



UNIVERSITETI I EVROPËS JUGLINDORE
УНИВЕРЗИТЕТ НА ЈУГОИСТОЧНА ЕВРОПА
SOUTH EAST EUROPEAN UNIVERSITY

Study program Business Informatics (2012/2013)

Faculty	Contemporary Sciences and Technologies
Study Cycle	Second Cycle (Postgraduate)
ECTS	120
Title	Master of Computer Sciences / Field: Business Informatics
Accreditation archive number [120]	17-1190/5
Accreditation date	18.10.2012

Description of the program

Business Informatics (BI) is a widely known discipline in continental Europe. Even though it is similar to Information Systems, it focuses more on the technical issues, including Information Systems and structural approaches for modeling and analyzing of the business processes and problems.

BI is particularly important in the field of economy and enterprise environment, which is characterized by strategic joining, outsourcing, physically distributed operating environments and global business partnerships. New strategies, techniques, tools and technologies for the development of an appropriate field such as BI will be the main objective of the programme at the South East European University.

Understanding both business and informatics is of huge importance to the work of all business professionals, including the executive managers who determine the strategic organization direction, the information professionals who design and deliver new information services; accountancy and finance managers who use information systems for managing the finances and business reports; and marketing and sale managers who use information systems to follow customer purchase and promote new products.

Business Informatics is a study of the Information Technology in business context. The information have become the key business resource which lead to the creation of new careers for the individuals who understand how to operate with the information. These "knowledgeable workers"- people who understand how to store, retrieve, analyze and inform information- currently have a promising and productive career which is imposed on them.

This balance also reflects the relation between the theoretical and practical subject content acquired through lectures, instructions, seminars, sessions in computer laboratories and self- study. The course knowledge is acquired through different approach methods including exam sessions, in-class tests, tutorials, individual tasks, group work and presentations. Students are expected to demonstrate inventiveness and originality aspects.

The instruction objective is to provide students with quality study experiences which will provide them with best possibilities to understand the course fields and realize their maximum potential.

All the instructors at our Faculty are highly respected professionals who remain active in their fields, and realize personal contacts in the region and surroundings. A quality designed programme is also offered, in which the instruction entails real world experiences, practical work and cooperation with successful companies from the business field which will lead to fast employment.

Career

With the Master of Science in Business Informatics at the South-East European University, the graduates will find employment in the fields of system development, software project management, ultimate users of IT support, programming, and as business system analysts, system analysts. For this reason, the individuals who have not only the ability to design technical, computer-based solutions, but also have the ability to notice the possibilities of IT from a business perspective, will be sought for employment by every organization. Students will be equipped with the following skills:

- To manage information function in middle-size and big organizations
- To analyze, plan and develop IT solutions which support the market needs.
- To plan the required business analysis and business risk estimates.
- To develop skillfulness, to contribute in the decision making, design and implementation of the changes in the business process.

Learning outcomes

Knowledge and understanding

- Knowledge and understanding of business and informatics fields (economy, management, marketing, finances and, respectively, programming, databases, computer and information systems, networking and data engineering) on a level that extends the basic acquaintance of fundamental knowledge through elementary research oriented knowledge and ability to demonstrate expertise in the treatment of real-world problems in the area.
- Able to develop and apply original and creative ideas within the environment which requires knowledge in the interdisciplinary, overlapping and cross-linked areas of business and informatics and express specialist competences in the same way.

Applying knowledge and understanding

- Able to originally, critically, independently and creatively solve problems in new, unseen or unfamiliar environments within the multidisciplinary context of real business or organizational environment.
- Able to plan, perform and evaluate independent research and query in business domains implementing correspondent computing tools, environments and technologies.

Making judgement

- Able to creatively integrate and synthesize knowledge across several areas related to business processes and using appropriate computing tools and techniques.
- Able to deal with complex issues related to business processes, to address appropriate specialized instances both in business and informatics domains, make sound judgments in situations of lack of complete information or data, and based on personal, social and ethical responsibilities linked to the application of their knowledge and understanding.

Communication skills

- Able to clearly and unambiguously communicate study outcomes and knowledge to specialist audiences from both business and informatics fields along with the ability to appropriate the style and form of expression to non-specialist audience.
- Have competency for critically independent and creatively argued research, to evaluate methodologies and develop critiques and where appropriate to propose and defend new hypotheses.
- Demonstrate ability for initiating, leading and taking responsibility for a work of individuals and groups where business and informatics competences are crucial for the type of the position.

