



UNIVERSITÀ DEGLI STUDI DI PALERMO

DEPARTMENT	Ingegneria		
ACADEMIC YEAR	2018/2019		
BACHELOR'S DEGREE (BSC)	CIVIL AND BUILDING ENGINEERING		
INTEGRATED COURSE	TRANSPORTATION TECHNIQUE AND ECONOMICS AND VALUATION - INTEGRATED COURSE		
CODE	17613		
MODULES	Yes		
NUMBER OF MODULES	2		
SCIENTIFIC SECTOR(S)	ICAR/05, ICAR/22		
HEAD PROFESSOR(S)	SALVO GIUSEPPE	Professore Associato	Univ. di PALERMO
OTHER PROFESSOR(S)	GUARNERI DANIELA	Professore a contratto	Univ. di PALERMO
	SALVO GIUSEPPE	Professore Associato	Univ. di PALERMO
CREDITS	12		
PROPAEDEUTICAL SUBJECTS			
MUTUALIZATION			
YEAR	3		
TERM (SEMESTER)	1° semester		
ATTENDANCE	Not mandatory		
EVALUATION	Out of 30		
TEACHER OFFICE HOURS	SALVO GIUSEPPE Monday 10:00 12:00 Dipartimento di Ingegneria (area Trasporti piano 2°) Wednesday 10:00 12:00 Dipartimento di Ingegneria (area Trasporti piano 2°) Thursday 12:00 14:00 Dipartimento di Ingegneria (area Trasporti piano 2°)		

DOCENTE: Prof. GIUSEPPE SALVO

PREREQUISITES	Knowledge of Physics
LEARNING OUTCOMES	<p>Knowledge and understanding The student at the end of the course will have knowledge about mobility of people and goods, and capacity to perform estimation case studies, which will enable him to evaluate investment projects in the transport sector</p> <p>Applying knowledge and understanding ability to understand the issues of people and freight mobility in terms of technology, functional, territorial, environmental and safety as well as in the estimation procedures and to assess their respective effectiveness</p> <p>Making judgments To be able to identify the theoretical and practical elements to evaluate and compare the results of studies in the field of people and freight mobility. In the course theories and arguments in respect of professional ethics and principles of national and international codes of conduct are discussed</p> <p>Communication skills: The student will acquire skill about evaluation reports and ability to expose issues concerning the different transport systems and to offer solutions.</p> <p>Learning ability Update capability by consultation of its scientific publications. Ability to attend, using the knowledge acquired in the course, teachings concerning transportation engineering</p>
ASSESSMENT METHODS	Written and oral test regarding the topics addressed during the course, the presentation of a property valuation report and discussion of exercise. Oral examination of TRANSPORT TECHNIQUES AND ECONOMICS will deal all the topics covered during the course
TEACHING METHODS	Teaching takes place in the first half of the 3th year and consists of lectures and of numerical exercises. Classroom exercises are performed to simulate the final examination.

**MODULE
TRANSPORTATION TECHNIQUE AND ECONOMICS**

Prof. GIUSEPPE SALVO

SUGGESTED BIBLIOGRAPHY

CANTARELLA, G.E. (2001), *Introduzione alla Tecnica dei Trasporti e del Traffico con Elementi di Economia dei Trasporti*, UTET, Torino,

CASCETTA, E. (1998), *Teoria e Metodi dell'Ingegneria dei Sistemi di Trasporto*, UTET, Torino,

Ricci, S., (2011), *Tecnica ed economia dei trasporti*, Hoepli, , Milano ISBN: 9788820345945

AMBIT	50278-Ingegneria ambientale e del territorio
INDIVIDUAL STUDY (Hrs)	96
COURSE ACTIVITY (Hrs)	54

EDUCATIONAL OBJECTIVES OF THE MODULE

This course is intended to provide an overview of traffic engineering fundamentals. course on this topic can address a wide range of areas upon which additional continuing education can be built.

