LUBLIN UNIVERSITY
OF TECHNOLOGY
MANAGEMENT
FACULTY

Proposal of courses for Erasmus students

Academic year 2025/2026

FACULTY OF MANAGEMENT – LUBLIN UNIVERSITY OF TECHNOLOGY PL LUBLIN03

WINTER SEMESTER COURSES 2025/2026

FIRST-CYCLE DEGREE PROGRAMME (UNDERGRADUATE LEVEL)	COURSE CODE	ECTS CREDITS
BUSINESS DEVELOPMENT STRATEGIES	Z41	4
COMPUTER SCIENCE IN MANAGEMENT	Z04	4
CONSUMER BEHAVIOUR	Z05	4
E-MARKETING	Z48	4
FINANCIAL ANALYSIS	Z13	4
FINANCIAL ACCOUNTING AND REPORTING	Z21	4
FUNDAMENTALS OF MARKETING	Z15	4
FOUNDATIONS OF BUSINESS INFORMATION SYSTEMS AND IT MANAGEMENT	Z55	4
INDUSTRY 4.0	Z39	4
PRODUCTION PLANNING AND MANAGEMENT	Z31	4
STARTUP ENTREPRENEURSHIP	Z46	4
WORKFLOW AND BUSINESS PROCESS MANAGEMENT	Z51	4

SECOND-CYCLE DEGREE PROGRAMME (MASTER'S LEVEL)	COURSE CODE	ECTS CREDITS
CAREER PLANNING	Z52	4
CRM 2.0 IN CUSTOMER SERVICE	Z43	3
DESIGN THINKING	Z09	4
ENTERPRISE PROJECT MANAGEMENT (EPM)	Z10	4
LOGISTICS	Z49	4
OCCUPATIONAL ENVIRONMENT	Z26	4
STATISTICS IN MANAGEMENT	Z35	4
SUSTAINABILITY, ECONOMY, AND TRANSPORT IN A CHANGING WORLD	Z59	4
WORK STRESS	Z28	4

SUMMER SEMESTER COURSES 2025/2026

FIRST-CYCLE DEGREE PROGRAMME (UNDERGRADUATE LEVEL)	COURSE CODE	ECTS CREDITS
ADVERTISING AND MEDIA COVERAGE	Z40	4
ARTIFICAL INTELLIGENCE IN BUSINESS	Z54	4
BUSINESS INTELLIGENCE (BI)	Z42	4
CONTENT CREATION & MULTIMEDIA PRODUCTION FOR SOCIAL MEDIA	Z60	4
CORPORATE FINANCE	Z06	4
INTEGRATED MARKETING COMMUNICATIONS	Z17	4
INTERNATIONAL BUSINESS TRANSACTIONS	Z53	4
ROBOTIC PROCESS AUTOMATION	Z56	4
MARKETING RESEARCH	Z23	4
MICROECONOMICS	Z25	4
PUBLIC RELATIONS	Z50	4
SOCIAL MEDIA COMMUNICATION	Z45	4

SECOND-CYCLE DEGREE PROGRAMME (MASTER'S LEVEL)	COURSE CODE	ECTS CREDITS
CORPORATE SOCIAL RESPONSIBILITY (CSR)	Z07	4
DESIGN INNOVATION R&D PROCESS AND TECHNOLOGY TRANSFER	Z37	4
ECONOMIC MANAGEMENT IN VARIOUS ECONOMIC SYSTEM	Z47	4
ERGONOMICS AND OCCUPATIONAL HEALTH RISK ASSESSMENT	Z11	4
GLOBAL&POLITICAL ECONOMICS	Z30	4
INNOVATION MANAGEMENT IN AN ENTERPRISE	Z44	4
PERSONAL BRANDING	Z57	4
PROJECT MANAGEMENT*	Z58	4
OPERATIONAL RESEARCH IN MANAGEMENT	Z29	4
STOCK MARKET INVESTMENTS	Z36	4

* UNDERGRADUATE & MASTER PROGRAMME

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.

LIST OF COURSES

ADVERTISING AND MEDIA COVERAGE - *Z40*

FACULTY OF MANAGEMENT	**CLASS TYPE:** LECTURES, CLASSES
NUMBER OF HOURS: 30 (15 LECTURES +15 CLASSES)	**ECTS: 4**
SEMESTER: SUMMER	**CLASS LEVEL:** UNDERGRADUATE
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. 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: 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.

EFFECTS OF EDUCATION PROCESS: Ability to define advertising and media coverage, describe the process of creating advertisement, evaluate the effects of the media coverage, create an advertising brief.

LITERATURE:

- *Ibach H., How to write an inspired creative brief, 2009.*
- *Sulivan L., Hey, Whipple, Squeeze This: The Classic Guide to Creating Great Ads , 2012.*

TEACHING METHODS: Multimedia presentations, tasks, case studies, and discussions.

ASSESSMENT METHODS: Written exam and completion of case studies.

TEACHER: Magdalena Maciaszczyk, PhD (m.maciaszczyk@pollub.pl)

ARTIFICAL INTELLIGENCE IN BUSINESS - *Z54*

FACULTY OF MANAGEMENT	**CLASS TYPE:** LECTURES, LABORATORIES
NUMBER OF HOURS: 30 (10 LECTURES + 20 LABORATORIES)	**ECTS: 4**
SEMESTER: SUMMER	**CLASS LEVEL:** UNDERGRADUATE
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. Basic knowledge of managing a production or service enterprise.

CONTENTS: 1. Explanation of the concepts of computational intelligence and machine learning. 2. Introduction to the methods of computational intelligence. 3. Supervised machine learning methods applicable to business. 4. Unsupervised machine learning methods applicable to business. 5. Artificial Neural Networks. 6. Convolutional Neural Networks for Image Classification. 7. Generative AI and ChatGPT. 8. Business applications of generative AI solutions. 9. Project management for implementing an AI solution in business.

EFFECTS OF EDUCATION PROCESS: Knowledge of concepts and formal methods useful in the description and modelling of AI systems in business. Knowledge of the principles of the practical use of artificial intelligence and business intelligence for the prediction and analysis of business phenomena. Knowledge of the research process in the field of Artificial Intelligence in business.

LITERATURE:

- *Promisise J., Applied Machine Learning and AI for Engineers: Solve Business Problems That Can't Be Solved Algorithmically, O'Reilly Media, 2022.*
- *Huyen C., Designing Machine Learning Systems: An Iterative Process for Production-Ready Applications, O'Reilly Media, 2022.*

TEACHING METHODS: Lecture and laboratory work.

ASSESSMENT METHODS: Active class participation, final test exam.

TEACHER: Jakub Pizoń, PhD, Eng. (j.pizon@pollub.pl)

BUSINESS DEVELOPMENT STRATEGIES - *Z41*

FACULTY OF MANAGEMENT	**CLASS TYPE:** LECTURES, CLASSES
NUMBER OF HOURS*:* 30 (15 LECTURES +15 CLASSES)	**ECTS: 4**
SEMESTER: WINTER	**CLASS LEVEL:** UNDERGRADUATE
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. 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-organizational 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, 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, discussions, and group work.

ASSESSMENT METHODS: Class preparation, evaluation of presentations.

TEACHER: Agnieszka Rzepka**,** PhD (a.rzepka@pollub.pl)

BUSINESS INTELLIGENCE (BI) - *Z42*

FACULTY OF MANAGEMENT	**CLASS TYPE:** LECTURES, LABORATORIES
NUMBER OF HOURS*:* 30 (10 LECTURES + 20 LABORATORIES)	**ECTS: 4**
SEMESTER: SUMMER	**CLASS LEVEL:** UNDERGRADUATE
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 computer science. Basics of knowledge management and business.

