DEPARTMENT OF LOGISTICS

STELLENBOSCH UNIVERSITY

POSTGRADUATE DIPLOMA:

TRANSPORT AND LOGISTICS

2023

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1 February 2023

POST GRADUATE DIPLOMA IN TRANSPORT AND LOGISTICS: MODULES

Anchor programme:

PGDip (Transport and Logistics)
Programme module

Code	Module	Credits	Module Name
13760	778	120	Transport and Logistics Studies

Student profiles (the programme content will vary dependent on the prior learning of the student):

A	Students with **NO** previous (undergraduate) qualifications or exposure to Logistics Management or Transport Economics
B	Students **WITH** previous (undergraduate) qualifications or exposure to **Logistics and Supply Chain Management** (on 3rd year) but **NO** Transport Economics under graduate exposure/ experience.
C	Students **WITH** previous (undergraduate) qualifications or exposure to **Transport Economics** (on 3rd year) but **NO** Logistics and Supply Chain Management under graduate exposure/ experience.
D	Students **WITH** previous (undergraduate) qualifications or exposure to **Logistics and Supply Chain Management AND Transport Economics** (on 3rd year).

All students must register for and pass a total of at least 8 modules (for a total of 120 credits). Depending on the undergraduate background, the number of compulsory and elective modules will differ. The tables below outline the compulsory modules per student profile listed above, as well as the elective modules that can be followed in both the Logistics and Supply Chain (LSCM) Management and Transport Economics focus areas.

COMPULSORY MODULES FOR 2023					
Module acronym	**Module [profile compulsory for]**	**Code**	**Semester**	**Lecturer**	**Credits**
Intr_TE	Intro to Transport Economics [A] [B]	13474 711	1	Mr R Kgwedi	15
Intr_LM	Intro to Logistics Management [A] [C]	13475 711	1	Ms G Khumalo	15
An.T&T.	Analysis Tools and Techniques [A] [B] [C] [D]	13477 711	1	Prof JH Nel	15
SM	Supply Management [A] [B] [C] [D]	11480 771	1	Prof LL Goedhals-Gerber & Ms C Lalendle	15

NOTE: *D3 – Analysis Tools and Techniques* cannot be taken by students that had *Business Analytics* as a major for their undergraduate degree, or that passed *LSCM 344* at Stellenbosch University.

ELECTIVE MODULES FOR 2023 – LOGISTICS AND SUPPLY CHAIN MANAGEMENT FOCUS					
Module acronym	**Module**	**Code**	**Semester**	**Lecturer**	**Credits**
Intr_Forc.	Introduction to Forecasting	10911 723	1	Mr HW Freiboth	15
CS_LM	Capita Selecta (Logistics – Strategy, Performance & Risk Management) *	11571 771	1	Ms UI Kussing	15
Viz_SCA	Visual Supply Chain Data Analysis**	14227 774	1.2 & 2.1	Prof JJ Louw & Mr HW Freiboth	15
Cust.S&L	Customer Service and Logistics Interface Management	11485 722	2	Ms A de Bod	15
A, B, C & D: Choose at least two of the above modules * Pass prerequisite: Logistics and SC Management 324 ** Selection criteria will be applied (computer literacy & computational thinking)					

ELECTIVE MODULES FOR 2023 – TRANSPORT ECONOMICS FOCUS					
Module number	**Module**	**Code**	**Semester**	**Lecturer**	**Credits**
Road_TM	Road Transport Management	59145 744	1	Mr M October & Mr JA van Rensburg	15
Maritime	Maritime Economics	14024 773	1	Prof S Krygsman & Mr R Kgwedi	15
ITTL	International Trade Transport Infrastructure and Logistics	13076 744	2	Mr JA van Rensburg	15
Urban_TE	Urban and Regional Transport Economics	59153 742	2	Mr M October	15
A & B: Choose at least one of *Road_TM* or *ITTL* **C & D:** Choose at least two of the above modules					

ADDITIONAL ELECTIVE MODULE FOR 2023					
Module number	**Module**	**Code**	**Semester**	**Lecturer**	**Credits**
Forec.	Forecasting [Operations Research]*	10933 753	2	Prof JH Nel	15
**Forecasting (OR)* can be chosen if a student passed the *Introduction to Forecasting* module in the first semester. This module has a very strong quantitative focus and is only recommended to students that had *Business Analytics* as a major at undergraduate level.					

