NOVA IMS
Information Management School

ERASMUS+ Students

Bachelor's Degree

Courses taught in English

Academic Year 2019/2020

Acreditações e Certificações da NOVA IMS

Cofinanciado por

ERASMUS+ Students
Courses taught in English*
Academic Year: 2019/2020

Curricular Units	Bachelor´s Degree
100023 - Organizations Behavior ECTS: 4 Year: 1st Semester: Fall Curricular unit objectives: In addition to technical skills, ITS professionals should understand the social and professional context of information and computer technologies. This course aims to be an introduction to the main theories, concepts and practical applications of the field of study of Organizational Behavior. It covers the most important issues facing organizations, managers and employees in today's companies. Besides training the students in the application of theoretical perspectives in the analysis of concrete organizational cases, it also aims to call their attention to the importance of social and human dimensions in the functioning of organizations.	Degree in Information Systems
100094 - Information Systems ECTS: 6 Year: 1st Semester: Fall Curricular unit objectives: Business managers face today the need for a deep knowledge of information systems potential to create value for their organizations. Firms looking for competitive advantages expect more from information systems than just the execution of repetitive tasks like wages processing or invoicing. In reality, organizations count on information systems to accelerate product development, improve customer relationship and achieve other strategic objectives. In the Information Systems course, we intend to promote a global reflection on information systems in the organizations covering the information systems conception, development and management in the organizations and the way they can create added value and promote business competitiveness. We will focus our attention on the ways that communication and information technologies advances are continuously redefining the roles and value of information systems in organizations and in management.	Degree in Information Management Degree in Information Systems

100080 – Marketing ECTS: 4 Year: 1st Semester: Spring Curricular unit objectives: The curricular unit of Marketing presents the main concepts of the theory and practice of marketing. In this course, the students will develop a marketing plan and explore the key aspects: in the formulation of marketing projects:. The students should be able to: • Explain the role of marketing in organizations and the problems encountered by managers. • Build Marketing planning capacities in students through the development of a marketing plan. • Improve students' ability to analyze situations and develop marketing recommendations. • Improve the student's ability to be selective in the analysis of information needed for decision making in marketing. • Develop skills such as the ability to communicate, work in groups, and present results.	Degree in Information Management
100102 - Theory and Practice of Information Systems ECTS: 4 Year: 1st Semester: Spring Curricular unit objectives: The course mainly aims at analyzing the information systems in the context of organizations, separating the technological aspects of the organizational aspects and management. It will examine the following topics: -Characterization of systemic Organizations -Structured Analysis -Planning of information systems Architectures-information systems At the end of this unit the student should be able to: LO1 - Conceptualize organizations systems as information systems, ie, be able to apply the basic concepts of Systems Theory and Information Theory in information systems management from the real world OA2-Perform Entity Active Systemic analysis OA3-Mastering a method of Functional Analysis OA4-Know the Information Systems Planning main approaches OA5-Know and apply the different types and referential of Information Systems architectures	Degree in Information Systems

100105 - Web Marketing and E-commerce ECTS: 4 Year: 3rd Semester: Spring ECTS: 4 Year: 1st Semester: Spring Curricular unit objectives: Descriptions In Chapter 1 (overview of electronic commerce), we provide an overview of today's business environment as well as the fundamentals of electronic commerce (EC) and some of its terminology. A discussion of electronic markets and their mechanisms and impacts is provided in Chapter 2 (e-marketplaces: mechanisms overview of electronic commerce) where special attention is given to blogs, wikis, and virtual worlds. The Chapter 3 (retailing in electronic commerce: products and services) and 4 (consumer behavior, Internet marketing, and advertising) describe EC B2C applications. Chapter 3 addresses e-tailing and electronic service industries (e.g., travel, e-banking). Chapter 4 deals with consumer behaviour online, market research, and online advertising. In Chapter 5 (B2B e-commerce), we examine the one-to-many B2B models including auctions, and the many-to-many models including exchanges. Finally, in Chapter 6 (the Web 2.0 environment and social networks) we explore social networking with special attention given to business and enterprise networks. Goals At the end of the course students should be able to: • Critically discuss the key notions and concepts related to EC and Marketing; • Initiate scientific research related to EC and Marketing.	Degree in Information Management Degree in Information Systems
100003 - Data Analysis ECTS: 6 Year: 2nd Semester: Fall Curricular unit objectives: • Knowledge and understanding of main techniques for Multivariate Data Analysis. • Presentation of numerous applications where univariate, bivariate and multivariate analysis associated to data with quantitative variables or qualitative variables, or both, are developed. • Use of MS Excel and SAS for statistical multivariate real data treatment.	Degree in Information Management

