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IT Applications in Business

Master Degree

Syllabus

MBA 514

3П 1.1

Specialty: 073 “Management”

Educational program “Business Administration”

Quarter/Year: Fall/2025

ECTS Credits: 6

Instructor: **Ruslana Selezneva, Ph.D.**

US Credits: 3

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Course Description

IT Applications is the study about IT applications for business and management. IT Applications studies the theory of computation and the practice of designing software systems. IT local business-functional applications embedded in business processes, activities, products and/or services. Research and development work in IT area performed to create a situation-specific bridge between new or existing IT hardware and software technologies and the information needs/wants of a customer. The combination of proper hardware, software, and tailored application delivers a well-rounded IT solution for the customer’s problem

Learning Outcomes

Upon successful completion of this course, students will be able to:

PH.2. Identify problems in the organization and justify methods for solving them;

PH.3. Design effective management systems for organizations;

PH.5. Plan the activities of the organization in strategic and tactical sections;

PH.7. Organize and carry out effective communications within the team, with representatives of various professional groups and in the international context;

PH.8. Use specialized software and information systems to solve management problems of the organization;

PH.9. Be able to communicate in professional and scientific circles in the state and foreign languages;

PH.10. Demonstrate leadership skills and ability to work in a team, interact with people, influence their behavior to solve professional problems;

PH.12. Be able to delegate authority and management of the organization (unit)

Competences

IK Ability to solve complex problems and problems in the field of management or in the learning process, involving research and / or innovation in the uncertainty of conditions and requirements

3K2. Ability to communicate with representatives of other professional groups from different levels (with experts from other fields of knowledge / types of economic activity);

3K5. Ability to act on the basis of ethical considerations (motives);

CK2. Ability to set values, visions, mission, goals and criteria by which the organization determines further directions of development, to develop and implement appropriate strategies and plans;

CK4. Ability to effectively use and develop the organization's resources;

CK5. Ability to create and organize effective communications in the management process;

CK6. Ability to form leadership qualities and demonstrate them in the process of managing people;

CK8. Ability to use psychological technologies at work with staff

Internationality: international software, international textbooks.

Communications

For individual issues, students should contact the professor **ONLY** by given e-mail or by Moodle. In the Subject line they should put: UACUFirstNameLastName. E-mail messages will normally be answered within 24 hours.

Note! Only emails sent from the student's corporate email address will be answered.

Student Responsibilities

Time Commitment

The study of technical courses is cumulative (i.e., an understanding of earlier material is necessary to grasp concepts covered later). Past experience has shown a high correlation between procrastination and low grades. Students must be committed to completing tasks on time.

Technical Aspects

The student is obliged to provide himself/herself with all the necessary technical equipment for the educational process (laptop or computer, webcam, headsets or headphones and microphone), as well as access to the Internet.

Only students signed-in with their own first and last name are allowed into video lectures in Zoom.

Grading Policy

The course is based on mastery of course outcomes. Student grades for this course will be calculated based on performance.

Note: the minimal grade to pass a subject is 60%.

Graduate Grading Guidelines

The assignment of a letter grade for a course is an indication of the student's overall success in achieving the learning outcomes for the course. The course letter grade may be viewed as a

summary statement of the student's achievement in individual assessments (assignments & activities). These assessments are intended to identify for students their strengths as well as those areas in need of improvement. Student work is assessed according to the guidelines below.

Course-level Grading guidelines:

Bachelor

Grade	ECTS Grade	International Grade
90% - 100%	A	5 (Excellent)
83% - 89%	B	4 (Very Good)
75% - 82%	C	4 (Good)
70% - 74%	D	3 (Good)
60% - 69%	E	3 (Acceptable)
35% - 59%	FX	Not acceptable, possible repetition of course

Master

Grade	ECTS Grade	International Grade
90% - 100%	A	5 (Excellent)
83% - 89%	B	4 (Very Good)
75% - 82%	C	4 (Good)
70% - 74%	D	3 (Good)
35% - 69%	FX	Not acceptable, possible repetition of course

Criteria for grading:

ECTS grade	Requirements for the student
A	The student demonstrated a comprehensive systemic and in-depth knowledge of program material; processed basic and additional literature; obtained a solid grasp of the conceptual apparatus, methods, techniques and tools provided by the program; found creative abilities in the presentation of the educational program material both on this issue and on related modules of the course and related courses, or the student had a current control of 90-100 points
B	The student demonstrated good knowledge of program material; processed the basic literature, mastered the conceptual apparatus, methods, techniques and tools provided by the program, but with some inaccuracies
C	
D	The student showed mediocre knowledge of the core program material; learned information mainly from a lecture course or just one textbook; mastered only certain methods, techniques and tools provided by the program
E	
FX	The student has significant gaps in knowledge of the main program material; fragmentary mastered the basic concepts, techniques and tools;

significant mistakes are made when using them

Maximum total possible points – 180 points incl. (Midterm and Final exam are 50% of overall evaluation, where Midterm – 20% and Final – 30%)

Test / Assignment / Project – 3/3/3 points (35-40% of the total for the course are tasks taken or presented exceptionally during the class)

Midterm exam – 36 points

Final exam – 54 points

Student Workload

It is assumed that for each out of 17 class sessions a student spends about 10.5 academic hours of work. This includes 3.5 academic hours of lectures with the instructor and 7 academic hours of personal work. Personal work includes task completion.