OVERVIEW

The Diploma in Transport and Logistics will provide graduate students with no prior Logistics Management or Transport Economics training with the core knowledge and skills about Transport Economics and Logistics Management. The qualification is thus aimed at people entering the business or professional environment that are suitably qualified in a specific field of knowledge, but lack the Transport and Logistics management background. It provides the opportunity to students to ensure a competitive advantage and to broaden career prospects. The qualification is also aimed at BCom Logistics and Transport Economics students that want to further their education, without having to complete an Honours research project.

MINIMUM ADMISSION REQUIREMENTS

The minimum admission requirement is a three-year Bachelor's degree in any field. Applicants in possession of a three-year Bachelor's degree must have at least 55% in their core subjects.

Students with no or limited experience in Logistics Management and Transport Economics, are required to enroll for the introductory modules (Introduction to Transport Economics and Introduction to Logistics Management). Students with Logistics or Transport Economics at third year level may not enroll for the introductory modules. They enroll for more elective modules.

DURATION

One year full-time from January to November.

VENUE
The programme is presented on the main campus of Stellenbosch University in Bosman Street, Stellenbosch.

COURSE FEES

The course fee amounts are available from the Student Fees department of Stellenbosch University. Request a quotation at: http://www.sun.ac.za/english/maties/fees/provisional-statement-of-fees-(quotation)

STUDY MATERIAL

Text books are used in the modules in the programme and details are made available at the beginning of each module.

NQF LEVEL AND CREDITS

This postgraduate diploma is presented at NQF level 8 (120 credits).

LECTURES

All modules will be presented in English.

MODULE LECTURERS

The lectures are primarily presented by lecturers of the Department of Logistics at Stellenbosch University. Occasionally, lectures are presented by guest speakers.

ASSESSMENT & EXAMINATION

Student progress is monitored by means of a continuous assessment scheme. Assessment schemes tend to be classical, focusing on individual performance, while allowing some credit for group work. Schemes may differ from module to module but will mainly fall in the following categories:

- Short class tests covering pre-reading on preparation;

- A final comprehensive test evaluation higher order learning outcomes, mainly integration by means of case studies or other applications;
- Individual or group assignments; and
- Case studies – written analysis or presentations.

APPLICATION

The application process is as follows:

- For current students of Stellenbosch University – apply electronically on www.mymaties.com (Administration A contact: Mr J Flandorp, jacquin@sun.ac.za, 021 808 4383)
- For new students – apply electronically on www.maties.com or send an email to info@sun.ac.za contact 021 808 9111 (Administration A contact: Mr J Flandorp, jacquin@sun.ac.za, 021 808 4383)

The closing date for applications is 30 September for international applicants and 31 October for South African applicants.

SELECTION

Only a limited number of students are accepted each year on the ground of their qualifications and/or performance in bachelor's degree.

The selection process will commence soon after the closing date for application whereafter students will be notified per e-mail whether they are accepted into the programme.

Applicants who are accepted into the programme will receive additional information per email. The information will include a list of important dates and a confirmation letter that has to be completed and returned to the Department of Logistics to verify participation in the programme.

GRADUATION

The Post-Graduate Diploma will be awarded to successful students during the December or March graduation ceremony. This post-graduate diploma will represent 120 credits on the NQF level 8.

CONTACT DETAILS

Further information can be obtained from:
Ms JM Van der Merwe
Room 3004, Van der Sterr building
021 808 4172
jacomienvdm@sun.ac.za

PROGRAMME DESCRIPTION

From the largest manufacturers to the smallest producers, any company that purchases and/or sells products, has a need for logistics professionals to manage the flow of products and information locally, nationally and internationally. Service entities like hospitals and restaurant chains must also manage logistics activities. The emphasis in this programme is on strategic, tactical and operational management of the supply chain of a business, and secondly, on transport planning and investment in transport infrastructure in the public and private sectors.

PROGRAMME OUTCOMES

The Post graduate Diploma in Transport and Logistics equips graduates with the ability to:

- analyse the supply chain processes;
- analyse management and economic principles in air, maritime and overland transport;

- analyse facility management with regards to port operations, warehouse management and material handling; and to
- synthesize the complex and multifaceted issues in transport planning and appraise modal options available.

