

**Report of  
Student Learning Outcomes Assessment  
Arizona Western College  
Calendar Year 2004**

**INTRODUCTION**

The assessment program at Arizona Western College has grown and matured in 2004. One major activity was the focus visit by the Higher Learning Commission/NCA. This is a report of activities for the calendar year of 2004 at Arizona Western College. Also included are lessons learned from the process and plans for continued improvement in the assessment process.

**GENERAL EDUCATION**

AWC states that “a responsive general education program requires thoughtful and precise writing, critical reading, quantitative thinking, and the processes of analysis and synthesis which underlie reasoning” (AWC 2004-2005 catalog). The areas targeted for assessment of general education in 2004 were communication skills, quantitative analysis, critical thinking, and technology applications literacy. Learning outcomes assessment cycles with direct measures were completed for written communication, quantitative analysis, technology applications and critical thinking.

Graduating students participated by taking the tests in written communication, quantitative analysis, technology applications, and critical thinking at the testing center 190 graduates participated in the 2004 assessment of general education competencies, with some students taking only some of the tests. The results of the testing follow.

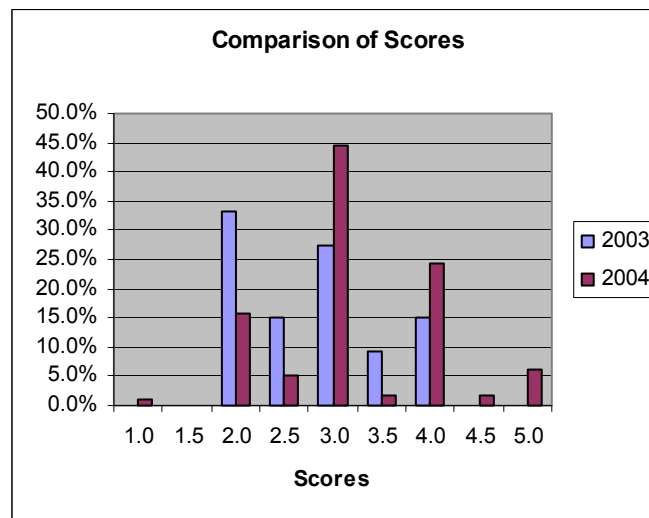
**Written Communication Assessment**

The intended student learning outcome for communication is that learners should (1) provide writing that is clear with a specific thesis and awareness of audience that fully develops examples to support the thesis in a logical and coherent manner; (2) demonstrate original thinking, depth of analysis, and comprehension of material used; and (3) show high proficiency in Standard English grammar, spelling, and punctuation. (Communications Skills Rubric)

During 2004, graduates participating in learning outcomes assessment were asked to write an essay of approximately 500 words on one of two provided topics. The writing should fully develop a clear and specific thesis in a logical and coherent manner. The graduates were instructed to proofread their writing to ensure standard grammatical usage, spelling, and punctuation. The two topics were:

1. Under what circumstances, if any, is a citizen justified in refusing to obey a law?
2. Do you agree or disagree that technology has made the world a better place in which to live?

178 graduates participated in the written communications assessment for 2004. 78.1% (139 of 178) meet the criteria for success score of 3 better, compared to 51.6% (17 of 33) in 2003.



The 2004 results show a greater percentage of students meeting the criteria for success than in the previous year. The fact that the writing was scored by a different scoring team than in the previous year may be a factor. Assessment at AWC has increased a focus on writing across the curriculum might also be a factor.

### Change for Improvement of Learning

**The committee will review and consider using a modified rubric that would provide information to identify more specifically the strengths and weaknesses of each writing artifact.**

### Quantitative Assessment

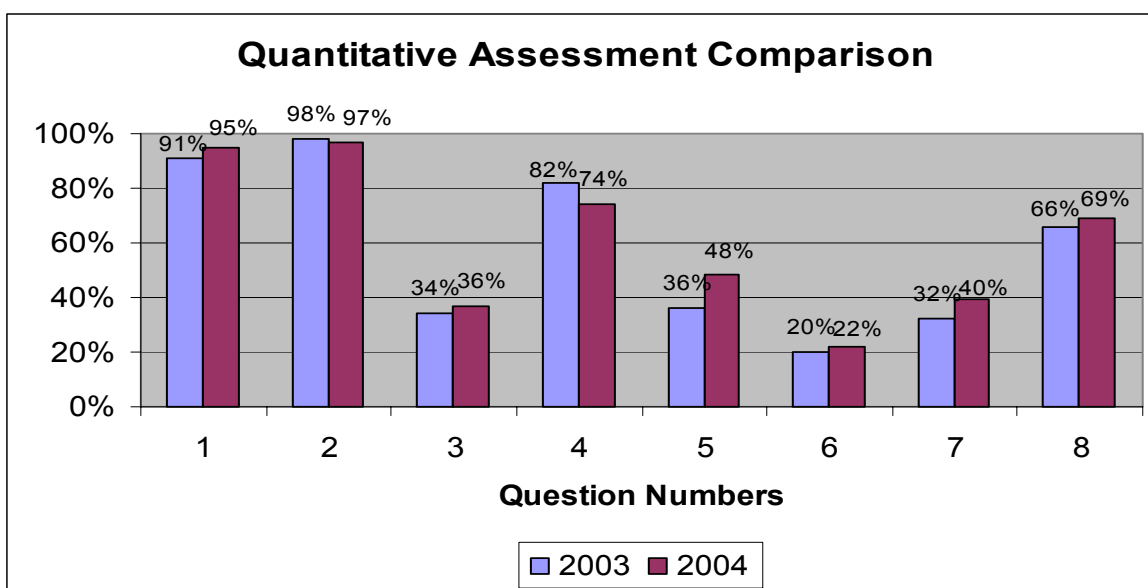
The intended student learning outcomes for quantitative analysis are delineated below:

Learners will:

- 1 Identify and extract relevant data from given mathematical or contextual situations.
- 2 Select known models or develop appropriate models that organize data into:
  - a) tables or spreadsheets (with or without technology); or
  - b) graphical representations (with or without technology); or
  - c) symbolic/equation format.
- 3 Obtain correct mathematical results and state those results with qualifiers.

- 4 Use the results to:
  - a) determine whether they are realistic in terms of the original situation; or
  - b) determine whether the mathematical model/representation of data was appropriate; or
  - c) describe a trend in a table, graph, or formula and make predictions based on trends; or
  - d) draw qualitative conclusions in written form.

A locally designed test to address the target outcomes for quantitative skills was administered to spring 192 graduates in 2004. The test consisted of 8 multiple choice questions corresponding to the target outcomes above. The criterion for success was for all participating graduates to correctly answer at least 6 out of the 8 multiple choice questions (75%) on the locally designed test. 32.8% (63 of 192) of the graduates answered at least 6 of the 8 questions correctly, compared to 22.7% (10 of 44) of the 2003 graduates.



The chart illustrates the percentage of students who correctly answered each of the 8 questions.

Percent of correct responses per assessed outcomes by 2004 graduates were:

Outcome 1: Identify and extract relevant data from given mathematical or contextual situations – question # 1 - 95% (182 of 192) of graduates (91% in 2003) and question # 6 – 22% (42 of 192) of graduates (20% in 2003).

Outcome 2: Select known models or develop appropriate models that organize data into: (a) tables or spreadsheets (with or without technology); or (b) graphical representations (with or without technology); or (c) symbolic/equation format – question # 5 - 48% (93 of 192) of graduates (36% in 2003).

Outcome 3: Obtain correct mathematical results and state those results with qualifiers – question # 7 - 40% (76 of 192) of graduates (32% in 2003).

Outcome 4a: Use the results to determine whether they are realistic in terms of the original situation – question # 8 - 69 % (133 of 192) of graduates (66 % in 2003).

Outcome 4c: Use the results to describe a trend in a table, graph, or formula and make predictions based on trends – question # 2 - 97% (186 of 192) of graduates (98% in 2003).

Outcome 4d: Use the results to draw qualitative conclusions in written form – question # 3 - 36% (70 of 192) of graduates (34% in 2003) and question # 4 - 74% (142 of 192) of graduates (82% in 2003).

The test did not assess outcome 4b: Use the results to determine whether the mathematical model/representation of data was appropriate.

Although the criterion set for success (all graduates will correctly answer at least 6 of the 8 test questions) was not met, this assessment showed improvement with 32.8 % of graduates meeting the criterion. (22.7% met the criterion in 2003.) There was improvement on most of the questions.

While the actual test questions are not included in this document, they are available for faculty perusal - contact Linda Reeser or Dr. Drum's office.

### **Change for Improvement of Learning**

**In the next cycle, the focus will be on the success of all graduates for each outcome rather than each graduate's success on the entire test. The criterion for success will be that at least 80% of graduates would correctly respond to each question.**

**Faculty teaching in GE courses will be surveyed to see what type of quantitative skills, if any, are required for class assignments. This should generate some ideas for additional ways to assess quantitative skills, perhaps with course embedded assessment.**

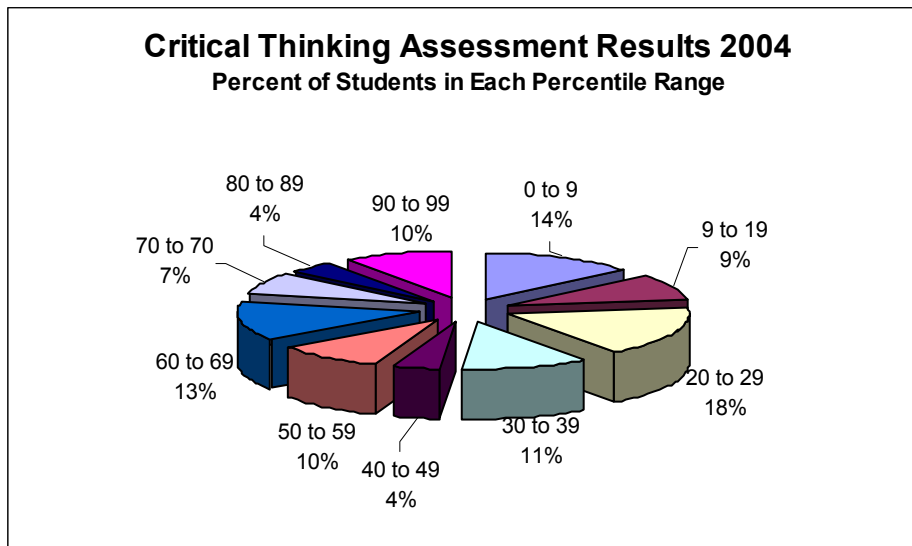
### **Critical Thinking Assessment**

The intended student learning outcomes for critical thinking are delineated below:

Learners will:

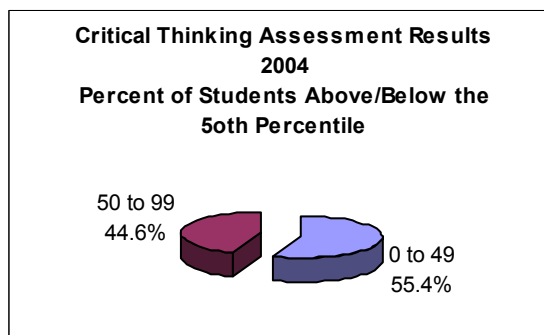
1. Demonstrate the ability to take charge of their own thinking
2. Demonstrate an intellectually disciplines process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and/or evaluating information gathered from, or generated by, observation, experience, reflection, reasoning, or communication, as a guide to belief and action.

One hundred and ninety three graduates participating in the General Education Learning Outcomes Assessment for 2004 took the Collegiate Assessment of Academic Proficiency (CAAP) standardized exam for critical thinking.



The chart above illustrates the results by percentile ranking.

44.6% (86 of 193) of the graduates scored in the 50th percentile or above on the exam, compared to 42.2% in 2003. 55.4% (107 of 193) graduates scored in the 90th percentile, compared to 13.3% in 2003.



**Change for Improvement of Learning**

**In order to use the results of this standardized test, we need more detail to identify specific areas that are deficient. The assessment coordinator and the testing center will determine what additional reports are available in order to do this.**

**Technology Applications Assessment**

According to the intended student learning outcomes for technology applications are delineated on the following page.

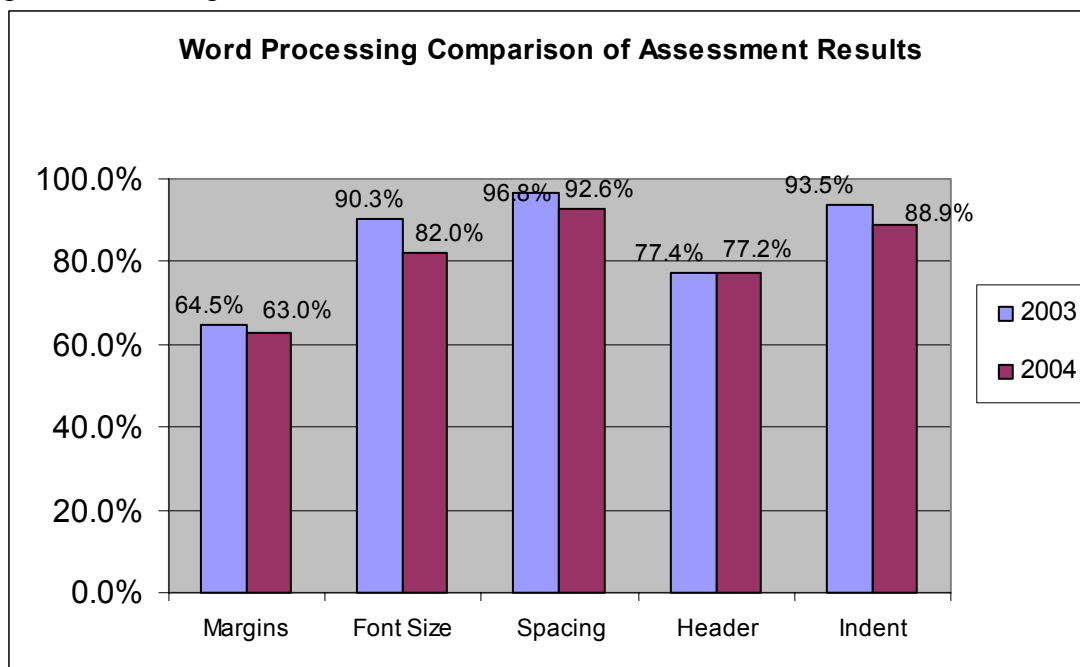
Learners will:

1. Demonstrate a working knowledge of computer basics by opening and closing a program; by creating, saving, printing, finding, renaming, copying, moving and deleting files
2. Perform basic word processing operations including document creation, editing, formatting, printing, saving and retrieving a document
3. Perform basic spreadsheet operations including creating, editing, formatting, printing, saving and retrieving a worksheet including the use of formulas, simple functions, and the copy command
4. Demonstrate the ability to use the Internet in order to access information resources, evaluate their credibility, and apply them
5. Demonstrate the ability to send and receive E-mail including attachments

In 2004, 190 graduates took the technology tests. 182 students were assessed on the spreadsheets portion and 189 on the word processing portion. All 190 students could not be considered due to disk or computer errors.

### Word Processing

The learning outcome for technology applications states that learners will perform basic word processing operations including document creation, editing, formatting, printing, saving and retrieving a document.



Percentage of Students Successfully Completing each Task

63 % (119 of 189) of the graduates set the document margins correctly compared to 64.5% (20 of 31) of the graduates assessed in 2003.

Fonts were changed successfully by 82% (155 of 189) as compared to 90.3% (28 of 31) in 2003.

92.6% (175 of 189) of the graduates correctly set the document for double spacing compared to 96.8% (30 of 31) in 2003.

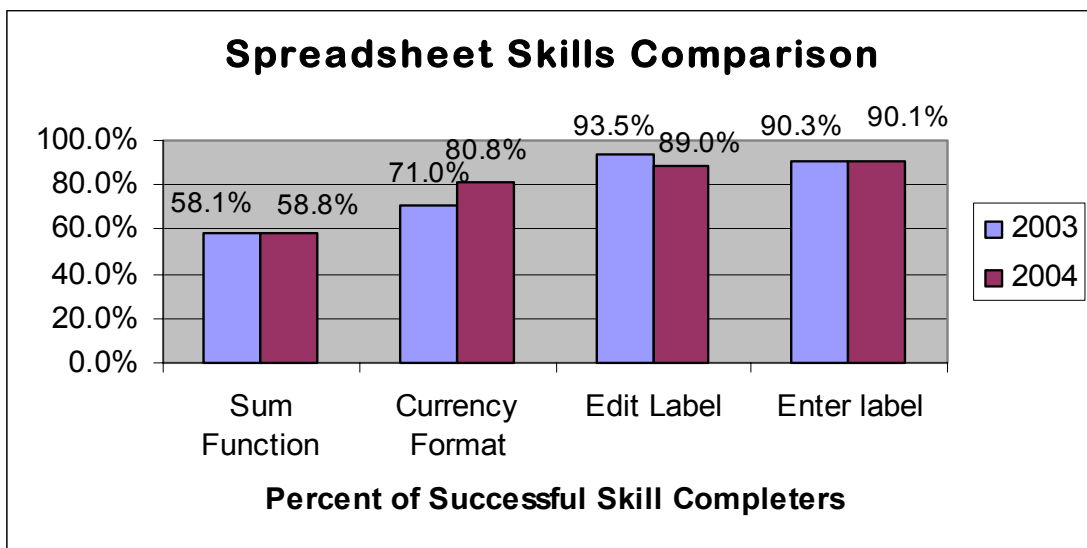
A header was created using the Word header feature by 77.2% (146 of 189) compared to 77.4% (24 of 31) in 2003.

