## ⧓ Rzeszów University of Technology

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| **The Faculty of:** | Faculty of Electrical Engineering and Informatics |
| **Field of study:** | Electronics and Telecommunications (ET) |
| **Speciality:** | |
| **Study degree (BSc, MSc):** | MSc, second circle Master's degree full part studies |

## COURSE UNIT DESCRIPTION

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| **Course title:** | Security of Information Systems |
| **Lecturer responsible for course:** Marcin Bednarek, PhD <br> **Contacts: phone:** +48178651543     **e-mail:** bednarek@prz.rzeszow.pl | |
| **Department :** Department of Computer and Control Engineering | |

| Semester | Weekly load | Type of classes | | | | Number of ECTS credits |
|---|---|---|---|---|---|---|
| | | **L** Lectures | **C** Theoretical Classes | **Lb** Laboratory | **P** Project | |
| 45 | 3 | 30 | | | 15 | 3 |

### Course description

**Lecture:**
Information security. Security policy. Organizational and legal aspects of information security. Security assessment of systems - criterions. Security threats - detection and prevention. Security attacks. Security architecture. Security services, security mechanism. Quality and certification of systems. Basic elements of cryptography. Properties of secure ciphers. Kinds of ciphers. Symmetric key cryptography: stream ciphers and block ciphers. Symmetric and asymmetric cipher algorithms. Public key cryptography. Key distribution. Quantum cryptography. Authentication methods. Digital signature. Malware. Digital watermarking and steganography. Compromising emanations. Spurious emission - mechanism of generation, ways of reducing emissions. Electromagnetic leakage (protection of information, protection zones).

**Classes:**

**Laboratory:**

**Project:**
Analysis and/or planning the security of information systems.

### Objectives of the course

The goal of the course is to learn about security of information systems (analysis and planning the security of information systems).

| Examination method |
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| Written test, written solution of design problems, oral discussion. |

| Bibliography |
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| 1. Stamp M.: Information Security. Principles and Practice. Willey-Interscience, Hoboken, 2006.<br>2. Stallings W.: Ochrona danych w sieci i intersieci. W teorii i praktyce. WNT, Warszawa 1997<br>3. Stokłosa J., Bilski T., Pankowski T.: Bezpieczeństwo danych w systemach informatycznych, PWN, Warszawa – Poznań 2001<br>4. Liderman K.: Bezpieczeństwo Teleinformatyczne, Instytut Automatyki i Robotyki WAT, Warszawa 2001<br>5. Anderson J.: Security Engineering. A Guide to Building Dependable Distributed Systems, Wiley Publishing Inc., Indianapolis 2008<br>6. Maiwald E. Bezpieczeństwo w sieci: kurs podstawowy, EDITION 2000, Kraków 2001<br>7. Sutton R. J.: Bezpieczeństwo telekomunikacji: praktyka i zarządzanie, WKiŁ, Warszawa 2004<br>8. Schneier B.: Kryptografia dla praktyków, WNT, Warszawa 2002<br>9. Dennig D.E.: Wojna informacyjna i bezpieczeństwo informacji, WNT, Warszawa 2002<br>10. Put D.: Szkoła Hakerów – podręcznik, Wydawnictwo CHS, Kwidzyn 2006 |

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| **Lecturer signature** | |
| **Head of Department signature** | |
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