#### card of course

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| Subject name | Universal design of infrastructure accessibility using a website |

1. The placement of the subject in the study system

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| --- | --- |
| 1.1. Field of study | Computer science |
| 1.2. Form and path of study | Full-time/Part-time |
| 1.3. Level of education | First-cycle studies |
| 1.4. Study profile | Practical |

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| 1. 5. Specialty | - |
| 1.6. Subject Coordinator | Mgr Rafał Sadownik |

2. General characteristics of the subject

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| 2.1. Belonging to a subject group | Directional/Practical |
| 2.2. Number of ECTS | 2 |
| 2.3. Language of lectures | English |
| 2.4. Semesters in which the subject is taught | V |
| 2.5.Criteria for selecting course participants | - |

1. Learning outcomes and course delivery
   1. Subject Objectives

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| No. | Subject Objectives |
|
| C1 | To familiarize students with the correct design of a website as an element of universal design with a focus on the accessibility of digital information reflecting accessibility. |
| C2 | Understanding the limitations of digital resources in relation to various disabilities. |
| C3 | Acquiring skills in analyzing the accessibility of website elements and defining barriers. |
| C4 | Acquiring skills in designing a website in a way that is accessible to people with disabilities. |

* 1. Subject-specific learning outcomes, divided into knowledge , skills and competences , with reference to the directional learning outcomes

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| --- | --- | --- | --- | --- | --- | --- |
| No. | Description of subject  learning outcomes | Reference to  directional effects  learning (symbols) | Method of implementation (mark "X") | | | |
| ST | | NST | |
| Classes at the University | Activities on  the platform | Classes at the University | Activities on  the platform |
| After passing the course, the student knows and understands **the knowledge** | | | | | | |
| W1 | The student knows and understands the concepts of disability, the problem of limitations in digital resources in relation to various disabilities, | INF\_W20  INF\_W21 |  | X |  | X |
| W2 | The student is aware of the existence of barriers limiting access to digital information, with particular emphasis on groups at risk of digital and social exclusion |  | X |  | X |
| W3 | The student knows and understands the principles of universal design in the field of web design, knows the methods of assessing the accessibility of websites |  | X |  | X |
| W4 | The student knows and understands the principles of preparing an accessible digital document |  | X |  | X |
| After passing the course, the student is **able** to: | | | | | | |
| U1 | The student is able to analyze the accessibility of website elements and define the basic barriers in digital content resources and prepare a website content accessibility report. | INF\_U08  INF\_U21  INF\_U28  INF\_U29 | X |  | X |  |
| U2 | The student is able to design a website in such a way that it is accessible to people with disabilities. | X |  | X |  |
| U3 | Use the aids during the classes, i.e. visual impairment simulators, contrast ratio testing, color blindness testing | X |  | X |  |
| After completing the course, the student is ready to take part in **social competences.** | | | | | | |
| K1 | The student is sensitive to problems related to the barriers faced by people with disabilities. | INF\_K02 | X |  | X |  |

3.3. Forms of teaching and their number of hours - Full-time studies (ST), Part-time studies (NST)

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Path | Lecture | Exercises | Design | Workshop | Laboratory | Seminar | Lecturer | Classes conducted using distance learning methods and techniques in the form of a lecture | Other | **ECTS points** |
| **ST** |  |  | 30 |  |  |  |  | 15 |  | 2 |
| **NST** |  |  | 30 |  |  |  |  | 15 |  | 2 |

3.4. Content of education (separately for each form of classes: (W, ĆW, PROJ, WAR, LAB, LEK, OTHER). It should be marked (X) how the given content will be implemented (classes at the university or classes on the e-learning platform conducted using distance learning methods and techniques)

