TOPLAND UNIVERSITY
105 Cas Coraweg, Willemstad, Curacao, Kingdom of the Netherlands.
Email Us: office@toplanduniversity.edu.cw Visit Us: https://toplanduniversity.edu.cw Phone: +59995151513

NAME:	**ECHO JOSEPH**
PROGRAM:	**MASTER OF BUSINESS ADMINISTRATION, MBA in LOGISTICS AND SUPPLY CHAIN MANAGEMENT**
REG. NO.:	**MBALSCM/TLU-00116EJ**
ACADEMIC SESSION:	**2025/2026 SESSION**
YEAR/SEMESTER:	**FIRST/SECOND**
DATE:	**OCTOBER 22, 2026**
INSTRUCTION:	**ANSWER ALL THE QUESTIONS**

SECOND SEMESTER RESEARCH WORKS FOR MASTER OF BUSINESS ADMINISTRATION [MBA] DEGREE PROGRAM IN LOGISTICS AND SUPPLY CHAIN MANAGEMENT

RESEARCH OBJECTIVES

The research works on the under-listed courses are designed to enable the student achieve the following objectives:

1 To expose the student to the rudiments of effective research backed up with empirical case studies to discuss and to have proper understanding of the courses as researched upon.

2 To enable the student be able to carry out independent self-studies at the post graduate levels.

3 To enable the student apply the knowledge acquired from the various courses researched on at real life scenario like at the work places and to participate on contemporary business related discussions as occasion may demand.

4 To apply the knowledge acquired from the various course to a real life situation towards solving problems at work places.

5 With the knowledge, graduates of these courses can effectively render consultancy services based on their various professional and academic certifications.

6 It is further to enable the student to begin to think of undertaking further study with additional in-depth research works up to doctoral level.

7 It will further enable the students at the completion of their programs be able to compete alongside their counterparts in such similar areas of study globally based on current trends and demands.

NECESSARY INSTRUCTIONS
ON HOW TO ANSWER THE RESEARCH QUESTIONS

This program is a Master of Business Administration (MBA) degree program. Therefore students are advised to follow the following steps in answering the questions:

1 The research student is expected to attempt all the questions

2 There are four courses and each of the course carry four questions each with their sub questions

3 Each of the questions with the sub questions should be presented in a chapter form. Since there are four questions for each of the courses, it implies that each course should be presented in four chapters.

4 State the chapter first, then the questions as written in the research document, before answering.

5 At the end of answering all the four questions for each of the courses, there should be references at the end.

6 The typing should be in 14 point (size), with 1.5 line spacing and well justified

7 Students are to use the recommended text books as stated in the study time table to answer the questions unless otherwise directed contrary by the academic supervisor.

8 All research works must be submitted within four months.

9 Should the student not meeting up to the four months period for submission of all works, he/she should apply for extension not more than two weeks.

10 All submissions should be sent to the academic supervisor's direct email mbagwuignatius11@gmail.om for assessment.

STUDENT NAME:	**ECHO JOSEPH**
PROGRAMME:	**MASTER OF BUSINESS ADMINISTRATION [MBA]**
FACULTY:	**BUSINESS AND MANAGEMENT SCIENCES**
DEPARTMENT:	**LOGISTICS AND SUPPLY CHAIN MANAGEMENT**
COURSE:	**SUPPLY CHAIN ANALYTICS; DESIGN AND INFORMATION MANAGEMENT**
COURSE CODE:	**SCM 640**
UNIT:	**2**
BOOK:	**SUPPLY CHAIN NETWORK DESIGN: Applying Optimization And Analytics To The Global Supply Chain**
AUTHORs:	**MICHAEL WATSON; SARA LEWIS; PETER CACIOPPI AND JAY JAYARAMAN**

