Fall Electives

Connection Staff

Compilers: Organization and Optimization:
CSCI 379 Prof. Wittie
In this course, students will be building a fully functional compiler for a language that is similar to C. They will also explore some simple optimization techniques to produce faster code than a generic compiler.

Theory of Computation:
CSCI 341 Prof. Mead
This course covers the theoretical foundations of computer science. Students taking the course will understand why computers work and what are the limitations of computation, i.e. what problems cannot be solved with computers. Includes the study of finite automata, context free grammars, push down automata, and Turing Machines.

Computer Architecture:
CSCI 320 Prof. Wenner
This course builds on the foundation gained in CSCI206, looking at architecture issues in more depth. More advanced topics in cache memory design, I/O systems, and storage systems (RAID) will be studied.

Capstone:
CSCI 479 Prof. Meng
This course is a capstone course for computer science majors. Students will work in groups of 3-4 on a web search engine related project, going through the whole process of typical software project development.

Officers

President: Lisa Thier 2005

VP: Tabitha Peck 2005

Treasurer: Jian Lee 2005

Secretary: John Ostrum 2005

Advisor: Lea Wittie

G33k W33k!

Tanya Sichko

Get ready folks, coming to you from April 4 to April 9, is Bucknell University's first ever Geek Week! Every proud geek is encouraged to show off his/her skillz through a range of events:

> Monday - Jeopardy: Test your overall computer knowledge against your classmates.
> Tuesday - Speaker Doug McIlroy, at Bell Labs in 1969, where UNIX was first developed, will be speaking. He is currently a professor at Dartmouth College, where he teaches a range of courses from the Logic of Programming to Advanced Operating Systems.
> Wednesday - Movie Night: Meet your fellow geeks!
> Thursday - Pimp My Box: Submit your own pimped out box to compete for a prize for the best one.
> Friday - ACM Dinner: All ACM members are invited to dinner at La Primavera.
> Saturday - Programming Contest: You may think you're a leet haxor, but how do you really compare? The contest will range in difficulty from CS204 level to the uber-challenging level!

So polish your programming skillz, bone up on your computer knowledge, and get ready to boast that you are a geek!

HELLO WORLD!

The Bucknell Connection
Computer Science Department
Bucknell University
Lewisburg, PA 17837

Volume XIII-S, 2004- 2005

The Bucknell Connection

CS Student Newsletter

Computer Science Colloquium Series

Shawn Walters

At the students' request, ACM and the Computer Science department began a series of talks this semester, due in large part to the help of Prof. Perrone. They are meant to introduce students to topics that could be found both in graduate school studies and in industry. Students are introduced to areas not presented in the traditional curriculum. The continuation of these talks next semester will be based on the participation and interest of students this semester.

The series began on January 27 with a talk by Prof. Perrone of the Computer Science Department entitled Simulation & the Simulation of Wireless Networks. Prof. Perrone discussed the concepts behind simulation and how these ideas are applied to his research in wireless ad hoc networks. On February 24, Prof. Kozick of the Electrical Engineering Department gave a related talk entitled Energy-Constrained Sensor Networks and Aeroacoustics. Prof. Kozick discussed the interplay between sensing, signal processing, and communications in energy-constrained, battery-powered wireless ad hoc networks.

On March 24, Paul Tymann of the Computer Science Department at Rochester Institute of Technology held a lecture entitled "What the Heck is Bio-informatics?" This talk introduced students to the idea of relating computer science to other disciplines, specifically biology. It introduced a few of the algorithms presently being used, as well as the challenging problems facing computer scientists in the field.

There are currently two more talks planned for this semester:

April 5, 4:30PM
Doug McIlroy, Dartmouth College
"Computing Back When"
A personal account of the evolution of computing, told from a vantage point in the front lines since the time when one could literally walk inside of a CPU. It will feature stories of astonishing innovation interspersed with moments of levity and even international intrigue.

April 21, 4:30PM
Xiannong Meng, Bucknell University
"Searching the Web From PageRank to BlockRank"
PageRank has been one of the key factors in Google's success. Prof. Meng will discuss the basics of PageRank and its related algorithms, including the deficiencies of the algorithm and the challenges to it due to today's web structure. He will introduce the newly proposed algorithms to solve these problems, such as BlockRank and LinkFusion, and will discuss the challenges posed by the widespread use of web logs (blogs).

