

Proposal of courses for Erasmus students

Academic year 2017/2018



FACULTY OF MANAGEMENT - LUBLIN UNIVERSITY OF TECHNOLOGY PL LUBLIN03

**WINTER SEMESTER COURSES**

FIRST CYCLE PROGRAMME	COURS ID	ECTS
COMPUTER SCIENCE IN MANAGEMENT	Z04	4
CONSUMER BEHAVIOUR	Z05	4
FINANCIAL ANALYSIS	Z13	4
FUNDAMENTALS OF MANAGEMENT	Z14	6
FUNDAMENTALS OF MARKETING	Z15	5
HUMAN RESOURCE MANAGEMENT & DEVELOPMENT	Z16	4
PROJECT MANAGEMENT	Z32	4
QUALITY MANAGEMENT	Z33	5
STATISTICS (I)	Z34	4

SECOND CYCLE PROGRAMME	COURS ID	ECTS
BUILDING BUSINESS AND INFORMATION APPLICATIONS	Z01	4
CORPORATE SOCIAL RESPONSIBILITY (CSR)	Z07	4
CRM IN CUSTOMER SERVICE	Z08	4
DESIGN THINKING	Z09	4
ENTERPRISE PROJECT MANAGEMENT (EPM)	Z10	4
EUROPEAN PROJECTS MANAGEMENT	Z12	4
JAVA MOBILE PROGRAMMING FOR ANDROID	Z19	4
MANAGEMENT ACCOUNTING	Z21	5
MANAGEMENT SKILLS & LEADERSHIP	Z22	4
OCCUPATIONAL ENVIRONMENT	Z26	4
OCCUPATIONAL STRESS	Z28	4

**SUMMER SEMESTER COURSES**

FIRST CYCLE PROGRAMME	COURS ID	ECTS
CORPORATE FINANCE	Z06	5
ERGONOMICS	Z11	6
INTEGRATED MARKETING COMMUNICATIONS	Z17	5
MARKETING RESEARCH	Z23	5
MATHEMATICS	Z24	6
MICROECONOMICS	Z25	6
PRODUCTION PLANNING AND MANAGEMENT	Z31	5
STOCK MARKET INVESTMENTS	Z36	4

SECOND CYCLE PROGRAMME	COURS ID	ECTS
BUSINESS PERFORMANCE MANAGEMENT	Z02	4
BUSINESS NEGOTIATIONS & PERSUASION	Z03	4
INTRODUCTION TO INTERNATIONAL BUSINESS	Z18	4
KNOWLEDGE MANAGEMENT	Z20	5
OCCUPATIONAL HEALTH RISK ASSESSMENT	Z27	4
OPERATIONAL RESEARCH	Z29	4
POLITICAL ECONOMICS	Z30	5
STATISTICS (II)	Z35	4
TIME SERIES ANALYSIS	Z37	4



ADDITIONAL PROVISIONS:

- The applying student can **select courses corresponding to no more than 32 ECTS credits** per semester.
- The student is allowed to choose courses offered by the other faculties of the Lublin University of Technology, provided that the number of ECTS credits assigned to these courses **is no more than 20%** of the total number of ECTS credits specified in his/her Learning Agreement (LA).
- Upon arrival the student may alter some of the courses originally listed in his/her Learning Agreement (LA) within the limits of **up to 30%** of the total number of ECTS credits specified in the original Learning Agreement.
- The "During the mobility" form must be delivered to the Coordinator no later than **14 days after the organizational meeting** held at the faculty.
- When the number of students applying for a given course is less than 12, the faculty will have the right to cancel the course. In this case the student should amend his/her Learning Agreement.

IMPORTANT NOTICE:

- The students have to check carefully **PRELIMINARY REQUIREMENTS** in order to make sure they are eligible for a desired course.
- The students are required to check in which semester the course will be delivered. The courses will be delivered exclusively in semesters specified in this offer.



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**BUILDING BUSINESS AND INFORMATION APPLICATIONS - Z01**

FACULTY OF MANAGEMENT	CLASS TYPE: LECTURE, LABORATORY
NUMBER OF HOURS: 30 (10 LECTURE + 20 LABORATORY)	ECTS: 4
SEMESTER: WINTER	CLASS LEVEL: SECOND CYCLE
MINIMAL NUMBER OF STUDENTS: 12 (Should the number of applying students be smaller, the course may be cancelled)	
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS: None.	
CONTENTS 1.Introduction to Java: Data types. Variables. Converting variable types. Arithmetic, shift, logical and relational operators. Order of operations. Statements: if, switch, iterations. Single and multidimensional arrays. 2. Method structure. Calling a method. Parameter types. Overloading methods. Virtual methods. Declaring a structure. Defining methods in structures. Calling methods from structures. Defining properties, indexers and interfaces in structures. 3. Classes and objects. Encapsulation. Inheritance. Polymorphism. 4. Using methods, properties, operators, constructors and destructors. Static Modifier. Static fields, constants, methods. Overloading operators.	
EFFECTS OF EDUCATION PROCESS: It will show how to write code using this brand new language. Language constructs such as statements, variables, control loops, and classes are all covered. In addition, it will show how to apply Java to programming tasks that developers often face in the real world. In final it will show how to use Java to develop Web sites, develop Windows desktop applications and more.	
LITERATURE: <ul style="list-style-type: none">• Sierra K., Bates B., <i>Head First Java, 2nd Edition, 2010.</i>• Schildt H., <i>Java, A Beginner's Guide, 5th Edition, 2012.</i>• Bloch J., <i>Effective Java Programming Language, 2002.</i>• Dai N., Mandel L., Ryman A., <i>Eclipse Web Tools Platform: Developing Java™ Web Applications, 2008.</i>• Niemeyer P, Knudsen J., <i>Learning Java, Second Edition, 2002.</i>• Haroey & Paul Deitel, <i>Java: How to Program, 2007.</i>• Burd B., <i>Java For Dummies, 2013.</i>	
TEACHING METHODS: Lecture and laboratory.	
ASSESSMENT METHODS: Test.	
TEACHER: Wojciech Kulik, MSc.	

**BUSINESS PERFORMANCE MANAGEMENT - Z02**

FACULTY OF MANAGEMENT	CLASS TYPE: LECTURE, PROJECT, EXERCISES
NUMBER OF HOURS: 30 (10 LECTURE + 10 PROJECT +10 EXERCISES)	ECTS: 4
SEMESTER: SUMMER	CLASS LEVEL: SECOND CYCLE
MINIMAL NUMBER OF STUDENTS: 12 (Should the number of applying students be smaller, the course may be cancelled)	
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS: Basics of management, Basics of marketing.	
CONTENTS: The main aim of this course is to introduce students to the concept of performance management. This issue covers both understanding and clarifying the value creation in the organisation and a construction of the performance measurement system that supports this. The main focus will be on how organisations can use non-financial performance measures as a supplement to the traditional financial reporting system (with an overview of various customer and employee satisfaction models). Secondly the course will provide students with an overview of different management models (with a special focus on the EFQM Excellence Model, Danish Diamond and the Balanced Scorecard). During the course students will learn how these frameworks can be used for self-assessment and benchmarking as a part of an continuous organisation's improvement effort.	
EFFECTS OF EDUCATION PROCESS: After passing the Business Performance Management course the student will have an general overview of performance management systems and the various management models and theories covered in the course. Additionally he/she will know how these models can be applied by organisations. The student should also be able to identify the relevance or non-relevance of various management models in a specific situation. Summing it up the course should provide the student with the following competences and knowledge: an overview of performance management, customer and employee satisfaction models and management models; ability to identify relevant non-financial performance measures in a given situation; ability to evaluate an organisation's approach to performance measurement and management; evaluation the pros and cons of various management models in a specific situation; ability to make an appropriate choice of management model.	
LITERATURE: <ul style="list-style-type: none">Porter, L. & Tanner, S.: <i>Assessing Business Excellence</i>, Butterworth Heineman Ltd.The EFQM Excellence Model 1999, <i>The European Foundation for Quality Management, Official Handbook</i>Kaplan R.S., Norton D.P., „The Balanced Scorecard: Measures That Drive Performance”, <i>Harvard Business Review</i>, July-August 2005. Complementary: <ul style="list-style-type: none">Haffer R., Kristensen K., „Developing versus developed companies in Business Excellence initiatives”, <i>Total Quality Management</i>, Vol. 19, No. 7-8, 2008 Kristensen K., Westlund A.H., „Management and external disclosure of intangible assets”, <i>European Quality</i> Vol. 8 No. 4, 2001.Kaplan Robert S., Norton David P. „The Balanced Scorecard: Translating strategy into action” <i>Harvard Business School Press, Boston, Mass, 1996.</i>Kristensen K., Westlund A.H., „Accountable Business Performance Measurement for Sustainable Business Excellence”, <i>Total Quality Management</i>, Vol. 15, No. 5-6, 2004.Kristensen K., Westlund A.H., „Performance Measurement and Business Results”, <i>Total Quality Management</i>, Vol. 15, No. 5-6, 2004.	
TEACHING METHODS: Multimedia presentations, tasks, cases, discussions.	
ASSESSMENT METHODS: Project, exercises and final test.	
TEACHER: Łukasz Skowron, PhD, (Eng.)	

