

**DEPARTMENT OF LOGISTICS
STELLENBOSCH UNIVERSITY**

**POSTGRADUATE INFORMATION:
LOGISTICS MANAGEMENT
2024**

Tel: 021 808 3911

Fax: 021 808 3406

E-mail: jacquin@sun.ac.za

Website: <http://www.sun.ac.za/logistics>

LOGISTICS MANAGEMENT POSTGRADUATE MODULES

Programmes modules:

BComHons (Logistics Management)

Code	Module	Credits	Module Name
50407	778	120	BComHons (Logistics Management)

MCom (Logistics Management)

Code	Module	Credits	Module Name
50407	879	180	MCom (Logistics Management) Full Thesis option (this programme consists of a 180 credit full thesis)

MCom (Logistics Management)

Code	Module	Credits	Module Name
50407	899	180	MCom (Logistics Management) Coursework- and Thesis option (the programme consists of 30 credits of coursework and a 150 credit thesis)

MODULES FOR 2023

Module Acronym	Module	Code	Lecturer	Credits
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First semester

Intr_Forc.	Introductory forecasting [LM] [Compulsory]	10911 723	Mr H Freiboth / Prof J Louw	15
SM_Outb	Supply Management (Outbound) [LM] [Compulsory]	13078 714	Prof L Goedhals-Gerber	15
Road_TM	Road transport management [TE]	59145 744	Mr J van Rensburg	15

Second semester

Cust.S&L	Customer Service and Logistics Interface Management [LM] [Compulsory]	11485 722	Ms A de Bod	15
SM_Inb	Supply Management (Inbound) [LM] [Compulsory]	13077 714	Ms C Lalendle / Prof J Louw	15
Visual_SCDA	Visual Supply Chain Data Analysis [LM]*	14227 743	Prof J Louw / Mr H Freiboth	15
Wareh_OM	Warehouse Operations Management [LM]	13472 741	Prof J Louw	15
Forec.	Forecasting [OR]	10933 753	Prof JH Nel	15
Pass Prerequisite: Intr_Forc. or Operations Research at 3 rd year level is a pass prerequisite for Forec.		Research Seminar, first and second semester: Logistics Management BComHons 11047 773		30

*Visual_SCDA starts in the 1st semester and end in the 2nd semester. See module description on page 9.

Apart from the modules listed above, you may obtain a maximum of 30 credits from a related field of study that has been approved by the programme coordinator. Elective modules in related fields of study that will be offered this year:

- International Trade, Transport Infrastructure and Logistics – see Transport Economics information document
- Other elective modules will be confirmed during the welcoming and orientation sessions

Elective modules not offered during 2023:

- Packaging Logistics Development
- Supply Chain Forecasting and Planning
- Supply Chain Performance Management and Technology Enablement
- Supply Chain Strategy Change Management and Governance
- Capita Selecta

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. Statistics and data, data types, data classification, data analytics process
2. Data collection, -connection, -preparation, and -exploration
3. Descriptive techniques (numerical and graphical)
4. Diagnostic techniques (hypothesis testing, correlation- and regression analysis)
5. Predictive techniques (time series analyses and forecasting)
6. Communicating results

Remarks

1. The module is presented during the first semester.
 2. The module counts 15 credits.
 3. This module is available to residential students only.
 4. This module is compulsory for all students enrolled for the Honours program in Logistics Management and the Honours program in Transport Economics.
 5. Passing this module is a pass prerequisite for Module 25 (Forecasting).
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Course objective

Students will learn the language of the subject matter and be equipped with the relevant practices typically found in outbound segments of an organization's supply chain (Deliver and Return). The Deliver section of the module will map out the major types of outbound supply chain configuration. It will consider process integration requirements and map out ideal process flows; conduct business process analysis and streamlining, and cover process control and quality management. The Deliver section covers essential elements needed to manage warehousing, packaging and materials handling activities (facilities management) as well as coordinate product deliveries (transport service providers). An overview of the use of relevant documentation to manage deliveries effectively is provided. Core aspects of maritime logistics are also covered. In the Return section of the module, practices to minimise the logistics environmental impact and waste are considered and product returns management and reverse logistics practices are explained.

