Bialystok University of Technology									
Field of study	**Computer Science**							**Degree level and programme type**	**Engineer's degree full-time programme**
Specialization/ diploma path	**---**							**Study profile**	academic
Course name	**Advanced Human-Computer Interaction and Application Usability**							**Course code**	**FCS-00082**
								Course type	obligatory
Forms and number of hours of tuition	L	C	LC	P	SW	FW	S	**Semester**	3
	30				30			**No. of ECTS credits**	**6**
Entry requirements	Human-Computer Interaction (FCS-00038), Software Development Tools (FCS-00071), Object Oriented Programming (FCS-00012),								
Course objectives	To familiarise the student with advanced techniques and systems of human-computer communication								
Course content	Lectures: 1. Speech-to-text systems. 2. VoiceXML 3. Virtual Reality 4. Augmented Reality 5. UX techniques related to colour 6. Advanced input controllers. Classes: 1. Implement system that is controlled by speech. 2. Implement simple VR test project. 3. Test various input controllers.								
Teaching methods	lecture problem, programming,								
Assessment method	Lecture - oral exam Laboratory - exercise reports								

Symbol of learning outcome	**Learning outcomes**	**Reference to the learning outcomes for the field of study**
LO1	knows the methods of human-computer communication and advanced user interfaces. know the elementary methods of data acquisition and signal processing for the purpose of user interaction with the computer	K_W10 K_W11
LO2	knows the methods of human-computer communication and advanced user interfaces. know the elementary methods of data acquisition and signal processing for the purpose of user interaction with the computer	K_W10 K_W11
LO3	can design, program and deploy an advanced user interface, for example audio activated application	K_W03 K_W10 K_U11
LO4	can design, program and deploy an advanced user interface, for example audio activated application	K_W03 K_W10 K_U11
LO5	by creating interfaces student draws attention to the non-technical aspects: ergonomics, aesthetics, comfort, etc. Able to identify and resolve the dilemmas associated with the divergence of needs / user expectations and limitations, economic, etc.	K_U13 K_U14 K_K04
LO6	by creating interfaces student draws attention to the non-technical aspects: ergonomics, aesthetics, comfort, etc. Able to identify and resolve the dilemmas associated with the divergence of needs / user expectations and limitations, economic, etc.	K_U13 K_U14 K_K04

Symbol of learning outcome	**Methods of assessing the learning outcomes**	**Type of tuition during which the outcome is assessed**
LO1	Oral exam	Ps
LO2	Oral exam	Ps
LO3	Projects	Ps
LO4	Projects	Ps
LO5	Projects	Ps
LO6	Projects	Ps

Student workload (in hours)	**No. of hours**
1 - Attendance at lectures -	30
2 - Attendance at laboratories -	30
3 - Preparation for laboratories -	10
4 - Homeworks -	30
5 - Participation in student-teacher sessions -	10
6 - Preparation of reports -	25
7 - Preparation for the exam -	15
TOTAL:	**150**

Quantitative indicators	**HOURS**	**No. of ECTS credits**
Student workload – activities that require direct teacher participation	70 (1)+(2)+(5)	2.8
Student workload – practical activities	95 (2)+(3)+(4)+(6)	3.8

Basic references	1. Julie A. Jacko (Ed.). (2012). Human-Computer Interaction Handbook (3rd Edition). CRC Press. ISBN 1-4398-2943-8 2. M.H. Cohen et al: Voice User Interface Design, Addison Wesley, 2004 3. A. Dix, J. Finlay, G. D. Abowd, R. Beale, Human-Computer Interaction (3rd Edition), Pearson, 2004
Supplementary references	1. W.O. Galitz: The Essential Guide to User Interface Design. An Introduction to GUI Design Principles and Techniques, Wiley, 2007. 2. J. Mariani: Language and Speech Processing, Wiley, 2009. 3. J. Preece, Y. Rogers, H. Sharp: Interaction Design: Beyond Human-Computer Interaction, 3nd ed., Wiley, 2011.
Organisational unit conducting the course	Department of Digital Media and Computer Graphics — **Date of issuing the programme**
Author of the programme	dr inż. Marcin Skoczylas — Feb. 11, 2022

L – lecture, C – classes, LC – laboratory classes, P – project, SW – specialization workshop, FW – field work,S – seminar