88.9% (168 of 189) learners used indents correctly compared to 93.4% (29 of 31) in 2003.

The graduates tested in 2003 scored higher in all areas (from .2-8.3% higher) but this may not be significant because of the difference in sample size (31 students participated in 2003 compared to 189 in 2004). Another possible factor is that the 2003 participants were volunteers and not required to take the tests.

### Spreadsheets

The technology applications learning outcome states that learners will perform basic spreadsheet operations including creating, editing, formatting, printing, saving and retrieving a worksheet including the use of formulas, simple functions, and the copy command.



58.8% (107 of 182) graduates correctly used the SUM() function compared to 58.1% (18 of 31) of the 2003 graduates who completed the assessment.

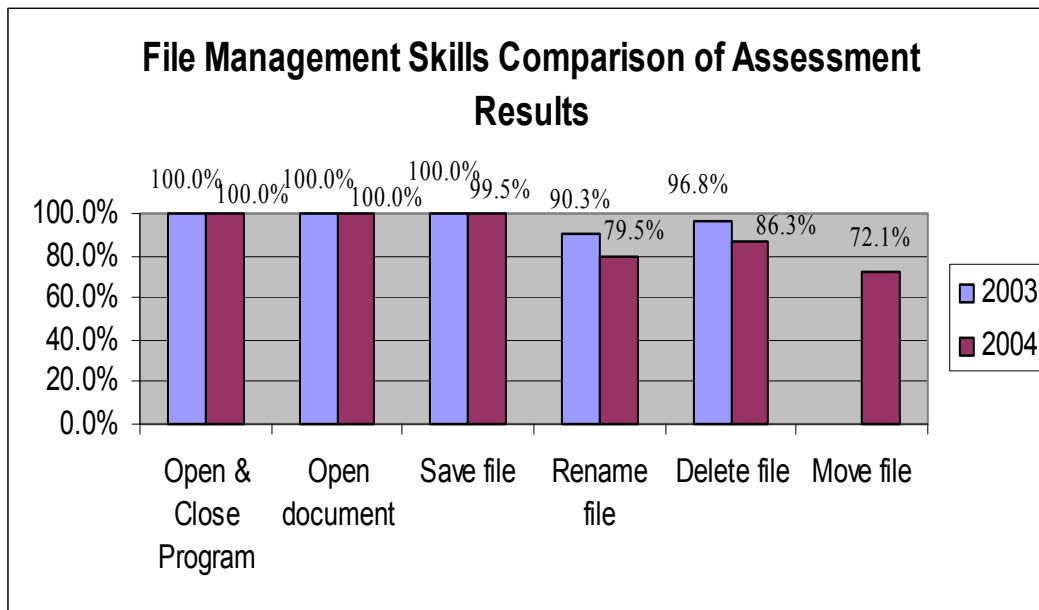
The correct currency format was set by 62.6% (114 of 182) compared to 71% (22 of 31) in 2003. (80.0% set the format for currency but failed to suppress the decimals.)

90.1% (164 of 182) learners entered labels correctly compared to 93.5% (29 of 31) in 2003.

Existing labels were edited correctly by 89% (162 of 182) graduates compared to 90.3% (28 of 31) in 2003.

## File Management

The technology applications learning outcome states that learners will demonstrate a working knowledge of computer basics by opening and closing a program; by creating, saving, printing, finding, renaming, copying, moving and deleting files.



100% (190) of the students successfully opened and closed a program and opened a document. 100% (31) of the 2003 graduates completing the 2003 completed these tasks successfully as well.

A file was saved successfully by 99.5% (189 of 190) of the 2004 graduates compared to 100% (31) in 2003.

79.5% (151 of 190) students successfully renamed a file compared to 90.3% (28 of 31) in 2003.

86.3% (164 of 190) deleted a file compared to 96.8% (30 of 31) in 2003.

72.1% (137 of 190) moved a file to another folder, a task not included in the 2003 assessment.

The percent of 2004 graduates successfully completing the word processing tasks decreased from 2003 by 3.6% overall. The 2004 graduates scored 1.45% higher on the spreadsheet tasks than the 2003 graduates. Overall, the percent of 2004 graduates successfully completing the file management tasks decreased from 2003 by 4.36%.

## **Internet**

The Internet/email portion of the assessment for technology applications was not considered due to technical problems that prohibited some students from completing the tasks. This portion of the test will be modified and data will be presented from actual use of technology to show skill attainment in these competencies.

Arizona Western College students are highly competent computer users. In the fall of 2004, approximately 714 students were enrolled in 36 online courses at AWC. In addition, some faculty use BlackBoard to supplement a traditional course and to provide resources and information to students. Some faculty require the electronic submission of assignments and most communicate with students by email.

Students access their grades electronically through the Internet. Some instructors require that papers be submitted through Turn-it-in dot com on the Internet.

### **Change for Improvement of Learning**

**Faculty and students will be surveyed in order to gather specific evidence of student success in technology use for learning.**

**Faculty will be encouraged to include information on student learning resources available on the college web site.**

## **DEGREES, CERTIFICATES, AND COURSE CLUSTERS**

Arizona Western College is organized into six instructional divisions – Business and Technology; Communications; Fine Arts and Humanities; Math, Science and Agriculture; Human Services; and Modern Languages. Student Learning Outcomes Assessment in the divisions is maturing and fostering the improvement of learning. All degrees and certificates having 30 or more declared students have been required to complete a full assessment cycle in 2004. Some departments also assessed multiple sections of a course or course group (course clusters) in areas where the findings might help improve learning. The attached division reports give detailed information assessment efforts in each division.

## **OTHER ACTIVITIES**

### **Focus Visit**

Arizona Western College had a comprehensive visit in March 1999. The College received ten-year accreditation. The visiting team recommended that the Higher Learning Commission (NCA) require a Monitoring Report for the assessment of student learning outcomes. AWC was required to submit the report in December 2001.

The College submitted a Monitoring Report in December 2001. Staff analysis stated in part that the report demonstrates that assessment is organized and focused with good direction, but that the Assessment Program is limited in numbers of general education

skills being assessed and measures used. The Commission accepted the staff action and recommendation and a focus visit was scheduled for April 19 and 20 in 2004.

Although preparation for the focus visit started in 2002, the efforts intensified in early 2004. On February 9, a practice visit was held to help the learning community be more aware of the strengths and weaknesses of the assessment program. Two professional evaluators from Arizona community colleges conducted the practice visit. They followed a similar format of an actual visit. This productive exercise helped us find the “rough spots” but also served to help energize the learning community.

On April 20, the focus visit team shared their recommendation with the campus community. They pointed out some areas with room for improvement but thought that the assessment program had matured and no further action would be required by the Commission. The Commission accepted this recommendation, so the next scheduled visit will be the comprehensive visit in 2008.

### **Assessment Presentations**

The Assessment Coordinator has given presentations/orientations to the AWC District Governing Board, new faculty and student officers. Some faculty members have given presentations on assessment and general education both internally and externally.

### **Chili Contest**

In October, the assessment committee sponsored a booth at the annual campus chili cook-off. Participants became eligible to enter a prize drawing by filling out a brief assessment awareness questionnaire. Assessment brochures were available. 80 persons entered the drawing. This effort was worthwhile as it provided an opportunity to increase assessment awareness and a means to collect immediate survey responses.

## **THE ROAD AHEAD**

Efforts must continue to educate students and new faculty about the assessment program.

NCA will expect multiple measures for learning outcomes by the comprehensive visit in 2008. Some department are discussing adding capstone classes or projects, e-portfolios, and using embedded assessment to measure learning outcomes.

In 2005, two new GE areas will be assessed – oral communication and working in teams. A process using a supplemental rubric to evaluate existing oral presentations will be piloted in the spring of 2005. A similar pilot for teamwork is tentatively scheduled for fall of 2005.

More fine-tuning is being considered for current GE testing instruments to help increase the usefulness for the improvement of learning.

We must find viable methods to include our online students in assessment efforts.

## **CONCLUSION**

Arizona Western College has become a learner-centered institution. The Student Learning Outcomes Assessment Program has been a contributing factor. We have come a long way and learned many things. Assessment has truly become a part of who we are rather than something we do.

Even though the focus visit is over, we must remember that assessment is a process, and not an event. We still have much room for growth as we find ways to help improve learning at Arizona Western College.

# Report on Assessment Activity for the Calendar Year 2004

## INTRODUCTION

The Division of **Business and Technology** is a composite of two distinct disciplines.

The Business and Computer Information Systems section offers two types of associate degrees. The Associate of Arts (called the Associate of Business, or ABUS) Degree provides the lower division university-equivalent coursework for transfer to a four-year Bachelor of Science program. This degree program is fully-articulated with all colleges and universities in the Arizona system. The Division offers six Associate of Applied Science (A.A.S.) degrees in General Business, Casino Management, Computer Information Systems, Marketing and Management, Microcomputer Business Applications, and Office Administration. While the A.A.S. degree in Computer Information Systems may be a terminal degree, it is also articulated to a Bachelor of Applied Science in Computer Information Systems at Northern Arizona University. In addition to these degree programs, the Division also offers five vocational certificates in the same areas of emphasis and an additional certificate in (computer) Networking. Students receiving degrees in general studies, whether for transfer or as a terminal program, are also served by the Division in that they may declare business as an area of emphasis. In addition, students in any other major may take courses for general education or elective purposes.

The Technology section of the Division of Business and Technology offers four A.A.S. (occupational) degrees and five certificates in Advanced Water Treatment, Air Conditioning and Refrigeration, Automotive Technology, Industrial Graphics-Drafting (CAD), and Welding.

## THE ASSESSMENT CLIMATE

An assessment culture is continuing to develop in this division as administrators, faculty, and even some students discuss and plan for assessment. Examples follow.

- By evaluating our course content and discussing outcomes, we have learned how strongly most of our transfer courses support the general education learning goals of our institution.
- Direct measures being implemented include portfolios, capstone projects, certifications, embedded comprehensive exam questions and problem based learning journals.
- Instructors teaching common courses enter into dialogue about outcomes and methods for assessment.
- Assessment has facilitated a greater dialogue between all faculty groups. Dialogue between department full-time faculty and associate faculty members has been incorporated into the assessment process.

- The process of analyzing learning outcomes in a formal format has allowed individuals and faculty groups to document and reinforce their everyday commitment to achieving relevant and appropriate learning objectives.

### **GENERAL EDUCATION ASSESSMENT OUTCOMES**

The table that follows contains examples of how the Division contributes to Arizona Western's general education goals. This is a set of examples only and not intended to be an exhaustive list.

| <b>GE GOAL</b>                 | <b>BUSINESS &amp; TECHNOLOGY CONTRIBUTION...</b>   |
|--------------------------------|--|
| <b>Communication</b>           | The division teaches three courses with a GE designation. In CIS 100, ECN 240 and ECN 250, the writing is intensive with several assignments containing written requirements in excess of the minimal 'writing across the curriculum' goal. Most courses taught in the division have a writing component. As a result of the emphasis on general education outcomes, even the vocational technology area has incorporated a writing component comprised of the welding students developing a small business plan.                        |
| <b>Critical thinking</b>       | Students use various levels of analysis in several of the business courses. Economics, accounting, quantitative analysis, legal environment of business all have a strong emphasis on problem solving that includes incorporation of both inductive and deductive reasoning skills. Other courses develop student critical thinking skills in different ways. As an example, in computer programming, abstract and nonlinear reasoning are necessary to envision what the computer will do with the instructions written by the student. |
| <b>Quantitative analysis</b>   | Quantitative analysis is a core component of accounting, economics, quantitative analysis, as well as the vocational technology courses.   |
| <b>Technology applications</b> | Students learn their technology skills in this division. Instruction starts at the very bottom and works through programming, networking and web design. Other courses heavily depend on technology to contribute to student success using word processing, spreadsheets, and graphics presentation to prepare and submit assignments. In addition, most division professors use the BlackBoard program for online or web-enhanced courses.  |

# BUSINESS AND COMPUTER INFORMATION SYSTEMS

## ASSESSMENT ACTIVITIES

- A student survey was first administered in the Spring 2002 semester, the survey was again applied in Spring 2004. Students were surveyed across the division and learners rated the effectiveness of the division in helping them obtain competency in personal effectiveness skills that support the General Education learning outcomes. Additionally, learners rated their satisfaction with the computer labs and the quality, variety and availability of courses in their programs. Although this survey is an indirect measure, it provides valuable feedback regarding our students' perceptions of our efforts. This information will enable us to improve student learning outcomes. Overall, 350 students took the survey in the Spring 2004 semester. Responses are listed as a percentage of responses for that question

| <b>Student Survey in the Business &amp; Technology Division:<br/>Spring 2004</b> |                   |           |             |                     |
|--|-------------------|-----------|-------------|---------------------|
| Arizona Western College<br>Learning Outcomes<br>Assessment                       | Very<br>Effective | Effective | Ineffective | Very<br>Ineffective |
| Analyze written arguments  | 35%               | 59.5%     | 4.5%        | <1%                 |
| Develop leadership skills  | 21.3%             | 56.5%     | 6.7%        | <1%                 |
| Improve decision-making ability  | 27.2%             | 65%       | 2.3%        | <1%                 |
| Increase your self-confidence  | 29.4%             | 60.3%     | 4.4%        | 2%                  |
| Respect different points of view   | 38.9%             | 54%       | 2%          | <1%                 |
| Set personal priorities  | 30%               | 56.9%     | 4%          | 1.6%                |
| Speak in front of a group  | 27.8%             | 48.4%     | 12.5%       | <1%                 |
| Use information technology   | 49%               | 47.6%     | 2.8%        | <1%                 |
| Write clearly  | 21.8%             | 66.8%     | 6.7%        | 1.3%                |

Other significant points of this survey related to computer literacy and computer-related skills. They will be addressed in their pertinent sections below.

### **A.A.S./ Certificate in Computer Information Systems**

Graduates with the A.A.S. in Computer Information Systems will demonstrate basic knowledge in computer information systems that will prepare them to obtain an entry-level position within the field. In addition, they will demonstrate competency in communication, critical thinking, quantitative analysis, and technological applications.

Assessment outcomes, methods, criteria for success and results follow.

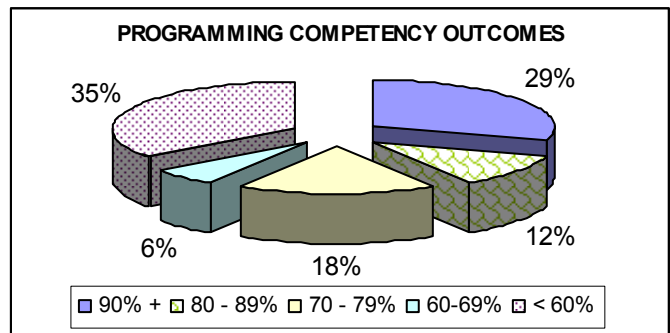
Learners will demonstrate programming competency by writing a program using data arrays & files (or a database) for input/output, functions, and sub procedures.

- GOAL: 100% of learners will achieve at least a 70% success rate on an exam requiring them to write an operational program using data arrays and files for

input/output. Students will be able to define and utilize functions and sub procedures to achieve the specified results.

- **OUTCOME:** As can be seen in the graphic to the right, 59% of the learners in BIS 200 (Visual Basic Programming) achieved a 70% success rate. This represents a drop in performance since last year.

The decline in the success rate is a continuation of that seen last year. This situation is deemed by the CIS faculty to be primarily influenced by a software upgrade in which Visual Basic has become more complex. Additionally, the



particular group of students measured for this report exhibited extreme absenteeism, a contributing factor to the results.

- **ACTION:** In response to the results from last year's assessment instrument and the comments of students on the survey taken in Fall 2004 an Advanced Visual Basic course was offered in the Spring 2005. However, it was cancelled due to scheduling difficulties. It is expected the Advanced Visual Basic will be offered again in Spring 2006.

Learners will demonstrate the ability to solve a business problem using mathematics and an advanced spreadsheet tool such as a pivot table, scenario manager, or solver.

- **GOAL:** 100% of learners will demonstrate a 70% or higher success rate on an Excel project that requires the use of an advanced spreadsheet tool.
- **OUTCOME:** 93% of learners demonstrated a 70% or higher success rate on an Excel project that required the use of an advanced spreadsheet tool. This assessment tool was a project requiring students to create a pivot table.
- **ACTION:** In the next assessment cycle, another spreadsheet tool will be assessed.

Learners will demonstrate the ability to effectively use system design procedures to determine feasibility, design, implementation and maintenance of business systems.

- **GOAL:** Learners will demonstrate the ability to effectively use system design procedures to determine feasibility and design a business system.
- **GOAL:** 100% of learners will demonstrate a 70% or higher success rate on a capstone project designed to demonstrate the ability to effectively use system design procedures to determine feasibility, and design of business systems.
- **OUTCOME:** The course was redesigned during this cycle to remove a previous requirement regarding the implementation and maintenance of a system. In its place, additional emphasis was placed on the feasibility portion of the project and included a new cost analysis portion. 86% of completing learners demonstrated a 70% or higher success ability to effectively determine feasibility and effectively design a business system.
- **ACTION:** The newly-added cost analysis portion of the assessed project will be closely monitored for opportunities for improvement during the next cycle.

Learners will demonstrate the ability to effectively communicate with clients, resource people and colleagues.

