Order No. 4/2024/2025
of 28th November 2024
of the Vice-Rector for Education of the Wroclaw Business Academy of Applied Sciences
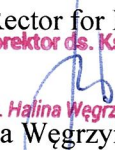*On updating the degree exam set for individual degrees of non-graduation in the academic year 2024/2025*

§ 1

Pursuant to § 22 point 8 of the Statute of the Wroclaw Business Academy of Applied Sciences and § 53 of the Regulations of Studies at the Wroclaw Business Academy of Applied Sciences, in connection with the Ordinance of the Vice-Rector for Education No. 2/2024/2025 on the rules for conducting the diploma examination at the first degree of studies, for which the program of study does not provide for a diploma thesis, in the academic year 2024/2025, I update the degree exam sets from academic year 2024/2025 for each degree in the Wroclaw Business Academy of Applied Sciences - Attachment 1.

§ 2
The Order comes into force on the day of its signature.

Vice-Rector for Education
Prorektor ds. Kształcenia

dr inż. Halina Węgrzyn, prof. WAB
PhD Halina Węgrzyn, prof. WAB

To information:
1) Rector
2) Vice-Rector for Science and International Relations
3) Vice-Rector for Development and External Relations
4) Plenipotentiary for Students for the Vice-Rector for Education
5) Manager of the field of study
6) Supervisors
7) Didactics office
8) Dean's office
9) President of the Student Self-Government

Field of study: Tourism and Leisure

<u>**Field of study questions:**</u>

1. Discuss the tourist traffic patterns – explain the concepts of traveler, visitor, tourist and one-day visitor
2. Discuss the concepts of tourist attraction
3. Describe UNESCO World Heritage sites in Poland.
4. Describe the 10 selected history monuments.
5. Discuss Poland's most important holiday values.
6. Describe the most important properties of nature landscapes in Poland.
7. Describe the size and structure of international tourist traffic in the world by world macro-regions
8. Describe the 5 main countries in the world in terms of the number of foreign tourists, the influence of international tourism and international tourism expenditure.
9. Describe the fastest growing macro-regions in the world and countries – the causes and potential impacts.
10. Describe the global mega trends and their impact on tourism: Economic growth, globalization, demography, and digitalization.
11. Characterize the leading trends in tourism: silver tourism, sustainable tourism, exploratory tourism, culinary tourism, active tourism, staylidays.
12. Discuss the main criteria and classifications of forms of tourism
13. Indicate the main breakdowns of tourist traffic
14. Discuss the organization of tourism at international, national and regional level
15. Discuss the current factors of tourism development
16. Describe the barriers to the development of tourism
17. Describe the dysfunctions of contemporary tourism
18. Describe the sources of tourist information: Promotional, information and statistical
19. List and characterize the main factors of leisure development.
20. List and describe the main barriers to the development of leisure activities.
21. Discuss the division of leisure forms of physical activity
22. Show the role of recreation in health promotion and prevention of civilization diseases
23. Describe the new trends in physical recreation
24. Discuss the methods for assessing the geographical environment for tourism
25. Describe the methods of tourism research and indicators for the development of tourism
26. Characterize tourist traffic in the great Polish tourist centers.
27. List the tourist regions of Poland.
28. Characterize Poland's main specialist values.
29. Describe the main features of Poland's communication accessibility.
30. Describe the conditions of tourism in lower Silesia.
31. List the main tourist products of lower Silesia.
32. Discuss the stages of organizing the package
33. Explain the principles of organizing tourist events
34. List and describe the elements for calculating the cost of the package.
35. Describe the procedure for handling tourists at the various stages of the journey
36. Discuss the concept of the tourism market and its elements
37. Describe the factors that shape tourism demand
38. List and describe the determinants of tourist supply
39. Describe the concept of tourism product and its characteristics
40. Discuss the structure of business tourism in Poland
41. Describe the different types of events
42. Describe 5 examples of the negative effects of tourism on the natural environment and briefly describe them.
43. Describe 5 examples of the positive effects of tourism on the natural environment
44. Describe 5 examples of the negative impact of tourism on the economy
45. Describe 5 examples of the positive effects of tourism on the economy