100029 - Computation III (1) ECTS: 6 Year: 2nd Semester: Fall Curricular unit objectives: The aim of this course is to get the elements of object-oriented programming. Java will be the basic reference language. At the end of the course the student is expected to master the major abstraction mechanisms useful in the analysis and design of software applications. He/She will be capable of designing, developing and testing Java programs. A part of the course will be dedicated to the design of algorithms using OOP. Applications related to graphs will be presented.	Degree in Information Systems
100147 - Geospatial Intelligence ECTS: 6 Year: 2nd Semester: Fall Curricular unit objectives: The aim of this course is to provide students with theoretical and practical knowledge of Geospatial Intelligence. The theoretical concepts will be explored using a combination of lectures with discussion. The practical component will be taught using GIS desktop software for GIS (ESRI ArcGIS Pro) and GIS tools available in the Cloud (ArcGIS Online, Story Maps).	Degree in Information Management Degree in Information Systems
100071 - Information Technologies Hardware and Software ECTS: 6 Year: 2nd Semester: Fall Curricular unit objectives: This course gives the knowledge about computer hardware and system software necessary to develop information systems, and at the same time understand the advantages and disadvantages of different technologies and computer architectures, so as to use them efficiently in a business environment. The principles and application of computer hardware and systems software are presented through lectures that focus both on theory and on practice, and complemented with classes where practical exercises are given, and classes where the students can practice with the systems themselves.	Degree in Information Systems

100089 - Computer Networks ECTS: 6 Year: 2nd Semester: Spring Curricular unit objectives: The main objectives that should be attained in order to succeed this course are: O1: Understand network architectures, communication protocols and related systems; O2: Understand the multiple abstraction layers of communication systems; O3: Acquire technical knowledge about the multiple protocols used on different communication layers; O4: Understand local and wide network requirements; O5: Acquire technical knowledge to assess network security; O6: Acquire technical knowledge to understand the network application challenges.	Degree in Information Systems
100075 - Human – Computer Interaction ECTS: 6 Year: 2nd Semester: Spring Curricular unit objectives: The objective of this course is to provide a broad but complete view on the problems, methodologies and practices of designing human-computer interaction experiences, as a part of the software engineering life-cycle or of other product design processes. Students will learn the historical background and the current technological context, the enabling technologies and, notably, the state-of-the-art interaction technologies. Students will understand how to obtain information about end user's needs and goals, their current and desired tasks, while taking into account their perception and cognitive capabilities, so that the interaction designing process can be effective. Students will follow the full HCI design process: • Requirements Gathering – Students will understand what HCI to design and build as a solution to an identified problem, taking into account the profile of the end-user, his/her abilities and current tasks, and adopting appropriate data collection methods. • Design - Students will know how do build the best UI for the problem at hand, using low-fidelity and high-fidelity prototyping approaches. • Heuristic Evaluation - Students will make sure people can use the proposed HCI design and will re-iterated appropriately, adopting heuristic evaluation principles. • User Studies and data collection and analysis - Students will collect user feedback and analyze, using descriptive statistics, the usability and satisfaction of the HCI design.	Degree in Information Systems

