



LUBLIN UNIVERSITY  
OF TECHNOLOGY  
MANAGEMENT  
FACULTY

# **Proposal of courses for Erasmus students**

## **Academic year 2023/2024**

FACULTY OF MANAGEMENT – LUBLIN UNIVERSITY OF TECHNOLOGY PL LUBLIN03

**WINTER SEMESTER COURSES**

<b>FIRST CYCLE PROGRAMME</b>	<b>COURS ID</b>	<b>ECTS</b>
BUSINESS DEVELOPMENT STRATEGIES	Z41	4
COMPUTER SCIENCE IN MANAGEMENT	Z04	4
CONSUMER BEHAVIOUR	Z05	4
E-MARKETING	Z48	4
FINANCIAL ANALYSIS	Z13	5
FUNDAMENTALS OF MARKETING	Z15	4
INDUSTRY 4.0	Z39	4
FINANCIAL ACCOUNTING AND REPORTING	Z21	5
PRODUCTION PLANNING AND MANAGEMENT	Z31	5
STARTUP ENTREPRENEURSHIP	Z46	4
WORKFLOW AND BUSINESS PROCESS MANAGEMENT	Z51	4

<b>SECOND CYCLE PROGRAMME</b>	<b>COURS ID</b>	<b>ECTS</b>
CAREER PLANNING	Z51	4
CORPORATE SOCIAL RESPONSIBILITY (CSR)	Z07	4
CREATIVE DESIGN IN BUSINESS	Z09	5
EMERGING TRENDS IN HRM	Z38	4
ENTERPRISE PROJECT MANAGEMENT (EPM)	Z10	4
LOGISTIC	Z49	5
OCCUPATIONAL ENVIRONMENT	Z26	4
STATISTICS IN MANAGEMENT	Z35	3
WORK STRESS	Z28	4



## SUMMER SEMESTER COURSES

FIRST CYCLE PROGRAMME	COURS ID	ECTS
ADVERTISING AND MEDIA COVERAGE	Z40	4
BUSINESS INTELLIGENCE (BI)	Z42	4
CORPORATE FINANCE	Z06	5
INTEGRATED MARKETING COMMUNICATIONS	Z17	5
MARKETING RESEARCH	Z23	5
MICROECONOMICS	Z25	4
PUBLIC RELATIONS	Z50	4
SOCIAL MEDIA COMMUNICATION	Z45	4

SECOND CYCLE PROGRAMME	COURS ID	ECTS
CRM 2.0 IN CUSTOMER SERVICE	Z43	4
DESIGN INNOVATION R&D PROCESS AND TECHNOLOGY TRANSFER	Z37	5
ECONOMIC MANAGEMENT IN VARIOUS ECONOMIC SYSTEM	Z47	5
ERGONOMICS	Z11	5
GLOBAL&POLITICAL ECONOMICS	Z30	4
INNOVATION MANAGEMENT IN AN ENTERPRISE	Z44	4
INTRODUCTION TO INTERNATIONAL BUSINESS	Z18	4
OCCUPATIONAL HEALTH RISK ASSESSMENT	Z27	4
OPERATIONAL RESEARCH IN MANAGEMENT	Z29	3
STOCK MARKET INVESTMENTS	Z36	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 **7 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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**ADVERTISING AND MEDIA COVERAGE - Z40**

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

<b>LANGUAGE OF INSTRUCTION:</b> English
<b>PRELIMINARY REQUIREMENTS:</b> Intermediate level of English. All students willing to participate in the class are required to contact the teacher; personally or via email otherwise they will not be allowed to enrol on a course.
<b>CONTENTS:</b> Advertisement as an instrument of activity of companies on the market. 6M scheme and marketing brief. Defining goals and assessing them via advertisements. Emotions, celebrities, music and pictures as determinants of successful communication. Symbolic meaning of colours in adverts. Creating media coverage for different market segments. Factors influencing success of the advertising campaign. Case studies of different ads.
<b>EFFECTS OF EDUCATION PROCESS:</b> Ability to define advertising and media coverage, describe the process of creating advertisement, evaluate the effects of the media coverage, create an advertising brief.
<b>LITERATURE:</b> <ul style="list-style-type: none"><li>• <i>Ibach H., How to write an inspired creative brief, 2009.</i></li><li>• <i>Sullivan L., Hey, Whipple, Squeeze This: The Classic Guide to Creating Great Ads , 2012.</i></li></ul>
<b>TEACHING METHODS:</b> Multimedia presentation, tasks, cases, discussions.
<b>ASSESSMENT METHODS:</b> Written exam and completion of case studies.
<b>TEACHER:</b> Magdalena Maciaszczyk, Ph.D.

**BUSINESS DEVELOPMENT STRATEGIES - Z41**

<b>FACULTY OF MANAGEMENT</b>	<b>CLASS TYPE: LECTURES/SEMINAR</b>
<b>NUMBER OF HOURS: 15</b>	<b>ECTS: 4</b>
<b>SEMESTER: WINTER</b>	<b>CLASS LEVEL: FIRST CYCLE</b>
<b>MINIMAL NUMBER OF STUDENTS: 12</b> (Should the number of applying students be smaller, the course may be cancelled)	

**LANGUAGE OF INSTRUCTION:** English

**PRELIMINARY REQUIREMENTS:** Intermediate level of English. All students willing to participate in the class are required to contact the teacher; personally or via email otherwise they will not be allowed to enrol on a course.

**CONTENTS:** 1. The importance of small business to development and in building a market position of an enterprise. 2. Factors influencing the development of enterprises 3. Competitive strategies for small and medium enterprises. 4. Determinants of enterprise development 5. Competitiveness of businesses. 6. Features of innovation & enterprises processes 7. An innovative enterprise. 8. Inter-organisational relations. 9. Leadership in enterprise 10. Creativity, knowledge management vs. innovativeness. 11. Virtual organization vs. teal organization. 12. Business models or development strategies.

**EFFECTS OF EDUCATION PROCESS:** After completing this module, the student should be able to: demonstrate analytical and integrative skills in solving advanced tasks within business development, apply acquired knowledge and understanding from this module, integrate sustainability when analyzing and solving business development tasks, critically reflect upon the individual's and the group's ability to work effectively with external organizations, orally and in writing for stakeholders, present analyses, ideas and conclusions developed and/or drawn by the team or individually, evaluate his/her competence and need for competence development in order to work with strategic business development.

**LITERATURE:**

- Street, D.L., Albu, C., Albu, N. Webber, S., *The SMP of the future in a changing world*. Edinburgh Group. Retrieved from [https://www.researchgate.net/publication/333055609\\_The\\_SMP\\_of\\_the\\_future\\_in\\_a\\_changing\\_world](https://www.researchgate.net/publication/333055609_The_SMP_of_the_future_in_a_changing_world), 25 June 2019.
- Schumpeter J.A., *Theory of economic development*, Routledge, New York, 2017.
- Santoro G., *Innovation in small and medium enterprises: the impact of open innovation practices on firm's performance*, *Global Business and Economics Review*, 2017, 19, 5, pp. 508–520.
- North K., Varvakis G. [Eds.], *Competitive strategies for small and medium enterprises*, Springer International Publishing, Cham, 2017.

**TEACHING METHODS:** Multimedia presentations, discussion, working in groups.

**ASSESSMENT METHODS:** Class preparation, evaluation of presentations.

**TEACHER:** Agnieszka Rzepka, Ph.D., D.Sc., Professor at LUT



**BUSINESS INTELLIGENCE (BI) - Z42**

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

<b>LANGUAGE OF INSTRUCTION:</b> English
<b>PRELIMINARY REQUIREMENTS:</b> Basic knowledge of mathematics and computer science. Basics of knowledge management and business.
<b>CONTENTS:</b> 1. Basic concepts related to Business Intelligence systems. 2. Overview of Business Intelligence problems. 3. Statistical methods of business data analysis. 4. Advanced methods of business data analysis. 5. Introduction to the analytical environment. 6. Preparing a data model using the analytical environment. 7. Build metrics within a defined model. 8. Create additional dimensions of data analysis from functions. 9. Using the selected tool to create reports, data visualization. 10. DAX language in Business Intelligence applications
<b>EFFECTS OF EDUCATION PROCESS:</b> The acquisition of knowledge of modelling principles of business intelligence theory related to the business model concept. Acquiring practical skills in conducting business intelligence analysis, building an exploratory model and using tools used to support the process of creating and describing a business model.
<b>LITERATURE:</b> <ul style="list-style-type: none"><li>• Knight D., Schact B., Pearson M., <i>Microsoft Power BI Quick Start Guide - Second Edition: Bring your data to life through data modeling, visualization, digital storytelling, and more</i>, Packt Publishing, 2020.</li><li>• Bruce P., Bruce A., Gedeck P., <i>Practical Statistics for Data Scientists</i>, O'Reilly Media, 2nd edition 2020.</li><li>• Provost F., Fawcett T., <i>Data Science for Business: What You Need to Know About Data Mining and Data-Analytic Thinking</i>, Athenaem Uitgeverij, 2013.</li></ul>
<b>TEACHING METHODS:</b> Lectures and project
<b>ASSESSMENT METHODS:</b> Presence, evaluation of submitted project
<b>TEACHER:</b> Jakub Pizoń, PhD, Eng.

