# HomeCOURSE INFORMATION Fall 2015

# 03-60-367 Computer Networks

# School of Computer Science, University of Windsor

***Instructor*:**

Dr. Robert D. Kent, School of Computer Science. **Email: rkent@uwindsor.ca**

Room: 5100 Lambton Tower Tel: 519-253-3000 ext. 2993

**Office Hours:** Mondays & Wednesdays, 10:00am – 12:00noon, LT 5100.

Dr. Kent will set up appointments with students who cannot meet during scheduled office hours. Dr. Kent also uses email to answer many questions from students. Students are advised to use proper English spelling and grammar in email communications, rather than contracted “texting” which often leads to incomprehensible messages. Students must use the official University of Windsor student email account and identify the course 60-367 in the Subject field.

**Graduate Assistants:**

Eric Bartlam bartlam@uwindsor.ca

Office hours: TBA ER3150 (Java Lab)

Shanpreet Kaur kaur128@uwindsor.ca

Office hours: TBA ER3150 (Java Lab)

## Purpose of the course and learning resources:

This course is an introduction to computer networks and their protocols. Topics include: network architectures, transport, routing, and data link protocols, addressing, local area networks, flow and congestion control, and network security. Examples will be drawn primarily from the Internet (e.g. TCP, UDP, IP) protocol suite. (Prerequisite: 60-212, 60-254, 60-256 and 60-265. Recommended co-requisite: 60-330.)

***Required textbook:***

* **Computer Networking: A Top-Down Approach (6’th Edition). J. F. Kurose and K. W. Ross. Addison-Wesley, 2013.**
  + This textbook will be regarded as a primary source of information for this course. Assigned readings will be given to students and all students are required to study the assigned textbook sections and chapters.
  + Secondary sources of information may include: various websites on the Internet; the course website and posted slides and documents; the student website provided by the textbook publisher Addison-Wesley, in addition to others.

Some students may wish to substitute another textbook for the recommended text. It must be understood that the course is directed at learning and understanding the concepts and techniques of computer networks and that many authors provide the same coverage, but with differing perspectives and organizations.

### Lectures and tutorials

Students will have the opportunity to meet with the instructor, GA staff and other students, through the following:

* Formal lectures with instructor every week.
* Tutorial sessions with GA – occasional (optional, but highly recommended)
* One-to-one consultations with instructor and graduate teaching assistants as required.
* Discussion and interaction with other students through face-to-face meetings and email or IM.

### Course notes and web page

Course notes, lecture slides, assigned laboratory exercises, essay topics and other announcements will be done using the Blackboard Learning Management System (LMS).

Students are advised that lecture slides are intended to provide basic coverage of course material **only**. Within the lecture these slides will be substantially embellished with additional material provided orally or using white/blackboard notes or computer examples (non-published). Readings will be assigned from the textbook and students are responsible for this assigned material as it will be tested.

### Computing resources

The following computing resources will be available for students taking this course:

* A distributed-computing network, accessible through a graphic interface provided by workstations located in dedicated laboratories on the 3rd floor of Lambton Tower and Erie Hall, or through PCs in an open laboratory in the Computer Centre, or, for students who have the necessary equipment, from campus and home using network connectivity.
* State-of-the-art parallel-processing computer servers.

### Teaching assistance provided

* The course instructor will give lectures and will directly supervise the marking of all examinations.
* Occasional tutorial sessions will be led by graduate teaching assistants
* The instructor will be available for consultation in designated office hours; it is recommended that students first meet with the teaching assistant for basic questions and clarifications.
* Teaching assistant(s) will be available for several hours each week for one-to-one consultation at times and places that will be announced in the lecture and on the course website.
* Teaching assistants and Instructor will evaluate the Group Laboratory Exercises and Essays.
* All appeals of marked work will be reviewed directly by the course instructor.

## Tentative course lecture schedule:

***Note:*** The schedule of topics may change slightly at the discretion of the Instructor. The Instructor will regularly assign readings from the course textbook.

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| --- | --- |
| ***Order*** | ***Topics*** |
| 1 | Introduction: Computer Networks and the Internet, Service models (OSI, TCP/IP) |
|  | Physical layer, Network configuration, Application Layer |
| 2 | Transport Layer (Introduction) |
| 3 | Transport Layer (Advanced) |
| 4 | Network Layer: Addressing, IP, Subnets, Routers, ICMP |
| 5 | Network Layer: Routing, Distance Vector (RIP), Link State (OSPF) |
| 6 | Link Layer, Local Area Networks |
| 7 | Network security |

## Work to be undertaken by students:

### Preparation for lectures, sample notes and exams

Attendance at all lectures is highly recommended. Some of the concepts covered are difficult and the professor will attempt to present the concepts in such a way as to make them easier to understand. Students should read the course notes ahead of lectures. Lectures are not substitutes for student reading and active discussion. Students who do not read ahead, and who do not achieve the assigned reading, may find themselves lost in the lectures.

Several opportunities are prepared for students who wish to do well on their tests and exams. A sample of former midterm and final exam questions are posted as self-study assignments (which are not to be marked), including solutions – NOTE: there may be errors in some cases so check all answers provided. This will allow a student to stage their own practice tests when they preparing to take the test or exam. These questions are just a sample and should not be relied upon for the actual examinations given in the course. The textbook is an excellent resource since it offers a different perspective to the subject matter and considerably more detail with examples and case studies. Through the publisher’s website, additional resource materials may be obtained using the login information provided in the course textbook.