100063 - Information Systems Project Management ECTS: 6 Year: 2nd Semester: Spring Curricular unit objectives: 1. Understand the differences of projects, operations and products concepts 2. Structure project management concepts, with focus on Organizations' business 3. Use distinct project life cycle models, recognizing their advantages and disadvantages 4. Use scope planning and control processes, methods and techniques 5. Use project activities planning and control processes, methods and techniques 6. Use project organization and responsibilities planning processes, methods and techniques 7. Develop the project communication plan 8. Identify the project cost types and be capable to structure the costs (CBS) and control project's performance (EVA) 9. Apply quality, quality assurance and quality control concepts in project management context 10. Apply risk identification, risk assessment and risk treatment processes, methods and techniques 11. Understand the main aspects of project team management	Degree in Information Systems
100006 - Systems Analysis ECTS: 6 Year: 2nd Semester: Spring Curricular unit objectives: This course aims to provide students with knowledge of cutting edge technologies for the specification, analysis, design, implementation and maintenance of complex software systems. The following aspects are considered fundamental: - Provide students with knowledge about Software Engineering methods - Provide knowledge about the software design methods 'state of the art' - Evaluation and quality assurance in software systems approaches - Support training for process and business environments analysis At the end of this unit the student should be able to: LO1- Understand the key technologies and methodological issues LO 2-Knowing the data and information management methods LO3-Mastering the methods and issues related to the design of systems LO4-Handle tools and techniques for modeling and development of information systems.	Degree in Information Systems

100137 – Web Technologies and Applications ECTS: 6 Year: 2nd Semester: Spring Curricular unit objectives: OA1 - Understand internet basic concepts OA2 - Ability to develop web pages with XHTML and CSS OA3 - Understand dynamic web applications (client and server side) OA4 - Ability to develop dynamic web pages with Javascript (client side) OA5 - Ability to develop dynamic web pages with PHP (server side) OA6 - Ability to develop web applications connected to databases (MySQL) OA7 - Ability to develop and use webservices OA8 - Understand mobile applications OA9 - Ability to design and develop mobile applications	Degree in Information Systems
100017 - Business Process Management ECTS: 6 Year: 3rd Semester: Fall Curricular unit objectives: The course main objective is to study the Business Process Management inside organizations separating the technological management and organizational management aspects. Additionally, will be addressed some mullti, trans and interdisciplinary concerns as the Business Process Management study involves multiple perspectives and concepts that include diverse knowledge fields. At the end of this unit the student should be able to: - Explain the critical factors to success in process oriented management - Develop an organizational strategy. - Develop a process architecture. - Integrate BMP in Management Information Systems (MIS) - Describe and explain a Business Process Management project - Use systems and BPM technologies. - Compare BPM approaches.	Degree in Information Management Degree in Information Systems
100031 - Data Mining ECTS: 6 Year: 3rd Semester: Fall Curricular unit objectives: In terms of skills, this discipline aims to stimulate the student to: - The analysis and synthesis; - The organization and planning; - The writing and speaking in Portuguese ; - Problem solving , partially structured ; - The ability to make decisions ;	Degree in Information Management

- Teamwork ; - The ability to apply acquired knowledge in practice ; - The ability to generate new ideas (creativity) ; - Leadership ; - Work independently	
100059 - Market Research ECTS: 6 Year: 3rd Semester: Fall Curricular unit objectives: This discipline includes a wide set of topics that go from qualitative research with exploratory goals to the development of quantitative marketing research. The role of secondary data in marketing research and the presentation of the results are also studied. With this course the students should be able to design and conduct an appropriate market study for the solution of a marketing problem and to present the results. At the end of the course the student should achieve the following learning outcomes: **1.** Understanding the steps of a market research **2.** Understand the various data sources and search secondary data sources **3.** Define a target population and the correspondent sampling frame **4.** Understand and compare the different techniques of qualitative market research **5.** Identify advantages and disadvantages of each method of data collection **6.** Understand the different scales **7.** Design a questionnaire for a particular study **8.** Identify the non-probability and probability sampling methods **9.** Identify preventive measures for potential non-sampling errors and corrective action where necessary **10.** Design, conduct and present the results of a market research suited to solving a marketing problem	Degree in Information Management
100086 - Forecasting Methods ECTS: 6 Year: 3rd Semester: Spring Curricular unit objectives: The main objective of this course is to develop the skills needed to do empirical research in fields operating with time series data sets. The course intends to meet two goals. It provides tools for empirical work with time series data and is an introduction into the theoretical foundation of time series models. Much of statistical methodology is concerned with models in which the observations are assumed to be independent. However, many data sets occur in the form of time series where observations are dependent. In this course, we will concentrate on	Degree in Information Management

