Computer Information Systems Program
Southeastern Oklahoma State University

Assessment Report
2009-2010

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# Table of Contents

I. Mission Statement.................................................................3

II. Vision Statement ......................................................................3

III. Constituents and Stakeholders..................................................3

IV. Position on the Assessment Process.........................................5

V. Goals......................................................................................5

VI. Learning Outcomes ..................................................................5

VII. Assessment Methods Used ....................................................6

VIII. Results of Assessment Methods .............................................6

IX. Analysis and Interpretation .....................................................27

X. Assessing IETV and Online Instruction ....................................29

XI. Program Modifications ..........................................................30

XII. Effectiveness of Previous Program Modifications ....................31

XIII. Future Modifications ............................................................32

XIV. Strengths and Weaknesses in the Program ...............................32

XV. Faculty Involvement in Assessment .........................................33

XVI. Signatures ............................................................................34
I. Mission Statement of the CIS Program

The *Computer Information Systems (CIS)* program of the department of *Chemistry, Computer, and Physical Sciences* aims to prepare its students to obtain and enjoy successful careers in the dynamic IT (Information Technology) industry. The CIS program strives to understand the needs of local, regional and national employers and deliver graduates that can adequately fill current IT positions.

II. Vision Statement of the CIS Program

The *Computer Information Systems (CIS)* program of the department of *Chemistry, Computer, and Physical Sciences* aims to adapt to the constantly changing IT environment by modifying curricula and teaching methods to match the evolution of the IT demands of businesses everywhere. The program envisions a typical graduate as an individual with a well-rounded knowledge of computing and information systems that has the problem-solving skills allowing a seamless transition into the particular requirements of any IT position that is presented to him or her.

III. Constituents and Stakeholders

The *Computer Information Systems (CIS)* program of the department of *Chemistry, Computer, and Physical Sciences* constantly strives to maintain dialogues with graduates who pursue IT careers and with employers of program graduates. Although stakeholders can philosophically be considered to include families of graduates, citizens in general and those concerned with the overall health of society, the program mainly concentrates on graduates pursuing IT careers and their employers as stakeholders in the success of the program.

Some students fit into both constituent and stakeholder categories because they frequently establish their own IT business, many having employees of their own.

Professors Mike Morris and Rhonda Richards have a broad scope of business experience in the IT area and routinely communicate with area business and industry to make them aware of qualified available students for our internship program. By keeping this line of communication open and providing worthy students for employment we attempt to raise the awareness of the quality of our CIS graduates. We often use our assessment data to convince them of our qualifications. For example, a local successful businessman, who is an alumnus of our program, often visits our department to discuss what we are teaching and why we are teaching this particular content. We have discussed with him our reasoning based on the ICCP exam and assessment results and have been met with appreciation of our commitment to student excellence.

An added bonus is the fact that the ICCP program offers additional testing to individuals who attain a 50% or higher score. We offer testing facilities and proctoring to our students with no fees and extend this offer to current and potential employers of our students (stakeholders). For example, one of our major stakeholders (Choctaw Nation) has paid for a student to take the additional testing
based on his base scores. The stakeholder was given documentation regarding our assessment exam and sufficient understanding of the process to release the funds for certification of their employees. This relationship improves the quality of our internship program with our stakeholders.

The program's primary method of assessing the progress and opinions of these individuals and entities is through personal communication. A brief selection of actual quotes follows. In each instance, the comment was received within the previous three calendar years and permission was granted to divulge the identity of the respondent.

"I want to thank you! I got the job at Frisco ISD as a Technology Integration Specialist. I will be working at Lone Star High School. It's a school that was built last year, so I will be working hard getting it all up and running."

"Thanks again for your help, Richard May"

"Thanks for helping me pursue and reach my educational goals over the last two years. I hope that in life after Southeastern, I have someone like you and Rhonda encouraging, empowering, and motivating me to always put forth my greatest effort."

"Sincerely, Brandin K. Alston"

"I would just like to thank the department faculty for all the time and effort you put into the classes which I attended. The things I learned in my courses have become invaluable."

"I would also like to thank you for forcing me to learn Linux and Unix. It has become a very valuable tool in my day to day life as a software engineer. I was introduced to so many programming languages."

"Sincerely, Ronald Schied"

"I never thought I'd have such a great job (working for a gov't contractor), great house, great car, and money to provide my family the good life."

"Theresa Thomas, San Antonio, TX"

"Oli's working FT [authors' note: full time] at Microsoft doing Software Development in Test for the Windows Media Center group. Chris is working FT at a software company called MAQ doing Software Development Engineer stuff. They're a Microsoft certified provider. And now I'm doing contract Software Development in test work for the Outlook Mobile team at Microsoft."

"All of us are using C#. Chris is getting into some XML stuff, and I'm pretty sure they just put him in charge of some project. So, things are going pretty well up here. " [authors' note: in the Seattle area.]