**CAREER PLANNING - Z52**

<b>FACULTY OF MANAGEMENT</b>	<b>CLASS TYPE: LECTURE, SEMINAR</b>
<b>NUMBER OF HOURS: 30</b> (10 LECTURES + 20 SEMINARS)	<b>ECTS: 4</b>
<b>SEMESTER: WINTER</b>	<b>CLASS LEVEL: SECOND CYCLE</b>
<b>MINIMAL NUMBER OF STUDENTS: 12</b> (Should the number of applying students be smaller, the course may be cancelled)	
<b>LANGUAGE OF INSTRUCTION:</b> English	
<b>PRELIMINARY REQUIREMENTS:</b> English level B2.	
<b>CONTENTS:</b> 1. Professional career concepts. Traditional and modern careers. 2. Stages, strategies and conditions of professional career development. 3. Professional portfolio as a method of supporting professional development. 4. Career capital - resources used in career planning. 5. Hard and soft professional competences – diagnosis and development. 6. Self-presentation in the recruitment and selection process. 7. Entrepreneurship: features and importance in the career planning process. 8. Analysis of labor market in the context of a professional career.	
<b>EFFECTS OF EDUCATION PROCESS:</b> The main aim of Career Planning course is to acquire knowledge and skills of planning and developing your own professional career. Participants acquire competences of planning their own career, developing and presenting their professional skills on the labor market.	
<b>LITERATURE:</b> <ul style="list-style-type: none"><li>• Callahan, M. (2021). <i>I Inc Career Planning and Development Using Proven Entrepreneurship Concepts</i>. Cognella Academic Publishing.</li><li>• Frischmann, R. M. (2013). <i>A Skills-Based Approach to Developing a Career</i>. Trafford Publishing.</li><li>• Harrington, B., &amp; Hall, D. T. (2007). <i>Career management &amp; work-life integration: Using self-assessment to navigate contemporary careers</i>. Sage.</li><li>• Robertson, P. J., Hooley, T., &amp; McCash, P. (Eds.). (2021). <i>The Oxford handbook of career development</i>. Oxford University Press.</li></ul> <b>Complementary:</b> <ul style="list-style-type: none"><li>• Lent, R. W., &amp; Brown, S. D. (2013). <i>Understanding and facilitating career development in the 21st century</i>. <i>Career development and counseling: Putting theory and research to work</i>, 2, 1-26.</li></ul>	
<b>TEACHING METHODS:</b> Lectures, discussion, case study, working in groups.	
<b>ASSESSMENT METHODS:</b> Written test, project execution and its presentation, presence and active participation in seminar discussion and exercises.	
<b>TEACHER:</b> Krystyna Wojciechowska, Ph.D., Eng.	

**COMPUTER SCIENCE IN MANAGEMENT - Z04**

<b>FACULTY OF MANAGEMENT</b>	<b>CLASS TYPE: LECTURE, LABORATORY</b>
<b>NUMBER OF HOURS: 30</b> (5 LECTURE + 25 LABORATORY)	<b>ECTS: 4</b>
<b>SEMESTER: WINTER</b>	<b>CLASS LEVEL: FIRST CYCLE</b>
<b>MINIMAL NUMBER OF STUDENTS: 12</b> (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:**

- Walkenbach J., *Excel 2007 Bible*, Wiley Publishing Inc, Indianapolis, USA, 2007.
- Manzo J.J., *Microsoft Office Excel 2007 in Business Core and Student Resource*, Prentice Hall, New Jersey, USA, 2008.

**TEACHING METHODS:** Laboratory exercise.

**ASSESSMENT METHODS:** Test

**TEACHER:** Piotr Ziń MSc, Eng.

**CONSUMER BEHAVIOUR - Z05**

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

<b>LANGUAGE OF INSTRUCTION:</b> English
<b>PRELIMINARY REQUIREMENTS:</b> 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.
<b>CONTENTS:</b> 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, alternatives evaluation and choice, risk, satisfaction and loyalty.
<b>EFFECTS OF EDUCATION PROCESS:</b> Ability to define the idea of consumer behaviour. Knowledge on and ability to identify the structure of consumer's decision making process and factors shaping and influencing a choice. Knowledge on general mechanisms used in marketing communications in order to shape consumer's behaviour
<b>LITERATURE:</b> <ul style="list-style-type: none"><li>• <i>Evans M., Jamal A., Foxall G., Consumer behaviour, Wiley, 2009.</i></li><li>• <i>Schiffman L., Kanuk L., Consumer behaviour, Pearson, 2009.</i></li></ul>
<b>TEACHING METHODS:</b> Lecture, interactive presentations, discussion, case studies.
<b>ASSESSMENT METHODS:</b> Written exam and completion of case studies.
<b>TEACHER:</b> Magdalena Maciaszczyk Ph.D.

**CORPORATE FINANCE - Z06**

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

<b>LANGUAGE OF INSTRUCTION:</b> English
<b>PRELIMINARY REQUIREMENTS:</b> Basics of accounting, rudiments of financial analysis.
<b>CONTENTS:</b> 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
<b>EFFECTS OF EDUCATION PROCESS:</b> 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.
<b>LITERATURE:</b> <ul style="list-style-type: none"><li>• Ehrhardt M., <i>Corporate Finance</i>, South - West Thompson Learning, 2008.</li><li>• Lumby S., <i>Corporate Finance Theory &amp; Practice</i>, Thomson Learning, 2008.</li></ul>
<b>TEACHING METHODS:</b> Multimedia presentation, tasks, cases, discussions.
<b>ASSESSMENT METHODS:</b> Final exam (test and case study).
<b>TEACHER:</b> Artur Paździor, Ph.D., D.Sc. Eng. Professor at LUT

**CORPORATE SOCIAL RESPONSIBILITY (CSR) - Z07**

<b>FACULTY OF MANAGEMENT</b>	<b>CLASS TYPE:</b> LECTURES WITH PRACTICAL ELEMENTS OF SEMINARS
<b>NUMBER OF HOURS: 30</b> (10 LECTURE + 20 PROJECT)	<b>ECTS: 4</b>
<b>SEMESTER:</b> WINTER	<b>CLASS LEVEL:</b> SECOND CYCLE
<b>MINIMAL NUMBER OF STUDENTS: 12</b> (Should the number of applying students be smaller, the course may be cancelled)	
<b>LANGUAGE OF INSTRUCTION:</b> English	
<b>PRELIMINARY REQUIREMENTS:</b> None	
<b>CONTENTS:</b> 1. Corporate Social Responsibility (CSR) - historical background, definition, recognition of contemporary models and standards of social responsibility. 2. Conditions and perception of CSR in Poland and in the world. 3. Basic models of social responsibility. 4. Stakeholder theory and CSR. 5. Moral choices individuals in consumer culture. 6. Contemporary ethical standards of consumer culture. 7. Responsibility for the environment. 8. Reporting as an important element of CSR strategies in the organization. 9. Corporate social responsibility as a source of competitive advantage.	
<b>EFFECTS OF EDUCATION PROCESS:</b> 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.	
<ul style="list-style-type: none"><li>• <i>da Silva Junior A., de Oliveira Martins-Silva P., de Araújo Vasconcelos K.C., Correa da Silva V., Martins Silva de Brito S.L., Rocha Monteiro J.M., Sustainability and corporate social responsibility in the opinion of undergraduate students in management programs: Between the concrete and the abstract. Journal of Cleaner Production 2019 (207)</i></li></ul>	
<b>TEACHING METHODS:</b> Participation in the classes, project, evaluation of presentations.	
<b>ASSESSMENT METHODS:</b> Active participating in the classes, essay, evaluation of presentations.	
<b>TEACHER:</b> Marzena Cichorzewska, Ph.D., Barbara Mazur, Ph.D., D.Sc. Professor at LUT	

**CREATIVE DESIGN IN BUSINESS - Z09**

<b>FACULTY OF MANAGEMENT</b>	<b>CLASS TYPE: PROJECT</b>
<b>NUMBER OF HOURS: 30</b>	<b>ECTS: 5</b>
<b>SEMESTER: WINTER</b>	<b>CLASS LEVEL: SECOND CYCLE</b>
<b>MINIMAL NUMBER OF STUDENTS: 12</b> (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 and Lean Thinking. Fundamental capabilities in the methodologies that designers use. Opening to innovating in multidisciplinary teams. Clear communicate about Design Thinking, Applied creativity - creating a product concept. Design of Services and Customer Experience.

**EFFECTS OF EDUCATION PROCESS:** Knowledge of creativity stimulation methods in yourself and others. Ability of incorporate Design Thinking and Lean Thinking into your everyday professional activities. Ability to participate in and lead innovation in collaborative settings. Apply methods that will help turn customer needs into human-centered solutions. De-risk new ideas by gaining feedback through rapid prototypes. Career acceleration through an enriched leadership toolkit and knowledge management.

**LITERATURE:**

- *Brown T., Change by Design, Harper Collins Publishers, 2009.*
- *Martin R., The Design of Business, Harvard Business Press, 2009.*
- *Liedtka J., Ogilvie T., Designing for Growth, Columbia Business School, 2011.*
- *Martin R., Christensen K., The Best on Design Thinking, Univ. of Toronto Press, 2013.*

**TEACHING METHODS:** Multimedia supported lecture, workshops.

**ASSESSMENT METHODS:** Class participation (individual); Practice project + presentations in class (team).

**TEACHER:** Krzysztof J. Czarnocki, Ph.D., D.Sc. Eng. Professor at LUT, Elżbieta Czarnocka, Ph.D.

**CRM 2.0 IN CUSTOMER SERVICE - Z43**

<b>FACULTY OF MANAGEMENT</b>	<b>CLASS TYPE: PROJECT</b>
<b>NUMBER OF HOURS: 15</b>	<b>ECTS: 4</b>
<b>SEMESTER: SUMMER</b>	<b>CLASS LEVEL: SECOND CYCLE</b>
<b>MINIMAL NUMBER OF STUDENTS: 12</b> (Should the number of applying students be smaller, the course may be cancelled)	

**LANGUAGE OF INSTRUCTION:** English

**PRELIMINARY REQUIREMENTS:** Marketing fundamentals

**CONTENTS:** 1. Change from CRM to CRM 2.0 in a selected company. 2. The use of selected social media in building relationships with customers. 3. Gamification of relations with customers. 3. Customer loyalty online. 4. Online customer support. 5. Modern online marketing communication instruments in the service of customer relations.