- GOAL: In a survey, learners will rate this department as effective in helping them gain competency in the following nine personal effectiveness skills : analyze written arguments, develop leadership skills, improve decision-making abilities, increase self confidence, respect different points of view, set personal priorities, speak in front of a group, use information technology, write clearly.
- OUTCOME: The detailed results of this survey can be found at the introduction to this report. In summary and compared to the survey taken in the Spring 2003 semester, there was, again, an improvement (94.5% currently compared to 86% in Spring 2003) in the number of learners who believed the department was very effective or effective in helping them gain competency in analyzing written arguments. In oral communications, 81.2% of learners reported the department as very effective or effective in developing the ability to speak in front of groups—a 5.2% improvement. 91.4% rated the department as very effective or effective in the area of helping them to write clearly; this is a 2.8% improvement. There was also improvement in the outcome of the survey regarding the effectiveness of the department in developing leadership skills (88.8% in 2004 v. 77.8% in 2003). As in the previous surveys, 90+% noted the department was effective in helping them with basic human relations skills of improving their decision-making abilities, increasing self confidence, helping them respect different points of view, and helping them set personal priorities. In the general category of how successful the department was in helping learners use information technology, 93.6% of learners reported the department is very effective or effective. This is the only area of decline in student responses. The decline, however, was minimal at 3%
- ACTION: More learning activities will be incorporated into the courses that emphasize the nine personal effectiveness skills.

**A.A.S. in Microcomputer Business Applications**

This major is small and is currently not measured independently.

**Certificate in Networking**

This major is small and is currently not measured independently.

**A.A.S./Certificate in Office Administration**

This course, while listed as having a significant number of enrolled majors, does not have enrollment in courses that indicates the intention of students to actually work on the AAS or Certificate in Office Administration. Because courses have been cancelled or taught on an override due to low enrollments, this major is not deemed to have sufficient data available for assessment.

ACTION: Enrollments will be monitored and when the enrollments increase to a sufficient level, assessment will resume.

## A.A.S. in General Business

Graduates will demonstrate basic knowledge in business and demonstrate competency in communication, critical thinking, quantitative analysis, and technological applications.

Assessment outcomes, methods, criteria for success and results are as follows:

### Graduates will demonstrate the ability to prepare and explain an income statement for a service-oriented business that covers one entire accounting cycle.

- GOAL: All students will successfully prepare an Account Cycle Review Problem that analyzes the entire accounting cycle of a service-oriented business.
- OUTCOME: Students completing the required accounting course for this degree completed a comprehensive Accounting Cycle Review Project (ACRP). Of the students completing the ACRP, 73% achieved between 90 and 100%. The remaining 27% of students received less than 70% on the project. Underachieving students submitted incomplete projects. Additional analysis was performed comparing the ACRP score with the homework score to identify whether homework completion contributed to ACRP score. The correlation coefficient was low--.3—and so no inference may be drawn between the two assignments. However, additional analysis was performed comparing ACRP score to the final exam score and the correlation was high--.85—therefore, the correlation may be drawn that successful completion of the ACRP contributes to success on the final exam. Further, the correlation indicates that these students, in fact, learned the material to a high degree.

### Graduates will analyze economic, statistical, or other type of data and make a proper decision based on short-run and long-term decision analysis.

- GOAL: On comprehensive final exam questions (70% to pass), students will be assessed on critical economic concepts.
- OUTCOME: ECN 100, Introduction to Economics, final exam essay questions covered three fundamental economic principles: Production Possibilities, Supply and Demand, and Fiscal/Monetary Policy. Each student's response was evaluated as Fully Understood (80-100%, Mostly Understood (70-79.9%), and Not Understood (<70%). Overall, 74% of students answered these three embedded final exam questions with at least a 70% accuracy. This represents a slight improvement over the 2003 performance.

Production Possibilities concepts were well understood with 89.5% of students taking the final exam scoring at least a 70% on the question. This is a slight improvement from the 2003 results of 89%.

In the Supply and Demand question, students were asked to identify and define seven points on a supply and demand graph--78% of students demonstrated at least a 70% proficiency in this economic principle. These results are acceptable; however, the Fiscal and Monetary principle question result is a concern. This question required the students to compare two different policy arenas of macroeconomics. Only 55% of them were able to do this.

- ACTION: Fundamentals will be stressed in every appropriate lesson. These principles will be checked again in 2005 and compared to this performance.

Graduates will appreciate basic knowledge of legal concepts and legal institutions.

- GOAL: A comprehensive final exam was taken by all learners that covered a general range of concepts.
- OUTCOME: Students were deemed to have achieved competency if they scored an overall of 70% or better in the exam. In this cycle, 70% of students successfully achieved at least a 70%. 45% of all students taking the exam scored at or above 80%
- ACTION: This measure will be refined and reapplied in Spring 2005 and the results will be compared to these to identify areas of weakness or opportunities for improvement.

Graduates will demonstrate the ability to effectively communicate with clients, resource people, and colleagues.

- GOAL: In a survey, learners will rate this department as effective in helping them gain competency in 9 personal effectiveness skills that support the learning outcomes.
- OUTCOME: The details of this survey can be found at the beginning of this report. Overall, learners reported the department is very effective or effective in the nine areas surveyed. Of note is a 94.5% response of very effective or effective in perceived performance in the area of analyzing written arguments and an overall 93.6% rating of very effective or effective in the area of helping students use information technology.
- ACTION: The survey will be reapplied and compared to these results to identify trends and any issues that may crop up.

**A.A.S. in Casino Management**

This major is small and is currently not measured independently.

**A.A.S. in Marketing and Management**

This major is small and is currently not measured independently.

## A.BUS in Business

Graduates will demonstrate basic knowledge in business that will prepare them for transfer to a university and demonstrate competency in communication, critical thinking, quantitative analysis, and technological applications. Since the Arizona universities hold additional accreditation by the American Association of Schools and Colleges of Business, the Division's coursework and outcomes as they relate to this degree are of particular importance.

Assessment outcomes, methods, criteria for success and results are as follows:

Graduates will demonstrate the ability to analyze the results of a financial statement using ratio analysis. Graduates will prepare a statement of cash flows.

- GOAL: Students will be presented with ratio analysis problems on the final exam. In addition, students will complete a 'capstone' accounting project
- OUTCOME: 95% of graduates successfully completed a ratio analysis problem in the final exam to at least a 70% level of success. 100% of graduates completed the 'capstone' accounting project.
- ACTION: Develop a new capstone accounting project each semester to challenge students to integrate the various accounting principles.

Graduates will understand how economic models and concepts illustrate fluctuations in prices.

- GOAL: Specific essay questions will be presented on exams (70% to pass). Comprehensive final exams will again assess critical concepts (70% to pass).
- OUTCOME: Comprehensive final exam essay questions were used in all courses covering Production Possibilities (ECN 240 and 250), Supply and Demand (ECN 240 and 250), Monetary and Fiscal Policy (ECN 240), and Market Structure (ECN 250). Results were mixed, as can be observed here.

For Production Possibilities concepts, 84% of Macroeconomic and 98% of Microeconomic students understood the concept to at least a 70% level.

The concept of Supply and Demand was tested in both Macroeconomics and Microeconomics. This concept is taught early in the semester, but utilized throughout the term, especially in Microeconomics. The results were disparate between the two courses. In Macroeconomics, 60% of students demonstrated an acceptable level of knowledge of this fundamental. In Microeconomics, 81% demonstrated mastery, an increase of 5% over the last assessment. Since, in Macroeconomics, the supply and demand curves take on the macro-level display of aggregate supply and aggregate demand at about week six and continue intensely in that vein for the remainder of the semester, students seem to have difficulty separating the two concepts.

Finally, Microeconomics students were asked to recap Market Structures, which includes: Competitive, Monopolistic Competition, Monopoly, and Oligopoly. They were required to identify in a matrix the differences between these structures in six distinct economic areas such as pricing and production decision points. The results were that 95% of students demonstrated mastery of this

broad concept.

A new textbook was adopted for Fall 2004. In the Spring 2004 semester, a class of students was asked to help select the new textbook. They narrowed the field to three, from which the Professor of Economics chose the new text. The impact of this change will, hopefully, reflect in the Spring 2005 assessments.

- ACTION: Additional methods of presenting and reinforcing these fundamental concepts will be explored, particularly in the critical concept of Supply & Demand. These fundamentals will be assessed again in 2005 and the results compared to these.

Graduates will demonstrate computer & Internet literacy to secure timely statistics and data about national and local economies or businesses, and effectively interpret and communicate findings.

- GOAL: By successfully completing, at a minimum, CIS 100 and utilizing those learned skills in projects across the curriculum, students will demonstrate literacy.
- OUTCOME: All ABUS graduates complete CIS 100 and each completed projects requiring them to use computer literacy skills. Significant here is the result of the survey taken and discussed early in this report where 93.6% of learners reported the department as effective or very effective in helping them learn to use information technology. An additional finding in this survey, not previously reported, can be seen in the table below where students were asked the following question: "Please evaluate your level of computer literacy as a result of the computer course you are completing (or have taken at AWC)." To ensure all used the same understanding of what is meant by computer literacy, the question went on to define it as "understanding how the computer works and knowing how to use it."

| <b>Learners respond, I am:</b> | <b>Percent</b> |
|--------------------------------|----------------|
| Very literate                  | 39.7%          |
| More literate                  | 41.4%          |
| No change in literacy          | 13%            |
| Somewhat literate              | 6%             |
| I still don't understand       | <1%            |

These specific responses somewhat correlate to the general question answered in the first part of the survey. Recall that 93.6% favorably reported on the department's effectiveness in helping them use information technology. Here, 81.1% report they are either very literate or more literate as a result of taking computer courses in the department. Both these response results are lower than those reported by students in 2003.

Further, in another portion of the survey, 100 students taking BIS 100 in the Spring 2004 semester were asked to assess how well the outcomes stated in the syllabus had been learned in the course. On average the following results were obtained in the ten objectives for BIS 100.

| Rating                | 2003 Average Percentage of all Objectives | 2004 Average Percentage of all Objectives |
|-----------------------|---|---|
| WOW! I learned a lot! | 30%                                       | 34.3%                                     |
| Mostly                | 42.2%                                     | 33%                                       |
| Enough                | 18.9%                                     | 22.7                                      |
| Somewhat              | 7.9%                                      | 9.4%                                      |
| Not at all            | 1.2%                                      | 1.3%                                      |

Rounding creates sums greater than 100%

These results are encouraging since, overall, an increasing number of students report a high degree of understanding or report they learned *enough*. The summation correlates well to the other measures discussed above. However, embedded in the averages is an improvement that cannot be seen when the results are aggregated. In 2003, we reported potential problem in student's perception of their learning. In the learning objective of *understanding the IPOS cycle* (input, process, output, storage), the following results were obtained in 2003 and 2004.

#### Explain the IPOS (Input, Process, Output & Storage) Cycle

| Rating                | 2003  | 2004   |
|-----------------------|-------|--------|
| WOW! I learned a lot! | 17.2% | 30.3%  |
| Mostly                | 30.3% | 32.9%  |
| Enough                | 19.2% | 19.8%  |
| Somewhat              | 24.3% | 15.8%% |
| Not at all            | 9.1%  | 1.3%   |

In last year's report, we postulated that it was possible the students did not recognize the acronym due to a change in textbooks. Therefore, the wording was changed to include the definition. A portion of the improvement may be as a result of an improvement of the tool.

- ACTION: The survey will be reapplied in the Spring 2005 semester and results will be compared to these.

#### Graduates will demonstrate understanding of the legal issues of business.

- GOAL: The student will be acquainted with current ethical and legal problems confronting business. The student will learn various methods of resolving disputes and interpret case problems.
- OUTCOME: Fifty-one students took the final exam that included embedded assessment questions relating to ethical and legal problems. The assessment included a case study problem. Eight-two percent of students taking the exam scored at least 70% and, thus, demonstrated comprehension. Of those taking the exam, 37% scored above average comprehension of the material by achieving 80% or better. This is a significant improvement over the last assessment whereby only 62% of students taking the exam scored at least 70%.
- ACTION: Strategic case studies and problems will continue to be assigned.

Graduates will demonstrate an integrated competency in quantitative processes.

- GOAL: In a comprehensive exam, learners will achieve success to at least a 70% proficiency level in the broad focus area of introductory business statistics.
- OUTCOME: Overall pass rate for this assessment of 88.89%. The pass rate for the control questions was 82.59%, indicating a high degree of confidence in the results. Student weaknesses were shown to be in sample size testing and confidence evaluation.
- ACTION: Additional material will be covered and assigned in the areas of demonstrated weakness.

Learners will rate this department as effective in helping them gain competency in 9 personal effectiveness skills that support the learning outcomes.

- GOAL: In a survey, learners will rate this department as effective in helping them gain competency in 9 personal effectiveness skills that support the learning outcomes.
- OUTCOME: Improvements in the survey results have been reported elsewhere in this document. Of interest, again, is the improvement in the topics that relate to general education competencies. Specifically, students' perception of the division's effectiveness in helping them analyze written arguments increased by 8.5%; oral communications increased by 5.2%; and written communications improved by 4%.
- ACTION: The survey will be reapplied and compared to these results to identify trends and any issues that may crop up.

**COURSE CLUSTER FOR BIS 100**

This course cluster is new for 2004. The assessment described below was a pilot in the Spring semester.

Learners will (1) know how data is represented by digital computer systems, (2) catalog software into standard groups, (3) relate the hierarchy of data elements, (4) understand the use of functions and formulas in a spreadsheet. In addition, learners will demonstrate critical thinking skills.

- GOAL: At least 80% of learners will correctly answer each question on an exam to measure the first four of the intended outcomes described above.
- OUTCOME: Students successfully answered the questions as follows:

| <b>Topic</b>   | <b>% of Students Achieving 70+%</b> |
|--|-------------------------------------|
| Know how data is represented by digital computer systems...                  | 74.4%                               |
| Catalog software into standard groups...                                     | 8.5%                                |
| Relate the hierarchy of data elements...                                     | 28%                                 |
| Understand the appropriate use of functions and formulas in a spreadsheet... | 73.1%                               |

- The exam was piloted primarily to test the process and determine whether or not such an exam would be useful to improve learning. Some faculty have placed more emphasis in areas based on this assessment.
- ACTION: Consensus of CIS 100 faculty is that the questions need some modification which may provide a more accurate measurement of student learning. Other questions may be considered. The tool will be refined and reapplied in the Spring 2005 semester. The results will then be compared.
- GOAL: In a hands-on application, students will score 80% or higher in the use of Excel formulae and functions. This will provide multiple measures for functions and formulas in a spreadsheet.
- GOAL: Learners will score 80% or higher in a written response to a course content-based question that requires critical thinking.
- OUTCOME: These instruments were not administered as part of the pilot.
- ACTION: Instruments for assessing these goals will be developed for application in the future.

## **TECHNOLOGY PROGRAMS**

### **A.A.S. in Air Conditioning and Refrigeration**

This course does not have sufficient declared majors (or enrollment in courses that indicates student intention to actually work on the AAS or Certificate in Air Conditioning and Refrigeration). Therefore, the major is not deemed to have sufficient data available for assessment. This is a major that is increasing in enrollment. We anticipate that assessment will be appropriate in the near future and will initiate measures at that time.

### **A.A.S. in Automotive Technology/Certificate in Automotive Technology**

This course does not have sufficient declared majors (or enrollment in courses that indicates student intention to actually work on the AAS or Certificate in Automotive Technology). Therefore, the major is not deemed to have sufficient data available for assessment.

### **A.A.S./Certificate in Water Treatment**

This course does not have sufficient declared majors (or enrollment in courses that indicates student intention to actually work on the AAS or Certificate in Water Treatment). Therefore, the major is not deemed to have sufficient data available for assessment.

### **A.A.S./Certificate in Welding**

While this major has sufficient declared majors to provide good sample size for assessment, current enrollments are not sufficient for assessment. Therefore, the major is not deemed to have sufficient data available for assessment. This is believed to be a temporary lull in enrollment and assessment will be begun again when appropriate.

### **Certificate in Industrial Graphics-Drafting/CAD**

This major is small and is currently not measured independently.

## **SUMMARY**

While the Division has made improvements in formalizing the ongoing assessment activities of faculty and implementing changes to improve learning, the assessment path is an experience that has no end. While we celebrate our successes, we recognize that some areas need improvement and will work on a more comprehensive program for the future. We will continue to strive to ensure the Division's diverse course structure is relevant and effective.