On accessing, processing and managing information and producing and communicating information, the Post graduate Diploma in Transport and Logistics equips graduates with the ability to:

- gather and synthesize relevant information from relevant sources for investigating specific logistic and transport problems;
- use appropriate tools to process and manage logistics and transport data and information; and to
- manage relevant data and information and effectively communicate such information in written documents.

On, ethics and professional practice, management of learning and accountability, the Post graduate Diploma in Transport and Logistics equips graduates with the ability to:

- work with public and private sector groups and understand the nature of interactions that can generate the collaborative and creative actions to deal with issues in transport and logistics, and
- to be responsible in managing the processes in the transport and logistics contexts.

FREQUENTLY ASKED QUESTIONS

Who qualifies for the Post Graduate Diploma in Transport and Logistics?

Anybody with an undergraduate degree that did NOT specialise in Logistics Management and/or Transport Economics can apply for the programme. BCom Logistics Management or Transport Economics graduates that do not qualify or are not accepted in the Honours programmes can apply for this programme. The programme is aimed at broadening your career possibilities. During the selection process undergraduate marks and all other qualifications and experience are taken into consideration. It is our aim to protect the quality of the interaction during lectures – therefore a selection process does apply and we do not simply allow all applicants to participate. Applicants are welcome to include in their applications any motivational letters or information that could increase their selection potential.

When is the closing date for applications?
The closing date for applications is 31 October.

But my final marks are not yet available on 31 October when the applications close?
Students are conditionally selected based on their available marks – when the programme commences in January of each year students have to provide proof of the completion of their degree. If the student only graduates in March/April graduation ceremony of Stellenbosch University, a letter of proof from administration is also acceptable.

When will I know whether I have been accepted for the Post-Graduate Diploma in Transport and Logistics?
Selection for the programme usually takes place during the first three weeks of November whereafter applicants are notified by e-mail whether their applications were successful. More information about the programme is also provided.

Is this a part time programme?
The Post-Graduate Diploma in Transport and Logistics is a FULL-TIME programme and participants are NOT allowed to have full-time jobs. Lectures will take place during the day.

DETAILED MODULES

13474 711 Introduction to Transport Economics

Course objective

Transportation plays a critical role in the economic development of societies. In many instances, countries with well- developed transport industries and infrastructures have seen faster rates of economic development and have become highly competitive in the global market. Therefore, it is imperative that those involved in the operational, tactical and strategic sectors of the transport industry possess a thorough background of appropriate knowledge required to achieve the benefits associated with transportation. In this module a selection of topics relevant to the functions of transport, elements of transport demand, infrastructure provision, sustainable transport and technology, transport policy and regulation, modal cost structures and the economic evaluation of transport projects will be covered.

Course Content

CHAPTER 1: TRANSPORT, ECONOMY, AND SOCIETY
Introduction
The functions of transport
The components of transportation
Transportation and space
The economic characteristics of transport

CHAPTER 2: TRANSPORT SYSTEM AND MODES
The elements of a transport system
Transport modes
Intermodal transportation and modal competition

CHAPTER 3: TRANSPORT PLANNING AND DEMAND ANALYSIS
Transport planning and governance
Transport safety and security
The factors influencing the demand for transport
Transport demand analysis

CHAPTER 4: TRANSPORT AND ECONOMIC EVALUATION
Income distribution aspects
Transport economic project evaluation

CHAPTER 5: URBAN TRANSPORT AND INNOVATION
Transportation and the urban form
Urban land use / urban form and transportation
Urban mobility
The urban transport challenges and solutions
Transport, sustainability, and innovation

Remarks

1. The module is presented during the first semester.
2. The module carries 15 credits.
3. This module is compulsory for students with NO previous (3rd year) qualifications or exposure to Transport Economics.
4. This module cannot be taken by students that had Transport Economics as a major for their undergraduate degree.

13475 711 Introduction to Logistics Management (*Intr_LM*)

Course objective

The student should be able to describe the basic functioning of a logistics channel. It is important to identify, illustrate and appreciate the contribution of all the major activities involved in logistics. The student should be able to articulate the major differences between the inbound and outbound logistics systems.

