Informatica per il Management (2023)

58463 - Internet Law

PDF, ADOC.

Learning outcomes

Basic knowledge of Internet Law: the legal profile of electronic commerce and IT security.

Course contents

At the end of the course, students are familiar with the main legal issues related to economic activities carried out on the Internet. They are aware of some legal profiles of computer security. They are able to make an initial assessment of the conformity of an electronic commerce project with the applicable regulation.

The law applicable to legal acts performed via the Internet

Competent jurisdiction

The contract as the main instrument of innovation and legal regulation on the Internet

Network access contracts, electronic commerce contracts (between businesses and between businesses and consumers), IT contracts (development contract, user licence contract, etc.), new atypical contracts, cloud computing

Digital and electronic signatures

Protection of personal rights on the Internet

Processing of personal data: privacy, anonymity and information needs

Infringement of personality rights via the internet: precautionary protection and compensation for damages

The protection of computer assets (software, databases, multimedia works, etc.) between copyright, patent and sui generis right

Legal profiles of computer security

Computer crimes

37458 - Business Economy

PDF, ADOC.

Learning outcomes

At the end of the course the student has the essential tools for understanding the structure and functioning of firms, to analyze economic and financial consequences of business decisions and interpret the information system comprising the financial statements. Students learn the criteria for the analysis of recurring decisions such as the choice of the selling price of a product, the levels of production capacity and choices for the internalization or externalization of production activities.

Course contents

Company and its context

Company structure

Stakeholders

Administrative Department

Financial Statements

Objective and Users

Accounting Systems

Accounting entries

Accounting adjustments

Financial and Non Financial Reporting

SDGs - brief outline

Exercises

Financial Statement Analysis

Objective and Users

Analysis of Balance Sheet and Income Statement, Financial ratios

IT aspects

Exercises

Management Control

Objective and Users

Contribution Margin

Break-even point

Unbundling - brief outline

Exercises

Planning and budgeting - brief outline

58423 - Internet Architecture

PDF, ADOC.

Learning outcomes

Learning the Internet architecture, its organizazion, its communication protocols and prominent applications (i.e., web)

Course contents

Internetworking: fundamentals

Communication protocols for LAN, WAN, MAN

MAC, Transport, and Application Layers

Internet structure

Routing in Internet

Internet applications

Ethernet, IEEE 802.11, HDLC, PPP, ARP, RARP, IP, TCP, UDP,

HTTP, SMTP, POP, IMAP, ICMP, TELNET, FTP

World Wide Web, Email, news, Chat, Client/Server, P2P

file-sharing

Internet2 and QoS

Wireless Networking

Wireless Internet

74843 - Organization Theory

PDF, ADOC.

Learning outcomes

The student should know the different organizational models, the way to organize them and the role of the IT. The student should even know how to diagnostic and find positive solutions in cases of failure of the organizational systems. The student should even know the main elements of the retribution and of work contracts.

Course contents

1. organizations and organizational theory 2.Strategy, planning and effectiveness 3. Basic elements of the organizational structure 4. Inter-organizational relations 5. Organizational culture and ethical values 6. Innovation and change 7. Decision-making processes (outline) 8. Empowerment 9. Social Network Analysis: theory and applications 10. Applications [team work] 11. Discussion [team work]

04521 - Business Finance

PDF, ADOC.

Learning outcomes

The aim of the course is to provide a basic education in corporate finance. At the end of the course the student will be able to evalute both the profitability of an investment project or of a business and to take appropriate decisions on how to finance it. The capital markets and behavioural finance will be highlighted with a focus on the balance between financial resourses and investments. All students from foreign universities are kindly requested to introduce themselves to the teacher before taking the exam or attending the classes.

Course contents

Present Value and the Opportunity Cost of Capital

How to Calculate Present Values

The Value of Common Stocks

Why Net Present Value Leads to Better Investment Decisions

Making Investment Decisions with the Net Present Value Rule

Introduction to Risk, Return, and the Opportunity Cost of Capital

Risk and Return

Capital Budgeting and Risk

Where Positive Net Present Value Comes From

Financing Decisions and Market Efficiency

Does Debt Policy Matter?

How Much Should a Firm Borrow?

Fundamental and Technical Analysis

TEXT BOOK CORPORATE FINANCE BY Brealey Meyers 8th edition customized by Emilio Tomasini

69176 - Numerical Methods for Computation

PDF, ADOC.

Learning outcomes

The general ideas and concepts of scientific computation and error analysis are introduced. The lessons are mostly concerned with the treatment of traditional mathematical problems and the aspects which are of importance for the design of algorithms are examined in Matlab/Octave environment

Course contents

Computer representation of data and floating point arithmetic. Approximation of

functions and solution of the approximation of experimental data by polynomial interpolation. Finding roots of a nonlinear equation,

numerical integration and numerical

methods for the solution of systems of linear equations. The theoretical topics will be supported by a laboratory activity in which the Matlab / Octave system will be used for testing the proposed methods. Some significant applications will be presented.

09446 - Microeconomics

PDF, ADOC.

