

## **BSc diploma subject proposals 2017/18**

### **Profile: Teleinformation Networks**

- 1. Software for structure parameter determination of DWDM optical switches**
- 2. Design of IMS/NGN architecture elements**
- 3. Laboratory for VoIP based on the Platan Proxima system**
- 4. IP network based on Raspberry Pi 3 devices**
- 5. Resource design for circuit switching networks**
- 6. Resource design for packet switching networks**
- 7. Adaptation of MatConvNet software for steganalysis of still images**
- 8. Accelerating of computations in artificial neuron nets using GPU**
- 9. Adaptation of DeebNet software for steganalysis of still images**
- 10. Adaptation of Cortexsys software package for steganalysis of still images**
- 11. Overview of symbol timing recovery algorithms**
- 12. Digital filter design using genetic algorithms**
- 13. Punctured convolutional codes**
- 14. Soft decoding of convolutional codes**
- 15. Coding and decoding of LDPC**
- 16. Application for demonstration of merged and iterated codes**
- 17. Research tools implementing convolutional neural networks**
- 18. Steganographic techniques of data hiding in images on the example of the F5 algorithm**
- 19. Instant messenger implementing a method of asymmetric encryption**
- 20. Application of OSN servers in internetwork gateways**
- 21. Internetworking of signalling gateways with DGT Millenium switching node**
- 22. Systems for management of software containers environments for virtualization of telecommunication servers**
- 23. Application of Elixir language for developing telecommunication solutions**

- 24. Evaluation of the quality a real time clock synchronization in the IP network**
- 25. Measurements of phase fluctuations for signals in the E1 interface using data from the digital oscilloscope**
- 26. Selective measurement of the signal level based on samples from the digital oscilloscope**
- 27. Graphical user interface for the management of the passive optical network GEPON**
- 28. Reasearch on NETCONF and RESTCONF capabilities of “mininet” environment**
- 29. Laboratory for VoIP based on the Oracle SBC system**