Each presentation should be about 5-8 minutes and the link and reference to the article (and slides if any) should be posted on the BB News Update Discussion Forum. The presentation should address the following: 1) why the topic is important from a supply chain perspective, 2) managerial significance, and 3) what the key learning points are. The ability to relate the article to class materials and clearly articulate the significance of the key learning points and quality of the presentation will determine the grade received for the presentation. It is important to relate class materials to the challenges facing business organizations currently. Coordination between partners and preparation of material and presentation are important aspects of the assignment grade.

**IN-CLASS EXERCISES:**

These are in-class learning experiences, completed in a team environment. In-class exercises are designed to reinforce the topics learned in the class. Students are typically given a fixed amount of time to work with others to complete each exercise. In-class exercises will occur at random, so you will not know when one will take place in class (but they are almost weekly). Full credit is given if you are present in class and attempt (in good faith) the exercise. They are not graded for correctness. Make-up in-class exercises are not allowed under any circumstances.

**OFFICE HOURS:**

The scheduled office hours are on Tuesdays from 1:10-1:30 PM and Wednesdays 4:30 PM -5:30 PM. Please stop by during the office hours to discuss course-related questions as soon as you have any. Don’t wait until the last minute before taking an exam or quiz! If the scheduled office hours don’t fit your schedule, feel free to make an appointment with me.

**TAKE-HOME QUIZZES:**

Four take-home (on BB) quizzes on class materials will be given in this course. Each quiz is worth 40 points. Students are NOT allowed to get help on any quiz questions from others, not even your pets! However, you are encouraged to discuss with your classmates similar problems from lecture examples and homework exercises. Each quiz will be on BB and is due by the posted date and time, usually Sunday midnight following the quiz posting. As this is electronic, there will be no late work allowed.

**EXTRA CREDIT:**

There is no extra credit.

**EXAMINATIONS:**

There are two in-class exams: one midterm and one final. The midterm will cover classes 1-6. The final is cumulative. Exams may consist of multiple choice, true-false, short answer, and problem type questions and will include quantitative and qualitative questions. The midterm and final examination are closed book and closed note exams. I will provide a formula sheet. Information presented in class, videos, slides, news updates, the book and by any guest speakers may be included on the examinations. Each student is expected to bring his/her own Scantron sheet, #2 pencils, and calculator (not cell phone/tablet) for answering multiple-choice questions in every exam. To prepare well for these exams, students should read assigned textbook chapters, review slides, read articles, and do practice problems on a weekly basis.

The scheduled exam date and covered materials for each exam can be found on the schedule page of this course syllabus. The final examination is given only at the specified time as published by the University Registrar. Please mark the exam dates on your calendar. IF YOU CANNOT TAKE THE FINAL OR MIDTERM EXAMS AT THE TIME SHOWN ON THE SCHEDULE, DO NOT REGISTER FOR THIS CLASS. NO MAKEUPS WILL BE GIVEN without a valid, per university policy, documented excuse. Missed exams not covered by a valid excuse (per University policy) will result in a grade of zero for the exam and probable failure for the class. Make-up exams may be given at the discretion of the instructor, given documentation is provided to support the
valid excuse. In case that you need to miss an exam during the semester, you are responsible to contact the instructor as soon as possible.

QUESTIONS:

All students are encouraged to bring questions, concerns and comments to my attention as soon as they arise. Please do not wait! Appeals or corrections to grades on any assignment/test/homework need to be made formally and in writing within one week of the graded deliverable being returned. A decision will be communicated in written form and the written decision is what counts, not any verbal communication. Once final grades are submitted, changes to grades will only be made to correct errors in tallying scores. In addition, there is a feedback section on BB under Discussion Board that allows anonymous (or not) comments to encourage your feedback.

EMERGENCY PREPAREDNESS

As part of our commitment to maintaining a safe learning environment, I ask that you be familiar with the basic emergency response procedures for a variety of situations including severe weather, medical emergencies, and workplace and campus violence. Please review the Emergency Preparedness Guides (http://ehs.gmu.edu/guides_EP.html). You are strongly encouraged to register your mobile phone to receive emergency notifications from Mason Alert (alert.gmu.edu). In the event of a campus emergency, you would receive instructions on how to respond.

COMMUNICATIONS:

All communications from me to you will be directed via e-mail or BB announcements. I will address all of my e-mails and replies ONLY to your @gmu.edu e-mail address for concerns of privacy and confidentiality. If you use another e-mail account as your primary e-mail, please be sure to forward your gmu e-mail to that account.