CONTENTS: 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.

EFFECTS OF EDUCATION PROCESS: 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 a exploratory model and using tools used to support the process of creating and describing a business model.

LITERATURE:

- *Knight D., Schact B., Pearson M., Microsoft Power BI Quick Start Guide - Second Edition: Bring your data to life through data modeling, visualization, digital storytelling, and more, Packt Publishing, 2020.*
- *Bruce P., Bruce A., Gedeck P., Practical Statistics for Data Scientists, O'Reilly Media, 2nd edition 2020.*
- *Provost F., Fawcett T., Data Science for Business: What You Need to Know About Data Mining and Data-Analytic Thinking, Athenaeum Uitgeverij, 2013.*

TEACHING METHODS: Lectures and project work.

ASSESSMENT METHODS: Active class participation and evaluation of the submitted project.

TEACHER: Jakub Pizoń, PhD, Eng. (j.pizon@pollub.pl)

CAREER PLANNING - *Z52*

FACULTY OF MANAGEMENT	**CLASS TYPE:** LECTURES, SEMINARS
NUMBER OF HOURS: 30 (10 LECTURES + 20 SEMINARS)	**ECTS: 4**
SEMESTER: WINTER	**CLASS LEVEL:** MASTER
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. 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.

EFFECTS OF EDUCATION PROCESS: 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.

LITERATURE:

- *Callahan, M. (2021). I Inc Career Planning and Development Using Proven Entrepreneurship Concepts. Cognella Academic Publishing.*
- *Frischmann, R. M. (2013). A Skills-Based Approach to Developing a Career. Trafford Publishing.*
- *Harrington, B., & Hall, D. T. (2007). Career management & work-life integration: Using self-assessment to navigate contemporary careers. Sage.*
- *Robertson, P. J., Hooley, T., & McCash, P. (Eds.). (2021). The Oxford handbook of career development. Oxford University Press.*

Complementary:

- *Lent, R. W., & Brown, S. D. (2013). Understanding and facilitating career development in the 21st century. Career development and counseling: Putting theory and research to work, 2, 1-26.*

TEACHING METHODS: Lectures, discussions, case studies, and group work.

ASSESSMENT METHODS: Written test, project execution and presentation, and active participation in seminar discussions and exercises.

TEACHER: Krystyna Wojciechowska, PhD (k.wojciechowska@pollub.pl)

COMPUTER SCIENCE IN MANAGEMENT - *Z04*

FACULTY OF MANAGEMENT	**CLASS TYPE:** LECTURES, LABORATORIES
NUMBER OF HOURS: 30 (5 LECTURES + 25 LABORATORIES)	**ECTS: 4**
SEMESTER: WINTER	**CLASS LEVEL:** UNDERGRADUATE
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 3D 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 exercises.

ASSESSMENT METHODS: Written test.

TEACHER: Piotr Ziń , MSc, Eng. (p.zin@pollub.pl)

CONSUMER BEHAVIOUR - *Z05*

FACULTY OF MANAGEMENT	**CLASS TYPE:** LECTURES, CLASSES
NUMBER OF HOURS: 30 (15 LECTURES + 15 CLASSES)	**ECTS: 4**
SEMESTER: WINTER	**CLASS LEVEL:** UNDERGRADUATE
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, alternatives evaluation and choice, risk, satisfaction and loyalty.

EFFECTS OF EDUCATION PROCESS: 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

LITERATURE:

- *Evans M., Jamal A., Foxall G., Consumer behaviour, Wiley, 2009.*
- *Schiffman L., Kanuk L., Consumer behaviour, Pearson, 2009.*

TEACHING METHODS: Lecture, interactive presentations, discussions, and case studies.

ASSESSMENT METHODS: Written examination and completion of case studies.

TEACHER: Magdalena Maciaszczyk, PhD (m.maciaszczyk@pollub.pl)

CONTENT CREATION & MULTIMEDIA PRODUCTION FOR SOCIAL MEDIA - *Z60*

FACULTY OF MANAGEMENT	**CLASS TYPE:** LECTURES, PROJECT
NUMBER OF HOURS*:* 30 (15 LECTURES + 15 PROJECT)	**ECTS: 4**
SEMESTER: SUMMER	**CLASS LEVEL:** UNDERGRADUATE
MINIMAL NUMBER OF STUDENTS: 12 (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 first lecture.

CONTENTS: 1.Introduction to Multimedia Production for Social Media: Overview of content types (video, graphics, animations) and current trends in social media marketing; The role of engagement-driven content and its impact on audience interaction. 2. Storytelling & Viral Multimedia Strategies: Key elements of engaging narratives and emotional triggers in social media multimedia; Principles of virality - what makes multimedia shareable and how to structure messages for maximum reach. 3. Smartphone as a Production Tool: Essentials of mobile content creation: photography, videography, and editing techniques; Optimizing smartphone settings and using popular tools for content creation. 4. Video Production for Social Media (Practical session in the Multimedia Studio at Lublin University of Technology): Fundamentals of framing, lighting, and storytelling in short-form video; Hands-on recording and editing of engaging social media clips. 5. Graphic Design & Motion Graphics for Social Media: Creating compelling visuals and simple animations using popular design tools; Maintaining brand consistency through colors, fonts, and layout strategies. 6. Live Streaming & Real-Time Content (Practical session in the Multimedia Studio): Basics of live streaming, technical setup, and audience engagement; Hands-on session where students conduct short live streams. 7. Social Media Publishing Best Practices: Platform-specific multimedia guidelines, scheduling strategies, and automation tools; Optimizing multimedia content for reach, engagement, and conversion. 8 Final Project: Social Media Campaign Production (Studio session & group collaboration): Students create, present, and refine a multimedia campaign using course techniques.

EFFECTS OF EDUCATION PROCESS: 1. Creating High-Quality Multimedia Content – Students will develop skills in shooting videos, taking professional photos, and designing engaging graphics using their smartphones, ensuring content is optimized for various social media platforms. 2 Mastering Storytelling & Viral Content Techniques - Students will learn how to structure compelling narratives, use emotional triggers, and apply engagement strategies to create viral multimedia content. 3 Practical Video Production & Editing - Hands-on experience in framing, lighting, and shooting videos, followed by editing techniques such as cutting, adding effects, subtitles, and optimizing content for different formats. 4 Designing Social Media Graphics & Motion Content. Students will gain the ability to create visually compelling static and motion graphics, including animations, ensuring strong brand identity and audience engagement. 5 Live Streaming & Real-Time Social Media Management – Practical knowledge of setting up and running live streams, interacting with audiences in real-time, and managing engagement during live broadcasts. 6 Optimizing & Publishing Multimedia Content – Students will understand platform-specific requirements, scheduling strategies, and performance analytics to maximize the effectiveness of social media multimedia campaigns. 7 Developing & Executing a Full Social Media Multimedia Campaign. Throughout the course, students will plan, create, and launch a complete multimedia campaign, applying all learned skills in a real-world project while using their smartphones and working in the Multimedia Studio at Lublin University of Technology.

