#### card of course

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| Subject name | Computer graphics part 1 |

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 | Computer graphics and game design |
| 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 | Optional/practical |
| 2.2. Number of ECTS | 5 |
| 2.3. Language of lectures | English |
| 2.4. Semesters in which the subject is taught | III |
| 2.5.Criteria for selecting course participants | For specializations: Computer graphics and game design |

1. Learning outcomes and course delivery
   1. Subject Objectives

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| No. | Subject Objectives |
|
| C1 | Learning to work with vector graphics in Adobe Illustrator |
| C2 | Learning to work with raster graphics in Adobe Photoshop |
| C3 | Learning the most important artistic issues. Color theory, composition. |

* 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 | Knows what the term vector graphics means and how it is used | INF\_W09 | X |  |  | X |
| W2 | Knows what the term raster graphics means and knows how it is used | X |  |  | X |
| W3 | Knows the basic tools of Adobe Illustrator | X |  |  | X |
| W4 | Knows the basic tools of Adobe Photoshop | X |  |  | X |
| W5 | Knows the basic concepts of composition and color | X |  |  | X |
| W6 | Knows the most important rules for preparing designed materials for printing | X |  |  | X |
| After passing the course, the student is **able** to: | | | | | | |
| U1 | Able to use Adobe Illustrator tools fluently | INF\_U02  INF\_U21 | X |  | X |  |
| U2 | Is able to create vector graphics in Adobe Illustrator based on references and a conceptual sketch | X |  | X |  |
| U3 | Is able to use text elements in vector compositions and knows text editing tools | X |  | X |  |
| U4 | Able to use Adobe Photoshop tools fluently | X |  | X |  |
| U5 | Can independently assemble a photo collage from multiple raster elements in Adobe Photoshop | X |  | X |  |
| U6 | Can perform photo retouching in Adobe Photoshop | X |  | X |  |
| After completing the course, the student is ready to take part in **social competences.** | | | | | | |
| K1 | Creative creation of photo collages based on independently found reference materials (photos, plans, concept drawings) | INF\_K03 | 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** | 20 |  |  |  | 40 |  |  |  |  | 5 |
| **NST** |  |  |  |  | 20 |  |  | 10 |  | 5 |

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. | The most important issues related to art. Color, composition. | W5 | X |  |  | X |
| 2. | Principles of working with raster graphics and learning the Adobe Photoshop tool. | W2, W4 | X |  |  | X |
| 3. | Principles of working with vector graphics and learning the Adobe Illustrator tool | W1, W3 | X |  |  | X |
| 4. | Discussion of the most important terms and presentation of the most important rules for preparing projects for printing | W6 | X |  |  | X |
| 5. | Summary of classes and discussion of grades. |  | X |  |  | X |

TYPE OF CLASS: LABORATORY

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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. | Exercises – Learning the most important tools in Adobe Photoshop | U4, U6 | X |  | X |  |
| 2. | Exercises – Learning the most important tools of Adobe Illustrator | U1, U2 | X |  | X |  |
| 3. | Exercises – Working with raster graphics on your own projects – photo collage | U4, U5, K1 | X |  | X |  |
| 4. | Exercise – Working with vector graphics on your own projects – movie poster | U2, U3 | 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)

LECTURE – the introduction to the lectures presenting tools for processing raster graphics (Adobe Photoshop) and vector graphics (Adobe Illustrator) will be a presentation of the most important artistic issues. The theory of color, principles of choosing colors and working with color in general will be discussed. In the next lectures, different types of composition will be discussed. The issues will be discussed using examples from the history of art. The lecture will present tools and techniques necessary for preparing vector graphics in Adobe Illustrator and vector graphics in Adobe Photoshop. Learning the knowledge provided in the lectures is necessary to complete the tasks in the exercises.

Assessment of lectures in the form of a 10-question test, single choice, each question worth 2 points.

Grade 3 (sufficient): 11 – 12 points

Grade 3.5 (sufficient plus): 13 – 14 points

Rating 4 (good): 15 – 16 points

Rating 4.5 (good plus) 17 – 18 points

Rating 5 (very good): 19 – 20 points

LABORATORY – During the laboratory, students supported by the teacher will carry out several projects to consolidate the most important tools and processes related to the creation of vector and raster graphics. Practical exercises on various topics will be adapted so that students get to know specific application tools. During the semester, students will carry out several increasingly advanced projects.

As a summary, participants will have to independently complete one vector graphics project in Adobe Illustrator and one raster graphics project in Adobe Photoshop. Both works are obligatory and subject to assessment. The works will be discussed during the last class and archived on the PUW platform. The final grade is the arithmetic mean of the two projects.

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| Subject Effects | Teaching methods | Methods of verifying learning outcomes | Documentation methods |
| KNOWLEDGE | | | |
| W1-W7 | Lectures – detailed description of work techniques in the form of lectures on the PUW platform | Test-based exam | Test results collected on the PUW platform |
| SKILLS | | | |
| U1-U6 | Laboratories – exercises in the workshop | Final project – raster graphics.  Vector graphics final project  (description above) | Final project – raster graphics.  Vector graphics final project  (Works archived on the PUW platform) |
| SOCIAL COMPETENCES | | | |
| K1-K2 | Laboratories – exercises in the workshop | Final project – raster graphics.  Vector graphics final project  (description above) | Final project – raster graphics.  Vector graphics final project  (Works archived on the PUW platform) |

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**

1. Elementy grafiki komputerowej. Michał Jankowski
2. Fotografia cyfrowa. Edycja Zdjęć. Scott Kelby

**Supplementary:**

1. Kompedium DTP, Paweł Zakrzewski. Wydawnictwo Helion
2. Wprowadzenie do projektowania przestrzennego. Zasady, procesy i projekty, Kimberly Elam
3. Kompozycja w sztuce cyfrowej. Podstawy. Simon Genew

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** | **60** | **30** |
| Classes included in the study plan | 60 | 30 |
| **Student's own work** | **65** | **95** |
| Ongoing preparation for classes, preparation of project work/presentations/etc. | 35 | 50 |
| Preparation for passing classes | 30 | 45 |
| **TOTAL STUDENT HOURLY LOAD** | **125** | **125** |
| **Number of ECTS points** | **5** | **5** |

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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. |