**EFFECTS OF EDUCATION PROCESS:** Moving customer service to the network forces enterprises to change their thinking about building lasting and profitable relationships with customers. The processes and tools used in CRM (customer relationship management) are changing. As part of these classes, students will have the opportunity to practice the practical design of online customer service solutions while maintaining the principles and philosophy of CRM.

**LITERATURE:**

- Buttle F., Maklan S., *Customer Relationship Management: Concepts and Technologies*, Routledge, 2019.
- Greenberg P., *CRM at the Speed of Light, Fourth Edition: Social CRM 2.0 Strategies, Tools, and Techniques for Engaging Your Customers*, McGraw-Hill Education, 2009.
- Kingsnorth S., *Digital Marketing Strategy*, Kogan Page, 2022.
- Downe L., *Good Services: How to Design Services that Work*, BIS Publishers, 2020.
- Kotler Ph., Kartajaya H., Setiawan I., *Marketing 4.0: Moving From Traditional to Digital*, Wiley, 2016.

**TEACHING METHODS:** Case studies, participation in the classes, project, evaluation of presentations

**ASSESSMENT METHODS:** Project, evaluation of presentations

**TEACHER:** Agnieszka Bojanowska, PhD, Eng.





**DESIGN INNOVATION R&D PROCESS AND TECHNOLOGY TRANSFER - Z37**

<b>FACULTY OF MANAGEMENT</b>	<b>CLASS TYPE: LECTURE, PROJECT</b>
<b>NUMBER OF HOURS: 30</b> (10 LECTURE + 20 PROJECT)	<b>ECTS: 5</b>
<b>SEMESTER: SUMMER</b>	<b>CLASS LEVEL: GRADUATE/THIRD-CYCLE STUDIES (OPTION)</b>
<b>MINIMAL NUMBER OF STUDENTS: 12</b> (Should the number of applying students be smaller, the course may be cancelled)	

**LANGUAGE OF INSTRUCTION:** English, Spanish – complementary.

**PRELIMINARY REQUIREMENTS:** For graduate level achieved the requirements for a Degree of Bachelor of Science; For third cycle achieved the requirements for a Degree of Master of Science respectively.

**CONTENTS:** 1. Innovation induction; 2. Disruptive innovation; 3. Critical data analysis; 4. R&D process; 5. R&D Leadership; 6. T- shaped and Y-shaped leaders; 7. New knowledge in industrial research - description of the effect of novelties and technological challenges.

**EFFECTS OF EDUCATION PROCESS:** This course aims to expose Students to the mindset, skillset and toolset associated with design, innovation and technology transfer. It does so through guided applications to framing and solving problems in innovation induction and design, business and engineering. Specifically, you will learn approaches to noticing and observing, framing, and reframing, imagining, and designing, and experimenting and testing as well as for critique and reflection. Following a human-centered design process that includes research, concept generation, prototyping, and refinement, students work as individuals and in teams to design mobile information systems and other interactive experiences. Becoming familiar with design methodologies for researching competing products and services, for modelling the current and preferred state of the world, and for prototyping and communicating solutions. The pitch presentation technique will be involved in the workshop and design part of the course. A series of lectures introduces students to a variety of types of leaders, innovators, and concepts in design and process innovation. Students will learn from practical experiences and insights and practices in applying and evaluating application forms for innovative projects. An important element will be the issues of ethics and the leadership and organization of research and scientific teams. Students will also have a chance to apply those approaches in various sectors.

**LITERATURE:**

- Bradley S. R., Hayter Ch. S., Link A. N., *Models and Methods of University Technology Transfer (Foundations and Trends(r) in Entrepreneurship) 5th ed. Edition, University of North Carolina Greensboro, NC, USA, 2013.*
- O'Reilly III, C. A. and Tushman, M. L. (2016). *Lead and Disrupt: How to Solve the Innovator's Dilemma.* Stanford, CA: Stanford University Press.
- *Disruptive Innovation: An Intellectual History and Directions for Future Research Journal of Management Studies 55:7 November 2018 doi:10.1111/joms.12349.*
- *Original UCB teaching materials for top500 Innovators made available with permission from the University of California Berkeley, 2013-2015, CA, USA.*

**TEACHING METHODS:** Lecture and project workshops

**ASSESSMENT METHODS:** Project 90% Feedback 10%. **Ethical approach:** All members of a group are responsible for the group's work and project presentation. In any assessment, every student shall honestly disclose any help received and sources used. In an oral assessment and Feedback session, every student shall be able to present and answer questions about the entire assignment, methods, tools and solution.

**TEACHER:** Krzysztof J. Czarnocki Ph.D., D.Sc. Eng. Professor at LUT. Elzbieta Czarnocka Ph.D.

**ECONOMIC MANAGEMENT IN VARIOUS ECONOMIC SYSTEM - Z47**

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

**LANGUAGE OF INSTRUCTION:** English

**PRELIMINARY REQUIREMENTS:** -

**CONTENTS:** 1. "Unofficial economy", "Second economy", "Informal economy", "Shadow economy" - the meaning and comparison of concepts; Why unofficial economy exists?; 2. Ways of measure of unofficial economy, bank fraud, counterfeit products, fraud in public sector, smuggling, money laundering, others fraud; 3. Unofficial economy vs economic policy, taxes and models of state; 4. Models and examples of: Social state, Liberal state, New industrial state; 5. "China vs Japan" - comparison different ways of development.

**EFFECTS OF EDUCATION PROCESS:** Student has knowledge of unofficial economy and various models o states They have ability how to avoid danger of being trick.

**LITERATURE:**

- *Blades D.W., The Hidden Economy and National Outlook, "Economic Outlook", Occasional Studies, OECD, Paris 1982.*
- *Colin L. The Hidden Economy. Elements of theory,*
- *O'Higgins M.: Measuring the Hidden Economy. A Review of Evidence and Methodologies. London 1980.*
- *Ha Joon Chang, Kicking Away the Ladder: Development Strategy in Historical Perspective, Anthem Press; 1st edition, 2002.*

**TEACHING METHODS:** Lecture and classes

**ASSESSMENT METHODS:** Evaluation of essay

**TEACHER:** Prof. Maciej Mindur, Ph.D., D.Sc.

**E-MARKETING - Z48**

<b>FACULTY OF MANAGEMENT</b>	<b>CLASS TYPE: LABORATORY</b>
<b>NUMBER OF HOURS: 15</b>	<b>ECTS: 4</b>
<b>SEMESTER: WINTER</b>	<b>CLASS LEVEL: FIRST CYCLE</b>
<b>MINIMAL NUMBER OF STUDENTS: 12</b> (Should the number of applying students be smaller, the course may be cancelled)	
<b>LANGUAGE OF INSTRUCTION:</b> English	
<b>PRELIMINARY REQUIREMENTS:</b> All students willing to participate in the class are required to contact the teacher, personally or via email, before start course.	
<b>CONTENTS:</b> 1. Introduction to e-marketing: specification of the Internet as an area of marketing activity of enterprises, development of a business model on the example of the Business Model Canvas. 2. Mobile technologies used in E-Marketing: marketing communication strategies in social media, real-time marketing, influencer marketing, content marketing and viral marketing. 3. E-commerce: essence and tools, Marketing automation: tools and techniques applied to its implementation. 4. Key E-Marketing tools: email marketing, display advertising (display), search engine marketing – PPC, Google marketing services. 5. Types, ways and forms of control of e-marketing activities. 6. Social and ethical aspects of Internet marketing activities: analysis of case studies.	
<b>EFFECTS OF EDUCATION PROCESS:</b> The main goal of the course is to provide students with knowledge on the essence and areas of application of e-marketing. Students will gain practical knowledge of the tools used to create marketing strategies that can be implemented on the Internet. Moreover, attendees will gain knowledge about the rules of control and measurement of e-marketing activities.	
<b>LITERATURE:</b> <ul style="list-style-type: none"><li>• Frick J., Ali M.M., Business model canvas as tool for SME. (in:) <i>Advances in Production Management Systems. Sustainable Production and Service Supply Chains: IFIP WG 5.7 International Conference, APMS 2013, State College, PA, USA, September 9-12, 2013, Proceedings, Part II</i>. Springer Berlin Heidelberg, 2013. p. 142-149.</li><li>• Alan Charlesworth, <i>Absolute Essentials of Digital Marketing</i>, Routledge, 2020, ISBN 0367859203.</li><li>• Heimbach I, Kostyra D.S., Hinz O., <i>Marketing Automation. Business &amp; Information Systems Engineering</i>, 2015, ISSN 2363-7005.</li></ul>	
<b>TEACHING METHODS:</b> Case studies, project, evaluation of presentations.	
<b>ASSESSMENT METHODS:</b> Project, evaluation of presentations.	
<b>TEACHER:</b> Paulina Jusiuk Msc.	