**BUSINESS NEGOTIATIONS & PERSUASION - Z03**

FACULTY OF MANAGEMENT	CLASS TYPE: LECTURE/SEMINAR, WORKSHOP
NUMBER OF HOURS: 30 (10 LECTURE + 20 WORKSHOP)	ECTS: 4
SEMESTER: SUMMER	CLASS LEVEL: SECOND CYCLE
MINIMAL NUMBER OF STUDENTS: 12 (Should the number of applying students be smaller, the course may be cancelled)	
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS: Knowledge of English at B2 level or above.	
CONTENTS: Negotiation and selling. Negotiation styles. Characteristics of exceptional negotiators. Structure of negotiations. Preparation well for business negotiations. Rituals of negotiating meetings, intercultural negotiations. After negotiations: making the agreement last. Negotiating tricks. Presentation and persuasion techniques. Advanced linguistics of persuasion.	
EFFECTS OF EDUCATION PROCESS: Ability to lead effective business negotiations in multicultural business environment. Knowledge about the structure, techniques, rules, culture and styles of negotiations in contemporary business. Knowledge about the methods and techniques of persuasion. Ability to lead persuasive presentation.	
LITERATURE: <ul style="list-style-type: none">• Bazerman M., Malhotra D., <i>Negotiation Genius: How to Overcome Obstacles and Achieve Brilliant Results at the Bargaining Table and Beyond</i>, Bantam Book, New York 2008.• Hazeldine S., <i>Bare Knuckle Negotiating</i>, Lean Marketing Press, UK, 2006. Complementary: <ul style="list-style-type: none">• Basu R., <i>Persuasion Skills</i>, Lean Marketing Press, UK, 2009• Goldstein N.J., Martin S.J., Cialdini R.B., <i>Yes!: 50 Scientifically Proven Ways to Be Persuasive</i>, Free Press, New York 2008.• Dilts R., <i>Sleight of Mouth. The Magic of Conversational Belief Change</i>, Meta Publications, Capitola 1999.	
TEACHING METHODS: Lecture, seminar, workshop	
ASSESSMENT METHODS: presence, successful presentation of negotiation skills in the negotiation games.	
TEACHER Leszek Panasiewicz, PhD, (Eng.)	

**COMPUTER SCIENCE IN MANAGEMENT - Z04**

FACULTY OF MANAGEMENT	CLASS TYPE: LECTURE, LABORATORY
NUMBER OF HOURS: 30 (5 LECTURE + 25 LABORATORY)	ECTS: 4
SEMESTER: WINTER	CLASS LEVEL: FIRST CYCLE
MINIMAL NUMBER OF STUDENTS: 12 (Should the number of applying students be smaller, the course may be cancelled)	
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS: Information technology	
CONTENTS: 1. Informing students about a computer laboratory regulations, discussing health and safety rules, presentation of the laboratory curriculum and principles of the coursework assessment. 2. Material consolidation on spreadsheet basics: worksheet formatting, types of cell references, operators and arithmetic formulae, automatic cells filling in a series, making simple charts. 3. Advanced chart making. Creating invoices in spreadsheet. 4. Advanced mathematical, logical and financial calculations in a spreadsheet. 5. Text operations in a spreadsheet. 6. Work on 3-D data areas. 7. Arrays and array formulas. 8. Spreadsheet database management. 9. Coursework assessment.	
EFFECTS OF EDUCATION PROCESS: Acquainting students with advanced possibilities of spreadsheets. Learning the skills of using advanced functions of spreadsheets.	
LITERATURE: <ul style="list-style-type: none">• Walkenbach J., <i>Excel 2007 Bible</i>, Wiley Publishing Inc, Indianapolis, USA, 2007.• Manzo J.J., <i>Microsoft Office Excel 2007 in Business Core and Student Resource</i>, Prentice Hall, New Jersey, USA, 2008.	
TEACHING METHODS: Laboratory exercise	
ASSESSMENT METHODS: Test	
TEACHER: Piotr Ziń MSc (Eng.)	

**CONSUMER BEHAVIOUR - Z05**

FACULTY OF MANAGEMENT	CLASS TYPE: LECTURE, CLASS
NUMBER OF HOURS: 30 (15 LECTURE + 15 CLASS)	ECTS: 4
SEMESTER: WINTER	CLASS LEVEL: FIRST CYCLE
MINIMAL NUMBER OF STUDENTS: 12 (Should the number of applying students be smaller, the course may be cancelled)	

LANGUAGE OF INSTRUCTION: English
PRELIMINARY REQUIREMENTS: Intermediate level of English. The course starts two weeks after the beginning of a semester. All students willing to participate in the class are required to contact the teacher, personally or via email, before that date, otherwise they will not be allowed to enrol on a course.
CONTENTS: The idea of consumers' activity on the market. The structure of the purchase process. Environmental, social, personal and psychological factors that influence and shape consumers' behaviour. Information gathering, alternative evaluation, risk, satisfaction and loyalty.
EFFECTS OF EDUCATION PROCESS: Define consumer behaviour, identify differences between consumer and customer. Describe the process of consumer behaviour and decision-making process.
LITERATURE: <ul style="list-style-type: none">• Evans M., Jamal A., Foxall G., <i>Consumer behaviour</i>; Wiley 2009.• Schiffman L., Kanuk L., <i>Consumer behaviour</i>, Pearson 2009.
TEACHING METHODS: Lecture, interactive presentations, discussion, case studies.
ASSESSMENT METHODS: Written exam and completion of case studies.
TEACHER: Marcin Gąsior, PhD, Eng.

**CORPORATE FINANCE - Z06**

FACULTY OF MANAGEMENT	CLASS TYPE: LECTURE, CLASS
NUMBER OF HOURS: 30 (15 LECTURE +15 CLASS)	ECTS: 5
SEMESTER: SUMMER	CLASS LEVEL: FIRST CYCLE
MINIMAL NUMBER OF STUDENTS: 12 (Should the number of applying students be smaller, the course may be cancelled)	
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS: Basics of accounting, rudiments of financial analysis.	
CONTENTS: Essence of financial management. Financial reports analysis (balance sheet, profit and loss account, cash flow statement). Methods of financial standing estimation. Cost of capital. Methods of shaping company's optimum capital structure. Methods of evaluation of company's investments. Factors which determine company's valuation. Methods of company's valuation	
EFFECTS OF EDUCATION PROCESS: To give skills in corporate finance, prepare to read company's financial statements, to understand the importance of changing money's valuation in making decision processes.	
LITERATURE: <ul style="list-style-type: none">• Ehrhardt M.: <i>Corporate Finance</i>, South-West Thompson Learning 2008.• Lumby S.: <i>Corporate Finance Theory & Practice</i>, Thomson Learning 2008.	
TEACHING METHODS: Multimedia presentation, tasks, cases, discussions.	
ASSESSMENT METHODS: Final exam (test and case discussion).	
TEACHER: Prof. Artur Paździor, PhD, DSc (Eng.)	



CORPORATE SOCIAL RESPONSIBILITY (CSR) - Z07

FACULTY OF MANAGEMENT	CLASS TYPE: LECTURES WITH PRACTICAL ELEMENTS OF SEMINARS
NUMBER OF HOURS: 15	ECTS: 4
SEMESTER: WINTER	CLASS LEVEL: SECOND CYCLE
MINIMAL NUMBER OF STUDENTS: 12 (Should the number of applying students be smaller, the course may be cancelled)	

LANGUAGE OF INSTRUCTION: English

PRELIMINARY REQUIREMENTS: None

CONTENTS: Corporate Social Responsibility (CSR) - historical background, definition, recognition of contemporary models and standards of social responsibility. Conditions and perception of CSR in Poland and in the world. Basic models of social responsibility. Stakeholder theory and CSR. Moral choices individuals in consumer culture. Contemporary ethical standards of consumer culture. Responsibility for the environment. Reporting as an important element of CSR strategies in the organization. Corporate social responsibility as a source of competitive advantage.

EFFECTS OF EDUCATION PROCESS: Understanding the issue of corporate social responsibility, knowing how to define and identify models, methods, tools used in the CSR, gaining knowledge of how to create and apply strategies of CSR.

TEACHING METHODS: lecture, interactive presentations, discussion, case studies.

ASSESSMENT METHODS: Participation in the classes, essay, evaluation of presentations.

TEACHER: Marzena Cichorzewska, PhD, Prof. Barbara Mazur, PhD, DSc

**CRM IN CUSTOMER SERVICE - Z08**

FACULTY OF MANAGEMENT	CLASS TYPE: LABORATORY
NUMBER OF HOURS: 30	ECTS: 4
SEMESTER: WINTER	CLASS LEVEL: SECOND CYCLE
MINIMAL NUMBER OF STUDENTS: 12 (Should the number of applying students be smaller, the course may be cancelled)	
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS: Issues relating to the wider business, Computer skills (including MS Office at a basic level), Issues related to strategic management in enterprises.	
CONTENTS: 1. Introduction - characteristics of the concept of CRM 2. Customer Relationship Management - a systems approach 3. Case study - implementation of CRM philosophy 4. Channels of communication with customers - as one of the elements of building lasting relationships 5. Complaints justified - how not to lose a customer? 6. Complaints unreasonable - how to solve the problem of disgruntled customer? 7. Methods of implementing CRM 8. Implementation problems and solving them 9. Customer segmentation in line with the concept of CRM 10. Audit of CRM in the enterprise. How to choose a CRM software? 11. Working with a sample CRM software within the module customer service 12. Working with a sample CRM software module within the calendar of meetings 13. Working with a sample CRM software within the module reports and analyses.	
EFFECTS OF EDUCATION PROCESS: Knowledge of the concept of customer relationship management (CRM) customer service. Knowledge of the key competences in the field of culture, customer service and building relationships with clients based on the philosophy of CRM. Knowledge of theoretical basis and the history of the concept of CRM. Skill of effectively use customer segmentation in line with the philosophy of CRM. Knowledge of how to effectively use CRM software. Skill of design and support the implementation of the CRM system in the company. Improvement communication skills. Ability of effectively working in a team of employees. Demonstration a proactive stance willing to build relationships with customers in the operating area.	
LITERATURE: <ul style="list-style-type: none">• Quintana Jc, <i>Speaking Frankly About Customer Relationship Management</i>, Corporate Relationship Group, 2015.• Kavitha Dr. N., <i>Handbook of Customer Relationship Management</i>, OmniScriptum GmbH & Co. KG, 2011.• Buttle F., Maklan S., <i>Customer Relationship Management: Concepts and Technologies</i>, 3rd Edition, Routledge Taylor & Francis Group, 2015.• Kincaid J. W., <i>Customer Relationship Management. Getting It Right!</i>, 2002.	
TEACHING METHODS: Workshops, lectures, classes	
ASSESSMENT METHODS: Reports from the accomplished laboratory exercises	
TEACHER: Agnieszka Bojanowska, PhD (Eng.), Monika Kulisz, PhD (Eng.)	

