

Computer Networks

International University of Central Asia
Information Technology Program

1 Course Information

Course Repositories

<https://github.com/iuca/iuca-networks>

Class Discussions

<https://piazza.com/iuca.kg/fall2018/iuca-networks>

Place

TBD

Time

TBD

2 Prerequisites

TBD

3 Contact Information

Instructor

Toksaitov Dmitrii Alexandrovich
toksaitov_d@iuca.kg

Office

TBD

Office Hours

TBD

4 Course Overview

This course gives an overview of computer networks in terms of concept, components, design, and management. Students investigate different aspects of computer networks. Critical thinking is given to why networks are designed and function as

they do. Students evaluate for themselves the good and bad points relating to network design and function (in an introductory way). They learn to understand why a network behaves as it does. Upon completion of the course, students should have a basic overview and understanding of how computer networks are designed and supported, and a good insight into networks functioning. They should also gain problem solving skills, and perspective skills that allow them to approach problem solving from a critical perspective. Moreover, the course gives insights on network operating systems to learn about network services, their application, functions, settings, and administration.

5 Topics Covered

- Packet switching
- Network topologies
- Network devices
- Organizational scopes
- Routing
- Communication protocols
- Network security

6 Practice Tasks

Students are required to finish several practice tasks. The tasks are based on topics discussed during lectures. The tasks will include Packet Tracer labs and various programming assignments.

7 Course Projects

As a course project students will have to build a scalable server application to solve a real-life problem. Examples may include a scalable web-server, a multi-player game-server or a map-reduce library.

8 Final Exam

At the end of the course, students have to take the final examination to defend their practice tasks and the course project.

9 Reading

1. Computer Networks, fifth edition by Andrew S. Tanenbaum (ISBN: 978-9332518742)
2. Unix Network Programming, Volume 1: The Sockets Networking API by W. Richard Stevens, Bill Fenner, Andrew M. Rudoff (ISBN: 978-0131411555)

10 Grading

- Practice tasks (40%)
- Course project (60%)
 - 90%–100%: A
 - 80%–89%: A-
 - 70%–79%: B+
 - 65%–69%: B
 - 60%–64%: B-
 - 56%–59%: C+
 - 53%–55%: C
 - 50%–52%: C-
 - 46%–49%: D+
 - 43%–45%: D
 - 40%–42%: D-
 - Less than 39%: F

11 Rules

Students are required to follow the rules of conduct of the Information Technology Program and International University of Central Asia.

Team work is NOT encouraged. Equal blocks of code or similar structural pieces in separate works will be considered as academic dishonesty and all parties will get zero for the task.