TYPE OF CLASS : LECTURE

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| --- | --- | --- | --- | --- | --- | --- |
| No. | Content of the course | Reference to subject-specific learning outcomes | Method of implementation (mark "X") | | | |
| ST | | NST | |
| **Classes at the University** | **Activities on  the platform** | **Classes at the University** | **Activities on  the platform** |
| 1. | Sensory, motor and cognitive disabilities, accessibility, digital divide, universal design, | W1 |  | X |  | X |
| 2. | Principles of designing interfaces in accordance with accessibility standards (WCAG 2) | W2, W3 |  | X |  | X |
| 3. | Legal conditions regarding digital accessibility | W2 |  | X |  | X |
| 4. | Limitations on access to digital information for people with disabilities | W2 |  | X |  | X |
| 5. | Elements embedded in the content of web pages, such as digital documents, multimedia, and others | W3 |  | X |  | X |
| 6. | Methods for assessing the accessibility of websites, including automatic validation and manual validation of website content | W3 |  | X |  | X |
| 7. | Collaboration with a group of end users, including user experience | W3, W4 |  | X |  | X |
| 8. | Case study on selected website subpages | W1, W2 |  | X |  | X |
| 9. | Summary of classes and discussion of grades |  |  | X |  | X |

TYPE OF CLASS: PROJECT

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| --- | --- | --- | --- | --- | --- | --- |
| No. | Content of the course | Reference to subject-specific learning outcomes | Method of implementation (mark "X") | | | |
| ST | | NST | |
| **Classes at the University** | **Activities on  the platform** | **Classes at the University** | **Activities on  the platform** |
| 1. | Accessibility analysis based on Easy Checks (W3C Consortium recommendations) | U1, K1 | X |  | X |  |
| 2. | Preparation of a website content accessibility report | U1, K1 | X |  | X |  |
| 3. | Using simulators:  Contrast Ratio Test Simulator (http://colorsafe.co)  Vision Loss Simulator (https://www.versanthealth.com/visionloss)  Color blindness simulator (https://www.toptal.com/designers/colorfilter | U3, K1 | X |  | X |  |
| 4. | Design work using available tools for analyzing the contrast ratio of content to background and graphic elements to background, analyzing the semantics and syntax of the page, correct navigation (headers), adding text alternatives (alt attribute), presence of focus, correct navigation using the TAB key of the keyboard, etc. | U2, K1 | X |  | X |  |
| 5. | Presentation of website projects and discussions on the projects. |  | X |  | X |  |
| 6. | Summary of classes and discussion of grades |  | X |  | X |  |

3.5. Methods of verifying learning outcomes (indication and description of methods of conducting classes and verification of achievement of learning outcomes and method of documentation)

Methods of verifying learning outcomes:

* **Lecture** : Test containing a set of 15 questions - 10 closed single-choice questions worth 1 point each and 5 open-ended questions worth 2 points each = 20 points

Percentage range and score for each rating:

Grade 3 (sufficient): 51 – 60% 11 – 12 points

Rating 3.5 (sufficient plus): 61 – 70% 13 – 14 points

Rating 4 (good): 71 – 80% 15 – 16 points

Rating 4.5 (good plus) 81 – 90% 17 – 18 points

Rating 5 (very good): 91 – 100% 19 – 20 points

* **Project** : Two tasks to complete –

Task 1: Preparation of a website content accessibility report.

Task 2: Design of a website accessible to people with disabilities.

Final grade: arithmetic mean of the tasks.

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| --- | --- | --- | --- |
| Subject Effects | Teaching methods | Methods of verifying learning outcomes | Documentation methods |
| KNOWLEDGE | | | |
| W1-W4 | Multimedia lecture, meetings with people with sensory disabilities, case study | Knowledge test  (description above the table) | Test sheet |
| SKILLS | | | |
| U1-U3 | Design exercises, discussions, performing analyses | Task 1: Creating a website content accessibility report  Task 2: Design of a website accessible to people with disabilities  Final grade: arithmetic mean of the tasks | Archived tasks |
| SOCIAL COMPETENCES | | | |
| K1 | Design exercises, discussions, performing analyses | Task 1: Creating a website content accessibility report  Task 2: Design of a website accessible to people with disabilities  Final grade: arithmetic mean of the tasks | Archived tasks |