Learning outcomes

Upon completion of the Course, the student has gained a detailed knowledge of: the object, goals and methodology of the microeconomic

analysis; Consumer Theory, in particular budget constraint, preferences, utility, choice, individual demand, Slutsky equation, consumer surplus, aggregate demand, revealed preferences, choice with

endowments and choice under uncertainty; Firm Theory (technology, profit maximization, cost minimization, individual offer, producer surplus, aggregate offer; the Competitive Equiibrium and its properties. Non-discriminating monopoly and static inefficiency. Lerner index.

Course contents

MODULE 1

Introduction

Consumer theory under certainty, individual and market demands, Notes on choice under uncertainty.

Intertemporal choices and activity markets.

Consumer surplus, revealed preferences and the Slutsky equation.

Individual and market demand, exchange.

MODULE 2

Technology: cost minimization, cost curves.

Firm and industry supply.

Competitive equilibrium.

Monopoly.

72534 - Numerical Methods of Statistics

PDF, ADOC.

Learning outcomes

At the end of the course the student has acquired:

-the knowledge of software tools for the data analysis

- the definition and the main characteristics of continuous and discrete distributions with their moments

-The Maximum Likelihood method for parameters estimation

- some numerical methods for linear regression and its application in economy
- the main concepts of Statistical Learning for regression and classification

Course contents

Definitions and examples on probability. Discrete and continuous distributions. Descriptive statistics. Points and interval estimations. Hypothesis test. Least squares data approximation: linear

regression, polynomial functions of higher order and nonlinear least squares. Numerical methods for the solution of the discrete linear least squares problem.

Simulations and programming environment R. Principal functions for graphics and data analysis. Guided exercises on examples with simulated and real data.

Introduction to statistical learning. Classification task.

37459 - Business Strategy

PDF, ADOC.

Learning outcomes

This course aims at introducing the student to the main strategic issues at the business level. At the end of the course the student knows what a strategy is and how a competitive advantage can be achieved through the analysis of the industry and of the internal resources and capabilities. He/She understands the importance of business models, including the role of organizational structures and technological innovation. The student is able to define a business strategy and to evaluate a business strategy by situating the business in its context

Course contents

Strategy and results

Sector structure and company positioning

Sector dynamics and strategic change

Strategy evaluation

Strategy evaluation in the multi-business enterprise

70155 - Data Bases

PDF, ADOC.

Learning outcomes

At the end of the course the student: - knows the relational data model and the SQL language; - is able to design and develop a relational database; - is capable of processing a project to implement an information system.

Course contents

The course program is structured in four parts, addressing complementary topics in the area of database and information systems. In the first part, we introduce the main concepts of the course (e.g. data, information, database), the characteristics of the relational model and of relational DBMS

tools, and the main functionalities of data languages used to perform CRUD operations. To this concern, we illustrate and detail the characteristics of the SQL language for the creation, update and query of a relational database. We also introduce alternative approaches to the relational model (NoSQL database), and technologies for big-data management. The second part illustrates the most popular methodologies and tools used for database design, from the analysis of requirements till the final implementation. More specifically, we present all the steps related to database engineering, i.e. requirements analysis, conceptual design, logical design, performance evaluation of E-R models, normalization techniques. The third part provides a (brief) overview of algorithms and techniques for data-mining (DM), focusing on supervised and unsupervised methods to deploy classification and prediction models from the information contained in a relational database. Example of applications of DM techniques in industrial and business use-cases are discussed. Finally, the fourth part of the course presents the characteristics and architectures of recent DMBS (MySQL and MongoDB), and also provides an overview of server-side scripting languages to deploy Web Information Systems (WIS). In the following, we provide a brief summary of the course program:

Introduction to Database Management Systems (DBMS)

Model and Languages

The relational model

Characteristics of relational Database Management Systems (DMBS)

SQL Language: CRUD operations, transactions

Alternatives to the relational model, NoSQL technologies, big-data technologies

Database design

Conceptual design: requirements analysis, E/R model, model evaluation

Logic design: translation of the E/R model into a relational model

Physical design: indexes and storage techniques

Normalization techniques: normal forms (Boyce-Codd, TFN) and decomposition algorithms

Introduction to data-mining

General definitions and use-cases

Classification and clustering algorithms

SQL for Applications

Examples of DBMS: MySQL, MongoDB, Cassandra

SQL and server-side scripting languages (PHP+MySQL)

66858 - Software Engineering

PDF, ADOC.

Learning outcomes

This is a software engineering course concerning software development processes and practices, with a focus on those useful for the requirement and the design of software systems.Specifically, the students will learn the main design techniques and the UML language. They will also learn the principles underlying the development of high-quality software systems.

Course contents

Introduction to Software Engineering

The software process model

The analisys model

Introduction to UML

UML: Use case

UML: Classes

Analisys model – domain model

UML: Activities

UML: Interactions

Robustness analysis

OO principles

GRASP

Specification

Design Patterns

Agile software development

Modern patterns and frameworks

66860 - Mobile Applications Laboratory

PDF, ADOC.