**DESIGN THINKING - Z09**

FACULTY OF MANAGEMENT	CLASS TYPE: SEMINAR
NUMBER OF HOURS: 30	ECTS: 4
SEMESTER: WINTER	CLASS LEVEL: SECOND CYCLE
MINIMAL NUMBER OF STUDENTS: 12 (Should the number of applying students be smaller, the course may be cancelled)	
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS: Be prepared to participate, contribute, ask and answer questions during classes.	
CONTENTS: Understand the challenges and benefits of Design Thinking. Fundamental capabilities in the methodologies that designers use. Opening to innovating in multidisciplinary teams. Clear communicate about Design Thinking.	
EFFECTS OF EDUCATION PROCESS: Knowledge of creativity stimulation methods in yourself and others. Ability of incorporate Design Thinking into your everyday professional activities. Ability to participate in and lead innovation in collaborative settings.	
LITERATURE: <ul style="list-style-type: none">• <i>Martin R., Christensen K. The Best On Design Thinking 2013 Univ. of Toronto Press.</i>	
TEACHING METHODS: Active seminars	
ASSESSMENT METHODS: 15% - Class participation (individual) 10% - Summarizing readings in class (team) 30% - Practice project + 10% presentations in class (team) 35% - Communication paper (individual)	
TEACHER: Krzysztof J. Czarnocki, PhD (Eng.), Elżbieta Czarnocka, PhD	

**ENTERPRISE PROJECT MANAGEMENT (EPM) - Z10**

FACULTY OF MANAGEMENT	CLASS TYPE: LECTURE, LABORATORY
NUMBER OF HOURS: 30 (5 LECTURE + 25 LABORATORY)	ECTS: 4
SEMESTER: WINTER	CLASS LEVEL: SECOND CYCLE
MINIMAL NUMBER OF STUDENTS: 12 (Should the number of applying students be smaller, the course may be cancelled)	

LANGUAGE OF INSTRUCTION: English
PRELIMINARY REQUIREMENTS: Basic skills in Microsoft Windows and MS Office. Basic knowledge of project management. Own laptop.
CONTENTS: 1. Introducing Microsoft Project. 2. Understanding projects and project management. What is project? What is project management? 3. Starting a new project. Planning the project. 4. Executing, controlling and closing the project. 5. Creating a model of the project. Working with a team through MS Project. 6. Sequencing and organizing tasks. Understanding Work Breakdown Structure Codes. 7. Accessing and rearranging the project information. Scheduling tasks. 8. Viewing project information. Scheduling tasks. Setting up resources in the project. 9. Assigning resources to the tasks. Planning resource and tasks costs. 10. Checking and adjusting the project plan. 11. Tracking progress. Setting a baseline and updating progress. 12. Responding to changes in the project. 13. Reporting and analysing project information. 14. Integrating MS Project with other programs. 15. Customizing and managing project files.
EFFECTS OF EDUCATION PROCESS: The acquisition of practical skills in project management according to EPM method. Understanding the concepts and formal project management methodologies. Providing knowledge on effective methods within the following areas: planning and implementation of the project, team building, human resources management, risk management, scheduling and project planning, change management and project tracking, closing the project.
TEACHING METHODS: Workshops, lectures, laboratory.
ASSESSMENT METHODS: Project to pass.
TEACHER: Grzegorz Kłosowski, PhD (Eng.), Monika Kulisz, PhD (Eng.)

**ERGONOMICS - Z11**

FACULTY OF MANAGEMENT	CLASS TYPE: LECTURE, LABORATORY
NUMBER OF HOURS: 30 (15 LECTURE + 15 LABORATORY)	ECTS: 6
SEMESTER: SUMMER	CLASS LEVEL: SECOND CYCLE
MINIMAL NUMBER OF STUDENTS: 12 (Should the number of applying students be smaller, the course may be cancelled)	
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS: None	
CONTENTS: An introduction to ergonomics, skeletal system, muscular system and work, engineering anthropometry, biomechanical bases of ergonomics, work physiology, cumulative trauma disorders (ctds), manual materials handling (mmh), workstation design, work-tool design: human-machine systems, light and vision, occupational vibration, shift work, office ergonomics, ergonomics assessment of the workplace, implementation of ergonomics program.	
EFFECTS OF EDUCATION PROCESS: Upon successful completion of this course, student will: Be able to describe an expanded view of ergonomics, which encompasses more than ergonomically related injuries but all parts of assuring that the workplace fits the worker; Be able to put ergonomic assessments and solutions to practical use in the workplace; Will be capable of initiating evaluations of ergonomic issues and working with an ergonomist.	
LITERATURE (OPTIONAL): <ul style="list-style-type: none">• Kroemer, K.H.E., Grandjean, E.: <i>Fitting the Task to the Human</i>, Philadelphia: Taylor and Francis, 5th Edition, 1997, ISBN: 074840665.• Di Nardi S.: <i>The Occupational Environment 3rd Ed.</i>, AIHA Press, 2012, ISBN-10: 1931504431.	
TEACHING METHODS: Multimedia supported Lecture + Lab exc.	
ASSESSMENT METHODS: Test	
TEACHER: Krzysztof J. Czarnocki, PhD (Eng.), Elżbieta Czarnocka, PhD	

**EUROPEAN PROJECTS MANAGEMENT - Z12**

FACULTY OF MANAGEMENT	CLASS TYPE: LECTURE /SEMINAR
NUMBER OF HOURS: 15	ECTS: 4
SEMESTER: WINTER	CLASS LEVEL: SECOND CYCLE
MINIMAL NUMBER OF STUDENTS: 12 (Should the number of applying students be smaller, the course may be cancelled)	
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS: Basic knowledge of project management.	
CONTENTS: Introduction to EU regional policy, structural funds and regional development programming. Administrative structure of European Funds Management in Poland and possibilities of co-financing the projects. What is a project; why we use project cycle management – approach presentation, phases description. What are the evaluation criteria for optimal project. When a project is feasible: technical, financial, economic and institutional aspects. Do we have to do stakeholder consultation? How to prepare problem tree? How to convert problem tree into purpose tree? What way should we go? What is intervention logic? How to do a logic analysis? What for is the log-frame? Are there evaluation criteria in the log-frame? How to prepare the project Gantt chart? How to prepare budget of the project? Which expenditures are eligible? How the project is assessed?	
EFFECTS OF EDUCATION PROCESS: Students will be theoretically prepared for ESIF application process, they will know general principles of EU regional policy, ability to find proper operational program, use programming documents and prepare logic analyse, project plan, budget. At the end students will be acquainted with filling a project form.	
LITERATURE : <ul style="list-style-type: none">• <i>European Commission, Project Cycle Management Guidelines, EuropeAid Co-operation Office General Affairs Evaluation, March 2004.</i>• <i>European Commission, Guide to Cost-Benefit Analysis of Investment Projects Economic appraisal tool for Cohesion Policy 2014-2020, European Union, 2015, doi:10.2776/97516</i>• <i>European Commission, Guide to Cost-Benefit Analysis of investment projects. Structural Funds, Cohesion Fund and Instrument for Pre-Accession. Final Report, Submitted by TRT Trasporti e Territorio and CSIL Centre for Industrial Studies 16/06/2008.</i>	
TEACHING METHODS: The lecture and multimedia presentation, educational discussion, brainstorming, case study, puzzle game, practical project, working in groups.	
ASSESSMENT METHODS: Written test in the field of the lecture, the project made by a group of students.	
TEACHER: Korneliusz Pylak, PhD (Eng.)	

**FINANCIAL ANALYSIS - Z13**

FACULTY OF MANAGEMENT	CLASS TYPE: LECTURE, CLASS
NUMBER OF HOURS: 30 (15 LECTURE + 15 CLASS)	ECTS: 4
SEMESTER: WINTER	CLASS LEVEL: FIRST CYCLE
MINIMAL NUMBER OF STUDENTS: 12 (Should the number of applying students be smaller, the course may be cancelled)	

LANGUAGE OF INSTRUCTION: English
PRELIMINARY REQUIREMENTS: Basics of accounting, basics of financial statements.
CONTENTS: Financial statement as a source of information about company's financial standing. Horizontal and vertical balance sheet analysis. Calculation of company's financial risk and financial liquidity ratios. Analysis of profit and loss account. Evaluation of company's productivity. Estimation of profitability ratios. Cash flow statement analysis. Market indicators calculation.
EFF OF EDUCATION PROCESS: To give the skills in proper reading of financial statements, to prepare students to calculate financial ratios, to realize the importance of using financial ratios in decision making processes
LITERATURE: <ul style="list-style-type: none">• Harrison W.T.Jr., Horngren Ch.T., Thomas C.W., Suwardy T., <i>Financial Accounting. International Financial Reporting Standards</i>, Pearson Education South Asia Pte Ltd, Singapore 2011.• Reosine L., Collins D., Johnson W.B.: <i>Financial Reporting and Analysis</i>, Prentice Hall, Apper Sadle River, New Jersey 2008.• Alehander D., Britton A., Jorissen A.: <i>International financial reporting and analysis</i>, South-Western Cengage Learning, Hampshire 2009.
TEACHING METHODS: Multimedia presentation, tasks, cases, discussions.
ASSESSMENT METHODS: Case study - estimation of company's financial standing.
TEACHER: Prof. Artur Paździor, PhD, DSc (Eng.)

**FUNDAMENTALS OF MANAGEMENT - Z14**

FACULTY OF MANAGEMENT	CLASS TYPE: LECTURE, SEMINAR, PROJECT
NUMBER OF HOURS: 45 (20 LECTURE + 20 SEMINAR + 5 PROJECT)	ECTS: 6
SEMESTER: WINTER	CLASS LEVEL: FIRST CYCLE
MINIMAL NUMBER OF STUDENTS: 12 (Should the number of applying students be smaller, the course may be cancelled)	

LANGUAGE OF INSTRUCTION: English

PRELIMINARY REQUIREMENTS: Knowledge of English at B2 level or above.

CONTENTS: CONTENTS: What is Management and what is Organization? - Definitions of the main terms. Management as a science. Historical development of management: XIX century. Schools of management: Industrial engineering (Taylorism), Human-relations (by E. Mayo) and Business administration (Fayolism). Schools of management: systemic approach, mathematical modelling in management, "new wave" management and postmodernism in management. Elements of strategic analysis. Planning in Organizations. Organizational design: organizational structures. Motivation theory and the motivation systems in management. Power and leadership in organization. Control as a management function. Organizational culture. Human Resources Management - an introduction. Strategic management - traditional and modern approach towards business blueprints. Intangible resources management. Contemporary and future challenges for management sciences.