46. Describe 5 examples of the negative effects of tourism on the socio-cultural environment
47. Describe 5 examples of the positive effects of tourism on the socio-cultural environment
48. Describe the types of hotel facilities in Poland
49. Introduce the selected divisions of hotel services
50. Describe the international hotel systems in Poland

Specialty Questions:

Hotel Industry

1. Present the functional areas of the contemporary hotel facility
2. Discuss the modern ways of improving work in the hotel facility
3. Present the documents governing the hotel's housekeeping
4. Discuss the factors influencing the design of the service offerings
5. Introduce price undercutting traps
6. Discuss pricing policy for the low and high seasons
7. What types of tenders are intended to increase the assignment
8. Discuss the variable costs of the hotel
9. Describe the types of events organized in the hotel facilities
10. Discuss the structure of the organization of conferences and banquets at the hotel
11. Describe the procedures for handling guests daily at the hotel
12. Introduce sales channels for conference and banquet services
13. Describe the distribution channels of hotel products
14. Indicate the ways in which the distribution channels for hotel products are integrated
15. Discuss the Internet channels for the distribution of hotel services
16. Describe the strategies for distributing hotel products
17. Discuss the types of hotel facilities in a modern hotel
18. Describe the principles of the hotel catering service
19. Describe the organization of the floor service
20. Describe the organizational structure of the hotel restaurant and the range of activities of the staff in each function
21. Instruments for the promotion of hotel facilities
22. Promotion strategies in the process of market communication of the hotel product
23. Role and tasks of external PR advisers
24. Discuss how the results of the PR actions in the hotel facility can be assessed

International Tourism Business

1. Identify the role and tasks in the tourism management process in the tourist reception area - Destination Management Organizations (DMO-s)
2. What is a cluster in tourism – please give some 3 examples.
3. Describe the strategy for the development of tourism for the country concerned.
4. Describe the strategy for the development of tourism for the selected tourist region of Poland.
5. Identify ways to break down barriers to intercultural contacts in tourism.
6. Indicate the main positive and negative effects of the cultural impact on tourism and leisure activities.
7. Describe the culinary heritage as an important component of tourism in a selected example from Europe.
8. Describe the culinary heritage as an important component of tourism in a chosen example from the world.
9. Discuss the characteristics of the modern tour operator market
10. Describe the means of distribution of tourist services
11. Describe types of travel agencies in Poland according to the Law on tourist Services.
12. Describe the elements of the package travel contract.
13. Describe marketing strategy of Poland.

14. Describe the marketing strategy of a selected European country (except Poland).
15. Discuss the effectiveness of the design elements of successful tourist brands.
16. Describe the elements of the tourist brand.
17. Identify the main trends in business tourism worldwide.
18. Discuss the characteristics and structure of the business tourism market in a selected example from the world.
19. Discuss the needs and motivations of the business traveler.
20. Discuss the most important organizations supporting business tourism in Poland and the world.
21. Indicate the Promotion Mix for the tourist offer.
22. Discuss the role of the Internet in the advertising of a tourist offer.
23. Describe the importance of Social Media in organizing tourist events.
24. Describe the sales channels of the tourist offer.

Organization of Events

1. Describe the definitions of events, special events and tourism events.
2. Describe the characteristics of events.
3. Describe the main trends in the event industry.
4. It is characterized by events as a factor in the development of tourist towns and regions.
5. Describe the products of the event offer.
6. Discuss the design principles of the event offering.
7. Indicate the principles of the safety of mass events.
8. Present three examples of corporate social responsibility in the planning and organization of events.
9. Characterize the market for the event industry in Poland and the world.
10. Identify the most important organizations and industry associations in the field of events in Poland and the world.
11. Discuss the specificities of the event profession of manager.
12. Indicate the stages and management of the event project.
13. Discuss how to manage the project team when organizing events.
14. Describe how we work with employees, contractors, and customers in the event organization.
15. Discuss the planning stages of corporate events
16. Indicate the means of identifying the recipients of the event offers and the specific nature of their requirements.
17. Review the principles of Corporate Event Calculation.
18. Describe trends in corporate events.
19. Discuss the meaning of branding, experience, networking and content marketing for Corporate events.
20. Indicate the Promotion Mix for the event offer.
21. Describe the instruments for the promotion of the organizations of the event.
22. Discuss the importance and use of the Internet in advertising the event offer.
23. Identify the role of Social Media in the organization of events.
24. Describe the techniques used to sell event-based tourism products.

