# HomeCOURSE INFORMATION Fall 2013

# 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 LT Tel: 519-253-3000 ext. 2993

**Office Hours:** Mondays & Wednesdays, 12:00pm – 2:00pm, LT 5100. (subject to cancellation without notice)

Dr. Kent will set up appointments with students who cannot meet during scheduled office hours.

Dr. Kent uses email to answer many questions from students and will usually respond within 24 hours to email enquiries. 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.

**Graduate Assistants:**

Morteza Mashayekhi (Doctoral) [mashaye@uwindsor.ca](mailto:mashaye@uwindsor.ca)

Office hours: Tuesday 3:00-6:00pm ER3150 (Computer Science Commons/Java Lab)

Ripudamanlall Ramlall (Masters) [ramlal1@uwindsor.ca](mailto:ramlal1@uwindsor.ca)

Office hours: Thursday 3:00-6:00pm ER3150 (Computer Science Commons/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.)

Students are advised that lecture slides will be made available on the website, but these are not sufficient to cover all details that are covered in the required textbook and which form the basis for examinations, assignments and project work.

*Required textbook:*

* Computer Networking: A Top-Down Approach (6’th Edition). J. F. Kurose and K. W. Ross.
  + 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.

### Lectures and tutorials

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

* Formal lectures with instructor every week – see schedule for times.
* 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.

### Course notes and web page

To access course notes, assignments, outline and other materials, go to <https://moodle.cs.uwindsor.ca/> . Log in using your UWinID and Password. Under Course Categories, click on 60-367 Fall Semester 2013. You will need to use the enrollment key: 367r0cks (ie. r zero c k s).

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 X-terminals and Sunrays 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 home via modems.
* State-of-the-art parallel-processing Sun computer servers.

### Teaching assistance provided

* The course instructor will give lectures and will directly supervise the marking of all examinations. The instructor will also be available for consultation after students have first met with the teaching assistant.
* Graduate 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.
* The instructor will directly mark the Essay; graduate teaching assistants will evaluate the Group Labs.
* Any other assignments will be marked by the graduate teaching assistants under supervision of the instructor.
* All appeals of marked work will be reviewed directly by the course instructor.

## Work to be undertaken by students:

### Preparation for lectures

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. A detailed schedule showing the topic of each lecture, along with lecture slides, will be given starting in the second week of lectures. Lectures are not substitutes for student reading. Students who do not read ahead, and who do not achieve the assigned reading, may find themselves lost in the lectures.

### Research Essay

The essay for this course is aimed at research. The student is required to research an advanced topic from a list provided by the instructor during the first week of lectures, write a detailed report, and submit the report in 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 Saturday, June 13 (23:59:59). 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.

### Revision for test and exams

Several opportunities are prepared for students who wish to do well on their tests and exams. Former midterm and final exam questions are posted as study assignments (which are not to be marked), including solutions. This will allow a student to stage their own practice tests when they preparing to take the test or exam. Some lecture notes from previous semesters and some examples are provided on the course website. The textbook is an excellent resource since it offers a different perspective to the same 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.

**Teaching Evaluation**

Student Evaluation of Teaching (SET) forms will be administered during the last week 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 according to which sections you are in and when you can schedule reading time, etc. The Durations noted below may not be required for all students, but they are recommended as the basis for achieving deep understanding and good grades.

|  |  |
| --- | --- |
| *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 |

### Evaluation Scheme

Assessment of students taking 60-367 consists of various components. They 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 Project presentations will be done during regular lectures at assigned times (to be determined). All assignment work will be submitted directly to the graduate teaching assistant (email address to be provided). All communications during evaluation procedures must be in English.

|  |  |  |  |
| --- | --- | --- | --- |
| ***Component*** | ***Date*** | ***Location*** | ***Weight*** |
| Midterm #1 | Wed, Oct 16, 2:30pm-3:45pm | Toldo 102 (regular classroom) | 15% |
| Midterm #2 | Wed, Nov 6, 2:30pm-3:45pm | Toldo 102 (regular classroom) | 15% |
| Research Essay | Friday, Nov 22 (23:59:59) | Email submission | 10% |
| Group Labs | TBA | Presentation - By appointment with GA | 20% |
| Final Exam | Friday, Dec 06, 3:30pm | TBA | 40% |

Students who miss a midterm examination due to legitimate reasons (eg. medical) supported by appropriate documentation (eg. doctor’s note) will have their final mark based on re-weighting of the remaining midterm (adjusted to 22%) plus the final examination (adjusted to 48%). No adjustments will be made to the Essay component weight (10%) or Group Labs weight (20%). 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. Students who miss both midterm examinations should drop the course by the last date published by the Registrar for Voluntary Withdrawal.