**BUSINESS AND TECHNOLOGY  
FULL-TIME FACULTY AND STAFF**

|   |  |
|---|--|
| Amy Wells, Associate Dean   | Anthony Hoffman, Professor of Automotive Technology              |
| Michael Bowman, Professor of CIS  | Ricky Keeling, Professor of Business & CIS                       |
| Samuel Colton, Professor of Welding and Mfg., Technology Coordinator    | Richard Linge, Professor of CIS                                  |
| Patrick Cunningham, Professor of Mgt/Mkg/Women's Basketball, Head Coach | Linda Reeser, Professor of CIS                                   |
| Moses Diaz de Leon, Professor of Business                               | Betty Reynolds, Professor of Business                            |
| Mary Sue DePuy, Professor of Economics                                  | Dorothy Smalley, Professor of CIS                                |
| David Godley, Professor of Business                                     | Kathy Thomas, Senior Secretary, Business and Technology Division |

**BUSINESS AND TECHNOLOGY ASSOCIATE FACULTY**

|                                     |                                   |
|-------------------------------------|-----------------------------------|
| Lee Altman, Air Conditioning        | Duane (James) Ingram, Welding     |
| Socorro Arrizon, CIS                | Robert Ingram, Technology         |
| Nate Bailey, Welding                | Richard Lamb, CIS                 |
| John Bir, Air Conditioning          | Alees Langford                    |
| Bennie Carlos, CIS                  | Juan Lomeli, Drafting             |
| Christian Castro, CIS               | Ricky Keeling, Business           |
| Sheral Colville, Business           | Florencio Madrid, Welding         |
| Alfonso Concha, Technology          | Victor Mata, CIS                  |
| Rosalicia Cordova, Business         | Vernon Neill, Business            |
| Lino Corral, Air Conditioning       | Rene Pack, CIS                    |
| Matt Crampton, CIS                  | Sandra Pliska, Technology         |
| Carlos Diaz, AWT                    | Frank Preciado, Broadcasting      |
| Andrew Dym, CIS                     | Ruben Rios, Technology            |
| Jose Encarnacion, Casino Management | Bonnie Robinson, Accounting       |
| Dale Foster, Air Conditioning       | Carlos Sanchez, Business          |
| William Henderson, CIS              | David Sanchez, Welding            |
| Richard Hernandez, CIS              | David "Flash" Sharrar, Automotive |
| Art Herrman, Automotive             | David Sisson, Electronics         |
| Juan Huerta, Drafting               | Vicki Thompson, CIS               |
| Randy Hartless, CIS                 | Joseph Wharton, Drafting          |

**Report of  
Student Learning Outcomes Assessment  
Calendar Year 2004  
DIVISION OF COMMUNICATIONS**

The Division of Communications offers courses in reading development, composition, creative writing, literature, journalism, broadcasting, and television production.

**A.A. in English**

Students who successfully complete the requirements of the English major will be able to write a research paper in a 200-level English course and demonstrate the following competencies:

1. Appropriate topic focus, audience awareness, and stated purpose
2. Comprehension of material cited and use of accurate documentation style
3. Overall unity of development and depth of analysis
4. And accurate mechanics, including diction, grammar, spelling, and punctuation

Because of the low number of English majors in the recent past, the department decided not to assess the English major but to assess sections of English 100 instead. Due to the large number of English 100 sections taught by a variety of English instructors, assessing this course should provide useful data to lead to the improvement of learning in this course.

**English 100: Introduction to English Course Cluster**

Students who successfully complete English 100 will demonstrate readiness for entry into English 101: Freshman Composition; they will demonstrate the ability to write clear, effective paragraphs and essays in preparation for general education coursework.

Students who successfully complete the requirements of English 100 will demonstrate minimum preparedness for entry into English 101 by receiving a grade of C or higher.

The following learning competencies are required:

- Accurate mechanics, including diction, grammar, spelling, and punctuation
- Appropriate topic focus, audience awareness, and stated purpose
- And effective use of diverse rhetorical modes and of organizational techniques in paragraph and essay writing

### **Fall 2004 Survey:**

In the final weeks of the Fall 2004 semester, a survey (revised from 2003) was administered to those students successfully completing English 100. This is a different approach than in 2003; the survey in 2003 surveyed students who earned Ds in English 101. Also, in the 2003 survey only eleven students responded out of a group of ninety; the 2004 survey included eight English 100 classes with 106 respondents. By surveying students in class rather than by mail, we received more responses and more insight into the students' perceptions.

The following is a summary of the students' responses/perceptions:

- 39% preferred audio/visual as a method of writing instruction with lecture (33%) rated second and models (27%) rated third
- 51% rated grammar as the most difficult aspect of English Composition with reading (23%) rated second
- 47% reported that they "always" turned in their assignments on time, and 34% reported "often"
- 47% reported that they "always" used the instructor's feedback on writing assignments while 28% reported "often"
- 6% rated their ability to organize an essay as "excellent" while 39% rated their ability as "very good" and 55% "average"
- 5% rated their grammar ability as "excellent" while 33% rated their ability as "very good" and 55% "average"
- 13% rated their reading comprehension as "excellent" while 41% rated their reading comprehension as "very good" and 45% "average"
- 44% rated "family obligations" as the greatest challenge affecting their success in English 100 while 36% rated "work obligations" as the greatest challenge
- 36% of students sought help from someone other than an instructor or a tutor while 26 % sought help from an instructor and 11% from a tutor

- 42% sought help 2-3 times while 13% sought help 1 time, and 9% sought help 4-5 times
- 92% reported that they feel “well prepared” for English 101

*Please see Appendix 1 for charts*

### **Assessment of Survey:**

While this survey provides some useful information such as the students’ perceptions of their preparedness for English 101, and their preferred method of instruction, it needs to be revised. Assessing “How Students Learn” and “How Students Prepare” will be the focus of the next survey.

### **English 100 Post-Test:**

During the Fall 2004 semester, the English 100 Post-Test was piloted. This test was administered during the final weeks of the semester; 114 students took the test and earned an average overall score of 78% accuracy.

Following is a brief overview of the English 100 Post-Test:

- Working with Subjects and Verbs
- Sentence Structure
- Selecting the Correct Sentence
- Choosing the Correct Forms of Modifiers
- Mechanics/Spelling
- Choosing the Correct Words
- Spelling
- Pronoun Reference and Agreement of Pronouns with Antecedents
- Punctuation
- Choosing the Correct Sentence
- Word Usage

*Please see Appendix 2 for charts*

### **Use of the Results:**

The English 100 Post-Test will be required in all English 100 classes beginning with the Spring 2005 semester; the results will be distributed to all English instructors this fall.

## Summary:

Through the process of assessment, the Division has gained invaluable knowledge in measuring the success of our faculty and our students, which ultimately reflects upon the institution. We have learned that some of the devices with which we measure must be changed, abandoned, or kept. We have also learned that the implementation of these devices must be well-planned with the students' ability to participate fully considered. As a result, we plan to continue to access English 100, making necessary adjustments for an improvement in the student learning outcomes.

|   |  |
|---|--|
| <b>COMMUNICATIONS FULL - TIME FACULTY AND STAFF</b> |  |
|   |  |
| Belobaba, Barbara, Professor of English             | Krueger, Joanne, Professor of English            |
| Bratt, Kirstin (Sabbatical), Professor of English   | Mattes, Judith, Professor of Reading             |
| Burns, Troy, Professor of English                   | Minervini, Amy, Professor of English, Journalism |
| Coogan, Mary, Professor of English                  | Moore, Steve, English, Reading                   |
| Cooper, Penny, Professor of English                 | Raspa, Ann, Professor of English                 |
| Coy, David, Professor of English                    | Rogers, Dolores, Senior Secretary                |
| Curtis-Chavez, Mark, Professor of English           | Ryan, Mary, Professor of English                 |
| Davis, Edmond, Professor of English                 | Self, James, Professor of Journalism             |
| Johnson, Charles, Professor of English              |  |
|   |  |
| <b>COMMUNICATIONS ASSOCIATE FACULTY</b>             |  |
| Abedi, Mizaba, English                              | Moore, Jana, English                             |
| Acker, LaRae, Reading                               | Moreno, Carlos, Journalism                       |
| Allan, Jere, English                                | Needham, Sherry, TV Production                   |
| Baughtman, Troy, TV Production                      | Orman, Marilyn, English                          |
| Campagna, Stephen, Broadcasting                     | Pemberton, Craig, English                        |
| Cannon, Sandi, English                              | Preciado, Frank, Broadcasting                    |
| Drew, Sheryl, English                               | Qualls, Robert, English                          |
| Gilbert, Don, English                               | Schubert, Ed, English                            |
| Gustafson, Miriam, English                          | Smith, Sara, English                             |
| Hafner, Cheryl, English                             | Taylor, Donna, English, Reading                  |
| Knapp, Lee, English                                 | Tudor, Travis, English                           |
| Kuntzelman, Ken, Reading                            | Watley, Leslie, English                          |
| Kuntzelman, Ruth, English                           | Welch, Julie, English                            |
| Loveless, Pat, English                              | Wood, Jerilyn, English                           |

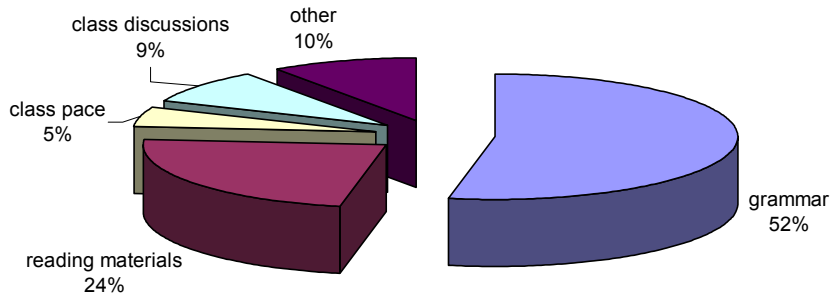
## APPENDIX 1: Fall 2004 Survey

|                    |        |     |   |  |
|--------------------|--------|-----|---|--|
|                    | 1      | 106 |   |  |
| lecture            | 33.02% | 35  |   |  |
| audio/visual       | 38.68% | 41  |   |  |
| texts              | 9.43%  | 10  |   |  |
| models             | 23.58% | 25  |   |  |
| other              | 4.72%  | 5   |   |  |
|                    | 2      |     |   |  |
| grammar            | 50.94% | 54  |   |  |
| reading materials  | 22.64% | 24  |   |  |
| class pace         | 4.72%  | 5   |   |  |
| class discussions  | 8.49%  | 9   |   |  |
| other              | 9.43%  | 10  |   |  |
|                    | 3      |     |   |  |
| always             | 47.17% | 50  |   |  |
| often              | 33.96% | 36  |   |  |
| usually            | 10.38% | 11  |   |  |
| sometimes          | 6.60%  | 7   |   |  |
| seldom             | 1.89%  | 2   |   |  |
| never              | 0.00%  | 0   |   |  |
|                    | 4      |     |   |  |
| always             | 46.23% | 49  |   |  |
| often              | 28.30% | 30  |   |  |
| usually            | 14.15% | 15  |   |  |
| sometimes          | 6.60%  | 7   |   |  |
| seldom             | 2.83%  | 3   |   |  |
| never              | 2.83%  | 3   |   |  |
|                    | 5      |     |   |  |
| excellent          | 5.66%  | 6   |   |  |
| very good          | 38.68% | 41  |   |  |
| average            | 54.72% | 58  |   |  |
| below average      | 1.89%  | 2   |   |  |
| poor               | 0.94%  | 1   |   |  |
|                    | 6      |     |   |  |
| excellent          | 4.72%  | 5   |   |  |
| very good          | 33.02% | 35  |   |  |
| average            | 54.72% | 58  |   |  |
| below average      | 7.55%  | 8   |   |  |
| poor               | 0.00%  |     |   |  |
|                    |        |     | 8 |  |
| work obligations   | 35.85% | 38  |   |  |
| family obligations | 44.34% | 47  |   |  |
| other              | 19.81% | 21  |   |  |
|                    | 9a     |     |   |  |
| from a tutor       | 11.32% | 12  |   |  |
| from an instructor | 26.42% | 28  |   |  |
| from someone else  | 35.85% | 38  |   |  |
|                    | 9b     |     |   |  |
| 1 time             | 13.21% | 14  |   |  |
| 2-3 times          | 42.45% | 45  |   |  |
| 4-5 times          | 9.43%  | 10  |   |  |
| more than 5 times  | 3.77%  | 4   |   |  |
|                    | 11     |     |   |  |
| yes                | 92.45% | 98  |   |  |
| no                 | 4.72%  | 5   |   |  |
| no response        | 2.83%  | 3   |   |  |

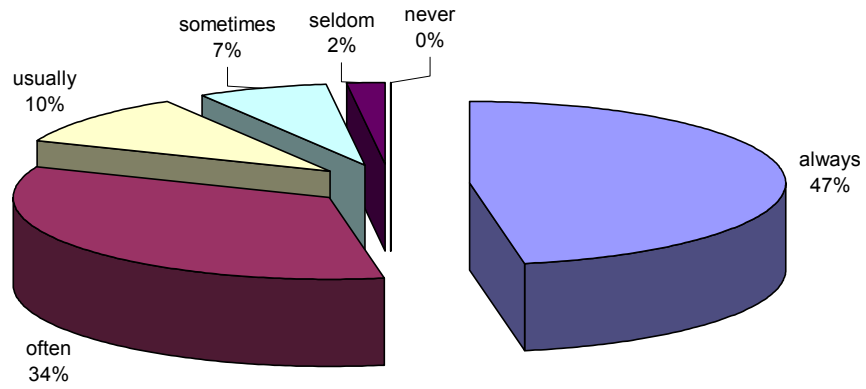
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|               |        |    |
|---------------|--------|----|
| excellent     | 13.21% | 14 |
| very good     | 40.57% | 43 |
| average       | 45.28% | 48 |
| below average | 1.89%  | 2  |
| poor          | 0.00%  | 0  |

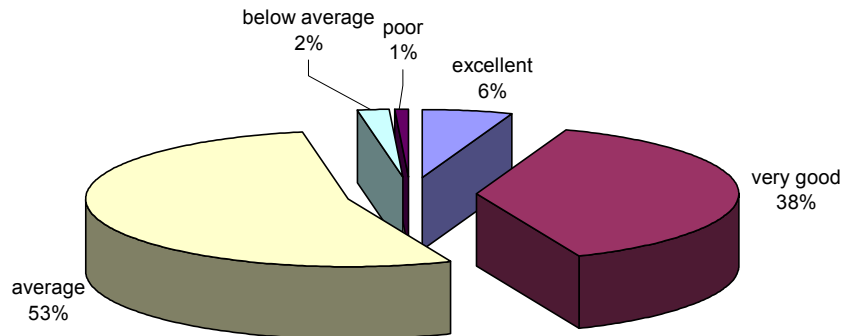
**What is the most difficult aspect of English composition classes?**



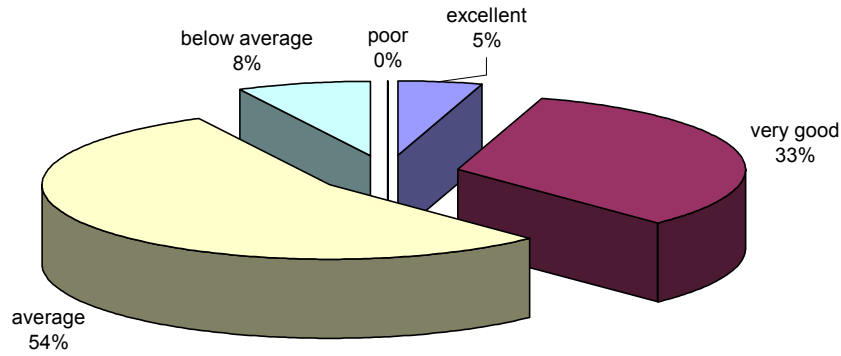
**How often did you turn in your assignments on time?**



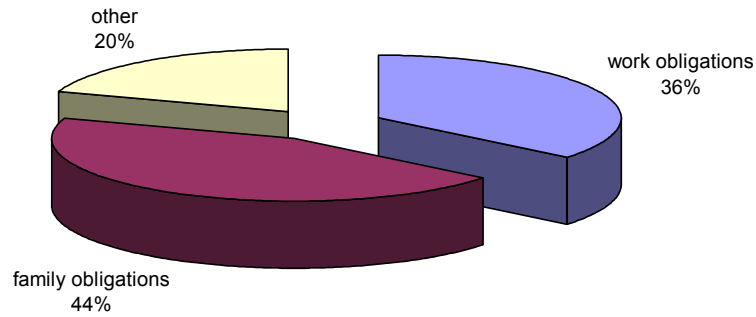
**How do you rate your ability to organize and develop an essay?**



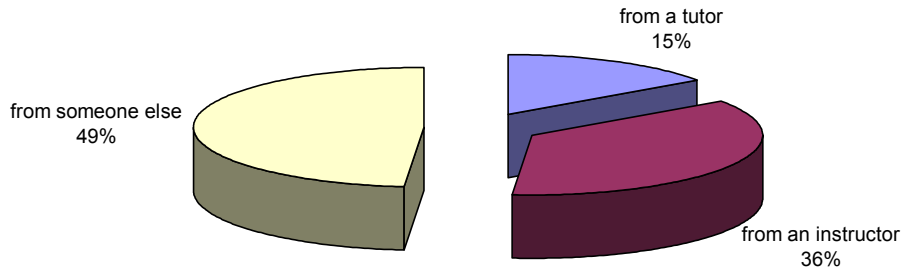
### How do you rate your grammar ability?



