* + - 1. **CARD OF COURSE**

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| Subject name | **Computer graphics** |

**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 inż. Michał Brogowski** |

**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 | **VI** |
| 2.5.Criteria for selecting course participants | **-** |

1. **Learning outcomes and course delivery**
   1. **Subject Objectives**

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| --- | --- |
| **No.** | **Subject Objectives** |
|
| C1 | Acquiring skills in Blender 3d. Low modeling poly, lighting – rendering. |
| C2 | Developing skills in using Adobe Photoshop. |
| C3 | Acquiring skills in processing images rendered in Blender in Adobe Photoshop. |

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

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| --- | --- | --- | --- | --- | --- | --- |
| **No.** | **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 | Knows the principles of building and lighting 3D scenes in Blender | INF\_W09 | X |  | X |  |
| W2 | Knows the principles of composition and knows how to work with image post-production in Photoshop | X |  | X |  |
| W3 | Knows the tools used in the process of photomontage and photo retouching in Adobe Photoshop | X |  | X |  |
| W4 | Knows the tools designed for working with curves in Adobe Illustrator | X |  | X |  |
| After passing the course, the student is able to **:** | | | | | | |
| U1 | Create a 3D scene in Blender | INF\_U12  INF\_U21 | X |  | X |  |
| U2 | Light the scene and render it ,  export image | X |  | X |  |
| U3 | Edit raster graphics, perform color correction, photomontage in Adobe Photoshop | X |  | X |  |
| U4 | Can prepare vector graphics using curves in Adobe Illustrator | X |  | X |  |
| is ready to take part in **social competences.** | | | | | | |
| K1 | Able to cooperate with people of  other specialties and create elements of a larger project together | INF\_K03 | X |  | X |  |
| K2 | can define correctly  problems and solve them based on your own creativity | 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 ……………….** | **Other** | **ECTS points** |
| **ST** |  |  |  | 30 |  |  |  |  |  | 2 |
| **NST** |  |  |  | 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: WORKSHOP**

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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.** | Working in Blender . Interface,  navigation, keyboard shortcuts | W1, W2, U1, U2, K1, K2 | **X** |  | **X** |  |
| **2.** | Poly modeling in Blender –  creating a scene like: low poly diorama | W3, U1, U2  K1, K2 | **X** |  | **X** |  |
| **3.** | Working with Adobe Photoshop.  Layers, selection methods, masks, color editing, photomontage, using AI tools (generative fill). | W3, W2  U3, K1, K2 | **X** |  | **X** |  |
| **4.** | Working with Adobe Illustrator .  Tools for creating curves - Pen tool , cutting curves Pathfinder , fill types, working with the outline. Layers, layer blending, effects. | W4, U4 | **X** |  | **X** |  |
| **5.** | 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)

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| --- | --- | --- | --- |
| **Subject Effects** | **Teaching methods** | **Methods of verifying learning outcomes** | **Documentation methods** |
| **KNOWLEDGE** | | | |
| **W1-W4** | lectures/exercises using multimedia, work on your own project, practical tasks | Practical exam tasks. Students will render images based on a 3D scene from a given topic. The final grade will be the average of the grades from 3 tasks (preparing a 3D scene render, preparing an image in Adobe Photoshop, preparing vector graphics in Adobe Illustrator) | Archived works on the platform |
| **SKILLS** | | | |
| **U1-U4** | lectures/exercises using multimedia, work on your own project, practical tasks | Practical exam tasks. Students will render images based on a 3D scene from a given topic. The final grade will be the average of the grades from 3 tasks (preparing a 3D scene render , preparing an image in Adobe Photoshop, preparing vector graphics in Adobe Illustrator) | Archived works on the platform |
| **SOCIAL COMPETENCES** | | | |
| **K1-K2** | lectures/exercises using multimedia, work on your own project, practical tasks | Practical exam tasks. Students will render images based on a 3D scene from a given topic. The final grade will be the average of the grades from 3 tasks (preparing a 3D scene render , preparing an image in Adobe Photoshop, preparing vector graphics in Adobe Illustrator) | Archived works on the platform |

**3.6. Assessment criteria for the achieved learning outcomes**

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| Learning effect | For a grade of 3 or " zal ."  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. Recommended literature**

**Basic**

1. Willberg H.P., Forssman F., Pierwsza pomoc w typografii: : poradnik używania pisma, Słowo/Obraz Terytoria, Gdańsk, 2008
2. Ambrose G., Harris P., Pre-press : poradnik dla grafików, PWN, Warszawa, 2010
3. Baines P., Haslam A., Pismo i typografia, PWN, Warszawa, 2010

**Supplementary:**

1. Zakrzewski P., Kompedium DTP: Adobe Photoshop, Illustrator, InDesign i Acrobat w praktyce, Helion, Gliwice, 2011

**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** | **30** | **15** |
| Classes included in the study plan | 30 | 15 |
| Teaching consultations (min. 10% of hours allocated for each form of classes) | 3 | 2 |
| **Student's own work** | **20** | **35** |
| Ongoing preparation for classes, preparation of project work/presentations/etc. | 10 | 20 |
| Preparation for passing classes | 10 | 15 |
| **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 | Mgr Arkadiusz Gwarda |