

MSc diploma subject proposals 2019/20

Specialization: Teleinformation Networks and Systems

- 1. Optical resource reservation in multidomain ASON/GMPLS network architecture**
- 2. ASON/GMPLS architecture simulation model with optical connection protection mechanism**
- 3. Analytical traffic model of a multidomain IMS/NGN including service and transport stratum**
- 4. Design of a multidomain IMS/NGN architecture elements**
- 5. Review and research of homomorphic ciphers algorithms**
- 6. Review and research still images watermarking methods using SVD**
- 7. Review and research Hill cipher modifications**
- 8. Review and research of algorithms of reversible data hiding in encrypted images**
- 9. An application demonstrating a data transmission with Faster-Than-Nyquist signaling**
- 10. Investigation of Single Bit Flipping algorithm in application to LDPC codes decoding**
- 11. Review of methods for measurements of impulse responses of telecommunication channels**
- 12. Laboratory of public key infrastructure**
- 13. Laboratory of digital fingerprint methods**
- 14. Laboratory of one-way hash functions**
- 15. Review and examination of properties of selected modifications for the AES algorithm**
- 16. Software implementation and research of the quaternion Hill cipher**
- 17. Segment Routing architecture**
- 18. Analysis of Message Oriented Middleware for telecommunication servers**

19. Analysis of next-generation passive optical network transmission capabilities

20. Transmission techniques with very high speed in the access network with copper symmetrical pairs

21. Quality measurement methods for coherent optical transmission at very high speed