time series analysis, with a balance between theory and applications. After completing this course, a student will be able to analyze time series data using available software. In order to emphasize application of theory to real (or simulated) data, we will use R software.	
100091 - Informatic Security ECTS: 5 Year: 3rd Semester: Fall Curricular unit objectives: The main objectives that should be attained in order to succeed this course are: O1: Understand how computer-based information systems are exposed to security risks; O2: Understand the multiple dimensions of influencers that can affect computer security (technical and non-technical aspects); O3: Evaluate the influence of information systems security on today's businesses; O4: Understand security requirements to support current business systems; O5: Acquire technical knowledge to assess security on computer-based information systems; O6: Design and evaluate controls to improve computer security.	Degree in Information Systems
100070 - IT Governance and Service Management ECTS: 5 Year: 3rd Semester: Fall Curricular unit objectives: Description The subject performs an Introduction to Science, Management and Services Engineering, upon presentation of Information Technology (IT) best practices used worldwide. It is intended to put into perspective the concepts related to the governance and management of IT, strategically aligned to business needs through an overview of the most respected "frameworks" and management/IT governance best practices, using management techniques such as planning, leadership, team management, organization and change management. Through case studies will be possible to understand the scenarios amenable to the use of IT management and governance best practices in real situations, regulated environments by specific government standards for IT and the importance to use internationally recognized integrated processes (framework) for IT Service Management: ITIL 2011 Edition Objectives At the end of the course students should be able to: • Critically discuss the key notions and concepts related IT Governance and IT Management; • Taking the correct options in the adoption of IT management/Governance best practices for solving the different professional challenges;	Degree in Information Systems

• Understand and identify the different processes of IT Service Management based on ITIL (Information Technology Infrastructure Library); • Be able to later (optional), apply for the international certification exam, "ITIL 2011 Foundation Certificate in IT Service Management", accredited by "APM Group International" (APMG-International) and recognized by the "United Kingdom Cabinet Office" as part of the "UK Government's portfolio of Best Management Practice"	
100101 – Artificial Intelligence (1) ECTS: 6 Year: 3rd Semester: Fall To provide the students with the historical and current context of Artificial Intelligence. To teach the functioning of a wide array of Artificial Intelligence methods, from the most classical techniques of search and reasoning to the most cutting-edge methods of machine learning. To raise awareness to the issue of ethics in Artificial Intelligence.	Degree in Information Systems
100096 - Enterprise Information Systems ECTS: 6 Year: 2nd Semester: Spring ECTS: 6 Year: 3rd Semester: Spring Curricular unit objectives: Among the many challenges of today, the constant changes in the economy, trends in various industries, the rising of customer expectations, the internationalization, and the endless need to reduce costs are at the forefront of managers actions. Despite all these challenges, the opportunities are based on an agile, flexible and fully integrated management. The use of business information systems designed to address these challenges, provide the management an infrastructure for companies get advantage of new opportunities. The development of an information system that supports the development of a management model relies heavily on knowing, articulate, use and extract the value of various types of enterprise applications such as ERP (Enterprise Resourse Planning), SCM (Supply Chain Management), HCM (Human Capital Management), CRM (Customer Relationship Management), and e-Commerce. Thus, the discipline of Enterprise Information Systems focuses on how advances in business information systems are constantly redefining the role and value of information systems in business and management. Students will have the opportunity to materialize the above challenges in training activities in the business applications of SAP.	Degree in Information Management Degree in Information Systems

