



48SJ-ABMDT

ECTS: 0,5

YEAR: 2020Z

**ELECTIVE COURSE- APPLICATIONS OF BIOPHYSICS IN MEDICAL
DIAGNOSTICS AND TREATMENT**
**ELECTIVE COURSE- APPLICATIONS OF BIOPHYSICS IN MEDICAL DIAGNOSTICS
AND TREATMENT**

**COURSE CONTENT
CLASSES**

Physical processes and phenomena occurring in the following diagnostic and treatment methods: nuclear medicine, magnetic resonance imaging, computed tomography, radiotherapy, ultrasound.

LECTURES**EDUCATIONAL OBJECTIVE:**

Recognition and knowledge of the laws of physics and physical phenomena applicable in medicine, in particular in the process of diagnosis and treatment. Developing skills to discuss in the forum about physical processes/ phenomena occurring in medicine.

**DESCRIPTION OF LEARNING OUTCOMES FOR THE COURSE IN RELATION TO FIELD AND MAJOR
LEARNING OUTCOMES**

Codes of learning outcomes in a major field of study: M/NM+++ , M/NMA_P7S_KR+ ,

Codes of learning outcomes in a major area of study: B.U1.+ , B.U10.+ , B.U2.+ , B.W6.+ , B.W8.+ , B.W9.+ , K.5+ , K.8.+ , KA7_KR1+ ,

LEARNING OUTCOMES:**Knowledge**

W1 - Student understands physical processes, natural and artificial phenomena and their relationship with diagnostic imaging and selected treatment methods.

Skills

U1 - The student recognizes the processes and physical phenomena occurring using selected diagnostic methods and treatment

Social competence

K1 - The student presents a presentation prepared in accordance with copyright and disclosure of sources. Student exchanges thoughts and arguments with discussion participants.

BASIC LITERATURE

1) Paul Davidovits, Physics in Biology and Medicine, wyd. Elsevier Science Publishing Co Inc, 2013 ; 2) Roland Glaser, Biophysics : An Introduction, wyd. Springer-Verlag Berlin and Heidelberg GmbH & Co. KG , 2012 ; 3) T. A. Delchar, Physics in Medical Diagnosis, wyd. Chapman and Hall, 1997

SUPPLEMENTARY LITERATURE**Course/module:**

Elective course- Applications of biophysics in medical diagnostics and treatment

Fields of education:

Course status: facultative

Course group: brak

ECTS code:

Field of study: Medicine

Specialty area: Medicine

Educational profile: General academic

Form of study: full-time

Level of study: uniform master's studies

Year/semester: 1 / 1

Type of course:

Classes

Number of hours per semester/week: Classes: 20

Teaching forms and methods

Classes(K1, U1, W1) : Seminar - a multimedia presentation on a diagnostic method or treatment with an emphasis on indication and explanation of physical foundations and discussion.

Form and terms of the verification results:

CLASSES: Colloquium test - Written check test(U1, W1) ; CLASSES: Part in the discussion - Activity in the discussion(K1, U1, W1) ; CLASSES: Presentation - Multimedia presentation prepared in teams of two(K1, U1, W1)

Number of ECTS points: 0,5

Language of instruction: English

Introductory courses:

physics

Preliminary requirements:

basics of physics

Name of the organizational unit offering the course:

Katedra Fizyki i Biofizyki,

Person in charge of the course:

dr hab. Krzysztof Bryl, prof. UWM

Course coordinators:**Notes:**

Detailed description of the awarded ECTS points - part B

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The awarded number of ECTS points is composed of:

1. Contact hours with the academic teacher:

- participation in: classes	20 h.
- consultation	2 h.
	22 h.

2. Student's independent work:

- preparation of a multimedia presentation. searching for source materials (library, internet).	5 h.
	5 h.

1 ECTS point = 25-30 h of the average student's work, number of ECTS points = 27 h : 1 h/ECTS = 27,00 ECTS

on average: **0,5 ECTS**

- including the number of ECTS points for contact hours with direct participation of the academic teacher:	22,00 ECTS points,
- including the number of ECTS points for hours completed in the form of the student's independent work:	-21,50 ECTS points,