Field of Study: Finance and Accounting

1. The scope of the public finance sector in Poland.
2. Structure and scope of the state budget.
3. Indirect taxes and the fiscal function.
4. Rules for shaping local government revenues.
5. Features of the capital market.
6. Money market features.
7. Shares and bonds - characteristics of instruments.
8. The role of the stock exchange.

9. Own and foreign sources of financing for the enterprise.
10. Financial and operational leverage and risk in financial management of the enterprise.
11. Investment assessment methods.
12. Active and passive operations of a commercial bank.
13. Polish pension system – new trends.
14. Universal banking and specialist banking – difference in models.
15. The role and tasks of insurance.
16. Differences between life and non-life insurance.
17. Credit assessment methods.
18. Financial market supervision systems.
19. The idea of mutual investment.
20. Specificity of budget accounting.
21. Accruals of costs.
22. Account books and rules for keeping them.
23. Financial instruments and their classification.
24. Central bank monetary policy instruments.
25. Rules of operation of cooperative banks and their associations.
26. The concept, methods and principles of inventory.
27. Types of enterprise costs.
28. How financial accounting differs from management accounting.
29. Method of determining the weighted average cost of capital
30. Discuss the stages and principles of preparing the financial statements.
31. Profit and loss account – components.
32. What is the analysis of the dynamics and structure of the balance sheet and profit and loss account
33. Indicate the differences between income and impact, cost and expense
34. Present an analysis of cash streams in three areas of the company's operations
35. What is the indicator analysis, what are its pros and cons.
36. The issue of profitability threshold in an enterprise - examples of use.
37. List budgeting methods and characterize two of them.
38. Discuss the types of financial risk.
39. Discuss insurance as a risk management method.
40. Characterize the forms of saving and investing cash.
41. Types and characteristics of investment funds.
42. Explain the financial goal of enterprises.
43. Discuss the capital structure in the enterprise.
44. Characterize the banking system as a link in the financial system.
45. Characterize the company's valuation methods, present their pros and cons.
46. Discuss the concept, classification and principles of account functioning in accounting.
47. Characterize assets and sources of financing on a balance sheet basis.
48. Assessment of the financial condition of the insurance undertaking.
49. Rules for guaranteeing cash deposits.
50. Economic consequences of budget deficits.
51. Sources of financing for banks' operating activities.
52. Financing strategies for current assets.
53. Primary and secondary market of treasury bills in Poland.

Specialization questions:
Accounting and taxes

1. Subject and subject scope and sources of income in personal income tax.
2. Forms of taxation of non-agricultural economic activity.
3. Tax returns and their types with personal income tax.
4. Cost tax characteristics.
5. Comparison of rules and the result of income settlement in activities carried out personally and non-agricultural economic activities.

6. Methodology for accounting for two sources of income - domestic and foreign, including double taxation conventions.
7. Subject matter and subject matter in corporate income tax.
8. Scope and basis of VAT taxation, entities in force for registration.
9. List and hierarchy of sources of tax law.
10. The concept of entity, subject, tax base, tax liability, tax rates in accordance with the Tax Code.
11. Functions and types of taxes.
12. The concept of depreciation of fixed assets and depreciation methods.
13. Types of employment contracts and self-employment.
14. Timetables and accounting periods for working time, overtime work.
15. The concept of minimum remuneration, fixed and variable remuneration components, holiday pay.
16. Leave: planning, postponing leave, overdue leave and during notice.
17. Classification of entrepreneurs in the light of tax regulations, the concept of small taxpayers.
18. Forms of income tax on small and medium-sized enterprises.
19. Rules for keeping a tax record of revenues and expenses.
20. Characteristics of the simplified financial statements of small and micro units.
21. Competences, organs and organizational units of the National Tax Administration.
22. Help and information for the National Tax Administration.
23. Subject and subject scope of customs control – tax.
24. Differences between tax control and – tax customs control.

