COSC 416 – Special Topics in Databases
Winter 2010 Term 2

Instructor: Dr. Ramon Lawrence
Class Schedule: 2:00 p.m. – 3:30 p.m. Monday/Thursday
Location: SCI 234
Office Hours: 11:30 a.m. – 12:30 p.m. Wednesday/Friday or by appointment
Office Location: ASC 349
Phone: 807-9390
E-mail: ramon.lawrence@ubc.ca (preferred contact method)
Course URL: http://people.ok.ubc.ca/rlawrenc/416/

Course Description

Official Calendar: Advanced or specialized topics in database design, modeling, and implementation. This course may be taken more than once for credit.

Specific description: The goal of this course is to give students experience programming in C on an embedded processor. Students will learn pointers and memory management and how to create algorithms given severe memory constraints. Basic abilities taught include how to communicate with the sensor node, take sensor readings, and send messages between nodes. Students will develop advanced algorithms on network routing and data storage, querying, and retrieval. The course is lab based with the primary evaluation as lab assignments and the final project. The course will be organized so that the first class of the week presents the material to be covered that week and the assignment for the week. The second class of the week will be an assignment work class. The assignment is due the following Monday.

Prerequisite

- COSC 304 – Introduction to Database Systems

Marking and Evaluation

Assignments	40 %
Midterm Exam	20 %
Project	40 %

Note: The sensor hardware requires a $75 deposit. If the sensor is returned in good condition at the end of the course, the deposit is returned.

Expectations

- I expect students to attend **all** classes and complete all assignments.
- I want all students to enjoy attending class and feel free to participate according to their own personalities.
- **I want all students to pass the course, receive a good grade, and feel the course was beneficial.**

Homework Expectation

For this course, it is expected that you will spend *at least six hours per week in out-of-class preparation*.

Grievances and Complaints Procedures

• The student should attempt to resolve the matter with the instructor first. Students may talk first to someone other than the instructor if they do not feel, for whatever reason, that they can directly approach the instructor.
• If the complaint is not resolved to the student's satisfaction, the student should go to the departmental chair Jan Cioe at ARTS 332, 807-8732.

Your Responsibilities

Your responsibilities to this class and to your education as a whole include attendance and participation. You have a responsibility to help create a classroom environment where all may learn. At the most basic level, this means you will respect the other members of the class and the instructor and treat them with the courtesy you hope to receive in return. Inappropriate classroom behavior may include: disruption of the classroom atmosphere, engaging in non-class activities, talking on a cell-phone, inappropriate use of profanity in classroom discussion, use of abusive or disrespectful language toward the instructor, a student in the class, or about other individuals or groups.

Academic Integrity

The academic enterprise is founded on honesty, civility, and integrity. As members of this enterprise, all students are expected to know, understand, and follow the codes of conduct regarding academic integrity. At the most basic level, this means submitting only original work done by you and acknowledging all sources of information or ideas and attributing them to others as required. This also means you should not cheat, copy, or mislead others about what is your work. Violations of academic integrity (i.e., misconduct) lead to the break down of the academic enterprise, and therefore serious consequences arise and harsh sanctions are imposed. For example, incidences of plagiarism or cheating may result in a mark of zero on the assignment or exam and more serious consequences may apply if the matter is referred to the President's Advisory Committee on Student Discipline. Careful records are kept in order to monitor and prevent recurrences. A more detailed description of academic integrity, including the policies and procedures, may be found at http://web.ubc.ca/okanagan/faculties/resources/academicintegrity.html. **If you have any questions about how academic integrity applies to this course, please consult with your professor.**

Disability Services

If you require disability-related accommodations to meet the course objectives please contact the Coordinator of Disability Resources located in the Student development and Advising area of the student services building. For more information about Disability Resources or about academic accommodations visit http://okanagan.students.ubc.ca/current/disres.cfm.

Equity, Human Rights, Discrimination and Harassment

UBC does not condone discrimination or harassment in classrooms, living or work environments on campus. For information about UBC's policies related to equity, human rights, discrimination or harassment please contact:
Equity Advisor: ph. 250-807-9291; email equity.ubco@ubc.ca Web: www.ubc.ca/okanagan/equity

Missing an Exam
There will be no make-up midterm exams.

Course Outline

Week	Dates	Topics Covered and Description
1	January 3-7	**Introduction to Course**
2	January 10-14	Introduction to C – Basics
3	January 17-21	Memory Management and Pointers in C
4	January 24-28	Introduction to Sensor Networks and Our Sensor Device
5	Jan. 31 – Feb. 4	Internals of Sensor Node and Data Storage in Flash Memory
6	February 7-11	Wireless Communications and Messaging
7	February 14-18	**No Class During Midterm Break**
8	February 21-25	Network Routing: Bellman-Ford Algorithm
9	Feb. 28 - March 4	Network Routing: ADOV
10	March 7-11	**March 7: Midterm Exam March 10: Project Planning**
11	March 14-18	Database Algorithms on a Single Sensor Node
12	March 21-25	Database Algorithms on an Entire Sensor Network
13	March 28-April 1	Project Work Week
14	April 4-8	**Project Demonstrations and Presentations**