100051 - Entrepreneurship and Project Analysis ECTS: 4 Year: 3rd Semester: Spring Curricular unit objectives: At the end of the semester students should be able to: - Know the process of decision-oriented evaluation of investment projects - Identify the various stages of developing a business plan - Prepare a real business plan - Understand the basics of financial statements - Understand the scope of investment project analysis and the different approaches to valuation - Understanding of the determinants of an investment's cost of capital - Estimate the inputs of discounted cash flow valuation methods - Understand, distinguish and calculate the different criteria used for investment project analysis - Analyse investment projects under risk and uncertainty - Rank and select between different investment projects - Know how to build a financial model in Excel - Learn about real options and how we can increase the value of an opportunity by timing or staging our investment - Understand value enhancement methods for investment project analysis	Degree in Information Management Degree in Information Systems
100092 - Information Systems Seminar ECTS: 6 Year:3rd Semester: Spring Curricular unit objectives: The aim of this course is to provide students with applied knowledge in Information Systems (IS) as well as writing and research skills in this area. This is a course especially designed for students who want to apply their knowledge in information systems and to get to know the reality of national enterprises in the area of SI. At the same time, students will develop their presentation, writing and synthesis skills, which can be applied to any other area of knowledge. Throughout the course students will build a real case study in the area of information systems in Portugal.	Degree in Information Management Degree in Information Systems
100064 - Risk Management ECTS: 6 Year: 3rd Semester: Spring Curricular unit objectives: At the end of the semester students should be able to: - Describe the risk management process and identify problems and challenges which can arise in the risk management process	Degree in Information Management Degree in Information Systems

- Learn the concept of risk and differentiate between risk and uncertainty and identify and distinguish the different types of risks - Evaluate and apply tools and procedures used to measure and manage risk, including quantitative measures, qualitative assessment, and enterprise risk management - Interpret the relationship between risk and reward, understand the portfolio choice under uncertainty and the benefits from diversification - Apply appropriate methods to hedge financial and non-financial risks - Understand the Structure and mechanics of OTC and exchange markets and how to evaluate financial instruments - Understand how to use derivative securities in Hedging strategies - Understand the main tools used to measure and manage market, credit, currency risks - Understand the role of insurance in risk management	
100046 - Remote Sensing ECTS: 6 Year: 3rd Semester: Spring Curricular unit objectives: On successful completion of the course students are expected to be able to (i.e. learning outcomes): **1.** Describe the principles of remote sensing **2.** Develop in an autonomous way a project to produce information based on satellite image classification **3.** Describe and evaluate the social economic benefits of remote sensing	Degree in Information Management Degree in Information Systems
100079 – Geospatial Analytics ECTS: 4 Year: 3rd Semester: Spring Curricular unit objectives: This course aims to explore the theoretical and practical concepts related with location based services (LBS). The theoretical part addresses the main societal impacts associated to the use of this technology. The technological aspects are explored and a diverse range of applications is presented. The practical component, aims to provide the basic capabilities to develop mobile applications with location based information using ESRI?s ArcGIS Runtime SDK for .NET. In the end of the course, students should be able to: Discuss critically the main concepts related with LBS. Develop a basic mobile application with maps in .NET which includes	Degree in Information Management Degree in Information Systems
100103 - Web Analytics ECTS: 4 Year: 3rd Semester: Spring Curricular unit objectives:	Degree in Information Management

Today information flows in different channels, on different devices and is supported and available in different formats and applications. The generation of data is constant and decentralized. The aim of this course is to develop in students a sense of how the analytical area is vital to address the new challenges that the digital society puts, being it the volume of data, its diversity or its complexity. It will be also analyzed the risks and gains that organizations and society will have in facing this new paradigm.	Degree in Information Systems
100097 – Intelligent Systems (1) ECTS: 6 Year: 3rd Semester: Spring The course will present artificial intelligence techniques for extracting usefull knowledge from data. More specifically, the course will introduce in details concepts such as Optimization and machine Learning and it will focus on stochastic heuristic methods like, among the others, Genetic Algorithms, Particle Swarm Optimization and Neural Networks.	Degree in Information Management Degree in Information Systems
100136 - Mobile Apps Development ECTS: 6 Year: 3rd Semester: Spring Curricular unit objectives: The course introduces the student to the development of mobile applications, focusing on native applications for Android and IOS with native technologies, native multiplatform development and mobile and hybrid web applications. At the end of the course the student should be able to: • Know the main mobile development environments • Characterize and distinguish mobile, hybrid and native web applications • Design and develop native Android apps • Develop native applications for IOS • Get use of frameworks for cross-platform native development • Know how to develop mobile and hybrid web applications using web technologies • Understand how to publish your app	Degree in Information Management Degree in Information Systems