EFFECTS OF EDUCATION PROCESS: Understanding of the main concepts of management. Knowledge of the historical development, and structure of contemporary management science. Knowledge about the concepts and methods of the contemporary business management. Ability to analysis and evaluate organizational solutions applied in a real organization. Knowledge of each management function, its role, goals and specific techniques.

LITERATURE:

- Boddy D., *Management: An Introduction*, Pearson Education Ltd., Harlow 2008.
- Griffin R., *Fundamentals of Management*, Cengage Learning, Manson, 2012.

Complementary:

- *Journal of Management History, Journal of Management Development, Management Decision* (journals of Emerald Publishing Group).

TEACHING METHODS: Lecture, seminar, project.

ASSESSMENT METHODS: presence, evaluation of submitted project, final examination.

TEACHER: Leszek Panasiewicz, PhD (Eng.)

**FUNDAMENTALS OF MARKETING - Z15**

FACULTY OF MANAGEMENT	CLASS TYPE: LECTURE (SEMINAR)
NUMBER OF HOURS: 15	ECTS: 5
SEMESTER: WINTER	CLASS LEVEL: FIRST CYCLE
MINIMAL NUMBER OF STUDENTS: 12 (Should the number of applying students be smaller, the course may be cancelled)	

LANGUAGE OF INSTRUCTION: English

PRELIMINARY REQUIREMENTS: Intermediate level of English. The course starts two weeks after the beginning of a semester. All students willing to participate in the class are required to contact the teacher, personally or via email, before that date, otherwise they will not be allowed to enrol on a course.

CONTENTS: Introduction to marketing - the idea of marketing, definitions of marketing, the role of marketing in a modern company. Marketing micro- and macro-environment, consumer behaviour – stages of buying process and their characteristics; key factors involved in and influencing consumer buying process (social, personal, psychological); impulsive buying, satisfaction and its sources. Marketing strategy - market segmentation, product positioning, sources of competitive advantage, building value and relationship with customers. Product and brand - the role of brands, brands equity, brand strategies and positioning, product, its levels and life-cycle. Price, pricing strategies and programs – different pricing strategies, consumers' perception of the price, adapting the price. Marketing communication – the idea and the role of communicating values, marketing communication mix, mass and personal communications. Delivering value – marketing channels and their design, direct marketing.

EFFECTS OF EDUCATION PROCESS: The main aim of the Fundamentals of Marketing course is to familiarize students with main, basic concepts of marketing management. Attendees will gain knowledge of the role of marketing in a modern company, understanding of the idea of product value and the relation between company and its customers. Students will gain the ability to use different marketing tools in order to create aforementioned value as well as to communicate and deliver it to the market.

LITERATURE:

- Kotler Ph., Keller K.L., *Marketing management*.
- Hollensen S., *Marketing Management: A Relationship Approach. Second Edition, Prentice Hall 2010*
- Egan J., *Relationship Marketing: Exploring Relational Strategies in Marketing*.
- Wood M. B., *The marketing plan handbook*.

TEACHING METHODS: Seminar, interactive presentations, discussion.

ASSESSMENT METHODS: Written exam.

TEACHER: Marcin Gąsior, PhD (Eng.)

**HUMAN RESOURCE MANAGEMENT & DEVELOPMENT - Z16**

FACULTY OF MANAGEMENT	CLASS TYPE: SEMINAR, WORKSHOP, PROJECT
NUMBER OF HOURS: 45 (20 SEMINAR + 15 WORKSHOP + 10 PROJECT)	ECTS: 4
SEMESTER: WINTER	CLASS LEVEL: FIRST CYCLE
MINIMAL NUMBER OF STUDENTS: 12 (Should the number of applying students be smaller, the course may be cancelled)	
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS: Knowledge of English at B2 level or above.	
CONTENTS: Structure and functions of the Human Resource Management System. Impact of the HRM on the enterprise performance and competitiveness. Job analysis. Recruitment and interview. Evaluation and performance management. Training and development programs. Succession plans. Motivation and employee engagement. Career development. Talent management. Coaching and mentoring. Leadership development. Organizational Culture and its positive aspects. New trends in HRM.	
EFFECTS OF EDUCATION PROCESS: Knowledge of human resources management (HRM) and its role in the systemic organizational context. Ability to analyse and designing jobs. Knowledge of recruitment and selection strategies and methods. Ability to develop rewards and compensation systems as well as another elements of motivational system. Ability to design and implement training and organizational development programs. Ability to conduct performance appraisals. Knowledge of consulting role and skills of the HRD professional. Knowledge of trends and new developments in HRM.	
LITERATURE: <ul style="list-style-type: none">• <i>Mitchell, B. Gamlen C., The Big Book of HR, The Career Press 2012.</i> Complementary: <ul style="list-style-type: none">• <i>Armstrong M., Armstrong's Handbook of Strategic Human Resource Management, Kogan Page, London 2011.</i>• <i>Ulrich D., Younger J., Brockbank W., Ulrich M., HR from the Outside In, McGraw Hill, NY 2012.</i>	
TEACHING METHODS: Seminar, workshop, project.	
ASSESSMENT METHODS: Presence, evaluation of submitted project, active participation in workshop.	
TEACHER: Leszek Panasiewicz, PhD (Eng.)	

**INTEGRATED MARKETING COMMUNICATIONS - Z17**

FACULTY OF MANAGEMENT	CLASS TYPE: LECTURE, PROJECT
NUMBER OF HOURS: 30 (15 LECTURE + 15 PROJECT)	ECTS: 5
SEMESTER: SUMMER	CLASS LEVEL: FIRST CYCLE
MINIMAL NUMBER OF STUDENTS: 12 (Should the number of applying students be smaller, the course may be cancelled)	

LANGUAGE OF INSTRUCTION: English
PRELIMINARY REQUIREMENTS: Marketing fundamentals.
CONTENTS: The integrated marketing communication (IMC) process. Managing and coordinating the integrated marketing communication process. Identifying the target audience. Determining the ICM objectives. Designing the message. Selecting the integrated communication channels (real and virtual). Establishing the total promotion budget. Designing the promotion-mix. Measuring the promotion results.
EFFECTS OF EDUCATION PROCESS: Familiarizing students with concepts of integrated marketing communication in contemporary organizations, businesses and institutions. Students will gain knowledge on the process of planning, implementation and control the integrated marketing communication campaigns, and also abilities to prepare creative promotion campaigns in the practice.
LITERATURE: <ul style="list-style-type: none">• Hollensen S., <i>Marketing Management - A Relationship Approach, Second Edition, Prentice Hall 2010, pages 490-527.</i>• Fill Ch., <i>Marketing Communications: brands, experiences and participation, 6/E, ISBN-10: 0273770543, ISBN-13: 9780273770541, Pearson, 2013.</i>• Ouwersloot H & Duncan T., <i>Integrated Marketing Communications. European edition. ISBN 978-0-0771-1120-5, McGraw-Hill Higher Education, 2008.</i>
TEACHING METHODS: Lecture with interactive presentations, case studies.
ASSESSMENT METHODS: Written exam, evaluation of submitted projects.
TEACHER: Barbara Szymoniuk, PhD (Eng.)

INTRODUCTION TO INTERNATIONAL BUSINESS - **Z18**

FACULTY OF MANAGEMENT	CLASS TYPE: LECTURE, LABORATORY
NUMBER OF HOURS: 30 (10 LECTURE + 20 LABORATORY)	ECTS: 4
SEMESTER: SUMMER	CLASS LEVEL: SECOND CYCLE
MINIMAL NUMBER OF STUDENTS: 12 (Should the number of applying students be smaller, the course may be cancelled)	
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS: Basics of management.	
CONTENTS: The course provides a fundamental knowledge of the varied aspects of business and prepares students for future studies in more specialized topics within international business area. Students will increase their awareness of the cultural, legal, financial and ethical environment and function of business as well as observe its contribution to society. This course also covers Political, Economic, Cultural, Legal Environments of International Business, and International Human Resource Management in the workplace. This course is designed to provide the student with a working knowledge of the fundamentals business functions, roles, and processes, of with special regard to international business.	
Effects: Knowledge: Student: knows the place of business in society; describes how business is organized in different environments: cultural, political, legal and ethical; identify and interpret basic cultural, legal, political and economic processes in surrounding world; understands the risks linked with operating in different environments; knows and understands the marketing objectives and tools. Skills: is able to looking for information on business environment al risks and limitations and knows the ways to eliminate them using different sources of data; critically analyses the gathered information. Social competences: is prepared to ethical conduct and behaviour in the frame of organizational and social roles; shows that knows how to improve the knowledge and skills; knows to use and develop cultural intelligence in business.	
LITERATURE: <ul style="list-style-type: none">• Lewis K., Housden M., <i>An Introduction to International Marketing: A Guide to Going Global</i>, Kogan Page 1998• El Kahal S., <i>Introduction to International Business</i>. London 1995• Crawley E., Swailes S. & Walsh D., <i>Introduction to International Human Resource Management</i>, Oxford 2013	
TEACHING METHODS: Individual assessment of student work (preparation of written work, class participation, problem solving knowledge in the course of knowledge verification)	
ASSESSMENT METHODS: Essay- 30%; class preparation 20% , final exam 50%	
TEACHER: Prof. Barbara Mazur, PhD, DSc	



JAVA MOBILE PROGRAMMING FOR ANDROID - Z19

FACULTY OF MANAGEMENT	CLASS TYPE: LECTURE, LABORATORY
NUMBER OF HOURS: 30 (10 LECTURE + 20 LABORATORY)	ECTS: 4
SEMESTER: WINTER	CLASS LEVEL: SECOND CYCLE
MINIMAL NUMBER OF STUDENTS: 12 (Should the number of applying students be smaller, the course may be cancelled)	

LANGUAGE OF INSTRUCTION: English
PRELIMINARY REQUIREMENTS: Basics of Java and Android programming.
CONTENTS: 1. Basics of Android Studio IDE. 2. Libraries. 3. First Application. 4. Views, View Groups, Layout. 5. Programming Events and Gestures. 6. Building interface with Fragments. 7. Using Master-Detail View. 8. Using Overflow Menu. 9. Intentions. 10. Multithreading Applications. 11. Using databases on Android. 12. Content Providers. 13. Using Google Maps API. 14. Programming sensors with Android.
EFFECTS OF EDUCATION PROCESS: Student will know how to design and program applications for Android OS. This knowledge will be useful for Product Managers working in IT sectors.
LITERATURE: Mobile applications programming with Java, Neil Smyth, Payload Media.
TEACHING METHODS: Presentation, hands-on laboratories and case study.
ASSESSMENT METHODS: Project
TEACHER: Tomasz Cieplak, PhD (Eng.)

