



DISCIPLINE ACADEMIC SHEET
ACADEMIC YEAR 2025 – 2026

1. PROGRAMME DATA

1.1. Higher Education Institution	UNIVERSITY OF CRAIOVA
1.2. Faculty	Automation, Computers and Electronics
1.3. Department	Computers and Information Technology
1.4. Field of Study	Computers and Information Technology
1.5. Study level	L(License / Undergraduate)
1.6. Organizational form	IF
1.7. Study Program (name/code) /Qualification	Computers / L2060101010

2. DISCIPLINE DATA

2.1 Discipline Name	Web Applications Design						
2.2 Course Activities Holder	Elvira Popescu						
2.3. Practical Activities Holder	Gabriel Badea						
2.4. Study Year	3	2.5. Semester	2	2.6. Evaluation type	E	2.7. Discipline regime	DOB

3. ESTIMATED TOTAL TIME (hours per semester of teaching activities)

3.1. Number of hours per week	4	in which: 3.2 course	2	3.3. sem./lab./pr.	2
3.4. Total hours of curriculum	56	in which: 3.5 course	28	3.6. sem./lab./pr.	28
Time distribution - hours/week					
Study after manual, course support, bibliography and notes					14
Additional documentation in library, on specialized electronic platforms and field					6
Training seminars / labs, homework, portfolios and essays					20
Tutorial					2
Examinations					2
Other activities.....					
3.7. Total hours per individual activities					44
3.8. Total hours per semester					100
3.9. Number of credits					4

4. PRECONDITIONS (where appropriate)

4.1. of curriculum	The student must possess knowledge and skills acquired at the following disciplines: Computer Programming and Programming Languages, Object Oriented Programming, Object Oriented Design, Databases, Concurrent and Distributed Systems
4.2. of competence	N/A

5. CONDITIONS (where appropriate)

5.1. of the course	Course lectures are taught using the video projector. Students are provided with course materials (in electronic format) and up-to-date documentation. The teaching process has the following structure: ▪ 80% theoretical presentations, based on lecture slides ▪ 20% interactive activities (discussions with students)
5.2. of seminar/ laboratory/project	The laboratory uses a computer network with the required software packages and programming environments. The applicative activities are carried out using tutorials and practical demonstrations; students are provided with up-to-date educational materials and continuous feedback for each phase of the Web application life cycle.

6. COURSE OBJECTIVES – expected learning outcomes that are supported by completing and passing the course

Knowledge	The student/graduate describes, identifies, and summarizes basic concepts and methods related to the architecture, modeling, and engineering of web systems, as well as current web programming languages, technologies, and frameworks, and their application to concrete problems in the field of web systems.
Skills (Abilities)	The student/graduate analyzes requirements, defines specifications, designs, implements, and tests Web applications using software engineering principles. They also manage the Web application's lifecycle and improve its performance.
Responsibility and autonomy	The student/graduate behaves honorably, responsibly, and ethically, in accordance with the law, in order to uphold the reputation of the profession.

7. CONTENT

7.1. Course	The method of implementation	Teaching methods	Allocated time (hours)
Introduction to Web applications' design	face to face	Course lectures are taught using the video projector (80% theoretical presentations, based on lecture slides; 20% interactive activities, discussions with students)	2
Requirements engineering for Web applications	face to face		2
Modeling Web applications	face to face		2
Web application architectures	face to face		4
Technologies for Web applications	face to face		4
Testing Web applications	face to face		2
Operation and maintenance of Web applications	face to face		2
Web project management	face to face		2
The Web application development process	face to face		2
Usability of Web applications	face to face		2
Performance of Web application	face to face		2
Security for Web applications	face to face		2
Bibliography:			

1. Randy Connolly, Ricardo Hoar: Fundamentals of Web Development (3rd edition). Pearson, 2022.
2. Armando Fox, David Patterson: Engineering Software as a Service: An Agile Approach Using Cloud Computing (2nd edition), 2021.
3. Gerti Kappel, Birgit Pröll, Siegfried Reich, Werner Retschitzegger (Eds.): Web engineering: the discipline of systematic development of web applications. Wiley, 2006.
4. Steve Smith: Architecting Modern Web Applications with ASP.NET Core and Azure. Microsoft Developer Division, .NET, and Visual Studio product teams, 2023.

7.2. Laboratory	The method of implementation	Teaching methods	Allocated time (hours)
Web Design (HTML5, CSS3, Bootstrap)	face to face	Lab sessions include tutorials, practical demonstrations and code writing; interpretation of results and discussions with students are highly encouraged, providing feedback for each phase of the Web application life cycle.	2
JavaScript & jQuery	face to face		2
MVC Pattern	face to face		2
Introduction to ASP.NET Core (Overview, Environment Setup, First ASP.NET Core App, Project Structure)	face to face		4
ASP.NET Core MVC (Models, Views, Controllers)	face to face		2
ASP.NET Core Database Connection, Migrations	face to face		2
Object-relation mapping, EntityFramework (Database-First, Code-First)	face to face		2
Routing in ASP.NET Core, Ajax	face to face		2
ASP.NET Core MVC Crud Operations	face to face		2
ASP.NET Core Dependency Injection (services)	face to face		2
Debugging, Logging, Exception Handling	face to face		2
ASP.NET Core Authentication and Authorization	face to face		2
ASP.NET Core Security	face to face		2
Bibliography:			
1. P. Ackermann: Full Stack Web Development: A Comprehensive, Hands-On Guide to Building Modern Websites and Applications, Rheinwerk Computing, 2023.			
2. T. Felke-Morris: Web Development and Design Foundations with HTML5 (10th edition). Pearson, 2021.			
3. A. Freeman: Pro ASP.NET Core 7 (10th edition), Manning, 2023.			
4. J.N. Robbins, Learning Web Design: A Beginner’s Guide to HTML, CSS, JavaScript, and Web Images, 6th ed., O’Reilly Media, 2025.			
5. M.J. Price, Real-World Web Development with .NET 9, Packt Publishing, 2025.			

8. Correlating the content of the discipline with the expectations of representatives from the epistemic community, professional associations and representative employers in the field related to the program

The course and lab content are in agreement with similar disciplines taught at other universities (both from Romania and from abroad). Additionally, the acquired competences follow the requirements of employers in the area (discussions have been conducted with local companies' representatives, such as Netrom, Quest Global, CS Romania).

9. EVALUATION

Activity Type	9.1. Evaluation criteria	9.2. Evaluation methods	9.3. Final mark weight
9.4. Course	- Understanding core theoretical concepts for designing Web applications - Ability to make connections between the various concepts taught - Analysis and synthesis skills in practical settings	Written exam	50%
9.5. Laboratory	- Ability to apply in practice the theoretical notions and tutorials - Problem solving skills - Ability to analyze the requirements, define the specifications, design, implement and test a Web application - Capacity to present the results obtained throughout the semester in a clear and concise manner	Assessment of lab activity over the course of the semester + final Web application (consisting in oral presentation + software demonstration + final software product)	50%
9.6. Minimum standard of performance			
- Obtaining minimum 50 % of the total score for the exam and for the assessment throughout the semester - The final grade is computed by rounding the final score to the nearest integer.			

Date of Completion	Signature of the Course Activities Holder,	Signature of the Practical Activities Holder,
23.08.2025		

Date of Approval in the Department	Signature of the Department Director,
25.08.2025	Ș.l.dr.ing. Nicolae ENESCU

Date of Approval in the Faculty	Signature of the Dean,
	Prof.dr.ing. Dorin ȘENDRESCU