***The list of courses taught in English can be subject to change.**
The number of vacancies in each course is limited.

(1) Courses that need previous knowledge of statistics / econometrics or computing / programming require previous approval of previous courses as pre-requirement of admission.

25/10/2019

ERASMUS+ Students

Courses taught in English*
Academic Year 2019/2020
(25/10/19)

INFORMATION MANAGEMENT DEGREE

Curricular Units Code/ Curricular Units	ECTS	Year	Semester
100094 - Information Systems	6	1st	Fall
100080 - Marketing	4	1st	Spring
100003 - Data Analysis	6	2nd	Fall
100147- Geospatial Intelligence (GeoInt)	6	2nd	Fall
100096 - Enterprise Information Systems	6	2nd	Spring
100031 - Data Mining	6	3rd	Fall
100017 - Business Process Management	6	3rd	Fall
100059 - Market Research	6	3rd	Fall
100051 - Entrepreneurship and Project Analysis	4	3rd	Spring
100079 - Geospatial Analytics	4	3rd	Spring
100086 - Forecasting Methods	6	3rd	Spring
100092 - Information Systems Seminar	6	3rd	Spring
100046 - Remote Sensing	6	3rd	Spring
100064 - Risk Management	6	3rd	Spring
100103 - Web Analytics	4	3rd	Spring
100105 - Web Marketing and E-commerce	4	3rd	Spring
100097 – Intelligent Systems (1)	6	3rd	Spring
100136 - Mobile Apps Development	6	3rd	Spring

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Degree in Information Systems
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Courses taught in English*
Academic Year 2019/2020
(25/10/19)

INFORMATION SYSTEMS DEGREE

Curricular Units	ECTS	Year	Semester
100023 - Organizations Behavior	4	1st	Fall
100094 - Information Systems	6	1st	Fall
100102 - Theory and Practice of Information Systems	4	1st	Spring
100105 - Web Marketing and E-commerce	4	1st	Spring
100029 - Computation III (1)	6	2nd	Fall
100147- Geospatial Intelligence (GeoInt)	6	2nd	Fall
100071 - Information Technologies Hardware and Software	6	2nd	Fall
100089 - Computer Networks	6	2nd	Spring
100075 - Human – Computer Interaction	6	2nd	Spring
100063 - Information Systems Project Management	6	2nd	Spring
100006 - Systems Analysis	6	2nd	Spring
100137 – Web Technologies and Applications	6	2nd	Spring
100017 - Business Process Management	6	3rd	Fall
100079 - Geospatial Analytics / (Location Based Services)	4	3rd	Spring
100091 - Informatic Security	5	3rd	Fall
100070 - IT Governance and Service Management	5	3rd	Fall
100101 – Artificial Intelligence (1)	6	3rd	Fall
100096 - Enterprise Information Systems	6	3rd	Spring
100051 - Entrepreneurship and Project Analysis	4	3rd	Spring
100092 - Information Systems Seminar	6	3rd	Spring
100064 - Risk Management	6	3rd	Spring

INFORMATION SYSTEMS DEGREE			
Curricular Units	**ECTS**	**Year**	**Semester**
100046 - Remote Sensing	6	3rd	Spring
100103 - Web Analytics	4	3rd	Spring
100097 – Intelligent Systems (1)	6	3rd	Spring
100136 - Mobile Apps Development	6	3rd	Spring

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