Field of Study: Management

Field of study questions:

1. Discuss manaegement functions
2. Specify the features of a modern manager.
3. The essence of managerial work: managerial roles and skills.
4. Management styles: the essence of the concept; basics of management styles selection.
5. Organizational structure: concept; construction principles; evolution directions.
6. Classical school strategies in management sciences based on the example of H. Fayola and F. Taylor
7. Present basic organizational and legal forms of enterprises.
8. The role and importance of interpersonal communication in the organization.
9. Negotiation rules and techniques
10. Managing change in organization – types of resistance against changes in organization
11. Marketing business environment.
12. Market segmentation – goals, criteria, examples.
13. Marketing-mix - elements, application.
14. Merchandising – concept, goals, techniques.
15. Brand essence, functions, types and construction.
16. Brand and image.
17. Promotion - its types and tools.
18. Factors affecting the level of financial result.
19. Financial measures of the company's operations.
20. Financial liquidity, profitability, enterprise debt
21. Profit and loss account – calculation and comparison option
22. What are the production, division, consumption? What are the relationships between them?

23. List the basic business entities and discuss the links between them.
24. What is the market and what types of markets can be distinguished in the economy?
25. What is economic profit and how is it different from capital gain?
26. Demand, demand conditions.
27. Composition and structure of the enterprise's fixed assets.
28. Balance sheet of the company's assets and sources of financing.
29. Balance sheet assets.
30. Sources of financing – liabilities.
31. Costs, outlays, expenses.
32. Present the concept of charismatic leadership and discuss the features of such a leader.
33. How is a leader different from a manager.
34. The essence and scope of importance of organizational culture.
35. Point to the material elements of the personnel function.
36. Present the principles of modern human management concept.
37. Selection of employees and tools for its implementation.
38. Characterize working conditions and their elements.
39. Methods, techniques and tools for recruitment and selection of employees.
40. Goals and types of marketing research.
41. Marketing research procedure.
42. Primary and secondary sources of market information.
43. The concept of quality, concepts for improving the quality management system.
44. Documentation structure in the quality system.
45. Quality tools - Ishikawa diagram and quality plan
46. Project management – goals and rules of conduct.
47. Concepts of entrepreneurship and entrepreneurs.
48. Wage and non-wage motivation – instruments and examples.
49. Groups of external and internal stakeholders.
50. Quality management – tools and systems.
51. Decision making methods and their essence. Stages of the decision-making process.
52. Information collection methods and their features.
53. The concept of business ethics and ethics and its areas of interest.

Specialty questions:

Business management

1. The process of logistics management in the enterprise.
2. Benchmarking – essence and types.
3. Outsourcing – essence and types.
4. Lean management and kazien.
5. The importance of innovation and barriers to their development.
6. The essence of innovation and their types.
7. Sources of innovation.
8. What models of the innovation process do you know?
9. Business plan - concept, goals, structure.
10. Sources of financing the activities of enterprises.
11. Forms of running a business.
12. Internal and external conditions for the development of the enterprise.
13. The concept of enterprise value and factors shaping it.
14. Describe the property methods of valuing an enterprise.
15. Describe the income methods of valuing an enterprise.
16. Describe methods for estimating the cost of equity capital.
17. Specificity and types of investments.
18. Investment project, its elements and classification criteria.
19. Financing the investment project and risk.

20. Life cycle of an investment project.
21. The concept and types of enterprise development strategies.
22. The concept and types of competitive strategies.
23. Micro-environment - influence on the development of the organization. Objectives and methods of strategic analysis.
24. Macro-environment - influence on the development of the organization. Objectives and methods of strategic analysis.

Human resource management

1. Characteristics of the recruitment and selection process of employees.
2. Examples of systems for classifying personal requirements according to Rodger and Fraser.
3. A five-stage system for analyzing the suitability of a candidate.
4. Recruitment outsourcing – purposefulness, economic justification.
5. The concept of competence management, differences between qualifications and competences, types of competences.
6. Assessment conversation, the essence of the evaluation conversation, and the transfer of information in the organization.
7. Work evaluation process, work analysis procedure, work analysis methods.
8. Application of the 360 degree employee evaluation system.
9. Incentive systems in the organization.
10. Concept and essence of motivation: internal motivation vs. external motivation.
11. Organizational structures conducive to and unfavorable to autotelic motivation.
12. Wage and non-wage elements of the incentive system.
13. Definitions, methods and tools for identifying competences.
14. Competence demand – practical aspects.
15. Creating competence profiles.
16. Identifying and managing talents in an organization.
17. Manager's tasks, skills and tools - coach.
18. Characteristics of tools for developing managerial competences.
19. Practical use of techniques and tools for developing managerial competences.
20. Problems and barriers in the development of managerial competences.
21. Place and role of the employee in the enterprise, groups and employee teams.
22. Team creation process: work schedules, task division, roles, norms, rules.
23. Leader in the organization and leader in the team: sources, attributes, types, roles.
24. Impact of standards and principles on the effectiveness of teams.

