



**EASTERN MEDITERRANEAN UNIVERSITY**  
**MASTER OF TECHNOLOGY**  
**COURSE POLICY SHEET**

<b>Course Title</b>	Computer Networking Applications
<b>Course Code</b>	ITEC521
<b>Type</b>	Full Time
<b>Semester</b>	Spring
<b>Category</b>	Area Core
<b>Workload</b>	180 Hours
<b>EMU Credit</b>	(3,0,0) 3
<b>Prerequisite</b>	-
<b>Language</b>	English
<b>Level</b>	Graduate
<b>Teaching Format</b>	3 Hours Lecture per week
<b>ECTS Credit</b>	6
<b>Course Web Site</b>	<a href="http://staff.emu.edu.tr/husnubayramoglu">http://staff.emu.edu.tr/husnubayramoglu</a>

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**Course Description**

Advanced topics on the newest wired networking technologies with a special emphasis on networking applications, familiarizing students with current research areas. Provide an in-depth introduction to a wide range of topics in the field of computer networks including the Internet. Rather than explain how work in the abstract protocols, the most important protocols in use today are used to illustrate how networks work in practice. Topics covered include network protocols, Internet routing, peer to peer networks, network security, congestion control, error detection & correction, and internetworking. This allows to include real-world experiences in the discussion. Focusing both on the existing technologies also on why some of them are not sufficient because of technology trends or changes in fundamental assumptions. Use applications as the motivation for the study of networking, and to derive a set of requirements that a useful network must meet if it is to support both current and future applications on a global scale.

**General Learning Outcomes**

On successful completion of this course, students will be able to:

- Discuss the state of the art in network protocols and architectures.
- Discuss the most important protocols in use today to illustrate how networks work in practice by including real-world experiences in the discussion.
- Discuss traditional applications and multimedia applications to the concepts of network protocols using the examples of recent applications.
- Discuss different techniques to detect transmission errors and take the appropriate action
- Discuss how the data generated by the application layer protocols can be reliably carried across a network.
- Discuss the issues of how data is actually encoded and transmitted on physical media such as Ethernets and wireless links.
- Investigate novel ideas in networking applications through a semester-long research project.

**Teaching Methodology / Classroom Procedures**

- The course has three hours of lectures in a week mainly held in the form of a seminar.
- There is no lab works or tutorials.
- There is one written midterm exam and one written final exam.
- The exams are conducted as a written exam that may contain multiple choice, fill in the blanks, short answer and writing essay questions.

- Only one make-up exam will be given for the missing exams.
- Make-up exam will be given after the final exam period.
- There is an individual term project.
  - You should find a recent conference/journal paper, published in the last 3 years, related to Computer Networking Applications.
  - The selected paper should be sent as an e-mail to [husnu.bayramoglu@emu.edu.tr](mailto:husnu.bayramoglu@emu.edu.tr) and wait for the confirmation.
  - Once the topic is confirmed, you can start studying the topic and prepare a written report.
  - The printed report should be submitted before the announced deadline.
  - Late submissions are not accepted.
  - Project grade is out of 20%.
  - The report should be between 3500-4000 words with the format provided in the report template on the web site.
  - Turnitin plagiarism test must be obtained before submission.
  - The plagiarism test result must be less than 20%.
  - No reports are accepted for consideration with higher plagiarism test results.
  - An account will be created for you to make the plagiarism test through Turnitin.
  - The work done for the project should be presented.
  - The duration of the presentation is about 10-15 minutes for each student.
  - Presentation grade is out of 10%.
  - Presentations will be held according to the provided schedule announced on the website.
- Class attendance is compulsory.
- Lecture notes are available on the course web site.
- Course related materials will be posted on the course web site.

#### Course Materials / Main References

**Text Book:**

Computer Networking: A Top-Down Approach, 6<sup>th</sup> Ed. (2013), James F. Kurose and Keith W. Ross., ISBN-13: 978-0-13-285620-1.

**Lecture Notes:**

Lecture notes are available in PDF format on the course website.

#### Weekly Schedule / Summary of Topic

<b>Week 1</b>	Overview on Computer Networks: The Network Edge, The Network Core
<b>Week 2</b>	Application Layer: The Web and HTTP, FTP, SMTP, DNS, Peer-to-Peer Applications
<b>Week 3</b>	Transport Layer: Multiplexing and Demultiplexing, UDP, TCP, SCTP, Congestion Control
<b>Week 4-5</b>	Network Layer: Virtual Circuit and Datagram Networks, IP, Routing Algorithms, Multicast Routing
<b>Week 6</b>	The Link Layer: Error Detection and Correction Techniques, Multiple Access Links and Protocols
<b>Week 7-8</b>	<b>Mid-term Examinations</b>
<b>Week 9-10</b>	Multimedia Networking: Streaming Stored Video, VOIP, RTP, SIP
<b>Week 11</b>	Security in Computer Networks: Principles of Cryptography, SSL, VPN, WEP
<b>Week 12</b>	Network Management: SMI, MBI, SNMP
<b>Week 13-14</b>	Project Discussions and Presentations
<b>Week 15-16</b>	<b>Final Examinations</b>

#### Rules and Obligations

- Each student can have only one make-up exam.
- One who misses an exam should provide a medical report within 3 days after the missed exam.
- The make-up exam will be organized at the end of the term after the finals and will cover all the topics.
- No make-up exam will be given for any quiz or assignment.

- Once the grades are announced, the students have only one week to do objection about their grades.
- Students who do not pass the course and fail to attend the lectures regularly may be given NG grade.

#### Background Requirements

- Students are expected to have a networking background at minimum undergraduate level for registering the course.
- Students who lack an official proof (such as undergraduate transcript) of the required academic background must acquire a written permission from the course instructor for registering the course.

	Method of Assessment		
Evaluation and Grading	<b>Term Project</b>	<b>Midterm Exam</b>	<b>Final Exam</b>
Percentage	30 %	30 %	40 %

#### Grading Criteria \*

A	A-	B+	B	B-	C+	C	C-	D+	D	D-	F
90 - 100	85 - 89	80 - 84	75 - 79	70 - 74	65 - 69	60 - 64	56 - 59	53 - 55	50 - 52	40 - 49	0 - 39

\* Letter grades will be decided upon after calculating the averages at the end of the semester. Distribution of the averages will play a significant role in the evaluation of the Letter Grades.