Please pay attention that 1 academic hour equals to 40 minutes.

Assignment Format

All work should be shown in time. If the student misses the deadline – the task is failed.

Midterm covered topics from previous lectures (weeks 1-7). It included multiple choice questions and cases (essays) and took about 45 min.

The Final exam covered all course material and included multiple choice questions and cases (essays). It lasts for 1.5 hours. Admission to the Final exam is possible only if all the tasks of the curriculum are covered.

After the Midterm and Final is graded a student has access to the grade only. Access to the attempt, corrects answers and information whether the answer is correct cannot be granted.

Academic dishonesty

·Academic integrity is submitting one's own work and properly acknowledging the contributions of others. Any violation of this principle constitutes academic dishonesty and is liable to result in a failing grade and disciplinary action. Forms of academic dishonesty include:

1. Plagiarism – submitting all or part of another's work as one's own in an academic exercise such as an examination, a computer program, or written assignment.
2. Cheating – using or attempting to use unauthorized materials on an examination or assignment, such as using unauthorized texts or notes or improperly obtaining (or attempting to obtain) copies of an examination or answers to an examination.
3. Facilitating Academic Dishonesty – helping another commit an act of dishonesty, such as substituting for an examination or completing an assignment for someone else.
4. Fabrication – altering or transmitting, without authorization, academic information or records.
- 5.

·Midterm and Final are valid only if they are taken on-campus (room defined by the dean's office) and on UACU's computer/laptop or online on the student's computer/laptop using Zoom and other conditions defined by the dean's office to avoid the cases of academic dishonesty. Students who will not meet this requirement will be expelled from the course with grade "0".

·In case of missed Midterm or Final exam (for a valid reason like sickness or an emergency) a request to repeat the exam is possible. Permit to repeat a midterm or final exam is done through a letter to the dean's office with request and approval of subject lecturer.

·Submission or retaking of any assessment activities after deadlines are forbidden.

Submission & Return Policy

Assignments must be submitted to the professor on or before the due date indicated in the Course Schedule. The assignments submitted after the due dates receive zero points.

**** NO MAKE –UP QUIZZES AND EXAMS****

Schedule

Lecture	Research Projects	Assignments Due	Points
1	Concepts of data, information, and computer-based information systems, impact of information technology on business (business data processing, intra-organizational and inter-organizational communication by using network technology, business process, and knowledge process outsourcing)	Test/Assignment	3/3
2	Types of Information Systems	Test/Assignment	3/3
3	Transaction Processing System (TPS)	Test/Assignment	3/3
4	Management Information System (MIS)	Test/Assignment	3/3
5	Decision Support System (DSS)	Test/Assignment	3/3
6	Knowledge Management System (KMS)	Test/Assignment	3/3
7	Recent trends in information technology (brief ideas): enterprise computing, mobile communication, smart card, AI	Test/Assignment	3/3
	Midterm (8 th class) 20% out of total amount of points for the course	Test	36
8	Data Base Management System for business (part 1) Concept of Data Base Management System, Important terms of Database [including Entity, Attribute, Primary Key, Foreign Key, Candidate Key, Referential integrity, Table, Views, Data Dictionary]. Types of databases [hierarchical, network, and relational]. Basic ideas of Data Warehouse and Data mining.	Test/Assignment	3/3
9	Data Base Management System for business (part 2) Creation of Tables, Defining Primary key; Multiple Table Handling – Defining Relationship, Foreign	Test/Assignment	3/3

	Key; Generating simple and Conditional Queries. Types of queries [Update, Delete, Append]; Designing Forms and Reports.		
10	Introduction to Internet for business applications Meaning of Internet. Concepts of Internet Intranet and Extranet, IP Address (IPv4, IPv6), URL, Domain name System. Internet Protocols - TCP/IP, UDP, FTP, TELNET,(brief ideas only). HTML, DHTML, AND XML	Test/Assignment	3/3
11	Data Communication: Concept of Data communications, Transmission Modes [Simplex, Half-Duplex, Full Duplex, Serial, Parallel, Synchronous, Asynchronous], Communication Media. Wireless and satellite communication, Wireless Broadband, WAP, Network components – Bridge, Switch, Router, Gateway. Computer Networks: Network Concept, Types: LAN, WAN, MAN, VAN, SAN.	Test/Assignment	3/3
12	Cloud IT solutions for business	Test/Assignment	3/3
13	Security Issues for business Security threats - Virus, Trozan, Hacking, Spam. Security Measures - Firewall, Antivirus software, Digital Signature. Concept of data Encryption & Decryption. Symmetric and asymmetric encryption. Digital Envelope	Test/Assignment	3/3
14	Financial Accounting Package and its Implementation	Test/Assignment	3/3
15	Artificial Intelligence (AI) for business	Test/Assignment	3/3
	Final (17 th class) 30% out of total amount of points for the course	Test	54