Psychology in business

1. Power and managerial influence – sources of power, types of power and their effectiveness.
2. The concept of efficient management and indicators of managerial efficiency.
3. Leadership as a modern approach in managing people.
4. Interpersonal relations in the context of differences in roles and sexes.
5. Opportunities and threats of group action (effect of facilitation, synergy, group thinking).
6. Processes taking place in the group and their impact on decision making, types of groups and teams.
7. Team creation process: work schedules, task division, roles, norms, rules.
8. Conflicts in teams and their resolution, feedback in interpersonal communication.
9. Analysis of social impact rules: reciprocity, social proof of equity, commitment and consistency, authority, liking and affection, unavailability.
10. Economic psychology – irrational human nature.
11. Counteracting corporate pathologies and building „ healthy ” organization.
12. Irrational decision making in risk conditions.
13. Methods and techniques for employee evaluation and employee development.

14. Enterprise assessment systems – forms and reasons for use.
15. Tools for creating an employee development plan.
16. Recognition and management of employee professional goals.
17. Team coaching – specificity and use.
18. Tools for developing managerial competences – discussion of tools.
19. Problems and barriers in the development of managerial competences.
20. Planning a manager development path.
21. Negative and positive effects of conflicts. Phases, stages, stages of conflict. The dynamics of the conflict incident.
22. Types of conflicts: individual, interpersonal, intergroup conflict.
23. Communication chain of information transfer, errors and barriers to communication.
24. Negotiating models according to Fiszer and Ura, 5 negotiation rules.

Sales and marketing

1. Marketing instruments – mix used in trade.
2. Internal marketing in the enterprise.
3. Marketing plan and marketing strategies
4. Trading company – essence, goals, functions, classification.
5. The communication process and its conditions.
6. The essence and functions of Public Relations.
7. Public Relations process phases.
8. Communication and Public Relations in crisis situations.
9. Describe the company's communication system with the market.
10. Describe and provide examples of promotion tools.
11. Communication instruments (promotion) online.
12. Stages of the promotion program.
13. Relationship marketing (partner) – concept, recipients, impact tools.
14. The use of CRM systems in the process of managing customer relationships.
15. Customer loyalty – concept, types, shaping tools.
16. The essence of the brand and the process of its construction.
17. The essence and elements of the marketing strategy.
18. Product and service development strategies.
19. Marketing strategies and creating value for the client.
20. The role of marketing research in building the company's strategy.
21. Typologies of negotiation styles.
22. Describe selected sales techniques.
23. Types of customer purchasing decisions – buyer behavior model.
24. The essence of the sales funnel.

Entrepreneurship

1. The specificity of services.
2. The essence of relationship marketing.
3. Describe the buyers' decision-making process.
4. Profitability of the client and company.
5. The importance of innovation and barriers to their development.
6. The essence of innovation and their types.
7. List the features of the innovation process.
8. Models of the innovation process.
9. The essence of managing the company's operating activities.
10. Describe the stages of developing a new product.
11. The concept and factors shaping production capacity.
12. The essence of resource management.
13. The essence of the team and the stages of its creation.
14. Types of conflicts in teams.

15. Chances and threats arising from teamwork.
16. Leader in the team – role, attributes.
17. Describe the life cycle of enterprises.
18. Methods for analyzing the company's environment.
19. Enterprise development strategies.
20. Methods of managing business development.
21. Classification of entrepreneurs in the light of tax regulations, the concept of small tax-payers.
22. Forms of income tax on small and medium-sized enterprises.
23. Simplified forms of accounting, rules for keeping a tax record of revenues and expenses.
24. Account books and financial statements of small and medium-sized enterprises.

