1.	Field of study	Biomedical Engineering
2.	Faculty	Faculty of Science and Technology
3.	Academic year of entry	2024/2025 (winter term)
4.	Level of qualifications/degree	first-cycle studies (in engineering)
5.	Degree profile	general academic
6.	Mode of study	full-time

7.	General information about the module	
Module name		Multimedia in medical imaging
Module code		08-IBIO-S1-17-7-MOM
Number of the ECTS credits		4
Language of instruction		Polish
Purpose and description of the content of education		Opanowanie materiału z modułu "Multimedia w obrazowaniu medycznym" dzieli się na dwie płaszczyzny. Pierwsza płaszczyzna zakłada poznanie i zrozumienia podstaw teoretycznych. Druga wymaga nabycia praktycznych umiejętności posługiwania się zdobytą wcześniej wiedzą teoretyczną. Do podstaw teoretycznych zaliczyć należy przede wszystkim przyswojenie i zrozumienie pojęć związanych z przedmiotem oraz nabycie umiejętności kojarzenia oraz zastosowania omawianych zagadnień. Istotną częścią podstawy teoretycznej jest umiejętność wyszukania w literaturze szczegółowych informacji takich jak techniki multimedialne, urządzenia do obrazowania medycznego czy standardy plików multimedialnych. Umiejętności praktyczne zdobywa się między innymi przez analizę medycznych rozwiązań multimedialnych stosowanych praktyce oraz przez samodzielne tworzenie własnych oraz konfigurowanie istniejących rozwiązań. Studiowanie modułu wymaga uwzględnienia dwóch aspektów, które są cechą inżyniera - praktyczne wykorzystywanie swojej wiedzy i umiejętności w działalności zawodowej.
List of modules that must be completed before starting this module (if necessary)		not applicable

8.	Learning outcomes of the module			
Code		Description	Learning outcomes of the programme	Level of competenc (scale 1-5)
K_1		Student przywołuje wiedzę w zakresie multimediów w obrazowaniu medycznym	W11	3
K_2		Student rozpoznaje i wyjaśnia metody, narzędzia oraz techniki informatyczne wykorzystywane w tworzeniu medycznych aplikacji multimedialnych	W11 W16	2 2
K_3		Student potrafi wybrać informacje z literatury, zasobów internetowych oraz innych źródeł	U01	1
K_4		Student łączy metody informatyczne, techniczne i eksperymentalne w celu formułowania i rozwiązywania zadań inżynierskich	U07 U22	2 2
K_5		Student demonstruje uzyskane rezultaty i wyciąga wnioski	U04	1
K_6		Student konstruuje multimedialne aplikacje do obrazowania medycznego.	U11	1
K_7		Student potrafi zaplanować i tworzyć prace w zespole oraz indywidualnie	U02	3

9. Methods of conducting classes

Code	Category	Name (description)
a03	Lecture methods / expository methods	**Description** *a description of objects, phenomena, processes or people; it involves specifying the structure and characteristic features of the object, phenomenon, or process being described; it is usually accompanied by a demonstration of the described object or by its models, drawings, tables, charts, etc.; a description may take the form of an explanation, classification, justification or comparison*
c06	Demonstration methods	**Demonstration-imitation** *a presentation of a model way of performing specific activities accompanied by a commentary; it aims at triggering imitation activities in an individual or in a group of participants observing the activities of the person teaching the course until the right habit is formed through regular exercise; the demonstration-imitation method is combined with a physical practice of activities/behaviours*
d01	Programmed learning methods	**Working with a computer** *e.g., Webquest; implementation of educational tasks using electronic and digital devices, computer programs and Internet applications; the academic teacher acts as a consultant; students' work is carried out step by step according to the plan laid own by the person teaching the course and following his instructions, and proceeds towards producing the indicated results within the set deadline*

10. Forms of teaching

Code	Name	Number of hours	Assessment of the learning outcomes of the module	Learning outcomes of the module	Methods of conducting classes
k_fs_1	laboratory classes	30	course work	K_1, K_2, K_3, K_4, K_5, K_6, K_7	a03, c06, d01

11. The student's work, apart from participation in classes, includes in particular:

Code	Category	Name (description)	Is it part of the BUNA?
a01	Preparation for classes	**Search for materials and review activities necessary for class participation** *reviewing literature, documentation, tools and materials as well as the specifics of the syllabus and the range of activities indicated in it as required for full participation in classes*	No
a02	Preparation for classes	**Literature reading / analysis of source materials** *reading the literature indicated in the syllabus; reviewing, organizing, analyzing and selecting source materials to be used in class*	No
a03	Preparation for classes	**Developing practical skills** *activities involving the repetition, refinement and consolidation of practical skills, including those developed during previous classes or new skills necessary for the implementation of subsequent elements of the curriculum (as preparation for class participation)*	No
a05	Preparation for classes	**Production/preparation of tools, materials or documentation necessary for class participation** *developing, preparing and assessing the usefulness of tools and materials (e.g. aids, scenarios, research tools, equipment, etc.) to be employed in class or as an aid when preparing for classes*	No
b01	Consulting the curriculum and the organization of classes	**Getting acquainted with the syllabus content** *reading through the syllabus and getting acquainted with its content*	Yes
c02	Preparation for verification of learning outcomes	**Studying the literature used in and the materials produced in class** *exploring the studied content, inquiring, considering, assimilating, interpreting it, or organizing*	No

		knowledge obtained from the literature, documentation, instructions, scenarios, etc., used in class as well as from the notes or other materials/artifacts made in class	
d01	Consulting the results of the verification of learning outcomes	Analysis of the corrective feedback provided by the academic teacher on the results of the verification of learning outcomes *reading through the academic teacher's comments, assessments and opinions on the implementation of the task aimed at checking the level of the achieved learning outcomes*	Yes
d02	Consulting the results of the verification of learning outcomes	Development of a corrective action plan as well as supplementary/corrective tasks *reviewing and selecting tasks and activities enabling the elimination of errors indicated by the academic teacher, their verification or correction resulting in completing the task with at least the minimum passing grade*	Yes

Information on the details of the module implementation in a given academic year can be found in the syllabus available in the USOS system: https://usosweb.us.edu.pl.