ELECTRONIC DEVICES:

Cell phones, pagers, and other communicative devices are not allowed in this class. Please keep them stowed away and out of sight. Laptops or tablets may be permitted for the purpose of taking notes only. Engaging in activities not related to the course (e.g., games, email, chat, etc.) will result in a significant deduction in your participation grade.
<table>
<thead>
<tr>
<th>CLASS</th>
<th>DAY</th>
<th>DATE</th>
<th>TOPIC</th>
<th>READING (before class) (Additional reading may be assigned)</th>
<th>DUE</th>
</tr>
</thead>
</table>
| 1     | T   | 1/19    | Introduction to Supply Chain, Syllabus, Purchasing/Procurement       | Chapter 1  
Chapter 2  
Procurement 2025 (BB)                                                                                                        | Resume/Picture due  
News Update signup in class                                                                                               |
| 2     | T   | 1/26    | Make vs. Buy Break even Total Cost of Ownership (TCO), Supplier Relationships, Pareto Principle | Chapter 3-4  
Managing the Total Costs of Global Supply Chains (BB)  
Complex Parts Case (BB)                                                                                                       | On BB before class, answer reading questions                                                                                   |
| 3     | T   | 2/2     | News Update Ethical and Sustainable Sourcing, PBL, FAR and DFAR Wal-Mart Discussion Guest Speaker | Wal-Mart Articles (link on BB)                                                                                           | Group information  
On BB before class, answer reading questions  
**Quiz 1 start**                                                                                                             |
| 4     | T   | 2/9     | News Update Demand Forecasting Sales and Operations Planning          | Online Review PPT on forecasting (watch before class)  
Handout on S&OP (TBD)  
Chapter 6 p. 165-174, 177-182, 185-200                                                                                       | Project option/ company choice  
On BB before class, answer reading questions                                                                                   |
| 5     | T   | 2/16    | News Update Inventory Management EOQ, EOQ with quantity discounts, Reorder Point, Continuous Replenishment | Online Review PPT on EOQ (watch before class)  
Chapter 7 (not p. 228-233, Economic Manufacturing Qty)     | On BB before class, answer reading questions  
**Quiz 2 Start**                                                                                                               |
| 6     | T   | 2/23    | News Update Inventory Management Review                               | Chapter 7                                                                                                               | On BB before class, answer reading questions                                                                                   |
| 7     | T   | 3/1     | Midterm                                                               |                                                                                                                           | SPRING BREAK                                                                                                                |
| 8     | T   | 3/15    | News Update Review Midterm Newsvendor Model and SC contracts          | Newsvendor Handout (BB)  
SC Contracts Handout (BB)                                                                                                     | On BB before class, answer reading questions                                                                                   |
| 9     | T   | 3/22    | News Update Newsvendor                                               | Newsvendor Handout (BB)  
SC Contracts Handout (BB)                                                                                                     | Detailed Outline Due  
On BB before class, answer reading questions                                                                                   |
| 10    | T   | 3/29    | News Update Transportation EOQ with transportation Warehousing        | Chapter 9  
Handout on pooling (BB)                                                                                                     | On BB before class, answer reading questions  
**Quiz 3 Start**                                                                                                               |
| 11    | T   | 4/5     | News Update Facility Location Methodology – Center of Gravity Global Supply Chains and Outsourcing | Chapter 11  
Handout on Center of Gravity (BB)                                                                                           | On BB before class, answer reading questions  
Project Rough draft due (optional, but encouraged)                                                                              |
<table>
<thead>
<tr>
<th>Date</th>
<th>Day</th>
<th>Topic</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>4/12</td>
<td>T</td>
<td>News Update</td>
<td>Chapter 13 SCM Software Report (BB) SC Analytics (BB) On BB before class, answer reading questions</td>
</tr>
<tr>
<td>4/19</td>
<td>T</td>
<td>News Update</td>
<td>Chapter 14 Reading the Tea Leaves Case (BB) Final Project Due Peer Evaluation due On BB before class, answer reading questions Quiz 4 start</td>
</tr>
<tr>
<td>4/26</td>
<td>T</td>
<td>News Update</td>
<td>TBD On BB before class, answer reading questions</td>
</tr>
<tr>
<td>5/10</td>
<td>T</td>
<td>FINAL EXAM Cumulative.</td>
<td></td>
</tr>
</tbody>
</table>

**PROJECT:**
Each group will choose one of the following. Intermediate deadlines are shown below and on the schedule. Teams should be 3-4 people.