E-business

1. Types of business processes.
2. Business process life cycle.
3. Mechanisms to ensure data integrity in databases.
4. Access control added in databases.
5. The role and skills of a system analyst.
6. Advantages of using CASE software when creating IT systems.
7. Characteristics of the use of the spreadsheet in business calculations.
8. Linear regression models and their applications in business.
9. Comparison of forward simulation analysis and target control.
10. IT system development strategy.
11. Methods of implementing the IT system.
12. Internet application architecture.
13. The role of e-commerce in business.
14. IT infrastructure components.
15. The role of IT systems in achieving competitive advantage.
16. The use of UML in the design of an IT system.
17. Designing the general architecture of the IT system.
18. Model components for supporting business decisions in tourism.
19. Data access technologies in a data warehouse to support decisions.
20. Features of data processing in the Cloud computing model.
21. Web portal construction tools.
22. Architecture of web portals.
23. Organization of a project team in the aspect of IT project management
24. How can the management team use OLAP systems to make better business decisions?

Field of Study: Logistics

Field of study questions:

1. Discuss the essence, purpose, logistics tasks, characterize the system and process approach in logistics.
2. Interpret logistics in the 7 R (formula and describe the components).
3. Explain what the supply chain is, discuss the types of supply chains.
4. Make the characteristics of the selected (logistics) system.
5. Discuss Lean, Agile supply chain strategies.
6. List modern ICT support tools in contemporary logistics.
7. Characterize global logistics systems, describe the selected one.
8. Explain the impact of globalization on – logistics. Give examples.
9. Explain the essence, purpose and tasks of production logistics.
10. Explain what is the customization of production – discuss variants.
11. List the essence and functions of distribution logistics. Discuss distribution channels.
12. Explain the relationship between logistics and marketing – give examples..

13. Explain the role of WMS, EDI, MRP and ERP in contemporary logistics.
14. Explain the concept of material identification, provide differences between the classic bar code compatible with GS1 and RFID?
15. Replace inventory control models, discuss selected, explain the differences.
16. Explain the concepts: PRODUCT, ASSORTMENT, GOODS, LOADS, PRODUCT.
17. Explain the essence and functions of inventory in the supply chain, give reasons for stockpiling.
18. Explain the economic order size model (EWZ / EOQ), its parameters and variants.
19. Explain the concept of ZAPAS, list the types of inventory in logistics.
20. Discuss the ABC and XYZ methods in inventory analysis.
21. Explain the pros and cons of composite packaging.
22. Explain the role of the arithmetic average and standard deviation in shaping the company's purchasing policy.
23. Explain the differences between the bag, angle and through systems in storage.
24. Replace and discuss the technological systems of – magazines explain the differences.
25. Discuss methods for determining the density of petroleum products.
26. Discuss two basic methods of inventory renewal / ordering.
27. Explain the method of the fixed ordering point (of the system based on the information level) and the method of the fixed ordering cycle (of the periodic review system).
28. Discuss the essence of „ BALL MODEL ” in inventory management.
29. Explain the concept of optimization in transport, list decision factors.
30. Discuss the role and function of the warehouse and decision criteria: own or foreign warehouse.
31. Describe the IT infrastructure of logistics processes.

Specialty Questions:

Logistics Manager

1. Characterize the role and tasks of the logistics operator in the supply chain.
2. Discuss the reasons for maintaining inventory in the manufacturing company.
3. Replace and characterize inventory storage methods in the warehouse.
4. Replace and characterize zones in the warehouse.
5. Discuss packaging functions in logistics processes.
6. Discuss the main problems of the decision „ own or foreign transport”.
7. List and characterize modern logistics management methods.
8. Characterize costs in logistics – give examples.
9. Discuss the essence of the FMEA method.
10. Characterize the essence and role of inventory classification including ABC analysis.
11. Discuss the Pareto rule in inventory management.
12. The essence and conditions of the JIT and JIS supply system.
13. List the criteria for choosing a material supplier in a manufacturing company.
14. List and characterize the advantages and disadvantages of rail and road transport.
15. List and characterize the advantages and disadvantages of air and sea transport.
16. Characterize the assumptions of CRM systems.
17. Explain the essence of completing, packaging and order picking in storage.
18. Discuss the pros and cons of indirect and direct distribution.
19. Characterize the features and discuss the tasks of logistics centers.
20. Discuss MRP material demand planning systems.

Information systems and technologies in logistics

1. Discuss the idea of material codification in logistics.
2. Characterize the automatic data identification system.
3. List and discuss IT systems used in logistics.

