	UNIVERSITY OF BANJA LUKA **FACULTY OF MEDICINE**	
	UNDERGRADUATE STUDIES	
	Study Programme of: **NURSING**	

Course Unit Name	**FUNDAMENTALS IN BIOPHYSICS**			
Course Unit Code	**Course Unit Status**	**Semester**	**Class Workload**	**Number of ECTS**
	compulsory	I	1 L + 0 P (15)	1
Members of Staff:	Academician Dragoljub Mirjanić, Full Professor			
Eligibility Requirements:	Form of Requirements			
None				

Goals of the Course Unit:

The primary goal of the course unit Biophysics is studying the fundamental physical quantities and laws in biophysics that are necessary for a successful pursuing of other course units, as well as for developing a certain level of creativity.

Learning Outcomes (knowledge gained):

Students will be trained to identify, formulate, and solve issues in the areas of biomechanics, bioelectromagnetism, optics, and the fundamentals of atomic and nuclear physics, both for the purpose of health care studies and for the purpose of biomedicine.

Competencies:

4, 5 (see the enclosure Competencies).

Contents of the Course Unit:

Introduction and significance of biophysics in health care. Biomechanics, molecular physics, and thermophysics (heat exchange between biosystems and the environment, particle transport), bioelectromagnetism, optics, and the fundamentals of atomic and nuclear physics (X-ray radiation, molecular spectra, natural and artificial radioactivity, ionizing radiation).

Teaching Methods:

Classes are performed as lectures, midterms, consultation and independent students' work.

Literature:

1. Шетрајчић, Ј. и Мирјанић, Д. (2012). *Биофизичке основе технике и медицине*. Бања Лука: АНУРС.
2. Раковић, Д. (2008). *Биофизика*. Београд.
3. Јанић, И., Мирјанић, Д. и Шетрајчић, Ј. (1993). *Опита физика и биофизика*. Бања Лука.

Examination forms:

Pre-Exam Duties		**Final Exam**		**Total Points**
Attendance	**4**	**Oral/written exam**	**50**	**100**
Midterms	**46**			
Seminar paper				

Note for the Course Unit:

Syllabus Designer: Academician Dragoljub Mirjanić, Full Professor