ANTHROPOLOGY 4020/5005 (SECTION 2)
Fall semester, 2010

COMPUTER PROGRAMMING FOR ARCHAEOLOGISTS

Wednesday 3:10-5:40 PM
Classroom Bldg, Room 225

Instructor: Todd Surovell  Phone: 307-766-3239
Office: Anthropology 217  Email: surovell@uwyo.edu
Office Hrs: Tues 2:40-4:00; Wed 1:00-2:30  (or by appointment)

Subject Matter and Goals
This course is designed to give students an introduction to the applications of computer programming to archaeology.

Computer programming is an invaluable skill that can aid in the performance of archaeological research. Programming can be useful not only during the analytical phase (testing of hypotheses) but also in the collection and management of data. It can also be used to develop models and simulations of complex prehistoric systems that are otherwise intractable, or difficult to model qualitatively. In this course, students will learn to write programs in Microsoft Excel in the Visual Basic for Applications language. Most programming languages have similar structure and syntax. Once one is learned, it is fairly simple to learn another. Excel VBA was chosen for this course because Microsoft Excel is widely owned and used, and programming in Excel VBA does not require the purchase of additional software. The course begins with an introduction to Microsoft Excel, programming structure, and applications to archaeology. In subsequent weeks, students will be given specific assignments in which they will be asked to write programs of relevance to typical archaeological problems.

Course Structure:
The class is scheduled to meet once per week on Wednesdays 3:10 to 5:40 PM in room 225 of the Classroom Building.

Class is to be comprised partly of lecture but mostly, it will involve students actively working on programs in class. At the start of each class, the instructor will introduce new concepts to be applied to that day’s assignment. The remainder of the day, students will work on the programming assignment.

Readings:
The text book for the course is:

Walkenbach, J.  

This book is an excellent basic reference for Excel VBA and is written in easy-to-understand language. You should bring your textbook to class each week as it will serve as invaluable reference for the VBA programming language. Additional readings focusing on archaeological applications of computer programming will be assigned throughout the course. These readings will be available on electronic reserve through the WyoWeb course website.
Software: In class and take-home assignments will require Microsoft Excel (v. 2000 or later). This will be available in the course classroom and is available in most campus computer labs. If you want to work on assignments at home, you will need to acquire a copy of Excel for personal use if you do not have one.

Assignments: During Weeks 6 — 11, there will be six graded assignments designed to give students practical experience in writing and using various types of programs. For each assignment, I will briefly introduce the assignment, and we will discuss the associated reading. We will then devote most of the class period to working on assignments. This is your time to have me help you directly with your assignment. Each assignment will be due by the start of the following class period.

Prerequisites: Undergraduates must have successfully completed the courses Anthropology 1300, or have consent of the instructor.

Grading:
Undergraduate grades will be based on performance on assignments (80% of the final grade) and a final project (20% of the final grade). For the final project students will develop an original program of practical application to archaeological problems, or students can reproduce a program taken directly from the archaeological literature. Undergraduates should let the instructor know what they will be doing for their final project by Wednesday, October 20. For the final project, students will turn in a copy of the program to the instructor and make a brief presentation of their work on the final day of class.

Graduate student grades will be based on performance class assignments (60%), a final project (40%). For the final project, you will be writing a term paper, the focus of which will be an original computer program of archaeological significance. I highly recommend that your program is a model or simulation of something of anthropological relevance. The project should be developed in consultation with me over the course of the semester. I would like to have the topic of your final project finalized by Wednesday, October 20, and your final project will be due on Wednesday, December 1. You will also be presenting a brief presentation of your simulation/study to the class on the due date.

Students with Disabilities
If you have a physical, learning, or psychological disability and require accommodations, please let me know as soon as possible. You will need to register with and provide documentation of your disability to University Disability Support Services (UDSS) in Room 109 of Knight Hall (ph: 307-766-6189; web: http://uwadmnweb.uwyo.edu/udss/default.asp).

Academic Dishonesty
Academic dishonesty of any form will not be tolerated in this course. University Regulation 802 defines all of the following as academic dishonesty:

- Representing as one’s own work material copied or borrowed from any source, written or otherwise, public or private, without proper citation of the source.
- Using a ghost writer, commercial or otherwise, for any type of assignment.
- Submitting substantially the same work for more than one class without the explicit permission of all concerned instructors.
- Doing a class assignment for someone else or allowing someone to copy one’s assignment.
- Using notes or prepared information in an examination unless authorized by the instructor.
- Taking an examination for someone else or allowing someone to take an examination for oneself.
- Copying from, or assisting, another student during an examination.
h. Stealing, or otherwise improperly obtaining, copies of an examination before or after its administration.

i. Submitting substantially the same work as someone else unless authorized by the instructor.

Students who engage in any form of academic dishonesty will be prosecuted according to University and College regulations.

**Schedule of Topics and Readings**

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<tr>
<th>Date</th>
<th>Topic</th>
<th>Readings</th>
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<tr>
<td>Week 1 (8/25)</td>
<td>Introduction to the course</td>
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| Week 2 (9/1) | Discussion: Computer Programming in Archaeology  | Young and Bettinger 1992,  
                               | Introduction to MS Excel          | Wobst 1974,                                   |
|            |                                            | Surovell 2003              |                               |
| Week 3 (9/8) | Excel VBA Programming I                    | Walkenbach, Ch. 1-6         |
| Week 4 (9/15) | Excel VBA Programming II                   | Walkenbach, Ch. 7-10         |
| Week 5 (9/22) | Excel VBA Programming III                  | Walkenbach, Ch. 11-14        |
| Week 6 (9/29) | Assignment 1: Zooarchaeological Tabulation Program |                               |
| Week 7 (10/6) | Assignment 2: $^{14}$C Date Graphing Program |                               |
| Week 8 (10/13) | Assignment 3: Artifact Dispersal Simulation | Gregg et al. 1991            |
| Week 9 (10/20) | Assignment 4: Artifact Accumulation Simulation | Schlanger 1991               |
| Week 10 (10/27) | Assignment 5: Predator-Prey Simulation I   | Alroy 2001                    |
| Week 11 (11/3) | Assignment 6: Predator-Prey Simulation I   | Stiner et al. 1999           |
| Week 12 (11/10) | Work on final projects                     |                               |
| Week 13 (11/17) | Work on final projects                     |                               |
| Week 14 (11/24) | Thanksgiving Holiday                      |                               |
| Week 15 (12/1) | Presentation of final projects             |                               |
Supplemental Readings

**Week 2**
Wobst, H.M.,
Young, D.A., Bettinger, R.L.,
Surovell, T.A.,

**Week 8**
Gregg, S.A., Kintigh, K.W., Whallon, R.,

**Week 9**
Schlanger, S.H.,

**Week 10**
Alroy, J.,

**Week 11**
Stiner, M.C., Munro, N.D., Surovell, T.A., Tchernov, E., Bar-Yosef, O.,