Connection

Staff

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Computer Science Accreditation

Overview

Alison Flynn

The Accreditation Board for Engineering and Technology (ABET) was founded in 1932 under the name of the Engineer's Council for Professional Development (ECPD), through the joint work of IEEE, ASME, ASCE, AIChE, and several other engineering agencies. In 1936, the ECPD began evaluating the quality of institutions of engineering training. It was this year that the Electrical and Civil Engineering programs at Bucknell were accredited, with the Mechanical program following 3 year later.

Unlike the other Engineering departments, the Computer Science department has three degree programs and actually deals with two accreditation agencies: ABET, for the Engineering degree, and the Computing Accreditation Commission (CAC), for the BS Arts and Sciences degree. The BS Arts and Sciences degree has been accredited since 1991 and the Engineering degree since 1997 --- BA programs are not subject to accreditation.

In order to gain ABET or CAC accreditation, the department must demonstrate that it has processes in place for continuous evaluation and improvement of the programs. The program is evaluated for quality of the curriculum, faculty, and facilities. There are many components to this continuous evaluation, but an important one is input from students.

How do students benefit from an accredited program? Primarily, it serves to legitimize the degrees earned by students in the eyes of employers and graduate schools. It also indicates to prospective students that the degree they will earn at Bucknell will prepare them to apply their skills in the world they find after graduation.

The Computer Science department has worked hard to gain accreditation. It wishes to maintain this status for the sake of preserving the reputation of Bucknell and to ensure that the programs continue to offer the high-quality computer science education students have come to expect.

Student Conversation

Eric Reed

Last fall the Computer Science department held its annual Student Conversation, first conducted in 2000.Representatives were selected from the junior and senior classes to speak on behalf of their fellow computer scientist majors. The purpose of the meeting is for the representatives to bring the positive comments and also the concerns of students to the attention of the department. These topics discussed are then evaluated by the department and actions are taken that will best suit the CS programs. Many good points were brought up at last fall's meeting. Below is a brief summary of the main topics for which students sought responses, and either a reasoning of why things are the way they are, or actions that are being carried out:

Concern for a lack of continuity in advising (having several advisors while at Bucknell).

This is an unfortunate consequence of professors taking leave or going abroad on a rotational basis, so nothing realistic can be done.

Suggestions for lectures by the professors in each of their own field of research.

There have been three held this spring so far, by Prof. Perrone, Prof. Kozick, and Paul Tymann. As long as students continue to show interest as they have at the first three lectures by keeping attendance high, these will continue!

Too few electives to choose from.

There are only so many students in the department, and the department is not interested in having several classes of 8-10 students each.

Concern for weak student-professor and student-student relationships, especially for underclassmen and between different class years.

Social gatherings have been held at Bull Run for both students and professors to build stronger personal relationships within our common field.

Students are coming through the curriculum with weak UNIX skills.

A list of commonly used commands for students to use as a reference has been promised for distribution (As it should be, students are expected to be able to learn how to apply these tools on their own.)

Why is there repeated material in separate classes in the curriculum?

The first look at many concepts is merely an exposure to a topic. Another class may dive deeper into a specific area and repeat some of the basics in the process.

Why Econ 103 is a requirement instead of another course or a choice between courses.

The department is looking into an alternative, however, just having Econ 103 allows for flexibility within a student's schedule, as many sections are offered.

Concern for pre-requisites for some classes.

The department is designed with the students best interest in mind. If it is felt that a student should have a firm grasp of a specific set of concepts before tackling a certain class, a pre-requisite is established.

Students would like to see career services tailored more for Computer Science students.

There were lectures and information sessions given by representatives of the CDC last fall and this spring in order to specifically help Computer Science students understand their career options.

Results

Tabitha Peck

Several positive changes that benefit both the department and its students have resulted through the years from the annual student conversation. The department has been listening to the suggestions of the students and has tried to address as many issues as possible.

For example, the non-engineering students wanted more real-life work experience, such as the Engineering students gain in the senior design project. So there is now a computer science capstone course which introduces students to a software engineering methodology in the context of a large scale, team-based project.

Another change that has come about is the creation of The Connection to increase the communication within the department and to keep students informed.

During the student conversations, many questions are often raised regarding required classes as well as the usefulness of specific classes. In response to the students questions, a curriculum booklet now exists and will soon be posted as a link off the computer science web page.

There is also a plan to post a helpful UNIX information link off the computer science web page as well. The conversations have addressed concerns and questions raised by the students, and the department has responded with some answers.