**EMERGING TRENDS IN HRM - Z38**

<b>FACULTY OF MANAGEMENT</b>	<b>CLASS TYPE: LECTURE, PROJECT</b>
<b>NUMBER OF HOURS: 30</b> (20 LECTURE +10 PROJECT)	<b>ECTS: 4</b>
<b>SEMESTER: WINTER</b>	<b>CLASS LEVEL: SECOND CYCLE</b>
<b>MINIMAL NUMBER OF STUDENTS: 12</b> (Should the number of applying students be smaller, the course may be cancelled)	
<b>LANGUAGE OF INSTRUCTION:</b> English	
<b>PRELIMINARY REQUIREMENTS:</b> -	
<b>CONTENTS:</b> 1. Human capital and human resources - introductory issues. The strategic dimension of human capital management. 2. Talent management in management theory and practice. 3. Professional competence management. Building a competence profile. 4. Diagnosis of professional competence. 5. Human potential management in the concept of positive organization. 6. Employee empowerment. 7. Organizational commitment management. Diagnosis of employee involvement level. 8. Generational diversity management. Building intelligent generation. 9. Employee health capital management. 10. Green HR. 11. Measurement of the value of human capital. 12. Evaluation of the subject.	
<b>EFFECTS OF EDUCATION PROCESS:</b> The aim of the course is to transfer knowledge and develop practical professional skills in the area of human resource management of an organization using the latest management concepts and theories. Students learn about current trends in HRM and implement projects aimed at diagnosis and solving practical management problems related to the human potential of the organization.	
<b>LITERATURE:</b> <ul style="list-style-type: none"><li>• Moczyłowska J.M., <i>Barriers and Difficulties in Talent Management, Przedsiębiorczość i Zarządzanie, 2014, Volume 15, Issue 6, p. 231-241.</i></li><li>• Peyrat-Guillarda D., Glińska-Noweś A. <i>Positive Organizational Potential, Organizational Commitment and Organizational Citizenship Behaviour: a French/Polish comparison, Journal of Positive Management, January 2009, p.47-63.</i></li><li>• Mullaney E., <i>Talent Mobility. A Global Approach to Talent Management, Worldwork 2012, www.worldatwork.org.</i></li></ul>	
<b>TEACHING METHODS:</b> Lectures, Project	
<b>ASSESSMENT METHODS:</b> Evaluation of project/ Active participating in the classes.	
<b>TEACHER:</b> Barbara Mazur, Ph.D., D.Sc. Eng. Professor at LUT	

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

<b>FACULTY OF MANAGEMENT</b>	<b>CLASS TYPE: LABORATORY</b>
<b>NUMBER OF HOURS: 30</b> (LABORATORY)	<b>ECTS: 4</b>
<b>SEMESTER: WINTER</b>	<b>CLASS LEVEL: SECOND CYCLE</b>
<b>MINIMAL NUMBER OF STUDENTS: 12</b> (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. Starting a new project. Planning the project. 3. Executing, controlling and closing the project. 4. Creating a model of the project. Working with a team through MS Project. 5. Sequencing and organizing tasks. Understanding Work Breakdown Structure Codes. 6. Accessing and rearranging the project information. Scheduling tasks. 7. Viewing project information. Scheduling tasks. Setting up resources in the project. 8. Assigning resources to the tasks. Planning resource and tasks costs. 9. Checking and adjusting the project plan. 10. Tracking progress. Setting a baseline and updating progress. 11. Responding to changes in the project. 12. Reporting and analysing project information.

**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. Ph.D., Eng., Monika Kulisz, Ph.D., Eng.

**ERGONOMICS - Z11**

<b>FACULTY OF MANAGEMENT</b>	<b>CLASS TYPE: LECTURE, LABORATORY</b>
<b>NUMBER OF HOURS: 30</b> (15 LECTURE + 15 LABORATORY)	<b>ECTS: 5</b>
<b>SEMESTER: SUMMER</b>	<b>CLASS LEVEL: SECOND CYCLE</b>
<b>MINIMAL NUMBER OF STUDENTS: 12</b> (Should the number of applying students be smaller, the course may be cancelled)	
<b>LANGUAGE OF INSTRUCTION:</b> English	
<b>PRELIMINARY REQUIREMENTS:</b> None	
<b>CONTENTS:</b> 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.	
<b>EFFECTS OF EDUCATION PROCESS:</b> 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.	
<b>LITERATURE:</b> <ul style="list-style-type: none"><li>• Kroemer, K.H.E., Grandjean, E.: <i>Fitting the Task to the Human</i>, Philadelphia: Taylor and Francis, 5th Edition, 1997, ISBN: 074840665.</li><li>• Di Nardi S.: <i>The Occupational Environment 3<sup>rd</sup> Ed.</i>, AIHA Press, 2012, ISBN-10: 1931504431.</li></ul>	
<b>TEACHING METHODS:</b> Multimedia supported Lecture + Lab exc.	
<b>ASSESSMENT METHODS:</b> Class participation, presentation evaluation	
<b>TEACHER:</b> Krzysztof J. Czarnocki, Ph.D., D.Sc. Eng. Professor at LUT, Elżbieta Czarnocka, Ph.D.	

**FINANCIAL ANALYSIS - Z13**

<b>FACULTY OF MANAGEMENT</b>	<b>CLASS TYPE: LECTURE, CLASS</b>
<b>NUMBER OF HOURS: 30</b> (15 LECTURE + 15 CLASS)	<b>ECTS: 5</b>
<b>SEMESTER: WINTER</b>	<b>CLASS LEVEL: FIRST CYCLE</b>
<b>MINIMAL NUMBER OF STUDENTS: 12</b> (Should the number of applying students be smaller, the course may be cancelled)	
<b>LANGUAGE OF INSTRUCTION:</b> English	
<b>PRELIMINARY REQUIREMENTS:</b> Basics of accounting, basics of financial statements.	
<b>CONTENTS:</b> 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.	
<b>EFFECTS OF EDUCATION PROCESS:</b> 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	
<b>LITERATURE:</b> <ul style="list-style-type: none"><li>• <i>Harrison W. T. Jr., Horngren Ch. T., Thomas C. W., Suwardy T., Financial Accounting. International Financial Reporting Standards, Pearson Education South Asia Pte Ltd, Singapore, 2011.</i></li><li>• <i>Revsine L., Collins D., Johnson W. B., Financial Reporting and Analysis, Prentice Hall, Apper Sadle River, New Jersey, 2008.</i></li><li>• <i>Alehander D., Britton A., Jorissen A., International financial reporting and analysis, South-Western Cengage Learning, Hampshire, 2009.</i></li></ul>	
<b>TEACHING METHODS:</b> Multimedia presentation, tasks, cases, discussions.	
<b>ASSESSMENT METHODS:</b> Case study – estimation of company's financial standing. Final exam.	
<b>TEACHER:</b> Artur Paździor, Ph.D., D.Sc. Eng. Professor at LUT	

**FUNDAMENTALS OF MARKETING - Z15**

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

**LANGUAGE OF INSTRUCTION:** English

**PRELIMINARY REQUIREMENTS:** Intermediate level of English.

**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 P. Keller K. L., *Marketing management (15th global ed.)*. England: Pearson, 2016.
- Egan J., *Relationship marketing: Exploring relational strategies in marketing*. England: Pearson education, 2008.
- Wilson R Ms., Gilligan C., *Strategic marketing management*. England: Routledge, 2012.

**TEACHING METHODS:** Seminar, interactive presentations, discussion.

**ASSESSMENT METHODS:** Written exam.

**TEACHER:** Marcin Gąsior, Ph.D., D.Sc. Eng. Professor at LUT



**GLOBAL & POLITICAL ECONOMICS - Z30**

<b>FACULTY OF MANAGEMENT</b>	<b>CLASS TYPE: LECTURES /SEMINAR</b>
<b>NUMBER OF HOURS: 20</b>	<b>ECTS: 4</b>
<b>SEMESTER: SUMMER</b>	<b>CLASS LEVEL: SECOND CYCLE</b>
<b>MINIMAL NUMBER OF STUDENTS: 12</b> (Should the number of applying students be smaller, the course may be cancelled)	
<b>LANGUAGE OF INSTRUCTION:</b> English	
<b>PRELIMINARY REQUIREMENTS:</b> English level B2	
<b>CONTENTS:</b> 1. Introduction: Interdisciplinary Approach to Globalization: Economics, History, Culture. 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. Distribution of goods and services in economy. 10. Influence of the government on the condition of the economy. 11. Polish minority government characteristic. 12. Basic economic problems of Polish economy. 13. Basic economic problems of global economy. 14. Economic data research and presentation 15. Impact of COVID and Current Issues and the Global Economy.	
<b>EFFECTS OF EDUCATION PROCESS:</b> By the end of the course, students will be able to understand the main factors and stages of global economic development. In addition, they will be able to grasp the complexity of historical processes and will understand concepts and issues drawn from the development of global economy. Furthermore, the students will appreciate the constant interplay of economic systems, institutions, and social dimensions in the global economy. By the end of this course, students will demonstrate the ability to analyze the challenges posed to governments by globalization. Also, they will obtain broad perspectives on the development of international monetary system. Students will be expected to understand the macroeconomic fundamentals underlining historical change, along with social context. Students will understand the development of the global economy as an international system, in which at different time periods specific industries, regions and countries have dominant influence.	
<b>LITERATURE:</b> <ul style="list-style-type: none"><li>• Hare P., Turley G., <i>Handbook of the Economics and political economy of transition</i>, Routledge, London, 2019.</li><li>• Case K.E, Fair C.R, Oster M.S., <i>Principles of Economics. Global Edition</i>, Pearson, 13 edition, New York, 2019.</li><li>• Amator F., Colli A., <i>The global economy, A concise history</i>. Taylor &amp; Francis Group, London, 2019.</li><li>• Rzepka A., <i>Globalisation and global economy in the theory and practise</i>. Lab Lambert, Saarbrucken, 2013.</li></ul>	
<b>TEACHING METHODS:</b> Multimedia presentations, discussion, working in groups.	
<b>ASSESSMENT METHODS:</b> Participation in the classes, essay, evaluation of presentations.	
<b>TEACHER:</b> Agnieszka Rzepka, Ph.D., D.Sc., Professor at LUT	

**INDUSTRY 4.0 - Z39**

<b>FACULTY OF MANAGEMENT</b>	<b>CLASS TYPE: LECTURES, PROJECT</b>
<b>NUMBER OF HOURS: 30</b> (10 LECTURES +20 PROJECT)	<b>ECTS: 4</b>
<b>SEMESTER: WINTER</b>	<b>CLASS LEVEL: FIRST CYCLE</b>
<b>MINIMAL NUMBER OF STUDENTS: 12</b> (Should the number of applying students be smaller, the course may be cancelled)	

**LANGUAGE OF INSTRUCTION:** English

**PRELIMINARY REQUIREMENTS:** Basic knowledge of mathematics and computer science, Basics of managing a production or service enterprise.

