FACULTY OF ENGINEERING
STUDY COURSE DESCRIPTION

Course Title:	**Web technologies and secure websites**
Course code (LAIS):	*The course code is assigned after it is registered in the study information system.*
Study programme:	**Information technology**
Level of Study programme:	☐ 1st level professional higher education
	☒ Professional Bachelor
	☐ Professional Master
	☐ Academic Master
	☐ PhD level
Type of Study programme:	☒ Compulsory course (Part A)
	☐ Professional specialization courses (Part B, compulsory)
	☐ Professional specialization optional courses (Part B, optional)
	☐ Elective courses (Part C)

Course Workload:	**Credits[1]**	Academic hours	Contact hours	Independent work hours
Full time:	6	150	60	90
Part time:	6	150	18	132

Course Author/ Tutor:	**Imelda Zadeja**
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	Consultation: according to the schedule for each semester
Study Form:	Full time studies/Part time studies
Study year, semester:	2nd year, 4th semester
Language:	English
Prerequisites for the Course:	none
Course Summary:	The purpose of this course is to provide an overview of the World Wide Web architecture and web technologies. It focuses on practical skills for creating websites using HTML, CSS, Bootstrap, JavaScript, PHP, and MySQL databases, as well as content management systems. Students will also gain an understanding of the principles behind programming languages JavaScript and PHP, along with the benefits of using CMS platforms, such as WordPress, for diverse web projects.
Assessment:	Exam Independent study of literature on lecture topics, practical works, group work - practical realization of the project, presentation of group work.
Requirements for Credits:	1. Successful completion of workshops/practical work assignments (at least 60% points of totally available). 2. Successful pass the exam (at least 60% points of totally available). 3. Successful completion of project work assignment (at least 65% points of totally available). Final assessment consists of: practical work assignments, group work evaluations; project work assignment, project work assignment presentation and exam. All practical work assignments have to be accepted (i.e. at least with 60% evaluation) in order to get the final evaluation within this course. 150 points system is used to come up with final evaluation. Table below lists totally available points for each activity.

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[1] *Eiropas kredītpunktu pārneses un uzkrāšanas sistēmas studiju uzskaites vienība*

Work assignment or activity	Points
Practical work assignments	40
Exam	40
Participation in class work activities	10
Project work assignment	50
Project work assignment presentation	10
Total	**150**

Final course evaluation (mark) calculation based on 150 points system is done as it follows below:

>= 93% (139-points) = 10   >= 75% (112-points) = 6
>= 90% (135-points) = 9   >= 70% (105-points) = 5
>= 85% (127-points) = 8   >= 65% (97-points) = 4
>= 80% (120-points) = 7   < 65% (97-points) = 3

Missing practical work assignment deadline: each missed day counts for subtraction of 5% from totally available points. It is required to acquire at least 60% from totally available points (not counting potential delay) in order to accept practical work assignment as done. There is provided a template which must be used for documenting practical work assignments – otherwise practical work assignment is not accepted for evaluation.

Students are permitted to use AI tools to support learning and development in this course, such as for exploring concepts, and debugging. However, these tools must not be used to complete assignments, projects, quizzes, or exams in a way that constitutes academic dishonesty. Use of AI should enhance the understanding and not replace their own work. Misuse of AI tools for cheating or plagiarism will be treated as a violation of the academic integrity policy.

Abiding by the Academic Ethics	Students must abide by the academic and research ethics, Vidzeme University of Applied Sciences Ethics Regulations, incl.: - study papers must be independently developed; - the study work should reference all statements, ideas and data used that have been authored by someone else; - appropriate data acquisition methods should be used in the acquisition of data, the research ethics must be respected, empirical data must be collected independently and cannot be distorted or falsified; - the examination must be carried out by the student independently, without the use of supporting materials and/or consultations with other students, unless the lecturer states otherwise. In the event of non-compliance with the academic and research ethics, punishment is imposed in accordance with the ViA Ethics Regulations and the study course must be re-taken, unless the punishment is exmatriculation.

	Learning Outcomes	The evaluation methods and criteria
Learning Outcomes; the evaluation methods and criteria	**Knowledge**	
	Knowledge on world wide web architecture and web development.	Practical works. Exam.
	Knowledge about various web technologies HTML, CSS, Bootstrap.	Practical works. Exam.
	Knowledge about programming languages JavaScript, PHP, and MySQL database.	Practical works. Exam.
	Knowledge on content management systems including WordPress and others.	Practical works. Exam.
	Skills	
	Develop websites using HTML, CSS, Bootstrap.	Course project development and presentation.
	Develop websites using programming languages JavaScript, and PHP.	Course project development and presentation.
	Develop an understanding of MySQL databases and acquire the ability to integrate with websites.	Course project development and presentation.
	Develop websites using content management system (CMS)	Course project development and presentation.