Emit Lowe

"Things are shaping up! I moved to Fort Worth and... found that Fort Worth ISD was looking for a network administrator. By the end of the day (after the interview) they were calling and asking how soon I could start to work."
"Talk to you later. Scott Goad."

"I have a great job with Dell that I never would have gotten without my CIS degree. It really made a difference."

"Adam Ferguson, Oklahoma City"

"Thank you for cramming all that SQL and IF-THEN stuff into my head. I use it almost every day."

"Larry McEvitt, Allen, Texas"

IV. The CIS Program's Position on the Assessment Process

The Computer Information Systems (CIS) program of the department of Chemistry, Computer, and Physical Sciences recognizes the program assessment process as an essential tool for providing a quality education to its students. The IT needs of business and home have a history of constant change. Assessment helps the CIS program to identify its strengths and weaknesses and therefore have a guide to make modifications needed to keep pace with the changes.

Traditional features of the assessment process are also recognized by the CIS program, including but not limited to budgeting, strategic planning, needed improvements not related to the IT industry demands and program review.

V. Program Goals

The primary goal of the Computer Information Systems (CIS) program at Southeastern Oklahoma State University is to prepare students for careers in information technology (IT) in business, industry, and government.

There are also many careers in other fields, some related, in which an IT background contributes greatly to success in these areas. Example fields include (but are not limited to) Art, Music, Theater, Medicine, Transportation and the Sciences.

VI. Program Learning Outcomes

1. Demonstrate an ability to identify problems in an information system and to select appropriate hardware and software packages to address the problems in a satisfactory manner.

2. Show competence in basic statistical analysis, the fundamentals of accounting, marketing, and management.
3. Demonstrate an understanding of data architecture, data management, systems integration, and the systems development cycle.

4. Manifest interpersonal communication skills through the preparation and presentation of reports.

VII. Assessment Methods Used to Meet Program Outcomes

1. In the senior year of the program, the Core Exam offered by the [Institute for the Certification of Computing Professionals](#) (ICCP) is given to each student. This gives the program an acceptable tool to evaluate all outcomes listed above.

2. All outcomes are objectively evaluated by faculty observations in the routine course of laboratory and classroom experiences in the curricula.

3. All outcomes are met by communication with employers that offer internships. A dialogue is maintained between faculty and employer during the internship and standard feedback from the employer's intern supervisor relating to all outcomes is solicited by the program administrators.

VIII. Results of Assessment Methods

1. Institute for the Certification of Computing Professionals (ICCP) Core Exam

   **General Comments**

   The ICCP Exam is developed to establish certification of professional designation in the computer industry. The ICCP exam given in our Senior Seminar is an exit exam utilized as a practical means of assessment. The previous ICCP Core Exam had 19 assessment indicators which were applicable to computer information systems. The previous exam has been retired and a new exam was developed and utilized for 2007-2008 assessment year. The ICCP and twenty university research professors developed the new IS-Core examination based on analysis of job advertisements that reflect common skills that employers seek. It is also used as a quality check and outcome assessment examination for 2 and 4 year college programs.

   This is especially useful for those colleges that follow the Model Curriculum as published by the ACM (Association for Computing Machinery), AIS (Association for Information Systems) and AIIT (Association of Information Technology Professionals). The CIS curriculum has traditionally followed the guidelines of these agencies in accordance with accreditation requirements.
In 2007-2008 the CIS curriculum was radically changed in an effort to better suit the needs of the students and to provide a more suitable response to employer needs. Our new program and the current guidelines published by the above three organizations are better suited for assessment by the new ICCP exam. The new exam was used last year as well.

A cumulative score of 50% or above on both old and new exams is considered ACP/Practitioner Proficiency and a score of 70% or better is considered CCP/Mastery/Expert Proficiency and is an indication of professional certification status which usually requires specialized courses beyond the typical undergraduate degree. The table below lists the performance of the CIS students on the exam, categorized by assessment indicators. It is important to note that some of these areas are taught outside of the department, yet they are an integral part of the CIS program.