**CONTENTS:** 1. Basic concepts, introduction to Industry 4.0. 2. Construction of Industry 4.0 systems and processes. 3. Infrastructure of intelligent factory systems - types and examples of applications. 4. Collection and processing of data from devices. Data flow in Industry 4.0 systems. 5. Communication in Industry 4.0 systems. Integration of industrial equipment and ICT systems. 6. Industry 4.0 systems and their integration with the Internet. Data processing in an intelligent factory. 7. Data organization, data stream processing, intelligent control algorithms. 8. Integration of the Internet of Things, cyber-physical systems. 9. Applications supporting Industry 4.0 systems: virtual and augmented reality. 10. The role of technology, infrastructure and digitization as pillars of Industry 4.0.

**EFFECTS OF EDUCATION PROCESS:** Knowledge of concepts and formal methods useful in describing and modelling the internal systems and processes of an intelligent factory. Knowledge of effective methods used in enterprises operating in the Industry 4.0 model. Acquiring practical skills in modelling and designing processes in intelligent factories of the future.

**LITERATURE:**

- Schwab K., *The Fourth Industrial Revolution, Currency, Illustrated edition (January 3, 2017)*.
- Dominik T. Matt D., Modrák V., Zsifkovits H., *Industry 4.0 for SMEs Challenges, Opportunities and Requirements, Palgrave Macmillan, 2020*.
- Ustundag A., Cevikcan E., *Industry 4.0: Managing The Digital Transformation Springer Series in Advanced Manufacturing, Springer 2018*.

**TEACHING METHODS:** Lectures and project

**ASSESSMENT METHODS:** Presence, evaluation of submitted project.

**TEACHER:** Jakub Pizoń, Ph.D., Eng.

**INNOVATION MANAGEMENT IN AN ENTERPRISE - Z44**

<b>FACULTY OF MANAGEMENT</b>	<b>CLASS TYPE: LECTURE, CLASS</b>
<b>NUMBER OF HOURS: 30</b> (15 LECTURE + 15 CLASSES)	<b>ECTS: 4</b>
<b>SEMESTER: SUMMER</b>	<b>CLASS LEVEL: SECOND CYCLE</b>
<b>MINIMAL NUMBER OF STUDENTS: 12</b> (Should the number of applying students be smaller, the course may be cancelled)	
<b>LANGUAGE OF INSTRUCTION:</b> English	
<b>PRELIMINARY REQUIREMENTS:</b> Intermediate level of English. All students willing to participate in the class are required to contact the teacher; personally or via email otherwise they will not be allowed to enrol on a course.	
<b>CONTENTS:</b> 1. The importance of innovation to civilization development and in building a market position of an enterprise. 2.Features of innovation processes. 3.An innovative enterprise. 4. Innovation strategies of enterprises. 5.New product and new technology development. 6.The economic evaluation of innovative undertakings. 7. Teal organization 8. Creativity, knowledge management vs. innovativeness. 9. Intellectual property and its protection. 10. National/ Regional System of Innovation.	
<b>EFFECTS OF EDUCATION PROCESS:</b> The course is aimed at discussing the most important determinants of innovation activity in enterprises as well as issues concerning innovation strategy formulation, the economic evaluation of innovative undertakings and managing an innovation project.	
<b>LITERATURE:</b> <ul style="list-style-type: none"><li>• <i>Altenburger R. (ed) , Innovation Management and Corporate Social Responsibility, Springer International Publishing AG, part of Springer Nature 2018.</i></li><li>• <i>Tidd J, Bessant J.: Managing Innovation: Integrating Technological, Market and Organizational Change, Sixth Edition. New York: Wiley 2018.</i></li><li>• <i>Dodgson M., Gann D, Salter A, The Management of Technological Innovation. Strategy and Practise, Oxford University press, Oxford/New York 2008.</i></li><li>• <i>Article from Harvard Business Review.</i></li></ul>	
<b>TEACHING METHODS:</b> Multimedia presentations, discussion, working in groups.	
<b>ASSESSMENT METHODS:</b> Active participating in the classes, essay, evaluation of presentations	
<b>TEACHER:</b> Agnieszka Rzepka, Ph.D., D.Sc., Professor at LUT	

**INTEGRATED MARKETING COMMUNICATIONS - Z17**

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

<b>LANGUAGE OF INSTRUCTION:</b> English
<b>PRELIMINARY REQUIREMENTS:</b> Marketing fundamentals.
<b>CONTENTS:</b> The integrated marketing communication (IMC) process. Managing and coordinating the IMC process. Identifying the target audience. Determining the ICM objectives. Designing the message. Selecting the integrated communication channels (real and virtual) according to the Marketing 4.0 concept. Establishing the total promotion budget. Designing the promotion mix. Measuring the IMC results.
<b>EFFECTS OF EDUCATION PROCESS:</b> Familiarizing students with concepts of integrated marketing communication in contemporary organizations, businesses and institutions. Students will gain knowledge on the processes of planning, implementing and controlling the IMC campaigns, and also abilities to prepare creative IMC campaigns in the practice.
<b>LITERATURE:</b> <ul style="list-style-type: none"><li>• Clow K.E., Baack D., <i>Integrated advertising, promotion, and marketing communications</i>. Harlow [etc.]: Pearson, 2016. LUT Library – sygn. : 659/183658</li><li>• Fill Ch., Turnbull S., <i>Marketing communications: discovery, creation and conversations</i>. Harlow [etc.]: Pearson, 2016. LUT Library – sygn. : 339.138/183657</li><li>• Kotler Ph., Kartajaya H., Setiawan I., <i>Marketing 5.0: Technology for Humanity</i>, ISBN: 9781119668510, Hoboken, New Jersey: Wiley, 2021. LUT Library – sygn.: 193070.</li><li>• Kotler Ph., Kartajaya H., Setiawan I., <i>Marketing 4.0: Moving From Traditional to Digital</i>, ISBN: 978-1-119-34120-8, Hoboken, New Jersey: Wiley, 2016.</li><li>• Kotler Ph., Keller K.L., Brady M., Goldman M., <i>Marketing Management, 3rd edition</i>, Pearson, 2016. Part 5 and pages 779-781.</li></ul>
<b>TEACHING METHODS:</b> Lecture with interactive presentations, case studies.
<b>ASSESSMENT METHODS:</b> Written exam, evaluation of submitted and presented projects.
<b>TEACHER:</b> Barbara Szymoniuk, Ph.D., D.Sc. Eng. Professor at LUT

**INTRODUCTION TO INTERNATIONAL BUSINESS - Z18**

<b>FACULTY OF MANAGEMENT</b>	<b>CLASS TYPE: LECTURE, LABORATORY</b>
<b>NUMBER OF HOURS: 30</b> (10 LECTURE + 20 LABORATORY)	<b>ECTS: 4</b>
<b>SEMESTER: SUMMER</b>	<b>CLASS LEVEL: SECOND CYCLE</b>
<b>MINIMAL NUMBER OF STUDENTS: 12</b> (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 OF EDUCATION PROCESS: 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:**

- Lewis K., Housden M., *An Introduction to International Marketing: A Guide to Going Global*, Kogan Page, 1998.
- El Kahal S., *Introduction to International Business*. London, 1995.
- Crawley E., Swailes S. & Walsh D., *Introduction to International Human Resource Management*, 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:** Class preparation 50%, final project 50%

**TEACHER:** Barbara Mazur, Ph.D., D.Sc. Professor at LUT

**FINANCIAL ACCOUNTING AND REPORTING - Z21**

<b>FACULTY OF MANAGEMENT</b>	<b>CLASS TYPE: LECTURE, CLASS</b>
<b>NUMBER OF HOURS: 30</b> (15 LECTURE + 15 CLASS)	<b>ECTS: 5</b>
<b>SEMESTER: WINTER</b>	<b>CLASS LEVEL: FIRST CYCLE</b>
<b>MINIMAL NUMBER OF STUDENTS: 12</b> (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 financial analysis

**CONTENTS:** The essence, goals and functions of accounting. Accounting information system. Accounting concepts and principles. The essence and methods of asset depreciation. Preparation of financial statements (balance sheet, income statement, cash flow statement, changes in equity statement, supplementary information).

**EFFECTS OF EDUCATION PROCESS:** To give the skills in proper creating and reading financial statements. To prepare students to evaluate internal financial information and how to create the useful information for external stakeholders.