Course content

1. Introduction to Logistics & Supply Chain Management
2. Dimensions of Logistics
3. The Inbound Logistics System
4. The Outbound Logistics System
5. Major Activities involved in Logistics (Inventory Management, Transport, Storage, Packaging, Handling, Documentation, etc.)

Remarks

1. This module is presented during the first semester.
2. The module counts 15 credits.
3. This module is offered residentially only.
4. This module is compulsory for students with NO previous (3rd year) qualifications or exposure to Logistics or Supply Chain Management.
5. This module cannot be taken by students that had Logistics or Supply Chain Management as a major for their undergraduate degree.

13477 711 Analysis Tools and Techniques (*An.T&T.*)

Course objective

The increasing availability of data and computational power, combined with the general tendency of managers to base decisions on proper analysis of data, increases the demand for employees with analytical skills. This course aims to introduce students to analytical tools and techniques to be able to solve basic problems as well as recognise the opportunities for improvements in the operational environment, through the application of the learnt knowledge and skills or by related but more advanced techniques.

Course content

1. Business mathematics and Excel
2. Linear programming
3. Network modelling
4. Queueing Theory
5. Simulation

Remarks

1. This module is presented during the first semester.
2. The module counts 15 credits.
3. This module is offered residentially only.
4. This module is compulsory for students with NO previous (3rd year) qualifications or exposure to Quantitative Management or Business Analytics.

5. This module cannot be taken by students that had Quantitative Management or Business Analytics as a major for their undergraduate degree.

11480 771 Supply Management (*SM*)

Course objective

It is important for a business to analyse logistics processes and to focus on streamlining the processes. The business should consider practises to minimise logistics environmental impact and waste. Aspects such as warehousing, packaging and materials handling activities should be considered. Product delivery through transport service providers should be coordinated.

Course content

1. Global procurement and sourcing
2. Supplier management
3. In-house and outsourced production operations and supply chain execution
4. Warehousing
5. Materials handling
6. Packaging
7. Transportation (inbound and outbound)
8. Reverse logistics

Remarks

1. This module is presented during the first semester.
2. The module counts 15 credits.
3. This module is compulsory for all PGDip (Transport and Logistics) students.

10911 723 INTRODUCTION TO FORECASTING (*Intr_Forc.*)

Course objective

Customers and business organisations are increasingly generating data – massive amounts of data. At the same time, we have seen increases in computer processing power that allows us to connect to, clean, structure and analyse large data sets with relative ease. This holds exciting possibilities from economic and management perspectives, if we can utilise this data to search for trends, patterns, and relationships, to make better decisions and plan for the future.

The aim of this module is to familiarise you with the data analytics process, specifically focussing on real-world data from the supply chain, logistics and transportation disciplines. Not necessarily “big data”, but hopefully larger datasets than you would have dealt with during your undergraduate studies. You will also learn how to use suitable software packages to clean datasets and to perform appropriate analysis on the data, whether it is descriptive, diagnostic, or predictive analysis, and ultimately interpret and share the results in appropriate ways.

Course content:

1. Elementary statistics
2. Probability theory
3. Statistics and data, data types, data classification, data analytics process
4. Data collection, -connection, -preparation, and –exploration
5. Descriptive techniques (numerical and graphical)
6. Diagnostic techniques (hypothesis testing, correlation- and regression analysis)

7. Predictive techniques (time series analyses and forecasting)
8. Communicating results

Remarks

1. The module is presented during the first semester.
2. The module carries 15 credits.
3. This module is available to residential students only.
4. This module is compulsory for all PGDip (Transport and Logistics) students.
5. Passing this module is a pass prerequisite for Module 25 (Forecasting).
6. Students who have taken Operations Research 3 may not follow this module.

11571 771 CAPITA SELECTA (Logistics – Strategy, Performance & Risk Management) (*CS_LM*)

Course objective

The aim of this module is to expand on the content covered during LSCM324. While the focus at an undergraduate level was mainly theoretical in nature, the focus of this module will be the practical application of theory in real supply chain environments. We will try to answer, for example, the following questions:

- Which supply chain strategy is appropriate for various product-market combinations?
- What implication does supply chain strategy have for the logistics activities within an organisation?
- How can a company measure whether their supply chain is helping them to achieve their strategic goals?
- What are the main risks that supply chain managers should be aware of?
- How can supply chain resilience be increased in order to decrease the impact of supply chain disruptions?
- What business continuity measures should organisations have in place to ensure the continuity of their logistics operations?