**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.

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 and/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 are not negotiable. There will not be any make-up tests or make-up final exam for this course.

## Marks/Grades Descriptors:

The University of Windsor uses a percentage marking and grading scale.   
  
The following are the university-wide grade descriptors for undergraduate programs and will be printed on the back of the transcripts.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ***% Score*** | ***Grade*** |  | ***% Score*** | ***Grade*** |
| 90.0-100 | A+ | 63.0-66.9 | C |
| 85.0-89.9 | A | 60.0-62.9 | C- |
| 80.0-84.9 | A- | 57.0-59.9 | D+ |
| 77.0-79.9 | B+ | 53.0-56.9 | D |
| 73.0-76.9 | B | 50.0-52.9 | D- |
| 70.0-72.9 | B- | 0-49.9 | F |
| 67.0-79.9 | C+ |  |  |  |

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.

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**.

## University policy on repeating courses:

Courses may be repeated at most twice (2 times). 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.

## Access to computing resources:

Computing laboratories will be available from the second week of the semester onwards. The laboratories are located on the third floor of Lambton Tower and Erie Hall. Teaching assistants will be available to provide help to students throughout the week. Whenever the laboratory is full, students can also use PCs in the Computer Centre, next to the CAW Student Centre.

Students who have difficulties with the network, or who have questions concerning modem access from home, etc., should first of all contact the Computing Consultants in IT Services, and if they are still in need of advice, should contact the teaching assistant or instructor for this course.

## Policy on cheating:

The professor and teaching assistant for 60-367 will put a great deal of effort into helping students to understand and to learn the material in the course. However, they will not tolerate any form of cheating.

The professors and teaching assistants will report any suspicion of cheating to the Director of the School of Computer Science. If sufficient evidence is available, the Director will begin a formal process according to the University Senate Bylaws. The instructor will not negotiate with students who are accused of cheating but will pass all information to the Director of the School of Computer Science.

The following behaviours will be regarded as cheating (together with other acts that would normally be regarded as cheating in the broad sense of the term):

* Copying assignments
* Allowing another student to copy an assignment from you and present it as their own work
* Copying from another student during a test or exam
* Referring to notes, textbooks, etc. during a test or exam
* Talking during a test or an exam
* Not sitting at the pre-assigned seat during a test or exam
* Communicating with another student in any way during a test or exam
* Having access to the exam/test paper prior to the exam/test
* Asking a proctor for the answer to a question during an exam/test
* Presenting another person’s work as your own
* Using web resources and information without proper referencing and quotation indicators
* Modifying answers after they have been marked
* Any other behaviour which attempts unfairly to give you an advantage over other students in the grade-assessment process
* Refusing to obey the instructions of the officer in charge of an examination.

## Tentative course lecture schedule:

***Note:*** The schedule of topics may change slightly due to the evolution of this course. The instructor will regularly assign readings from the course textbook. Students must take personal responsibility for reading in advance in preparation for lectures.

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

## Comments:

Students learn best when they are fully engaged in learning. Many students become used to working independently and quietly and think that is the best way. It is only one way. In preparation for professional life, which very often includes a group activity, I strongly encourage students to mix and exchange ideas, questions and answers. Use the lecture as a discussion forum in addition to listening to the instructor present material – ask questions and answer them also. Practice your communications skills. This course involves students participating within groups. Be prepared, organized and disciplined!

On a lecture by lecture basis you should organize your notes and study. Every weekend, take time to fully review the week`s learning activities, read ahead and review the entire course. By taking a layered approach to learning, you constantly reemphasize important points and you will also come to realize where your weaknesses may lie so that you can take remedial actions to build a strong foundation for success.

## Characteristics of a University of Windsor Graduate

A University of Windsor graduate will have the ability to demonstrate:

1. the acquisition, application and integration of knowledge
2. research skills, including the ability to define problems and access, retrieve and evaluate information (information literacy)
3. critical thinking and problem-solving skills
4. literacy and numeracy skills
5. responsible behaviour to self, others and society
6. interpersonal and communications skills
7. teamwork, and personal and group leadership skills
8. creativity and aesthetic appreciation
9. the ability and desire for continuous learning

Students should understand that education and personal development result from the mutual investment of time and effort spent by both student and the instructional team. Without the full participation of all partners learning is less effective, so motivate yourself to do your best at all times.