	WordPress.	
	Competency	
	Independently apply web technologies, including HTML, CSS, and Bootstrap for web development.	Course project development and presentation.
	Develop and implement web solutions using programming languages such as JavaScript and PHP, along with MySQL databases.	Course project development and presentation.
	Apply content management system like WordPress for web development.	Course project development and presentation.
Course Compulsory literature:	1. Nixon, R. Learning PHP, MySQL, JavaScript, CSS & HTML5, Third Edition, O'Reilly, 2014. 2. MDN Web Docs (HTML& CSS) Available at: https://developer.mozilla.org/en-US/ 3. Bootstrap Documentation. Available at: https://getbootstrap.com/docs/4.1/getting-started/introduction/ 4. MDN JavaScript Guide. Available at: https://developer.mozilla.org/en-US/docs/Web/JavaScript/Guide 5. PHP Documentation. Available at: https://www.php.net/manual/en/index.php 6. MySQL Documentation. Available at: https://dev.mysql.com/doc/ 7. WordPress Documentation. Available at: https://codex.wordpress.org/Main_Page	
Course additional literature:	1. Robbins, J. Learning Web Design A Beginner's Guide to HTML, CSS, JavaScript, and Web Graphics, Fifth Edition, O'Reilly, 2018. 2. Haverbeke, M. Eloquent JavaScript, Fourth Edition, No Starch Press, 2024. 3. Nixon, R. Learning PHP, MySQL & JavaScript, Sixth Edition, O'Reilly, 2021. 4. Wilson, R., Miller, C., Palmer, K., Rennick, A., Torbert, M., WordPress All-in-One For Dummies, Wiley Publishing, Inc., 2011.	
Course confirmation date:	08.12.2022	
Date of course description update:	30.04.2025	

Study Course Plan (full time):

Date	Theme	Academic hours		Study Form/ Organization of independent work of students and task description
		Contact hours	**Independent work hours**	
The date is specified before the implementation of the course	Course introduction and overview. Overview of web development and the World Wide Web architecture.	4	4	Theoretical lecture. Practical work.
	Introduction to HTML structure and syntax. Semantic HTML elements.	4	4	Theoretical lecture. Practical work.
	Styling with CSS. CSS syntax, selectors, and properties. Introduction to responsive design. Practical examples.	4	4	Theoretical lecture. Practical work.
	Introduction to Bootstrap framework. Bootstrap components. Responsive web pages with Bootstrap. Practical examples.	4	4	Theoretical lecture. Practical work.
	Introduction to JavaScript syntax, variables and data types. Control flow, functions and objects in JavaScript. Practical examples.	4	6	Theoretical lecture. Practical work.
	JavaScript ES6 features. Introduction to JSON and Ajax. Asynchronous programming and practical examples.	4	6	Theoretical lecture. Practical work.
	Introduction to PHP syntax, variables and control structures.	4	6	Theoretical lecture. Practical work.

	PHP functions, and arrays. Practical examples.			
	PHP Object-Oriented programming (OOP). PHP sessions and cookies. Practical examples.	4	6	Theoretical lecture. Practical work.
	Introduction to relational database with MySQL. Basic SQL commands. Connecting PHP with MySQL. Practical examples.	4	6	Theoretical lecture. Practical work.
	CRUD operations in PHP with MySQL. Handling user inputs and validation. Practical examples.	4	6	Theoretical lecture. Practical work.
	Introduction to content management systems (CMS). Introduction to WordPress and its features. Practical examples.	4	4	Theoretical lecture. Practical work.
	WordPress themes and templates. Introduction to WordPress plugins.	4	4	Theoretical lecture. Practical work.
	Web security and best practices for secure websites. Security in WordPress (CMS).	4	4	Theoretical lecture. Practical work.
	Practical workshop.	4	4	Practical work. Group work.
	Developing and defending group project work	2	20	Project development and presentation
	Exam	2	2	Exam
	Hours total:	**60**	**90**	

Study Course Plan (part time):

Date	Theme	Academic hours		Study Form/ Organization of independent work of students and task description
		Contact hours	Independent work hours	
The date is specified before the implementation of the course	Course introduction and overview. Overview of web development and the World Wide Web architecture.	2	12	Theoretical lecture. Practical work.
	HTML and CSS Fundamentals. Practical examples.	2	15	Theoretical lecture. Practical work.
	Bootstrap and Responsive Design. Responsive web pages with Bootstrap. Practical examples.	2	15	Theoretical lecture. Practical work.
	Introduction to JavaScript and ES6 Features. Practical examples.	2	15	Theoretical lecture. Practical work.
	Introduction to PHP language. Object-Oriented Programming (OOP) in PHP. Practical examples.	2	15	Theoretical lecture. Practical work.
	Introduction to relational databases and MySQL. Connecting PHP with MySQL. Practical examples.	2	15	Theoretical lecture. Practical work.
	Overview of CMS and WordPress features. Web security and best practices for secure websites.	2	15	Theoretical lecture. Practical work.
	Developing and defending group project work	2	20	Project development and presentation
	Exam	2	10	Exam
	Hours total:	**18**	**132**	