STUDY MODULE DESCRIPTION FORM

Name of the module/subject **Computer graphics and man-machine communication**		Code **1010331551010334961**

Field of study **Information Engineering**	Profile of study (general academic, practical) **(brak)**	Year /Semester **3 / 5**

Elective path/specialty **-**	Subject offered in: **Polish**	Course (compulsory, elective) **obligatory**

Cycle of study: **First-cycle studies**	Form of study (full-time,part-time) **full-time**

No. of hours Lecture: **30** Classes: **-** Laboratory: **30** Project/seminars: **-**	No. of credits **6**

Status of the course in the study program (Basic, major, other) **(brak)**	(university-wide, from another field) **(brak)**

Education areas and fields of science and art **technical sciences**	ECTS distribution (number and %**)** **6 100%**

Responsible for subject / lecturer: dr inż. Izabela Janicka-Lipska email: izabela.janicka-lipska@put.poznan.pl tel. 61-665-39-92 Wydział Elektryczny ul. Piotrowo 3A 60-965 Poznań	**Responsible for subject / lecturer:** dr inż. Izabela Janicka-Lipska email: izabela.janicka-lipska@put.poznan.pl tel. 61-665-39-92 Wydział Elektryczny ul. Piotrowo 3A 60-965 Poznań

Prerequisites in terms of knowledge, skills and social competencies:

1	**Knowledge**	K_W01: Student has a basic knowledge of mathematics, including algebra, analysis, logic, probability and elements of discrete and applied mathematics
		K_W05: Student has organized knowledge with theoretical foundations of basic program constructions, algorithm implementations, paradigms and programming styles, software verification methods, formal languages, compilers, platforms
2	**Skills**	K_U01: Student is able to acquire information from literature, data bases and other sources; student is able to integrate acquired information, to interpret it, to draw conclusions and to formulate and justify judgments
		K_U04: Student is able to prepare and to demonstrate short presentation of engineering task results
		K_U10: Student is able to use software platforms and environments for simple programs encoding, running and testing in imperative, object-oriented and declarative programming languages
3	**Social competencies**	K_K01: Student understands the need and knows the possibilities of lifelong learning (second- and third-degree, postgraduate, courses) and improving language professional, personal and social skills

Assumptions and objectives of the course:

Analyse and creation 2D and 3D objects in chosen graphic editors

Tools and methods for human-computer interaction design

Study outcomes and reference to the educational results for a field of study

Knowledge:

1. Student has organized knowledge with theoretical foundations computer graphics and man machine communication - [-K_W10]

2. Student knows common IT engineering technology - [-K_W18]

Skills:

1. Student is able to carry out basic tasks in computer graphics and human-computer communication - [-K_U14]

2. Student is able to create engineer work documentation and to prepare text with the work result discussion - [-K_U03]

3. Student is able to self learning in order to increase professional skills - [-K_U05]

Social competencies:

1. Student understands and is aware of the importance of nontechnical issues related to computer engineer activity. Student understands the responsibility associated to his engineering decisions - [-K_K02]

2. Student is aware of the importance of behavior in a professional manner and comply with the rules of professional ethics and respect for the diversity of views and cultures - [-K_K03]

3. Student is able to self learning in order to increase professional skills - [-K_U05]

Assessment methods of study outcomes

Lecture ? oral or written examination

Laboratory ? experiments, projects and reports assessment

More than 50% of all points is necessary for positive result

Course description

Content of lecture - computer graphic application, history, equipment for computer graphics, visible light, hue/color, raster and vector graphic, compression algorithms of images, graphic files, algebra of images, 2D & 3D graphics, animation, fractals geometry, perception (sense and organs of senses), sources of communications, interpersonal communication (verbal and unverbal), communication person - computer system, styles of user?s interactions with system, principles of designing interactive systems, characteristic of GUI, interface of internet and mobile application, testing and evaluation of applications? and websites? interfaces, availability, affordance and usability of information

Course update 2017: new examples, mockups.

Teaching methods:

- lecture with multimedia presentations,

- additional topics available in Moodle course.

Laboratory exercises ? 2D & 3D modelling, essessment of user interface for chosen system, designing user friendly interface

Basic bibliography:

1. 1.   Dix A., Finlay J. Abowd G., Beale R., Human-Computer Interaction, Prentice Hall, 2004

2. 2.   Sharp H., Rogers Y., Preece J. Interaction Design. Beyond Human-Computer Interaction, Wiley, 2005

3. 3.   Tidwell J., Projektowanie interfejsów. Sprawdzone wzorce projektowe, Helion, 2012

4. 4.   Nielsen J., Projektowanie funkcjonalnych stron internetowych, Helion, 2003

Additional bibliography:

1. 1.   Nielsen J. , Tahir M., Funkcjonalność stron WWW. 50 witryn bez sekretów, Helion, 2006

2. 2.   Nielsen J., Loranger H., Optymalizacja funkcjonalności serwisów internetowych, Helion, 2007

3. 3.   Krug S. Nie każ mi myśleć. O życiowym podejściu do projektowania stron internetowych, Helion, 2006

4. 4.   37 signals, Linderman M., Fried J. Przyjazne witryny WWW, Helion, 2005

Result of average student's workload

Activity	Time (working hours)
1. Lectures	30
2. Laboratory	30
3. Consultations and exam	15
4. Practical and theoretical preparation for laboratory; reports	45
5. Exam preparation	30

Student's workload

Source of workload	hours	ECTS
Total workload	150	6
Contact hours	75	3
Practical activities	75	3