DEPARTMENT OF LOGISTICS
UNIVERSITY OF STELLENBOSCH

POSTGRADUATE INFORMATION:
TRANSPORT ECONOMICS
2017

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**TRANSPORT ECONOMICS POSTGRADUATE MODULES**

Anchor programmes:

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<thead>
<tr>
<th>Code</th>
<th>Module</th>
<th>Credits</th>
<th>Module Name</th>
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<tr>
<td>21008</td>
<td>778</td>
<td>120</td>
<td>BComHons (Transport Economics)</td>
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**MCom (Transport Economics)**

Programme modules

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<th>Lecturer</th>
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<tr>
<td>21008</td>
<td>899</td>
<td>180</td>
<td>MCom (Transport Economics) Coursework- and Thesis</td>
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**MCom (Transport Economics)**

Programme module

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<tr>
<td>21008</td>
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<td>MCom (Transport Economics) Full Thesis</td>
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**MODULES FOR 2017**

<table>
<thead>
<tr>
<th>Module number</th>
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<th>Code</th>
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<tr>
<td></td>
<td>First semester</td>
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<tr>
<td>4</td>
<td>Transport and Economic development [TE] [Compulsory]</td>
<td>13473 711</td>
<td>Prof SC Krygsman</td>
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<td>11</td>
<td>Introduction to forecasting [LM] [Compulsory]</td>
<td>10911 723</td>
<td>Mr H Freiboth</td>
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<tr>
<td>13</td>
<td>Competition and regulation [TE] [Compulsory]</td>
<td>59102 715</td>
<td>Prof SC Krygsman</td>
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<tr>
<td>17</td>
<td>Road transport management [TE]</td>
<td>59145 744</td>
<td>Mr RA Janse van Rensburg</td>
<td>15</td>
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<tr>
<td>34</td>
<td>Shipping Economics [TE]</td>
<td>12995 773</td>
<td>Mr R Kgwedi / Mr G Dekkers</td>
<td>15</td>
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<td>36</td>
<td>CAPITA SELECTA ( Spatial accessibility and transport network analysis [TE]</td>
<td>64017 714</td>
<td>Prof T de Jong, Ms J Thiart &amp; Mr J van Dijk</td>
<td>15</td>
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<td></td>
<td>Second semester</td>
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<td>8</td>
<td>Air Transport Economics [TE]</td>
<td>11275 742</td>
<td>Mr Corné de Waal / Mr J van Rensburg</td>
<td>15</td>
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<td>21</td>
<td>Urban transport economics [TE] [Compulsory]</td>
<td>59153 742</td>
<td>Prof SC Krygsman / Me J vd Merwe / Mr M October</td>
<td>15</td>
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<td>25</td>
<td>Forecasting [OR]</td>
<td>10933 753</td>
<td>Prof JH Nel</td>
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<td>40</td>
<td>Advanced economic and financial planning for transport projects</td>
<td>13079 744</td>
<td>Prof SC Krygsman / Dr S Lamprecht</td>
<td>15</td>
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<tr>
<td>41</td>
<td>International Trade transport infrastructure and Logistics</td>
<td>13076 744</td>
<td>Mr J van Rensburg</td>
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Pass Prerequisite:

Module 11 is a pass prerequisite for Module 25

Research Seminar, first and second semester:

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<tr>
<td></td>
<td>TE</td>
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<td>(The 150 credit TE MCom program requires coursework of 30 credits)</td>
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10904 712 ECONOMIC INVESTMENT PLANNING

Course objective

With their investment in transport infrastructure, governments are invariably confronted with a complex and multi-faceted economic problem. Firstly, there is the scarcity aspect: a multitude of (and often very extensive) transport needs have to be met with limited means. Secondly, there is a problem of choice: a choice must be made between different forms and modes of transport in order to maximise social utility. Thirdly, maximum satisfaction of needs depends on effective transport activities and infrastructure. In this module the supporting economic theory and evaluation methods are discussed and applied to equip prospective transport economists with the ability to contribute towards alleviating the above-mentioned problem. (The content of the module is road transport oriented.)

Course content

A: Road economics

- Road user costs
- Road supply costs and financing
- Road cost responsibility
- Cost recovery methods
- Road user benefits, non-road user benefits and external costs
- Multiplier analysis

B: Economic evaluation and selection of government transport projects

- Benefit-cost analysis (theory and application)
- Discounted cash flow techniques
- Derivation of the social discount rate
- Opportunity cost and shadow pricing
- Project selection
- Strategies to promote either economic efficiency or social equity
- Timing of project implementation

Remarks

1. The module is presented during the first semester.
2. The module counts 15 credits.
3. The module is compulsory for the honours program in Transport Economics.
4. Transport Economics 318, 348 is a pass prerequisite for this module.
MODULE 8

11275 742 AIR TRANSPORT ECONOMICS

Course objective

The air transport industry is complex and dynamic and subject to rapid change and innovation. With the introduction of deregulation it has become imperative to take cognisance of new business practices and management concepts. The module will, firstly, provide a basis for the student to enter the air transport industry at (junior) management level, and secondly to introduce students to managerial strategies used in competitive industries within and outside of air transport.

Course content

1. Economics and strategy in aviation, with reference to the role of aviation in the value chain.
2. Air traffic and the role of demand, market segmentation and demand forecasting.
3. Yield in aviation – the aspect of pricing, market segmentation and tariff structures that impact yield.
5. Unit costs in aviation – determining and management of cost.
7. Fleet management – aircraft acquisition and financing tactical utilization of aircraft capacity.
8. Revenue management – function of revenue management, actions taken and various approaches used.

