

Use MUST logo with DU008(B)

MASTER OF SCIENCE IN TRANSPORTATION & LOGISTICS

(R3/840/7/0013)(12/27)(A8621)

The Master of Science in Transportation and Logistics Programme offers an opportunity for recent graduates as well as working professionals from backgrounds such as engineering, science, or business to venture into the fast-growing and dynamic field of transportation and logistics. Those who wish to upgrade their knowledge and professional skills are also provided an opportunity to conduct research at an advanced level and acquire practical knowledge and theories needed to launch or enhance a supply chain career. Graduates of the programme will be prepared for careers in academic, government or managerial and planning positions in a variety of industries in freight transportation, warehousing, as well as manufacturing.

PROGRAMME DETAILS

- ✓ **INTAKE:** January, April, June, August
- ✓ **STUDY MODE:** Blended Learning
- ✓ **DURATION:** Flexible program duration ranging from 18 months to 36 months

ENTRY REQUIREMENTS

- Applicants holding Bachelor's degree with CGPA of 3.00 or above or an equivalent qualification in a relevant field from a recognized university.
- In special circumstances, applicants with Bachelor's degree with CGPA lower than 3.0 and minimum 5 years of relevant work experience may be considered for admission.
- Applicants with a Bachelor's degree with CGPA lower than 3.0 and without working experience may be considered for admission to the Structure C (by coursework only) of the program.

LANGUAGE PROFICIENCY REQUIREMENTS:

- Test of English as a Foreign Language (TOEFL) at a score of 550, or higher.
- International English Language Testing Services (IELTS), a minimum overall score of 6.0.
- Provide proof of English proficiency as evaluated by MUST.



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CORE SUBJECTS

- ✓ MTL501 TRANSPORTATION SYSTEMS (4CH)
- ✓ MTL506 TRANSPORTATION POLICY AND STRATEGY (4CH)
- ✓ MBA3243 AI AND BUSINESS ANALYTICS (3CH)
- ✓ MTL513 SUPPLY CHAIN MANAGEMENT AND DESIGN (4CH)
- ✓ MTL510 LOGISTICS SYSTEMS (4CH)
- ✓ UCC504 RESEARCH METHODS (4CH)
- ✓ MBA1094 SUSTAINABLE SUPPLY CHAIN (3CH)
- ✓ MBA3311 RESEARCH PROJECT (6CH)

ELECTIVES * Students are required to choose 2

- ✓ MBA1114 OPERATIONS MANAGEMENT
- ✓ MTL505 MARITIME LOGISTICS
- ✓ MTL520 LOGISTICS PERFORMANCE MANAGEMENT
- ✓ MTL503 TRAFFIC AND FLOW MANAGEMENT
- ✓ MTL504 CARRIER SYSTEMS
- ✓ MTL509 PUBLIC TRANSPORTATION SERVICE AND OPERATIONS

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CSSCP CERTIFICATION

CSSCP

Certified Sustainable
Supply Chain
Professional

ISCEA

1

A comprehensive supply chain education course that integrates real industry examples of sustainable supply chain in practice.

2

100% scholarship for worldwide recognized professional certificate worth RM5,000.

3

Can lead to higher-paying roles and more lucrative projects.



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PROGRAMME SYNOPSIS

MTL501 TRANSPORTATION SYSTEMS

The course provides an understanding of the world of transportation: why it matters and where it fits; how it works; and how to model it. It will introduce students to the techniques to model systems. Introduce the fundamental elements and issues shaping passengers. Analyse transportation system in society and measures of system effectiveness on many dimensions, including the economy, environmental, and political. Covers deterministic and stochastic models of system performance and level of service and determinants of transportation travel demand. Analyse transportation networks including predictions of cost and service quality. Considers the design of transportation service and facilities for various modes and intermodal operation. Institutional and policy issues are addressed.

MBA3243 AI AND BUSINESS ANALYTICS

This course delves into the dynamic integration of Artificial Intelligence (AI) and Business Analytics within business operations, emphasizing the transformative role of digital technologies in shaping modern business landscapes. It provides a thorough introduction to digital transformation, AI, and their influence on the digital economy and business models. Students will explore critical technologies such as machine learning, natural language processing, and computer vision, and their applications across various business sectors including finance, customer service, and supply chain management. The big data analytics, data governance, and the foundational aspects of machine learning that underpin effective AI solutions. Special attention is given to enhancing customer experience and optimizing digital operations and supply chain through smart AI strategies. Additionally, the course addresses the strategic management of innovation and change within organizations, alongside the financial implications and ethical considerations of AI investments. Combining theoretical insights with practical applications, this course features lectures, case studies, and hands-on projects that equip students with the skills to harness AI for strategic decision-making and business innovation. This comprehensive approach ensures students are well-prepared to navigate and lead in the evolving landscape of business technologies.