3.6. Assessment criteria for the achieved learning outcomes

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| --- | --- | --- | --- | --- | --- |
| Learning effect | For a grade of 3 or "pass."  the student knows and understands/is able to/is ready to | For a grade of 3.5, the student knows and understands/is able to/is ready to | For a grade of 4, the student knows and understands/is able to/is ready to | For a grade of 4.5, the student knows and understands/is able to/is ready to | For a grade of 5, the student knows and understands/is able to/is ready to |
| W | 51-60% of knowledge indicated in learning outcomes | 61-70% of knowledge indicated in learning outcomes | 71-80% of knowledge indicated in learning outcomes | 81-90% of knowledge indicated in learning outcomes | 91-100% of knowledge indicated in learning outcomes |
| U | 51-60% of skills indicated in learning outcomes | 61-70% of skills indicated in learning outcomes | 71-80% of skills indicated in learning outcomes | 81-90% of skills indicated in learning outcomes | 91-100% of skills indicated in learning outcomes |
| K | 51-60% of skills indicated in learning outcomes | 61-70% of skills indicated in learning outcomes | 71-80% of skills indicated in learning outcomes | 81-90% of skills indicated in learning outcomes | 91-100% of skills indicated in learning outcomes |

3.7. Literature

**Basic**

* Mrochen I., To See or Not to See, to Hear or Not to Hear – Accessibility and Usability in Localization, Proceedings of the European Academic Colloquium on Technical Communication 2017 Vol.5, Prof. Dr. Birgitta Meex, Antwerpia, Belgia, tcworld GmbH, pp. 68-87, 2017
* Zadrożny J., Web Content Accessibility Guidelines (WCAG) 2.0 – zasady i wytyczne do tworzenia dostępnych serwisów Internetowych (dostęp Formacie PDF) 14.
* Dostępność witryn internetowych instytucji publicznych dla osób z niepełnosprawnościami, Zasada równego traktowania, Prawo i Praktyka Nr.11, Warszawa 2013 (publikacja w formacie PDF)
* Paszkiewicz D., Dębski J., Dostępność serwisów internetowych. Dobre praktyki w projektowaniu serwisów internetowych dostępnych dla osób z różnymi rodzajami niepełnosprawności, Warszawa 2013. Stowarzyszenie Przyjaciół Integracji, Dostęp w formacie PDF: (https://www.power.gov.pl/media/13588/Dostepnosc-serwisow-internetowych-Dominik-Paszkiewicz-Jakub-Debski.pdf)

**Supplementary**

* Lew-Starowicz R., Lorecka K., Włączenie cyfrowe - droga do reintegracji społecznej, WUW, Warszawa, 2013
* Zadrożny J., Dostępność stron internetowych – wyjaśnienie istoty problemu i opis wymagań. Dostępność stron internetowych wybranych str. 74 jednostek samorządu terytorialnego na Mazowszu, Warszawa, Federacja Mazowia, 2013

4. Student workload - ECTS points balance

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| --- | --- | --- |
| **Types of student activity** | **Student Load** | |
| **ST** | **NST** |
| **Classes requiring direct contact between the student and the academic teacher at the university premises** | **45** | **45** |
| Classes included in the study plan | 45 | 45 |
| **Student's own work** | **5** | **5** |
| Ongoing preparation for classes, preparation of project work/presentations/etc. | 3 | 3 |
| Preparation for passing classes | 2 | 2 |
| **TOTAL STUDENT HOURLY LOAD** | **50** | **50** |
| **Number of ECTS points** | **2** | **2** |

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| Last change date | 30/09/2024 |
| The changes were introduced | INF Education Quality Team |
| The changes were approved | Arkadiusz Gwarda, M.A. |