Computer Networks

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Computer Networks

Course Directions:

- network types
- communication protocols (TCP/IP),
- network architecture models
- client/server paradigm,
- BSD socket interface,
- Winsock interface,
- application protocols (terminal, SMTP, FTP, POP, et.al.),
- RPC paradigm,
- peer-to-peer(P2P) paradigm,
- wireless networks,
- security aspects in computer networks

Bibliography:

- … (each course)
- Larry L. Peterson , Bruce S. Davie, Computer Networks: A Systems Approach, 6th Edition, 01 Oct 2020
- Lewis Van Winkle, Hands-On Network Programming with C: Learn socket programming in C and write secure and optimized network code, 1st Edition (May 13, 2019)
- Andrew S. Tanenbaum, David J. Wetherall, Computer Networks (5th Edition), ISBN-10: 0132126958 , Publication Date: October 7, 2010
- James F. Kurose, Keith W. Ross; Computer Networking: A Top-Down Approach (6th Edition), 2013 (http://www-net.cs.umass.edu/kurose-ross-ppt-6e/)

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Laboratory:

- UNIX/Linux system programming in C
- Communication among processes running on the same computers (signals, pipes, FIFOs, descriptors duplication)
- Communication between processes laying on different computers
  - Iterative / Concurrent servers
  - I/O multiplexing
  - Exception handling communication

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- The main focus is centered on computer network programming (Internet application programming)
- The network hardware part is approached at an informative level

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It requires knowledge about:

- Computer Architecture
- Operating systems
- Programming language: C/C++

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Evaluation

- Final mark(N)
  N = 0.5*P+0.4*L+1

Where:

- P – the project;
  - Types: A (maximum 10), B (maximum 8), C (maximum 6)
- L – laboratory mark;

  Calculated as it follows:
  - Mandatory problems during the semester;
    - 4th & 10th weeks;
  - Individual activities;
  - Other laboratory activities;

Conditions: getting a minimum of 5 for P and a minimum of 5 for N

The final mark is computed in accordance with ECTS

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Details:

- Discipline site:
  - http://profs.info.uaic.ro/~computernetworks
- Discipline team:
  - Lenuţa Alboaie adria@info.uaic.ro – **course, laboratory**
  - Andrei Panu andrei.panu@info.uaic.ro– **course**, **laboratory**
  - Emanuel Onica eonica@info.uaic.ro **– laboratory**
  - Georgiana Calancea cristina.calancea@info.uaic.ro – **laboratory**
  - Ioana Bogdan ioana.bogdan@info.uaic.ro – **laboratory**
  - Stefana Toader stefana.toader@info.uaic.ro – **laboratory**
  - Eugen Croitoru eugennc@gmail.com – **laboratory**

Questions?

FAQ answers:

- It will focus on conceptual understanding and problem solving skills
- …

"Everyone is a genius. But if you judge a fish on its ability to climb a tree, it will live its whole life believing it is stupid." (A. Einstein)

```
server.sin_family = AF_INET;
server.sin_port = htons (atoi (argv[2]));
memcpy (&server.sin_addr.s_addr,
ip_addr->h_addr, sizeof (ip_addr->h_addr));
client.sin_family = AF_INET;
client.sin_port = 0;
client.sin_addr.s_addr = htonl (INADDR_ANY);
```

… ???

The answer: Course & Laboratory