Transilvania University of Brașov, Romania

Study program: Integrated Business Information Systems

Faculty: Economic Sciences and Business Administration

Study period: 2 years (master)

Course title	Code	No. of credits	Number of hours per week			
			course	seminar	laboratory	project
Integrated Information Systems_I	ERP1	7	1		2	1

Course description (Syllabus): This course covers concepts related to **ERP** systems. Students will gain knowledge on using the most complex **ERP** (**E**nterprise **R**esource **P**lanning) system, namely **SAP R/3** (**Systems, Applications and Products in Data Processing**) for enterprise resource planning. Students will also assimilate information concerning terminology, solutions, components and techniques related to the SAP system as well as skills development of integrated and real-time approach of the activities related to an enterprise.

Main issues: Introduction: ERP Systems, ERP Architecture, SAP system, SAP Modules**; Logging On. SAP Navigation:** Interface, Menus: SAP Standard, Favorites, Create and work with multiple sessions, Help; **System-wide concepts in SAP:** Organizational elements, Master Data, Transactions; **Material Master Data:** Structure, Material Types, Classification; **Sales and Distribution:** Organizational elements, Sales Order; **Material Requirements Planning:** MRP Single-item multi-lever, MRP Single-item single- lever, MRP Parameters; **Production Planning:** Master data: BOM, Routing, Work Center, Production Version, Create Planned Order, Create Production Order, Goods Movement, Confirmation; **Purchasing:** Create Purchase Requisition, Create Purchase Order; **Outbound Delivery:** Transfer Order, Picking; **Logistics Invoice/Billing:** Billing Document (create), Invoice Verification.

Course title	Code	No. of credits	Number of hours per week			
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Multidimensional Data Analysis	AMD	7	2		1	

Course description (Syllabus): Enhancing Business Intelligence using Information Systems; Developing BI Information Systems; Managing the Information Systems Infrastructure; Metadata Repository Considerations; Multidimensional Analysis – OLAP; Implementing BI Information Systems.

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Advanced Data Science	AMD	7	2		1	

Course description (Syllabus): Introduction to Data Science; Data Processing and Exploration; Regression; Classification; Clustering; Association rules;

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Ethics and Academic Integrity	AMD	3	1	1		

Course description (Syllabus): Plagiarism and copy-right; Citation styles in economic research; Codes of professional ethics and deontology; Quantitative and qualitative research methods; Structure of a research project; Scientific Poster and Oral Scientific Presentations.

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Mobile Technologies	TM	6	2		1	

Course description (Syllabus): Programming languages for developing mobile applications – Android; Web applications vs. mobile applications vs. desktop applications ; Client-side strategies and frameworks with JavaScript and AJAX for mobile apps; Lifecycle and testing mobile applications; Security concerns (network and session attacks, isolation, phishing); Native application development.

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Artificial Intelligence Applications in Economy	AIE	7	1		2	

Course description (Syllabus): Introduction to artificial intelligence; Intelligent adaptive; How cars think; Intelligence based on big data; Emerging technologies and their impact on artificial intelligence; Communication with artificial intelligence systems; Trends in the field of artificial intelligence; Reinforcement learning - Markov Decision Process; Reinforcement learning - Reward Matrix; Learning assessment metrics; Deep learning: neural networks FNN (feedforward neural networks) and CNN - convolutional neural network - Python Keras and TensorFlow applications; Prediction by regression models based on neural networks

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Integrated Information Systems (SAP)	ERP2	7	2		1	1

Course description (Syllabus): General SAP FI-CO Module description; Integration of Business Structure in an IT Environment; ERP General Master Data – creation, storage, maintenance use; General Ledger – transition from business accounting to ERP Accounting; Accounts Payable – ledgers, master data, accounting documents, reporting, payments to suppliers; Account Receivable - ledgers, master data, accounting documents, reporting, invoices for customers; Asset Accounting - ledgers, master data, accounting documents, reporting, depreciation; Overall ERP Financial Process and Integration with other ERP Modules.