LITERATURE:

- *Cunningham, S., & Craig, D. – Social Media Entertainment: The New Intersection of Hollywood and Silicon Valley, New York University Press, 2019.*
- *Müller, M. E., & Rajaram, D. – Social Media Storytelling, Routledge, 2022.*
- *Gitner, S. – Multimedia Storytelling for Digital Communicators in a Multiplatform World, Routledge, 2021.*
- *Kumar, A., & Qiu, R. G., Social Media Analytics and Practical Applications: The Change to the Competition Landscape, Routledge, 2022.*
- *Rettberg, J. W., Seeing Ourselves Through Technology: How We Use Selfies, Blogs and Wearable Devices to See and Shape Ourselves, Palgrave Macmillan, 2014.*
- *Sampson, T. D. – A Sleepwalker's Guide to Social Media, Polity Press, 2020.*

TEACHING METHODS: Lecture and project work.

ASSESSMENT METHODS: Project evaluation.

TEACHER: Jakub Krzysiak, MSc, Eng. (j.krzysiak@pollub.pl)

CORPORATE FINANCE - *Z06*

FACULTY OF MANAGEMENT	**CLASS TYPE:** LECTURES, CLASSES
NUMBER OF HOURS: 30 (15 LECTURES +15 CLASSES)	**ECTS: 4**
SEMESTER: SUMMER	**CLASS LEVEL:** UNDERGRADUATE
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:

- *Ehrhardt M., Corporate Finance, South - West Thompson Learning, 2008.*
- *Lumby S., Corporate Finance Theory & Practice, Thomson Learning, 2008.*

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

ASSESSMENT METHODS: Final examination (written test and case study).

TEACHER: Artur Paździor, PhD, Eng. (a.pazdzior@pollub.pl)

CORPORATE SOCIAL RESPONSIBILITY (CSR) - *Z07*

FACULTY OF MANAGEMENT	**CLASS TYPE:** LECTURES, SEMINARS
NUMBER OF HOURS: 30 (10 LECTURES + 20 SEMINARS)	**ECTS: 4**
SEMESTER: SUMMER	**CLASS LEVEL:** MASTER
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. 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.

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**.**

- *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).*
- *Mazur B. Management: Diversity for Sustainability / Lublin : Wydawnictwo Politechniki Lubelskiej, 2022. (ISBN 978-83-7947-547-6)*

TEACHING METHODS: Project work, and presentation evaluation.

ASSESSMENT METHODS: Active class participation, essay, and presentation evaluation.

TEACHER: Marzena Cichorzewska, PhD, Barbara Mazur, PhD (b.mazur@pollub.pl)

CRM 2.0 IN CUSTOMER SERVICE - *Z43*

FACULTY OF MANAGEMENT	**CLASS TYPE:** LECTURES, PROJECT
NUMBER OF HOURS*:* **20** (5 LECTURES + 15 PROJECT)	**ECTS: 3**
SEMESTER: WINTER	**CLASS LEVEL:** MASTER
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: 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, 4th 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., Setiavan I., Marketing 4.0: Moving From Traditional to Digital, Wiley, 2016.*

TEACHING METHODS: Case studies, class participation, project work, and presentation evaluation.

ASSESSMENT METHODS: Project work and presentation evaluation.

TEACHER: Agnieszka Bojanowska, PhD, Eng. (a.bojanowska@pollub.pl)

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

FACULTY OF MANAGEMENT	**CLASS TYPE:** LECTURES, PROJECT
NUMBER OF HOURS*:* 30 (10 LECTURES + 20 PROJECT)	**ECTS: 4**
SEMESTER: SUMMER	**CLASS LEVEL:** MASTER/THIRD-CYCLE STUDIES (OPTION)
MINIMAL NUMBER OF STUDENTS: 12 (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-cantered 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., Tushman, M.L., Lead and Disrupt: How to Solve the Innovator's Dilemma. Stanford, CA: Stanford University Press 2016.*
- *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 PhD, Eng. ,Elżbieta Czarnocka PhD (k.czarnocki@pollub.pl)

DESIGN THINKING - *Z09*

FACULTY OF MANAGEMENT	**CLASS TYPE:** LECTURES, PROJECT
NUMBER OF HOURS: 30 (5 LECTURES + 25 PROJECT)	**ECTS: 4**
SEMESTER: WINTER	**CLASS LEVEL:** MASTER
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 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, PhD, Eng. , Elżbieta Czarnocka, PhD (e.czarnocka@pollub.pl)

ECONOMIC MANAGEMENT IN VARIOUS ECONOMIC SYSTEM - *Z47*

FACULTY OF MANAGEMENT	**CLASS TYPE:** LECTURES, CLASSES
NUMBER OF HOURS: **30** (15 LECTURES + 15 CLASSES)	**ECTS: 4**
SEMESTER: SUMMER	**CLASS LEVEL:** MASTER
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. “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 the National Accounts*. *Economic Outlook*, Occasional Studies. Paris: OECD.1982.
- *Colin L., The Hidden Economy. Elements of theory,*
- *O'Higgins M., Measuring the Hidden Economy: A Review of Evidence and Methodologies*. London.*1980.*
- Chang, H.-J.*, Kicking Away the Ladder: Development Strategy in Historical Perspective*. London: Anthem Press, 2002.

TEACHING METHODS: Lecture and classes.

ASSESSMENT METHODS: Essay evaluation.

TEACHER: Maciej Mindur, Prof. (m.mindur@pollub.pl)

E-MARKETING - *Z48*

FACULTY OF MANAGEMENT	**CLASS TYPE:** LECTURES, LABORATORIES
NUMBER OF HOURS: **30** (15 LECTURES + 15 LABORATORIES)	**ECTS: 4**
SEMESTER: WINTER	**CLASS LEVEL:** UNDERGRADUATE
MINIMAL NUMBER OF STUDENTS: 12 (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: 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.

EFFECTS OF EDUCATION PROCESS: 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.

LITERATURE:

- *Frick J., Ali M.M.,* Business model canvas as tool for SME. (in:) *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*. Springer Berlin Heidelberg, 2013. p. 142-149.
- *Alan Charlesworth, Absolute Essentials of Digital Marketing, Routledge, 2020, ISBN 0367859203.*
- *Heimbach I, Kostyra D.S., Hinz O., Marketing Automation. Business & Information Systems Engineering, 2015, ISSN 2363-7005.*

TEACHING METHODS: Case studies, project work, and evaluation of presentations.

ASSESSMENT METHODS: Project and evaluation of presentations.

TEACHER: Paulina Jusiuk, MSc. (p.jusiuk@pollub.pl)

ENTERPRISE PROJECT MANAGEMENT (EPM) - *Z10*

FACULTY OF MANAGEMENT	**CLASS TYPE:** LECTURES, LABORATORIES
NUMBER OF HOURS: 30 (5 LECTURES + 25 LABORATORIES)	**ECTS: 4**
SEMESTER: WINTER	**CLASS LEVEL:** MASTER
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. 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.

- *Lewis CM., Chatfield Ch., Johnson T. Microsoft Project 2019 step by step. Microsoft Press, 2019.*
- *Shirodkar, Srikanth. Learning Microsoft Project 2019: Streamline project, resource, and schedule management with Microsoft's project management software. Packt Publishing Ltd, 2020.*
- *Maley C.H. Enterprise Project Management: A Comprehensive Guide to Successful Management by Projects. CRC Press, 2023.*
- *Klojcnik T, Angleitner Sagadin T., Kralj D.. "Project Management: A Systematic Approach to Planning, Scheduling, and Controlling Sustainable Transformation.International Journal of Economics and Management Systems 3, 2018.*
- *Biafore B., On Time! on Track! on Target!: Managing Your Projects Successfully with Microsoft Project. Microsoft Press, 2006.*

TEACHING METHODS: Workshops, lectures, and laboratory work.

ASSESSMENT METHODS: Project and evaluation of presentations.