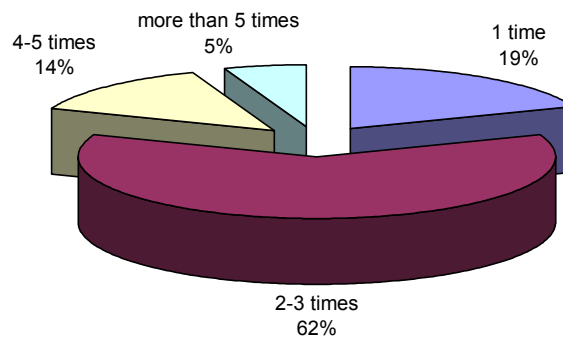
### What challenges affected your success in English 101? (You may choose more than one.) [Percentage of responses, not students]



### Did you seek writing help? (Yes...)



### How often did you seek help?

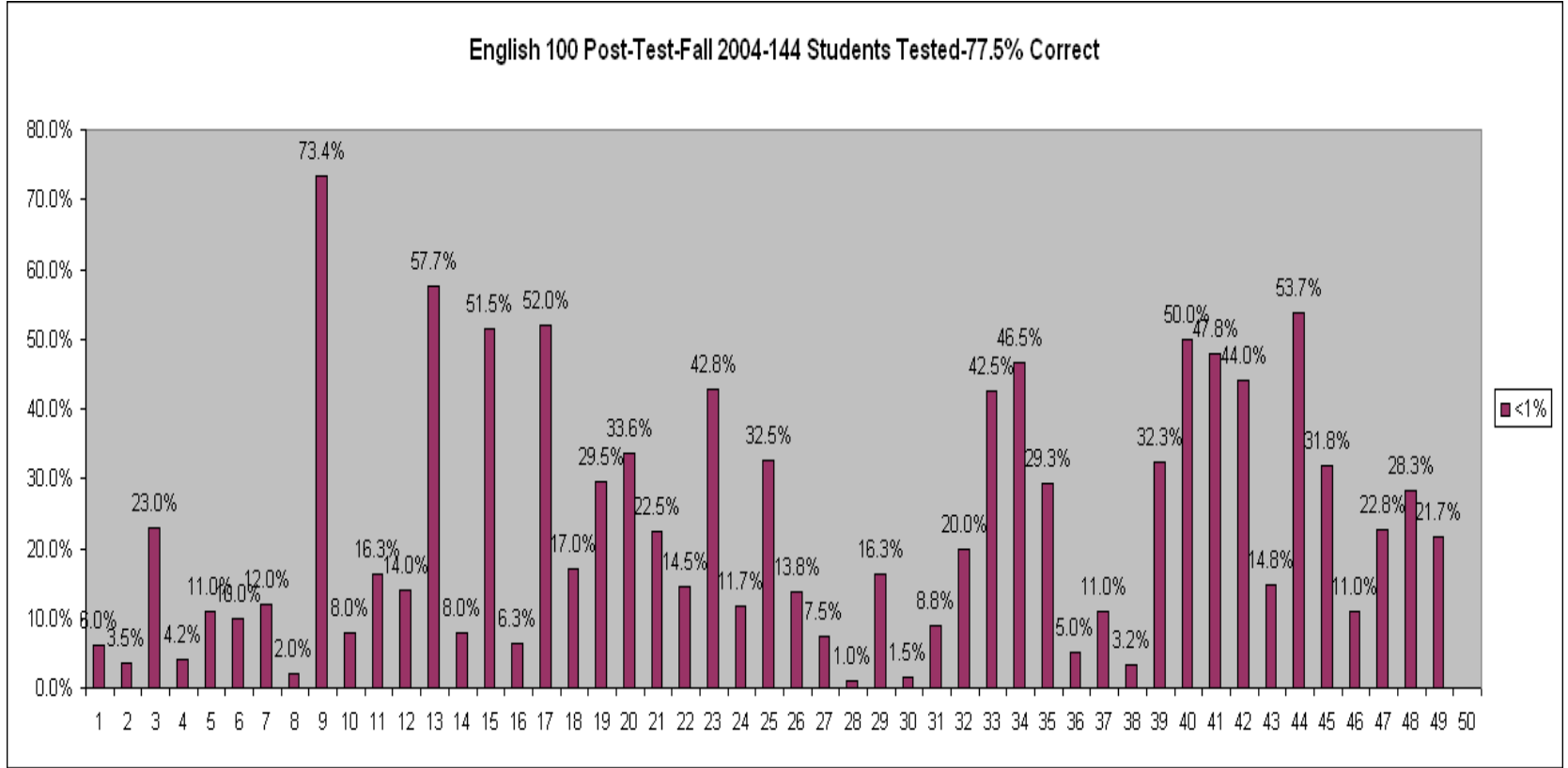


Appendix 2: English 100 Post-Test Results  
English 100 Post---Test---Fall 2004---114 Students Tested---77.5% **Correct**

Question---Percentage Answered Incorrectly:

|            |            |
|------------|------------|
| 1---<1%    | 26---32.5% |
| 2---6%     | 27---13.8% |
| 3---3.5%   | 28---7.5%  |
| 4---23%    | 29---1%    |
| 5---4.2%   | 30---16.3% |
| 6---11%    | 31---1.5%  |
| 7---10%    | 32---8.8%  |
| 8---12%    | 33---20%   |
| 9---2%     | 34---42.5% |
| 10---73.4% | 35---46.5% |
| 11---8%    | 36---29.3% |
| 12---16.3% | 37---5%    |
| 13---14%   | 38---11%   |
| 14---57.7% | 39---3.2%  |
| 15---8%    | 40---32.3% |
| 16---51.5% | 41---50%   |
| 17---6.3%  | 42---47.8% |
| 18---52%   | 43---44%   |
| 19---17%   | 44---14.8% |
| 20---29.5% | 45---53.7% |
| 21---33.6% | 46---31.8% |
| 22---22.5% | 47---11%   |
| 23---14.5% | 48---22.8% |
| 24---42.8% | 49---28.3% |
| 25---11.7% | 50---21.7% |

- 1 <1%
- 2 6.0%
- 3 3.5%
- 4 23.0%
- 5 4.2%
- 6 11.0%
- 7 10.0%
- 8 12.0%
- 9 2.0%
- 10 73.4%
- 11 8.0%
- 12 16.3%
- 13 14.0%
- 14 57.7%
- 15 8.0%
- 16 51.5%
- 17 6.3%
- 18 52.0%
- 19 17.0%
- 20 29.5%
- 21 33.6%
- 22 22.5%
- 23 14.5%
- 24 42.8%
- 25 11.7%
- 26 32.5%
- 27 13.8%
- 28 7.5%
- 29 1.0%
- 30 16.3%
- 31 1.5%
- 32 8.8%
- 33 20.0%
- 34 42.5%



|    |       |
|----|-------|
| 35 | 46.5% |
| 36 | 29.3% |
| 37 | 5.0%  |
| 38 | 11.0% |
| 39 | 3.2%  |
| 40 | 32.3% |
| 41 | 50.0% |
| 42 | 47.8% |
| 43 | 44.0% |
| 44 | 14.8% |
| 45 | 53.7% |
| 46 | 31.8% |
| 47 | 11.0% |
| 48 | 22.8% |
| 49 | 28.3% |
| 50 | 21.7% |

## **Division of Human Services**

The Division of **Human Services** prepares students for careers that promote and support the health and well being of families, individuals, and communities throughout the lifespan. Of the 24 programs (10 degrees and 14 certificates) offered by the division, 13 (five degrees, seven certificates and 1 degree cluster) completed assessment cycles in 2004.

### **A.A. in Education – Elementary**

#### **PURPOSE:**

Graduates will demonstrate: (1) basic knowledge in education that will prepare them for transfer to the university and (2) competency in communication, critical thinking, quantitative analysis, and technological applications.

1. Graduates will be familiar with educational experts, resources, articles, lesson plans, and vocabulary.
2. Graduates will produce observation journals that identify and compare teaching skills and strategies. (minimum of 40 hours of observation).

#### **EXPECTED OUTCOMES AND EVIDENCE OF ATTAINMENT:**

The following tools were used to gather evidence and the outcomes noted.

1. Students will present education portfolios containing student's experiences, internet site reviews, education articles, lesson plans, education vocabulary, experts in education, and a collection of age appropriate literature.

CRITERIA: 100% of graduates will receive at least the grade of C or better (as evaluated using rubric) on the segment developed in the individual education courses (EDU 110,210,222)

- Of the data collected, N=181, 84% (N=152) of the students who earned a C or better met this requirement.
- The data represented does not define if students are Elementary or Secondary Education majors.

2. Students will submit observation journals that reflect a minimum of 40 hours of observation time. These journals will identify and compare teaching skills and strategies which will be evaluated based on a rubric.

CRITERIA: 100% of graduates will receive a C or better on each journal.

- 90%, (N=162), of the students met the requirement for the individual courses. No data was collected to determine if students overall, met the total 40 hour requirement.
- Data did not reflect whether or not individuals were able to identify and compare teaching skills and strategies.

## **CHANGES BEING MADE AS A RESULT OF ASSESSMENT:**

1. 1 In order to more clearly track student outcomes, an individual matrix will be developed for each of the three (3) education courses.

Support for this decision:

- The use of the word graduates needs to be removed from the matrix
- The portfolio and observations alone, cannot be utilized to assess course competency. More detailed learning outcomes need to be included in the matrix.
- Students intended course of study, i.e. Elementary or Secondary, will be part of an end of the semester student survey to be developed.
- Students cannot obtain an AAEE or pass the class without meeting the observation requirement. This information does not need to be collected.
- A list of competencies for the observation journals will be developed for all education faculty.

## **A.A. in Education – Secondary**

PURPOSE:

Graduates will demonstrate: (1) basic knowledge in education that will prepare them for transfer to the university and (2) competency in communication, critical thinking, quantitative analysis, and technological applications.

1. Graduates will be familiar with educational experts, resources, articles, lesson plans, and vocabulary.
2. Graduates will produce observation journals that identify and compare teaching skills and strategies. (minimum of 30 hours of observation)

EXPECTED OUTCOMES AND EVIDENCE OF ATTAINMENT:

The following tools were used to gather evidence and the outcomes noted.

1. Students will present education portfolios containing student's experiences, internet site reviews, education articles, lesson plans, education vocabulary, experts in education, and a collection of age appropriate literature.

CRITERIA: 100% of graduates will receive at least the grade of C or better (as evaluated using rubric) on the segment developed in the individual education courses (EDU 110, 210 or 220)

- Of the data collected, N=181, 84% (N=152) of the students who earned a C or better met this requirement.
- The data represented does not define if students are Elementary or Secondary Education majors.

2. Students will submit observation journals that reflect a minimum of 30 hours of observation time. These journals will identify and compare teaching skills and strategies which will be evaluated based on a rubric.

CRITERIA: 100% of graduates will receive a C or better on each journal.

- 90%, (N=162), of the students met the requirement for the individual courses. No data was collected to determine if students overall, met the total 30 hour requirement.
- Data did not reflect whether or not individuals were able to identify and compare teaching skills and strategies.

### **CHANGES BEING MADE AS A RESULT OF ASSESSMENT:**

1. In order to more clearly track student outcomes, an individual matrix will be developed for each of the three (3) education courses.

Support for this decision:

- The use of the word graduates needs to be removed from the matrix
- The portfolio and observations alone, cannot be utilized to assess course competency. More detailed learning outcomes need to be included in the matrix.
- Students intended course of study, i.e. Elementary or Secondary, will be part of an end of the semester student survey to be developed.
- Students cannot obtain an AAEE or pass the class without meeting the observation requirement. This information does not need to be collected.
- A list of competencies for the observation journals will be developed for all education faculty.

### **A.A. in Family and Consumer Sciences**

PURPOSE:

The goal is to assess a cluster of courses leading to the degree in Family and Consumer Sciences instead of graduates because the declared majors are low. To that end the course of FCS 160 Marriage and Family was assessed. Students who complete this course will demonstrate basic knowledge regarding intimate relationships. 2) Students will demonstrate competency in communication, critical thinking, quantitative analysis and the application of technology.

1. Each person will be aware of personal choice and the consequences of their choices on themselves and others who are significant in their lives.
2. Know that relationships require a lifetime of work to be successful.
3. Behavior needs to match values to have a fulfilling life.

EXPECTED OUTCOMES AND EVIDENCE OF ATTAINMENT:

The following tools were used to gather evidence and the outcomes noted.

1. Pre and Post journal: Students will write a journal addressing specific questions related to choices at the beginning and end of semester. The answers will be compared to see if the students are more aware of the impact of choices and their ability to make different choices.

CRITERIA: 90% of students who complete course will identify that choices and consequences are connected, not random events. They will identify changes they can make that will alter the outcome of their choices.

- 95.9% (47 students) identified choices they had made during the semester and the consequences that occurred.
- 97.9% (48 students) identified what they would do differently if they had the chance to make those choices again and the consequences they might expect with the different choices.

2. Essay Question to be included on Final: Students will identify events/challenges that are typical in the life cycle of a relationship and what tools might be helpful in dealing effectively with those predictable challenges.

CRITERIA: 90% of students completing this course will be able to list at least 5 relationship challenges and at least 1 way they could deal effectively with the challenge.

- 94.5% (55 students) listed 5 events/challenges they could expect during the life cycle of a marriage.
- 91.3% (53 students) listed one thing they would do to deal with the events they expected to experience.

3. Journal Summary will include questions asking students to identify their values and how their behavior either matches or contradicts their stated values.

CRITERIA: 90% of students will identify the 3 most important values in their life and what behaviors demonstrate those values.

- 95.9% (47 students) listed the 3 most important values in their life.
- 91.8% (45 students) identified what they did to support and/or contradict the values listed as most important in their life.

4. Even though this tool was not originally listed for 2004, students were asked to identify the usefulness and applicability of each topic covered in class and what topic they found most important. 59 students responded to this student survey.

Regarding what was not at all or seldom useful:

- All 20 topics had 2 or more students listing the topic as not at all or seldom useful.
- 3 topics had 35.5%-45.7% (21-27 students) identified as not at all or seldom useful.

Regarding topics identified as often useful to completely useful and applicable:

- 50% (30 or more) students listed all 20 topics covered in the course as often to completely useful.
- 80%-91.5% (47-53) students listed the same 7 topics as often to completely useful.

When asked to list the most important topic in the course, all topics were listed by at least 1 person.

- 10 or more students listed the same 3 topics (choices in life, love and relationships, communication and conflict) as more important.
- A number of students listed more than one topic as the most important to them.

When asked to list the least important topic of the 5 topics they considered most important to them:

- 15 different topics were listed by 1 or more students.
- Not sure if students followed the direction for least important. They were to choose which from their 5 most important topics was least important, but it appeared some answered what was least important from all 20 topics that were listed.

### **CHANGES BEING MADE AS A RESULT OF ASSESSMENT:**

1. Find a way to collect information from ALL students completing course. There was no place for student name or instructor name, so don't know which classes did not submit information.
  - Coordinate with associate faculty to make sure all students who complete the semester submit this information so we get a representative picture.
  - Require all students finishing class respond to questions
  - Get all forms from associate faculty.
  - Reword questions to be sure students are understanding what is being assessed.
  - Meet with all faculty teaching this course.
  - Use information on usefulness and applicability to determine order of topics and amount of time spent on each topic. Review topics that were listed as not at all or seldom useful and decide which to continue including.
  - After revising questions to make them clearer, have Fall 2004 students respond then compare both semesters to see if information is consistent. If consistent:
    - Evaluate FCS/SOC 160 on 3 different intended student learning outcomes
    - Select another course in the major to assess to whether that course is meeting the student learning outcomes intended.

### **AA in Hospitality**

#### **PURPOSE**

1. Graduates of the Arizona Western College AA degree in Hospitality are prepared to transfer to a baccalaureate program at a university.
2. Graduates will be competent in communication, critical thinking, quantitative and technology applications.

3. Graduates will be prepared for mid-management positions in hotels and restaurants.

#### EXPECTED OUTCOMES AND EVIDENCE OF ATTAINMENT:

The following tools were used to gather evidence and the outcomes noted.

1. Students in HOS 210 will develop a quality service philosophy.  
CRITERIA: Completion of reflective papers on quality service
  - HOS 210 was canceled due to a lack of sufficient enrollment in Spring 2004. It will be offered in Spring 2005.
2. Students in HOS 210 will effectively communicate with customers and other team members and demonstrate the importance of customer service.  
CRITERIA: Videotapes of students handling difficult customers and difficult situations during role-playing exercises.
  - HOS 210 was canceled due to a lack of sufficient enrollment in Spring 2004. It will be offered in Spring 2005.

#### CHANGES BEING MADE AS A RESULT OF ASSESSMENT:

Given the higher enrollments in HOS 100 Introduction to Hospitality, it is anticipated that HOS 210 will have sufficient enrollment in January 2005 and we will be able to assess those students as planned.

#### **AA in Exercise Science, Health, Physical Education, Recreation, and Sport**

##### PURPOSE

1. Students will demonstrate basic expertise in exercise science, health, physical education, recreation, and sport.
2. Students will demonstrate knowledge in communication, critical thinking, quantitative analysis, and technological applications as it relates to exercise science, health, physical education, recreation, and sport in preparation for transfer to another institution for further studies.

#### EXPECTED OUTCOMES AND EVIDENCE OF ATTAINMENT:

The following tools were used to gather evidence and the outcomes noted.

1. Students enrolled in PED 110 Intro to Recreation and PEM 100 Intro to PERS will be able to describe the benefits of a healthy lifestyle involving physical activity.  
CRITERIA: Students will complete a capstone question explaining healthy lifestyle choices incorporating physical activity.

- The Intro to Recreation course did not make during the fall 2004 semester. The capstone question will be asked in December 2004 during the final exam.
2. Students will implement a regular fitness routine into their everyday life in order to maintain a healthy lifestyle.  
 CRITERIA: 50% of the students enrolled in a PERS activity course the previous term will enroll in the same or a different PERS activity course centered on fitness/recreational activities.  
  
 50% of students surveyed will be participating in fitness/recreational activities outside of AWC
    - Students surveyed are participating in fitness and recreational activities outside of AWC
  3. Students who major in Exercise Science at AWC and apply to a four-year school for transfer will be accepted into the Exercise Science program at the four-year institution.  
 CRITERIA: 100% of those students majoring in Exercise Science and wishing to transfer to a four-year institution will be accepted.
    - No students transferred to four year institutions.