MTL506 TRANSPORTATION POLICY AND STRATEGY

Transportation Policy and Strategy is a survey course of current concepts, theory and issues in the strategic management of transportation organizations. Designed for graduate transportation, logistics, planning and engineering systems student, the objective of this course is to provide students with an overview of the operating context, leadership challenges, strategies and management tools that are used in today's public and private transportation organizations. As transportation operations occur within an environment where the roles of public and private organizations are often blurred, this course focuses on the patterns of conflict and consensus between government and industry in transportation. The following concepts, approaches and issues are presented: alternative models of decision making, strategic planning (e.g., use of SWOT analysis and scenario development), stakeholder valuation and analysis, government-business regulation and cooperation within the transportation enterprise, disaster communications, change management and the impact of globalization.

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PROGRAMME SYNOPSIS

MTL513 SUPPLY CHAIN MANAGEMENT AND DESIGN

This course provides an overview of supply chains and their operating principles and strategies for managing them. The course will identify functional components of supply chains, their linkages and interactions. The course will outline the hierarchy of decisions to be made in supply chains and the key considerations that play a role in making those decisions. The course will present strategies for managing supply chain functions such as Aggregate Planning, Inventory Management, Distribution, Procurement, Outsourcing and Transportation Planning. The course will demonstrate the value of information and coordination in promoting efficiency in supply chains. The role of Information Technology and Decision Support Systems, Performance Metrics and international issues will also be discussed.

UCC504 RESEARCH METHODS

In this course, students will be provided various research methods for primary and secondary data analysis and a framework for conducting business research in a systematic manner. Students will be exposed to practical guidance in research proposal writing using scientific enquiry process for social science studies in business environment. This course is also designed to help students inculcate the art of building and presenting research work efficiently that is very systematic and yet informative manner.

MBA331I RESEARCH PROJECT

The project offers students the opportunity to undertake an individual piece of research that students should find both challenging and interesting. Students will be allocated a supervisor who will offer guidance and whom students will meet on a regular basis. The choice of topic is their own with respect to the programme of study and area elected which is business related and their supervisor will advise on its feasibility and suitability. Students will initially be required to submit a research topic and a research proposal. On completion of the research, students will have to submit a report 15,000 words in length. Students will be assessed on their management of the project, the methodology, the intellectual quality and originality of their work, and the structure and coherence of the report.

MTL510 LOGISTICS SYSTEMS

In this course, we will introduce logistics systems within the larger context of supply chains and identify their scope and functions. Logistics inherently involves making smart trade-offs between competing considerations and we will present models and tools for understanding, analyzing and optimizing logistics systems, recognizing the trade-offs involved. The course would cover demand forecasting techniques including time series methods and regression, lot sizing and deterministic inventory models, trade-off between transportation and inventory, safety-stock and stochastic inventory models, multi-period and multi-echelon inventory models, revenue management, queuing models and applications, vehicle routing and scheduling and supply chain design. The emphasis will be on applying modeling techniques and solving problems using computer-based tools.

MBA1094 SUSTAINABLE SUPPLY CHAIN

This course focuses on the role of management and how international logistics and supply chain management can function as a source of competitive advantage. In addition, the course will provide students with knowledge about the use and impact of e-commerce in logistics and supply chain management.



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MBA1114 OPERATIONS MANAGEMENT

This course deals with the central issues in operations management, especially those related to design and implementation of a successful operations strategy. These issues include production and capacity planning, facility location and production allocation for multi-plant operations, global operations management, and response time management. This course draws examples from many industries including service sectors and covers a variety of frameworks and quantitative tools for analyzing operations problems.

MTL520 LOGISTICS PERFORMANCE MANAGEMENT

This course aims to provide you with a comprehensive understanding of the logistics performance, its tools and strategies needed to achieve the firms overall competitiveness while aligning its performance to manufacturing, distribution and transportation.

MTL505 MARITIME LOGISTICS

Ocean transportation is currently the most commonly used transportation mode between continents. Maritime Logistics focuses on all the activities related to this seaborne transportation. This course provides an overview of the principles and operations of international maritime logistics, especially movement of cargo through maritime infrastructures and carriers and the interactions of the land and sea modes to shipping. The important systems that affect international freight and maritime activities will be explained as well as the operations of the key components of the systems. Basic theories and strategies incorporating key factors affecting decision making for maritime logistics management will be discussed and students will learn to apply these concepts by conducting case studies.

This publication contains information, which is current as of January 2025. Changes in circumstances after this date may impact upon the accuracy or timeliness of the information. Malaysia University of Science and Technology (MUST) does its best to ensure that the information contained herein is accurate, but reserves the right to change any information described in this brochure without notice. Readers are responsible for verifying information that pertains to them by contacting the university