<table>
<thead>
<tr>
<th>Assessment Indicator</th>
<th>% Correct</th>
</tr>
</thead>
<tbody>
<tr>
<td>Database Modeling &amp; Design *</td>
<td>53.13%</td>
</tr>
<tr>
<td>Database Administration *</td>
<td>50.00%</td>
</tr>
<tr>
<td>Business Management **</td>
<td>75.00%</td>
</tr>
<tr>
<td>Accounting &amp; Finance **</td>
<td>37.50%</td>
</tr>
<tr>
<td>Business Problems &amp; Technical Solutions *</td>
<td>75.00%</td>
</tr>
<tr>
<td>Lifelong Learning ***</td>
<td>25.00%</td>
</tr>
<tr>
<td>Personal Skills ***</td>
<td>37.50%</td>
</tr>
<tr>
<td>Professionalism ***</td>
<td>50.00%</td>
</tr>
<tr>
<td>Teams ***</td>
<td>87.50%</td>
</tr>
<tr>
<td>Communication ***</td>
<td>18.75%</td>
</tr>
<tr>
<td>Ethics *</td>
<td>75.00%</td>
</tr>
<tr>
<td>Strategic Use of IT *</td>
<td>50.00%</td>
</tr>
<tr>
<td>IT and Organization Systems *</td>
<td>46.43%</td>
</tr>
<tr>
<td>System Analysis &amp; Design *</td>
<td>46.88%</td>
</tr>
<tr>
<td>Systems Theory *</td>
<td>45.83%</td>
</tr>
<tr>
<td>Team Leading ***</td>
<td>58.33%</td>
</tr>
<tr>
<td>Manage Resources &amp; Activities *</td>
<td>50.00%</td>
</tr>
<tr>
<td>Scheduling &amp; Planning *</td>
<td>50.00%</td>
</tr>
<tr>
<td>Scheduling &amp; Tracking *</td>
<td>43.75%</td>
</tr>
<tr>
<td>Overall Score</td>
<td>51.35%</td>
</tr>
</tbody>
</table>

* indicates those indicators taught by the CIS faculty  
** indicates those indicators taught outside the CIS department  
*** indicates those indicators not specifically taught within the department or by any department on campus but part of an overall learning experience at the university level

Such things as business management, accounting and finance, communication, teams and team leading are incorporated in several CIS courses since students use them in preparing...
and presenting both written and oral reports. The experience and practical business knowledge of faculty have enabled the integration of financial and real-world application concepts into the CIS curriculum. It is noteworthy that the overall average score for all of the CIS majors was approximately 51.35%, which is considered passing by national standards and while it is a not an improvement over last year’s average of 55.41% it does reflect an increase in certain areas of the program.

Four graduating CIS students took the exam in order to fulfill requirements of the CIS senior seminar class. Our students attained passing status in 11 of 19 sections, professional status (this status is based on a passing rate of 70%, which is usually preceded by a course offered by ICCP that our students do not take) in 4 of 19 sections and all achieved overall passing on the exam as a whole. The students’ overall scores were: 53.85%, 40%, 50.77%, and 53.85%.

Proper utilization of the assessment results requires a trend analysis to determine longitudinal improvement or need in specific areas. The new format of the ICCP exam has different content and categorization of topics from the exam used in previous years. Due to this new format, a pair-wise organization of the previous topics on the exam to the new topics on the exam was implemented so that a trend analysis could be conducted. The following trend analysis represents this integration of the two exams. Future reports will show trend analysis data with this conversion and also of the current exam as longitudinal data is accumulated.
## ICCP Exam Results

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Database Modeling &amp; Design</td>
<td>53.13%</td>
<td>62.50%</td>
<td>47.90%</td>
<td>53.70%</td>
<td>55.60%</td>
</tr>
<tr>
<td>Database Administration</td>
<td>50.00%</td>
<td>30.00%</td>
<td>41.70%</td>
<td>46.30%</td>
<td>25.00%</td>
</tr>
<tr>
<td>Business Management</td>
<td>75.00%</td>
<td>60.00%</td>
<td>83.30%</td>
<td>53.30%</td>
<td>50.00%</td>
</tr>
<tr>
<td>Accounting &amp; Finance</td>
<td>37.50%</td>
<td>60.00%</td>
<td>75.00%</td>
<td>55.60%</td>
<td>50.00%</td>
</tr>
<tr>
<td>Business Problems &amp; Technical Solutions</td>
<td>75.00%</td>
<td>70.00%</td>
<td>75.00%</td>
<td>44.40%</td>
<td>50.00%</td>
</tr>
<tr>
<td>Lifelong Learning</td>
<td>25.00%</td>
<td>0.00%</td>
<td>33.30%</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Personal Skills</td>
<td>37.50%</td>
<td>60.00%</td>
<td>66.70%</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Professionalism</td>
<td>50.00%</td>
<td>30.00%</td>
<td>58.30%</td>
<td>66.70%</td>
<td>25.00%</td>
</tr>
<tr>
<td>Teams</td>
<td>87.50%</td>
<td>80.00%</td>
<td>100.00%</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Communication</td>
<td>18.75%</td>
<td>40.00%</td>
<td>50.00%</td>
<td>72.20%</td>
<td>75.00%</td>
</tr>
<tr>
<td>Ethics</td>
<td>75.00%</td>
<td>80.00%</td>
<td>83.30%</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Strategic Use of IT</td>
<td>50.00%</td>
<td>40.00%</td>
<td>66.70%</td>
<td>30.00%</td>
<td>35.00%</td>
</tr>
<tr>
<td>IT and Organization Systems</td>
<td>46.43%</td>
<td>62.86%</td>
<td>57.10%</td>
<td>47.20%</td>
<td>33.30%</td>
</tr>
<tr>
<td>System Analysis &amp; Design</td>
<td>46.88%</td>
<td>47.50%</td>
<td>39.60%</td>
<td>51.40%</td>
<td>41.70%</td>
</tr>
<tr>
<td>Systems Theory</td>
<td>45.83%</td>
<td>70.00%</td>
<td>55.60%</td>
<td>50.00%</td>
<td>75.00%</td>
</tr>
<tr>
<td>Team Leading</td>
<td>58.33%</td>
<td>60.00%</td>
<td>33.30%</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Manage Resources &amp; Activities</td>
<td>50.00%</td>
<td>70.00%</td>
<td>66.70%</td>
<td>64.60%</td>
<td>75.00%</td>
</tr>
<tr>
<td>Scheduling &amp; Planning</td>
<td>50.00%</td>
<td>75.00%</td>
<td>58.30%</td>
<td>69.40%</td>
<td>58.30%</td>
</tr>
<tr>
<td>Scheduling &amp; Tracking</td>
<td>43.75%</td>
<td>55.00%</td>
<td>45.80%</td>
<td>69.40%</td>
<td>58.30%</td>
</tr>
<tr>
<td>Overall Score</td>
<td><strong>51.35%</strong></td>
<td><strong>55.41%</strong></td>
<td><strong>59.87%</strong></td>
<td><strong>55.30%</strong></td>
<td><strong>50.51%</strong></td>
</tr>
</tbody>
</table>

