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|  | Course | CS 4396 – 001 Computer Networks Lab |
| | Professor | Dr. Kamil Sarac |
| | Term | Spring 2024 |
| | Meetings | In ECSW 1.355 at 10am on Fridays |

Professor's Contact Information

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| Office Phone | 972 883 2337 |
| Other Phone | n/a |
| Office Location | ECS South 4.207 |
| Email Address | ksarac@utdallas.edu |
| Office Hours | By appointment |
| Other Information | Course web page: http://www.utdallas.edu/~ksarac/cnlab/ |

General Course Information

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| Pre-requisites, Co-requisites, & other restrictions | CS 4390 is a pre-requisite; working knowledge of a LINUX/UNIX-based operating system would be *helpful* |
| Course Description | <p>This course will enable students to gain hands-on experience with real networks by building networks in a <i>virtual</i> laboratory environment. Projects may include establishing an intra-domain routing infrastructure in the laboratory; establishing inter-domain network topologies with BGP used to connect the different autonomous systems; running network services/applications on top of this network such as DNS.</p> <p>This course covers the technologies and protocols of the Internet. The lectures cover the design principles of the Internet protocols, including the Internet Protocol (IP), Address Resolution Protocol (ARP), Internet Control Message Protocol (ICMP), User Datagram Protocol (UDP) and Transmission Control Protocol (TCP), the Domain Name System (DNS), and routing protocols (RIP, OSPF, BGP). In addition to an in-depth study of the Internet protocols in real network settings, you will gain hands-on experience working in a virtualized network environment and acquire useful networking skills. By putting computer networking into practice, this course aims to teach how network protocols work and how networked systems interact.</p> <p>A major part of the class will be the lab components. Each lab consists of a self-guided pre-lab reading/research, number of lab exercises, and a post lab report. The lab exercises and post lab reports will be completed in groups of two. The lab exercises are completed without supervision and require on the average 3 hours of work. <i>Please note that this is a lab oriented course and you will spend time doing a prelab work (mostly reading material on the web and/or 4390 textbook, etc); lab exercises (3 hours on the average for each lab); and postlab report.</i></p> |
| Learning Outcomes | <ul style="list-style-type: none"> • Ability to use simple network diagnostic utilities and network protocol analyzer utilities • Ability to configure a PC for TCP/IP networking • Ability to configure a static IP routing domain and manually display, edit, and alter routing table information • Ability to configure a dynamic IP routing domain with RIP and OSPF and detect and debug routing problems • Ability to understand the transport layer protocol functioning including congestion control, flow control and connection management issues |

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| | <ul style="list-style-type: none"> • Ability to understand the operation of Network Address Translation and Dynamic Host Configuration Protocol • Ability to understand Domain Name System operation and maintenance • Ability to detect network anomalies and locate the problems and fix them |
| Required Texts & Materials | <ul style="list-style-type: none"> • No textbook required. The instructor will provide hard copies of the lab manual during the semester for each lab. |
| Suggested Texts, Readings, & Materials | <ul style="list-style-type: none"> • Your CS4390 text book or another Computer Networks book |

Assignments & Academic Calendar

Please see the course schedule page at www.utdallas.edu/~ksarac/cnlab/Schedule.htm

Course Policies

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| Grading (credit) Criteria | Two quizzes: 20% total Lab reports: 80% total |
| Make-up Exams | No make-up exams unless in case of an emergency situation such as health emergency or similar un-avoid-able situations and you need to provide convincing documentation for it. |
| Extra Credit | n/a |
| Late Work | Late lab reports are accepted with penalty as discussed in class. |
| Special Assignments | n/a |
| Class Attendance | Strongly encouraged |
| Classroom Citizenship | Class participation in terms of asking questions is highly encouraged. Please do not hesitate to ask questions no matter how simple you might think the answer could be. This type of interaction helps improve the effectiveness of the class and breaks the monotony. |
| UT Dallas Syllabus Policies and Procedures | The information contained in the following link constitutes the University's policies and procedures segment of the course syllabus. Please go to http://go.utdallas.edu/syllabus-policies for these policies. |

The descriptions and timelines contained in this syllabus are subject to change at the discretion of the Professor.