

# ECE 470 Syllabus

<b>Course:</b>	ECE 470
<b>Credit Hours:</b>	3
<b>Course Title:</b>	Internetworking
<b>Course Description:</b>	

The course consists in a series of 10-11 lab exercises focused on teaching the students the practical aspects of configuring and trouble-shooting small networks. Theoretical presentation on essential and common Internet protocols are always coupled with practical lab exercises.

**Prerequisite(s):** ECE 407

**Textbook(s) and/or other required material:**

Mastering Networks: - An Internet Lab Manual, by Jorg Liebeherr and Magda El Zarki, Addison Wesley, 2004.

**Course objectives. By the end of this course, the student should be able to (use demonstrative verbs):**

By the end of this course the student should be able to configure simple networks and isolate and troubleshoot faults in simple networks; the student will also be able to integrate this simple network in larger networks (but not necessarily design the larger network).

**Topics covered:**

Single segment networks, static routing, dynamic routing, transport protocols, dynamic host configuration protocol, network address translation, domain name system, simple network management protocol, bridging, multicast.

**Class/laboratory schedule (sessions per week and duration of each session):**

Each class meets for one or two (as needed) 75 minute sessions a week for theoretical presentation of the week's topic, followed by one three hour lab session for the practical component of the topic.

**Contribution of course to meeting the requirements of Criterion 5 - other:**

**Contribution of course to meeting the requirements of Criterion 5 - math and basic sciences:**

**Contribution of course to meeting the requirements of Criterion 5 - engineering topics:**

3 hours

**Contribution of course to meeting the requirements of Criterion 5 - general education:**

**Relationship of this course to program learning outcomes:**

Learning Outcome	Level of Instruction	Related Course Content
Outcome A	Major	This course applies basic mathematics and algorithms to complex systems (communication networks).
Outcome B	Major	Practically for each theoretical objective there is at least one experiment that illustrates the concepts, often generating data and requiring interpretation of this data.
Outcome C	Major	Much of this course is about designing small networks that function correctly (with a specified functionality, i.e., meeting specific needs).
Outcome D	N/A	In many instances, a fault is introduced in the network and the student is asked to find the root cause of the problem and correct it.
Outcome E	Basic	In many instances, a fault is introduced in the network and the student is asked to find the root cause of the problem and correct it.
Outcome F	N/A	The equipment in the lab is not quite, but almost state of the art for networks of the scope of the ones envisioned in the lab exercises.
Outcome G	N/A	The equipment in the lab is not quite, but almost state of the art for networks of the scope of the ones envisioned in the lab exercises.
Outcome H	N/A	The equipment in the lab is not quite, but almost state of the art for networks of the scope of the ones envisioned in the lab exercises.
Outcome I	N/A	The equipment in the lab is not quite, but almost state of the art for networks of the scope of the ones envisioned in the lab exercises.
Outcome J	N/A	The equipment in the lab is not quite, but almost state of the art for networks of the scope of the ones envisioned in the lab exercises.
Outcome K	Intermediate	The equipment in the lab is not quite, but almost state of the art for networks of the scope of the ones envisioned in the lab exercises.

**Relationship of this course to program learning outcomes:**

**Learning Outcome**

**Level of Instruction**

**Related Course  
Content**

**Person who last prepared this description and date of preparation:**

- Ozturk, Hatice Orun (hoo) - Apr 1st, 2010 (08:45pm)