### **CHANGES BEING MADE AS A RESULT OF ASSESSMENT:**

The Exercise Science, Health, Physical Education, and Sport AA degree will be phased out and the students notified.

The new Director of Fitness and Wellness Education will work with the faculty in developing a new AA degree that better meets the needs of the population.

### **A.A.S. in Early Childhood Education**

#### **PURPOSE**

1. Students will develop expertise in child care giving. They will also demonstrate competence in communication, computation, use of technology and critical thinking as it relates to the care of young children.

### **EXPECTED OUTCOMES AND EVIDENCE OF ATTAINMENT:**

The following tools were used to gather evidence and the outcomes noted.

Students will demonstrate competency in the use of technology by

1. Successfully using Blackboard.  
 CRITERIA: 100% of students will demonstrate competency by completing the capstone courses ECE 212 Internship and FCS 185 Family Communication Skills.

- 100%of students demonstrated competency by completing the capstone courses ECE 212 Internship and FCS 185 Family Communication Skills.
2. Using the internet for information on research in Child Development  
CRITERIA: 100%of students who write research papers in ECE 212, 240, 245 and 265 use information gathered from the internet. These students will cite the information correctly.
    - 100%of students who wrote research papers in ECE 212, 240, 245 and 265 used information gathered from the internet. These students cited the information correctly
  
  3. Employer surveys report graduates demonstrate competency in communication, computation, application of technology and critical thinking as it applies to work with children.  
CRITERIA: 80% of employers will report competency in employees trained by AWC program.
    - 80% of hand delivered employer surveys reported graduates demonstrate competency in communication, computation, application of technology and critical thinking as it applies to work with children using a Likert scale with a score of 4 out of 5.
  
  4. Employer surveys will indicate competency on an early childhood checklist.  
CRITERIA: 80% of employers will report competency using the early childhood checklist.
    - 80% of hand delivered employer surveys indicated competency on an early childhood checklist. Using a Likert scale with a score of 4 out of 5.

#### **CHANGES BEING MADE AS A RESULT OF ASSESSMENT:**

Continue to use Blackboard in capstone courses.

Ask for the same information next year to ensure our results continue.

Continue to require use of the internet with information cited correctly.

80% of employers were satisfied with employee competency; however the other 20% stated some inadequacy in writing, technology and setting up an environment for young children. We will continue to address these areas.

## A.A.S. in Nursing

### PURPOSE

1. Arizona Western College nursing program graduates will demonstrate expertise as beginning Registered Nurse practitioners and will demonstrate competency in communication, critical thinking, quantitative analysis and technology applications

### EXPECTED OUTCOMES AND EVIDENCE OF ATTAINMENT:

The following tools were used to gather evidence and the outcomes noted.

1. The graduate will demonstrate knowledge in the profession of nursing.  
CRITERIA: 90% or greater of Graduates will pass the NCLEX-RN test on the first attempt.
  - The NCLEX-RN annual pass rate 97.7%. NCLEX –RN (42/43). Forty three (43) of the 44 Spring '04 graduating students took the test and 42 passed.
2. The graduate will demonstrate critical thinking.  
CRITERIA: 100% of students will improve in critical thinking skills as measured in the critical thinking test at the beginning and end of the nursing program.
  - Data not currently available.
3. The graduate will demonstrate safe patient care.  
CRITERIA: 1) 100% will pass all clinical competency skills check list by end of fourth semester. 2) 100% of employer surveys will state AWC RN graduates are adequate or above in basic nursing skills and procedures.
  - 100% (44/44) students passed competency skill checklist by end of fourth semester.
  - Data not currently available.
4. The graduate will demonstrate the ability to safely calculate figures.  
CRITERIA: 100% of the Medication calculation questions on every exam will be answered correctly.
  - This outcome objective was difficult to measure due to the number and variety of test question related to medication administration and calculations.
5. The graduate will demonstrate an ability to communicate both orally and in writing.  
CRITERIA: 100% of employer surveys will state graduates are adequate or above in communication skills.

- Data not currently available.
6. The graduate will demonstrate an ability to use technology.  
 CRITERIA: 100% of employer surveys will indicate that graduates are adequate or above in the use of technology.
- Data not currently available.

### **CHANGES BEING MADE AS A RESULT OF ASSESSMENT:**

1. Continue implementing the strategies introduced in spring '02 to improve student success: 75% pass rate on the average of the semester and final exams, 100% competency on math proficiency, mandatory standardized tests for progression, and the reading proficiency requirement for admission (CPT > 80).
2. The outcome statement will be revised at the December Nursing Curriculum committee meeting and updated for the '05 assessment.

### **Certificate – Practical Nursing**

#### PURPOSE

Arizona Western College Licensed Practical Nursing program graduates will demonstrate expertise as beginning practitioners.

#### EXPECTED OUTCOMES AND EVIDENCE OF ATTAINMENT:

The following tools were used to gather evidence and the outcomes noted.

Students will demonstrate knowledge in the field of nursing.

CRITERIA: 90% of students taking the test for the first time will pass NCLEX-PN.

- 100 % (11/11) passed the NCLEX-PN exam.

The graduate will demonstrate critical thinking.

CRITERIA: 100% of students will improve in critical thinking skills as measured by the clinical evaluation tool.

- 100% (13/13) improvement.

The graduate will demonstrate safe patient care.

CRITERIA: 100% will pass all PN level clinical competency skills checklist by end of PN summer semester.

- 100% (13/13) meet the requirement.

The graduate will demonstrate the ability to safely calculate figures.

CRITERIA: 100% of the Medication calculation questions on every exam will be answered correctly.

- This was not measured in the class setting. Students demonstrated proficiency in the clinical setting during the summer completion program.

### **CHANGES BEING MADE AS A RESULT OF ASSESSMENT:**

1. The Practical Nursing course is an exit option following the two first semester of the associate degree in nursing program. All modifications identified in the A.A. S.

### **Certificate – Culinary Arts**

#### **PURPOSE**

Graduates of the Arizona Western College Culinary Arts Certificate Program will be prepared for mid-level employment in the food service industry.

#### **EXPECTED OUTCOMES AND EVIDENCE OF ATTAINMENT:**

The following tools were used to gather evidence and the outcomes noted.

Graduates will provide safe/sanitary food service.

CRITERIA: ServSafe certification and Yuma County Foodhandlers cards.

- All students obtained Yuma County Foodhandlers cards. ServSafe certification was not offered due to extra cost and lack of requirement in Yuma County.

Graduates will execute moist and dry methods of cooking, baking and appetizers.

CRITERIA: Portfolio including: Instructor's checklist, Field Experience checklist, Capstone project, reflective writing, and pictures.

- Portfolios included instructor's checklist, Capstone project (menus, recipes, pictures).
- Field Experience was not a catalog requirement for students completing the program Spring 04 so Field Experience checklists were not completed. Reflective writing did not happen.

Graduates will present themselves for work.

CRITERIA: Professional resume.

- All students completed a professional resume.

## **CHANGES BEING MADE AS A RESULT OF ASSESSMENT:**

AWC will continue to require food handler cards as evidence of competency. Portfolio development will become a requirement of students to complete rather than amassing of material by instructors/coordinator. Students will have a competency check list for employers to complete during their field experience. Resume development will continue as part of each students portfolio.

### **Certificate – Dietary Manager**

#### **PURPOSE**

Graduates of the AWC Dietary Managers Certificate Program will be prepared to supervise institutional foodservice departments, especially those in critical and long-term care.

#### **EXPECTED OUTCOMES AND EVIDENCE OF ATTAINMENT:**

The following tools were used to gather evidence and the outcomes noted.

1. Pass the national exam administered by the Dietary Managers Association.  
CRITERIA: A minimum of 75% who chose to take the national exam will pass.
  - The national exam will be administered October 30, 2004 at Phoenix College. No graduates elected to take the exam October 04.
2. Assess patients' nutritional status and correctly complete the federal MDS form.  
CRITERIA: Students will complete the nutritional assessment form with a minimum 80% accuracy.
  - FCS 142 was not offered in Spring 04.

Provide safe/sanitary food service.

CRITERIA: 80% of students taking the Foodhandlers Test will pass.

- All students obtained their food handlers cards.

## **CHANGES BEING MADE AS A RESULT OF ASSESSMENT:**

1. The national exam will continue to be an assessment tool as it is ultimately the measure of success of the program. Students may elect not to take the exam based on their career choices.
2. Completion of nutritional assessment forms are required in the health institutions that employ CDMs so this will continue as an assessment tool.
3. Obtaining a food handler card demonstrates knowledge of food safety standards and will continue as an assessment tool.

### **Certificate- Early Childhood Education**

#### **PURPOSE**

AWC Child Development Certificate graduates will demonstrate expertise as beginning child caregivers.

#### **EXPECTED OUTCOMES AND EVIDENCE OF ATTAINMENT:**

The following tools were used to gather evidence and the outcomes noted.

Students will demonstrate the use of technology by using the Internet to provide current research in child development.

CRITERIA: 100% of Students will demonstrate use of the internet in research papers for ECE 240, 245 and 265. They will receive a "C" or better in the paper.

- 100% of Students demonstrated use of the Internet in research papers for ECE 240, 245 and 265. They received a "C" or better in the paper.

## **CHANGES BEING MADE AS A RESULT OF ASSESSMENT:**

1. AWC will continue to use Internet for research. Child Development certificate will no longer be used for assessment purposes. It will be included under AAS Degree.

### **Certificate – Nursing Assistant**

#### **PURPOSE**

Arizona Western College Nursing Assistant program graduates will demonstrate expertise as beginning nursing assistant practitioners.

#### **EXPECTED OUTCOMES AND EVIDENCE OF ATTAINMENT:**

The following tools were used to gather evidence and the outcomes noted.

The students will demonstrate knowledge in the role of the nursing assistant.

CRITERIA: 90% of students taking the Nursing Assistant theory portion of the certification test will pass.

- The pass rate was 96% (26/27)

The student will demonstrate safe patient care.

CRITERIA: 90% of the students taking the Nursing Assistant practical skills component of the certification exam will pass.

- 96% pass rate (26/27)

The student will meet state certification standards

CRITERIA: 100% of the graduates will take the state certification written and practice exam.

- 40% (27/68) of students graduating from the program took the certification exam.

#### **CHANGES BEING MADE AS A RESULT OF ASSESSMENT:**

1. Testing is currently done on the AWC campus. The certification fee has been added to the lab fee in Fall '04. Increase in the number of students taking the state certification is expected to be reflected in 2005.

#### **Certificate – School Age Child Care**

##### **PURPOSE**

1. AWC school age child care students will demonstrate expertise with school age students.

##### **EXPECTED OUTCOMES AND EVIDENCE OF ATTAINMENT:**

The following tools were used to gather evidence and the outcomes noted.

Students will demonstrate the ability to establish and maintain a safe, healthy learning environment that supports children's physical and intellectual growth as it relates to after school activities with school age children.

CRITERIA: Student teacher observation to demonstrate competency at 100% of required skills using a checklist.

- No completers at this time.

Students will demonstrate the ability to support social and emotional development and to provide positive guidance to school age children and their parents.

CRITERIA: 80% of students secure jobs or job promotion or advancement as determined by a six month follow up graduate survey.

- No completers at this time.

Students will demonstrate the ability to ensure a well-run purposeful program responsive to participant needs.

CRITERIA: 80% of students secure jobs or job promotion or advancement as determined by a six month follow up graduate survey.

- No completers at this time.

### **CHANGES BEING MADE AS A RESULT OF ASSESSMENT:**

1. A cohort from Wellton will complete this certificate in 2005. However with less than 30 students we will no longer assess this group separately.

### **Certificate – Family Development Credential**

#### **PURPOSE**

1. Students who complete the Family Development Credentialing Program (FDC) will be able to demonstrate competency as frontline workers by empowering families to attain a healthy self reliance and interdependence with their communities.

#### **EXPECTED OUTCOMES AND EVIDENCE OF ATTAINMENT:**

The following tools were used to gather evidence and the outcomes noted.

Each person will demonstrate:

- how to better support a healthy self-reliance within the family system.
- basic self-empowerment skills.
- how to build mutually respectful relationships with families.
- basic communication skills that will assist them in working with families.
- the importance of understanding various cultures and diversity.
- basic principles of family assessment.
- basic skills that will assist them with the home visiting process.
- how to recognize the need for special services.
- how to help families develop informal helping networks.
- how to collaborate effectively with families and other agencies.

Students will complete 3 activities to extend their learning for each outcome. Students will demonstrate their ability to practice what they have learned in class by practicing in their families and communities

CRITERIA: 90% of students who complete the course will demonstrate competency through real-life experiences.

- 100% of students completed all 3 activities to extend learning which were approved by Cornell University.

Students will complete a skills practice reflection for each outcome. They will describe what they have done to practice the skills learned and reflect on each experience.

CRITERIA: 90% of students who complete the course will demonstrate competency by reflecting on each real-life experience.

- 100% of students completed a skills practice reflection that was approved by Cornell University.

Students who complete the course will take a final examination to test knowledge and skills learned.

CRITERIA: 90% of students who complete the course will pass the examination with a 70% or above.

- 96% of students passed the Cornell University Credentialing Examination with a 70% or above.

Students will compile a portfolio showing all of the experiences they have practiced throughout the course.

CRITERIA: 90% of students who complete the course will compile a portfolio containing all required paperwork to complete the FDC which will be approved by Cornell University.

- 100% of students compiled a portfolio which completed the requirements set forth by Cornell University.

### **CHANGES BEING MADE AS A RESULT OF ASSESSMENT:**

1. The only change that will be made to this program will be to change the format in which content is delivered. The format for 2003-2004 included 10 classes which were worth 1 credit each and 1 class which was worth 3 credits for a total of 13 credits. It was determined that articulation between AWC and state universities will be accomplished by collapsing and combining classes so that each class will be worth at least 3 credits. Beginning 2005 this program will have 2 classes worth 3 credits each and 1 class worth 5 credits for a total of 11 credits.

Report on Assessment Activity for the Calendar Year 2004  
**MODERN LANGUAGES DIVISION**

The mission of the Division of **Modern Languages** is to advance the study of foreign languages in a direction that will serve the educational needs of a diverse citizenry in the 21<sup>st</sup> century. Our approach is two fold: encompassing both language proficiency and cultural understanding, so that students may learn to perceive themselves as but one part of the world's varied cultures. In the calendar year 2003, the division completed full assessment cycles for one certificate, one degree, and two course clusters.

**Studies in Deafness Certificate**

Graduates will demonstrate fourth semester proficiency in American Sign Language as specified by the Languages Articulation Task Force of Arizona, and will demonstrate an understanding of norms, values, and beliefs of Deaf culture, in order to fulfill foreign language requirements necessary for transfer to a four year institution of higher learning, or for personal goals.

Graduate successfully meeting the selected competencies will be able to:

1. Apply critical thinking skills to analyze and evaluate texts which have a clear, underlying internal structure
2. Follow writing process (i.e. organizing, revising, proofreading)
3. Demonstrate comprehension and language production, including cultural fluency

Measurement tools criteria, and results were:

1. 100% of students will receive at least 70% on the exit exam in ASL 202, the capstone course. Results: 100% of students (10 of 10) received above 70% on their exit exam.
2. 100% of students will achieve at least 70% on a "word processed" paper that provides a clear, specific thesis. The paper will contain fully developed examples to support the thesis in a logical, coherent manner that demonstrates original thinking, depth of analysis, and comprehension. Collection research papers from ASL 202 offered in Spring 2003. Results: 90% of students (9 of 10) received above 70% on their research paper.
3. 100% of students will demonstrate a fourth semester language proficiency and cultural sensitivity through a one-on-one signed interview with the instructor. Interviews will be evaluated using a rubric. Results: 100% of students (10 of 10) received above 70% on their interview.

As a result of the ASL assessment results:

1. ASL faculty will review exit exams for pertinent information. Questions incorporating Deaf Culture will be included.
2. ASL faculty will contact the AWC Center for Teaching Effectiveness for more information on rubrics that could be used for writing proficiency assessment.

3. ASL faculty will continue to focus on signing proficiency of students.

### ESL (English as a Second Language) Course Cluster 1 (Levels 1 and 2)

The purpose of this course cluster is to enable non-native speakers of English to achieve self-determined language acquisition goals: degree/certificate completion, employment, employment mobility, and/or personal goals.

Students will demonstrate level appropriate:

1. Listening and reading comprehension and spoken and written use of words and phrases in affirmative and negative statements, questions, and commands in simple and complex phonological morphological, grammatical, and syntactical contexts.
2. Recognition and comprehension of simple and increasingly complex cultural practices (i.e. holidays, common eating, working, and recreational habits and conditions, gestures) used in the United States and in other areas of the English-speaking world.

Measurement tools, criteria, and results:

At the beginning of the semester, 100% of ESL Level 2 students who passed ESL Level 1 at AWC with a grade of "C" or better will achieve a score of 80% or higher on a comprehensive ESL Level 1 multiple choice structure test and write a letter with 70% or higher accuracy in content, organization, grammar, and mechanics. Results: Twelve students from South Yuma County ESL classes took the structure test with 16% achieving 80% or above. Forty-two percent achieved 70% or above, and 42% achieved less than 70%. No students on main campus had volunteered to participate. Sixty-two students participated in the writing assessment, with 72% of the students achieving 70% or above on writing a personal letter. An appropriate closing of the letter was not achieved by 76% of the students. Of the students assessed by writing a personal letter, 16 out of 26 students from South Yuma County achieved 70% or above, and 29 out of 36 students achieved 70% or above on writing assessment.

