

August 2, 2010

Graduate Council E-mail meeting

1. CS 5823 Scripting Languages-New Course **APPROVED**

## New/Special Course Proposal-Bulletin Change Transmittal Form

- Undergraduate Curriculum Council** - Print 1 copy for signatures and save 1 electronic copy.  
 **Graduate Council** - Print 1 copy for signatures and send 1 electronic copy to [mmcginnis@astate.edu](mailto:mmcginnis@astate.edu)

**New Course** or  **Special Course (Check one box)**

Please complete the following and attach a copy of the catalogue page(s) showing what changes are necessary.

Department Curriculum Committee Chair	Date	COPE Chair (if applicable)	Date
		Professional Education Head of Unit (If applicable)	Date
Department Chair	Date	General Education Committee Chair (if applicable)	Date
College Curriculum Committee Chair	Date	Undergraduate Curriculum Council Chair	Date
College Dean	Date	Graduate Curriculum Committee Chair	Date
		Vice Chancellor for Academic Affairs	Date

<b>1. Proposed Course Prefix and Number (For variable credit courses, indicate variable range.)</b> CS 4823/5823
<b>2. Course Title – if title is more than 30 character (including spaces), provide short title to be used on transcripts. Title cannot have any symbols (e.g. slash, colon, semi-colon, apostrophe, dash, and parenthesis). Please indicate if this course will have variable titles (e.g. independent study, thesis, special topics).</b> Scripting Languages
<b>3. Will this course be lecture only, lab only, lecture and lab, activity, dissertation, experiential learning, independent study, internship, performance, practicum, recitation, seminar, special problems, special topics, studio problems, student exchange, occupational learning credit, or course for fee purpose only (e.g. an exam)? Please choose one.</b> lecture
<b>4. What is the grade type (i.e. standard letter, credit/no credit, pass/fail, no grade, developmental)?</b> standard letter credit
<b>5. Is this course dual listed (undergraduate/graduate)?</b> yes
<b>6. Is this course cross listed? (If it is, all course entries must be identical including course descriptions. It is important to check the course description of an existing course when adding a new cross listed course.)</b> no
<b>7. Brief course description (40 words or less) as it should appear in the bulletin.</b> Examination of scripting languages compared to conventional programming languages and construction of domain-specific solutions for common problems in GUI, networking, and web programming.
<b>8. Indicate all prerequisites and if this course is restricted to a specific major, which major. (If a student does not have the prerequisites or does not have the appropriate major, they will not be allowed to register).</b> CS 3113 Data Structures
<b>9. Course frequency (e.g. Fall, Spring, Summer, or Demand). Not applicable to Graduate courses.</b> Demand
<b>10. Contact Person (Name, Name of Institution, Address, Email Address, Phone Number)</b> Jeff Jenness, Arkansas State University, Computer Science Department, 3978
<b>11. Proposed Starting Term/Year</b> Fall 2010
<b>12. Is this course in support of a new program? If yes, what program?</b>

no

**13. Does this course replace a course being deleted?**

no

**b. If yes, what course?****c. Has this course number been used in the past?**

no

**Attach Course Deletion Proposal-Bulletin Change Transmittal Form.****14. Does this course affect another program? If yes, provide contact information from the Dean, Department Head, and/or Program Director whose area this affects.**

no

**15. Justification should include:****A. Academic rationale and goals for the course (skills or level of knowledge students can be expected to attain).****Provide the student with the following skills and knowledge:**

- Understand the differences between scripting and application languages
- Understand the set of problems for which scripting languages provide solutions
- Understand and employ the advanced features of scripting languages
- Be able to construct common solutions for several problems using scripting languages
- Be able to use scripting languages in network-centric environments
- Be able to use scripting languages in web-centric solutions
- Be able to use scripting languages to construct user interfaces

**B. How does the course fit with the mission established by the department for the curriculum? If course is mandated by an accrediting or certifying agency, include the directive.**

This course provides students with a broader set of problem solving and programming skills which is core to the mission of the department.

**C. Student population served.**

Advanced undergraduate and graduate students in Computer Science or advanced IT professionals wanting to gain knowledge in scripting languages and their usage

**D. Rationale for the level of the course (lower, upper, or graduate).****This course requires advance programming skills and programming language knowledge, as well as a solid foundation in data structures.****16. Outline** (The course outline should be topical by weeks and should be sufficient in detail as to allow for judgment of the content of the course.)