Learning skills

- Able to identify personal needs and directions for individual and autonomous study and to perform it in self-directed and autonomous manner in the common business and informatics areas.
- Able to take responsibility for ongoing individual and group learning in specialized business and informatics fields within the networked economy, including defining learning objectives for medium and longer terms.

List of courses

Semester 1

- [6.0 ECTS] **Organization Information Systems**
- [6.0 ECTS] **Elective Course 1**
- [6.0 ECTS] **Free Elective Course 1**

Concentration: Students with previous education in Computer Science

- [6.0 ECTS] **Foundations of Economic Systems**
- [6.0 ECTS] **E-accounting**

Concentration: Students with previous education in Economics

- [6.0 ECTS] **Concepts of programming**
- [6.0 ECTS] **Computer Systems**

Semester 2

- [6.0 ECTS] **E-commerce**
- [6.0 ECTS] **Database Management Systems**
- [6.0 ECTS] **Strategic Information Technology Management**
- [6.0 ECTS] **Free Elective Course 2**
- [6.0 ECTS] **Elective Course 2**

Semester 3

- [6.0 ECTS] **Business Process Analysis for Entrepreneurial Resource Planning**
- [6.0 ECTS] **Service-Oriented Architectures**
- [6.0 ECTS] **System Analysis and Design**

Concentration: Students with previous education in Computer Science

- [6.0 ECTS] **Elective Course 4**
- [6.0 ECTS] **Elective Course 3**

Concentration: Students with previous education in Economics

- [6.0 ECTS] **Elective Course 3**
- [6.0 ECTS] **Elective Course 4**

Semester 4

- [30.0 ECTS] **Master Thesis**

Description of courses

Core courses

- **Organization Information Systems**
Introduction to the basic Information System (IS) concepts and principles in the context of business decision making.

This course entails research in the field of Information Systems, as well as explanation of their importance within the contemporary organizations. The main course objective is to provide students with knowledge on how managers can develop and manage the potentials of the Information Technology in their personal professions and the strategic benefits for their companies.

- **Foundations of Economic Systems**

This advanced course emphasizes on applications of various economic models for the analysis of issues and debates related to micro / macro-economic policy and strategy. In this context analyzed are various microeconomic models such as patterns of demand and supply, models of minimizing costs, patterns of maximizing profits in conditions of perfect and imperfect competition, the optimal allocation of resources and more. Furthermore, this course covers the international business focused in the period of globalization, national differences in economic policy, foreign direct investment, regional economic integration and so on.

- **E-accounting**

The course aims to analyze the prism of accounting of information systems. The course also analyzes accounting from a business perspective and system perspective. After completing this course, students will be able to understand the internal processes in accounting, as these processes are related, what effect has each process in other processes, accounts and annual reports. This knowledge students can use in their careers as business analysts.

- **Concepts of programming**

Systems of programming with events and visual programming. Advanced programming techniques for organizing and operating with data. Applications: environment for working with object-oriented programming languages.

- **Computer Systems**

Internet databases, teleconferencing, learning using the Internet, electronic business and commerce, teleport, robots. Java programming language, and java server pages, java server faces, content providers, development and future communications with the Internet, new technologies.

- **E-commerce**

Commercial transactions in an electronic era, understanding of technology, transactions, marketing and trade, business, management and technical implementations of E-commerce. Students will first acquire leadership, planning and team management skills included in the initiation and development of highly technological endeavors

- **Database Management Systems**

Thorough research of the Intelligent Management Systems with databases in support of business decision making. Research on all the aspects of data modeling, database design and implementation of relational, object-oriented and semantic database. Relational database systems: architecture, theory and application. Relational data structures, integrated rules, mathematical description and data manipulation.

- **Strategic Information Technology Management**

The course describes the general concepts of information management and supports the development of skills and knowledge required for information managers. The most important management and strategy concepts are integrated, and problems such as management function and concepts, the strategy, organization and planning, as well as the examination of the method of using information systems as a strategic tool are also covered. The course objectives are to primarily generate introduction to the key elements of strategic management, the planning and organization in order to further develop understanding of the basic concepts and frames of strategic management through which the potentials of strategic information systems may be identified and evaluated.