Note that there are scores missing from 2005 – 2006 for some indicators. These discrepancies are because the trend data is based on the new exam and a direct mapping of categories was incomplete due to phased-out categories on the old exam. Examples of phased-in indicators include Lifelong Learning, Personal Skills, Teams, Ethics and Team Leading. Even though these are new categories, based on the above average scores, our program seems to be in line with the growing trend in CIS as reflected in the new ICCP exam.
The five year trend analysis shows improvement from the first year to the current year in some categories and a decrease in others. It is difficult to assess a program based on four students' indicators and a one-time exit exam. In addition, this is a new exam with new categories that our curriculum may not have addressed while these particular students were in the program. We have made changes in course content, which will be discussed below, to incorporate these nation-wide indicators of computing professionals.

Our overall numbers were affected somewhat by a decrease in scores on indicators taught outside the department. More specifically, Financial Management & Analysis had a 22.50% decrease. Also, of the eight indicators that did not reflect a passing grade, only four are under the direct control of our teaching.

The following chart illustrates overall trends in the totality of all courses required of the major, including those taught within the CIS department and those taught outside the CIS department. These scores represent the CIS program assessment results from the ICCP exam.

National Competency Comparison. The ICCP administers a program that allows universities such as SOSU that use the IS2002 Model Curriculum from ACM, AIS and AITP to assess how their students measure up to the top participants in the National Collegiate Conference Competitions on the same ICCP exams.

We have sample performance statistics based on an extensive psychometric and statistical analysis on ICCP examinations. The core IT skills that the CIS program administers has a
minimum score of 19, a maximum score of 91, a mean of 55.96, a median of 56, standard deviation of 14.55 and applicants pass rate of 60.87%.

Three out of four of our students passed, based on a passing score of 50%, which gives us a pass rate of 75.0%. We feel that this speaks sufficiently of our program and our consistent attention to each student’s learning.

Assessment of Each Program Outcome Using ICCP Data

The ICCP exam results data for the previous five years will be used to address the four learning outcomes listed above (see VI). We have mapped the 2005-2006 and 2006-2007 exam scores to the new categories on the ICCP exam. Therefore, since there was not a direct mapping, some indicators only reflect three years, rather than five.

The ICCP exam for this scholastic year was given to four students. Last year there were five and the previous year there were seven. The total number of questions each student was assessed for each outcome is listed immediately following the outcome.

Outcome 1. Demonstrate an ability to identify problems in an information system and to select appropriate hardware and software packages to address the problems in a satisfactory manner.

There were 13 questions assessed for this outcome on the ICCP exam. In order to be able to identify and address problems in an information system and to select appropriate hardware and software packages the student must have a knowledge of available types of IT and organizational systems on the market. The student should be able to analyze a business problem and arrive at an acceptable technical solution. The solution should incorporate sound managerial procedures of available resources and implement activities to arrive at that solution.
The charts above show the scores earned by CIS majors in these areas for the past five years. IT & Organization Systems scores were on a steady incline, but there was a decrease in the indicator for last assessment year. The decrease could be explained by the fact that we went to a more technically-oriented book which was at a higher level than was applicable for students. We have since changed to a more appropriate book and incorporated a practical-approach software package for hands-on learning.

The Business Problems & Technical Solutions scores showed a slight increase. A new course, called Advanced Business Solutions, was added to the curriculum. This group of students tested was among the first to be required to take this course. We added this course to fulfill the void of students' application of skills to open-ended solutions. It appears to be working.

