

COURSE SYLLABUS AND COURSE REQUIREMENTS

ACADEMIC YEAR: 2022-2023 ... THIRD SEMESTER...

| | |
|------------------------------|--|
| <i>Course title</i> | <i>Introduction to Computer Networks</i> |
| <i>Course Code</i> | IVB368AN |
| <i>Hours/Week: le/pr/lab</i> | 2/0/0 |
| <i>Credits</i> | 4 |
| <i>Degree Programme</i> | IT Engineering BSC |
| <i>Study Mode</i> | |
| <i>Requirements</i> | |
| <i>Teaching Period</i> | Sep. 6 th - May. 16 th |
| <i>Prerequisites</i> | |
| <i>Department(s)</i> | System and Software technologies |
| <i>Course Director</i> | |
| <i>Teaching Staff</i> | Géza Várady |

COURSE DESCRIPTION

A short description of the course (max. 10 sentences).

Neptun: Instruction/Subjects/Subject Details/Basic data/Subject description

Introduction to Computer Networks gives a base for the next steps in the lectures in connection with Computer Networks. The course covers the basic goals of networks, the different grouping of networks and the main concepts behind the grouping parameters. The course goes through the basic layered reference models, the functions of the different layers. The details of the first and second layers of the ISO/OSI model is also covered. The different possible implementations of the physical layer are investigated and compared. The course is about network history and about the basics of the lower layer functions.

SYLLABUS

Neptun: Instruction/Subjects/Subject Details/Syllabus

1. GOALS AND OBJECTIVES

Goals, student learning outcome.

Neptun: Instruction/Subjects/Subject Details/Syllabus/Goal of Instruction

This subject covers the fundamental principles of networks. The lecture covers network evolution history, network groupings, network layer models and implementations of lower layers.

The subject of the course includes the followings.

- Network aims
- Network history
- Grouping of Networks
- Layered model of network functions
- Lower layer implementations

2. COURSE CONTENT

Neptun: Instruction/Subjects/Subject Details/Syllabus/Subject content

TOPICS

LECTURE

1. *Introduction, general uses of networks*
2. *Network structures*
3. *Network Software, layer structure*
4. *Network layers, services, protocols (ISO-OSI, TCP/IP)*
5. *Network examples (from Ethernet to Internet)*
6. *Wireless LAN*
7. *Physical layer*
8. *Guided transmission media (copper based)*

9. Guided transmission media (fibre optics)
10. Wireless transmission (Radio - micro)
11. Wireless transmission (Satellites)
12. Public Switched Telephone Networks (PSTN)
13. Switching modes

DETAILED SYLLABUS AND COURSE SCHEDULE

ACADEMIC HOLIDAYS INCLUDED

LECTURE

| week | Topic | Compulsory reading; page number (from ... to ...) | Required tasks (assignments, tests, etc.) | Completion date, due date |
|------|--|---|---|------------------------------|
| 1. | Introduction, general uses of networks | 3-15 | | week 2 |
| 2. | Network structures | 17-28 | | week 3 |
| 3. | Network Software, layer structure | 29-40 | | week 4 |
| 4. | Network layers, services, protocols (ISO-OSI, TCP/IP) | 41-53 | | week 5 |
| 5. | Network examples (from Ethernet to Internet) | 54-69, 75-80 | | week 6 |
| 6. | Wireless LAN | 70-73 | | week 7 |
| 7. | Physical layer | 90-95 | | week 8 |
| 8. | Guided transmission media (copper based, fibre optics) | 95-99 | | week 11 |
| 9. | SPRING BREAK | | | |
| 10. | EASTER BREAK | | | |
| 11. | Wireless transmission (Radio – micro, Satellites) | 100-123 | | week 12 |
| 12. | Public Switched Telephone Networks (PSTN) | 138-144 | | week 14 |
| 13. | BREAK | | | |
| 14. | Switching modes | 144-161, extra: 164-185 | | |
| 15. | Pre Exam | | | |

3. ASSESSMENT AND EVALUATION

(Neptun: Instruction/Subjects/Subject Details/Syllabus/Examination and Evaluation System)

ATTENDANCE

In accordance with the Code of Studies and Examinations of the University of Pécs, Article 45 (2) and Annex 9. (Article 3) a student may be refused a grade or qualification in the given full-time course if the number of class absences exceeds 30% of the contact hours stipulated in the course description.

Method for monitoring attendance (e.g.: attendance sheet / online test/ register, etc.)

Attending is not required but is strongly recommended. Preparation for the exam can be done according to the handout slides and the reference materials. The course is part of the state exam for students.

ASSESSMENT

Cells of the appropriate type of requirement is to be filled out (course-units resulting in mid-term grade or examination). Cells of the other type can be deleted.

Course resulting in mid-term grade (PTE TVSz 40§(3))

Mid-term assessments, performance evaluation and their ratio in the final grade (The samples in the table to be deleted.)

| Type | Assessment | Ratio in the final grade |
|--|------------|--------------------------|
| Pre Exam – not obligatory – proposed note can be received | | Proposed note |
| | | |
| Test results can give a proposed note (3+). Normal exams are running during the exam period. | | |

Opportunity and procedure for re-takes (PTE TVSz 47§(4))

The specific regulations for improving grades and resitting tests must be read and applied according to the general Code of Studies and Examinations. E.g.: all tests and assessment tasks can be repeated/improved at least once every semester, and the tests and home assignments can be repeated/improved at least once in the first two weeks of the examination period.

Grade calculation as a percentage

based on the aggregate performance according to the following table

| Course grade | Performance in % |
|------------------|------------------|
| excellent (5) | 85 % ... |
| good (4) | 70 % ... 85 % |
| satisfactory (3) | 55 % ... 70 % |
| pass (2) | 40 % ... 55 % |
| fail (1) | below 40 % |

The lower limit given at each grade belongs to that grade.

Course-unit with final examination

Requirements for the end-of-semester signature

(E.g.: mid-term assessment of 40%)

Attendance at classes.

Re-takes for the end-of-semester signature (PTE TVSz 50§(2))

The specific regulations for grade betterment and re-take must be read and applied according to the general Code of Studies and Examinations. E.g.: all the tests and the records to be submitted can be repeated/improved each at least once every semester, and the tests and home assignments can be repeated/improved at least once in the first two weeks of the examination period.

Type of examination (written, oral): written

The exam is successful if the result is minimum 40 %. (The minimum cannot exceed 40%.)

Calculation of the grade (TVSz 47§ (3))

The mid-term performance accounts for a possible proposed mark. The performance at the final exam accounts for the final grade.

Calculation of the final grade based on aggregate performance in percentage.

| Course grade | Performance in % |
|------------------|------------------|
| excellent (5) | 85 % ... |
| good (4) | 70 % ... 85 % |
| satisfactory (3) | 55 % ... 70 % |
| pass (2) | 40 % ... 55 % |
| fail (1) | below 40 % |

The lower limit given at each grade belongs to that grade.

4. SPECIFIED LITERATURE

COMPULSORY READING AND AVAILABILITY

[1.] A.S. Tanenbaum – Structured Computer Architectures – can be borrowed at the library or can be bought/downloaded paperback or online.

RECOMMENDED LITERATURE AND AVAILABILITY

[2.] Larry Peterson and Bruce Davie – Computer Networks: A Systems Approach – can be borrowed at the library or can be bought/downloaded paperback or online.