TEACHER: Grzegorz Kłosowski, PhD, Eng., Monika Kulisz, PhD, Eng. (m.kulisz@pollub.pl)

ERGONOMICS AND OCCUPATIONAL HEALTH RISK ASSESSMENT - *Z11*

FACULTY OF MANAGEMENT	**CLASS TYPE:** LECTURES, SEMINARS
NUMBER OF HOURS*:* **30** (10 LECTURES + 20 SEMINARS)	**ECTS: 4**
SEMESTER: winter	**CLASS LEVEL:** MASTER
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. Basic of ergonomics, workstation design, work-tool design, human-machine systems, office ergonomics, ergonomics assessment of the workplace, implementation of ergonomics program. 2. Health hazards in the workplace: physical injury, musculoskeletal disorders. 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: a) identification of exposures, hazards; (b) assessment of alternatives, use of forecasting and modelling, spread of risk, diversification. 7. Partnership between ergonomists, occupational health advisors, occupational /industrial hygiene advisors, managers and operational staff.

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, 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:

- *Kroemer, K.H.E., Grandjean, E.: Fitting the Task to the Human, Philadelphia: Taylor and Francis, 5th Edition, 1997, ISBN: 074840665*
- *Di Nardi S.: The Occupational Environment 3rd Ed., AIHA Press, 2012, ISBN-10: 1931504431*
- *Haimes 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 2nd 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 and laboratory exercises.

ASSESSMENT METHODS: Class participation and evaluation of presentations.

TEACHER: Krzysztof J. Czarnocki, PhD, Eng. , Elżbieta Czarnocka, PhD (k.czarnocki@pollub.pl)

FINANCIAL ANALYSIS - *Z13*

FACULTY OF MANAGEMENT	**CLASS TYPE:** LECTURES, CLASSES
NUMBER OF HOURS: 30 (15 LECTURES + 15 CLASSES)	**ECTS: 4**
SEMESTER: WINTER	**CLASS LEVEL:** UNDERGRADUATE
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.

EFFECTS 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:

- *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.*
- *Revsine L., Collins D., Johnson W. B., Financial Reporting and Analysis, Prentice Hall, Apper Sadle River, New Jersey, 2008.*
- *Alehander D., Britton A., Jorissen A., International financial reporting and analysis, South-Western Cengage Learning, Hampshire, 2009.*

TEACHING METHODS: Multimedia presentations, tasks, case studies, and discussions.

ASSESSMENT METHODS: Case study – evaluation of the company's financial standing and final examination.

TEACHER: Artur Paździor, PhD, Eng. (a.pazdzior@pollub.pl)

FINANCIAL ACCOUNTING AND REPORTING - *Z21*

FACULTY OF MANAGEMENT	**CLASS TYPE:** LECTURE, CLASSES
NUMBER OF HOURS: 30 (15 LECTURES + 15 CLASSES)	**ECTS: 4**
SEMESTER: WINTER	**CLASS LEVEL:** UNDERGRADUATE
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 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 presentations, tasks, case studies, and discussions.

ASSESSMENT METHODS: Written test, practical homework, and final examination.

TEACHER: Artur Paździor, PhD, Eng. (a.pazdzior@pollub.pl)

FUNDAMENTALS OF MARKETING - *Z15*

FACULTY OF MANAGEMENT	**CLASS TYPE:** LECTURES, CLASSES
NUMBER OF HOURS: 30 (15 LECTURES + 15 CLASSES)	**ECTS: 4**
SEMESTER: WINTER	**CLASS LEVEL**: UNDERGRADUATE
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.

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, and discussions.

ASSESSMENT METHODS: Written examination.

TEACHER: Marcin Gąsior, PhD, Eng. (m.gasior@pollub.pl)

FOUNDATIONS OF BUSINESS INFORMATION SYSTEMS AND IT MANAGEMENT - *Z55*

FACULTY OF MANAGEMENT	**CLASS TYPE:** LECTURES, LABORATORIES
NUMBER OF HOURS: 30 (10 LECTURES + 20 LABORATORIES)	**ECTS: 4**
SEMESTER: WINTER	**CLASS LEVEL:** UNDERGRADUATE
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 fundamentals of IT or business management.

CONTENTS: 1. Fundamental concepts: data, information, processes of information handling, and business entities. 2. Overview of information systems: their structure, functions, and classification. 3. Prerequisites and organizational aspects of computerization. 4. The process of acquiring IT systems. 5. Steps involved in IT system implementation. 6. Managing the operational phase of IT systems. 7. Application of information systems in businesses and various organizations. 8. Information systems used outside the scope of business activities. 9. Risks and challenges associated with computerization. 10. Legal considerations and regulations surrounding computerization. 11. IT project execution: phases, methodologies, and software development models. 12. Principles and processes of designing IT systems. 13. Procedures for implementing and testing IT systems. 14. Strategies for the evolution and enhancement of IT systems.

EFFECTS OF EDUCATION PROCESS: Knowledge of concepts and formal methods useful in application of information technologies in business management. By exploring the objectives, conditions, and potential risks associated with computerization, students gain insight into the strategic role of IT in organizational success. Knowledge of techniques as well as tools for IT systems that support management processes, deepening understanding of system functionality and real-world application.

LITERATURE:

- *Beynon-Davies P., Business Information Systems, Macmillan education, 2019.*
- *Polak P., Introduction to Business Information Systems, Warsaw School of Economics, 2015.*
- *Gunasekaran A., Maqsood S., Handbook on Business Information Systems, 1st ed., World Scientific, 2010.*

TEACHING METHODS: Lecture, project.

ASSESSMENT METHODS: Active class participation and evaluation of the submitted project.

TEACHER: Jakub Pizoń, PhD, Eng. (j.pizon@pollub.pl)

GLOBAL & POLITICAL ECONOMICS - *Z30*

FACULTY OF MANAGEMENT	**CLASS TYPE:** LECTURES, SEMINARS
NUMBER OF HOURS: 30 (10 LECTURES + 20 SEMINARS)	**ECTS: 4**
SEMESTER: SUMMER	**CLASS LEVEL:** MASTER
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. 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.

EFFECTS OF EDUCATION PROCESS: 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.

LITERATURE:

- *Hare P., Turley G., Handbook of the Economics and political economy of transition, Routledge, London, 2019.*
- *Case K.E, Fair C.R, Oster M.S., Principles of Economics. Global Edition, Pearson, 13 edition, New York, 2019.*
- *Amator F., Colli A., The global economy, A concise history. Taylor & Francis Group, London, 2019.*
- *Rzepka A., Globalisation and global economy in the theory and practise. Lab Lambert, Saarbrucken, 2013.*

TEACHING METHODS: Multimedia presentations, discussions, group work.

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

TEACHER: Agnieszka Rzepka**,** PhD (a.rzepka@pollub.pl)

INDUSTRY 4.0 - *Z39*

FACULTY OF MANAGEMENT	**CLASS TYPE:** LECTURES, PROJECT
NUMBER OF HOURS: **30** (10 LECTURES + 20 PROJECT)	**ECTS: 4**
SEMESTER: WINTER	**CLASS LEVEL:** UNDERGRADUATE
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 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: Active class participation and evaluation of the submitted project.

TEACHER: Jakub Pizoń, PhD, Eng. (j.pizon@pollub.pl)

INNOVATION MANAGEMENT IN AN ENTERPRISE - *Z44*

FACULTY OF MANAGEMENT	**CLASS TYPE:** LECTURES, CLASSES
NUMBER OF HOURS*:* **30** (15 LECTURES + 15 CLASSES)	**ECTS: 4**
SEMESTER: SUMMER	**CLASS LEVEL:** MASTER
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. 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 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.

