COURSE SYLLABUS

1. **Program information**

Faculty	Faculty of Electrical Engineering and Computer Science
Department	Computer Science
Field of study	Computers and Information Technology
Cycle of studies	Master's Degree
Study Program	Artificial Intelligence & Social Robotics Applied to Global Health

2. **Course information**

Course name		**ASSISTIVE SOFTWARE TECHNOLOGIES**				
Year of study	1	Semester	2	Type of assessment	Ongoing assessment	
Course regime		Course category by educational content: DF – Fundamental, DS – Specialization, DC – Complementary				DS
		Course category by optionality: DOB – Compulsory, DOP – Optional, DFA – Elective				DOB

3. **Total estimated time (hours allocated to teaching activities)**

I a) Number of hours per week	2	Lecture	1	Seminar	-	Laboratory / practical work	1	Project	-
I b) Total number of hours per semester according to curriculum	28	Lecture	14	Seminar	-	Laboratory / practical work	14	Project	-

Distribution of time allocation per semester (hours)	No. hours
II. Individual study	117
III. Examinations	5
IV. Other activities (specify):	-

Total individual study hours (II+III)	122
Total hours per semester (I.b+II+III+IV)	150
Number of credits	6

4. **Specific competencies acquired**

Transversal competencies	-
Professional competencies	CP1 – perform scientific research CP3 – design prototypes CP7 – manage research data CP9 – prepare scientific report

5. **Learning outcomes**

Knowledge	**Skills**	**Responsibility and autonomy**
The student/graduate identifies and applies cutting-edge specialized concepts and methods through human-centered design of intelligent technologies.	The student/graduate integrates advanced artificial intelligence methods into interactive applications that adapt to users, taking into account the diversity of their individual preferences and abilities.	The student/graduate takes responsibility for the design, implementation, and evaluation of human-centered interactive solutions, managing complex design situations involving different user, device, and environment characteristics.

6. **Course objectives** (derived from the grid of specific competencies acquired)

General objective of the course	Development of advanced competencies in assistive software technologies with emphasis on the design, implementation, and evaluation of inclusive and accessible software solutions that support diverse user needs through adapted interfaces.

7. **Teaching and learning content**

Lectures	**No. of hours**	**Teaching methods**	**Remarks / Notes**
1. Introduction 1.1. Principles of Accessibility and Universal Design. 1.2. Overview of Disabilities and User Needs (visual, auditory, motor, cognitive).	2	Lecture, discussion, exemplification, demonstration	
2. Accessibility Standards, Laws, and Ethics 2.1. International Accessibility Standards and Guidelines. 2.2. Legal and Regulatory Frameworks for Inclusive Software. 2.3. Ethical Considerations and Inclusive Design Responsibility. 2.4. Evaluation Metrics for Accessibility, Usability, and Effectiveness.	2		
3. Assistive Software Architectures 3.1. Architectural Patterns for Assistive Applications. 3.2. Adaptive and Context-Aware Software Systems. 3.3. Integration with Operating Systems and Platforms.	2		
4. Interaction Techniques and Adaptive Interfaces 4.1. Alternative Input Methods (speech, gesture). 4.2. Multimodal Interaction and Feedback. 4.3. Personalization and Adaptive User Interfaces.	2		
5. Generic Technologies for Accessibility 6.1. AI-Driven and Intelligent Assistive Software Systems. 6.2. Mobile, Wearable, and Ambient Assistive Technologies.	2		
6. Assistive Technologies for Specific Domains 5.1. Visual and Auditory Assistive Software Solutions. 5.2. Motor and Cognitive Support Technologies. 5.3. Assistive Software in Education, Work, and Daily Living.	4		
Recommended minimum bibliography			
1. Ovidiu-Andrei Schipor. (2022). *Fundamentals of Front-End Web Development. A Study Guide*, USV Press, Suceava, 150 pages. 2. Assistive Technology, https://www.coursera.org 3. David Davis, Fundamentals of Cloud Computing https://www.pluralsight.com 4. Ovidiu-Andrei Schipor, Laura-Bianca Bilius, Radu-Daniel Vatavu. (2022). WearSkill: Personalized and Interchangeable Input with Wearables for Users with Motor Impairments. *Proceedings of W4A '22, the 19th Web for All Conference.* ACM, New York, NY, USA, Article No. 10, 1-5. https://doi.org/10.1145/3493612.3520455 5. Laura-Bianca Bilius, Ovidiu-Andrei Schipor, Radu-Daniel Vatavu. (2024). The Age-Reward Perspective: A Systematic Review of Reward Mechanisms in Serious Games for Older People. *Proceedings of IMX '24, the ACM International Conference on Interactive Media Experiences*. ACM, New York, NY, USA, 168-181. https://doi.org/10.1145/3639701.3656327			

