SLC. MS.040. LSO9001. 1693

SYLLABUS

INTERNATIONAL EUROPEAN UNIVERSITY

EUROPEAN SCHOOL OF BUSINESS

Human-machine interaction
Educational program «Software engineering»

2024

SYLLABUS

1 Name of the course and educational program

Human-machine interaction
Educational program “Software engineering”

2 Course description

The subject of study of the educational discipline "Human-machine interaction" is modern and effective principles of "front-end" software design and formal methods and approaches to the description of the process of human-machine interaction, as well as relevant software tools. Therefore, the main tasks of studying this discipline are mastering various software design methodologies, taking into account their advantages and disadvantages; study of principles of organization of interaction of software objects; to develop the skills of using the acquired knowledge to solve the problems of designing interfaces of information systems and technologies.

3 Study prerequisites

The educational discipline is related to the disciplines "Algorithms and data structures", "Object-oriented programming", "Fundamentals of software engineering".

4 Amount of credits/hours

4 ECTS credits/ 120 hours

5 Training format

Blended learning

6 Classroom location

Audience 405. https://dist.ieu.edu.ua/course/index.php?categoryid=495

7 Information about the teacher

Svitlana Proskura, teacher of the Department of Information Technologies

8 Department

Department of Information Technologies

9 Office location

Kyiv, Akademika Glushkova Ave., 42 B, room 505

SYLLABUS

10 Schedule of counseling

Every Monday from 12:00 to 16:00 with prior appointment via corporate mail

11 E-mail of the teacher

svitlana_proskura@ieu.edu.ua

12 Course objectives

Students receive thorough theoretical training, knowledge of basic methodological principles and familiarization with instrumental software tools used in the activities of developers of "front-end" software tools, providing theoretical and engineering training of specialists in the field of design and development of information.

13 The role of academic discipline in achieving program results

PR08. Be able to develop a human-machine interface..
PR13. Know and apply methods of developing algorithms, data structures and
of knowledge.
PR18. Know and be able to apply information technologies for data processing, storage and transmission.

14 Learning outcomes

Know:
- peculiarities of human perception of information;
- models and principles used in the design of interfaces;
- dialogue devices and modes;
- methods of computer representation and visualization of information;
- paradigms and principles of human-computer interaction environment;
- criteria for evaluating the usefulness of dialogue systems;
- about trends in the development of user interfaces, new computer technologies and methods of
- increasing the usefulness of software systems that are developed and used.

Be able:
- escribe and build describe the interaction with the computer environment in the given problem area;
- use libraries of dialog control;
- using custom development support programs interfaces to create an environment of human-machine interaction;
- develop a human-machine interface;
- describe events of interactive interaction as a system.

SYLLABUS

15 Course content

Chapter 1. Introduction to the discipline. UI quality criteria.
Topic 1. Introduction to the discipline.
Topic 2. User interface quality criteria.
Chapter 2. Design of user interfaces.
Topic 3. Principles and paradigms.
Topic 4. Design environments and tools.
Topic 5. Mobile and desktop interfaces.
Topic 6. Principles of "front-end" software design.
Topic 7. Prospects for UI development.
Topic 8. Information security of the human-machine interaction process.

16 Course materials and requirements

1. Eric Freeman, Elizabeth Robson. Design patterns, Trans. from English 2020. 672c.
2. Minasy M. Graphic user interface: design secrets: Trans. with English Mir, 1996.
3. Coates R., Vleymink I. "Human - computer" interface. Trans. with English Peace. 1990. 501 p.
4. Jakob Nielsen, Raluka Boudiu Mobile Usability. How to create perfectly user-friendly applications for mobile devices, 2013. 213 p.
5. Bondarchuk A. P. User interface design: training. manual. Electronic resource Kyiv, 2017. 110 p.
6. Scott B., Neil T. Design of web interfaces. Trans. from English Symbol-Plus, 2010, 352 p.
7. Jennifer Tidwell. Designing Interfaces. O Reilly, 2010. 575 p.
8. Interfaces and usability Resource access mode: https://www.livelib.ru/selection/744100-interfejsy-iyuzabiliti.
9. Visual Paradigm. Resource access mode: https://online.visual-paradigm.com/
10. UX Planet. Mode of access to the resource: https://uxplanet.org/.
11. Interaction Design Foundation. Mode of access to the resource: https://www.interaction-design.org/ 5. Figma learn. Resource access mode
12. Figma Learn - Help Center 6. Virtual Reality Modeling Language. Regime access to the resource.
13. VRML Tutorial (techiwarehouse.com).
14. ReadyMag learn. Resource access mode: Learn (readymag.com)
15. Gopfish. Resource access mode

17 Technical requirements for working on the course

To work on the Human-Machine Interaction course, you need regular access to a computer and the Internet.
In order to successfully study and pass the exam from the training course, you need to constantly familiarize yourself with the materials posted on the university's remote platform (Moodle) in the Human-Machine Interaction course. You also need to create reporting documents for the performance of laboratory work and upload them to the platform. You can use the remote platform only from your corporate mail account.
If it is impossible to access the platform or the course, you must notify the dean's office or the headmaster, or the course instructor directly.