Remarks

1. This module is offered during the second semester.
2. This module counts 15 credits.
3. Transport Economics 318 and 348 are pass prerequisites for this module.
MODULE 13

59102 715  COMPETITION AND REGULATION

Course objective

Although the South African economy is largely based on free market principles, and most government transport enterprises have either been corporatised or privatised, there is still a need to economically regulate certain aspects which relate to the supply of transport services. The module strives towards making students confident in working with the economic principles of transport regulation, transport pricing, transport competition and government transport policy. Thorough knowledge of these aspects, and the insight to execute transport policy and regulations judiciously, should contribute towards the transport industry supporting the national economy most effectively.

Course content

1. Economic principles of regulation and coordination
2. Market characteristics and phenomena: market forms and market contestability, modal cost structures, horizontal and vertical integration and opportunities for the attainment of economies of scale, long-haul, scope and density
3. Market failures, limitations and problems: public goods externalities, the so-called natural monopoly, incomplete/insufficient user perception, indivisibilities and predatory pricing
4. Regulatory failures, limitations and problems; deregulation, corporatisation and privatisation; and self-regulation
5. Control of market entry
6. Principles of price regulation and concomitant problems with respect to: operating expenses, service quality, capital investment, return on capital, depreciation and measures of effectiveness
7. Price-fixing under conditions of regulation: marginal cost pricing (short and long run), price discrimination, the treatment of common and joint costs and the influence of varying demand on price-fixing
8. The place and role of the common carrier in developing and industrial economies, and the vulnerability of the common carrier to ruinous competition and cream skimming
9. The determinants, goals and objectives of government transport policy

Remarks

1. The module is presented during the first semester.
2. The module counts 15 credits.
3. This module is compulsory for students following the honours program in Transport Economics.
4. Transport Economics 318, 348 or Economics 318, 348 is a pass prerequisite for this module.
MODULE 17

59145 744 ROAD TRANSPORT MANAGEMENT

Course objective

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.

Course content

1. The role of road freight transport in the logistical chain
2. Detailed vehicle costing and control
3. Financial aspects of vehicle purchasing, management and replacement
4. Client service and marketing of the transport product
5. Analysis of current road transport legislation

Remarks

1. This module is offered during the first semester.
2. This module counts 15 credits.
3. Logistics Management 244 and/or Transport Economics 318 and 348 is a pass prerequisite for this module.

MODULE 21

59153 742 URBAN 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. This module is compulsory for students following the honours program in Transport Economics.
4. Transport Economics 318, 348 is pass prerequisite for this module.
MODULE 34

12995 773   SHIPPING ECONOMICS

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 & sea ports
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
Course objective

Service provision, including the location of facilities and extension of transport network infrastructure are major issues for the both the public sector policy formulation and private sector management environment. Spatial efficiency and spatial equality with regard to the location of transport networks and facilities (hospitals, schools, community centres, etc.) are important factors to be considered in public policy such as land use planning and network expansion. The same factors also influence decisions by the private sector concerning the service market and operational management environment. This module will, among others, deal with these factors with the point of departure being accessibility offered by transport networks.

Focus will be placed on the practical use of Geographic Information Systems (GIS) and GIS based expert systems to do applied assignments. For these assignments use will be made of mostly South African data and applications. No prior knowledge of GIS is required. Depending on the number of students, assignments may be done in groups of no more than two students. The course is important for all researchers that have to do with flow/interaction and facility planning in the public and private sector.

Course content

1. GIS and Thematic map making.
2. Discussion of relevant concepts like spatial efficiency, spatial equality, accessibility statistics, satisfactory solution, optimal solutions, etc.
4. Predicting spatial interaction with gravity modelling.
5. Service centre location models and public sector application.
6. Trade area analysis and private sector applications.
7. Project

Remarks

1. The module is presented during the first semester.
2. The module counts 15 credits.
3. There are no prerequisite courses for this for this module
MODULE 40

13079 844       ADVANCED ECONOMIC AND FINANCIAL PLANNING FOR TRANSPORT PROJECTS

Course objective

In this module transport infrastructure in economic development will be analysed. Different evaluation technique will be applied. The nature of transport infrastructure, such as type of ownership, funding and marketing structure will be investigated. A comprehensive economic and financial evaluation of transport projects, with regards to project infrastructure, risks, methods of capital funding, demand and market imperfections will be required.

Course content

1. Introduction: The importance of Transport Infrastructure
2. Basic principles
3. Commercial and social approaches to investment
   - Financial Appraisal
   - The Benefit-Cost approach
4. Comparability between Appraisal Techniques
5. Measuring the Costs of Transport Investment Projects
6. Measurements of Benefits From Transport Investment Projects: Computational Issues
7. Risk and Uncertainty in Transport Project Evaluation
8. Financing Transport Investment Projects
9. Transport improvements and Equity
10. Environmental and Safety Externalities
11. Assessing the effect on National Income
12. Institutional and Policy Considerations

Remarks

1. The module is presented during the second semester.
2. The module counts 15 credits.
3. The module is offered residentially only.
MODULE 41
13076 744 INTERNATIONAL TRADE TRANSPORT INFRASTRUCTURE AND LOGISTICS

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 is cost effective. This module focusses on various topics relevant to the export and import trade market, the optimal transport infrastructure to be used for these trade activities including the correct logistical processes to be undertaken.

Course content

1. Introduction to International trade and trade theories
2. Trade in the Global Economy
3. Trade economics
4. International Ocean Transportation
5. International Air Transportation
6. International Land and multimodal Transportation
7. International Logistics Functions and Intermediaries
8. Terms of sale and payment
9. Documentation and insurance

Remarks

1. This module is offered during the Second semester.
2. This module counts 15 credits.
3. There are no prerequisite courses for this module