This is a new module for which most of the content is still under development. Classes will only start in March. During the first lecture, you will receive further details on module content.

Course content

1. Supply chain strategy and orchestration
2. Supply chain performance measurement and management
3. Supply chain risk management
4. Business continuity management

Remarks

1. This module is offered during the first semester.
2. This module counts 15 credits.
3. The module is offered residentially only.
4. PGDipl students that want to take this module can only do so if they have completed the Logistics and Supply Chain Management (LSCM) 324 module at Stellenbosch University.

14227 774 VISUAL SUPPLY CHAIN DATA ANALYSIS

Course objective

Students following this module, can develop important analytical competences and be able to visually present and communicate supply chain (SC) related data more effectively. Students will be introduced to the structured process of "exploratory data analysis"; with a time-efficient progression from raw SC data to information to insight. This module covers inter alia the different ways to connect to a variety of types of data sources, doing exploratory data analyse and visualisation, and answer the questions at hand. The foundation of data visualization techniques and -principles, effective data analysis techniques and visualization best practices will be covered. Although an overview of current analytical tools will be done, this module will only focus on the correct use of one or two of the prominent data visualization software packages.

Course content

- Visualization theory, related concepts, terminology and different visualization types.
- The structured "exploratory data analysis" process (e.g. data collection, pre-processing, definition, structuring, organizing, simplifying, cleaning, coding, hierarchies, formatting, testing, exploring).
- Dealing with different data sources (doing joins and blends; working with relational data tables).
- Proficiency with basic and slightly advanced quantitative and qualitative SC data analysis.
- Computer-supported, interactive, visual representation of abstract data to amplify human cognition (sensitive to the human's pre-attentive visual processing).
- Building simple to complex visualizations and how to combine them in interactive dashboards.
- Establishing effective story boards and sharing visualizations.

Remarks

1. This module is presented across the first and second semester, starting in the 2nd academic quarter and ending in the 3rd academic quarter.
2. This is an elective module in the Logistics Management honours programme.
3. Students from other postgraduate programmes, with appropriate computer, analytical proficiency and have done at least some basic logistics and SC management introductory modules, can also be considered for the module.
4. Due to computer lab constraints, only a limited number of students can be accommodated. The class will be limited to 24 students; Students that want to follow this module are screened and selected primarily based on their the criteria mentioned in point 3 above (preliminary selection will take place during the period 6 – 10 Feb 2023; the class list will be finalised by 13 Feb 2023).
5. The module counts 15 credits.
6. The module is offered residentially only.

11485 722 CUSTOMER SERVICE AND LOGISTICS INTERFACE MANAGEMENT

Course objective

The ultimate effect of logistics and supply chain activities / processes should meet the targeted customer requirements. Managing the interface between sales and logistics is of vital importance. Balancing the performance-related and cost-related targets remains a challenge.

Customer service is the source of customer information. It also provides the customer with real-time information on scheduling and product availability through interfaces with the company's production and distribution operations. Customer service is also a process for providing significant value-added benefits to the supply chain in a cost-effective way.

Course content

1. Introduction to Customer Service and Logistics Interface Management
2. Customer service dimensions and measurement
3. Customer Service's role in demand management
4. Customer Service strategy development
5. Customer service performance management
6. The customer service and customer relationship process across the value chain
7. Reverse marketing or Supplier Development

Remarks

1. The module is presented during the second semester.
2. The module counts 15 credits.
3. The module is offered residentially only.

59145 744 ROAD TRANSPORT MANAGEMENT

Course objective

The module is concerned with providing the student with a practical overview of the functions of freight and passenger transport management and recommend practices that can ensure efficiency, quality and effective delivery of service to customers. The purpose of this module is to enable students to comprehend the integrated nature of transport management so that they can contribute to the implementation of sound transport management principles in a transport environment. The road transport industry is highly competitive. Therefore it is imperative to have a thorough understanding of the appropriate management aspects in transport operations. In this module a selection of topics relevant to strategic, tactical and operations management are covered which are essential for successfully running a road transport firm. These core components of learning include knowledge of transport logistics, routing and scheduling, basic principles of road transport management and occupational health, safety and environmental protection that is applied in operating successfully in a road transport logistics environment.