Course content

1. Distribution channels
2. The physical distribution concept ("outbound logistics")
3. Client service
4. Transport, Warehousing, Materials handling, and Packaging function
5. Distribution costing and control
6. Information and control
7. Logistics coordination and control
8. Reverse logistics
9. Sustainability

Remarks

1. The module is presented during the first semester.
 2. The module counts 15 credits.
 3. The module is only offered residentially.
 4. This module is compulsory.
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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.
 2. This module counts 15 credits.
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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.
 4. This module is compulsory for all students enrolled for the Honours program in Logistics Management.
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Course objective

Students will learn the language of the subject matter and be equipped with the relevant procurement, supply and inventory management practices typically found in inbound segments of a manufacturing organization's supply chain (Source and Make). This module is designed to explore the procurement cycle within the context of supply chain management from acquisition to disposal of goods (and services). The major phases of supply management will be covered, i.e., generation of requirements, sourcing, pricing, agreement development, and post award activities including evaluation processes. Students will also be sensitized to the procurement decision interfaces with the other major business functions, including marketing, finance-accounting, operations, logistics, and research and development. The major operational/execution processes of the inbound supply chain will also be covered. It is based on a number of existing supply chain conceptual models that highlight these as core/functional skill areas.

Source - *The processes associated with ordering, delivery, receipt and transfer of raw material items, subassemblies, products and/or services.*

Make - *The process of adding value to products through, e.g., mixing, separating, forming, machining, and chemical processes.*

Course content

1. Supply Management: An Organizational Spanning Activity
2. Purchasing Descriptions and Specifications
3. Local and global sourcing, and trade considerations
4. Cost and Price analysis (Total Cost of Ownership)
5. Procurement risk management practices
6. Negotiation, contract formation, legal issues, and supplier management
7. Production and inventory control

Remarks

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

1. Visualization theory, related concepts, terminology and different visualization types.
2. The structured "exploratory data analysis" process (e.g. data collection, pre-processing, definition, structuring, organizing, simplifying, cleaning, coding, hierarchies, formatting, testing, exploring).
3. Dealing with different data sources (doing joins and blends; working with relational data tables).
4. Proficiency with basic and slightly advanced quantitative and qualitative SC data analysis.
5. Computer-supported, interactive, visual representation of abstract data to amplify human cognition (sensitive to the human's pre-attentive visual processing).
6. Building simple to complex visualizations and how to combine them in interactive dashboards.
7. 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. The Introductory forecasting (module code 10911 723) is a prerequisite for this module.
 4. Due to computer lab constraints, the class size may be limited; students that want to follow this module are screened and selected primarily based on the criteria mentioned in point 3 above (preliminary selection will take place during the period 12 – 16 Feb 2024; the class list will be finalised by 16 Feb 2024).
 5. The module counts 15 credits.
 6. The module is offered residentially only.
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13472 741 Warehouse Operations Management

Course objective

The operational management of warehouses typically oversee the distribution and storage of inventory for a manufacturing company (or where the function is also outsourced to a logistics service provider). Although students studying in the field of logistics and supply chain management focus on process integrating principles and cost analysis, students can also prepare to become more knowledgeable in warehousing/distribution activities (establishing functional excellence in specialised focal areas).

Students will be exposed to the key aspects of inventory control and materials handling. They can develop their knowledge of receiving and storing materials with a focus on contributing to greater profitability. Lecturers will also guide the students through the processes of material processing, including the picking and shipping of goods. Case studies and a site visit(s) will complement the learning. Students will get exposure to the technologies and computer systems used to assist operational management in maintaining inventory, scheduling, operating, monitoring and controlling operations, and forecasting supply needs. Since warehouse operations also require the management of people in fulfilling numerous key functions, the concepts and practices of sound supervision and labour relations will also be covered. Warehouses are fixed installations that need compliance to specific legislation (Acts and Regulations). An overview of the applicable governing legislation will also be covered (e.g. OSH act, Labour Relations Act.).

Course content

1. **Inbound Warehouse Operations** related to product receipt, material handling, inspection & quality control, put-away, storage and replenishment.
2. **Outbound Warehouse Operations** related to product picking, checking, packing, compliance labelling, staging and despatch to customers.
3. **Warehouse Operational Support** related to inventory control, order entry, order processing and inventory replenishment, performance management, automated and enabling warehousing technology (e.g. bar code scanning and radio frequency (RF) data communication, resulting in a paperless distribution environment).

Remarks

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

Section I

Revision of

- Basic inferential statistics
- The linear regression model and the method of least squares
- Diverging from basic assumptions
- Dummy and lag variables
- Test and evaluation criteria

Section II

Advanced forecasting techniques:

- Stationarity of time series
- Moving average and exponential smoothing models
- Decomposition of time series
- Functional forms in regression
- Gompertz and Logistic curves
- Logistic regression
- ARIMA models
- Short and long term models

Section III

Applications of Forecasting

- Data gathering and related problems
- Single and multivariate functions
- Modelling (Excel and R)
- Presenting and interpreting modelling results

Remarks

1. The module is presented during the second semester.
 2. The module carries 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.
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