**Field of study**  
Computer Science  

**Degree level and programme type**  
Engineer’s degree full-time programme  

**Specialization/ diploma path**  
---  

**Course name**  
Human-Computer Interaction  

**Course code**  
FCS-00038  

**Forms and number of hours of tuition**  
<table>
<thead>
<tr>
<th>L</th>
<th>C</th>
<th>LC</th>
<th>P</th>
<th>SW</th>
<th>FW</th>
<th>S</th>
<th>Semester</th>
<th>No. of ECTS credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td>15</td>
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<td></td>
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<td>3</td>
<td>6</td>
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**Entry requirements**  
Object Oriented Programming (FCS-00012)  

**Course objectives**  
Lecture:  
2. Review of the development of human-computer interfaces in the historical context.  
3. Discussion of text interfaces (LCD screens, text consoles).  
4. Discussion of sound interfaces, the basics of psychoacoustics, processing, synthesis and speech recognition.  
5. Discussion of graphic user interfaces.  
6. Elements of 2D and 3D graphics, principles of GUI creation in window applications.  
7. Review of non-traditional interfaces (touch, intercepting gestures and movement, brain).  
8. Virtual reality interfaces.  

Class:  
1. Analysis of text interfaces on the basis of examples of ready-made applications.  
2. Project preparation and application implementation using the text-mode interface.  
3. Adaptation of the project according to the Model View Controller scheme enabling the exchange of the human-computer communication interface.  
4. Preparation of the project and implementation of the application with the use of the graphical mode interface (GUI).  
5. Wireframes of an advanced multi-window application, data flow diagram.  

**Course content**  
Lecture:  
2. Review of the development of human-computer interfaces in the historical context.  
3. Discussion of text interfaces (LCD screens, text consoles).  
4. Discussion of sound interfaces, the basics of psychoacoustics, processing, synthesis and speech recognition.  
5. Discussion of graphic user interfaces.  
6. Elements of 2D and 3D graphics, principles of GUI creation in window applications.  
7. Review of non-traditional interfaces (touch, intercepting gestures and movement, brain).  
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5. Wireframes of an advanced multi-window application, data flow diagram.  

**Teaching methods**  
lecture problem,  
programming,  
project method.  

**Assessment method**  
Lecture - exam  
Laboratory - exercise reports  

**Symbol of learning outcome**  
Learning outcomes  
Reference to the learning outcomes for the field of study  

<table>
<thead>
<tr>
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<th>Reference to the learning outcomes for the field of study</th>
</tr>
</thead>
</table>
| 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                       | can design and select user interfaces, particularly graphical (GUI) and voice response (IVR) | K_W10  
K_W11  
K_U10 |
| LO3                       | can select user interface technique for applications and selected and used technologies suitable for the implementation of this interface | K_W04  
K_W06  
K_W11  
K_U11 |
| LO4                       | can design, program and deploy an advanced user interface, for example. interactive communication system IVR | 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 technological 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  

<table>
<thead>
<tr>
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<th>Type of tuition during which the outcome is assessed</th>
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</thead>
<tbody>
<tr>
<td>LO1</td>
<td>exam</td>
<td>L</td>
</tr>
<tr>
<td>LO2</td>
<td>report on the exercise grade</td>
<td>Sw</td>
</tr>
<tr>
<td>LO3</td>
<td>report on the exercise grade</td>
<td>Sw</td>
</tr>
<tr>
<td>LO4</td>
<td>report on the exercise grade</td>
<td>Sw</td>
</tr>
<tr>
<td>LO5</td>
<td>exam</td>
<td>Sw</td>
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**Student workload (in hours)**  

<table>
<thead>
<tr>
<th>Calculation</th>
<th>No. of hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - Attendance at lectures -</td>
<td>30</td>
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<tr>
<td>2 - Attendance at laboratories -</td>
<td>15</td>
</tr>
<tr>
<td>3 - Participation in student-teacher sessions -</td>
<td>5</td>
</tr>
<tr>
<td>4 - Preparation of reports -</td>
<td>78</td>
</tr>
<tr>
<td>5 - Preparation for the exam -</td>
<td>20</td>
</tr>
<tr>
<td>6 - Presence during exam -</td>
<td>2</td>
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<td>TOTAL:</td>
<td>150</td>
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**Quantitative indicators**  

<table>
<thead>
<tr>
<th>Student workload - activities that require direct teacher participation</th>
<th>HOURS</th>
<th>No. of ECTS credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>52.2</td>
<td>2.1</td>
</tr>
<tr>
<td>Student workload - practical activities</td>
<td>93</td>
<td>3.7</td>
</tr>
</tbody>
</table>

**Basic references**  

**Supplementary references**  
Organisational unit conducting the course
Department of Digital Media and Computer Graphics

Author of the programme
dr inż. Marcin Skoczyłas

Date of issuing the programme
Feb. 18, 2022

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