**LITERATURE:**

- Gierusz B., *Podręcznik do samodzielnej nauki księgowania*, ODDK, Gdańsk, 2018.
- Franklin M., Graybeal P., Cooper D., *Principles of Accounting*, (openstax.org), 2019.
- Ittelson T.R., *Financial Statement Career Press*, Frankiln Lakes, NJ, 2009.
- *Ustawa z dnia 29 września 1994 r. o rachunkowości (Dz.U. 1994 Nr 121 poz. 591 ze zm.)*.
- *Międzynarodowe Standardy Rachunkowości i Sprawozdawczości Finansowej*

**TEACHING METHODS:** Multimedia presentation, tasks, cases, discussions.

**ASSESSMENT METHODS:** Written test and practical homework. Final exam.

**TEACHER:** Artur Paździor, Ph.D., D.Sc. Eng. Professor at LUT

**LOGISTIC - Z49**

<b>FACULTY OF MANAGEMENT</b>	<b>CLASS TYPE: LECTURE, PROJECT</b>
<b>NUMBER OF HOURS: 30</b> (15 LECTURE+15 PROJECT)	<b>ECTS: 5</b>
<b>SEMESTER: WINTER</b>	<b>CLASS LEVEL: SECOND CYCLE</b>
<b>MINIMAL NUMBER OF STUDENTS: 12</b> (Should the number of applying students be smaller, the course may be cancelled)	
<b>LANGUAGE OF INSTRUCTION:</b> English	
<b>PRELIMINARY REQUIREMENTS:</b> All students willing to participate in the class are required to contact the teacher, personally or via email, before first lecture.	
<b>CONTENTS:</b> 1. Why we study logistic?, definition of logistics, the roots of logistics, logistics role in the economy; 2. 7R in logistics, supply chain, flow of goods management; 3. Transport, road transport, railways, sea transport, inland water transport, air transport, intermodal transport, sustainable transport, warehousing, logistics centre, 4. Distribution of goods, the role of packing in logistics, supplies management, 6. Logistic management, Just in time, TQM, QR, Lean logistic, revers logistics, 7. New trends in logistics, e-logistics logistics 4.0, the future of logistics.	
<b>EFFECTS OF EDUCATION PROCESS:</b> Student has knowledge of basic of logistics, knows how to manage of supply chain, how to manage of flow goods, how to choose the best mode of transport, how to choose best place for logistics center warehouse, understand the role of logistics center in flow of goods and the role of logistics center in economy.	
<b>LITERATURE:</b> <ul style="list-style-type: none"><li>• <i>Stock J. R., Lambert D. M., Strategic logistics management, McGraw-Hill/Irwin, 2001.</i></li><li>• <i>Mindur M., Sierpinski G., Turoń K., The Diversity of Logistics Centre Concepts in Europe, Logistics and Transport 2018, 39(3), pp. 61-68.</i></li><li>• <i>Mindur M., Qualitative and temporal determinants in Integrated Supply Chains (in:) Contemporary challenges of transport systems and traffic engineering, Springer 2017</i></li><li>• <i>Mindur L., Mindur M., Intermodal transport in selected countries in Modern Trends and research in intermodal transportation (in:) Sładkowski A., Modern Trends and Research in Intermodal Transportation, Springer 2022.</i></li></ul>	
<b>TEACHING METHODS:</b> Lecture and project workshops	
<b>ASSESSMENT METHODS:</b> Project, evaluation of presentations	
<b>TEACHER:</b> Prof. Maciej Mindur, Ph.D., D.Sc	

**MARKETING RESEARCH - Z23**

<b>FACULTY OF MANAGEMENT</b>	<b>CLASS TYPE: LECTURE, CLASS</b>
<b>NUMBER OF HOURS: 30</b> (15 LECTURE +15 CLASS)	<b>ECTS: 5</b>
<b>SEMESTER: SUMMER</b>	<b>CLASS LEVEL: FIRST CYCLE</b>
<b>MINIMAL NUMBER OF STUDENTS: 12</b> (Should the number of applying students be smaller, the course may be cancelled)	
<b>LANGUAGE OF INSTRUCTION:</b> English	
<b>PRELIMINARY REQUIREMENTS:</b> Participants should have basic knowledge of marketing and statistics and intermediate level of English.	
<b>CONTENTS:</b> 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.	
<b>EFFECTS OF EDUCATION PROCESS:</b> 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.	
<b>LITERATURE:</b> <ul style="list-style-type: none"><li>• <i>Babbie E.R. The practice of social research. USA: Cengage learning, 2020.</i></li><li>• <i>Churchill G. A., Iacobucci, D., Marketing research: methodological foundations. New York: Dryden Press, 2006.</i></li><li>• <i>Babin, B. J.; Zikmund W. G. Exploring marketing research. USA: Cengage Learning, 2015.</i></li></ul>	
<b>TEACHING METHODS:</b> Lecture, interactive presentations, discussion, case studies.	
<b>ASSESSMENT METHODS:</b> Written exam and completion of three case studies.	
<b>TEACHER:</b> Marcin Gašior, Ph.D., D.Sc. Eng. Professor at LUT	



**MICROECONOMICS - Z25**

<b>FACULTY OF MANAGEMENT</b>	<b>CLASS TYPE: LECTURES</b>
<b>NUMBER OF HOURS: 15</b>	<b>ECTS: 4</b>
<b>SEMESTER: SUMMER</b>	<b>CLASS LEVEL: FIRST CYCLE</b>
<b>MINIMAL NUMBER OF STUDENTS: 12</b> (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:**

- *Couttis D., Irvine I., Begg D., Microeconomics, McGraw-Hill Ryerson, 2010.*
- *Begg D., Fischer S., Dornbusch R., Mikroekonomia, PWE, Warszawa, 2007.*
- *Samuelson P.A., Nordhaus W.D., Economics, McGraw-Hill, New York, 2009.*

**TEACHING METHODS:** Lectures and multimedia presentations, discussions, exercises.

**ASSESSMENT METHODS:** Oral exam.

**TEACHER:** Tomasz Żminda, Ph. D., Eng.

**OCCUPATIONAL ENVIRONMENT - Z26**

<b>FACULTY OF MANAGEMENT</b>	<b>CLASS TYPE: LECTURE, LABORATORY</b>
<b>NUMBER OF HOURS: 30</b> (10 LECTURE + 20 LABORATORY)	<b>ECTS: 4</b>
<b>SEMESTER: WINTER</b>	<b>CLASS LEVEL: SECOND CYCLE</b>
<b>MINIMAL NUMBER OF STUDENTS: 12</b> (Should the number of applying students be smaller, the course may be cancelled)	
<b>LANGUAGE OF INSTRUCTION:</b> English	
<b>PRELIMINARY REQUIREMENTS:</b> None	
<b>CONTENTS:</b> 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.	
<b>EFFECTS OF EDUCATION PROCESS:</b> 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.	
<b>LITERATURE:</b> <ul style="list-style-type: none"><li>• <i>Kroemer, K.H.E., Grandjean, E.: Fitting the Task to the Human, Philadelphia: Taylor and Francis, 5<sup>th</sup> Edition, 1997, ISBN: 074840665.</i></li><li>• <i>Di Nardi S.: The Occupational Environment 3<sup>rd</sup> Ed., AIHA Press, 2012, ISBN-10: 1931504431.</i></li><li>• <i>Applications and Computational Elements of Industrial Hygiene CRC Press, Martin B. Stern and S.Z. Mansdorf, Editors, 1999.</i></li></ul>	
<b>TEACHING METHODS:</b> Case analysis + Lab exercises.	
<b>ASSESSMENT METHODS:</b> Qa Prior the Lab Exc	
<b>TEACHER:</b> Krzysztof J. Czarnocki, Ph.D., D.Sc. Eng. Professor at LUT; Elżbieta Czarnocka, Ph.D.	

**OCCUPATIONAL HEALTH RISK ASSESSMENT - Z27**

<b>FACULTY OF MANAGEMENT</b>	<b>CLASS TYPE: LECTURE/SEMINAR</b>
<b>NUMBER OF HOURS: 15</b>	<b>ECTS: 4</b>
<b>SEMESTER: SUMMER</b>	<b>CLASS LEVEL: SECOND CYCLE</b>
<b>MINIMAL NUMBER OF STUDENTS: 12</b> (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:**

- Haines Y. Y., *Risk Modeling, Assessment, and Management 2nd Edition* ISBN: 978-0- 471-72389-9 2010.
- Reese Ch.D., *Occupational Health and safety management. A practical approach 2<sup>nd</sup> edition* CRC Press Taylor & Francis Group, 2009.
- Gallwey T.J., O'Sullivan L.W., *Ergonomics laboratory exercises* CRC Press 2009.