**KNOWLEDGE MANAGEMENT - Z20**

FACULTY OF MANAGEMENT	CLASS TYPE: LECTURE, SEMINAR, PROJECT
NUMBER OF HOURS: 30 (10 LECTURE + 15 SEMINAR + 5 PROJECT)	ECTS: 5
SEMESTER: SUMMER	CLASS LEVEL: SECOND CYCLE
MINIMAL NUMBER OF STUDENTS: 12 (Should the number of applying students be smaller, the course may be cancelled)	
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS: Knowledge of English at B2 level or above.	
CONTENTS: Knowledge Economy and a new landscape of competitiveness. Intellectual Capital - idea, structure and measurement. Core Competencies - foundation of the new strategy approach. Knowledge vs. information or data. Knowledge processes in organization: Generation, Codification, Transfer and Use. Knowledge Roles and Skills. Knowledge Management in practice - case studies of leading companies. Elements of Knowledge Engineering: Knowledge maps, Rule-based systems, Case -Base Reasoning Systems, other KBS' technologies. Organizational learning and the learning organization. Organizational culture as a factor of the organizational learning process and the knowledge flows. Knowledge-based and learning-based business strategy.	
EFFECTS OF EDUCATION PROCESS: Detailed knowledge and understanding of the knowledge flow in the organization. Systemic knowledge of the methods and techniques of knowledge management. Knowledge of intellectual capital and competence. Ability to analyse the situation of the knowledge flow in the real organization. Ability to design the knowledge management systems. Ability to develop knowledge-based strategies.	
LITERATURE: <ul style="list-style-type: none">• Davenport T.H., Prusak L.: <i>Working Knowledge. How Organizations Manage What They Know</i>, Harvard Business Scholl Press 1998.• O'Dell C., Hubert C., <i>The New Edge in Knowledge</i>, Wiley, 2011 Complementary: <ul style="list-style-type: none">• <i>Journal of Knowledge Management, Journal of Intellectual Capital</i> (journals of Emerald Publishing Group).	
TEACHING METHODS: Lecture, seminar, project.	
ASSESSMENT METHODS: Presence, active participation in seminar discussions, evaluation of submitted project.	
TEACHER: Leszek Panasiewicz, PhD (Eng.)	

**MANAGEMENT ACCOUNTING - Z21**

FACULTY OF MANAGEMENT	CLASS TYPE: LECTURE, CLASS
NUMBER OF HOURS: 20 (10 LECTURE + 10 CLASS)	ECTS: 5
SEMESTER: WINTER	CLASS LEVEL: SECOND CYCLE
MINIMAL NUMBER OF STUDENTS: 12 (Should the number of applying students be smaller, the course may be cancelled)	
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS: Basics of accounting, basic knowledge of financial statements, basic knowledge of corporate finance	
CONTENTS: The nature and type of costs. Methods of cost calculation. Fixed costs and variable costs – ways of calculation. Full costs accounting and variable costs accounting. Break-even point – calculation and use in decision-making. Segmental analysis of the break-even point. Operational risk assessment on the basis of the break-even point. Pricing decisions of enterprises.	
EFFECTS OF EDUCATION PROCESS: To give the skills in proper reading of costs, to prepare students to evaluate internal financial ratios, to realize the importance of using internal financial ratios in decision making processes.	
LITERATURE: <ul style="list-style-type: none">• Atkinson A.A., Kaplan R.S., Matsumura E.M., Young S.M., <i>Management Accounting: Information for Decision-making and Strategy Execution</i>, Pearson Prentice Hall, New Jersey 2011.• Horngren Ch.T., Datar S.M., Rajan M., <i>Cost Accounting: A Managerial Emphasis</i>, Pearson Prentice Hall, New Jersey 2012.• Drury C., <i>Management and Cost Accounting</i>, SOUTH-WESTERN CENGAGE Learning, London 2008.	
TEACHING METHODS: Multimedia presentation, tasks, cases, discussions.	
ASSESSMENT METHODS: Written test and practical homework.	
TEACHER: Prof. Artur Paździor, PhD, DSc (Eng.)	

**MANAGEMENT SKILLS & LEADERSHIP - Z22**

FACULTY OF MANAGEMENT	CLASS TYPE: WORKSHOP
NUMBER OF HOURS: 30	ECTS: 4
SEMESTER: WINTER	CLASS LEVEL: SECOND CYCLE
MINIMAL NUMBER OF STUDENTS: 12 (Should the number of applying students be smaller, the course may be cancelled)	
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS: Knowledge of English at B2 level or above. (It's required to pass the preliminary test of English)	
CONTENTS: Models and concepts of management styles and skills. Positive approaches. Decision Making and Problem Solving. Techniques of Creative Thinking. Time and stress management. Building Relationships. Motivation. Building Teams and Structures. Delegating and Empowering. Managing conflicts. Development of leadership skills. Conducting meetings.	
EFFECTS OF EDUCATION PROCESS: Ability of the competent performance of the executive duties. Ability to lead people and group: organize, motivate, guidance and control. Ability to solve interpersonal problems and create atmosphere of efficiency. Ability to efficient self-management. Ability to solve problems. Knowledge of leadership theories and techniques.	
LITERATURE: <ul style="list-style-type: none">• Whetten D.A., Cameron K.S., <i>Developing Management Skills</i>, Prentice Hall, New Jersey 2011.• Owen J., <i>How to Lead</i>, Pearson Education Ltd., Edinburgh, 2009. Complementary: <ul style="list-style-type: none">• Grimme D., Grimme S., <i>The New Manager's Tool Kit: 21 Things You Need to Know to Hit the Ground Running</i>, AMACOM, New York 2009• Stettner M., <i>Skills for New Managers</i>, McGraw-Hill, New York, 2000.• Maxwell J. C., <i>The 5 Levels of Leadership: Proven Steps to Maximize Your Potential</i>, Hachette Book Group, New York 2011.	
TEACHING METHODS: Workshop	
ASSESSMENT METHODS: Required attendance rate, evaluation of presentations.	
TEACHER: Leszek Panasiewicz, PhD (Eng.)	

**MARKETING RESEARCH - Z23**

FACULTY OF MANAGEMENT	CLASS TYPE: LECTURE, CLASS
NUMBER OF HOURS: 30 (15 LECTURE +15 CLASS)	ECTS: 5
SEMESTER: SUMMER	CLASS LEVEL: FIRST CYCLE
MINIMAL NUMBER OF STUDENTS: 12 (Should the number of applying students be smaller, the course may be cancelled)	
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS: Participants should have basic knowledge of marketing and statistics and intermediate level of English The course starts two weeks after the beginning of a semester. All students willing to participate in the class are required to contact the teacher, personally or via email, before that date, otherwise they will not be allowed to enrol on a course.	
CONTENTS: Introduction to marketing research, its role in modern marketing management. Planning and evaluating the research process. Exploratory and explanatory, experimental and non-experimental approaches. Sampling: identifying the target population, determining the size of the sample, probability and non-probability sampling techniques and their characteristics. Different qualitative and quantitative data collection methods, their advantages and shortcomings. Measurement: questionnaires, scales and scaling techniques, constructing appropriate questions. Basic concepts of data analysis, interpretation and visualization. Research reports. Marketing research ethics.	
EFFECTS OF EDUCATION PROCESS: The main aim of the Marketing Research course is to familiarize students with fundamental concepts of planning and conducting marketing research projects. Attendees will gain in-depth knowledge of different sampling and measurement approaches as well as data collection, analysis and presentation methods and techniques. Upon completion of the course, students should be able to design and carry out market and consumer research in real business environment.	
LITERATURE: <ul style="list-style-type: none">• <i>Babbie E., The Practice of Social Research, Wadsworth Publishing.</i>• <i>Churchill G.A., Marketing Research: Methodological Foundations, South Western College Pub.</i>• <i>Zikmund, W.G., Babin B.J., Exploring marketing research, Cengage Learning Services; South Western College.</i>	
TEACHING METHODS: Lecture, interactive presentations, discussion, case studies.	
ASSESSMENT METHODS: Written exam and completion of three case studies.	
TEACHER: Marcin Gąsior, PhD (Eng.)	

**MATHEMATICS - Z24**

FACULTY OF MANAGEMENT	CLASS TYPE: LECTURE AND CLASSES
NUMBER OF HOURS: 30 (15 LECTURE+ 15 CLASSES)	ECTS: 6
SEMESTER: SUMMER	CLASS LEVEL: FIRST CYCLE
MINIMAL NUMBER OF STUDENTS: 12 (Should the number of applying students be smaller, the course may be cancelled)	