Managing Resources & Activities showed a drop this year after a steady incline for the previous years. We feel that the content of this area is most likely taught in the Systems Analysis & Design course which has been modified with a new textbook and an additional
software package with hands-on experience for managing resources and activities.

Outcome 2. Show competence in basic statistical analysis, the fundamentals of accounting, marketing, and management.

There were 4 questions assessed for this outcome on the ICCP exam. Several assessment indicators in the ICCP exam show the progress of students in the areas of financial analysis, accounting, management, and general business practices. In the two charts below it is encouraging to see a general upward trend in one of these two indicators over the last several years. While the Accounting & Finance course is taught outside the department, some aspects of Business Management are taught within our courses, such as in Excel case studies.
The courses taught outside the department show a decrease in the Accounting & Finance score with an increase in Business Management. Our changes in the CIS program that were implemented during the past two years were done to the courses taught within the CIS department. Trends in courses required, but taught outside the department, are not within our direct control. However, it is our responsibility to incorporate more business material into our CIS curriculum in order to offset these deficiencies demonstrated by this assessment. For example, we have a new course in our curriculum called Advanced Business Solutions, which includes components of accounting and management. Students who took this assessment took this new course before their assessment exam which appears to have had an impact on the Business Management component.

Because of the decrease in Accounting & Finance scores we are considering adding an accounting software package mini-course to our curriculum in the near future. We are currently teaching Quickbooks in a course for accounting majors only and will look at the results in order to determine if this is something we need to incorporate into the CIS curriculum. We are willing to modify our program based upon the results of this type of assessment.
Future data may help to determine if this conjecture is correct or if the trends are merely a statistical artifact due to the quality of the cohort of students that took the exam. Future data may also give us indication if our new course is contributing to the improvement of our program.

**Outcome 3. Demonstrate an understanding of data architecture, data management, systems integration, and the systems development cycle.**

There were 33 questions assessed for this outcome on the ICCP exam. There are specific assessment indicators in the ICCP exam that reflect the students' understanding of data architecture, data management, systems integration, and the systems development cycle. The charts below reflect students' understanding of these areas.
The charts above illustrate improvement in only two of the seven areas. We see by the
assessment that we still need improvement in the Systems Analysis areas as well as the
Database Modeling area and have implemented remedies for this in the coming year’s
curriculum. However, the department feels that these results are satisfactory at this time.

Due to a steady decrease in Data Management and Administration, last year we indicated in
our report that we would be carefully monitoring students' comprehension of Data
Management in the curriculum and in future assessments to see if more emphasis in that
area is successful. We now see a significant increase in this area and feel that our
curriculum change which added an intermediate and advanced database class has been very
successful.

The decreases in the other five areas are of great concern to our department. We feel that
these areas should be covered in the Systems Analysis and Design course. This course is
taught online and a traditional textbook has been used in the past. The online environment
hinders the lecture and demonstration of modeling, charting and flows. Therefore, we have
added Visible Analyst to the Systems Analysis and Design course which is a hands-on
tutorial for students to learn modeling, charting and flows, as well as, scheduling planning
and tracking. We have also added instructional DVDs to the database class which should
enforce fundamental modeling and design concepts.

**Outcome 4. Manifest interpersonal communication skills through the preparation and
presentation of reports.**

There were 15 questions assessed for this outcome on the ICCP exam. The interpersonal
communication skills outcomes are assessed in the ICCP exam through the
Communication, Teams, Team Leading, Lifelong Learning, Personal Skills and
Professionalism indicators. It is vitally important for information technology managers to
be able to communicate effectively with co-workers. It is also critical that they conduct
themselves in a professional manner when communicating with other members of the
organization. The charts below reflect the students' performance in these areas.
Communication

Teams
The Communication indicator concerns our department. While we depend on general education requirements to fulfill the general communication learning, it is obvious that our students need additional help in this area. Right now, we are unsure of the path to take in this, but are researching how to incorporate this into our courses. We continue to require written reports, oral presentations, group work and other activities to hone students' communication and leadership skills. But this has not yet reversed the downward trend.

However, the communication between teams and team leading has remained at a consistent passing rate for our students. We accredit at least some of this to the discussion boards and group work we incorporate into our online classes.

Lifelong Learning, Professional Skills and Professionalism still need attention. We are again unsure how these indicators are assessed on the ICCP exam, but feel that possible additions to our Senior Seminar class may aid in bringing these scores up. Currently, we use a leadership book in Senior Seminar and may need to incorporate other professional skills books into this course. We also feel that a student's complete university experience can be attributed to these scores.

The slight decrease in the score in Ethics is a bit misleading for two reasons. One, the ICCP exam only asked only one ethics question. We do not feel that this is a sufficient basis for
determining the outcome of an entire course. Two, although it is a decrease, the passing rate of 75% is still sufficiently higher than the required 70% passing rate.