- **Option 1:** Analyze and critique the supply chain management activities of an actual, LOCAL organization or part of one where a group member is employed or has a contact.
- **Option 2:** Analyze and critique the operations of a logistics company.
- **Option 3:** Prepare an operating plan to import or export one or more products
- **Option 4:** Develop the supply chain plan for an entrepreneurial venture

At a minimum (i.e., to achieve a reasonable grade) the written report should provide thoughtful and detailed coverage of the suggested topics. Only papers that creatively integrate these topics and provide a true critique of (1) supply chain operations, (2) logistics operations, (3) import/export potential, or (4) supply chain entrepreneurial plan will be considered for higher grades. In addition, outside literature is needed to support the project (e.g., magazine articles). Be sure to list the references at the end of the report. You must use materials from the company website and published sources; be sure to cite them. Failure to cite sources constitutes plagiarism.

Late projects and/or late sub-deliverables will be each penalized 10% per day.

The length of the report should be a 8-12 double-spaced pages (of text) with one-inch margins all around and excluding cover page, Executive Summary, figures, tables, exhibits, appendices, and references. Include page numbers.

**Paper Format:**
- Cover Page
- Executive Summary: Provide a one-page executive summary of the report.
- Organization (or product) Background (1-page)
- Supply Chain or Profile or Plan (4-6 pages)
- Critique and Recommendations (3-5 pages)
- References (APA or MLA format, see [http://writingcenter.gmu.edu/writing-resources/wc-quick-guides](http://writingcenter.gmu.edu/writing-resources/wc-quick-guides)) For option 1, you need a minimum of 3 sources outside the company itself, for option 2, you need a minimum of 10 sources beyond the company’s material/website) and for options 3 and 4, you need a minimum of 5 sources)
• Appendices (figures, tables, diagrams etc). Be sure to refer to these in your paper.

Option 1:
Supply Chain Profile: Identify a local organization where one of the members is employed or has a contact. Make contact and seek approval for the project. Projects should be based on current observations of the organization’s current operations.

To complete this project, your team must investigate, analyze, evaluate, and make recommendations about the supply chain management capabilities of an organization (or division/department/subsidiary of an organization). To do this, arrange to talk with or interview managers or other appropriate personnel in the organization. Starting topics/questions to guide the development of your project’s content are listed below.

Organization and Supply Chain
• What services and/or products does the organization provide? Where is it? How big is it? What industry is it in? Who are the primary customers. Are these internal or external customers?
• What are the major challenges faced by the organization and how does supply chain relate to them?
• Supply chain: Identify physical flows (goods or customers) and locations, Identify information flows.
• Diagram the firm’s supply chain.
• Sourcing. Who are primary suppliers? How are suppliers selected? How is performance monitored? Key supplier partnerships, if so, why and benefits?
• Inventory: How are orders placed (EOQ?, safety stock?) Electronic purchasing? Warehouses?
• How is demand forecasting performed?
• Do they have customer service problems? Queuing/delivery problems?
• Distribution: Are there any key logistics companies involved? Discuss trucking and warehousing services used. How are they selected? Managed? Are any of these considered key suppliers?
• Describe their inventory management systems (i.e., ERP or any other information systems used to track inventories).
• How do they measure supply chain performance?
• Do they use lean, six sigma, ISO 9000, ISO 14000? Other certifications or programs?

Information Systems
• Describe all the systems used to track inventories/customers/suppliers (MRP, ERP, CRM, SRM, JIT, warehouse management, trucking, etc.). Describe these systems and applications, how long they have been used, and problems. New systems being purchased? What suppliers were used for these systems? Do they buy applications, make own applications, use cloud-based SAAS?

Overall
• What notable improvements, if any, has the firm made in these various areas over the past 3-4 years?

If it is a Service Process: In addition to the applicable questions above, please address the following
• What types of services are provided to customers? How would you characterize the service supply chain?
• How do customers flow through these processes?
• What is the nature of service-response logistics at the establishment?
• Where does waiting occur in its service processes? What does the organization do to manage wait times? Calculate it if possible.
• What is the organization’s service capacity? Quantify it if possible. What does the organization do to manage service capacity? Manage demand? Forecasting process?