- **Business Process Analysis for Entrepreneurial Resource Planning**

The course provides students with introduction to the basics of Entrepreneurial Resource Planning Systems, with a special emphasis on how integrated information systems enhance business operations. The course is a detailed description of examining the principles required for understanding the data integration through different departments in every organization.

- **Service-Oriented Architectures**

Representation of XML documents. Describe the information in XML. Building blocks of Web services. Architecture of Web Services. Client server model. Web hosting services. Using Web services. SOAP Messaging. SOAP faults. Model for SOAP messaging. Data types. Transport of messages with SOAP. Defining data types and structures with XML schemas. Description of the interface of Web services. Samples of communication. UDDI registries. UDDI interface. Using UDDI to publish the service. Using UDDI to find services. Generating the UDDI WSDL. XML digital signatures and encryption. SOAP security updates. Security. NET 2.0 Web Services. Review na.NET. Classes for working with Web services.

- **System Analysis and Design**

The purpose of this course is to enable students with understanding and usage of methodologies, techniques, tools and perspectives essential for system analysts to successfully investigate and develop information systems applications by using standard modeling techniques, such as structure, modeling techniques, and techniques for object modeling. Students should understand and be able to use various technologies and tools for designing programs. Also, students should understand the methods and their limitations in creating a working design with the results obtained from systematic analysis.

- **Master Thesis**

This module enables students to transfer their skills and knowledge to research and make more complex task of Master-Thesis. The module is designed to be fully practical and students to acquire the necessary knowledge and skills to approach writing the thesis. The module has unique return result-to enable students to write the master thesis with minimal difficulties, and with maximum efficiency. The course aims to improve research techniques and style of writing paper, taking account to stop illegal means, such as plagiarism and infringement of copyright, which are prohibited by the Statute of SEEU.

Elective courses

- **Application of Innovative Technologies in Business Processes**

The main objective of the course is to present and introduce creative thinking and its possible applications to the students. Challenges that businesses have to face with the introduction of the novel technologies in order to deploy innovative technology to certain processes or services. Possible risks and benefits related with deployment of novel and innovative technologies.

- **Database Concepts**

Organization and manipulation of data organized into data warehouses. Advanced operations and algorithms for working with data warehouse. Modeling the data warehouse, organization and manipulation of data stored in the repository of data, preparation of reports from the repository data.

- **Rhetoric**

During its long history of 2,500 years, rhetoric was used to indicate many different things; but rhetoric nowadays is considered as the art of persuasion through language. Rhetoric marks the way that an individual is linked to a particular theme or idea in order to convince the others. Rhetoric is characterized by several distinguishing features.

- **Methodology of Teaching**

The aim of the course is to introduce the students to the basic teaching approaches and methods. They are expected to gain knowledge and skills in order to be able to apply the active educational tools. The course also offers development, learning and teaching as concepts and basic practices that allow teachers to teach about the development of thinking. Throughout this course, students will gain both theoretical background and entirety of strategies that will enable them to reflect and develop both their own and their students` critical thinking.

- **Multilingualism and multiculturalism**

The purpose of this subject will be multilingualism in multicultural societies as a social phenomenon. This phenomenon is massive in the world. During the lectures, more precise terms such as monoculturalism and multiculturalism will be considered. The term 'linguistic nationalism' has at least two forms of this nationalism, which collide with each other: for the leaders of the most powerful countries nationalism means expansion, and for minorities it takes the form of defiance and struggle for the affirmation of identity, despite such pressure. The emphasis during the program will be multiculturalism in education. In the schools curricula consists of contents from

different cultures.

- **Selected Chapters of Advanced Topics in IT Applications for Preparing a Scientific Paper**

The aim of this subject is: - To display the technical elements, the structure of the text and design of a scientific research. - To enable students to acquire advanced knowledge and skills from selected advanced chapters of IT applications that will be needed in preparation of the scientific and research paper. - Practical application of these objectives in preparing student's individual research paper.

- **Selected Chapters of Advanced Applications for Statistical Data Processing**

The aim of this subject is: * To display the technical elements in the field of statistics: organizing, processing, comparing through analysis and publication of data. * To enable students to acquire advanced knowledge and skills from selected advanced chapters of the applications for statistical data processing. * Practical application of these objectives in statistical processing of data obtained from questionnaires, reports, scientific studies and other documents.

