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SYLLABUS

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BUSINESS ARS EST

IEU
INTERNATIONAL EUROPEAN UNIVERSITY

EUROPEAN SCHOOL OF BUSINESS

Web Application Programming
Educational program «Software engineering»
«Information systems and technologies»

2024

SYLLABUS

1	Name of the course and educational program

Web Application Programming
Educational program "Software engineering"

2	Course description

The subject matter of the Web Application Programming academic discipline is the design and development of web pages and Internet applications. Key objectives include providing students with theoretical knowledge and practical skills in programming web applications.

3	Study prerequisites

The academic discipline is related to such disciplines as Fundamentals of Programming, Fundamentals of Software Engineering, Object-Oriented Programming, Computer Networks, and Databases and Knowledge Bases.

4	Amount of credits/hours

3 ECTS credits/ 90 hours

5	Training format

Blended learning

6	Classroom location

Room 405. https://dist.ieu.edu.ua/enrol/index.php?id=742

7	Information about the teacher

Svitlana Proskura

8	Department

Department of Information Technologies

9	Office location

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

10	Schedule of counseling

Every Monday from Tuesday from 2 p.m. to 3:30 p.m. by appointment via corporate e-mail

11	E-mail of the teacher

svitlana_proskura @ieu.edu.ua

SYLLABUS

12	Course objectives

To provide students with basic knowledge, skills, and abilities to design and develop websites and web applications.

13	The role of academic discipline in achieving program results

PLO 4. To know and apply professional standards and other regulatory documents in the software engineering sector.

PLO 7. To know and apply the fundamental concepts, paradigms and key operational principles of language, instrumental and computational software engineering tools in practice.

PLO 8. To be able to develop a human-machine interface.

PLO 15. To be motivated in selecting programming languages and development technologies to solve problems of creating and maintaining software.

14	Learning outcomes

Know:
- the current level of information system technologies, programming, and the use of applied and specialized computer systems and environments for their implementation in professional activities;
- the structure of an HTML document;
- Cascading Style Sheets (CSS), including key CSS properties;
- the main components of the Document Object Model (DOM).
- rules for using and key elements of the JavaScript language;

Be able:
- develop the structure of an internet application.
- use Cascading Style Sheets (CSS) for formatting web pages.
- utilize JavaScript to work with the main objects of an HTML document.
- design a database for use in dynamic websites.
- use JavaScript to write scripts and connect to databases.
- solve complex specialized tasks and practical problems in a specific field of professional activities or study.
- develop appropriate software as part of information management systems and decision-support technologies.

15	Course content

CONTENT MODULE 1. STRUCTURE OF AN HTML DOCUMENT. STYLING AN HTML DOCUMENT

Topic 1.1. Structure of an HTML document. Main tags and attributes.

Topic 1.2. Styling elements of an HTML document.

CONTENT MODULE 2. HTML DOCUMENT LAYOUT

Topic 2.1. HTML document layout. Block model. Flexbox.

Topic 2.2. Element positioning. Responsive layout. Media queries

CONTENT MODULE 3. PROGRAMMING WEB APPLICATIONS IN AVASCRIPT

Topic 3.1. Variables. Constants. Data types.

Topic 3.2. Objects.

Topic 3.3. Callback functions.

CONTENT MODULE 4. DOCUMENT OBJECT MODEL (DOM)

Topic 4.1. Document Object Model (DOM).

Topic 4.2. Node.js.

Topic 4.3. Asynchronicity.

Topic 4.4. HTTP requests.

16	Course Books and materials

1. HTML Textbook. w3schools.com. https://w3schoolsua.github.io/html/index.html
2. HTML. Language for creating web pages. w3schools.com. In Ukrainian. https://w3schoolsua.github.io/index.html#gsc.tab=0
3. HTML Tag Reference. https://w3schoolsua.github.io/tags/index.html
4. CSS Textbook. w3schools.com. https://w3schoolsua.github.io/css/index.html#gsc.tab=0
5. HTML. Language for creating web pages. W3Schools in English. https://w3schoolsua.github.io/index_en.html#gsc.tab=0
6. HTML Tutorial. https://w3schoolsua.github.io/html/index_en.html#gsc.tab=0
7. HTML and CSS Textbooks. https://htmlbook.at.ua/news/tutorial_html/1-0-1
8. Learn to Code. With the world's largest web developer site. https://www.w3schools.com/
9. Ukrainian Web Guide. https://css.in.ua/
10. Guide to HTML tags. https://css.in.ua/html/tags
11. Guide to HTML tags. https://html-css.co.ua/dovidnuk-html-tags/
12. HTML Design. http://htmlbook.in.ua/
13. http://htmlbook.in.ua/tegs-html/
14. http://htmlbook.in.ua/pr01-html/
15. CSS-TRICKS. GUIDES. ARTICLES. https://css-tricks.com/

17	Technical requirements for working on the course

To work on the Web Application Programming 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 Web Application Programming 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.

18	Learning process

The process of studying the course "Web Application Programming" 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	5th semester	No	3rd year	Professional training course

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, control during the lecture)	12
Tests (8)	12
Performance of laboratory work	30
Performance of independent work	6
Total current work Credit	**60**
Pass/Fail test	**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.

SYLLABUS

Rating scale: national and ECTS

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

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.

SYLLABUS

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

30	Course schedule

Topic name	Content of practical class
Topic 1.1. Structure of an HTML document. Main tags and attributes. Topic 1.2. Styling elements of an HTML document.	▪ Control during the lecture; ▪ Tasks for independent work: Evolution of programming economics ▪ Laboratory work No. 1. Developer tools. Integrated Development Environment (IDE) ▪ Tests
Topic 2.1. HTML document layout. Block model. Flexbox. Topic 2.2. Element positioning. Responsive layout. Media queries.	▪ Control during the lecture; ▪ Tasks for independent work: The relationship between labor intensity and the cost of software development. ▪ Laboratory work No. 2. Text formatting. Google Fonts service ▪ Tests.
Topic 3.1. Variables. Constants. Data types. Branching and loops in JavaScript. Array methods. The for...of Loop. Functions. Scope. Pseudo-Array arguments.	▪ Control during the lecture; ▪ Tasks for independent work: Measurement of software size ▪ Laboratory work No. 3. Inline-block elements ▪ Tests.

Topic 3.2. Objects. Properties and methods of an object. Array of objects. Spread and rest operations. Object destructuring. Topic 3.3. Callback functions. The forEach method. Arrow functions.	▪ Control during the lecture; Tasks for independent work: Ranking and assessing the complexity of external inputs ▪ Laboratory work No. 4. Arrays. for...of loop. Array methods ▪ Laboratory work No. 5. Implicit return. Callback functions. ▪ Tests
Topic 4.1. Document Object Model (DOM). Properties and attributes. Events. Event object. Event delegation. Topic 4.2. Node.js. NPM Package Manager. Webpack. JSON Format. Web Storage. Web Storage API. Local Storage.	▪ Control during the lecture; ▪ Tasks for independent work: Principles of algorithmic modeling of software development labor intensity ▪ Laboratory work No. 6. Implicit return. Callback functions. ▪ Laboratory work No. 7. addEventListener() and removeEventListener() methods. ▪ Tests
Topic 4.3. Asynchronicity. Promises. Topic 4.4. HTTP requests. REST API. AJAX. Cross-domain requests. Pagination. CRUD.	▪ Control during the lecture; ▪ Tasks for independent work: Overview of alternative parametric models. ▪ Laboratory work No. 8. WEB-Storage. Web Storage API. ▪ Laboratory work No. 9. Pagination. CRUD ▪ 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!