4. Explain the concept and functionality of WMS (Warehouse Management System) systems.
5. Explain the concept of radio scanning – RFID (Radio Frequency Identification).
6. Discuss the essence of ERP (Enterprise Resources Planning) systems.
7. What is and what the GS1 system in globalization of flows serves.
8. Explain the concepts: DATA, INFORMATION, KNOWLEDGE.
9. What is „ DEEP LEARNING " in the development of AI.
10. Discuss the concept of cybernetics development in relation to the control function.
11. Explain the essence of CIM (Computer Integrated Management Systems).
12. Discuss the evolution of data carriers and the essence of databases.
13. Explain the concept and meaning of BIG DATA.
14. Explain the meaning of codification using laser light.
15. Split bar codes – explain what the EAN-13/8 code is.
16. Explain the concept and meaning of EDI (Electronic Data Interchange).
17. Explain the concept of E-Commerce in logistics.
18. Explain the meaning of ADC (Automatic Data Capture).
19. Explain the role and meaning of (active, passive and semi-passive) transponders.
20. Explain the difference between bar codes, QR and NFC.

Field of Study: Computer Science

Field of study questions:

1. Describe the five-layer model that corresponds to the TCP/IP Internet protocol.
2. Describe the functions of a router in a computer network.
3. What mechanisms are used in TCP to ensure error-free data transmission between stations?
4. Describe the basic types of logical gates.
5. Present the sorting algorithms.
6. List the essential characteristics of object-oriented programming.
7. Present the types of loops using an example of a programming language you are familiar with.
8. Explain the concept of algorithm – describe the characteristics and types of algorithms.
9. Describe the advantages and disadvantages of recursion on example algorithms.
10. Describe CRUD applications.
11. Introduce ways to represent graphs.
12. Discuss the 3 formal forms of relational databases.
13. Discuss the concept of polymorphism in object-oriented programming.
14. Discuss inheritance in object-oriented programming.
15. Introduce the imperative and declarative programming paradigm.
16. What is the difference between get, post, put requests?
17. Discuss the HTTPS protocol.
18. List and describe the basic data types in any classical language programming e.g. C/C++, C#, JAVA.
19. What is the difference between abstract class and interface?
20. Discuss solid principles.
21. Discuss the terms stack and queue.
22. Explain the difference between RGB and CMYK color models.
23. Explain the difference between raster and vector graphics and their purpose.
24. List and describe the main HTML tags necessary to create the basic structure of the web page.
25. List and briefly describe the operators used in genetic algorithms.
26. Present an algorithm for searching in an ordered and unordered set.
27. List and discuss the basic electrical troubleshooting laws.
28. What is the relationship between active, reactive and apparent power in AC elec-

trical systems?

29. When is a series of voltage sources used and when is a parallel connection of voltage sources used?
30. Introduce the exponent of the Fourier series and determine what the amplitude spectrum is and phase spectrum in the signal analysis?

Specialty Questions:

Computer graphics and multimedia

1. How is an image built in raster graphics?
2. What is raster and vector graphics? What are their uses?
3. What is compression of the data in the graphic file and what file format does it use?
4. List and characterize known color models.
5. Describe the image file formats.
6. List and discuss the types of presentation views.
7. What is the "Presenter View" and how is it used during the presentation?
8. What does dpi mean when printing and how do I convert DPI into pixels?
9. Describe the basic rules for preparing files for printing.
10. discuss the need to visualize products and their prototypes.
11. Identify ways of working with the customer and ways of obtaining the data needed to design industrial designs.
12. What is the design principle that is in accordance with the rules of the SWD? Responsive Web Design]?
13. describe the UCD methodology User centered Design].
14. Explain the basic principles of usability.
15. Explain the appropriateness of using consistency in the design of packaging lines.
16. List the methods of forming the grids and the packing punch.
17. Explain the appropriateness of decorating the product and the benefits of such activities.
18. List the ways in which modern trends in graphics and fashion can be obtained.
19. Describe the main features of the graphic style Menphis and the Swiss and Nordic styles.
20. List the main features of the Grunge, Vintage and minimalism graphic styles.