STUDY COURSE OUTLINES

WEEKS	TOPICS	PAGES

Week I

Introduction and Basic Building Blocks

Week 2

The Value of Supply Chain Network Design

Week 3

Intuition Building with Center of Gravity Models

Week 4

Locating Facilities Using a Distance-Based Approach

Week 5

Alternative Service Levels and Sensitivity Analysis

Week 6

Adding Capacity to the Model

Week 7
Adding Costs to Two-Echelon Supply Chains
Adding Outbound Transportation to the Model

Week 8
Introducing Facility Fixed and Variable Costs

Week 9
Baselines and Optimal Baselines

Week10
Advanced Modeling and Expanding to Multiple Echelons
Three-Echelon Supply Chain Modeling
Adding Multiple Products and Multisite Production Sourcing

Week 11
Multi-Objective Optimization
How to Get Industrial-Strength Results
The Art of Modeling

Week 12
Data Aggregation in Network Design
Creating a Group and Running a Project
Case StudyWrap Up
Case Study: JPMS Chemicals Case Study

THE RESEARCH QUESTIONS

[D] COURSE: SUPPLY CHAIN ANALYTICS; DESIGN AND INFORMATION MANAGEMENT [CODE SCM 640]

1a Fully discuss the basic building blocks that are very obvious in supply chain analytics; design and information management as being applied by corporate business organizations. Discuss this with the relevant case studies to drive home your views for proper clarity.

b Network design is a vital tool for organizational successes and market penetration. You are therefore required to critically discuss the value of supply chain network design for proper market penetration and optimization of gains or profits. Apply illustrative models in this discussion.

c With vivid explanatory frameworks and models, carefully present illustrative discussions on intuition building with center of gravity models reference to supply chain analytics; design and information management

2a Discuss how your organization can locate facilities for effective operational efficiency and effectiveness using a distance-based approach in a typical supply chain analytics, design and information management operational business setting.

b Present a model based discussion on alternative service levels and sensitivity analysis and carefully explain what an organization in competitive business environment is likely to enjoy by such application in a supply chain analytics and design.

c How can a corporate organization add capacity to a model being designed for proper corporate efficiency and optimization? Discuss this using a proper simulative strategy to create real life scenario.

3a What do you understand by two-echelon supply chains**?** With the necessary models and analytics, discuss how costs can be added to two-echelon supply chain for proper analytics, design and information management as the case may be.

bi Explain with the necessary models how outbound transportation can be added to supply chain operational activities in a typical distribution company where you are working as one of the sales representatives in the distribution department of the company. Discuss this with a typical operational framework

ii Present a discussion on data aggregation in Network Design reference to supply chain analytics, design and information management.

ci Carefully discuss with necessary frameworks the introduction of facility fixed and variable costs in operational system of supply chain design and information management.

ii Explain Baselines and Optimal Baselines and why are they necessary in supply chain analytics, design and information management?

4a Discuss on the following and their implications to supply chain analytics, design and information management

- Advanced Modeling and Expanding to Multiple Echelons
- Three-Echelon Supply Chain Modeling
- Adding Multiple Products and Multisite Production Sourcing

bi Write on multi-objective optimization and its nexus to supply chain analytics, design and information management.

ii Explain the ideology of multi-objective optimization with reference to supply chain analytics, design and information management.

ci How can an organization get or achieve industrial-strength results in a typical competitive market?

ii Explain the art of modeling in operational supply chain business system. Apply empirical examples in the explanations.

iii Explain how an organization can create a group and run a project in typical supply chain operations, designs and information management. Use a necessary case study for this discussion.

NOTE:

1. The academic second semester work, starts October 22, 2026 and ends February 22, 2027.
2. You are to pay Examination Fee of ₦20,000.00 for each course. (Compulsory Payment)
3. Each course should contain a minimum of 20 pages.
4. The front page should be properly addressed. A sample will be sent to you on your request.
5. All the research works must be approved by the supervisor.

Thanks and wishing you success in your academic research.

Prof. Mbagwu Ignatius N. PhD, PhD, ***FCAI, FCPA, FMA, FFC*****,** ***FIDP*****,** ***FSBPA***
Supervisor
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