Course content

1. The South African road network
2. Planning the transport function
3. Organising the transport function
4. Staffing the transport function
5. Transport operations

6. Monitoring transport operations
7. Transport operations costing and reporting
8. Finance and external relations
9. Compliance with legislation

Remarks

1. This module is offered during the first semester, and is presented on a Hybrid-platform of face-to-face and online lectures and interaction.
2. This module counts 15 credits.

14024 773 MARITIME ECONOMICS (*Maritime*)

Course Objectives

Almost 90 per cent of the volume of international trade is seaborne. The globalisation of economic activities has led to fierce competition, resulting in lower freight rates to which the shipping business has had to adapt. This module focuses on the demand for shipping, with specific reference to South African imports and exports, as well as on the supply of shipping and the changes in the behaviour of shipping markets.

Course content

1. The main features of the ship
2. Ship design, construction & operation
3. Types of ships around the globe (cargoes, trades and future trends)
4. Maritime canals, inland waterways & seaports
5. Liner conferences & charter parties
6. Containerisation
7. Ship financing, management & governance

Remarks

1. This module is presented during the first semester.
2. The module counts 15 credits.
3. Transport Economics 318 and 348 are pass prerequisites for this module.

13076 744 INTERNATIONAL TRADE, TRANSPORT INFRASTRUCTURE AND LOGISTICS (*ITTL*)

Course objective

The growth of the South African economy is dependent on the current and future trade of resources with neighbouring and international countries. This entails the import and export of various commodities, including human capital, based on sound theoretical principles in political environments that are cost effective. This module focusses on various topics relevant to the export and import trade market and the optimal transport infrastructure to be used for these trade activities, including the correct logistical processes to be undertaken.

Course content

1. Introduction and Trade in the Global Economy
2. Evolution of Trade Theories

3. Import Tariffs, quotas and export subsidies
4. International Infrastructure
5. Ocean Transportation
6. International Air Transportation
7. International Land and multimodal Transportation
8. International Terms of sale and payment
9. International trade documentation
10. Custom Clearance

Remarks

1. The module is presented in the second semester, and is presented on a Hybrid-platform of face-to-face and online lectures and interaction.
2. This module counts 15 credits.

59153 742 URBAN AND REGIONAL TRANSPORT ECONOMICS

Course objective

The South African economy is largely dependent on the production of goods and services, and commercial activities in the metropolitan areas. These activities cannot be efficiently carried out without an effective urban transport system. In this module the economic aspects of urban transport are explained and analysed. The knowledge thus obtained is important for urban planners, administrators, transport economists and a career in applied economics.

Course content

1. The relationship between urban land use and transport provision
2. The urban transport problem and proposed solutions
3. The urban transport planning process
4. Urban transport systems and technology
5. The urban transport investment decision
6. Pricing and subsidies
7. Urban transport policy and legislation in South Africa

Remarks

1. The module is presented during the second semester.
2. The module counts 15 credits.
3. Transport Economics 318, 348 is pass prerequisite for this module.

10933 853 FORECASTING (*Forec.*)

Course objective

In addition to the general problems in time series data considered in Module 11 (Introduction to forecasting), there are several more intricate problems related to time series data which require more intricate techniques for the identification and forecasting process. Students are familiarised with these techniques in order to identify and solve these problems.

Course content

The module comprises three sections:

1. Section I – Revision of …
    a. Basic inferential statistics
    b. The linear regression model and the method of least squares
    c. Diverging from basic assumptions
    d. Dummy and lag variables
    e. Test and evaluation criteria
2. Section II – Advanced forecasting techniques:
    a. Stationarity of time series
    b. Moving average and exponential smoothing models
    c. ARIMA models
    d. Short and long term models
3. Section III – Applications of Forecasting:
    a. Data gathering and related problems
    b. Single and multivariate functions
    c. Modelling
    d. Presenting and interpreting modelling results

Remarks

1. The module is presented during the second semester.
2. The module counts 15 credits.
3. Module 11 (Introduction to forecasting) or Operations Research 3 is a pass prerequisite for this module.
4. This module is available to residential students only.