Internet Engineering

1. List and describe the layers of the ISO/OSI network model.
2. Describe the network services and protocols you know.
3. What is the mobile first approach?
4. List and characterize popular frameworks for creating mobile applications.
5. What are the mobile application development solutions for the multiplatform approach and one underlying code?
6. What are the basic software architectures used in the development of mobile applications?
7. List the third services (services, APIs) that can be used to create mobile applications.
8. Characterize the perspective view and compare it to the orthographic view.
9. Introduce the mini-max algorithm for finite-sum games using the play in a circle and cross.
10. On some examples, discuss the importance of JavaScript in online engineering.
11. Describe the JavaScript event handling features.
12. What is the Web framework – list the advantages and disadvantages of using frameworks.
13. What is the difference between get, post, put requests?
14. What CSS Cascading Style Sheets are and what they are used for?

15. Describe the design methods of the graphical interfaces.
16. What is a user interface – describe the features of an interface that is friendly to you user.
17. Describe the client/server architecture based on examples.
18. What is front-end and back-end – discuss the meaning of concepts based on examples.
19. Discuss the basic SQL commands/queries.
20. What are the tools you know to test web applications?

Software engineering

1. List and briefly describe the programming paradigms.
2. Characterize the Object-oriented Programming paradigm.
3 Review and characterize known UML diagrams.
4. Describe the phases of the software lifecycle.
5. Describe the client/server architecture based on examples.
6. Based on examples, discuss the importance of database servers?
7. List compiled and interpreted languages – what are the differences, and what are their advantages and disadvantages?
8. What are the key features of embedded systems – what is different from a desktop PC?
9. Describe a typical microcontroller used in embedded systems.
10. List the known interface types between the microcontroller and other embedded systems.
11. How do we create objects in Java?
12. What are the Java Class Definition components – give an example of the class.
13. How Java inheritance is done – give an example.
14. How does Java differ from JavaScript – give examples of how to apply both Languages?
15. In the example selected, describe the implementation methods for the Java applet.
16. What is front-end and back-end – discuss their importance on the basis of examples.
17. Describe the error handling functions in the selected programming languages.
18. Describe it design methods.
19. List and describe the methods for processing digital images.
20. Describe methods for implementing vector graphics in any programming language.

The security of networks and information and communication systems

1. What measures are taken to ensure the security of the computer system?
2. Discuss firewall operation and packet selection criteria used. ·
3. Identify the difference between circuit-switched and packet-switched networks.
4. Specify the difference between TCP and connectionless UDP.
5 discuss basic local network topologies and their advantages and disadvantages.
6. Describe the importance of secure Socket Shell.
7. Describe the meaning of cryptographic protocols that ensure the security of communication on a computer network.
8. What is symmetric (single key) and non-symmetric (private and public key) cryptography?
9. Use examples to describe the meaning of cryptographic algorithms.
10. Describe the meaning of cryptographic protocols at the layers of the ISO/OSI model.
11. Describe the methods for detecting data transmission errors.
12. Describe methods for correcting data transmission errors.
13. Discuss potential risks and methods of protecting databases.
14. Discuss control mechanisms and strategies for granting access to the database.
15. What are the SQL/NoSQL injection attacks?
16. List and describe data protection tools.
17 describe the types of security threats in operating systems.

18. Discuss the security risks of the online store – what are the ways to address potential threats?
19. Describe how to protect your data in an online store.
20. Describe methods to ensure the security of web applications.

E-business

1. Describe the types of e-commerce.
2. Explain the benefits and limitations of e-commerce.
3. What is Business – describe business activities.
4. Describe the basic assumptions for building a business plan.
5. Characterize B2B, B2C, B2B and C2C e-commerce.
6 Discuss e-commerce development barriers.
7 Discuss the importance of Internet technology for the development of trade.
8. Describe the types of business models in e-commerce.
9. Characterize the importance of electronic services for the development of tourism.
10 Discuss the importance of e-marketing to the development of business.
11 Discuss the role of project management patterns in it consulting.
12. What are the elements of the risk record?
13. Describe business process modeling methods in the BPMN notation.
14. Discuss the trust relationship in the shopping cart analysis.
15. Discuss the support rule in a shopping cart analysis.
16. What are the associativity of products?
17 Discuss trends in e-business system design.
18. What is electronic supply chain management?
19 Discuss the importance of developing information technologies in e-business.
20. What is the importance of e-business for the business of today's business?