Recommended Materials

1. Alter, S (2013). Work System Theory: Overview of Core Concepts, Extensions, and Challenges for the Future. *Journal of the Association for Information Systems*. 14 (2): 72-121. doi:10.17705/1jais.00323.
2. Alter, S. (2003) 18 Reasons Why IT-Reliant Work Systems Should Replace 'The IT Artifact' as the Core Subject Matter of the IS Field, *Communications of the Association for Information Systems*, 12(23), Oct., pp. 365-394, <http://aisel.aisnet.org/cais/vol12/iss1/23/>
3. Alter, S. (2006) *The Work System Method: Connecting People, Processes, and IT for Business Results*. Works System Press, CA

4. Bacon, C. James; Fitzgerald, Brian (2001-04-01). A systemic framework for the field of information systems. *ACM SIGMIS Database: The DATABASE for Advances in Information Systems*. 32 (2): 46–67. doi:10.1145/506732.506738. ISSN 0095-0033. S2CID 15687595.
5. Beynon-Davies P. (2009). Business Information Systems. Palgrave, Basingstoke
6. Bulgacs, Simon (2013). The first phase of creating a standardised international innovative technological implementation framework/Software application. *International Journal of Business and Systems Research*. 7 (3): 250. doi:10.1504/IJBSR.2013.055312. Retrieved 2015-11-02.
7. D'Atri A., De Marco M., Casalino N. (2008). Interdisciplinary Aspects of Information Systems Studies, Physica-Verlag, Springer, Germany, pp. 1-416, doi:10.1007/978-3-7908-2010-2 ISBN 978-3-7908-2009-6
8. Information Services. *Directory*. Australian Government. 2 June 2017. Archived from the original on 27 March 2022. Retrieved 6 March 2021.
9. Information Services. *Ramsey County*. 12 September 2015. Retrieved 6 March 2021.
10. information system. *BusinessDictionary.com*. Archived from the original on 2020-08-11. Retrieved 2014-09-21.
11. Information Systems. 2020-11-12.
12. Information Systems. *Principia Cybernetica Web*.
13. Information Technology vs Information Systems: What's The Difference?. *CityU of Seattle*. 2020-01-16. Retrieved 2021-11-13.
14. Jessup, Leonard M.; Joseph S. Valacich (2008). Information Systems Today (3rd ed.). Pearson Publishing. Glossary p. 416
15. Kroenke, D M. (2008). Experiencing MIS. Prentice-Hall, Upper Saddle River, NJ
16. Kroenke, D. M. (2015). MIS Essentials. Pearson Education
17. Laudon, K.C. and Laudon, J.P. Management Information Systems, Macmillan, 1988.
18. Marc S. Silver, M. Lynne Markus, Cynthia Mathis Beath (Sep 1995). The Information Technology Interactive Model: A Foundation for the MBA Core Course. *MIS Quarterly*: 361–390.
19. Neumann, Gustaf; Sobernig, Stefan; Aram, Michael (February 2014). Evolutionary Business Information Systems. *Business and Information Systems Engineering*. 6 (1): 33–36. doi:10.1007/s12599-013-0305-1. S2CID 15979292.
20. O'Hara, Margaret; Watson, Richard; Cavan, Bruce (1999). Managing the three levels of change. *Information Systems Management*. 16 (3): 64. doi:10.1201/1078/43197.16.3.19990601/31317.9. Retrieved 25 November 2018.
21. O'Brien, J A. (2003). Introduction to information systems: essentials for the e-business enterprise. McGraw-Hill, Boston, MA
22. Piccoli, Gabriele; Pigni, Federico (July 2018). Information systems for managers: with cases (4.0 ed.). Prospect Press. p. 28. ISBN 978-1-943153-50-3. Retrieved 25 November 2018.
23. Rainer, R. Kelly Jr, and Casey G. Cegielski. Introduction to Information System: Support and Transforming Business Fourth Edition. New Jersey: John Wiley and Sons, Inc., 2012. Print.
24. Rockart et al. (1996) Eight imperatives for the new IT organization Sloan Management review.
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26. *Stair, Ralph (2020). Principles of Information Systems. George Reynolds (14th ed.). Mason, OH: Cengage. ISBN 978-0-357-11252-6. OCLC 1305839544.*
27. *The Joint Task Force for Computing Curricula 2005. Computing Curricula 2005: The Overview Report (pdf) Archived 2014-10-21 at the Wayback Machine*
28. *Vladimir Zwass (2016-02-10). Information system. Britannica.*
29. *What is Information Systems or Information Services (IS)? Definition from Techopedia. Retrieved 6 March 2021.*
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** The above schedule and procedures are subject to change in the event of extenuating circumstances.*

Протокол засідання кафедр № 4 від 26.08.2025 року

Проректор з навчально-методичної роботи



Л.І.Кондратенко

Завідувач кафедри



А.В.Кінаш

Викладач



Р.В.Селезньова

