SYLLABUS FOR 2023/2024 ENROLMENT
FORM OF STUDY: FULL-TIME PROGRAMME

GENERAL INFORMATION

1. **Course** Computer graphics techniques
2. **Field of study** Computer Science
3. **Level of acquired education** first-cycle programme
4. **Number of ECTScredits 3**
5. **Number of hours per semester**

semester	lecture	classes	laboratory/foreign language course	project/practical classes	self-study	internship
I	15		30			

6. **Language of instruction: English**
7. **Lecturer mgr inż. Sebastian Sawczuk**

DETAILED INFORMATION

8. Preliminary requirements

1. General knowledge of computers and the Windows operating system.
2. General knowledge of working in any graphical environment.

9. Course objectives

C1 To introduce students to the theory of computer graphics techniques.

C2 To familiarise students with working techniques for creating graphic products.

C3 To develop creative thinking, aesthetic sensitivity and to solve design tasks critically and effectively.

10. Field-specific learning outcomes in terms of knowledge, skills and social competences

A student who completed the course:	reference to field-specific learning outcomes
KNOWLEDGE	
EU01 Knows and understands the theory within computer graphics.	K_W014, K_W17
EU02 Knows and understands the types of computer graphics.	K_W014
EU03 Knows and understands colour models/colour spaces	K_W014
SKILLS	
EU04 Is able to apply theoretical knowledge and transform it into project implementation in practice.	K_U01, K_U02 K_U06, K_U15, K_U21,K_U22
EU05 Is able to apply filters in graphic environments.	K_U01, K_U02 K_U06, K_U15
EU06 Is able to prepare graphics for a web page.	K_U01, K_U02 K_U06, K_U15
EU07 Is able to prepare appropriate graphics on layers so that they are suitable for importing into animation work environments.	K_U01, K_U02 K_U06, K_U15
EU08 Is able to prepare and modify graphics for photography, printing, mobile devices.	K_U01, K_U02 K_U06, K_U15
EU09 Is able to create graphics on layers suitable for importing into other work environments.	K_U01, K_U02 K_U06, K_U15
EU10 Is able to save to appropriate formats.	K_U01, K_U02 K_U06, K_U15
EU11 Knows the principles of lossy and lossless compression.	K_U01, K_U02 K_U06,

	K_U15
EU12 Knows the formats for saving graphics. Can import and export different formats.	K_U01, K_U02 K_U06, K_U15
EU13 Is able to convert graphic files from vector to bitmap images and vice versa.	K_U01, K_U02 K_U06, K_U15
SOCIAL COMPETENCES	
EU14 Is ready to undertake responsible independent / team work as a graphic designer.	K_K04
EU15 Is competent within formulating an assessment of his/her own and others' achievements in the field of graphic design.	K_K01

11. Course content

Course delivery method – lectures/laboratories

Lecture:

1) Computer graphics - history and essence.
2) Anatomy of the human visual system.
3) Division and examples of computer graphics applications.
4) Colour theory - colour vs tone.
5) Colour models / colour spaces.
6) 2D images - raster graphics.
7) 2D images - vector graphics.
8) Graphics for export to other work environments - compression, saving.
9) Basics of composition.

Laboratories:

1) Familiarisation exercises with the interface and operation of graphics programs based on an open source licence.
2) Creating graphics using all the features available in GIMP.
3) Creating graphics with particular use of layers and channels.
4) Modifying graphics using selection tools.
5) Processing graphics using algorithms (e.g. Liquid Rescale).
6) Modifying graphics using filters. Converting text to paths.
7) Introduction to vector graphics in Inkscape.
8) Importing/Exporting vector graphics.
9) Using advanced Inkscape tools - logo design.
10) Using raster and bitmap graphics elements in preparing a website layout.
11) Compressing and exporting graphics to various formats.

12. Teaching tools and methods

1. lecture: informative / problem-based / discussion with the use of multimedia
2. laboratory: open source software for bitmap and vector graphics,

13. Assessment method (component, final)

1. component: continuous assessment, (evaluation of work carried out in class and of homework)
2. final: graded credit (test of choice and gap filling).

14. Student workload

Form of activity	Number of hours
1. Classes with direct participation of the teacher and office hours	55
2.Student workload	20
sum	75
Number of ECTS credits	3

15. Reference books

Primary:

1) Adobe Photoshop PL. Oficjalny podręcznik, Wydawnictwo Helion, 2020.
2) Adobe Illustrator PL. Oficjalny podręcznik, Wydawnictwo Helion, 2020.
3) Witkowski B., GIMP : poznaj świat grafiki komputerowej, Wydawnictwo Helion, 2019.
4) Hiitola B. Inkscape : Beginner's Guide,. Birmingham : Packt Publishing, 2012.

Secondary:

1) www.adobe.com.pl

16. Assessment form - details

The final grade for laboratories is based on component marks.
The final grade for the lectures is the sum of the class participation and the graded credit (choice and gap filling test).

The way of the learning outcomes verification:

The assessment of the degree of learning outcomes achieved by the student is made according to the following criteria:
5.0 - learning effect was achieved without reservations
4.5 - learning effect was achieved with single insufficiencies/ errors
4.0 - learning effect was achieved with few insufficiencies /errors
3.5 - learning effect was achieved with many insufficiencies /errors
3.0 - learning effect was achieved with numerous and significant insufficiencies /errors (minimum required level of achievement of the effect)
2.0 - the learning effect was not achieved

17. Other details concerning thecourse

1. Direct information about the issues of classes and a program content is provided by the teacher during classes and during office hours.
2. Classes will be held at AB in Biała Podlaska
3. Classes will be held in accordance with the current schedule
4. Office hours will be held in accordance with the applicable schedule