



COURSE DESCRIPTION CARD - SYLLABUS

Course name

Information and multimedia technologies [S1ETI2>TIIM]

Course

Field of study

Education in Technology and Informatics

Year/Semester

1/1

Area of study (specialization)

–

Profile of study

general academic

Level of study

first-cycle

Course offered in

Polish

Form of study

full-time

Requirements

compulsory

Number of hours

Lecture

30

Laboratory classes

30

Other

0

Tutorials

0

Projects/seminars

0

Number of credit points

5,00

Coordinators

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Lecturers

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Prerequisites

Basic information on computer science. Basic use of a Windows computer. Ability to work in a group, active attitude when solving problems

Course objective

The subject is to familiarize students with the design and basic functions of personal computers, the types and capabilities of operating systems and the software used to prepare scientific papers as well as the analysis and presentation of laboratory research results. Practical knowledge and skills in the field of multimedia techniques, taking into account the issues of auditory and visual perception, will also be provided.

Course-related learning outcomes

Knowledge:

1. Explain the structure and functions of basic computer components, and explain how computers process information.
2. Explain the functions and present the differences and similarities between the currently used operating systems of personal computers.
3. Present and discuss the principles of presenting the results of scientific research, placing references in the literature and building charts.
4. Understands the operation and configuration of the computer's Internet connection using a wired or wireless sitting
5. Knows the types of computer software licenses
6. Knows the rules of creating and applying bitmap and vector graphics
7. Knows the principles of safe computer use, avoiding unwanted software and data encryption.

Skills:

1. Is able to prepare a properly formatted document which is a research paper, containing references, images, patterns, tables and indexes.
2. Independently prepare and present a multimedia presentation on scientific topics, containing tables, formulas, pictures.
3. Can create scientific graphs and analyze the data contained on them using the Origin program. -
4. Prepare bitmap graphics of appropriate quality.
5. Prepare vector graphics of appropriate quality.

Social competences:

1. Be involved in solving IT problems on your own.
2. Recognize the need for ethical use of computer software in accordance with its licenses.

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Lecture - Final test at the last class with 5-10 questions and a multimedia presentation.

Laboratory exercises: 2-3 tests of practical skills with the use of computer and software.

Percentage of grades: 0-50% - 2.0 (insufficient); 50,1-60% - 3.0 (sufficient); 60,1-70% - 3.5 (sufficient plus); 70,1-80% - 4.0 (good); 80,1-90% - 4.5 (good plus); 90,1-100% - 5.0 (very good).

Programme content

Operating systems. Decimal number recording and processing in the binary system. Types of computer software licences. Issues of experimental data processing and presentation. Creation of scientific documents. Issues of safety in the use of information technology and computers. Basic issues of computer graphics.

Course topics

Lecture:

- exposure to the history of computing
- types of computers
- methods of encoding and processing data by computers
- review of operating systems
- basic types of applications used on PCs
- types of licences and principles of software licensing and sales
- principles of ergonomics when working with computers
- computer dangers: unwanted software, hacking, protecting against them
- operation and principles of operation of the PP university network
- Internet: history and current status.
- Protocols used in communication via the Internet.
- E-mail.
- Searching for information on the Internet.
- Safety of using the Internet.
- Vector and raster computer graphics. Differences and applications.
- Processing vector and raster graphics. Optimising file size.

- Digital sound recording.
- Creation and processing of digital video files.
- Design of peripherals and software used for digital multimedia processing (scanners, printers, digital cameras).
- Vector and raster computer graphics. Differences and applications.

Labs:

- advanced document creation
- calculation and processing of measurement results
- imaging and analysis of measurement results - Originlab Origin
- Basics of correct scientific presentation
- Raster processing. Optimisation of file size.
- Creating vector graphics.
- Vectoring bitmap graphics.
- Basics of digital audio recording.
- Creation and processing of digital video files.
- Operation of peripherals and software used for digital multimedia processing (scanners, printers, digital cameras).

Teaching methods

Lecture: multimedia presentation, illustrated with examples.

Bibliography

Basic:

1. Praca zbiorowa pod redakcją A.Z. Hryniewiczza i E. Rokity. Fizyczne metody badań w biologii, medycynie i ochronie środowiska. PWN Warszawa 1999.
2. Praca zbiorowa pod redakcją A.Z. Hryniewiczza i E. Rokity. Fizyczne metody diagnostyki medycznej i terapii. PWN Warszawa 2000.
3. Praca zbiorowa pod red. H. Podbielska, A.Sieroń, W.Stręk - Diagnostyka i terapia fotodynamiczna, Wydawnictwo Medyczne Urban &Partner, Wrocław, 2004.
4. Praca zbiorowa pod red. A. Hryniewiczza - Człowiek i promieniowanie jonizujące, Wydawnictwo Naukowe PWN, Warszawa 2001.

Additional:

Current issues of computer journals.

Breakdown of average student's workload

	Hours	ECTS
Total workload	125	5,00
Classes requiring direct contact with the teacher	62	2,50
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	63	2,50