LANGUAGE OF INSTRUCTION: English
PRELIMINARY REQUIREMENTS: Basic knowledge of arithmetic, understanding the symbolic notation in mathematics.
CONTENTS: PART 1 - CALCULUS: 1.Types of numerical sets. Real functions of one variable. Types of the most commonly used functions. Geometric representations of functions -graphs 2. Limits and continuity. Differentiability. 3. Calculating derivatives. Derivatives of composite functions - rule of the chain. Inverse functions and their derivatives. 4. Connection of derivatives with monotonous functions/extrema. 5. Examples of using functions in economics. Specific issues related to economical usage: defining functions by a verbal description/a table of values, rounding arguments and values. 6. Real functions of two variables - limits and continuity, differentiability: partial derivatives and directional differentials. Rule of the chain. Graphs of two-variable functions: curve levels, saddle points 7. Integral Calculus. Anti-derivatives (indefinite integrals), Riemann integral (definite integral). Interpretation and applications. PART 2 - LINEAR ALGEBRA: 1. Notions of matrices, algebra of matrices, special types of matrices 2. Systems of linear equations, invertible matrices; solving systems of linear equations using the matrix inverse. 3. Determinants - properties, applications of the determinant theory. 4. Vector spaces: definition and properties, linear dependence and independence; vector subspaces 5. Linear map (linear transformation): definitions and properties, transformation of a linear array of vector spaces of finite size. Application of linear algebra 6. Inner (dot) and outer product: definitions and properties, orthogonal base.
EFFECTS OF EDUCATION PROCESS: Basic knowledge of calculus of one- and two-variable functions including defining functions, graphs, limits, continuity, differentiability, monotonicity, extremes, integrals as well as some economical applications. Knowledge of basic notions and properties of linear algebra including matrix and vector operations, solving systems of linear equations, linear transformations and some economical applications.
LITERATURE: <ul style="list-style-type: none">• Greenspan H. P., Benney D. J., <i>Calculus: An Introduction to Applied Mathematics</i>, Breukelen Press, 1997 (http://books.google.pl/books?id=E-__4PCIE-EC)• Anton H.: <i>Calculus with Analytic Geometry</i>, 6th Edition, Wiley, New York 1999• Bowen, Ray M.; Wang, C. C. <i>Introduction to vectors and tensors, Vol 1: linear and multilinear algebra</i> http://txspace.tamu.edu/handle/1969.1/2502
TEACHING METHODS: Lecture, classes, additional materials for self-learning on www.
ASSESSMENTS METHODS: A written exam which will check the knowledge of the most essential definitions and theorems as well as the ability of solving simple problems of calculus and matrix/vector calculations.
TEACHER: Przemysław Kowalik, PhD

**MICROECONOMICS - Z25**

FACULTY OF MANAGEMENT	CLASS TYPE: LECTURES
NUMBER OF HOURS: 15	ECTS: 6
SEMESTER: SUMMER	CLASS LEVEL: FIRST CYCLE
MINIMAL NUMBER OF STUDENTS: 12 (Should the number of applying students be smaller, the course may be cancelled)	
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS: Mathematics - Knowledge of basic functional dependencies; The ability of logical and creative thinking. Students can work in a team, has instilled habits of lifelong learning and are prepared to analyse practical examples.	
CONTENTS: 1. Introduction to economics, the basic concepts, tools of economic analysis. 2. Supply and demand and their determinants, the market mechanism, market equilibrium. 3. Types and significance of factors elasticity of the demand and the supply. 4. Assumptions of the theory of consumer choice, the factors determining the choice of the consumer. 5. The concept of indifference curves and maps, diversity of consumer preferences, the utility and the marginal rate of substitution. Optimum consumers in both static and dynamic. 6. Economic profit in the company. The production function, the marginal productivity and average productivity. 7. Types of production costs, production costs in the short and long term. 8. Maximizing profit in the company, the company's decisions on output in the short and long term. The choice of the optimal manufacturing techniques. 9. Market structures.	
EFFECTS OF EDUCATION PROCESS: Student is able to define basic economic concepts (demand, supply, market, product, price, money); student is able to explain the market mechanism and the factors that affect the market equilibrium; will be able to describe the main categories of costs in the company from an economic point of view, considered in short and long term; will be able to analyse economic data at a basic level; will be able to calculate the economic profit in the company in terms of its maximization; will be able to assess the company production policy; will be able to explain consumer behaviour related to his income and preferences.	
LITERATURE: <ul style="list-style-type: none">• <i>Couttis D., Irvine I., Begg D., Microeconomics, McGraw-Hill Ryerson, 2010;</i>• <i>Begg D., Fischer S., Dornbusch R., Mikroekonomia, PWE, Warszawa 2007;</i>• <i>Samuelson P.A., Nordhaus W.D., Economics, McGraw-Hill, New York 2009.</i>	
TEACHING METHODS: Lectures and multimedia presentations, discussions, exercises.	
ASSESSMENT METHODS: Oral exam.	
TEACHER: Tomasz Żminda, PhD (Eng.)	



OCCUPATIONAL ENVIRONMENT - Z26

FACULTY OF MANAGEMENT	CLASS TYPE: LECTURE, LABORATORY
NUMBER OF HOURS: 30 (10 LECTURE + 20 LABORATORY)	ECTS: 4
SEMESTER: WINTER	CLASS LEVEL: SECOND CYCLE
MINIMAL NUMBER OF STUDENTS: 12 (Should the number of applying students be smaller, the course may be cancelled)	
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS: None	
CONTENTS: Introduction, History of Occupational Health. Occupational Health Law and Regulations. Industrial Hygiene and Control of Exposures, Calculations and Occupational Exposure Limits. Short Term Exposure Limits, Additive effects, Models of exposure. Pre Inspection Research, Initial Walk Through, Basic Elements: Qualitative IH Survey, Quantitative IH Survey. Industrial Hygiene Control, Dilution Ventilation, Air Cleaning Systems. Occupational Illnesses, Microbiological factors in occupational environment. Personal Protective Equipment. Noise: Measurement, Health Impact; Hearing Conservation Amendment, Controlling noise levels. Ergonomics. Non-ionizing radiation, Heat stress. Occupational Health Around the World, Industrial Hygiene: Professional Ethics. Ionizing Radiation, Health Impact; Controlling radiation levels. Vibration, Measurement, Health Impact; Controlling shock levels. Implementation of Occupational environment management systems.	
EFFECTS OF EDUCATION PROCESS: Upon successful completion of this course, student will: be able to conduct basic industrial hygiene calculations (concentration, time-weighted average, ventilation and noise); list common diseases related to the work and the workplace; discuss occupational health in a world-wide context; understand the implications of ethics (The Canons of Industrial Hygiene Practice) in the practice of environmental and occupational health; discuss how regulations affect the practice of industrial hygiene.	
LITERATURE: <ul style="list-style-type: none">• Kroemer, K.H.E., Grandjean, E.: <i>Fitting the Task to the Human</i>, Philadelphia: Taylor and Francis, 5th Edition, 1997, ISBN: 074840665.• Di Nardi S.: <i>The Occupational Environment</i> 3rd Ed., AIHA Press, 2012, ISBN-10: 1931504431.• <i>Applications and Computational Elements of Industrial Hygiene</i> CRC Press, Martin B. Stern and S.Z. Mansdorf, Editors, 1999	
TEACHING METHODS: Case analysis + Lab exercises.	
ASSESSMENT METHODS: QA PRIOR THE LAB EXC	
TEACHER: Krzysztof J. Czarnocki, PhD (Eng.), Elżbieta Czarnocka, PhD	



OCCUPATIONAL HEALTH RISK ASSESSMENT - Z27

FACULTY OF MANAGEMENT	CLASS TYPE: LECTURE/SEMINAR
NUMBER OF HOURS: 15	ECTS: 4
SEMESTER: SUMMER	CLASS LEVEL: SECOND CYCLE
MINIMAL NUMBER OF STUDENTS: 12 (Should the number of applying students be smaller, the course may be cancelled)	
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS: None	
CONTENTS: 1. Health hazards in the workplace; 2. Physical injury • Musculoskeletal disorders • Noise-induced hearing loss • Hand arm vibration syndrome • Skin cancer • Effects from both ionizing and non-ionizing radiation e.g. cataracts • Heat exhaustion, hypothermia and various other health effects Skin disorders (burns, contact dermatitis, cancer) • Irritant contact dermatitis • Allergic contact dermatitis • Intoxication, through to asphyxiation and death • Acute pneumonia. Damage to the respiratory tract • Damage to internal organ systems. Acute health effects. Chronic health effects. Long latency; 3. Measurement of exposures and characterization of the risk. 4.Reducing exposures 5.Assessing exposure levels; 6. Risk management process and analysis: (1) identification of exposures, hazards; (2) assessment of alternatives, use of forecasting and modelling, spread of risk, diversification; 7. Partnership between occupational health advisors, occupational / industrial hygiene advisors, managers and operational staff.	
EFFECTS OF EDUCATION PROCESS: Practice in collaboration with other disciplines within the field of occupational health. Evaluate the industrial environment, including industrial processes, hazards, labour issues, and corporate structure in the context of worker health and safety; Analyse examples of workplace and other environmental exposures in the context of regulations, laws, and policies. Formulate a program and a feasible implementation plan to control occupational health hazards. Recommend risk management approaches, including regulatory, engineering, and behavioural/risk communication options. Assess the effectiveness of interventions that have been instituted to modify risks associated with workplace and other environmental hazards.	
LITERATURE: <ul style="list-style-type: none">• <i>Haimes Y.Y., Risk Modeling, Assessment, and Management 2nd Edition ISBN: 978-0- 471-72389-9 2010.</i>• <i>Reese Ch.D., Occupational Health and safety management. A practical approach 2nd edition CRC Press Taylor & Francis Group 2009.</i>• <i>Gallwey T.J., O'Sullivan L.W., Ergonomics laboratory exercises CRC Press 2009.</i>	
TEACHING METHODS: Multimedia supported Lecture + case analysis	
ASSESSMENT METHODS: Assessment will be done with a portfolio technique, which includes a mixture of challenges such as assignments, filled-out checklists, reports (e.g. workplace evaluations) and some tests.	
TEACHER: Elzbieta Czarnocka, PhD	