**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:** Elżbieta Czarnocka, Ph.D.

**OPERATIONAL RESEARCH IN MANAGEMENT - Z29**

<b>FACULTY OF MANAGEMENT</b>	<b>CLASS TYPE: LECTURE, LABORATORIES</b>
<b>NUMBER OF HOURS: 45</b> (15 LECTURE + 30 LABORATORIES)	<b>ECTS: 3</b>
<b>SEMESTER: SUMMER</b>	<b>CLASS LEVEL: SECOND CYCLE</b>
<b>MINIMAL NUMBER OF STUDENTS: 12</b> (Should the number of applying students be smaller, the course may be cancelled)	

<b>LANGUAGE OF INSTRUCTION:</b> English
<b>PRELIMINARY REQUIREMENTS:</b> Knowledge of the matrix notation of systems of equations, operations on matrices, basics of probability theory and spreadsheet usage.
<b>CONTENTS:</b> 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, knapsack problem, special issues connected with cutting/packing problems, job/task scheduling. 5. Mixed integer linear programming (MILP) - dealing with discontinuities in models. 6. Network optimization problems: transportation problem and its extensions, assignment problems, minimal flow cost, shortest path, maximal flow, travelling salesman problem (TSP), minimal spanning tree problem. 7. Non-linear programming (NLP): assumptions, basic properties, specific issues: global vs local extrema, limitations of algorithms. Examples of applications of non-linear programming. 8. Advanced application of operational research: multi-criteria optimization, dynamic programming, decision trees, decision games, mass service systems, basic inventory models.
<b>EFFECTS OF EDUCATION PROCESS:</b> Knowledge of terminology and methodology of operational research, the language of quantitative methods used to express goals of the organization as decision optimization problems, usage of IT tools (especially spreadsheets) used in optimization, issues connected with computer-based optimization.
<b>LITERATURE:</b> <ul style="list-style-type: none"><li>• Hillier F.S., Lieberman G.J.: <i>Introduction to Operations Research, 8th Edition, McGraw Hill, 2005.</i></li><li>• Ragsdale C.T.: <i>Spreadsheet Modelling and Decision Analysis: A Practical Introduction to Management Science, South-Western College Publishing, 2007.</i></li><li>• <i>Excel Solver Tutorial for Optimization Users, <a href="http://www.solver.com/tutorial.htm">http://www.solver.com/tutorial.htm</a>.</i></li></ul>
<b>TEACHING METHODS:</b> Lecture and computer laboratories (Microsoft Excel or WPS Spreadsheets, also other optimization software (both with usage of LCD projector), paper "hand-out" educational materials for laboratories, additional materials in pdf and xlsx formats for self-learning available on the website.
<b>ASSESSMENTS METHODS:</b> 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).
<b>TEACHER:</b> Przemysław Kowalik, Ph.D.

**PRODUCTION PLANNING AND MANAGEMENT - Z31**

<b>FACULTY OF MANAGEMENT</b>	<b>CLASS TYPE: LECTURES, PROJECT</b>
<b>NUMBER OF HOURS: 30</b> (10 LECTURES +20 PROJECT)	<b>ECTS: 5</b>
<b>SEMESTER: WINTER</b>	<b>CLASS LEVEL: FIRST CYCLE</b>
<b>MINIMAL NUMBER OF STUDENTS: 12</b> (Should the number of applying students be smaller, the course may be cancelled)	
<b>LANGUAGE OF INSTRUCTION:</b> English	
<b>PRELIMINARY REQUIREMENTS:</b> Own computer with application Excel, good knowledge of Excel.	
<b>CONTENTS:</b> 1. Operations Management. 1. Operations Management. Operating strategy 2. Design and development of new products. Selection and process design and technology 3. Long-term planning of capacity and location of facilities. Quality Management 4. Planning for medium and short term. Selected methods of manufacturing flow management (Systems Just in Time, Kanban) 6. Project: Model of the product in the market.	
<b>EFFECTS OF EDUCATION PROCESS:</b> To know the strategies included within the concept of Organization and Production Management. Business activities they collect. Know how to approach, evaluate and select the most appropriate operational strategies in each case, identify weaknesses and propose improvements.	
<b>LITERATURE:</b> <ul style="list-style-type: none"><li>• <i>Stevenson, W.J., Production / Operations management. Irwin, 2010.</i></li><li>• <i>Stoner, J., Freeman, R., Management. Prentice-Hall, 2002.</i></li><li>• <i>Walters, D., Inventory control and management. John Wiley &amp; Sons, Chichestr, 2012.</i></li><li>• <i>Koren, Y., The global manufacturing revolution. Product-Process-Business Integration and reconfigurable manufacturing systems. Wiley, New Jersey, 2010.</i></li><li>• <i>Pepall, L., Contemporary industrial organization: a quantitative approach. Handbook. John Wiley &amp; Sons, Chichestr, 2011.</i></li><li>• <i>David, F.R., Strategic management: concepts, global edition. Pearson, Boston, 2011.</i></li></ul>	
<b>TEACHING METHODS:</b> Lectures and project	
<b>ASSESSMENT METHODS:</b> Project/ Active participating in the classes.	
<b>TEACHER:</b> Jolanta Słonieć, Ph.D., D.Sc. Eng. Professor at LUT	

**PUBLIC RELATIONS - Z50**

<b>FACULTY OF MANAGEMENT</b>	<b>CLASS TYPE: SEMINAR</b>
<b>NUMBER OF HOURS: 15</b>	<b>ECTS: 4</b>
<b>SEMESTER: SUMMER</b>	<b>CLASS LEVEL: FIRST CYCLE</b>
<b>MINIMAL NUMBER OF STUDENTS: 12</b> (Should the number of applying students be smaller, the course may be cancelled)	

**LANGUAGE OF INSTRUCTION:** English

**PRELIMINARY REQUIREMENTS:** All students willing to participate in the class are required to contact the teacher, personally or via email, before start course.

**CONTENTS:**The importance of a comprehensive company/organization identification system, the difference between image and identity, a new division of media - the PESO model, PR campaign design procedure, message house, monitoring, testing the effectiveness and efficiency of PR activities, e-PR, social media in PR, event - role and importance in PR, crises and procedures in crisis situations.

**EFFECTS OF EDUCATION PROCESS:** The main goal of the course is to provide students with knowledge on the essence and areas of application of public relations. Students will gain practical knowledge of public relations techniques addressed to various groups (external and internal). In addition, course participants will gain knowledge about media monitoring mechanisms, as well as procedures to be followed in crisis situations.

**LITERATURE:**

- Theaker A., *The Public Relations Handbook*, 2020, ISBN-13: 9780367278915.
- Gregory A., *Planning and Managing Public Relations Campaigns: A Strategic Approach*, 2020, ISBN-13: 978-1789663235.
- *Journal of Public Relations Research*.
- *Public Relations Review*.

**TEACHING METHODS:** Multimedia presentation, working in groups, cases, discussions.

**ASSESSMENT METHODS:** Class preparation, evaluation of presentations.

**TEACHER:** Magdalena Rzemieniak, Ph.D., D.Sc., Professor at LUT

**SOCIAL MEDIA COMMUNICATION - Z45**

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

**LANGUAGE OF INSTRUCTION:** English

**PRELIMINARY REQUIREMENTS:** Intermediate level of English. All students willing to participate in the class are required to contact the teacher; personally or via email otherwise they will not be allowed to enrol on a course.

**CONTENTS:** Business would like to communicate with the surrounding via various media sources. SM types and specificity, innovative communication via social media, SM marketing, preparation of SM communication plan, SM influencers, crisis communication in SM.

**EFFECTS OF EDUCATION PROCESS:** Ability to define and describe social media types and SM marketing, describe the process of creating social media communication plan, evaluate the effects of the SM communication launched, choose appropriate SM matching the targeted audience.

**LITERATURE:**

- Evans, D., Bratton, S., McKee, J., *Social media marketing*. AG Printing & Publishing, 2021.
- Tuten, T. L., *Social media marketing*. Sage, 2020.
- Tuten, T. L., & Solomon, M. R., *Social media marketing*. Sage, 2017.

**TEACHING METHODS:** Multimedia presentation, tasks, cases, discussions.

**ASSESSMENT METHODS:** Written exam and completion of case studies.

**TEACHER:** Magdalena Maciaszczyk, Ph.D.

**STATISTICS IN MANAGEMENT - Z35**

<b>FACULTY OF MANAGEMENT</b>	<b>CLASS TYPE:</b> LECTURE, PRACTICAL/TUTORIALS, LABORATORY
<b>NUMBER OF HOURS: 60</b> (15 LECTURE+ 15 TUTORIALS + 30 LABORATORY)	<b>ECTS: 3</b>
<b>SEMESTER:</b> WINTER	<b>CLASS LEVEL:</b> SECOND CYCLE
<b>MINIMAL NUMBER OF STUDENTS: 12</b> (Should the number of applying students be smaller, the course may be cancelled)	
<b>LANGUAGE OF INSTRUCTION:</b> English	
<b>PRELIMINARY REQUIREMENTS:</b> Basic knowledge of mathematics and statistics I	
<b>CONTENTS:</b> 1. Introduction to probability theory. Discrete random variables. Continuous random variables. Applications of the concept of random variables in management and quality sciences. Basic statistical measures. 2. Estimators and their properties. Estimations: the least mean squares method (LMS), maximum likelihood estimation method (MLE), method of moments (MM). Interval estimation. Confidence interval for mean. Confidence interval for variance. 3. Hypothesis testing. Hypothesis test for a mean, hypothesis test for a variance. 4. Parametric and non-parametric tests for comparing two or more groups. Goodness of fit tests. 5. Correlation test. Regression analysis. 6. Multi-dimensional analysis. 7. Designing statistical experiments. The Monte Carlo Method. 8. Time series.	
<b>EFFECTS OF EDUCATION PROCESS:</b> Identification of phenomena using the tools of mathematical statistics	
<b>LITERATURE:</b> <ul style="list-style-type: none"><li>• Salvatore D., Reagle D., <i>Statistics and econometrics</i>, McGraw-Hill, 2002.</li><li>• Smith G., <i>Essential Statistics, Regression and Econometrics, for the Social Sciences</i>, Academic Press, Elsevier, 2015.</li><li>• Stevens J.P., <i>Applied Multivariate Statistics for the Social Sciences</i>, Lawrence Erlbaum Associates Publishers, London, 2002.</li><li>• Myers J., Well A., <i>Research Design and Statistical Analysis</i>, Lawrence Erlbaum Associates Publishers, London, 2003.</li><li>• Ross, Sh. M., <i>Introduction to Probability Models</i>, Academic Press, 1997.</li></ul>	
<b>TEACHING METHODS:</b> Lecture, practical/tutorials, laboratory	
<b>ASSESSMENT METHODS:</b> Lecture: oral examination. Laboratories: a test checking the ability of solving some tasks.	
<b>TEACHER:</b> Edward Kozłowski, Ph.D., D.Sc., Professor at LUT, Piotr Oleszczuk Ph.D.	