SYLLABUS

Hrs	Frontal teaching
1	introduction to traffic studies and summary of available resources
2	Generality about means of transport: the social role, the link between transportation and territorial structure.
4	Forces on the vehicle, equilibrium of forces on wheels
7	Resistances to motion
6	drag factor, Locomotion mechanic and general equation for traction
5	Power and traction diagrams, performance curves and manual integration of the motion equation
5	Introduction to vehicle dynamics
2	Braking and stop distances on roads and railways
2	Active and Passive Driving Safety
6	Traffic flow theory
10	Logistics, freight transportation and management
6	fundamentals of travel demand and network modeling
4	Traffic Analysis: experimental techniques to characterize and analyze arterial street and freeway traffic operations

**MODULE
ECONOMICS AND LAND VALUATION**

Prof.ssa DANIELA GUARNERI

SUGGESTED BIBLIOGRAPHY

M. SIMONOTTI: Metodi di stima immobiliare. Dario Flaccovio, Palermo, 2006.
 RICS: Standard di valutazione RICS. 8° edizione. The Royal Institution of Chartered Surveyors, Coventry, 2017.
 TECNOBORSA: Codice della valutazioni immobiliari IV. Tecnoborsa, Roma, 2011.
 M. SIMONOTTI: Valutazione immobiliare standard. Stimatrix, Mantova, 2011.
 R.K. TURNER, D.W. PEARCE, I. BATEMAN: Economia ambientale. Il Mulino, Bologna, 2003.
 IVSC: International valuation standards. IVSC London, 2017.
 APPRAISAL INSTITUTE: The appraisal of real estate. 14° edizione. Appraisal Institute, Chicago, 2013.
 G. STELLIN, P. ROSATO: La valutazione economica dei beni ambientali. Metodologia e casi di studio. Utet Libreria, Torino, 1998.
 AM. FREEMAN: The Measurement of Environmental and Resource Value. Resources for the Future, Washington DC, 1993.
 RICS: Appraisal and valuation standards. Rics Book, Coventry.

AMBIT	10653-Attività formative affini o integrative
INDIVIDUAL STUDY (Hrs)	96
COURSE ACTIVITY (Hrs)	54

EDUCATIONAL OBJECTIVES OF THE MODULE

The course aims at providing students with the tool to assess the value of property, plant and companies, costs in construction and the value of environmental resource. Specific aims are: learning the foundations of political economics (microeconomics); understanding the specific context related to real estate and construction processes; learning and applying the principles and procedures of valuation; learning from case history of a cost appraisal; developing the ability to carry out a practical appraisal; prepare a valuation report (appraising), a feasibility study (counseling) and technical consultancy in civil and criminal matters; Asseverate the code of ethical conduct in the work practise.

SYLLABUS

Hrs	Frontal teaching
5	Consumer theory. Demand function. Measures of elasticity. Theory of production. Factors of production. Company and industry. Cost in construction. Supply function. Market forms. Perfect competition. Monopoly. Monopolistic competition. Oligopoly. Bilateral monopoly. Segmentation process. Analysis of the market construction and real estate. Parameters of the market segments.
2	Principles of welfare economics. Surplus and willingness to pay and to accept. Public goods. Free goods. External effects.
3	Market value and bases other than market value. International Valuation Standards.
4	Appraisal postulates. Postulate of the price. Postulate of forecasting. Postulate of purpose. Postulate of ordinariness. Postulate of comparison. Measurement scales.
1	Process of real estate development and construction process.
4	Financial transactions. Interest rate. Loans and discounts. Equivalent rates. Assessment of income. Present value and total amount of typical rent.
5	Problem of income capitalization. Net present value. Internal rate of return.
5	Un-in-place methods. Inventory. Properties sheet. Means of production sheet. Unit price analysis. Cost base calculation on the contract. Cost appraisal on building process. Appraisal criteria of provisional cost (approximate and itemized cost). Adjusted cost. Apprèciation rapide des couts de construction (ARC). Méthode d'Estimation Rapide (MER). Advanced costing methodology (DAC).
8	Appraisal procedures. Market comparison approach. Appraisal sample. Statistical sample. Sales summary grid. Adjustments analysis. Market rates and ratios. Appraisal ratios. Sales adjustment grid. Reconciliation.
5	General appraisal system. Compari-son function. Conditions of resolution. Generalized inverse Moore- Penrose. Appraisal system and market comparison approach. Repartition system.
6	Income Approach. Direct capitalization. Yield capitalization. Discounted cash flow analysis. Search for the capitalization rate. Band of investment. Yield and change formulas. Property balance (measuring net income of building).
3	Cost approach. Appraisal of built up area. Residual techniques. Appraisal of building land.
3	Construction cost. Reconstruction cost. Depreciation. Depreciated reconstruction cost.
3	Economic total value. Use value. Option value. Existence value. Cost-benefit analysis. Cost- efficacy analysis.
Hrs	Practice
5	Consumer balance calculation. Calculation of elasticity. Cost curves. Company balance calculation. Financial mathematics. Calculation of interest and discount. Calculation of the present value and annuities. Internal rate of return calculation. Appraisal methodology. Applications to practical cases of the main appraisal methodologies, Exposure: Protocols of expertise. Code of ethics. Standards.