At the beginning of the semester, 100% of ESL Level 2 students who passed ESL Level 1 at AWC with a "C" grade or higher will be able to answer written comprehension questions based on selected reading topics which contain relevant cultural content, with 70% accuracy. Result: Forty-four students participated in the reading comprehension assessment with 79% of the students achieving 70% or higher.

At the end of the semester, students were expected to demonstrate spoken proficiency via videotaped presentations. Workshop 1 students will demonstrate mid-novice speaking proficiency; Workshop 2 students will demonstrate high-novice speaking proficiency. Results: Twenty students in Workshop 1 were videotaped; analysis to be done during 2005.

Assessment results will be/have been used in the following ways:

1. The grammar/structure, writing, and reading proficiency tools will be administered at the end of the semester rather than at the beginning of the following semester so that the department can be assured of a larger sample. This will also ensure that those students participating in the assessment process actually were students at AWC. In addition, teachers can use these tools as a part of their end of the semester evaluation process.
2. The department will remind Writing 1 and Writing 1B instructors to include writing a personal letter as part of their end of the semester assessment activities.
3. The department will analyze the Workshop 1 videotapes using the American Council for the Teaching of Foreign Languages language proficiency levels as benchmarks.
4. The department will begin to align South Yuma County classes more closely to main campus classes through curricula, competencies, texts, and classroom contact time.
5. The department will begin to use the national CELSA exam in 2005 as a placement tool for ESL levels. This exam will also allow the department to pull out statistical data, which was previously inaccessible.
6. The department will investigate expanding writing samples to a portfolio measure.

#### ESL (English as a Second Language) Course Cluster 2 (Levels 3, 4, and 5)

The purpose of this course cluster is to enable non-native speakers of English to achieve self-determined language acquisition goals: degree/certificate completion, employment, employment mobility, and/or personal goals.

Students will demonstrate level appropriate competencies summarized below with results and changes.

1. Competency: listening and reading comprehension and spoken and written use of words and phrases in affirmative and negative statements, questions, and commands in simple and complex phonological, morphological, grammatical, and syntactical contexts. The measurement and success criteria for this competency will be a multiple choice grammar test based on a passage "Women in the United States" from the textbook, Grammar Through Stories. Results: Fifty-four students participated with 38% of them achieving 70% or above (21 out of 54). Sixty-one percent (33 students out of 54) achieved less than 70%.
2. Competency: recognition and comprehension of simple and increasingly complex cultural practices (i.e. holidays, common eating, working, and recreational habits and conditions, gestures) used in the United States and in other areas of the English speaking world. The department did not find an appropriate tool for this competency so this competency was not assessed in 2004.
3. Competency: Use of email and word processing. At the beginning of the semester 100% of level 4 students who passed level 3 at AWC with "C" or better will achieve a score of 70% or higher on an original composition using

appropriate word processing skills and formatting. Result: Fifty-three students participated in this assessment, with 53 (100%) achieving a successful competency.

4. Competency. Appropriate score on CPT-R and CPT-S placement tests for admittance to English and Reading classes for those students pursuing a degree or certificate. An analysis of the CPT-R and CPT-S scores of ESL students who completed ESL levels 3, 4, or 5 within the past two semesters will show 100% of students receiving scores high enough for admittance into (a) ENG and/or (b) RDG classes. Result: of 64 students testing with the CPT-R, 40 students (63%) placed at RDG 93 or above, while 27 students (37%) did not score high enough to take a reading course. Of the 55 students tested with the combined score of CPT-R and CPT-S to place into an ENG class, 30 students (55%) placed at ENG 95 or above.

The faculty will use these results as follows:

1. Review the syllabus competencies for each level, ensuring that faculty are aware of these competencies, and revising a tool to reflect competencies. These competencies were disseminated to all faculty at the January 2005 faculty meeting.
2. The department will continue to encourage students to take Workshop 3 or another lower level computer course if the students are lacking in computer literacy.
3. Analyze data by level and location for more informative results. Maintain an increased emphasis on reading skills and focus on sentence skill practice and vocabulary development in all courses.

Spanish Course Cluster (Spanish General Education Courses: SPA 101, 102, 201, 202)

Completers will demonstrate fourth semester proficiency as specified by the Languages Articulation Task Force of Arizona (2/26/99) in reading, writing, speaking and listening in the Spanish language, and will demonstrate an understanding of norms, values, and beliefs of where Spanish is spoken, in order to fulfill the foreign language requirements necessary for transfer to a four year institution of higher learning, or for personal goals.

Course cluster completers will be able to:

1. Apply critical thinking skills to analyze and evaluate texts which have a clear, underlying internal structure
2. Follow writing process (i.e. organizing, revising, proofreading) in Spanish
3. Demonstrate comprehension and language production in Spanish, including cultural fluency

Assessment tools, criteria for success, results and changes for the above competencies:

1. 100% of students will receive at least 80% on the exit exam in SPA 202, the capstone course. These students will demonstrate fourth semester language proficiency knowledge (per Arizona ATF guidelines) on embedded questions on the exit exam in SPA 202.

2. 100% of students exiting SPA 202 will demonstrate fourth semester writing proficiency (per Arizona ATF guidelines) on a “word processed” paper that provides a clear, specific thesis. The paper will contain fully developed examples to support the thesis in a logical, coherent manner that demonstrates original thinking, depth of analysis, and comprehension. Randomly selected papers will be evaluated by a non-Spanish faculty member.
3. 80% of SPA 201 students will demonstrate third semester writing proficiency (per Arizona ATF guidelines) on a research paper.
4. 80% of students exiting SPA 202 will demonstrate fourth semester proficiency levels per Arizona ATF guidelines through a simulated Oral Proficiency Interview.
5. 100% of SPA 101 students will demonstrate appropriate language proficiency per Arizona ATF guidelines in response to selected questions/situations. Result: 94% (15 of 16 students) demonstrated appropriate proficiency at the end of the Fall 2004 semester in SPA 101.
6. 100% of SPA 102 students will demonstrate appropriate language proficiency per Arizona ATF guidelines in response to selected questions/situations.

The SPA 202 was cancelled due to low enrollment, so no data was available to be gathered and analyzed. The Spanish department decided to focus on SPA 101 and 102 for assessment in the future since student numbers would be present for assessment at those levels.

### Spanish Major

Graduates will demonstrate high-intermediate proficiency (ACTFL standards) in reading, writing, speaking, and listening in the Spanish language, and will demonstrate an understanding of norms, values, and beliefs of where Spanish is spoken that will prepare them for transfer to the university level. Graduates will demonstrate competency in communications, critical thinking, quantitative analysis, and technology applications.

Graduates will be able to:

1. Apply critical thinking skills to analyze and evaluate texts which have a clear, underlying internal structure
2. Follow writing process (i.e. organizing, revising, proofreading) in Spanish
3. Demonstrate comprehension and language production, including cultural fluency
4. Successfully transition to a four year institution

Students will achieve the following competencies:

1. 100% of students exiting SPA 265, the capstone course of the Spanish major, will demonstrate an appropriate knowledge of Hispanic literature per guidelines from the AWC Spanish Department and will demonstrate intermediate-high writing proficiency (per ACTFL standards) on embedded questions within the exit exam in SPA 265. Results: On ten embedded questions, 40% of students (10 of

- 25) demonstrated 100% accuracy on questions. Twenty-four percent demonstrated 90% accuracy.
2. 100% of students will demonstrate intermediate-high writing proficiency (per ACTFL standards) on a “word processed” paper that provides a clear, specific thesis. The paper will contain fully developed examples to support the thesis in a logical, coherent manner that demonstrates original thinking, depth of analysis, and comprehension. Randomly selected papers will be reviewed by a non-Modern Languages faculty member. Results: 18 out of 22 students (82%) demonstrated this level of writing proficiency.
  3. 100% of students will demonstrate intermediate-high language proficiency (per ACTFL standards) and literary understanding through an oral presentation on literary research. Result: 84% of students (21 of 25) demonstrated this level of proficiency in Spanish via oral presentations on literary themes.
  4. 100% of Spanish majors who graduate from AWC and apply to a four year university will be accepted. No data available.

#### Results of Data:

1. Spanish faculty will review embedded questions for applicability and maintain a goal of 100% accuracy.
2. Spanish faculty will obtain extra training on writing proficiency through ACTFL and main a goal of 100% of students demonstrating intermediate-high proficiency level.
3. Spanish faculty will communicate with the office of Institutional Research and Grants to determine if this data is accessible.
4. A Spanish faculty member will undergo training through ACTFL on new writing proficiency assessment techniques.

Report of  
Student Learning Outcomes Assessment  
Calendar Year 2004

The mission of the **Division of Science, Math and Agricultural Sciences** is to provide a learning atmosphere based on solid academic standards, fostered by caring and respect, and inspiring a love for learning throughout life. Effective and innovative techniques will be used to enhance students' knowledge of science, mathematics, and agricultural sciences and to emphasize their relationship to other academic disciplines. We believe science, mathematics, agricultural sciences and the scientific method are an integral part of modern life, and that an understanding of them is essential to the success of every educated person.

By nature of the disciplines found within the Division of Science, Mathematics, and Agricultural Sciences, General Education Student Learning Outcomes are embedded throughout all curriculums. Classroom Assessment Techniques (CATS) are used by faculty in their classes to modify instruction and improve student learning. Positive changes in delivery modalities, teaching strategies, and curricula evolve as a result of faculty discussions and continuous informal means of assessment.

The initial focus for assessment of student learning has been on programs having a sufficient number of majors. Although division faculty have identified explicit competencies and tools for assessment in each discipline, data has not been collected in all program areas due to the small student sample size. As an alternative, the Mathematics Department has opted to assess students by course clusters. Faculty in other areas continue to explore this as a viable option to holistic program assessment.

The following is a summary of student learning outcomes assessments for the 2004 calendar year. Assessment strategies are included for all disciplines even if formal assessment did not occur. Additionally, grids are provided to illustrate examples of specific activities in each academic area supportive of the General Education Student Learning Outcomes at Arizona Western College.

Mathematics  
**Examples of activities in Mathematics  
that support  
General Education Student Learning Outcomes**

|                                |   |
|--------------------------------|---|
| <b>Communication</b>           | Students present mathematical concepts verbally and in writing through formal presentations, projects, written papers, activities, group discussions; students provide written and oral explanations of mathematical problem solving techniques and strategies                                      |
| <b>Critical thinking</b>       | Students use various levels of analysis, including inductive and deductive reasoning, in solving real life application problems; students develop logical and critical thinking skills as they conceptualize number properties and solve problems using appropriate mathematical solving techniques |
| <b>Quantitative analysis</b>   | Students gather and analyze data, extrapolate information from various types of tables/graphs; mathematical modeling  |
| <b>Technology applications</b> | Students use graphing calculators, computer software programs (Microsoft Office, Maple), the Internet (interactive software, course-specific web-sites/tutorials, Shodor, Interactivate), e-mail  |

Assessment

**Developmental Mathematics Cluster**

During fall 2003 and spring 2004 the mathematics department assessed developmental mathematics courses. Courses were assessed to determine whether the students were appropriately prepared for the courses.

To design the assessment tests, faculty were polled to determine which mathematical competencies were deemed necessary for success in both beginning algebra (Mat 082) and intermediate algebra (Mat 122). Faculty suggestions were correlated with course objectives as stated in the college syllabi and then incorporated into a 12-question test. The tool, consisting of 2 demographical and 10 mathematical questions, was administered in all courses on the second day of class. Data was collected and analyzed.

The analysis was conducted in three parts: performance for the two semesters, method of entrance into the course, and the time elapsed since their last math course.

Findings included:

- Similar results with respect to the two semesters,
- Student preparedness is a concern in Math 082,
- Results suggest that signature override for admission into a course is not a viable option,
- Students entering via the placement test are as prepared as those entering via the prerequisite course.

## **CHANGES BEING MADE AS A RESULT OF ASSESSMENT:**

**The mathematics department has ended signature override as an option for student enrollment in a course where the prerequisite has not been satisfied. The 2005 assessment tool will focus on students' exit competencies as they transition from Math 72 to Math 82.**

## **Calculus Cluster**

Gateway exams were administered to all students in Calculus 1, Calculus 2, and Calculus 3. These students were assessed for their ability to:

- demonstrate prerequisite algebraic manipulative skills
- 1. apply the rules of differentiation to a variety of functions.
- 2. apply the rules of integration to a variety of functions.

In Calculus 1, 46 out of 72 (64%) of the students received a score of 80% or higher. In Calculus 2, 16 out of 41 (39%) of the students received a score of 80% or higher. In Calculus 3, 13 out of 30 (43%) of the students received a score of 80% or higher.

## **CHANGES BEING MADE AS A RESULT OF ASSESSMENT:**

**No immediate change will be made in the Calculus curriculum or instructional delivery; however, weekly quizzes will be administered in Calculus 2 and 3 to emphasize key concepts (differentiation in Calculus 2 and integration in Calculus 3). Over the two-year period in which the Calculus sequence has been assessed, improvements in assessment scores have not occurred despite modifications. Because there are high student success rates in the Calculus courses, the department has concluded that there is no correlation between initial assessment and success in the course.**

**The original intent of assessing the Calculus sequence was experimental in nature and has failed to provide a useful measure of student learning. The department feels that this is neither a reasonable tool in measuring student learning nor is it a predictor of student success. Formal assessment of the Calculus cluster will therefore be discontinued in 2005.**

## **Spanish Cluster**

Developmental mathematics coursework in Spanish was piloted during the fall 2003 semester, targeting first and second level ESL students. After collection and analysis, the 2003-04 data was found to be inclusive. The detailed report can be found in Appendix A. Preliminary information compiled in 2003 by the AWC Office of Institutional Research did suggest however a slight improvement in retention and success rates.

## **CHANGES BEING MADE AS A RESULT OF ASSESSMENT:**

A more detailed analysis through the use of additional assessment tools is required for conclusive results. Due to temporary full-time faculty changes, Spanish mathematics courses will not be offered in 2005; consequently, formal assessment will be discontinued.

### **A.A. in Mathematics**

Graduates will demonstrate (1) basic knowledge in mathematics that will prepare them for transfer to the university level and (2) competency in communication, critical thinking, quantitative analysis, and technological applications.

Graduates in Mathematics are assessed on their ability to:

1. apply the concept of the derivative to solve real world problems,
2. apply the concept of the integral to solve real world problems,
3. use appropriate technology to solve real world problems.

To provide evidence of meeting expected outcomes, students will:

1. score 80% or higher on specific application problems involving the derivative, integral, and the use of technology. Problems will be included on the final exam in Introduction to Differential Equations (Math 262).

Out of the 8 math majors, 6 or 75% scored 100% on the assessment tool. Out of the 10 non-math majors, only 5 or 50% scored 80% or above on the assessment tool. When Spring 2003 data are combined with 2004 data, 11 out of 13 math majors (approximately 85%) scored 100% on the assessment tool.

### **CHANGES BEING MADE AS A RESULT OF ASSESSMENT:**

**From the combined data, all 2003 and 2004 mathematics majors possessed the intended student outcomes for the mathematics major; consequently, no remedial action is deemed necessary at this time. Due to the small sample size, formal assessment for the A.A. in Mathematics will not be conducted in 2005.**

*Agricultural Sciences*  
**Examples of activities in Agricultural Sciences  
that support  
General Education Student Learning Outcomes**

|                                |  |
|--------------------------------|--|
| <b>Communication</b>           | Agricultural Science students are required to write weekly lab summaries in all agriculture courses, critique scientific journal articles and develop a written research report as part of their capstone project. Writing is also embedded in their examinations and periodic quizzes. Oral communication skills are developed in peer presentations made in a variety of courses in the program.         |
| <b>Critical thinking</b>       | Critical analysis of student and commercially grown crops for a variety of crop quality and health issues is a key component of the agriculture curriculum. Students also assess and interpret data collected during lab experiments in agriculture classes.   |
| <b>Quantitative analysis</b>   | Students summarize (via graphs and/or tables) and interpret or evaluate data (via reference to others) in a format that utilizes the scientific method.  |
| <b>Technology applications</b> | In addition to utilizing Microsoft Office computer programs on a routine basis, agricultural science students utilize software specific to the agricultural sciences such as those used in GPS and GIS mapping. Students also utilize a variety of technical equipment in the agricultural sciences such as tractors with assisted steering, high-tech seed planters and fertilizer application equipment. |

**Assessment**

**A.S. in Agriculture**

Graduates will demonstrate (1) basic knowledge in agricultural science that will prepare them for transfer to the university and (2) competency in communication, critical thinking, quantitative analysis, and technological applications.

Graduates in Agriculture are assessed on their ability to:

1. apply fundamental agricultural production skills that include laboratory/field techniques, plant-soil-water relationships, and economic factors to analyze and solve problems involving production agriculture,
2. apply the scientific method to collect, analyze, and report scientific data,
3. effectively communicate orally and in writing,
4. critically evaluate crop health conditions and make necessary agricultural recommendations,
5. use computer technology and the Internet to communicate and obtain information related to their professional needs.

To provide evidence of meeting expected outcomes, students will:

- demonstrate 80% or higher competency in each of the 5 areas listed above,
- successfully complete the Arizona Certified Crop Advisor's exam,

- complete an Agriculture Independent Study Course (Capstone, AGR 299) that involves the (1) planting, (2) culture, (3) maintenance, (4) harvesting, and (5) marketing of a vegetable crop,
- complete independent projects with little faculty guidance or input.