- **Professional Communication**

The course is focused on the development of those communication skills that are essential for effective functioning in the professional world. Students will study the process for analysis of different communication situations, and will accordingly comprehend them. Among the themes that will be covered are communication in organization, interpersonal and group communication, oral presentations, interviews for employment, professional business letters and interpersonal skills including group dynamics and teamwork.

- **Philosophy of Social Sciences**

This module covers information that will provide the learner to gain knowledge, skill and competence of the social sciences, including general methodology (explaining, theorizing, testing), the application of philosophy (especially individualism versus holism), the nature of rationality, and the history of theories and concepts. This module offers an advanced survey of current debates about the ontology, methodology, and aims of the social sciences. It will focus on the central issues of the social sciences: Ethno methodology; Evolution; Phenomenology; Rationality; Relativism; Scientific Methods; Textual Interpretations. Learning outcomes: On successful completion of the course, students will be able to: Understand the goal of social sciences. Tell the difference between explaining and understanding human behavior; To explain the different approach in explanation of the social sciences compare the natural sciences, the peculiarities about human beings and social phenomena; To understand the social structures, practices, norms, institutions, etc. The relationship between individuals and larger social structures; To explain the rely not only on facts about individuals and their mental states, but also the cases in which social phenomena cannot be explained in terms of individual behavior; To understand the value-laden in a different way or to a different degree than natural science, the possibility to have a value-free social science, the possibility to have an objectivity in social science.

- **Business Finances**

Transfer the required amount of theoretical knowledge and skills towards students from the area of corporate finance. Equipping students with contemporary theoretical knowledge and experience of the analysis of the fundamental concepts of finance to corporations, financial and real investment projects and their evaluation through the time dimension of financial means (money). The focus of the course is on training students how to use adequate sources of financing, effectively managing capital and the determination of proper structure, determining the appropriate policy-distribution of profits and dividend policy through financial planning and forecasting, etc.

- **Business Modelling and Process Innovation**

The purpose of this course is to enable students with solid skills in computer modeling. These skills are expected in today's labor market, and will also be very useful for other courses within this program. In order to achieve the goal of acquiring these skills, the course focuses primarily on modeling to address specific issues in using Excel. Contemporary issues in information systems will also be covered within this course. Students will refresh their knowledge of mathematics and statistics.

- **Information Technology Project Management**

Overview of the practice for Information Technology Project Management, software, context, and processes. The topics include project methodology implementation, resource selection, project risks and damage: technical personnel project management, project management tools, techniques and issues related to the external project origin.

- **Financial applications of information systems**

The focus is on the impact and use of information technology in the sector of financial services, including exposure and experience to different types of software for financial services. Upon successful completion of this course, students will understand the impact of information technology in Banking and financial markets; knowledge specific classes of financial information systems such as electronic communication networks (ECNs) and multilateral systems, networks transfer of fund links etc.

- **Managing Corporate Information Systems**

This course provides fundamental knowledge and perspectives that apply to all organizations, regardless of which framework or method of corporate architecture used in that organization. The first section examines the history of corporate architecture and incorporates blocks IT strategy, planning, modeling information, and management. The second part examines the main frames and methods of corporate architecture with a focus on creating artifacts for business managers, technology managers, and those who implement the technology. The third part focuses on implementation of corporate architecture with a focus on standards, management and multiple use of artifacts. This section also considers the integration of corporate architecture reengineering business processes, management needs, integration of systems and methods of developing systems.

- **Advanced Software Design**

Thorough review of software design. Continuing the study of patterns of design (design patterns), the framework for design and architecture. Review of current intermediary (middleware) architectures. Design of distributed systems using intermediaries. Component based design. Theory of measure and use metrics in the design. Characteristics of good design: performance, reliability, security, reusability, reliability, etc. Measuring internal qualities and complexity of the software. Evaluation and evolution of design.

- **Advanced Algorithms**

The course includes the following topics: analysis of recursive algorithms and random techniques, algorithms for sorting and according to complexity (counting, radix, heapsort, quicksort, linear sorting), methods of conception algorithms (divide and conquer, dynamic programming, greedy algorithms) , data structures (heap, sets and balanced trees), increasing the existing structures, methods and hash functions, graphs and algorithms for search in depth and width, heuristic search, algorithms for finding the shortest path, optimization and linear programming, maximum flow network, etc.

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