

Study Programme: Biomedical Engineering			
Course Unit Title: Flexible Electronics			
Course Unit Code: BM117B			
Name of Lecturer(s): Goran Stojanović			
Type and Level of Studies: Bachelor level			
Course Status (compulsory/elective): compulsory			
Semester (winter/summer): winter			
Language of instruction: english			
Mode of course unit delivery (face-to-face/distance learning): face-to-face			
Number of ECTS Allocated: 5			
Prerequisites: none			
Course Aims: Acquiring theoretical and practical knowledge in the filed of printed-flexible electronics in manufacturing of mechanically flexible sensors, stimulators and other components and devices in medicine.			
Learning Outcomes: - an ability to design and and manufacture of flexible blood pressure sensors - an ability to design and manufacture of prototypes of implantable ocular pressure sensors - an ability to design and manufacture of flexible stimulators for application in EMG - an ability to design and manufacture of RFID for telemetry application in medicine			
Syllabus: Manufacturing methods for flexible electronic components and devices (ink-jet printing, screen printing, flexo-printing, etc.). Flexible transistors and light emitting diodes. Flexible displays. Flexible solar cells. Flexible sensors and scanners. Implantable LC blood pressure sensors. Implantable ocular pressure sensors. Fleixble (polymeric) stimulators. Flexible RFID tags and their applications in medical telemetry. Smart textiles. Measuring ECG using embedded electrodes in textile. Moisture sensors embedded in textile (blankets, etc.). Realization and application of flexible force sensitive resistors (FSR).			
Required Reading: Relevant literature in English TBD			
Weekly Contact Hours: 4		Lectures: 2	
Practical work: 2			
Teaching Methods: Lecture. Auditory exercises. Laboratory exercises. Consultation			
Knowledge Assessment (maximum of 100 points): 100			
Pre-exam obligations	points	Final exam	points
Project	30	Final Exam part 1	35
		Final Exam part 2	35
The methods of knowledge assessment may differ; the table presents only some of the options: written exam, oral exam, project presentation, seminars, etc.			