EFFECTS OF EDUCATION PROCESS: 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.

LITERATURE:

- *Altenburger R.(ed) , Innovation Management and Corporate Social Responsibility, Springer International Publishing AG, part of Springer Nature 2018.*
- *Tidd J, Bessant J.: Managing Innovation: Integrating Technological, Market and Organizational Change, Sixth Edition. New York: Wiley 2018.*
- *Dodgson M., Gann D, Salter A, The Management of Technological Innovation. Strategy and Practise, Oxford University press, Oxford/New York 2008.*
- *Article from Harvard Business Review.*

TEACHING METHODS: Multimedia presentations, discussions, group work.

ASSESSMENT METHODS: Active participation in classes, essay, and evaluation of presentations.

TEACHER: Agnieszka Rzepka**,** PhD (a.rzepka@pollub.pl)

INTEGRATED MARKETING COMMUNICATIONS - *Z17*

FACULTY OF MANAGEMENT	**CLASS TYPE:** LECTURES, PROJECT
NUMBER OF HOURS: 30 (15 LECTURES + 15 PROJECT)	**ECTS:** 4
SEMESTER: SUMMER	**CLASS LEVEL:** UNDERGRADUATE
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 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 6.0 concept. Designing the IMC tools. Establishing the total IMC budget. Measuring the IMC results.

EFFECTS OF EDUCATION PROCESS: Familiarizing students with concepts of integrated marketing communication in contemporary organizations, businesses and institutions. Students will gain knowledge of the processes of planning, implementing and controlling the IMC campaigns, and also abilities to prepare creative IMC campaigns in the practice.

LITERATURE:

- *Clow K.E., Baack D, ,Integrated Advertising, Promotion, and Marketing Communications. Pearson, 2016.*
- *Kotler Ph., Kartajaya H., & Setiawan I. Marketing 6.0: The Future is Immersive. John Wiley & Sons, 2024.*
- *Kotler Ph., Keller K. L., & Chernev A., Marketing (16th ed.). Pearson, 2022.*

TEACHING METHODS: Lecture with interactive presentations, case studies.

ASSESSMENT METHODS: Test on lecture content and evaluation of submitted and presented projects.

TEACHER: Barbara Szymoniuk, PhD, Eng. (b.szymoniuk@pollub.pl)

INTERNATIONAL BUSINESS TRANSACTIONS - *Z53*

FACULTY OF MANAGEMENT	**CLASS TYPE:** LECTURES, PROJECT
NUMBER OF HOURS*:* 30 (10 LECTURES + 20 PROJECT)	**ECTS: 4**
SEMESTER: SUMMER	**CLASS LEVEL:** UNDERGRADUATE
MINIMAL NUMBER OF STUDENTS: 12 (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 first lecture.

CONTENTS: 1. Introduction to International Trade: Definition and importance of international trade; Types of trade agreements; Tariffs and trade barriers. 2. Trade Agreements: Overview of trade agreements; Types of trade agreements (e.g. free trade agreements, customs unions); Impact of trade agreements on international trade transactions. 3. International Transactions: Incoterms and their significance; Phases of the transaction, types of transactions; Contract, Negotiations and cultural differences; Documentation in international transactions; International certification bodies. 4. Trade Finance: Overview of trade finance; 5. Methods of payment for international transactions (e.g. letters of credit, documentary collections). 6. Role of banks and financial institutions in trade finance.

EFFECTS OF EDUCATION PROCESS:
Student knows and understands the relations between economic entities and public institutions involved in international trade. Student has a knowledge of legal and organisational rules on the international market. Student has a knowledge and understanding of the principles of entering and conducting business transactions on the international market. Student can prepare a contract in international trade. Student knows and understands the principles of settlement of business transactions on the international market and can correctly select the form of settlement to the applied conditions of an international transaction.

LITERATURE:

- *Krugman, P., Obstfeld M., Melitz M.J. (2022). International Trade: Theory and Policy, Global Edition Paperback, Pearson Education Limited, ISBN 9781292417233*
- *Feenstra R.C., Taylor A.M. (2010) International Trade, (2nd ed.), Worth Publishers. ISBN 1429293217, 978142929321*
- *Grath A., (2011) The Handbook of International Trade and Finance: The Complete Guide to Risk Management, International Payments and Currency Management, Bonds and Guarantees, Credit Insurance and Trade Finance, (2nd ed.), Kogan Page LTD, ISBN 9780749463977*
- *David Soler, D. (2021) Practical guide to the Incoterms 2020 rules, Marge Books. EAN: 9788418532849*
- *Council Regulation (EEC) No 2913/92 of 12 October 1992 establishing the Community Customs Code (OJ L 302,19.10.1992)*

TEACHING METHODS: Lecture and project.

ASSESSMENT METHODS: Project evaluation.

TEACHER: Tadeusz Zienkiewicz, PhD (t.zienkiewicz@pollub.pl)

ROBOTIC PROCESS AUTOMATION - *Z56*

FACULTY OF MANAGEMENT	**CLASS TYPE:** LECTURES, LABORATORIES
NUMBER OF HOURS*:* 30 (5 LECTURES + 25 LABORATORIES)	**ECTS: 4**
SEMESTER: SUMMER	**CLASS LEVEL:** UNDERGRADUATE
MINIMAL NUMBER OF STUDENTS: 12 (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 first lecture.

CONTENTS: Explanation of the concepts of Robotic Process Automation (RPA). Introduction to software designed for bot training. Building simple processes using components for data management, decision-making, task execution, working in loops, and using subprocesses. Building processes that interact with external programs using Virtual Business Objects (VBO). Budling Virtual Business Objects (VBO).

EFFECTS OF EDUCATION PROCESS: Knowledge on tool for automation of business processes, components of environment for designing processes and objects. Skills on building simple bots and understanding basic components for building algorithms and data management.

LITERATURE:

- *Ying, Lim Mei (2018). Robotic Process Automation with Blue Prism Quick Start Guide. Packt Publishing. ISBN 1789610443*
- *Blue Prism University: Foundation Course, available online: https://university.blueprism.com/*

TEACHING METHODS: Laboratory work.

ASSESSMENT METHODS: Project and evaluation of presentations.

TEACHER: Marta Juszczyk, PhD, Eng. (m.juszczyk@pollub.pl)

LOGISTICS - *Z49*

FACULTY OF MANAGEMENT	**CLASS TYPE:** LECTURES, PROJECT
NUMBER OF HOURS*:* **30** (15 LECTURES + 15 PROJECT)	**ECTS: 4**
SEMESTER: WINTER	**CLASS LEVEL:** MASTER
MINIMAL NUMBER OF STUDENTS: 12 (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 first lecture.

CONTENTS: 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.

EFFECTS OF EDUCATION PROCESS: 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.

LITERATURE:

- *Stock J. R., Lambert D. M., Strategic Logistics Management (4th ed.). Boston, MA: McGraw-Hill/Irwin, 2001.*
- *Mindur M., Sierpiński G., Turoń K., The diversity of logistics centre concepts in Europe. Logistics and Transport, 2018, 39(3), 61–68.*
- *Mindur M., Qualitative and temporal determinants in integrated supply chains (in:) Mikulski J. (Ed.), Contemporary Challenges of Transport Systems and Traffic Engineering, Springer 2017.*
- *Mindur L., Mindur M, Intermodal transport in selected countries (in:) Sładkowski A. (Ed.), Modern Trends and Research in Intermodal Transportation, Springer 2022.*

TEACHING METHODS: Lecture and project workshops.

