Course Syllabus: CS 45231 Internet Engineering
Fall 2018
106 MSB
M/W 5:30-6:45 pm

Maha Allouzi, Instructor
Department of Computer Science,
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Email: mallouzi@kent.edu
Dates: August 23, 2018-December 10 2018
Office hours T/R 10:00-12:30 pm and by appointment

Course Information

- Course Description
  This course covers the 'under the hood' technologies that constitutes the modern Internet. There is a gap between what is covered in a typical Computer Communication Network (CCN) course in US universities and a robust understanding of the Internet. This course is aimed at filling up this critical gap. The course covers in depth the core internet protocols from traffic engineering, BGP, HTTP, caching to web services infrastructure.
  At the end of this course the students are expected to gain a handsome understanding about the key technology components and the grand design that together makes the high performance Internet running.

- Prerequisites
  Courses in Computer Networks & Operating Systems, Solid programming skill Python for doing the programming Assignments and projects. If you are not sure about your background please contact me.

- Course Goals
  By the end of this course, you will learn about:
  1. Internet protocols and concepts
  2. Computer Networks Operation and Managements
  3. Networking Tools to evaluate and measure the network performance

- Course Learning Outcomes
  By the end of the course, you will be able to:
  1. Identify different Network protocols and architecture.
  2. Test network performance using networking tools
  3. Identify network thread and vulnerabilities

Learning Materials
The course makes extensive use of online materials and research papers.
• **Topics:**
  • Introduction
  • Architecture and Principles
  • Switching
  • Routing
  • Naming, Addressing and Forwarding
  • Router Design basics
  • DNS
  • Congestion control and streaming
  • Rate Limiting and traffic Shaping
  • Content Distribution
  • Software Defined Networking
  • Traffic Engineering
  • Network Security
  • Internet Warms
  • Spam
  • Denial of Service Attacks

**Policies and Expectations**

• **Tips for successful completion of the course**
  • Attend the classes regularly
  • Perform the homework thoroughly and independently
  • Read the assigned papers and several times
  • Ask questions
  • Check the course website frequently for important deadlines

• **Make-up and Late policy**
  Attendance is a course requirement. Missed assignments, homework, and attendance are only excused if absence was essential and can be fully documented. Homework must be turned in by midnight on due date. Unexcused late homework is not accepted.

**Assignments and Grades**

A detailed breakdown of course assignments and due dates by lesson module is available as a separate .pdf document that can be accessed in Bb Learn by clicking on the **Syllabus & Course Schedule** link in the course menu.

• **Assignments (25% of grade)**
  • 4 Programming assignments

• **Midterm Exam (25% of grade)**
  • TBD

• **Final Project (25% of grade)**
  • Replication of real research paper

• **Final Exam (25% of grade)**
  • Check the registrar calendar
Assessment Feedback
Evaluation of a programming assignment will be posted on Bb 1-2 weeks after it is due.

Late and Make-up Work Policy
Assignments more than one week late will not be graded unless you have arranged with the instructor to submit the assignment late. All late programs will have points (at least 10%) deducted from the final score.

Assignment of Grades

<table>
<thead>
<tr>
<th>Percentage of Earned Points</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>93% -100%</td>
<td>A</td>
</tr>
<tr>
<td>90%-92%</td>
<td>A-</td>
</tr>
<tr>
<td>88%-89%</td>
<td>B+</td>
</tr>
<tr>
<td>83%-87%</td>
<td>B</td>
</tr>
<tr>
<td>80%-82%</td>
<td>B-</td>
</tr>
<tr>
<td>78%-79%</td>
<td>C+</td>
</tr>
<tr>
<td>73%-77%</td>
<td>C</td>
</tr>
<tr>
<td>70%-72%</td>
<td>C-</td>
</tr>
<tr>
<td>68%-69%</td>
<td>D+</td>
</tr>
<tr>
<td>60%-67%</td>
<td>D</td>
</tr>
<tr>
<td>Under 60%</td>
<td>F</td>
</tr>
</tbody>
</table>

University Policies
Students are required to be aware of and follow all general and academic policies established by Kent State University. A list of the general academic policies is listed on the online version of the Kent State University Catalog. Specific policies related to the successful completion of this online course can be located and reviewed in your Blackboard Learn course. University policies are located in the Online Student Support Services & University Policies folder contained within the START HERE folder in your Blackboard Learn course.

Students with Disabilities
(Revised 6/01/07) University policy 3342-3-01.3 requires that students with disabilities be provided reasonable accommodations to ensure their equal access to course content. If you have a documented disability and require accommodations, please contact the instructor at the beginning of the semester to make arrangements for necessary classroom adjustments. Please note, you must first verify your eligibility for these through Student Accessibility Services (contact 330-672-3391 or visit www.kent.edu/sas for more information on registration procedures).

Blackboard Learn accessibility statement:
http://blackboard.com/Platforms/Learn/Resources/Accessibility/WebCT-Accessibility.aspx

Course Enrollment and Withdrawal
University policy requires all students to be officially registered in each class they are attending. Students who are not officially registered for a course by published deadlines should not be attending
classes and will not receive credit or a grade for the course. Each student must confirm enrollment by checking his/her class schedule (using Student Tools in FlashLine) prior to the deadline indicated.

If registration errors are not corrected by this date and you continue to attend and participate in classes for which you are not officially enrolled, you are advised now that you will not receive a grade at the conclusion of the semester for any class in which you are not properly registered. Also, it is your responsibility to check the withdrawal dates for each semester.

**Registration**
The official registration deadline for this course is August 29, 2018. University policy requires all students to be registered in each class they are attending. Students who are not officially registered for a course by published University deadlines should not be attending classes and will not receive credit or a grade for the course. Each student must confirm enrollment by checking his/her official class schedule (using Student Courses and Registration in FlashLine) prior to the deadline indicated. Registration errors must be corrected prior to the deadline.

**Sep 05 Last day to drop** any or all courses **that meet the full semester before grade of "W" is assigned.**
Access the View Schedule of Courses in the Student Category / Resources Page / Courses and Registration Section or View or Print Course Schedule and Purchase Textbooks in the Student Category / Resources Page / Courses and Registration Section to view your student printable schedule for deadlines for flexibly scheduled courses.

**Sept. 6-Oct. 31, 2018: WITHDRAWAL FROM ANY OR ALL COURSES THAT MEET THE FULL TERM USING FLASHFAST.**
*(Grade of "W" assigned.)* Access the View Schedule of Courses in the Student Category / Resources Page / Courses and Registration Section or View or Print Course Schedule and Purchase Textbooks in the Student Category / Resources Page / Courses and Registration Section to view your student printable schedule for deadlines for flexibly scheduled courses.

**Plagiarism and Academic Integrity**

Students enrolled in the university, at all its campuses, are to perform their academic work according to standards set by faculty members, departments, schools and colleges of the university; and cheating and plagiarism constitute fraudulent misrepresentation for which no credit can be given and for which appropriate sanctions are warranted and will be applied.

For more information: [http://www.kent.edu/academics/resources/plagiarism/](http://www.kent.edu/academics/resources/plagiarism/)

**Subject to Change Statement**
The syllabus and course schedule may be subject to change. Changes will be communicated via email or the Blackboard Learn announcement tool. It is the responsibility of students to check email messages and course announcements to stay current in their online courses.