COURSE DESCRIPTION

Dept., Number	CSci 490	Course Title	Special Topics: Scripting Languages, Spring 2006
Semester hours	3	Course Coordinator	Dawn E. Wilkins, Associate Professor

Current Catalog Description

Study of topics in computer science according to the interests of the instructor and students.

Topic description: In recent years there has been increased interest in scripting languages. Traditional programming languages such as C, Pascal, and Ada were designed to allow the development of complex programs that involve data structures and algorithms from the ground up. Scripting languages are typically used to connect (glue) together components that have previously been developed. Normally scripting languages are typeless (or dynamically typed) and interpreted, whereas traditional programming languages are statically typed and compiled. This course considers several scripting languages and their ues.

Textbook

None required. All resources were available online.

References

Syllabus: http://www.cs.olemiss.edu/~dwilkins/script/spr06/syllabus.html

John K. Ousterhout. "Scripting: Higher Level Programming for the 21st Century," *IEEE Computer,* Vol. 36, No. 3, March 1998. Also at http://www.tcl.tk/doc/scripting.html

Examples and handouts: http://www.cs.olemiss.edu/~dwilkins/script/spr06/examples/

Useful links: http://www.cs.olemiss.edu/~dwilkins/script/spr06/links.html

Course Outcomes

Upon successful completion of this course, the students:

1. understand the scripting language paradigm;
2. know the tradeoffs (advantages and disadvantages) of scripting versus traditional programming;
3. are proficient programmers in at least two scripting tools/languages, including bash and Perl;
4. can write scripts using Unix/bash;
5. know how and when to make effective use of regular expressions.

Relationship between Course Outcomes and Program Outcomes

1. Understand the scripting language paradigm. Outcome: k
2. Know the tradeoffs (advantages and disadvantages) of scripting versus traditional programming. Outcome: j
3. Are proficient programmers in at least two scripting tools/languages, including bash and Perl. Outcome: c
4. Can write scripts using Unix/bash. Outcome: i
5. Know how and when to make effective use of regular expressions. Outcome: i

Prerequisites by Topic

The official prerequisites for CSci 490 are CSci 211 (Computer Science III) and CSci 223 (Computer Organization and Assembly Language). The students in this section should also have an interest in exploring new programming languages.

Major Topics Covered in the Course

1. What are scripting languages and when are they useful?
2. Comparison of traditional programming languages and scripting languages
3. Unix shell scripting with bash
4. Unix scripting tools, awk and sed
5. Regular expressions in scripting languages
6. Perl scripting, variables, control structures, arrays, hashes
7. Basic Ruby, Ruby by example

Assessment Plan for the Course

This is an elective course offered on this topic only once with the specified content. The offering had 2 quizzes, 3 homework sets (9 programs), class presentations, and class discussions. The course outcomes were assessed by various aspects of these activities.

How Data in the Course are Used to Assess Program Outcomes (unless adequately covered already in the assessment discussion under Criterion 4)

Estimate Curriculum Category Content (Semester hours)

Area	Core	Advanced	Area	Core	Advanced
Algorithms		2	Software design		
Data structures		1	Concepts of programming languages		