A. Basic Unix Software Tools For Engineering

Time:	Tuesday, May 21	1 PM to 5 PM
	Thursday, May 23	1 PM to 5 PM
Place:	7th Floor, One Jackson Place	
Textbook(s):	ALL O'Reilly Books! http://isip.msstate.edu/fun_stuff The Internet (specifically Netscape and comp.unix.*) U. Vahalia, *Unix Internals: The New Frontiers*, Prentice-Hall, ISBN 0-13-101908-2	

Overview:

Session I:

1.	Basic Unix Concepts (filesystems, shells, pipes, etc.)	60 min.
2.	Window Systems and Window Managers	30 min.
3.	Editors (Emacs)	30 min.
4.	Break (Questions and Some Answers)	15 min.
5.	Interactive Shells (Bash)	15 min.
6.	Mail (Rmail)	30 min.
7.	Netnews (Gnus)	30 min.
8.	Web Tools (Netscape)	30 min.

Session II:

9.	More Web Tools (ftp and archie)	30 min.
10.	Office Automation (Calendar Manager Tools, DTP)	30 min.
11.	Compilers and Debuggers (g++ and gdb)	60 min.
12.	Break (More Q&A)	15 min.
13.	Make Files (gmake)	30 min.
14.	Software Revision Management (rcs)	30 min.
15.	Emerging Programming Languages (perl, tk/tcl, java)	30 min.
16.	Summary, Future Directions, and Open Discussion	15 min.

Description:

This course presents an introduction to modern day Unix computing environments. The goal of the course is to familiarize students with a variety of basic Unix tools commonly used in engineering research and development environments. Practice will be favored over theory. The course emphasizes the use of public domain (or shareware) tools that are commonly available on the Internet We focus on a small set of tools that are well-integrated and known to provide a balance between the need for open systems, flexibility, power, simplicity, and reliability. A demonstration of these tools on a Sun workstation will be given. Students who enroll in this course should plan to follow up the course with extensive hands-on learning, or most of what you learn will vanish quickly.

B. Object-Oriented Programming Using C++

Time:	Thursday, May 30	1 PM to 5 PM
Place:	7th Floor, One Jackson Place	
Textbook(s):	S.B. Lippman, *C++ Primer*, Addison-Wesley, ISBN 0-201-54848-8 B. Stroustrup, *The C++ Programming Language*, ISBN 0-201-53992-6 http://isip.msstate.edu/fun_stuff The Internet (specifically Netscape and comp.unix.*)	

Overview:

Session I:

1.	C++ At A Glance	15 min.
2.	Why Should I Use C++ To Write C Programs?	15 min.
3.	C++ Shares Many Constructs With C	30 min.
4.	The Class Construct	60 min.
5.	Break (Questions)	15 min.
6.	Scope and Memory	15 min.
7.	Overloading and Virtual Functions	30 min.
8.	Inheritance	30 min.
9.	Object-Oriented Programming	30 min.
10.	Programming Tools For C++ (enroll in the Unix intro. class)	0 min.

Description:

An object-oriented language does not instantly make one an object-oriented programmer. This course is designed to teach you how to write effective programs in C++. We will review the language definition and discuss its differences with ANSI C. We will focus on a small subset of C++ that is necessary for the development of modular, object-oriented programs. We will also briefly discuss more advanced aspects of the language that are somewhat more controversial and still undergoing development (and teach you what not to do in C++).

C programming experience will be helpful in understanding the concepts introduced in this course, but not necessary. Experience with some data structure-oriented language is preferred. Tools to support programming and debugging C++ programs will be discussed in the Basic Unix Software Tools for Engineering course offered the previous week.

C. Instructor

Dr. Joseph Picone

Ph.D. in Electrical Engineering, Illinois Institute of Technology (1983)
M.S. in Electrical Engineering, Illinois Institute of Technology (1980)
B.S. in Electrical Engineering, Illinois Institute of Technology (1979)

Dr. Picone is an Associate Professor in the Department of Electrical and Computer Engineering at Mississippi State University. He is also a Senior Member of the IEEE and a Professional Engineer registered in the State of Texas. He was previously employed at Texas Instruments as a Senior Member of Technical Staff and at AT&T Bell Laboratories as a Member of Technical Staff. He is also a former Adjunct Professor at University of Texas at Dallas and Illinois Institute of Technology. He is founder and Director of the Institute for Signal and Information Processing at Mississippi State University. His current research interest is the development of stochastic signal processing algorithms for syntactic pattern recognition, with applications in automatic speech recognition. He has previously conducted research in medium and low data rate speech compression. Dr. Picone has published more than 70 papers in the area of speech processing and has been awarded 8 patents. He is an Associate Editor for the *IEEE Signal Processing Magazine* and the *IEEE Transactions on Speech and Audio Processing*.

Dr. Picone offers courses at Mississippi State University in the areas of Signals and Systems, Introduction to Digital Signal Processing (see ftp://ftp.isip.msstate.edu/pub/ee_4773), and Fundamentals of Speech Recognition (new in Spring'96). As a side interest, in Spring'95, he initiated a course titled Basic Unix Software Tools for Engineering.

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