Applications (Laboratory)	**No. of hours**	**Teaching methods**	**Remarks / Notes**
Accessible user interface evaluation.	2	Practical work, experiment, discussion, case study	
Integration of assistive technologies with operating systems and platforms.	2		
Implementation of alternative input and output modalities. Elements of scientific creativity in designing alternative modalities.	2		
AI-Enhanced assistive software prototyping.	4		
Reporting results in the form of a scientific report.	2		
Presentation and evaluation of assistive applications.	2	Demonstration	
Attendance at compulsory activities is regulated by USV's "Framework Regulation on Student Assessment". Make-up for mandatory practical activities scheduled during the semester is carried out in accordance with the provisions of this regulation. Practical activities scheduled throughout the semester may be replaced by the completion and presentation of high-complexity projects from the course syllabus, with the approval of the course instructor.			
Recommended minimum bibliography			
1. Ovidiu-Andrei Schipor. (2022). *Fundamentals of Front-End Web Development. A Study Guide*, USV Press, Suceava, 150 pagini.			

2. Assistive Technology, https://www.coursera.org
3. David Davis, Fundamentals of Cloud Computing https://www.pluralsight.com
4. Ovidiu-Andrei Schipor, Laura-Bianca Bilius, Radu-Daniel Vatavu. (2022). WearSkill: Personalized and Interchangeable Input with Wearables for Users with Motor Impairments. *Proceedings of W4A '22, the 19th Web for All Conference.* ACM, New York, NY, USA, Article No. 10, 1-5. https://doi.org/10.1145/3493612.3520455
5. Laura-Bianca Bilius, Ovidiu-Andrei Schipor, Radu-Daniel Vatavu. (2024). The Age-Reward Perspective: A Systematic Review of Reward Mechanisms in Serious Games for Older People. *Proceedings of IMX '24, the ACM International Conference on Interactive Media Experiences*. ACM, New York, NY, USA, 168-181. https://doi.org/10.1145/3639701.3656327

8. **Evaluation**

Type of activity	Evaluation criteria	Evaluation methods	Weight in final grade
Final evaluation	Clear presentation of theoretical concepts and correct application of notions and methods specific to assistive technologies.	Written test, followed by oral verification of the extent to which the requirements in the written work are met.	50%
Evaluation of ongoing practical activities	Correct design and functional implementation of assistive applications, highlighting aspects of scientific creativity. Participation in various practical activities related to the specific objectives of the course.	Project evaluation, systematic observation	50%

Physical accessibility: activities are conducted in classrooms and laboratories accessible to wheelchair users via ramps/lifts (USV buildings C/D); **Accessibility of teaching materials:** documents are available in digital PDF format with selectable text and slides with large fonts; **Evaluation accessibility:** ongoing evaluation through projects; possibility of extended time for the written tests and oral verification.

Date	Academic title, Name, Surname, Signature of Course Instructor	Academic title, Name, Surname, Signature of Practical Work Instructor
23.09.2026	Prof. univ. dr. ing. Ovidiu-Andrei SCHIPOR	Prof. univ. dr. ing. Ovidiu-Andrei SCHIPOR

Date of approval	Academic title, Name, Surname, Signature of Program Coordinator
24.09.2026	Prof. univ. dr. ing. Radu-Daniel VATAVU

Date of departmental approval	Academic title, Name, Surname, Signature of Head of Department
24.09.2026	Prof. univ. dr. ing. Ovidiu-Andrei SCHIPOR

Date of Faculty Council Approval	Academic title, Name, Surname, Signature of Dean
25.09.2026	Prof. univ. dr. ing. Laurentiu-Dan MILICI