Your Improvement Recommendations
• What are your group's recommendations for improving this organization's supply chain management performance in each of the areas your team discussed?
• Critique their SCM capabilities.
• Explain and justify your recommendations. Be as thorough as possible.

Option 2:
Logistics Company Profile: Students will be asked to research a variety of questions dealing with a particular company. Choose a major logistics company and submit to professor for approval.

Suggested topics:
• Corporate Location, CEO, number of employees, web site.
• Brief history of the company, is the company public or private, what are the primary services provided by the firm, how long have they been in existence, how they evolved to their current situation, e.g., mergers, acquisitions, expansion, etc.
• Provide the most recent operating statistics, i.e., traffic volume, commodities handled, etc.
• Identify the primary markets served, include geographic as well as product and service. What kinds of transportation do they provide? Do they also offer warehousing, consolidation, end customer distribution, or assembly?
• Who are their primary competitors? Intermodal? Intramodal?
• Who are their primary customers (if you can find it)?
• Does the company have any inherent advantages? If so, identify them. (Hint: Inherent advantages may be attributable to the nature of the mode of transportation or some comparative advantage of a firm within that mode.)
• IT systems used if you can find. For example do they use online customs paperwork systems?
• Security issues and measures in place
• What are the major current issues facing the company? These may be related to issues facing all firms in this business, or issues that only this company needs to address.
• To what extent are the firm’s cost fixed? Variable? Explain and discuss.
• Is the firm subject to economies of scale, scope, density, or network economies? Explain why or why not.
• Discuss the firm’s future prospects? What are their strengths? Weaknesses? Is the firm financially and competitively viable? What are their opportunities for growth? What threats exist within and outside the firm? (SWOT analysis)
• What actions does the company need to take to continue to prosper or to become more prosperous?

Option 3:
Import/Export Group Project: Assume that you are managing a new product line and have been tasked with preparing an operating plan to import or export one or more products. The plan should indicate how you intend to operate the import or export business. In the plan, describe the procedures you will use to undertake the business. This should be written as a proposal to your boss/partner. Factors that may be considered in the plan include:

• Products to be imported or exported
• Why this is a good product to import/export – potential sales and customers
• Brief description of sourcing country or export market
• Choice of supplier or distributor
• Security concerns and measures to take
• Methods of transportation
• Use of intermediaries
• Inventory and warehousing policy (EOQ, newsvendor, etc)
• IT Systems needed
• Financing requirements
• Terms of sale

Option 4:
Supply Chain Plan for an Entrepreneurial Venture: (Can have a single team member, must talk to me first.) Do you have plans to start a business? Use this opportunity to develop your plans and specifically your supply chain plans. The plan should include your idea, target market, and the steps you are taking to make the plan a reality. This should be written as a business model for your potential investors. Factors that may be considered in the plan include:

• Product
• Why this is a good product – potential sales and customers
• Target price
• Rough design
• Materials to be used
• Estimated cost
• Business licenses needed, trademarks, patents, regulations, etc.
• Possible sources (make, buy from x country, etc.) and pros/cons of each
• If you will make it, how/where will you source materials, where will you make it, labor plan
• If possible, actual suppliers that could be used
• Inventory – initial amounts (i.e., make to order or order a container full, EOQ or newsvendor, etc)
  Where will you store it?
• Methods of transportation and cost from supplier
• Distribution to customers – How will you sell to customers (stores, Amazon, Home Shopping Network, website, kickstarter, etc)? How will you deliver to customers and what will it cost?
• Financing requirements (how much money do you need to get this going?)
• Timeline

Due Dates:

<table>
<thead>
<tr>
<th>Date</th>
<th>Due</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>2/2</td>
<td>Team Member List (5 points)</td>
<td>List of names via email</td>
</tr>
</tbody>
</table>
| 2/9   | Option chosen and supporting information due (10 points) | Company name and local contact for option 1  
  Two choices for option 2 (to prevent duplication)  
  One paragraph describing product for option 3  
  One paragraph describing entrepreneurial idea for option 4 |
| 3/22  | Detailed Outline (10 points)                 | An outline of your paper including major and minor topics in the order covered.  
  Details under those topics should be filled in. This does not need to include references, but you should have done research by this point. |
| 4/5   | First submission (optional)                   | This should be a completed version of your paper with complete references. I will provide feedback in 1 week. |
| 4/19  | Final Paper (75 points)                       | Incorporate feedback                                                   |
| 4/19  | Peer Evaluation (optional)                    | On BB                                                                  |