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Financial Management	MFIN	6	2	1		

Course description (Syllabus): Financial management: development, main objectives ; Financial management environment: financial markets, state's role, main financial instruments, prices ; Fundamental financial concepts: time value of money, simple and compound interest, present and future value; Financial Analysis as a base for financial decisions: financial statement analysis, financial ratios, users of financial information; Financial decisions under certainty: strategic framework of financial decisions; investment projects under certainty; investment criteria; Financial decisions under risk and uncertainty: risk and profit theory; market equilibrium and portfolio analysis; CAPM; securities price; Risk and firm value: structure of firm's capital; cost of capitals; firm value; dividend policy; Working capital management: working capital decisions; main ratios; strategies for current assets and liability management; Long-term financing decisions: stocks, debts, bonds, leasing; Dynamic strategies to increase firm value: M&A, restructuring, bankruptcy, going international.

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IT Project Management	MPI	5	1		1	

Course description (Syllabus): Managing plans: concepts and definitions, implement the key steps involved in managing a project, organize the project into manageable components, scope management, identify the start and end of a project. **Procurement management in IT Projects. Project life-cycle**: successfully lead project teams and work with stakeholders, explain how software tools can be used to support project management tasks, describe the typical steps in the conventional project and system life cycles. **Time Management**: design Gantt Chart, design Pert Diagram, dependencies between tasks, stakeholder analysis and Work Breakdown Structure. **Cost Management**: develop project budgets and schedules, total cost, cost control, Network Diagram with highlighted Critical Path. **Risk Management**: risk identification, risk evaluation, risk planning, conflicts management, the variables for success, assess the relative effectiveness of alternative plans for the same project, for example by balancing a shortened duration against increased costs. **Human Resource Management**: describe the role of project managers identifying the range of matters that are their concern and the qualities they need to display, technical management, project organization, network scheduling techniques. **The Role of the Managers in Communication**: certification in Project Management, leadership Attributes of Effective Project Managers, recognize issues in a realistic project scenario, demonstrate the use of appropriate network scheduling techniques. **Quality Management**: bring complex projects to successful completion, standards, plans, assurance, estimating a budget and Quality Management Plan, working with executives, explain the relationship between the management of an individual project and the higher level management **Basic Evaluation and Control Data**: change management, responding to change, change control, use effective tools to oversee and monitor complex projects, critical path example slides, agile Project Management, identify the different management roles that need to be filled and allocate responsibility for those roles in a project. **Testing the Pattern:** use Microsoft Project to create a project plan and monitor progress, develop a comprehensive project plan which is ready for implementation in Gantt Project, analyze and apply lessons from other actual projects using open source tools like Open-Project, Microsoft Project Tutorial, produce a project proposal.

Course title	Code	No. of credits	Number of hours per week			
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Business Simulation	SIM	5	1	2		

Course description (Syllabus): General concepts on modelling of economic processes; General concepts on simulation of economic processes; Discrete distributions. Generating discrete random variables; Continuous Distribution. Generating continuous random variables; Construction of simulation models of economic processes; Sensitivity analysis of simulated economic processes; Business simulation software packages; Analysis of the main business simulation software packages; Applications using the main business simulation software packages; Projects of business simulation.

Course title	Code	No. of credits	Number of hours per week			
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Data Mining Techniques	TDM	7	2		1	

Course description (Syllabus): Introduction to R language. Source Nodes; Record Operations Nodes; Field Operations Nodes. Graph Nodes; Statistical Models; Decision Trees; Clustering Models; Output Nodes.

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E-Business	EB	6	2		1	

Course description (Syllabus): E-business vs. E-commerce; Electronic markets and electronic payments. Online security; Online marketing. Marketing strategies on the web; Web 2.0 and social networks. E-Government; Online web applications in Romania; Document and content management applications for organisations ; Business Intelligence.