**STARTUP ENTREPRENEURSHIP - Z46**

<b>FACULTY OF MANAGEMENT</b>	<b>CLASS TYPE: LECTURE, PROJECT</b>
<b>NUMBER OF HOURS: 20</b> (10 LECTURE + 10 PROJECT)	<b>ECTS: 4</b>
<b>SEMESTER: WINTER</b>	<b>CLASS LEVEL: FIRST CYCLE</b>
<b>MINIMAL NUMBER OF STUDENTS: 12</b> (Should the number of applying students be smaller, the course may be cancelled)	
<b>LANGUAGE OF INSTRUCTION:</b> English	
<b>PRELIMINARY REQUIREMENTS:</b> All students willing to participate in the class are required to contact the teacher, personally or via email, before first lecture.	
<b>CONTENTS:</b> 1. Startup definition and Business Model Canvas. 2. Customer Segments and The Empathy Map. 3. Value Proposition Canvas. 4. Running Lean Startup - The Problem and Solution Interview. 5. Ad-Lib Value Proposition.	
<b>EFFECTS OF EDUCATION PROCESS:</b> The main aim of the Startup Entrepreneurship course is to familiarize students with main, modern methods of creation and development business idea. Students will learn to participate and innovate in collaboration.	
<b>LITERATURE:</b> <ul style="list-style-type: none"><li>• Maurya A., <i>Running lean: iterate from plan A to a plan that works. The lean series (2nd ed.)</i>. Sebastopol, CA: O'Reilly, 2012, ISBN 9781449305178.</li><li>• Osterwalder A., Pigneur Y., Clark T., <i>Business model generation: a handbook for visionaries, game changers, and challengers</i>. Hoboken, NJ: John Wiley &amp; Sons, 2010, ISBN 9780470876411.</li><li>• Ries E., <i>The lean startup: how today's entrepreneurs use continuous innovation to create radically successful businesses</i>. Crown Publishing, 2014, ISBN 9780307887894.</li><li>• Blank S., Dorf B., <i>The Startup Owner's Manual: The Step-By-Step Guide for Building a Great Company</i>, Wiley, 2020, ISBN 9781119690689</li></ul>	
<b>TEACHING METHODS:</b> Lecture and project (working in groups)	
<b>ASSESSMENT METHODS:</b> Evaluation of submitted project	
<b>TEACHER:</b> Jakub Bis, Ph.D.	

**STOCK MARKET INVESTMENTS - Z36**

<b>FACULTY OF MANAGEMENT</b>	<b>CLASS TYPE: LECTURE, CLASS</b>
<b>NUMBER OF HOURS: 30</b> (15 LECTURE+ 15 CLASS)	<b>ECTS: 4</b>
<b>SEMESTER: SUMMER</b>	<b>CLASS LEVEL: SECOND CYCLE</b>
<b>MINIMAL NUMBER OF STUDENTS: 12</b> (Should the number of applying students be smaller, the course may be cancelled)	
<b>LANGUAGE OF INSTRUCTION:</b> English	
<b>PRELIMINARY REQUIREMENTS:</b> basic knowledge of financial statements and financial analysis, basic knowledge of financial mathematics and macroeconomics.	
<b>CONTENTS:</b> 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.	
<b>EFFECTS OF EDUCATION PROCESS:</b> 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.	
<b>LITERATURE:</b> <ul style="list-style-type: none"><li>• <i>Mishkin F.S., Eakins S.G.: Financial Markets and Institutions, Pearson education Limited, Edinburgh, 2012.</i></li><li>• <i>Murphy J.J.: Technical Analysis of the Financial Markets, New York Institute of Finance, 1999.</i></li><li>• <i>Graham B.: The intelligent Investor, Library of Congress Cataloging-in-Publication Data 2003.</i></li></ul>	
<b>TEACHING METHODS:</b> Multimedia presentation, tasks, cases, discussions.	
<b>ASSESSMENT METHODS:</b> Written test and practical task. Presentation.	
<b>TEACHER:</b> Artur Paździor, Ph.D., D.Sc. Eng. Professor at LUT	

**WORK STRESS - Z28**

<b>FACULTY OF MANAGEMENT</b>	<b>CLASS TYPE: LECTURE, SEMINAR</b>
<b>NUMBER OF HOURS: 30</b> (10 LECTURES + 20 SEMINARS)	<b>ECTS: 4</b>
<b>SEMESTER: WINTER</b>	<b>CLASS LEVEL: SECOND CYCLE</b>
<b>MINIMAL NUMBER OF STUDENTS: 12</b> (Should the number of applying students be smaller, the course may be cancelled)	
<b>LANGUAGE OF INSTRUCTION:</b> English	
<b>PRELIMINARY REQUIREMENTS:</b> English level B2.	
<b>CONTENTS:</b> 1. Stress concepts. Work stress theories. 2. Sources of work stress. Stress in selected professions 3. Symptoms and effects of work stress. Stress-related illnesses and accidents at work. Economic and social costs of stress at work. 4. Occupational burnout. 5. Selected methods and tools for diagnosing stress at work. 6. Coping with stress from the employee's perspective. 7. Stress management strategies - an organizational perspective. 8. Work stress prevention at individual and organizational level.	
<b>EFFECTS OF EDUCATION PROCESS:</b> The main aim of Work Stress course is to acquire knowledge and skills of recognizing, diagnosing, coping and managing stress at work. Participants acquire competences: diagnosing of personal and organizational stress using selected tools; developing plans of personal and organizational stress management and prevention.	
<b>LITERATURE:</b> <ul style="list-style-type: none"><li>• Cooper, C. (Ed.). (2013). <i>From Stress to Wellbeing Volume 1: the theory and research on occupational stress and wellbeing</i>. Springer.</li><li>• Cooper, C. (Ed.). (2013). <i>From Stress to Wellbeing Volume 2: Stress Management and Enhancing Wellbeing (Vol. 2)</i>. Springer.</li><li>• Dolan, S. L. (2023). <i>De-Stress at Work: Understanding and Combatting Chronic Stress</i>. Taylor &amp; Francis.</li><li>• Glazer, S., &amp; Liu, C. (2017). <i>Work, stress, coping, and stress management</i>. In <i>Oxford Research Encyclopedia of Psychology</i>.</li><li>• Harms, P. D., &amp; Perrewé, P. L. (Eds.). (2021). <i>Examining and Exploring the Shifting Nature of Occupational Stress and Well-being</i>. Emerald Group Publishing.</li><li>• Rossi, A. M., Meurs, J. A., &amp; Perrewé, P. L. (Eds.). (2017). <i>Stress and Quality of Working Life: Conceptualizing and Assessing Stress</i>. IAP.</li></ul>	
<b>Complementary:</b> <ul style="list-style-type: none"><li>• Biron, C., Burke, R.J., &amp; Cooper, C.L. (2017). <i>Creating Healthy Workplaces: Stress Reduction, Improved Well-being, and Organizational Effectiveness</i>.</li><li>• Melnick, S. (2013). <i>Success Under Stress: Powerful Tools for Staying Calm, Confident, and Productive when the Pressure's on</i>. Amacom Books.</li><li>• <i>International Journal of Stress Prevention and Wellbeing</i></li></ul>	
<b>TEACHING METHODS:</b> Lectures, discussion, case study, working in groups.	
<b>ASSESSMENT METHODS:</b> Written test, project execution and its presentation, presence and active participation in seminar discussion and exercises.	
<b>TEACHER:</b> Krystyna Wojciechowska, Ph.D., Eng.	

**WORKFLOW AND BUSINESS PROCESS MANAGEMENT - Z51**

<b>FACULTY OF MANAGEMENT</b>	<b>CLASS TYPE: LECTURE, LABORATORY</b>
<b>NUMBER OF HOURS: 30</b> (10 LECTURE + 20 LABORATORY)	<b>ECTS: 4</b>
<b>SEMESTER: WINTER</b>	<b>CLASS LEVEL: FIRST CYCLE</b>
<b>MINIMAL NUMBER OF STUDENTS: 12</b> (Should the number of applying students be smaller, the course may be cancelled)	
<b>LANGUAGE OF INSTRUCTION:</b> English	
<b>PRELIMINARY REQUIREMENTS:</b> Basic knowledge of mathematics and fundamentals of production or service business management.	
<b>CONTENTS:</b> 1. Concept of business system and process and information exchange system. 2. Differences between a project and a business process. 3. Use of project management knowledge to design business processes. 4. Use of CASE tools in business process design. 5. Discussion of UML and BPMN notation in business process design. 6. Implementation of a process approach in an enterprise. 7. Forms of process organization in an enterprise. 8. Review of methods and software for design of processes. 9. Review of IT tools for optimization of logistic processes.	
<b>EFFECTS OF EDUCATION PROCESS:</b> Knowledge of concepts and formal methods useful in describing and modelling the internal systems and processes of organisation. Knowledge of techniques as well as tools for analysing organisational systems and examples of complex IT solutions for carrying out a variety of tasks and solving problems in the field of process management.	
<b>LITERATURE:</b> <ul style="list-style-type: none"><li>• <i>Dumas M., La Rosa M., Mendling J., Reijers H. A., Fundamentals of Business Process Management, Springer; 2nd ed. 2018.</i></li><li>• <i>Berman P. K., Successful Business Process Management, AMACOM, 2014.</i></li></ul>	
<b>TEACHING METHODS:</b> Lecture, laboratory.	
<b>ASSESSMENT METHODS:</b> Presence, test exam.	
<b>TEACHER:</b> Jakub Pizoń, PhD, Eng.	