2. Laboratory and Classroom Experiences in the CIS Program

Some of the laboratory/classroom experiences that the CIS majors had included:

- Relational databases
- Database design
- Databases file structure and transactions
- SQL queries
- Object Linking Embedding (OLE)
- Desktop publishing
- Multimedia demonstrations
- Web Design
- Methods, languages, and tools used in contemporary software development
- Software process models, project management, software metrics, analysis, and design
- Software verification and validation
- Object-oriented concepts
- Professionalism and ethics
- Security
- Analyzing the business case
- Requirements modeling
- Enterprise modeling
- Development strategies
- Input and output design
- Discrete mathematics
- System architecture
- Systems implementation
- Systems operation and support

3. Senior Survey

CIS students are asked to complete a survey during the required Senior Seminar taken in their final year of the program. In general, most are satisfied with faculty (as can be shown by the SUMA evaluations) and advisement. Most also show excitement about their employment options after graduation and many have offers long before they graduate, sometimes working for a potential employer part time while in school.
4. Internship Guidelines

When a student gains part-time employment with a firm in which the work duties are computer related, three semester hours of upper-level CIS credit are allowed if the job requires 96 or more hours of work during a given semester. Duties must include some form of software management beyond simply being a user or duties must include hardware configuration and/or repair.

Examples of duties performed in the past are:

- Database administration
- Desktop publishing
- Hardware installation and repair
- Help desk staffing
- Network administration
- Software engineering
- Software security management
- Systems implementation
- Systems operation and support
- Web page design and maintenance

CIS Program faculty members maintain close communication with employers and discuss performance and duties of the student intern. By doing so the development of the student is assessed and discussed with the student. Skills that have been observed in interns include:

- Accurate record keeping
- Conscientious attendance
- Effective time management
- Leadership
- Listening and communication skills
- Personal appearance
- Phone etiquette
- Punctuality
- Task planning and organization
- Team building and relationship building
Entities that have participated in the CIS internship program include:
(unless noted, locations are in Durant)

- CCS – (Sherman, TX)
- Cardinal Glass FG
- Choctaw Nation
- Christie Lodge – (Avon, CO)
- DataRX – (Sherman, TX)
- Durant Public Schools
- First United Bank
- Landmark Banks
- Medical Center of Southeast Oklahoma
- Michelin – (Ardmore, OK)
- Potter's Sausage
- Rhino Communications
- Rural Enterprises, Inc.
- SOSU Communications
- SOSU Help Desk
- SOSU Art Department
- Staff One

IX. Analysis and Interpretation

The overall performance of CIS on the ICCP exam was 51.35% which is above the ICCP passing standards of 50%. In the various sub areas of the ICCP that were taught within the department, the following assessment indicators were at or above 50%:

- Database Modeling & Design (53.13%)
- Database Administration (50.00%)
- Business Problems & Technical Solutions (75.00%)
- Ethics (75.00%)
- Strategic Use of IT (50.00%)
- Manage Resources & Activities (50.00%)
- Scheduling & Planning (50.00%)

Those areas taught within the department where performance was below 50% were:

- IT and Organization Systems (46.43%)
- System Analysis & Design (46.83%)
- Systems Theory (45.83%)
- Scheduling & Tracking (43.75%)
The ancillary areas not taught within the department had the following scores:

- Business Management (75.00%)
- Accounting & Finance (37.50%)

The areas not taught specifically by our department or any department on campus had the following scores:

- Lifelong Learning (25.00%)
- Personal Skills (37.50%)
- Professionalism (50.00%)
- Teams (87.50%)
- Communication (18.75%)
- Team Leading (58.33%)

It is important to note that while the ancillary areas were down in the trend analysis, the students are still attaining above passing scores in the Business Management area. We feel that most of our courses emphasize the business aspect of CIS and therefore contribute to the learning.

The new ICCP exam is based on the industry suggested curriculum developed by educators, researchers and academicians. The CIS program recently evaluated and upgraded the degree requirements to better reflect this suggested curriculum. Since the new course requirements are in effect for incoming CIS degree candidates and the examinees of this year’s assessment were on the retired degree plan, we feel that our previous degree plan, although outdated, was sufficient for our graduates to attain and excel in their careers.

The assessment indicators on the ICCP exam seem to indicate the department is doing a good job in meeting the outcomes that the exam assesses.

The laboratory/classroom experiences of the computer information systems major are invaluable in producing competent people in the CIS discipline. Since all of the majors must demonstrate proficiency in the above mentioned topics in their respective course work, it is believed that the CIS program is meeting the learning outcomes.
X. Assessing IETV and Web-Based Instruction

The CIS program does not have any course offerings on IETV.

The CIS program's first course offered via the internet was in the fall of 2002, relatively early in the college's online history. The CIS faculty members have considerable experience using this media.

Today the CIS1003 Computers In Society course is a General Education course and enjoys 20 to 25 sections per academic year. Approximately 8 to 10 of these are offered online. In these online courses, an entrance exam is given to roughly evaluate the students' knowledge of the material. At semester's end a similar exam (with different questions) is administered. The variance in the results gives a good assessment of the students' skill level on the material. As a matter of record, note that the face-to-face courses administer a similar exam sequence.