SYLLABUS

18 Learning process

The process of studying the course "Human-Machine Interaction" includes lectures and laboratory sessions.
During the lectures, such teaching methods as lecture, lecture-conversation, discussion, discussion of problematic issues, demonstration, and analysis of various situations will be used according to the topic of the lectures.
During laboratory classes, such teaching methods as surveys, testing, performance of individual tasks, performance of analytical and calculation works, solved specific problems and situations will be used).

19 Signs of discipline

Term of teaching	**Semester**	**International Disciplinary integration**	**Course study**	**Cycles: general training/ professional training/ free choice**
1 semester	6rd semester	No	3ty course	Cycle of professional training

20 Evaluation policies

You will have different ways to demonstrate your knowledge and skills throughout the semester. This includes how you attend class, how and what you contribute to topic discussions, how you complete and complete lab assignments and tests on time, how you complete independent work assignments, and the ability to present your work. In addition, it is possible to perform tasks that are performed individually or in a small group in the form of a student scientific work.

Activities during the semester	**Maximum number of points during the semester**
Current work (attendance, monitoring of lectures, Performing laboratory work)	32
Tests (8)	24
Performance of independent work	4
Total current work Credit	**60**
Exam	**40**
TOTAL	**100**

21 Rating scale

The grade for the discipline is defined as the sum of the points scored for the current activity in the semester. Each module includes an assessment score for the student's current work. Module control activities are carried out upon completion of the study of the taught material of this module. The minimum number of points for the current educational activity, which allows the discipline to be counted as completed, must be at least 60. The maximum point for the discipline is 100.
The total grade for studying the discipline is set according to the national and European scale (EKTS).
The overall final grade in points, according to the national scale and according to the ECTS scale, is entered in the student's assessment and examination information, study card and student's assessment book.

Rating scale: national and ECTS

<table>
<tr><td rowspan="2">The sum of points for all types of educational activities</td><td rowspan="2">Evaluation ECTS</td><td colspan="2">Evaluation on a national scale</td></tr>
<tr><td>for an exam, course project (work), practice</td><td>for credit</td></tr>
<tr><td>90-100</td><td>A</td><td>perfectly</td><td rowspan="5">Enrolled</td></tr>
<tr><td>82-89</td><td>B</td><td rowspan="2">good</td></tr>
<tr><td>74-81</td><td>C</td></tr>
<tr><td>66-73</td><td>D</td><td rowspan="2">satisfactorily</td></tr>
<tr><td>60-65</td><td>E</td></tr>
<tr><td>30-59</td><td>FX</td><td>unsatisfactory with possibility reassembly</td><td>not counted with the possibility of retaking</td></tr>
<tr><td>1-29</td><td>F</td><td>unsatisfactory with mandatory repeated sstudy of the discipline</td><td>not enrolled with mandatory repeated study of the discipline</td></tr>
</table>

22 How to find out your score

To check your assignment grades and read the teacher's comments, you need to check the relevant tabs on the distance learning platform (Moodle) in this course.
You can also get information about the received grades in the joint chat of the subject group (Viber or Telegram) or directly from the course instructor via corporate mail, messengers or by appointment on the days of consultations.

23 Course policies

For the productive educational and cognitive activity of the applicants when studying the discipline, thematic lectures are held and practical classes are conducted in the form of laboratory works.

In classes and during his stay at the university, the student must treat teachers, staff and other students with respect, attend classes according to the schedule, come on time and not leave the classroom without the teacher's permission. It is necessary to complete all academic tasks and their work within the specified time.

The teacher, in turn, must constantly raise his professional level, pedagogical skill, general culture, provide conditions for students to master educational programs at the level of mandatory requirements for the content, level and scope of education, promote comprehensive professional development of students. It is mandatory to follow the educational and thematic plan, not to be late for classes, not to allow any manifestations of corruption, discrimination, bullying, harassment and oppression of the rights of those seeking education.

Education is based on the application of active learning methods. Active participation is expected and the norm. Attendance and active participation make up 80% of the grade. A student who, for good reasons, documented, was not subject to current control has the right to undergo current control within a two-week period after returning to studies.

A student who was absent from classes without valid reasons, did not participate in current control activities, did not liquidate academic debt, is not allowed to take the final semester control of knowledge in this discipline, and on the day of the exam in the examination information by a scientific and pedagogical employee the grade "not admitted" is issued. Retaking the exam in the discipline is prescribed on the condition that all types of educational, independent (individual) work provided for in the work curriculum of the discipline are performed, and is carried out in accordance with the liquidation schedule approved by the directorate.

The academic integrity of any institution of higher education requires integrity in teaching and research, so academic integrity is required of all MEU students. Academic dishonesty is prohibited in all programs at our university. All participants in the educational process are guided by the principles of academic integrity.