ASSESSMENT METHODS: Project and evaluation of presentations.

TEACHER: Maciej Mindur, Prof. (m.mindur@pollub.pl)

MARKETING RESEARCH - *Z23*

FACULTY OF MANAGEMENT	**CLASS TYPE:** LECTURES, CLASSES
NUMBER OF HOURS: 30 (15 LECTURES + 15 CLASSES)	**ECTS: 4**
SEMESTER: SUMMER	**CLASS LEVEL:** UNDERGRADUATE
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.

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:

- *Babbie E.R. The practice of social research. USA: Cengage learning, 2020.*
- *Churchill G. A., Iacobucci, D., Marketing research: methodological foundations. New York: Dryden Press, 2006.*
- *Babin, B. J., Zikmund W. G. Exploring marketing research. USA: Cengage Learning, 2015.*

TEACHING METHODS: Lecture, interactive presentations, discussions, case studies.

ASSESSMENT METHODS: Written examination and completion of three case studies.

TEACHER: Marcin Gąsior, PhD, Eng. , Paulina Jusiuk, MSc. (p.jusiuk@pollub.pl)

MICROECONOMICS - *Z25*

FACULTY OF MANAGEMENT	**CLASS TYPE:** LECTURES, CLASSES
NUMBER OF HOURS: 30 (15 LECTURES + 15 CLASSES)	**ECTS: 4**
SEMESTER: SUMMER	**CLASS LEVEL:** UNDERGRADUATE
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:

- *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, multimedia presentations, discussions, and exercises.

ASSESSMENT METHODS: Multiple-choice test.

TEACHER: Tomasz Żminda, PhD, Eng. (t.zminda@pollub.pl)

OCCUPATIONAL ENVIRONMENT - *Z26*

FACULTY OF MANAGEMENT	**CLASS TYPE:** LECTURES, LABORATORIES
NUMBER OF HOURS: 30 (10 LECTURES + 20 LABORATORIES)	**ECTS: 4**
SEMESTER: WINTER	**CLASS LEVEL:** MASTER
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:

- *Kroemer, K.H.E., Grandjean, E.: Fitting the Task to the Human, Philadelphia: Taylor and Francis, 5th Edition, 1997, ISBN: 074840665.*
- *Di Nardi S.: The Occupational Environment 3rd Ed., AIHA Press, 2012, ISBN-10: 1931504431.*
- *Applications and Computational Elements of Industrial Hygiene CRC Press, Martin B. Stern and S.Z. Mansdorf, Editors, 1999.*

TEACHING METHODS: Case analysis and laboratory exercises.

ASSESSMENT METHODS: Qualifying questions prior to laboratory exercises

TEACHER: Krzysztof J. Czarnocki, PhD, Eng., Elżbieta Czarnocka, PhD. (k.czarnocki@pollub.pl)

OPERATIONAL RESEARCH IN MANAGEMENT - *Z29*

FACULTY OF MANAGEMENT	**CLASS TYPE:** LECTURES, LABORATORIES
NUMBER OF HOURS: 30 (10 LECTURES + 20 LABORATORIES)	**ECTS: 4**
SEMESTER: SUMMER	**CLASS LEVEL:** MASTER
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 operations on matrices and the matrix notation of systems of equations/inequalities.

CONTENTS: 1. Operational Research – short introduction: history and scope. 2. Introduction to linear programming (LP): assumptions, basic properties, solving LP problems, multiple optimal solutions, limitations of usage. 3. Introduction to the practical applications of LP: product-mix problem, diet/blending problems. 4. Integer linear programming (ILP): cutting/packing/covering problems, 5. Minimax problems and mixed integer linear programming (MILP) - dealing with discontinuities in models. 6. Network optimization problems: transportation problem and its extensions, assignment problems - job/task scheduling, minimal flow cost, shortest path, maximal flow, travelling salesman problem (TSP), 7. Non-linear programming (NLP): assumptions, basic properties, specific issues: global vs local extrema, limitations of algorithms. Examples of applications of non-linear programming.

EFFECTS OF EDUCATION PROCESS: 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 used in optimization, issues connected with computer-based optimization.

LITERATURE:

- *Williams H.P., Model Building In Mathematical Programming, 5th Edition, Wiley, 2013.*
- *Hillier F.S., Lieberman G.J., Introduction to Operations Research, 11th Edition, McGraw Hill, 2020.*
- *Dantzig G. B., Thapa M.N., Linear Programming 1 & 2, Springer, 1997.*
- *Encyclopedia of Optimization, Floudas C.A., Pardalos P.M., 2nd Edition, Springer Science & Business Media, 2009.*
- *Sallan J.M., Lordan O., Fernandez V., Modeling and solving linear programming with R, OmniaScience, 2015.*
- *Ragsdale C.T.: Spreadsheet Modeling and Decision Analysis: A Practical Introduction to Business Analytics, 9th Edition. Cengage Learning, 2021.*
- *Excel Solver Tutorial for Optimization Users, www.solver.com/tutorial.htm.*

TEACHING METHODS: Lecture and computer laboratories, both with usage of LCD projector; distribution of educational materials in laboratories by using MS Teams Assignments, additional materials for self-learning available in the MS Teams Files repository.

ASSESSMENTS METHODS: Lecture: a test using MS Forms 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.

TEACHER: Przemysław Kowalik, PhD (p.kowalik@pollub.pl)

PERSONAL BRANDING - *Z57*

FACULTY OF MANAGEMENT	**CLASS TYPE:** LECTURES, SEMINARS
NUMBER OF HOURS*:* **30** (10 LECTURES + 20 SEMINARS)	**ECTS: 4**
SEMESTER: SUMMER	**CLASS LEVEL:** MASTER
MINIMAL NUMBER OF STUDENTS: 12 (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: What is a personal brand? Personal brand models. The process of building a personal brand. The system of a person's identity - how to create it. Image and reputation, the difference between image and identity. Employer branding. New division of media - PESO model, public relations tools and techniques.

EFFECTS OF EDUCATION PROCESS: Students will gain practical knowledge in the field of personal branding, employer branding - activities aimed at external and internal groups. Students will learn how to build a personal brand, its image and identity, as well as how to do it in social media (SoMe).

LITERATURE:

- *Kotler Ph., Kartajaya H., Setiawan I., Marketing 6.0. Future is Immersive, John Wiley&Sons, 2023.*
- *Kotler Ph., Kartajaya H., Setiawan I., Marketing 5.0. Technology for Humanity, John Wiley&Sons, 2021.*
- *Kotler Ph., Kartajaya H., Setiawan I., Marketing 4.0. Moving from Traditional to Digital, John Wiley&Sons , 2016.*
- *Kim M., You Are The Brand: The 8-Step Blueprint to Showcase Your Unique Expertise and Build a Highly Profitable, Personally Fulfilling Business, Morgan James Publishing, 2021.*
- *Walker D., The 90 Day Brand Plan: How to Unleash Your Personal Brand to Dominate the Competition and Scale Your Business, John Wiley&Sons 2024.*

TEACHING METHODS: Lecture, multimedia presentations, group work, tasks, case studies, and discussions.

ASSESSMENT METHODS: Written test and practical task.

TEACHER: Magdalena Rzemieniak, PhD, Eng. (m.rzemieniak@pollub.pl)

PRODUCTION PLANNING AND MANAGEMENT - *Z31*

FACULTY OF MANAGEMENT	**CLASS TYPE:** LECTURES, PROJECT
NUMBER OF HOURS: 30 (5 LECTURES + 25 PROJECT)	**ECTS: 4**
SEMESTER: WINTER	**CLASS LEVEL:** UNDERGRADUATE
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 application Excel, good knowledge of Excel.