### Research Essay

The Research Essay requirement for this course is aimed at background research. The student is required to investigate an advanced topic from a list provided by the instructor during the second week of lectures, write a detailed report, and submit the report in raw text, Word or OpenOffice compatible file formats to the instructor – note that PDF files are **NOT** acceptable. Each student must work independently and the mark for the research essay is assigned on an individual basis. The due date and time are Sunday, November 22, 2015 (23:59:59 ET). Plagiarism is absolutely forbidden and will result in a mark of zero (0). Failure to properly use and cite references will result in significant penalties.

### Group Labs

The Group Lab requirement is undertaken by a group of from 1-3 students (absolutely no more than 3 students in a group is permitted). A set of laboratory exercises involving the use of the Wireshark software tool will be assigned and each group must complete the entire set of exercise questions for each lab. Each group will make an appointment with a GA who will administer a brief interview with the group members and assess the group and individual understanding of the lab exercises. **All group members must be present** for these assessment interviews; group members who are absent will receive a mark of zero (0). The GA will report the assessed mark to the Instructor. These labs are considered extremely important as practical training and students are advised to take them very seriously.

### Requirements and Evaluation Scheme

Assessment of students taking 60-367 consists of various required components. These will be weighted as follows in the calculation of the final grade. The location of the midterm tests will be the same as the lectures. The location of the final exam will be published by the Registrar in the official exam schedule. The Research Essay will be written by the student as part of assigned work, to be completed independently, and submitted directly to the Instructor. All assignment Group Lab work will be submitted directly to the graduate teaching assistants (email addresses provided above) and evaluated within an interview setting. All communications during evaluation procedures must be in English.

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| ***Component*** | ***Date*** | ***Location*** | ***Weight*** |
| Midterm Exam #1 | Thurs, Oct 22, 8:30pm-9:45pm | CHN G133 (regular classroom) | 20% |
| Midterm Exam #2 | Thurs, Nov 19, 8:30pm-9:45pm | CHN G133 (regular classroom) | 20% |
| Research Essay | Sunday, Nov 22 (23:59:59) | Email submission to rkent@uwindsor.ca | 15% |
| Group Labs | TBA | Presentation - By appointment with GA | 15% |
| Final Exam | Saturday, Dec 19, 12:00 Noon | TBA | 30% |

**NOTE:** Consistent with University Senate Bylaws, no marked work will be assigned to students during the last week of classes, nor will any assigned work come due for submission during the last week of classes or during the period following lectures, leading up to the final examinations.

Students who miss a midterm examination due to legitimate and approved reasons (e.g. medical) supported by appropriate documentation (e.g. doctor’s note) will have their final mark based on re-weighting of the remaining midterm (adjusted to 28%) plus the final examination (adjusted to 42%). No adjustments will be made to the Essay component weight (15%) or Group Labs weight (15%). Students who do not submit the Essay or Group Labs will receive marks of zero (0) – significant penalties will be applied for work that is submitted late, including the most likely possibility that such late submissions may receive marks of zero (0) for serious and unjustifiable delays. It is strongly recommended that students who miss both midterm examinations should drop the course by the last date published by the Registrar for Voluntary Withdrawal.

Opportunity will be given to students to review class tests and final examinations. Under most circumstances, it is advised to view these papers during the prescribed viewing sessions. The dates/times of these viewing sessions will be announced in class or on the course website. The test and examination marks will not be changed unless there are errors in the marking procedure or mistakes in addition. The Essay and Group Lab marks will be evaluated carefully by the Instructor and/or Graduate Teaching Assistants, and will be subjectively evaluated; thus, Essay and Group Lab marks are not negotiable. There will not be any make-up tests for this course.

**Teaching Evaluation**

Student Evaluation of Teaching (SET) forms will be administered during the last two weeks of the class schedule.

### Weekly work schedule

In order to keep up with the work required for this course it is a good idea for students to write down a weekly schedule, such as the following, filling in the time and location column accordingly.

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| *Task* | ***Duration (minimum)*** |
| Reading of lecture notes, textbook | 3 hours |
| Lectures | 3 hours |
| Individual essay library work and writing | 1.5 hours |
| Group Lab – meetings, preparation and work | 1.5 hours |
| Weekly TOTAL (excluding revision for tests and exam) | 9 hours |

## Marks/Grades Descriptors:

The University of Windsor uses a percentage marking and grading scale. For a more detailed explanation, students are directed to the webpage: [www.uwindsor.ca/calendar](http://www.uwindsor.ca/calendar) and from there, follow the link to **Examinations, Grading and Graduation** and then to the link **MARKS/GRADES DESCRIPTORS**.

Students must understand that the professor reserves the sole right to adjust the marks of the entire class at the end of the semester and before submitting grades to the Registrar. If such adjustments are made, they are made by adding a constant value to all student total marks before calculating the letter grade.

## University policy on repeating courses:

Courses may be repeated once only. Any student who wishes to take a course for the third (3’rd) time must seek the permission and approval of the Associate Dean of Science. Students must understand that failure to obtain a passing grade of 50% (D-) in required courses may lead to removal from the program of study.

## Student Disability Services:

Student Disability Services provides a variety of services and supports to students with documented disabilities (including: learning disabilities, attention deficit/hyperactivity disorder, acquired brain injuries, vision, hearing and mobility impairments, chronic medical conditions and psychiatric issues), who have registered with SDS. If you have, or think you may have a disability, you may wish to visit Student Disability Services  to learn how best to meet your academic goals. The SDS office is located in Room 117, Dillon Hall, (519) 253-3000 ext. 3288 or online at:

[www.uwindsor.ca/disability](http://www.uwindsor.ca/disability).<http://www.uwindsor.ca/disability>