OCCUPATIONAL STRESS - Z28

FACULTY OF MANAGEMENT	CLASS TYPE: LECTURE, SEMINAR
NUMBER OF HOURS: 30 (10 LECTURES + 20 SEMINARS)	ECTS: 4
SEMESTER: WINTER	CLASS LEVEL: SECOND CYCLE
MINIMAL NUMBER OF STUDENTS: 12 (Should the number of applying students be smaller, the course may be cancelled)	
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS: English level B2. Basic knowledge of the work and organization psychology and sociology	
CONTENTS: Stress: concept and conceptions (biological, medical and psychological). Stress as a pathogenic mechanism and a social problem. The work addiction as the organizational stress effect. Occupational stress and organizational stress processes. Certain job stress theories. Psychosocial sources of job stress (physical environment, chronobiological factors and social environment). Stress sources analysis at different workplaces. Stress in the context of organizational culture and scientific - technical civilization development. Responses to stress at physiological, psychological and organizational level. Effects and costs of the workplace stress - individual and organizational perspective. Burnout as the effect of excessive load stress. Occupational stress and individual differences (temperament, locus of control, the sense of coherence). Certain methods and tools of the stress assessment at workplace. Stress coping methods at individual and organizational level. Stress audit at working environment. Stress management at the organization. Making plans of the occupational stress prevention at individual and organizational level.	
EFFECTS OF EDUCATION PROCESS: The main aim of the Occupational Stress course is to acquire the skills of recognizing, appraising and managing stress at the work environment. Occupational stress knowledge presented during the course concentrate on recognizing occupational and personal stress at individual and organizational level. Participants acquire such competences as: diagnose stress level, coping with stress, making the stress management programs, prevention plans and to manage them.	
LITERATURE: <ul style="list-style-type: none">• Biron C., Cooper C.L., Burke R. J. : <i>Creating Healthy Workplaces: Stress Reduction, Improved Well-being and Organizational Effectiveness</i>. Routledge, Farnham 2014. eBook• Dewe P., Leiter M.P., Cox T.: <i>Coping, Health, and Organizations</i>. CRC Press, London 2000. eBook• Gordon S.G.: <i>Toward Wellness: prevention, Coping and Stress</i>. Information Age Publishing, Charlotte, N.C. 2003. eBook• Mustafa A.: <i>Organizational Behaviour</i>. Edition: 2nd ed. Global Professional Publishing Ltd., London 2013. eBook. (Chapter 8: Stress Management)• Perrewe P.L., Quick J.C., Rossi A.M.: <i>Stress and Quality of Working Life: The Positive and the Negative</i>. Information Age Publishing: Charlotte, N.C. 2009. eBook• Pestonjee D. M., Pandey S.C.: <i>Stress and Work: perspectives on Understanding and Managing Stress</i>. New Delhi: Sage Publications Pvt. Ltd. 2013. eBook. Complementary: <ul style="list-style-type: none">• Anderson N. : <i>Handbook of Industrial, Work & Organizational Psychology: Volume 2: Organizational Psychology</i>. SAGE Publications Ltd., London 2001. eBook• Melnick S.: <i>Success under stress: Powerful Tools for Staying Calm, Confidential, and Productive When the Pressure's On</i>. AMACOM. : New York 2013. eBook.	
TEACHING METHODS: Lectures, discussion, case study, working in groups, workshops.	
ASSESSMENT METHODS: Written test, project execution and its presentation, presence and active participation in seminar discussion and exercises.	
TEACHER: Krystyna Wojciechowska, PhD (Eng.)	



OPERATIONAL RESEARCH - Z29

FACULTY OF MANAGEMENT	CLASS TYPE: LECTURE, LABORATORIES
NUMBER OF HOURS: 30 (15 LECTURE + 15 LABORATORIES)	ECTS: 4
SEMESTER: SUMMER	CLASS LEVEL: SECOND CYCLE
MINIMAL NUMBER OF STUDENTS: 12 (Should the number of applying students be smaller, the course may be cancelled)	

LANGUAGE OF INSTRUCTION: English
PRELIMINARY REQUIREMENTS: Knowledge of arithmetic, ideas of set and functions, understanding the symbolic notation in mathematics; Possession of a laptop/netbook is recommended but not necessary.
CONTENTS: 1. Operational Research – introduction: history and scope. 2. Introduction to linear programming (LP): assumptions, basic properties, solving LP problem, multiple optimal solutions, limitations of usage. 3. Practical applications of LP: product-mix problem, diet/blending problems. 4. Integer linear programming (ILP): cutting-stock problem, packing problems, special issues connected with cutting/packing problems, job/task scheduling. 5. Network optimization problems: transportation problem and its extensions, assignment problems, minimal flow cost, shortest path, maximal flow, travelling salesman problem (TSP). 6. Introduction to non-linear programming (NLP): assumptions, basic properties, specific issues: global vs local extrema, limitations of algorithms. 7. Examples of applications of non-linear programming.
EFFECTS OF EDUCATION PROCESS: Knowledge about basic definitions and theorems of operational research as well as limitations of this mathematics-oriented approach to decision making. Business/managerial applications-oriented ability of formulating as well as solving some types of optimization problems by using a computer. The above includes: usage of spreadsheet-based as well as dedicated “universal” optimization software, awareness of its limitation and possible errors, learning about some optimization software dedicated for specific classes of problems e.g. cutting-stock, packing, routing etc.
LITERATURE: <ul style="list-style-type: none">• Hillier F.S., Lieberman G.J.: <i>Introduction to Operations Research</i>, 8th Edition, McGraw Hill 2005.• Ragsdale C.T.: <i>Spreadsheet Modelling and Decision Analysis: A Practical Introduction to Management Science</i>, South-Western College Publishing., 2007.• <i>Excel Solver Tutorial for Optimization Users</i>, http://www.solver.com/tutorial.htm.
TEACHING METHODS: Lecture, laboratories with usage of LCD projector and paper “hand-out” educational materials, additional materials for self-learning on www.
ASSESSMENTS METHODS: Lecture: an examination in written form which will check the understanding of basic definitions and theorems of operational research. Laboratories: a test checking the ability of solving some types of optimization problems: creating mathematical model and obtaining an optimal solution by using selected optimization software (spreadsheet-based like Microsoft Excel/WPS Spreadsheets).
TEACHER: Przemysław Kowalik, PhD

**POLITICAL ECONOMICS - Z30**

FACULTY OF MANAGEMENT	CLASS TYPE: LECTURES /SEMINAR
NUMBER OF HOURS: 15	ECTS: 5
SEMESTER: SUMMER	CLASS LEVEL: SECOND CYCLE
MINIMAL NUMBER OF STUDENTS: 12 (Should the number of applying students be smaller, the course may be cancelled)	
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS: English level B2	
CONTENTS: 1. Economic situation and condition. Globalisation. 2. Rules of market (at the micro and macro levels). 3. Determinants and models of economic development. 4. Main macroeconomic trends in labour market. 5. Main macroeconomic trends in inflation. 6. Effects of Foreign Direct Investments in economy. 7. Balance of economy. 8. Fundamentals of monetary policy. 9. Fiscal policy. 10. Distribution of goods and services in economy. 11. Influence of the government on the condition of the economy. 12. Polish minority government characteristic. 13. Basic economic problems of Polish economy. 14. Basic economic problems of global economy. 15. Economic data research and presentation.	
EFFECTS OF EDUCATION PROCESS: Introduction of the students to principles essential to understanding economizing problem, principles of economic methodology, specific economic issues, and the policy alternatives.	
LITERATURE: <ul style="list-style-type: none">• <i>McConnell C.R., Brue S.L.: Economics, McGraw-Hill Irwin, 2005.</i>• <i>Begg D., Fischer S., Dornbusch R.: Economics, 6th ed., Mcgraw Hill, 2000.</i>• <i>Mayer T.: Truth Versus Precision in Economics, Edward Elgar, 1993.</i>• <i>Mankiew N.G.: Principles of Economics, 3rd ed., Thompson, 2004.</i>• <i>Stiglitz J.E.: Economics of the Public Sector, Norton&Co, New York-London, 2000.</i>	
TEACHING METHODS: Multimedia presentations, discussion, working in groups.	
ASSESSMENT METHODS: Writing an essay, presentation, active participation in class.	
TEACHER: Prof. Ewa Bojar, PhD, DSc / Korneliusz Pylak, PhD (Eng.) / Agnieszka Rzepka, PhD	

**PRODUCTION PLANNING AND MANAGEMENT - Z31**

FACULTY OF MANAGEMENT	CLASS TYPE: LECTURES, CLASS
NUMBER OF HOURS: 30 (15 LECTURES +15 CLASS)	ECTS: 5
SEMESTER: SUMMER	CLASS LEVEL: FIRST CYCLE
MINIMAL NUMBER OF STUDENTS: 12 (Should the number of applying students be smaller, the course may be cancelled)	
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS: Basic skills in Microsoft Windows and MS Excel.	
CONTENTS: 1. Production management tasks in enterprise. 2. Demand forecasting in the aspect of manufacturing plans development. 3. Developing of level production plans. 4. Developing of chase production plans. 5. Production program calculation with the matrix algebra method. 6. Production program calculation with the graph-analytical method. 7. Optimal production batch size calculation. 8. Manufacturing cycle time calculation for different manufacturing scenarios. 9. Manufacturing cycle time calculation for a complex product. 10. Developing of main production schedule. 11. Priority rules in production planning and management. 12. Developing Gantt's charts. 13. Material Requirements Planning 14. Inventories of work in progress - classification and calculation methods. 15. Selected methods of manufacturing flow management (Just in time, Kanban).	
EFFECTS OF EDUCATION PROCESS: The acquisition of practical skills in production management. Understanding the concepts and formal production planning and management methodologies. Providing knowledge on effective methods within the following areas: demand forecasting, production planning, manufacturing process scheduling, inventory management.	
LITERATURE: <ul style="list-style-type: none">• <i>Stevenson W.J., Production/operations Management</i>• <i>Schroeder R.G., Goldstein S.M., Rungtusanatham J.M., Operations management: contemporary concepts and cases, McGraw Hill</i>• <i>Chase R & Aquilano N.J., Operations management for competitive advantage, McGrawHill</i>	
TEACHING METHODS: Workshops, lectures, classes.	
ASSESSMENTS METHODS: Practical tasks to be solved individually.	
TEACHER: Jolanta Słonic, PhD (Eng.)	