Learning outcomes

At the end of the course, the student knows methodological and technological aspects, and application development tools for mobile devices both under iOS (iPhone, iPad, iPod Touch) and Android platforms. Students will understand the management of devices with innovative user interfaces, multi-touch, event management, ObjectiveC programming, Xcode and Cocoa Touch, Eclipse and Android SDK, design patterns, I/O, sensors and geo-localization/maps APIs, networking services, debugging and testing of applications. In addition, students will understand the basic issues of applications' execution in wireless mobile scenarios, and will experience the most relevant platforms for mobile applications' development, APIs of internal devices, multimedia management, iPhone and Android SDK and design of applications under a Model-View-Control pattern.

Course contents

Introduction:

overview of technologies for iPhone, iPod Touch e iPad (and iOS in general).

overview of Android Technology

iOS Module:

iOS technology layers: Core OS, Core Services, Media, Cocoa Touch.

iOS e iOS SDK. Development tools for iOS: Xcode, Storyboard, Simulator.

Swift and Swift UI language (notes on differences with ObjectiveC).

Model-View-Controller.

Target, Action, Outlets.

Foundation Framework and UIKit (Cocoa Touch), user interface, UIWindow e UIView.

UIViewController and MultiViews, controllers and views.

Touch events and Multi-touch, gestures.

Debugging and Testing of iOS apps incrementally developed in classes.

Android Module:

Thehistory of Android versions

Installing the Android SDK

The Android Architecture

Java and Kotlin

The Android Resources System

Android Activities and Fragments

Android Intents

Android Layouts, Widgets and Events

Android Menu, Dialog and Toasts

Android Services and Background

Android Data Management

Maps Support (Google Maps, Mapbox, ...)

Android Network

Android Design guidelines and patterns

Android Navigation

Android System Services (alarms, sensors, vibration, audio)

Hybrid development framework

44763 - Teory of the Firm

PDF, ADOC.

Learning outcomes

Upon completion of the Course, the student has gained a working knowledge of: the definitions of market structure and market power; discriminating monopoly (linear and non-linear pricing), monopoly product variety and quality; Oligopoly and strategic competition: static games, quantity and price competition, sequential decisions and competition; anti-comopetitive strategies: limit pricing and entry deterrence, recent developments of predation; repeated games and collusion; detection of and fight against collusion; contractual relationships among firms: mergers, price vertical restraints; non-price competition: advertising and information, research and development, patents, network economics, regulation and liberalization.

Course contents

MODULE 1

1) Basic concepts.

Introduction.

Some useful microeconomic ideas.

Market structure and market power

Technology and production costs.

2) Market power

Price discrimination under monopoly: linear pricing.

Price discrimination under monopoly: non-linear pricing.

Product variety and quality under monopoly.

3) Oligopoly and strategic interaction.

Static games and Cournot competition.

Price competition.

Sequential competition.

MODULE 2

4) Anticompetitive strategies.

Limit pricing and entry deterrence.

Predation: recent developments.

Collusion and repeated games.

Collusion: how to identify and fight it.

5) Non-price competition.

Advertising, market power, competition and information.

Research and Development and patents.

6) Complementary Topics.

Networks

Regulation and liberalization

73387 - Creativity and Innovation M

PDF, ADOC.

Learning outcomes

At the end of the course the student will gain knowledge of the following topics: The necessity for creativity. Learnings from the science of creativity studies. The DA VINCI Model & Method or the creative thinking process. Strategies and components for specific thinking stages. Innovation:

hurdles and strategies for success. Practical applications to study cases.

Course contents

1) The necessity for creativity and its definition

2) Creativity in the history of art and science.

3) Theoretical foundations of creative thinking. Cognitive modelling.

4) The Da Vinci thinking model. Strategies and processes for specific thinking stages.

5) Application of creative thinking to study cases.

B3584 - STORIA E POLITICHE DEL DIGITALE

PDF, ADOC.

Learning outcomes

The course aims to critically analyze the origin of digital platforms and their political role in contemporary society.

As new infrastructures of everyday life, platforms are the latest changes that brought circulation and logistics to the central core of capitalism. During the course, we will deal with some particularly relevant changes that occurred in the last years, which concern the impact that platforms have had on work, subjects, urban spaces, and, above all, we will analyze their political role, a crucial aspect to reach the dimension of change they have produced. A concluding part will focus precisely on the attempts of local or European institutions to legislate within this new and rapidly expanding world

Course contents

Course Syllabus:

From the "Logistics revolution" to the "Platform Revolution";

What are digital platforms?;

Capitalism 4.0;

Different types of platforms;

Platforms and infrastructure: similarities and differences;

The Political Role played by digital platforms;

Platform, Sharing or Gig? Ambiguities and Ambivalences in the Digitisation of the Economy;

Work in the time of platforms: between playbour and gamification;

Riders, hosts, drivers, cleaners: new jobs and new subjects;

Platforms between governance and governmentality;

Internet between platforms, data and surveillance;

Platforms and the Urban;

De-Westernize Platform: a global look at platforms;

Attempts at legislation 1: Urban and national cases;

Attempts at legislation 2: DSA and DMA.