



Assessment Report for BS in Computer and Information Science Spring, 2007

Introduction

The BSCIS major is one of two undergraduate majors offered by the CIS Department. (See also BBA – Information Systems.) The basic purpose of the program is to prepare students to work in software development jobs, primarily in the Greater Cleveland area. In contrast to the BBA-IS major, which emphasizes the use of information technology in business; and the Bachelor of Computer Engineering major (offered by the Engineering College), which emphasizes design of computer hardware, the BS-CIS degree is a general purpose, software oriented program. Students are taught fundamental programming techniques, principles of software operation, and (through electives) various software development and use techniques. Although students can focus their studies in application areas of personal interest (e.g., business, engineering, math, physics, etc.), the goal of the program is to give graduates the foundation to be productive immediately and to learn as needed in the work place.

Goals

Original program goals were developed in 2003 by all tenure-track faculty members teaching in the BS-CIS program. Even though 2003 goals were established by faculty consensus, the department instituted a review of these goals during the year 2006-07. A faculty committee spent significant amount of time reviewing and fine tuning the program goals during 2006-2007 calendar year. The assessment process was partially modified as a result of this review. Specifically, the primary tool used for the assessment during 2006-07 was changed. A new comprehensive examination was designed and administered during both the Fall of 2006 and the Spring of 2007. This test is significantly different from that used in the previous years. In addition, we are pilot testing an exit survey that is expected to be modified during 2007-08 to address as yet untested program goal.

Outcomes

Outcomes were revised during 2006-07 along with the revision of the program goals in 2006-07. The new outcomes were determined by a faculty committee of the department. The outcomes were also discussed in the department meeting during the year and were adopted. These outcomes are expected to be fine tuned as the department gains more experience in the assessment process.

Research Methods

We have used essentially the same research method for the past six semesters even though the instrument has been revised. Given that the current test has been used only for one year, its efficacy in the assessment process is not yet fully established.

In addition to a test, the department conducted a small pilot study to assess the satisfaction of students completing the BSCIS degree. Even though the result is not statistically valid, following preliminary results were obtained:



- Overall satisfaction with the program (3.8 out of 5)
- Satisfaction with theoretical and analytical contents (4.0 out of 5)
- Satisfaction with preparation for a career (3.6 out of 5)
- Interest towards a master's degree (3.8 out of 5)

The survey result will be reviewed by a faculty committee during the Fall of 2007-08. Once the review is complete, we will institute procedure for administering the survey to all of our near graduates.



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Goal 1: A BSCIS graduate will understand the basic principles of software system development, and be able to use different software tools.

Outcomes	Research Methods	Findings	Review	Actions
<ol style="list-style-type: none"> 1. Have an understanding of several programming languages. 2. Understand fundamental data structures and be able to incorporate them into programs. 3. Understand basic object oriented concepts and design principles. 4. Be familiar with event driven programming. 	<p>Faculty provided a total of 40 exam questions covering the understanding of the basic programming skills. 29 students completed the test for the assessment purpose. Questions 1 -30 tested programming skills required for outcomes 1 and 2. Questions 31-40 addressed the two more advanced outcomes (#3 and 4)</p>	<p>59.9% of the testing group answered questions 1 – 30 correctly and 44.1% answered questions 31-40 correctly. There is a slight improvement in scores between those taking the test at the end of Fall 2006 and those taking at the end of Spring 2007. The mean number of correct answers for Fall 2006 is 30.7 for the entire test (including those for Goal 2). The mean score for the Spring 2007 is 37.1. The average for the test for the current year is 33.6.</p>	<p>The object oriented concepts were tested for the second time since OO courses are relatively new introduction in into the curriculum. The result of this component improved slightly to 44.1% correct to 42.3% in Spring 2006. There is a slight overall improvement in the performance since the average value of all scores improved to 33.6 compared to 26.7 and 32.5 given prior to Spring 2006. The average score for outcomes 1 and 2 did improve to 59.9% compared to scores of 58.6 and 57.7 for 2 examinations prior to this year.</p>	<p>The result of the programming component is quite satisfactory. Unfortunately, the result for the OO portion the test is unsatisfactory. The department faculty plan to review the test results during the Fall of 2007. Once the reason of poor performance is understood, appropriate remedial action will be planned. These actions may include revision of the assessment test should the test be judged as ambiguous. Curriculum review will also be initiated to address programmatic weaknesses.</p>



Goal 2: In order to be able to adapt to changing technologies, the BSCIS graduate will have a thorough understanding of principles of Computing and Information Science.

Outcomes	Research Methods	Findings	Review	Actions
<ol style="list-style-type: none"> 1. Understand the basic function of an operating system 2. Understand the concepts of programming language translation, including the distinction between interpreters and compilers, and the functions of assemblers, linkers, loaders, and macro processors. 3. Have some understanding of algorithmic efficiency and the fundamental limits of computing. 	<p>Faculty provided a total of 30 exam questions covering the understanding of the systems principles.</p>	<p>37.4% of the questions were answered correctly by the student group taking the test.</p>	<p>Result of 2006-07 is not substantially different from that of the Spring 2006. The total correct answer is 37.1% for this year compared to 46.2% for the Spring 2006. This part of the test covered more advance material. The reason for poor performance is not yet completely clear.</p>	<p>A faculty committee will review the test questions as well the questions' match with the curriculum. This review is expected to take place in the Fall of 2007. The result of the review will guide the department's future action.</p>