24 Completing the task late, correcting grades, working out

Assignment reports must be uploaded to Moodle by the due dates specified in the course schedule. Best practice would be to complete assignments as soon as possible after receipt to allow enough time to actively participate in class. If more time is needed to complete the task, flexible deadlines are available. Completed assignments are accepted for full credit until the last class in the discipline on the schedule, after which 40% partial credit based on the grade received will be awarded within a week of the last day of class. Assignments that were not submitted at all will receive 0.

If classes are missed for more than one week due to illness or other reasons, it is necessary to contact the teacher to agree on alternative options for completing tasks. Deadlines work both ways, and meeting them ensures that your instructor provides timely feedback on your assignments to ensure you stay on course.

25 Teacher's response time (about checking assignments)

Via corporate mail (within 24 hours), via messengers (within 1-2 hours).

26 Effective communication

Effective communication is essential to success in this course, we recommend using the following channels:
Forum of questions and answers: for general course questions, you need to check the FAQ section in Moodle and then post your question in the Q&A forum to ask your colleagues or the instructor (guaranteed to receive a notification by e-mail every time a new publication or an answer to a question appears);
E-mail: have a personal question related to studying the course, write to the teacher directly;
Social networks, messengers: personal communication with classmates, teacher;
Face-to-face meeting: communication with classmates during classes and with the teacher on consultation days.

27 Policy of publication and distribution of course materials

Students may not post, publish, sell, or otherwise publicly distribute course materials without written Permission the teacher. Such materials include: lecture notes, slides (presentations) of lectures, video or audio recordings, tasks, problem sets, tests, other students' works and answers, etc. Students who sell, post, publish, or distribute course materials without written permission or otherwise may be subject to disciplinary action, up to and including withdrawal.
The use of generative AI is permitted subject to adherence to the principles of academic integrity.

28 Expected workload and involvement of students

Approximately 2-3 hours per week should be allocated to work in this course. If circumstances arise that force you to spend more time on one of the tasks, you must inform the teacher by e-mail (messenger).
An extension of the submission deadline is possible only under the condition that the teacher is informed in advance that it is impossible to submit the assignment by the specified time. Students are expected to have a backup plan in case of computer malfunctions or Internet outages.

29 Support services

Electronic schedule: https://rozklad.ieu.edu.ua
Online library: https://onlinelibrary.ieu.edu.ua
Repository: https://sed.ieu.edu.ua/index.php/sed/index
Educational Ombudsman: https://ieu.edu.ua/pro-mieu/ombudsmen

SYLLABUS

30 Course schedule

Topic name	Content of practical class
Topic 1. Introduction to the discipline	1. Control on lectures 2. Laboratory work 1 - Analysis of the subject area, розробки writing of usage scenarios 3. Questions submitted for independent study - Goals and styles of assessment, assessment at the design stage, formal methods of dialogue analysis for dead ends. 4. Tests
Topic 2. Criteria of user interface quality .	1. Control on lectures 2. Laboratory work 2 – Projection the design of a mobile application; 3. Questions submitted for independent study - Requirements for help systems, help when pointing to an object, hypertext documentation. 4. Tests
Topic 3. Principles and paradigms	1. Control on lectures 2. Laboratory work 3 - Prototyping user interaction with the interface 3. Questions submitted for independent study - Systems of intellectual assistance, educational systems, design of assistance systems. 4. Tests
Topic 4. Design environments .	1. Control on lectures 2. Laboratory work 4 - Creation of mobile application interface with Figma frameworks 3. Questions submitted for independent study - Assessment of implementation, assessment of reaction time, dialogue integrity. 4. Tests
Topic 5. Mobile and desktop interfaces .	1. Control on lectures 2. Laboratory work 5 - Adaptive blocks based on the Auto Layout function 3. Questions submitted for independent study - A graphical subsystem for creating user interfaces in Windows applications. 4. Tests
Topic 6. Principles of frontend software design	1. Control on lectures 2. Laboratory work 6 - Designing front-end image of the site by means of Readymag 3. Questions submitted for independent study - Designing front-end image of the site by means of Readymag. 4. Tests
Topic 7. Prospects for UI development	1. Control on lectures 2. Laboratory work 7 - Multimedia environment 3. Questions submitted for independent study - Multimedia environment — computer support for speech, video on demand, interactive television, computer telephony. 4. Tests
Topic 8. Information security of the human-machine interaction process	1. Control on lectures 2. Laboratory work 8 - Setting properties of browsers and mail systems 3. Questions submitted for independent study - Testing the quality of protection by simulating phishing using the free GOpfish software. 4. Tests

31 Tips for successful study

The goal is unique to everyone, but its correct setting greatly affects the result, as well as the learning process. For example,

- processing the materials of the theoretical component (lectures) of the discipline will provide insight and knowledge about the
- development process and the architecture of the OS itself, and the implementation of the practical component - the acquisition
- of practical skills in the use of methods and tools for creating system software. After all, any training that follows a clear plan and
- with a serious attitude to the material will always be successful.

So, if you want to successfully master this subject, you must be:

- persistent, attentive and inquisitive;
- creative and cheerful, open to communication and discussions
- ready to receive information and knowledge on the subject not only during lectures, but also during extracurricular hours

See you soon!