Week 1: Overview of Scripting Languages

Definition, History, Features

Week 2: Major Features

Dynamic Typing, Regular Expressions (AWK)

Syntax, Run-time Environment, Libraries

Week 3: Perl Features

Week 4: Advanced Perl Features

Week 5: Python Features

Week 6: Advance Python Features

Week 7: Other Scripting Languages

JavaScript, Scheme, Forth

Week 8: Domain Specific Scripting Languages

Week 9: GUI-based Programming

Libraries, TCL

Week 10: Network-based Programming

Week 11: Web-based Programming

Week 12: Client-Server Programming

Week 13: Compared Application Languages

C++, Java, C# (modern features blended)

Week 14: Embedded Scripting Languages

**GUI – graphical user interface****AWK, Perl, Python, JavaScript, Scheme, Forth, TCL, C+, Java, and C# are programming languages****17. Course requirements** (e.g. research papers, projects, interviews, tests, etc.)**The course will consist of 2 in-class tests and 14 programming assignments.****18. Special features** (e.g. labs, exhibits, site visitations, etc.)

none

**19. Required reading**

Ellen Siever, Stephen Spainhour and Nathan Patwardhan, Perl in a nutshell : a desktop quick reference 1/e, O'Reilly &amp; Associates, 1998

**20. Department staffing and classroom/lab resources** (Will this require additional faculty, supplies, etc.?)

none

**21. What is the primary goal of this course?**

To provide the student with a strong foundation in script-based programming solutions.

**22. If this proposal is for a general education course, please check the primary goal this course addresses:**

- |   |   |
|---|---|
| <input type="checkbox"/> Communicating effectively                                      | <input type="checkbox"/> Thinking Critically  |
| <input type="checkbox"/> Using mathematics  | <input type="checkbox"/> Using Technology   |
| <input type="checkbox"/> Understanding global issues                                    | <input type="checkbox"/> Understanding interdependence                                  |
| <input type="checkbox"/> Developing a life-long appreciation of the arts and humanities | <input type="checkbox"/> Developing a strong foundation in the social sciences          |
| <input type="checkbox"/> Using science to accomplish common goals                       | <input type="checkbox"/> Providing foundations necessary to achieve health and wellness |

**23. Considering the indicated primary goal, provide up to three outcomes that you expect of students after completion of this course. For example, what will students who meet this goal know or be able to do as a result of this course?**

**Primary Goal Outcome #1: Understand and employ advanced features of scripting programming languages**  
**Learning Activity:** Two assignments will be given to test students over regular expressions and run-time translation  
**Assessment Tool:** The assignments will develop computer programs to illustrate the practical experience the students gain in order to meet the goal. Each assignment will be graded according to efficacy of the student solution for the given problems.

**Primary Goal Outcome #2: Be able to use scripting languages in network-centric environments**  
**Learning Activity:** One assignment will be given to test the students over standard server or peer-to-peer network communications  
**Assessment Tool:** The assignment will be graded work that develops practical computer programs to illustrate the students achievement of the goal involved.

**Primary Goal Outcome #3: Be able to use scripting languages in web-centric solutions**  
**Learning Activity:** One assignment will be given to test the students over web-crawler technology using a scripting language  
**Assessment Tool:** The assignment will be graded work that develops practical computer programs to illustrate the students achievement of the goal involved.

**From the most current electronic version of the bulletin, copy all bulletin pages that this proposal affects and paste it to the end of this proposal.**

**To copy from the bulletin:**

1. Minimize this form.
2. Go to <http://registrar.astate.edu/bulletin.htm> and choose either undergraduate or graduate.
3. This will take you to a list of the bulletins by year, please open the most current bulletin.
4. Find the page(s) you wish to copy, click on the "select" button and highlight the pages you want to copy.
5. Right-click on the highlighted area.
6. Click on "copy".
7. Minimize the bulletin and maximize this page.
8. Right-click immediately below this area and choose "paste".
9. For additions to the bulletin, please change font color and make the font size larger than the surrounding text. Make it noticeable.
10. For deletions, strike through the text, change the font color, and enlarge the font size. Make it noticeable.