

# Institutional Effectiveness Report

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## Assessment Summary

**Department or Division:** Mathematics and Computer Science

**Degree Program:** B.S. Computer Information Systems

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**Assessment Cycle** (academic or calendar year): 2008-2009

**Mission:** The Computer Science program at Valdosta State University will provide foundational knowledge of computing, its practice, and its applications, to enable graduates to pursue graduate work or a professional career.

**Assessment History** (discuss here how and when the program developed its current assessment program, what it used prior to starting that program to assess its effectiveness, etc.): A capstone course, CS 4900 – Senior Seminar was introduced in the academic year 1999-2000. The following year, a series of three courses in either Networking (CS 4121,4122,4123), Software Engineering (CS 4321,4322,4323), or Database (CS 4721, 4722, 4723) was required with the sequence being considered the capstone experience. In 2004-2005, due to low enrollment in the third courses in a sequence, we allowed CS 4900 as an option instead of the third course. Finally, in 2007-2008, the third courses in the sequences were removed as requirements and CS 4900 became an elective. Thus, the first and second courses were made the capstone experience.

The assessment procedure also specified a program exit questionnaire; however this was never administered. The assessment procedure has been modified to exclude this as it was felt that the implementation of was too complicated and unnecessary.

The assessment procedure also incorporates the results of alumni surveys conducted by the university.

During the academic years 2005-07, a number of modifications were made. It was observed that students' abilities to write computer programs had deteriorated and exhibited too much variability. The topics in the gateway courses were standardized, several mathematics related core courses were required to be completed with a grade of C or better, a statement was added to the course description for the first course warning of the skills required for success, a dedicated advising system was implemented, advisors were instructed to carefully filter students for entry into the gateway courses, the curriculum was evaluated according to the ACM/IEEE Computing Curriculum 2005 Guidelines, and an external consultant was utilized to formally evaluate the program. Based on these and other factors, the curriculum was modified to allow more choices for new courses that were developed.

### Expected Student Learning Outcomes:

1. Students will analyze case studies and solve problems requiring that they assess hardware, software, and networking needs for information processing in the corporate environment.

2. Students will do projects requiring that they apply their knowledge in accounting, marketing, and management to the design, development, and maintenance of information systems.
3. Students will use their skills in data structures, program design, and algorithm analysis to solve information system problems through programming, system configuration, and system simulation.

**Assessments** (include when and to whom these are administered, and align goals with specific assessments):

Exit surveys to graduating seniors given all three years. Pertains to Learning Outcome 1 above.

Projects and/or final exams from CS 4121/4122, 4321/4322, 4721/4722. Pertains to Learning Outcomes 1, 2, and 3 above.

ACM/IEEE Computing Curriculum Guidelines – 2005. Pertains to Learning Outcome 1.

ABET Consultant. Pertains to Learning Outcome 1.

### **2005-2006**

- Assessment Results (submit an electronic file of the data collected): CS 4121 assignments had an average of 68, CS 4321 projects had an average grade of 84 with an average of 78 on the coding portion, and CS 4721 final exam had an average of 72.4. The Exit survey revealed that 72% of graduates thought their advisor's helpfulness was excellent or good, 50% thought their major courses were excellent or good towards preparation for graduate school, and 61% for initial employment.
- Discussion/Dissemination of Results: Assessment results for the capstone courses revealed that satisfactory performance was exhibited. Exit surveys showed required courses prepared students adequately for initial employment or graduate school. Discussion among the faculty about the capstone courses (and others) revealed that there was a large variability in students' abilities to program. A survey of advanced CIS students was conducted to determine how adequate CS 1010 prepared them for CS 1301, the first programming course. A discussion was started to standardize the topics in the gateway courses: CS 1301, CS 1302, CS 3410.
- Modifications Made: CS 1301 course description was modified to include a warning about the analytical abilities required for the course. Requested that CIS advisors do strong filtering to decide whether students should enter CS 1301 directly or by taking CS 1010 first. Documents were produced that standardized the topics in the gateway courses.

### **2006-2007**

- Assessment Results (submit an electronic file of the data collected): CS 4121 assignments had an average of 4, CS 4321 projects had an average grade of 85 with an average of 80 on the coding portion, and CS 4721 final exam had an average of 66.4. The Exit survey revealed that 72% of graduates thought their advisor's helpfulness was excellent or good, 45% thought their major courses were excellent or good towards preparation for graduate school, and 54% for initial employment.
- Discussion/Dissemination of Results: Assessment results for the capstone courses revealed that satisfactory performance was exhibited. Exit surveys showed required courses prepared students adequately for initial employment or graduate school. The CS Program Committee evaluated the curriculum with the ACM/IEEE Computing Curriculum Guidelines and it was found that the CIS program

needed further evaluation and needed to hire faculty with expertise in CIS. A search for this person continues.

- Modifications Made: The CIS curriculum was changed to require that a C or better in all lower division math courses (Areas A and D) and Area F courses. New courses were introduced into the curriculum: web programming (CS 3340), introduction to e-commerce (CS 3700), e-commerce design (CS 4700).

### 2007-2008

- Assessment Results (submit an electronic file of the data collected): Assessment results for the capstone courses revealed that reasonable performance was exhibited. CS 4121 assignments had an average of 81, CS 4321 projects had an average grade of 84 with an average of 85 on the coding portion, and CS 4721 final exam had an average of 68.0. The Exit survey revealed that 75% of graduates thought their advisor's helpfulness was excellent or good, 25% thought their major courses were excellent or good towards preparation for graduate school, and 25% for initial employment.
- Discussion/Dissemination of Results: Exit surveys results for how required courses prepared students adequately for initial employment were inconclusive as there was only one respondent. The CS Program Committee arranged for a consultant to be brought in to evaluate the CS and CIS programs.
- Modifications Made: As a result of the consultant's report, the CIS curriculum was changed to broaden the upper-level CS elective choices.

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<b>Dept. Head/ Director</b>	<b>Date</b>	<b>Dean</b>	<b>Date</b>	<b>VPAA</b>	<b>Date</b>
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Adapted from: University of Alabama SACS site (<http://sacs.ua.edu/degreeInfo2.cfm?college=2&dept=50>);

University of Western Kentucky SACS Accreditation Review Process (<http://www.wku.edu/sacs/assessmentmanual.htm>) ; and

Mrs. Marila D. Palmer, VP-Executive Affairs & Planning, LeTourneau University, Presentation to 2008 SACS-COC Institute