Course code. Course title **NUCLEAR ELECTRONICS**	
Name of the lecturer: **Assist. Prof. Ilko Rusinov, PhD**	
Type of the course **Optional**	*Level of course* **Bachelor**
Year of study **Fourth**	*Semester* **Eight**
Number of ECTS credits allocated **4**	*Number of hours* **30 hours lectures and 15 hours exercises**
Teaching methods **Regular lectures and laboratory training**	*Objective of the course* **Acquiring knowledge and practical skills in nuclear electronics for undergraduate students.**
Assessment methods **Weighted average of 2 current written tests, homework, laboratory and final written examination**	*Language of instruction* **Bulgarian**

Prerequisites
Successfully taken course in general electronics

Course contents

The subject of the course is the field of electronics engaged in acquisition and processing of electrical signals generated in various types of radiation detectors. Basic principles and building blocks for amplification, shaping, transmission, and analog-to-digital conversion of signals are studied. The students get acquainted with the techniques for amplitude and timing data acquisition. Among the included topics are: preliminary amplification of pulses by voltage and charge-sensitive amplifiers, various means for pulse shaping, integrators, appropriate analog-to-digital conversion schemes, time-to amplitude conversion, single- and multi-channel analyzers, simulation of some electrical circuits with basic application, etc. In the laboratory, the students assemble and investigate some relevant electronic circuits, using integrated circuits and discreet components.

Recommended readings

1.The Art of Electronics, Horowitz and Hill, Mir, Moskva, 1993 (in Russ.);
2. Electronics for Research and Experiments, Brian Jones, Tehnika, Sofia,1991 (in Bulg.);
3. Applications of Analog Integrated Circuits, Sidney Soclof, Prentice-Hall 1985, Tehnika, Sofia, 1990 (in Bulg.);
4. Nuclear Electronics, P.W.Nicholson, John Wiley & Sons 1974;
5. Nuclear Electronics, E. Kowalsky, Atomizdat, Moskva, 1972 (in Russ.);
6. Lectures in Nuclear Electroncs, V. Angelov