The following table is one of several that it is indicative of the general progress of the online students:

<table>
<thead>
<tr>
<th>Excel</th>
<th>Excel Pre-test</th>
<th>Excel Post-test</th>
<th>Improvement</th>
<th>%Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>90</td>
<td>65</td>
<td>260%</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>64</td>
<td>45</td>
<td>237%</td>
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<tr>
<td>6</td>
<td>88</td>
<td>82</td>
<td>1367%</td>
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<tr>
<td>17</td>
<td>80</td>
<td>63</td>
<td>371%</td>
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<td>9</td>
<td>48</td>
<td>39</td>
<td>433%</td>
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<td>9</td>
<td>60</td>
<td>51</td>
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<td>11</td>
<td>56</td>
<td>45</td>
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<td>13</td>
<td>58</td>
<td>45</td>
<td>346%</td>
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<td>74</td>
<td>47</td>
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<td>86</td>
<td>75</td>
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<td>62</td>
<td>53</td>
<td>589%</td>
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<td>54</td>
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<td>54</td>
<td>33</td>
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<td>58</td>
<td>207%</td>
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<tr>
<td>7</td>
<td>68</td>
<td>61</td>
<td>871%</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>76</td>
<td>59</td>
<td>347%</td>
<td></td>
</tr>
</tbody>
</table>

AVG 477%
In the fall of 2009 and the spring of 2010 comparisons were made of online and traditional courses using the same textbook and the same evaluation material. Evaluation of the entrance/exit exams showed a 318% improvement overall in the online and a 260% improvement overall in the traditional courses. This indicates that online courses achieve approximately the same, if not better, effectiveness as traditional courses.

In addition, students seem to really like the online classes:

"Personally I like online classes. It gives me the opportunity to work and support myself while I am in school."

"Kaleb Hensley, Durant, OK"

"The online classes are great! I can work at my house and come up to the professor’s offices to ask questions and get help. The CIS professors are really good at answering emails, too!"

"Patrick Earthman, Durant, OK"

"The online classes in the CIS program were organized and easy to follow. Thank you for making the online learning experience enjoyable and effective!"

An anonymous student outside the CIS major

In order to increase the effectiveness of online courses, faculty members have prepared online video lectures for students to access and gain information. This allows online students to reap the same benefits the traditional classroom students get in a face-to-face environment. Interviews with students that dropped the course have indicated that difficulties with getting started and becoming comfortable with the online format are primary reasons for dropping an online course. By developing and posting these online video lectures, faculty members provide “face-to-face” instructions and human interaction to motivate the students.

Feedback from students has indicated that the video lectures aid in understanding the format of the class as well as understanding the material presented in the video lectures. For example, faculty members use Adobe Captivate to capture the development of a spreadsheet solution to a business case. Much like a classroom whiteboard, students can watch the development of the solution while listening to the faculty member give instruction. We also are adopting certain textbooks that have professionally produced companion videos compatible with Blackboard for students use in their studies.

XI. Program Modifications

The department of Chemistry, Computer and Physical Sciences has modified the CIS major by modeling it after perceived needs in the business community and by modeling it after other CIS, MIS (Management Information Systems) and IT programs in the region. The entire CIS movement nationwide, because of market demand, is de-stressing technical and traditional Computer Science topics, such as system programming, operating systems, algorithm analysis and general theory, and
is now stressing applications, especially those relating to business.

The CIS program has overhauled its curricula to reflect this trend. This has resulted in a clear delineation that distinctly distinguishes the CIS program from the CS (Computer Science) program.

These modifications are showing positive signs, illustrated by the fact that enrollment numbers are up. CIS faculty members claim to notice marked improvement in student attitudes as a result of these modifications.

A new CIS minor has been formed in the modification process. The new minor replaces the old one and consists of three required courses that are quite attainable by students of any other discipline. The remaining three courses can be chosen from a substantial list of options. This makes the minor very attractive to any discipline and the student that takes advantage of it will leave with a high level of competence in productivity software such as Microsoft Office. This is a skill desired by most employers, regardless of discipline.

In keeping with the administration's desire for online programs, most of the curricula is now offered online. There is some dissention among faculty and students as to the soundness of this policy so extensive research, evaluation and lively discussion is ongoing in this area.

As mentioned previously in the report, Systems Analysis & Design was significantly modified to utilize a better learning environment for the online students. The textbook was changed to an essentials text which covers sufficient material. However, the technical part of this course was dropped from the textbook choice and has been replaced with Visible Analyst which is a hands-on software-based tutorial. This addition should not only benefit our students by giving them practical experience but also should enforce learning through hands-on experience as a supplement to textbook readings and online video lectures.

