COURSE SYLLABUS AND COURSE REQUIREMENTS
ACADEMIC YEAR 2022/2023 SEMESTER SPRING

Course title	*IP Based Systems and Applications*
Course Code	IVB369ANMI
Hours/Week: le/pr/lab	2/0/3
Credits	6
Degree Programme	Computer Science Engineering
Study Mode	*full time course*
Requirements	Exam
Teaching Period	spring
Prerequisites	Introduction to Computer Networks
Department(s)	System and Software Technology
Course Director	Gábor Gyurák
Teaching Staff	*Gábor Gyurák*

COURSE DESCRIPTION

This course is intended to help students understand the mechanisms of upper OSI layers.
We will focus on an overview of network, transport and application layers. Students who successfully complete this course will have a concept and theoretical knowledge of building, operating and managing computer networks. Students will also have hands-on experience in building computer networks, configuring active network devices, switches, routers through lab sessions.

SYLLABUS

1. GOALS AND OBJECTIVES

Students who successfully complete this course will have a comprehensive overview of computer
networks as well as more in depth understanding of a number of focus areas that they select throughout the course. Furthermore, students will gain practical experiences in computer networks. By the end of the semester students will be able to:

- design physical and logical plans of LAN networks,
- calculate with IP addresses, making subnets,
- select devices appropriate to the network requirements,
- build and configure SOHO networks,
- build and configure enterprise networks,
- configure routing and switching.

2. COURSE CONTENT

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

TOPICS	
LECTURE AND PRACTICE	- design physical and logical plans of LAN networks, - calculate with IP addresses, making subnets, - select devices appropriate to the network requirements, - build and configure SOHO networks, - build and configure enterprise networks, - configure routing and switching.

DETAILED SYLLABUS AND COURSE SCHEDULE

LECTURE

week	Topic	Compulsory reading; page number (from … to …)	Required tasks (assignments, tests, etc.)	Completion date, due date
1.	Introduction	Slides	-	-
2.	Structure of the Internet	[1] pp 1-53	-	-
3.	Access networks	Slides	-	-
4.	Application Layer I.	[1] pp 83-114	-	-
5.	Application Layer II-III.	[1] pp 116-168	-	-
6.	Transport Layer I.	[1] pp 185-206	-	-
7.	Transport Layer II-III.	[1] pp 215-302	-	-
8.	Network Layer I-II.	[1] pp 305-431	-	-
9.	Break	-	-	-
10.	Break	-	-	-
11.	Routing theory	Slides	-	-
12.	Wireless netoworks	[1] 513-544	-	-
13.	Break	-	-	-
14.	Test	-	Theory Test	-
15.	Retake	-	Theory Retake	-

PRACTICE, LABORATORY PRACTICE

week	Topic	Compulsory reading; page number (from … to …)	Required tasks (assignments, tests, etc.)	Completion date, due date
1.	Registration	-	-	-
2.	Basic network connectivity	[2] 1,2,3 chapter	-	-
3.	Ethernet concepts	[2] 4,5,6,7 chapter	T1 (1-3)	-
4.	Internetwork communication	[2] 8,9,10 chapter	T2 (4-7)	-
5.	IPv4 addressing	[2] 11 chapter	T3 (8-10)	-
6.	IPv6 addressing	[2] 12,13 chapter	-	-
7.	Network application communication	[2] 14,15 chapter	T4 (11-13)	-
8.	Building and securing a small network	[2] 16,17 chapter	T5 (14-15)	-
9.	Break	-	-	-
10.	Break	-	-	-
11.	Routing practice	-	T6 (16-17)	-
12.	PTSA, Final Exam	-	PTSA, FE	-
13.	Break	-	-	-
14.	Test	-	Practice Test	-
15.	Retake	-	Practice Retake	-

3. ASSESSMENT AND EVALUATION

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.)*

attendance sheet

ASSESSMENT

Course-unit with final examination

Mid-term assessments, performance evaluation and their weighting as a pre-requisite for taking the final exam

Type	Assessment	Weighting as a proportion of the pre-requisite for taking the exam
T1 (minimum 70%)	1 point	1%
T2 (minimum 70%)	1 point	1%
T3 (minimum 70%)	1 point	1%
T4 (minimum 70%)	1 point	1%
T5 (minimum 70%)	1 point	1%
T6 (minimum 70%)	1 point	1%
PTSA (minimum 70%)	7 point	7%
FE (minimum 70%)	7 point	7%
Theory Test	40 point	40%
Practice est	40 point	40%

Requirements for the end-of-semester signature

minimum 40% of overall 100 points
minimum 40% Theory Test
minimum 40% Practice test

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.*

Reatek test is scheduled to the 15th week.

Type of examination (written, oral): writen

The exam is successful if the result is minimum 40 %

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

> The mid-term performance accounts for 30 %, the performance at the exam accounts for 70 % in the calculation of 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

> *In order of relevance. (In Neptun ES: Instruction/Subject/Subject details/Syllabus/Literature)*

COMPULSORY READING AND AVAILABILITY

[1.] James F. Kurose – Keith W. Ross: Computer Networking: A Top-Down Approach, 7th edition, Pearson, 2016. (ISBN-13: 978-0133594140)
[2.] Cisco Networking Academy – Introduction to Networks ITN v7.02

[3.] moodle.mik.pte.hu Presentation slides

RECOMMENDED LITERATURE AND AVAILABILITY
[1.] Andrew S. Tanenbaum – David J. Wetheral: Számítógép-hálózatok, Panem, 2013. (ISBN 978-963-545-529-4)