General Information:

Name of Course: **IP BASED SYSTEMS AND APPLICATIONS**

Course Code:	IVB369ANMI
Semester:	4th
Number of Credits:	6
Allotment of Hours per Week:	2 Lectures, 3 Lab sessions/week
Evaluation:	Exam (with grade)
Prerequisites:	**Introduction to Computer Networks**

Instructor: **Gábor GYURÁK, assistant lecturer**
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Introduction, General 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.

Learning 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.

Methodology:
- **Lectures**: discussion and lectures on computer networks theory.
- **Practical sessions**: will give an introduction to planning, building, programming, operating and troubleshooting computer networks.

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Course Syllabus
Schedule : Monday, 13.15 – 17.30
Location: UP FEIT, A-214

Schedule:

Week	Lecture	Practice	Tests
1	Registration		-
2	Internet architecture	Network simulation	-
3	Application layer I.	L2 switching	**T1**
4	Application layer II.	L3 network interconnection, routers	**T2**
5	Application layer III.	IPv4 networks, IPv4 addressing	**T3**
6	National Holiday		
7	Transport layer I.	IPv4 subnetting	-
8	Transport layer II.	IPv6 networks	**T4**
9	Transport layer II.	Static routing	**T5**
10	Core network services I.	Dynamic routing	**T6**
11	Spring Holiday		
12	Core network services II.	Final Test Practice (FP)	**FP**
13	Summary	Final Test Theory (FT)	**FT**
14	Midterm Test (MT)		**MT**
15	Pre-Exam	Retake Test (RT)	**RT**

* Pre-exam can be done during the Study Period in case the Student has met the requirements of midterm tests and successfully performed the homework presentation.

Attendance:
Unexcused absences will adversely affect the grade, and in case of absence from more than 30% of the total number of lesson will be grounds for failing the class. To be in class at the beginning time and stay until the scheduled end of the lesson is required, tardiness of more than 20 minutes will be counted as an absence. In the case of an illness or family emergency, the student must notify the lecturer as soon as possible and must present a valid excuse, such as a doctor's note.

Evaluation + Grading:
The course grade is determined from a combination of study-period performance (midterm tests and homework) and the exam (in some cases the exam can be substitued by the pre-exam).
All exams and tests are closed-book and closed-notes. Any students who do not take the examination at the scheduled time will receive a zero score.

Students must reach a minimum of 50 points out of 100:
- Module Tests (T_1-T_6)　　　12 points (minimum 3 points)
- Final Tests (FP, FT)　　　18 points (no minimum)
- Midterm Test (MT)　　　70 points (minimum 35 points)

Details:

Modul Tests	0-60%	60-70%	70-90%	90-100%
T1	0	0.5	1	2
T2	0	0.5	1	2
T3	0	0.5	1	2
T4	0	0.5	1	2
T5	0	0.5	1	2
T6	0	0.5	1	2
Modul tests maximum				**12 points**
Minimum requirement				*3 points*

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Final Tests	0-60%	60-70%	70-90%	90-100%
Practice (FP)	0	3	5	8
Theory (FT)	0	4	7	10
Final Tests maximum				**18 points**
Minimum requirement				0 points

Midterm Test (MT)	Max
Practice part	35
Theory part	35
Mindterm test maximum	**70 points**
Minimum requirement	35 points

There is no possibility to retake Module Tests and Final Test, but it is possible to retake the Midterm Test (MT) if needed. The Rateake Test (RT) will overwrite the Midterm Test.

This course ends with an exam (E) or a pre-exam (PE):
- Both the exam and the pre-exam can be taken only after successfully completing assessment during the study period and the student has got the subject signed
- A pre-exam can be taken only if the student has got the signature without a retake-test
  - the pre-exam is scheduled on the last week of the study period
  - the pre-exam does not decrease the number of possible exams
- The exam can be taken if the student has got the signature with or without retaking the test
  - the exam can be taken only during the exam period
- The course grade is calculated from the average of the study period performance and the result of the exam/pre-exam.

Grade:	5	4	3	2	1
Evaluation in percent:	81%-100%	71%-80%	61%-70%	51%-60%	0-50%

PTE Grading Policy:
Information on PTE's grading policy can be found at the following location:
www.pte.hu

Students with Special Needs:

Students with a disability or special needs should notify the Deans Office so we can make accommodations. Proper documentation of disability will be required. All attempts to provide an equal learning environment for all will be made.

Readings and Reference Materials:
Required:
1. Presentation slides (Moodle CMS)
2. Materials in Cisco Networking Academy
3. James F. Kurose, Keith W. Ross - Computer Networking: A Top-Down Approach 6th Edition, 2012. (ISBN-10: 0132856204)

More:
1. Andrew S. Tanenbaum, David J. Wetherall - Computer Networks (5th Edition), 2010. (ISBN-10: 0132126958)
2. Larry L. Peterson, Bruce S. Davie - Computer Networks: A System Approach, 2011. (ISBN-10: 0123850592)