**PROJECT MANAGEMENT - Z32**

FACULTY OF MANAGEMENT	CLASS TYPE: LECTURE, PROJECT
NUMBER OF HOURS: 30 (15 LECTURES +15 PROJECT)	ECTS: 4
SEMESTER: WINTER	CLASS LEVEL: FIRST CYCLE
MINIMAL NUMBER OF STUDENTS: 12 (Should the number of applying students be smaller, the course may be cancelled)	
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS: Own computer with the programme Microsoft Project	
CONTENTS: 1. Project definition, characteristics and types of projects. 2. History of project management, project life cycle will, project creation. 3. Stages and activities of the project. 4. Institutional possibilities to manage the project. 5. Personal possibilities to manage the project. 6. CPM network programming. 7. PERT network programming. 8. Creating the project in Microsoft Project program.	
EFFECTS OF EDUCATION PROCESS: Theory classes: Learn the strategies included within the concept of project management. Knowing the importance of project management including management sciences, learn the basics of project management, learn methods and techniques of project management. Understanding the rules of project management and the modern tools of project management, able to define and plan projects, organize and direct their execution performance. Project: Understanding the network programming methods (CPM, PERT), the program know how to use Microsoft Project to create, present, organize and direct the project.	
LITERATURE : <ul style="list-style-type: none">• Clements J. P., <i>Effective project management</i>. South-Western Cengage Learning, 2012.• Meredith J. R., <i>Project management: a managerial approach</i>. Hoboken: John Wiley & Sons, 2010.• Harper-Smith P., <i>Project management: fast track to success</i>. FT Prentice Hall/Financial Times, 2009.• Kloppenborg T. J., <i>Project management: a contemporary approach: organize, plan, perform</i>. South-Western Cengage Learning, 2009.• Newton R., <i>The practice and theory of project management: creating value through change</i>. New York : Palgrave Macmillan, 2009.	
TEACHING METHODS: Lecture.	
ASSESSMENT METHODS: Execution of the project, test of network methods / written exam.	
TEACHER: Jolanta Słonic, PhD (Eng.)	

**QUALITY MANAGEMENT - Z33**

FACULTY OF MANAGEMENT	CLASS TYPE: LECTURE, CLASS
NUMBER OF HOURS: 15 (5 LECTURE + 10 CLASS)	ECTS: 5
SEMESTER: WINTER	CLASS LEVEL: FIRST CYCLE
MINIMAL NUMBER OF STUDENTS: 12 (Should the number of applying students be smaller, the course may be cancelled)	

LANGUAGE OF INSTRUCTION: English
PRELIMINARY REQUIREMENTS: None
CONTENTS: 1. Introduction to Quality Management. 2. International and local organizations for standardization. 3. Quality management systems in conformity to ISO 9000:2008 standards. 4. Quality management systems documentation. 5. Selected quality tools. 6. Quality costing.
EFFECTS OF EDUCATION PROCESS: With the widespread interest in quality in any organization, this course will give students the background and skills they need to design, implement, and evaluate quality improvement programs.
LITERATURE: <ul style="list-style-type: none">• Evans J.R., Lindsay W.M.: <i>The management and control of quality</i>, 7th Edition, Thomson, South-Western, 2008.
TEACHING METHODS: Lecture, exercise.
ASSESSMENT METHODS: Test, participation in the classes.
TEACHER: Piotr Blicharz, PhD (Eng.)

**STATISTICS I - Z34**

FACULTY OF MANAGEMENT	CLASS TYPE: LECTURE, CLASS
NUMBER OF HOURS: 45 (15 LECTURE + 30 CLASS)	ECTS: 4
SEMESTER: WINTER	CLASS LEVEL: FIRST CYCLE
MINIMAL NUMBER OF STUDENTS: 12 (Should the number of applying students be smaller, the course may be cancelled)	
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS: Basic knowledge of mathematics.	
CONTENTS: 1. The nature of statistics. Presentation of statistical data. Frequency distribution. Measures of central tendency. Measures of dispersion. Moments and coefficients. 2. Coefficient of correlation between two attributes. Correlation diagram. Correlation table. 3. Simple regression analysis. Least - Squares Method. Multiple regression analysis. Applications in regression analysis. Nonlinear regression. 4. Study and forecasting of trends of development.	
EFFECTS OF EDUCATION PROCESS: Understanding the specifics of the random events. To acquaint students with the elements of analysis and interpretation of statistical data, methods and tools of descriptive statistics, statistical analysis of management problems	
LITERATURE: <ul style="list-style-type: none">• Salvatore D., Reagle D., <i>Statistics and econometrics</i>, McGraw-Hill, 2002.• Smith G., <i>Essential Statistics, Regression and Econometrics, for the Social Sciences</i>, Academic Press, Elsevier, 2015.• Stevens J.P., <i>Applied Multivariate Statistics for the Social Sciences</i>, Lawrence Erlbaum Associates Publishers, London 2002.• Myers J., Well A., <i>Research Design and Statistical Analysis</i>, Lawrence Erlbaum Associates Publishers, London 2003.• Ross, Sh. M., <i>Introduction to Probability Models</i>, Academic Press, 1997.	
TEACHING METHODS: Lecture, class.	
ASSESSMENT METHODS: Exam/test.	
TEACHER: Edward Kozłowski, PhD	



STATISTICS II - Z35

FACULTY OF MANAGEMENT	CLASS TYPE: LECTURE, LABORATORY
NUMBER OF HOURS: 45 (15 LECTURE + 30 LABORATORY)	ECTS: 4
SEMESTER: SUMMER	CLASS LEVEL: SECOND CYCLE
MINIMAL NUMBER OF STUDENTS: 12 (Should the number of applying students be smaller, the course may be cancelled)	
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS: Basic knowledge of mathematics and statistics I	
CONTENTS: 1. Introduction to probability theory. Sample space and events. Conditional probabilities. Independent Events. Bayes' Formula. Random variables. Discrete random variables. Continuous random variables. 2. Basic distributions of random variables. Expectation of random variables: discrete and continuous cases. Mean, variance and standard deviation. Condition probability and condition expectation. Central limit theorem. 3. Parametric point estimation. Likelihood method. Method of moments. Least square method. 4. Interval estimation. Confidence interval for mean. Confidence interval for variance. 5. Tests of statistical hypotheses. Sampling from the Normal Distribution. 6. Tests on the mean. Tests on the variance. 7. Test of goodness of fit. Chi-square test. Kolmogorov test. Shapiro - Wilk test. Anderson-Darling test. Lilliefors test. Jarque-Bery Test. 8. Test of correlation.	
EFFECTS OF EDUCATION PROCESS: Identification of phenomena using the tools of mathematical statistics	
LITERATURE: <ul style="list-style-type: none">• Salvatore D., Reagle D., <i>Statistics and econometrics</i>, McGraw-Hill, 2002.• Smith G., <i>Essential Statistics, Regression and Econometrics, for the Social Sciences</i>, Academic Press, Elsevier, 2015.• Stevens J.P., <i>Applied Multivariate Statistics for the Social Sciences</i>, Lawrence Erlbaum Associates Publishers, London 2002.• Myers J., Well A., <i>Research Design and Statistical Analysis</i>, Lawrence Erlbaum Associates Publishers, London 2003.• Ross, Sh. M., <i>Introduction to Probability Models</i>, Academic Press, 1997.	
TEACHING METHODS: Lecture, laboratory.	
ASSESSMENT METHODS: Exam/test.	
TEACHER: Edward Kozłowski, PhD	

**STOCK MARKET INVESTMENTS - Z36**

FACULTY OF MANAGEMENT	CLASS TYPE: LECTURE, CLASS
NUMBER OF HOURS: 30 (15 LECTURE+ 15 CLASS)	ECTS: 4
SEMESTER: SUMMER	CLASS LEVEL: FIRST CYCLE
MINIMAL NUMBER OF STUDENTS: 12 (Should the number of applying students be smaller, the course may be cancelled)	
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS: basic knowledge of financial statements and financial analysis, basic knowledge of financial mathematics and macroeconomics.	
CONTENTS: Short brief of stock market history. Fundamental analysis, technical analysis and behaviour analysis – main differences. Main tools of technical analysis. Trend lines, resistant and supporting lines, etc. Linear formations. Candlestick formations. Fibonacci numbers and Elliot wave theory. Short brief of stock market history. Fundamental analysis, technical analysis and behaviour analysis – main differences.	
EFFECTS OF EDUCATION PROCESS: To give the skills in investing on a stock market. To prepare to find proper line and candlestick formation. To realize the importance of reducing investment risk. To show the ways and results of many types of investing.	
LITERATURE: <ul style="list-style-type: none">• <i>Mishkin F.S., Eakins S.G.: Financial Markets and Institutions, Pearson education Limited, Edinburgh 2012.</i>• <i>Murphy J.J.: Technical Analysis of the Financial Markets, New York Institute of Finance 1999.</i>• <i>Graham B.: The intelligent Investor, Library of Congress Cataloging-in-Publication Data 2003.</i>	
TEACHING METHODS: Multimedia presentation, tasks, cases, discussions.	
ASSESSMENT METHODS: Written test and practical task.	
TEACHER: Prof. Artur Paździor, PhD, DSc (Eng.)	

**TIME SERIES ANALYSIS - Z37**

FACULTY OF MANAGEMENT	CLASS TYPE: LECTURE, LABORATORY
NUMBER OF HOURS: 45 (15 LECTURE + 30 LABORATORY)	ECTS: 4
SEMESTER: SUMMER	CLASS LEVEL: SECOND CYCLE
MINIMAL NUMBER OF STUDENTS: 12 (Should the number of applying students be smaller, the course may be cancelled)	
LANGUAGE OF INSTRUCTION: English	
PRELIMINARY REQUIREMENTS: Basic knowledge of mathematics and Statistics I	
CONTENTS: 1. Mathematical methods of forecasting. 2. Identification of random components. 3. Correlation and spectrum. 4. Stationary models (AR, MA, ARMA). 5. Tests of nonstationarity (DF, ADF, KPSS). 6. Nonstationary models (ARIMA, ARCH, GARCH, TARARCH etc.). 7. Kalman filtering.	
EFFECTS OF EDUCATION PROCESS: To acquaint students with the methods and tools of identification of time series, modelling and simulation systems, forecasting of their behaviour in the future.	
LITERATURE : <ul style="list-style-type: none">• Cryer J. D., Chan K.S., <i>Time series analysis with Applications in R</i>, Springer 2008.• Shumway R.H., Stoffer D.S., <i>Time Series Analysis and its applications</i>, Springer 2011.• Cowpertwait P.S., Metcalfe A.V., <i>Introductory time series with R</i>, Springer 2009.• Hamilton J.D., <i>Time Series Analysis</i>, Princeton, New Jersey, 1994.• Hatanaka M., <i>Time Series-Based Econometrics: Unit Roots and Cointegration</i>, Oxford University Press, 1996.• Yaffee R.A., McGee M., <i>An Introduction to Time Series Analysis and Forecasting with Applications of SAS and SPSS</i>, Academic Press Inc., 2000.	
TEACHING METHODS: Lectures.	
ASSESSMENT METHODS: Test.	
TEACHER: Edward Kozłowski, PhD	