CONTENTS: 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.

EFFECTS OF EDUCATION PROCESS: 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.

LITERATURE:

- *Stevenson, W.J., Production / Operations management. Irwin, 2010.*
- *Stoner, J., Freeman, R., Management. Prentice-Hall, 2002.*
- *Walters, D., Inventory control and management. John Wiley & Sons, Chichestr, 2012.*
- *Koren, Y., The global manufacturing revolution. Product-Process-Business Integration and reconfigurable manufacturing systems. Wiley, New Jersey, 2010.*
- *Pepall, L., Contemporary industrial organization: a quantitative approach. Handbook. John Wiley & Sons, Chichestr, 2011.*
- *David, F.R., Strategic management: concepts, global edition. Pearson, Boston, 2011.*

TEACHING METHODS: Project.

ASSESSMENT METHODS: Project evaluation and active participation in classes.

TEACHER: Jolanta Słoniec, PhD, Eng. (j.sloniec@pollub.pl)

PROJECT MANAGEMENT - Z58

FACULTY OF MANAGEMENT	**CLASS TYPE:** LECTURES, PROJECT
NUMBER OF HOURS: 30 (5 LECTURES + 25 PROJECT)	**ECTS: 4**
SEMESTER: SUMMER	**CLASS LEVEL:** UNDERGRADUATE&MASTER
MINIMAL NUMBER OF STUDENTS: 12 (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 first lecture.

CONTENTS: Project definition, characteristics, and types of projects. History of project management, project life cycle, project creation. Stages and activities of the project. CPM network programming. PERT network programming. Creating the plan of the project using the Microsoft Project application.

EFFECTS OF EDUCATION PROCESS: Understand the importance of project management, learn the basics of project management, learn methods and techniques of project management, understand the rules of project management and the modern tools of project management, and organize and direct their execution performance. Understanding the network programming methods (CPM, PERT) and knowing how to use Microsoft Project to create, present, organize, and direct the project.

LITERATURE:

- *Meredith J.R., Mantel S.J., Project Management. A managerial approach, John & Sons, 2016.*
- *Leach L. P., Critical chain project management, Boston: Artech House, 2014.*
- *Cavanagh, M., Second order project management, Burlington, Vt.: Gower, 2012.*
- *Neal J., The spirit of project management, London: Routledge, 2016.*
- *Hickson R.J.., Owen T.L., Project management for mining: handbook for delivering project success, Englewood, Colorado: Society for Mining, 2022.*
- *Davidson J. P., Everyday project management, Oakland, California: Berrett-Koehler Publishers, Inc., 2019.*

TEACHING METHODS: Project.

ASSESSMENT METHODS: Project evaluation.

TEACHER: Jolanta Słoniec, PhD, Eng. (j.sloniec@pollub.pl)

PUBLIC RELATIONS - *Z50*

FACULTY OF MANAGEMENT	**CLASS TYPE:** LECTURES, SEMINARS
NUMBER OF HOURS*:* 30 (10 LECTURES + 20 SEMINARS)	**ECTS: 4**
SEMESTER: SUMMER	**CLASS LEVEL:** UNDERGRADUATE
MINIMAL NUMBER OF STUDENTS: 12 (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: Image and reputations. Person/company/organization identification system, the difference between image and identity, personal branding, employer branding, new division of media - PESO model, public relations tools and techniques, e-PR, PR campaign design procedure, Message House, media monitoring, social media (SoMe) in PR, event - role and importance in PR, crisis, conduct in crisis situations.

EFFECTS OF EDUCATION PROCESS: Students will gain practical knowledge in the field of public relations, personal branding, employer branding - activities addressed to external and internal groups. Students will learn how to build an image and identity, including SoMe. In addition, course participants will gain knowledge about media monitoring mechanisms, as well as valuable knowledge on how to deal with crisis situations.

LITERATURE:

- *Kotler Ph., Kartajaya H., Setiawan I., Marketing 6.0. Future is Immersive, John Wiley&Sons, 2023.*
- *Kotler Ph., Kartajaya H., Setiawan I., Marketing 5.0. Technology for Humanity, John Wiley&Sons, 2021.*
- *Kotler Ph., Kartajaya H., Setiawan I., Marketing 4.0. Moving from Traditional to Digital, John Wiley&Sons , 2016.*
- *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: Lecture, multimedia presentations, group work, tasks, case studies, discussions.

ASSESSMENT METHODS: Written test and practical task.

TEACHER: Magdalena Rzemieniak, PhD, Eng. (m.rzemieniak@pollub.pl)

SOCIAL MEDIA COMMUNICATION - *Z45*

FACULTY OF MANAGEMENT	**CLASS TYPE:** LECTURES, CLASSES
NUMBER OF HOURS: 30 (15 LECTURES + 15 CLASSES)	**ECTS: 4**
SEMESTER: SUMMER	**CLASS LEVEL:** UNDERGRADUATE
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. All students willing to participate in the CLASSES 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 presentations, tasks, case studies, discussions.

ASSESSMENT METHODS: Written examination and completion of case studies.

TEACHER: Magdalena Maciaszczyk, PhD (m.maciaszczyk@pollub.pl)

STATISTICS IN MANAGEMENT - *Z35*

FACULTY OF MANAGEMENT	**CLASS TYPE:** LECTURES, LABORATORY
NUMBER OF HOURS: 30 (10 LECTURES + 20 LABORATORIES)	**ECTS: 4**
SEMESTER: WINTER	**CLASS LEVEL:** MASTER
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 Introduction to descriptive statistics, basic statistical measures. 2. Introduction to probability theory. Discrete and continuous random variables. Applications of the concept of random variables in management and quality sciences. 3. Estimators and their properties. Method of moments (MM). Interval estimation for mean and variance, hypothesis tests for means and variances. 4. Parametric and non-parametric tests for comparing two or more groups. 5. Goodness of fit tests, correlation test. 6. The least squares method (LSM), regression analysis. 7. Multi-dimensional analysis. 8. Time series.

EFFECTS OF EDUCATION PROCESS: Identification of phenomena using the tools of mathematical statistics.

LITERATURE:

- *Salvatore D., Reagle D., Statistics and econometrics, McGraw-Hill, 2002.*
- *Smith G., Essential Statistics, Regression and Econometrics, for the Social Sciences, Academic Press, Elsevier, 2015.*
- *Stevens J.P., Applied Multivariate Statistics for the Social Sciences, Lawrence Erlbaum Associates Publishers, London, 2002.*
- *Myers J., Well A., Research Design and Statistical Analysis, Lawrence Erlbaum Associates Publishers, London, 2003.*
- *Ross Sh. M., Introduction to Probability Models, Academic Press, 1997.*

TEACHING METHODS: Lecture and computer laboratories, both with usage of LCD projector; distribution of educational materials in laboratories by using MS Teams Assignments, additional materials for self-learning available in the MS Teams Files repository.

ASSESSMENT METHODS: Lecture: a test using MS Forms will check the understanding of basic definitions and theorems of statistics. Laboratories: a test checking the ability of solving some types of statistical problems by using selected statistical software.

TEACHER: Przemysław Kowalik, PhD, Piotr Oleszczuk PhD, Edward Kozłowski, PhD (p.kowalik@pollub.pl)

STARTUP ENTREPRENEURSHIP - *Z46*

FACULTY OF MANAGEMENT	**CLASS TYPE:** LECTURES, PROJECT
NUMBER OF HOURS: **30** (10 LECTURES + 20 PROJECT)	**ECTS: 4**
SEMESTER: WINTER	**CLASS LEVEL:** UNDERGRADUATE
MINIMAL NUMBER OF STUDENTS: 12 (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 first lecture.