Course title	Code	No. of credits	Number of hours per week			
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Information Systems Audit	SE.MSI.SI.34	7	2	2		

Course description (Syllabus): IT Governance; Information system controls objectives; Information system audit program; Information systems security policies, standards and guidelines; Audit standards. COBIT (Control Objectives for Information and Related Technology); Audit for IS security. Physical security. Logical security. Security risks; Estimating information systems efficiency.

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Entrepreneurship and Business Strategies	ANT	7	2	2		

Course description (Syllabus): Business – concepts, characteristics. Business in services; The approach of business. Partners and clients; Organizational structures and business efficiency; Business planning. Strategic business decision; Business approach – the essential questions. Business: management and leadership; Small businesses; Entrepreneurship – concepts; Entrepreneurship and innovation. Creativity; Entrepreneurial strategies; Building the entrepreneurial organizations.

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Knowledge Management	KM	5	2		1	

Course description (Syllabus): The knowledge economy; Knowledge management. Main concepts; Knowledge management models; Knowledge management processes; Knoeledge management processes – II; Knowledge management systems; Knowledge management systems – II; Knowledge management systems -evaluation processes.

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Information Systems Management	MSI	3	1		1	

Course description (Syllabus): Introduction to IT/IS. Concepts and Definitions - data, information and knowledge distinctions, Internet Coverage, IT advantages and drawbacks, the role of IT in history, systems, Information Systems (IS), roles of other areas and of the human factor, IS components, network types, the role of IS in business and in organizations etc. **IS in organizations** – organization definition, companies as socio-technological systems, various organization structures compared, the impact of IS in organizations, functional perspective vs business process perspective, concepts related to processes, organization strategy, the impact of IS on organization strategy, strategy frameworks, IS strategy matrix, the coherence between strategies etc. **IS classification** – by organizational levels, TPSs, detailing IS at operational level, tactical management and strategic management, IS and decision making (MIS, DSS, GIS, EIS, ESS, expert systems etc.), Enterprise-wide IS, Inter-organizational IS etc. **Enterprise Information Systems** – delays, pressures on an organization, processes using functional systems vs. processes using EIS, Enterprise Systems, evolution of ES, ES infrastructure, ES architecture evolution, Enterprise Systems Software, ESS

categories and software examples, ERP, ERP modules, ERB advantages and disadvantages etc. **Business Intelligence** – extended applications of ESS, Enterprise Application Integration, BI, data visualization, BI activities, Knowledge Discovery technologies and tools, OLAP, Data Mining, DM types, DM applications etc.

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Cyber marketing	CYM	5	1		2	

Course description (Syllabus): Marketing in online environment. Particularities of marketing on the internet; Cybermarketing: Definition, advantages and short history. Comparisons between cybermarketing and traditional marketing. Differences between cybermarketing and digital marketing; Main tools of cybermarketing: Email marketing, content marketing, social media; Market segmentation in online environment. Marketing research in online environment; Cybermarketing mix. Policies and strategies for online environment; Ethics issues in online environment related to cybermarketing; The connection between cybermarketing and e-commerce

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Information Technology Legislation | European Projects	LEG	4	2	1		

Course description (Syllabus): The course will analyse the legal implications of digitalisation and of the Internet, including topics such as e-signature, e-commerce, contracts, jurisdiction and dispute resolution, intellectual property, content liability, trademarks, the internet and domain names, online privacy, cloud computing and virtualisation, computer crime, and online dispute resolution. Structure: legislation in information technology - introductory notes; legal aspects regarding the regulation and security of public and private information systems; legal regulations applicable to activities in the digital environment; vulnerability of infrastructure systems - criminal offenses in the information sector

Course title	Code	No. of credits	Number of hours per week			
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Research for dissertation thesis	DIS	5				4

Course description (Syllabus): Training and skill development for building applicative projects and papers; Applying the correct methods, techniques and models for solving their projects; Underlying conclusions and proposals; Identifying new solutions for solving a project; Interdisciplinary research in IT for solving the proposed project.