**XII. Effectiveness of Previous Program Changes**

The 2010-2011 academic year marks the beginning of the fourth year of the modifications mentioned in section XI. Therefore the extent of these changes has not yet been fully measured with a five-year trend analysis.

However, CIS faculty members' research indicates that the demand for Computer Information Systems (CIS), Management Information Systems (MIS), and Information Technology (IT) [the department, basically, considers these three acronyms to represent the same degree] professionals is growing on the national scale. The recent modifications of the CIS program reflect the faculty's perception of skills needed by industry, and every effort is being made to address those needs.

The program aims to graduate its first class under the new program in the spring of 2011 and perhaps even as soon as the spring or fall of 2010. The effectiveness of these major changes should
be obvious and assessable by that time.

XIII. Future Modifications

The CIS faculty believes that enrollment is affected by the nation's economy to some degree. It seems that during plentiful times the work force is larger and enrollment decreases while vice versa, when the economy is in recession enrollment is up because displaced workers attempt to re-train or get more education for a chance at a better job.

The CIS faculty is alert to conditions such as these and attempts to adjust the program in any way deemed necessary to ensure its success. At present the new program seems stable and appears to have a bright future but if changes are needed they can and will be made. The direction of the program is not dictated by opinion. Hard data from the various assessment tools will always be used in the evaluation of the program and will be used when considering any program modifications.

The department is also in the process of offering courses in Health Information Systems and Electronic Medical Records. With the shift from paper to electronic in the healthcare industry and the backing of the presidential initiative for electronic records, we feel that CIS students will have an advantage by taking these courses and going into the workforce equipped with a specialty.

XIV. Strengths and Weaknesses in the Program

Perhaps the greatest strength of the CIS program is that traditionally, the graduates are happy with their degree and obtain career employment within the field. This is illustrated by a few of many graduate quotes that are listed in section III above. Although exceptions are possible, the program knows of no incident where a graduate is unhappy with the degree or working in a non-professional position.

Another strength is the fact that the program stresses the skills of critical thinking and problem solving as having extreme importance. This seems to allow the student to adapt quickly and learn the rigors of whatever employment is attained. A shortfall of knowledge in a particular subject is thus overcome easily and quickly.

The fact that the program is leaning to a totally web-based format is debatable as to whether it is a strength or weakness. Faculty and students are strongly opinionated about this matter and it is being heavily discussed and analyzed. Data is gathered each semester for both online and traditional courses and statistically evaluated for further analysis and comparison. Also, student input is gathered each semester qualitatively for subjective analysis by the faculty.

A particular weakness in the program is the shortage of faculty. The former inadequacy of facilities and equipment has been addressed by the completion of the new Classroom Building, in which the CIS faculty is housed. The new facilities are now a definite strength of the program.
It is believed by the faculty that more relevant courses could be offered and more up-to-date technologies (such as programming personal data assistants (PDAs), cell phones, iPods, etc.) could be addressed with a larger budget. That is a weakness, but again, the faculty is well aware of the state's financial position and strives to do the best job possible with the resources available, and that attitude is definitely a strength.

The CIS faculty is regularly involved with students outside the classroom. For example, regular field trips are made, such as attendance to the Oklahoma Supercomputer Symposium at OU in Norman. The CIS faculty sponsors the SOSU Computer Club and regularly hosts LAN (Local Area Network) parties, which are get-togethers where students bring their own computers, network them together and battle each other with appropriate games. The Computer Club members also assist CIS faculty with the Curriculum Contest.

The CIS faculty is also active in the relatively new organization, the Oklahoma Computer Consortium, and held the 2009 annual OCC symposium on the SOSU campus. Faculty and professionals from approximately 35 institutions of higher learning from Oklahoma, north Texas and southern Kansas gathered to present and discuss current trends in CIS and CS, exchange ideas, etc. Students participated in this event.

XV. Faculty Involvement in Assessment

Assessment is performed individually by each faculty member in the courses they teach through projects, exams, laboratory experiences, etc. All CIS faculty members are involved in the assessment process. The ICCP exam is a comprehensive exam based on knowledge students gather during their four years in the program. Most students encounter several faculty members in our department as well as across campus in other general education and support courses.

This assessment report is based on the ICCP exam as well as information gathered from pre-test and post-tests in Computers in Society and the Internship program. The ICCP exam is ordered, administered, proctored and submitted for grading by Rhonda Richards. The pre-tests and post-tests scores in Computers in Society for this assessment year were from Mike Morris’ and Rhonda Richards’ courses. The Internship program is administered by Mike Morris.

A nationally standardized exam (ICCP – see section VIII) is administered in the Senior Seminar class. This report represents a summation of the assessment performed by the CIS faculty which includes Betty Clay, Mike Morris and Rhonda Richards and several qualified adjuncts. Mike Morris and Rhonda Richards wrote the report and Jerry Polson, department chair, assisted in compiling the report.
XVI. Signatures

Department Chair  

Date 9-3-10

Dean of Arts and Sciences  

Date 09/03/10