CONTENTS: 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. 6. MVP (Minimum Viable Product) & Prototyping. 7. Go-To-Market Strategy & Growth Hacking 8. Financial Aspects of Startups. 9. Pitching & Investor Relations. 10. Final Startup Project Presentation.

EFFECTS OF EDUCATION PROCESS: 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.

LITERATURE:

- *Maurya A., Running lean: iterate from plan A to a plan that works. The lean series (2nd ed.). Sebastopol, CA: O'Reilly. 2012, ISBN 9781449305178.*
- *Nielsen N. H., The Startup Funding Book. Chichester: Wiley, 2017*
- *Osterwalder A., Pigneur Y., Clark T., Business model generation: a handbook for visionaries, game changers, and challengers. Hoboken, NJ: John Wiley & Sons, 2010, ISBN 9780470876411.*
- *Ries E., The lean startup: how today's entrepreneurs use continuous innovation to create radically successful businesses. Crown Publishing, 2014, ISBN 9780307887894.*
- *Osterwalder A., Bland D.J., Testing business ideas: A field guide for rapid experimentation. Hoboken, NJ: Wiley, 2019*

TEACHING METHODS: Lectures and project-based group work.

ASSESSMENT METHODS: Project evaluation and presentation.

TEACHER: Jakub Bis, PhD Eng. (j.bis@pollub.pl)

STOCK MARKET INVESTMENTS - *Z36*

FACULTY OF MANAGEMENT	**CLASS TYPE:** LECTURES, LABORATORIES
NUMBER OF HOURS: 30 (15 LECTURES + 15 LABORATORIES)	**ECTS: 4**
SEMESTER: SUMMER	**CLASS LEVEL:** MASTER
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:

- *Mishkin F.S., Eakins S.G.: Financial Markets and Institutions, Pearson education Limited, Edinburgh, 2012.*
- *Murphy J.J.: Technical Analysis of the Financial Markets, New York Institute of Finance, 1999.*
- *Graham B.: The intelligent Investor, Library of Congress Cataloging-in-Publication Data 2003.*

TEACHING METHODS: Multimedia presentations, tasks, case studies, discussions.

ASSESSMENT METHODS: Written test and practical task. Presentation.

TEACHER: Artur Paździor, PhD, Eng. (a.pazdzior@pollub.pl)

SUSTAINABILITY, ECONOMY, AND TRANSPORT IN A CHANGING WORLD - *Z59*

FACULTY OF MANAGEMENT	**CLASS TYPE:** LECTURES, CLASSES
NUMBER OF HOURS: **30** (15 LECTURES + 15 CLASSES)	**ECTS: 4**
SEMESTER: WINTER	**CLASS LEVEL:** MASTER
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.Global Economic and Social Challenges – Migration trends, the economic divide between the poor South and the wealthy North, and their implications for global stability. 2. Climate Change and Sustainable Development – The impact of climate change on economies, the concept of sustainable economic development, and strategies for sustainable transport. 3. Armed Conflicts and the World Economy – The influence of wars and conflicts on global markets, trade, and economic growth. 4. International Organizations and Future Strategies – The role of the Club of Rome in shaping economic policies and the key objectives of Agenda 2030.

EFFECTS OF EDUCATION PROCESS: The student has a fundamental understanding of today's economy and the major global challenges, including the concept of sustainable development. The student understands how climate change impacts the economy and how these changes influence new methods of transporting goods from Asia to Europe and North America. Additionally, the student is able to explain the risks posed by climate change to the world.

LITERATURE:

- *Becker, G. S., Glaeser, E. L., & Murphy, K. M., Population and economic growth. American Economic Review, 89(2), 1999, p.145–149.*
- *United Nations. The 17 Sustainable Development Goals (SDGs), 2015. (https://sdgs.un.org/goals*)
- *Meadows, D. H., Meadows, D. L., Randers, J., & Behrens, W. W. III., The Limits to Growth. New York: Universe Books, 1972.*
- *Chang, H.-J, Kicking Away the Ladder: Development Strategy in Historical Perspective. London: Anthem Press, 2002.*
- Taleb N.N., *The Black Swan: The Impact of the Highly Improbable*. New York: Random House, 2007.
- Kołodko, G.W. *World on the Move*. Warszawa: Wydawnictwo Naukowe PWN, 2008.

TEACHING METHODS: Lecture and classes.

ASSESSMENT METHODS: Essay evaluation.

TEACHER: Maciej Mindur, Prof. (m.mindur@pollub.pl)

WORK STRESS - *Z28*

FACULTY OF MANAGEMENT	**CLASS TYPE:** LECTURES, SEMINARS
NUMBER OF HOURS: 30 (10 LECTURES + 20 SEMINARS)	**ECTS: 4**
SEMESTER: WINTER	**CLASS LEVEL:** MASTER
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.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.

EFFECTS OF EDUCATION PROCESS: 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.

LITERATURE:

- *Cooper C. (Ed.), From Stress to Wellbeing Volume 1: the theory and research on occupational stress and wellbeing, Springer.2013.*
- *Cooper C. (Ed.), From Stress to Wellbeing Volume 2: Stress Management and Enhancing Wellbeing, Springer, 2013.*
- *Dolan S.L., De-Stress at Work: Understanding and Combatting Chronic Stress. Taylor & Francis, 2023.*
- *Glazer S., Liu, C., Work, stress, coping, and stress management. In Oxford Research Encyclopedia of Psychology, 2017.*
- *Harms P.D., Perrewé, P.L. (Eds.), Examining and Exploring the Shifting Nature of Occupational Stress and Well-being. Emerald Group Publishing, 2021*
- *Rossi A. M., Meurs J.A., Perrewé P.L. (Eds.), Stress and Quality of Working Life: Conceptualizing and Assessing Stress. IAP, 2017.*

Complementary:

- *Biron C., Burke R.J., Cooper C.L., Creating Healthy Workplaces: Stress Reduction, Improved Well-being, and Organizational Effectiveness, 2017.*
- *Melnick S., Success Under Stress: Powerful Tools for Staying Calm, Confident, and Productive when the Pressure's on. Amacom Books, 2013*
- *International Journal of Stress Prevention and Wellbeing*

TEACHING METHODS: Lectures, discussions, case studies, group work.

ASSESSMENT METHODS: Written test, project execution and its presentation, attendance and active participation in seminar discussions and exercises.

TEACHER: Krystyna Wojciechowska, PhD (k.wojciechowska@pollub.pl)

WORKFLOW AND BUSINESS PROCESS MANAGEMENT - *Z51*

FACULTY OF MANAGEMENT	**CLASS TYPE:** LECTURES, LABORATORIES
NUMBER OF HOURS: 30 (10 LECTURES + 20 LABORATORIES)	**ECTS: 4**
SEMESTER: WINTER	**CLASS LEVEL:** UNDERGRADUATE
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 fundamentals of production or service business management.

CONTENTS: 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.

EFFECTS OF EDUCATION PROCESS: 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.

LITERATURE:

- *Dumas M., La Rosa M., Mendling J., Reijers H.A., Fundamentals of Business Process Management, Springer; 2nd ed. 2018.*
- *Berman P. K., Successful Business Process Management, AMACOM, 2014.*

TEACHING METHODS: Lecture, laboratory work.

ASSESSMENT METHODS: Active class participation, written exam.

TEACHER: Jakub Pizoń, PhD, Eng. (j.pizon@pollub.pl)