

Title <b>Information Theory</b>	Code <b>1018071610108010166</b>
Field <b>Electronics and Telecommunications</b>	Year / Semester <b>3 / 6</b>
Specialty -	Course <b>core</b>
Hours Lectures: <b>2</b> Classes: <b>1</b> Laboratory: -    Projects / seminars: -	Number of credits <b>4</b>
	Language <b>polish</b>

**Lecturer:**

dr hab. inż. Hanna Bogucka  
Wydział Elektroniki i Telekomunikacji  
ul. Polanka 3  
60-965 Poznań  
tel. 061-665-3911, fax. 061-665-3823  
e-mail: hbogucka@et.put.poznan.pl

**Faculty:**

Faculty of Electronics and Telecommunications  
ul. Piotrowo 3A  
60-965 Poznań  
tel. (061) 665-2293, fax. (061) 665-2572  
e-mail: office\_det@put.poznan.pl

**Status of the course in the study program:**

Obligatory course, Faculty of Electronics and Telecommunications, field: Electronics and Telecommunications

**Assumptions and objectives of the course:**

Knowledge of the principles of transmission of information

**Contents of the course (course description):**

Model of the information system, models of information sources, characterization of information sources, entropy and its application in the source characterization, source coding, limits of source coding, Huffman coding, Shannon-Fano coding, Lempel-Ziv coding, arithmetic coding, channel models, channel capacity, calculation of channel capacity, mutual information, Shannon theorem on channel coding and limits of the information rate in transmission over unreliable channels, capacity of selected channel models, theoretical basics of the adaptive modulation.

**Introductory courses and the required pre-knowledge:**

Basic knowledge of digital communication systems, statistics, probability and stochastic processes theory.

**Courses form and teaching methods:**

Lectures based on multimedia presentations and classes

**Form and terms of complete the course - requirements and assessment methods:**

Credit based on the test of problems solving in the 14th week of the semester; written exam in the form of the test including open questions.

**Basic Bibliography:**

-

**Additional Bibliography:**

-