During the spring of 2004, all students demonstrated adequate competency in vegetable crop production as all successfully completed the course above the minimum level of competence (80%). Three students attempted and successfully passed the Arizona Certified Crop Advisor's Exam. Three students successfully completed the AGR 299 capstone course. Although independent projects were completed with little faculty guidance, students showed a surprising level of difficulty when expressing their findings orally to the instructor.

### **CHANGES BEING MADE AS A RESULT OF ASSESSMENT:**

**Independent projects will continue to be emphasized to encourage students to work independently; however a new focus for the 2004-05 academic year will be the incorporation of an oral delivery component to their final project as well as more opportunities for oral presentations within the Ag curriculum. No remedial action or instructional change is warranted for 2005 as all expected outcomes for 2004 were met satisfactorily. Due to the limited number of identified student majors and dramatic staffing changes in the Agricultural program, formal assessment in 2005 will not be conducted.**

### **A.A.S. in Agriculture Business Management**

Graduates will demonstrate (1) basic knowledge in agribusiness management that will prepare them to obtain an entry-level position within the field and (2) competency in communication, critical thinking, quantitative analysis, and technological applications.

Graduates in Agriculture Business Management are assessed on their ability to:

1. apply fundamental concepts and theories underlying agribusiness management including agricultural product-price analysis, market risk management, financial management, government policies, and farm and agribusiness operations
2. apply the techniques of crop and livestock management in preparation for sales and agribusiness management positions
3. effectively communicate orally and in writing
4. use computer technology and the Internet to communicate and obtain information related to their professional needs

To provide evidence of meeting expected outcomes, students will:

1. score 80% or higher on an annual scholarship exam that requires a demonstration of their knowledge of theoretical and applied models of farm and market behavior

The number of declared student majors in this program is limited; therefore, it is currently not assessed independently.

### **A. A. S. in Plant Science**

Graduates will demonstrate (1) basic knowledge in plant science that will prepare them to obtain an entry-level position within the field and (2) competency in communication, critical thinking, quantitative analysis, and technological applications.

Graduates in Plant Science are assessed on their ability to:

1. apply fundamental agricultural production skills that include biological variables, plant-soil-water relationships, and economic factors to analyze and solve problems involving production agriculture,
2. effectively communicate orally and in writing,
3. critically evaluate crop health conditions and make necessary agricultural recommendations,
4. use computer technology and the Internet to communicate and obtain information related to their professional needs.

To provide evidence of meeting expected outcomes, students will:

1. complete the Pre and Post Test exams in PLS 100 (Plant Science) and score 80% or higher competency on the Post-exam,
2. complete the assigned team field project embedded within the PLS 100 course, which involves the (1) planting, (2) culture, (3) maintenance, (4) harvesting, and (5) marketing of a vegetable crop. Students will write a summary report and present a final oral version of their findings. Students will demonstrate 80% or higher competency in each of the areas listed above.

During the Fall of 2003 and Spring of 2004, 135 students enrolled in PLS 100.

1. Only 4 students (3%) successfully mastered the Pre-Test exam at the 80% minimum competency, but 126 students (93%) passed the Post-Test exam at the 80% level. It is clear that students are learning the basic scientific principles in the area of plant science.
2. Of the 135 students, 95 (70%) successfully completed the written report at the 80% competence level. Only 64 students (47%) were successful in oral delivery of their field summary. Students seemed rather unprepared at presenting their findings in oral form. The use of computer technology was not a factor, as most seemed confident in the use of the delivery method (PowerPoint).

## CHANGES BEING MADE AS A RESULT OF ASSESSMENT:

No remedial action or instructional change is warranted for 2005 as all expected outcomes for 2004 were met satisfactorily; however, a greater emphasis will be made on oral presentations. Due to the limited number of declared student majors, formal assessment for the A.A.S. in Plant Science will not be conducted in 2005.

### Biological Sciences

#### Examples of activities in the Biological Sciences that support General Education Student Learning Outcomes

| Outcome                 | GE Biology Courses   |
|-------------------------|--|
| Communication           | In biology courses students: <ul style="list-style-type: none"><li>• write essay questions, term papers, scientific reports, and summary reports from Noon Discovery Series seminars</li><li>• give oral presentations</li><li>• communicate within a team to organize, perform, and analyze group lab exercises</li></ul>   |
| Critical thinking       | In biology courses students: <ul style="list-style-type: none"><li>• set up and analyze experiments</li><li>• analyze case studies, such as pathology scenarios</li><li>• classify organisms by characterizing their similarities and differences</li><li>• critically analyze writings from differing viewpoints on controversial social topics, such as, stem cell research or whaling issues</li><li>• address the role, and limits, of scientific knowledge in making ethical decisions</li><li>• address how scientific thinking is continually revised based on new evidence</li></ul>                                       |
| Quantitative analysis   | In biology courses students: <ul style="list-style-type: none"><li>• take accurate measurements</li><li>• tabulate data</li><li>• graph data</li><li>• analyze data using statistical concepts, such as sample size, variation, and significant differences</li><li>• read and analyze information presented graphically</li><li>• perform calculations for lab exercises, such as, chemical or pharmaceutical calculations, genetic analysis, and population studies</li></ul>  |
| Technology applications | In biology courses: <ul style="list-style-type: none"><li>• computer software is used in and out of class, e.g. ADAM software, textbook CDs</li><li>• students use microscopes, microbiology equipment, balances, and other laboratory instrumentation</li><li>• the Internet is accessed in classrooms for immediate research</li><li>• students access assigned online readings</li><li>• students email papers to instructors as attachments</li><li>• students and instructors communicate by email</li><li>• students perform online searches for research papers</li><li>• students give Power Point presentations</li></ul> |

## Assessment

### A.S. in Biology

Graduates will demonstrate (1) basic knowledge in biology that will prepare them for transfer to the university and (2) competency in communication, critical thinking, quantitative analysis, and technological applications.

Graduates in Biology are assessed on their ability to:

1. demonstrate knowledge of cytology and laboratory techniques appropriate to sophomore level majors.

To provide evidence of meeting expected outcomes, students will complete with 70% accuracy:

1. written and/or practical tests that demonstrate knowledge of cytology and microscope use.

Fourteen (14) sophomore level BIO 240 students were assessed. On a 15 question multiple-choice test on cytology, the average score was 76%. On individual questions, scores exceeded 70% on 11 of the 15 questions.

On a written and practical assessment on microscope use, the average was 85%.

Students scored over 70% accuracy on all components of the assessment:

Identify parts of microscope use = 77%

Explain functions of parts = 84%

Demonstrate correct usage = 88%

Demonstrate correct handling/care = 98%

### **CHANGES BEING MADE AS A RESULT OF ASSESSMENT:**

**Although the cytology test results were satisfactory, faculty will further stress the topics of the low scoring questions. Faculty will use a modified version of the microscope practical assessment tool for day to day, in class use to help identify students who are struggling with basic microscopy techniques. A pilot project is being developed for students who miss the regular introductory microscopy laboratory. The 2004 assessment tool will be used for the 2005 assessment to compare results.**

Engineering  
**Examples of activities in Engineering that support  
General Education Student Learning Outcomes**

|                                |  |
|--------------------------------|--|
| <b>Communication</b>           | Development of well-defined reports on explicitly specified assignments and projects.                      |
| <b>Critical thinking</b>       | Developing any rational means of solving assignments and projects to accomplish the specified end results. |
| <b>Quantitative analysis</b>   | Use of algebraic skills to analyze alternative rational solutions to given assignments and problems.       |
| <b>Technology applications</b> | Use of Microsoft Office, Java, Unix to complete given assignments.   |

**Assessment**

**A.S. in Engineering**

Graduates will demonstrate (1) basic knowledge in engineering that will prepare them for transfer to the university and (2) competency in communication, critical thinking, quantitative analysis, and technological applications.

Graduates in Engineering learn how engineers approach and solve problems, increase their awareness of and interest in the types of problems that confront engineers. They are assessed on their ability to:

1. develop and exhibit the behaviors associated with taking personal responsibility for time management, learning new materials, and setting goals
2. demonstrate the fundamentals of organizing and presenting technical work
3. demonstrate the ability to resolve conflicts in groups and teams
4. develop and demonstrate the behaviors of effective problem solvers
5. create purposeful representations of artifacts and processes
6. demonstrate a working knowledge of the role of the customer in defining quality
7. demonstrate the ability to meet and/or exceed customer-defined specifications.

To provide evidence of meeting expected outcomes, students will develop an Engineering Design Notebook containing completed projects, assignments, and reflections with the intended outcomes being:

1. organization: 100% of Engineering Design Notebooks will either meet or exceed expectations specified,
2. projects: 80% or more of completed projects will either meet or exceed expectations specified for the project,

3. other assignments: 80% or more of completed assignments will either meet or exceed expectations specified for the assignments.

Since Engineering courses are offered only during the fall semesters, data is still in the process of being analyzed.

*Environmental Science*  
**Examples of activities in Environmental Science  
that supports the four  
General Education Student Learning Outcomes**

|                                |  |
|--------------------------------|--|
| <b>Communication</b>           | <ul style="list-style-type: none"> <li>• Each student is delivers a short five-minute presentation to the class on an environmental science topic of their choice. The presentation is in a non-lecture format and requires classroom participation.</li> <li>• Four times per semester each student, working as a group, presents some environmental science concept to the group using visual or auditory aids to assist in learning some concept that we have recently learned.</li> <li>• Each of the four tests have at least three essay questions requiring a one-half page answer that requires the student to organize his thoughts and to write in a cogent, concise manner.</li> </ul>  |
| <b>Critical thinking</b>       | <ul style="list-style-type: none"> <li>• We spend one week working on statistical sampling and the concept of random samples and sampling error. Each group of four students then devises a sampling plan to estimate the number of rabbit pellets found in the grass in front of the science building.</li> <li>• Each student is required to develop a marketing plan to encourage recycling of aluminum cans. Competence is demonstrated not in the slick nature of the presentation but in how many cans are collected.</li> <li>• Each student develops a hypothesis and an experimental design testing their hypothesis to explain the phenomenon of E-rays – a real world test of an unexplained scientific problem.</li> </ul>   |
| <b>Quantitative analysis</b>   | <ul style="list-style-type: none"> <li>• We spend one class period working through a worksheet measuring various levels of scale. Students are required to work with large numbers such as millions, billions and trillions as well as small numbers such as millimeters and centimeters. An example activity may be: Go outside and measure out one acre of land. After measuring this acre of land, estimate the number of ants I this acre if there is one ant per square millimeter.</li> <li>• We spend one week working on statistical sampling and the concept of random and sampling error. Each group of four students then devises a sampling plan to estimate the number of rabbit pellets found in the grass in front of the science building.</li> <li>• Students learn how to calculate mean, variance and standard deviation using sample data</li> </ul> |
| <b>Technology applications</b> | <ul style="list-style-type: none"> <li>• Each student learns the principles of how Global Positioning systems (GPS) work and then demonstrate competence by</li> </ul>   |

|  |  |
|--|--|
|  | <p>locating items I have hidden using only GPS coordinates as clues.</p> <ul style="list-style-type: none"> <li>• Students are required to e-mail at least one quiz to me to demonstrate competence in use of e-mail and to demonstrate possession of a valid e-mail address.</li> </ul> |
|--|--|

## Assessment

### **A.S. in Environmental Sciences**

Arizona Western College recognizes the Environmental Science Program as an interdisciplinary program composed of two inter-related disciplines: Biology and Geology. Graduates will demonstrate (1) basic knowledge in environmental sciences that will prepare them for transfer to the university, (2) competency in communication, critical thinking, quantitative analysis, and technological applications, and (3) a Sophomore level of expertise that will enable them to be competitive for undergraduate environmental science internships.

Environmental Science Courses are team taught by four instructors and separated into six different modules. Each module addresses a specific content area. Student outcomes will be based on each of these six different modules. The seventh outcome is activity based.

Graduates in Environmental Science are assessed on their ability to:

1. demonstrate an understanding of quantitative methods of measuring change in natural and altered communities. (ENV 230)
2. demonstrate an understanding of the many levels of biological organization and the hierarchy of ecological classification. (ENV 230)
3. demonstrate an understanding of the interaction of humans with the environment and be capable of discussing population growth and resource use as a logical underpinning of environmental science.
4. instrumentation:
  - a. describe two techniques to measure air quality (ENV 280);
  - b. demonstrate use of a GPS (ENV 230)
5. demonstrate an understanding of groundwater use in the southwest (ENV 280)
6. demonstrate an understanding of the various types of hazardous waste and be able to explain where hazardous and toxic waste is stored and understand issues involving the proper care needed to handle such waste. (ENV 280)
7. visit many ecological systems, observe exotic species, view groundwater usage, and observe hazardous waste repositories.

Students will complete a written/oral evaluation during the latter part of the ENV 230 and ENV 280 courses. To provide evidence of meeting expected outcomes, students will:

1. design a scientifically defensible monitoring plan incorporating random samples, good coverage, good management objectives and good sampling objectives. Using pilot data, they will determine the statistical power of their method.
2. demonstrate competency in the following concepts:
  - \*identify and delineate the various ecological classifications

- \*problems associated with population growth and possible curbs to this growth
  - \*usage of a GPS
  - \*techniques for measuring air quality
  - \*surface and groundwater usage in the Yuma Valley
  - \*describe the various types of waste found in the Yuma Valley and describe proper storage techniques
4. participate in at least two overnight field trips sponsored by the Division of Science, Mathematics, and Agricultural Sciences.

The number of declared student majors in this program is limited; therefore, it is currently not assessed independently.

**Physics and Astronomy**  
**Examples of activities in Physics and Astronomy**  
**that support**  
**General Education Student Learning Outcomes**

| <b>Outcome</b>          | <b>Physics</b>   | <b>Astronomy</b>  |
|-------------------------|--|---|
| Communication           | Students prepare written lab reports explaining their application of physical principles to the analysis of their experimental data.             | Students wrote a research report describing their investigations of the prograde and retrograde motions of the planets.   |
| Critical thinking       | Students conceptualize physical situations and select the fundamental principles needed to analyze motion.                                       | Students observed the motions of the planets to determine the conditions necessary for a planet to be in prograde and retrograde motion.  |
| Quantitative analysis   | Students predicted the landing location for a rocket launched at various angles and compared the actual landing location with their predictions. | Students measured lengths of shadows in craters on the moon and used the incidence sunlight angle to calculate the depth of the craters.  |
| Technology applications | Students collected, tabulated, and graphed data using a computer.  | Students used computer software to track the motion of the Sun, Moon, planets, and stars and record the direction of motion of these objects throughout the year. Students used Photoshop to enhance the contrast of digital images and measure surface features on planets and the moon. |

## Assessment

### A.S. in Physics

Graduates will demonstrate (1) basic knowledge in physics that will prepare them for transfer to the university and (2) competency in communication, critical thinking, quantitative analysis, and technological applications.

Graduates in Physics will be assessed on their ability to:

- 1). demonstrate critical thinking by applying physical principles
- 2). solve quantitative physics problems.

To provide evidence of meeting expected outcomes, students will:

- 1). score at least 70% on embedded final exam questions requiring the application of physical principles
- 2). demonstrate mastery on at least 80% of the physics problem sets

Data was gathered for students taking the Physics 222 final exam in the Spring 2004 semester. 69.2% (9/13) of students scored at least 70% on embedded final exam questions requiring the application of physical problems; 69.2% (9/13) of students demonstrated mastery on a least 80% of the 29 problems on the physics problem sets.

### **CHANGES BEING MADE AS A RESULT OF ASSESSMENT:**

**Physics majors successfully demonstrated the required competency levels as defined; consequently, no remedial action is deemed necessary at this time. Due to the small sample size, formal assessment for the A.S. in Physics will not be conducted in 2005**

### Geological Sciences

### **Examples of activities in Geological Sciences that support General Education Student Learning Outcomes**

|                          |   |
|--------------------------|---|
| <b>Communication</b>     | Students write 2-4 page field reports, test essays, and short answer response on tests. Additionally, several courses require short research papers and take home quizzes that emphasize reading, assimilation, and summarizing material. |
| <b>Critical thinking</b> | Faculty pose questions or hypotheses and ask students to provide conjecture regarding geologic processes operating through time and space.  |

|                                |   |
|--------------------------------|---|
| <b>Quantitative analysis</b>   | Emphasis is placed on reading and interpreting Cartesian graphs. In some labs students are required to understand the use of ratios. In seismic labs students play some simple games with seismic velocities to graphically display distance between an earthquake epicenter and a receiving seismic station. |
| <b>Technology applications</b> | Students work with GPS/GIS equipment, seismometers, web sites, and various computer software applications.  |

### Assessment

#### **A.S. in Geology**

Graduates will demonstrate (1) basic knowledge in geology that will prepare them for transfer to the university and (2) competency in communication, critical thinking, quantitative analysis, and technological applications.

Graduates in Geology will be assessed on their ability to:

1. demonstrate an understanding of basic geologic principles and their impact on Earth systems.
2. demonstrate lab or field-based skills in areas of: Artography (map reading, map parameters, map interpretation, and recognizing basic geomorphic features.)
3. demonstrate ability to summarize scientific lab or field observations in written reports.
4. demonstrate familiarity with GPS technology and its application to solving field-based geologic problems.
5. apply, in a rudimentary manner, math and physics principles to solving field-based geologic problems.

To provide evidence of meeting expected outcomes, students will (with a minimum of 70% accuracy):

1. make written and oral reports, along with sketches and data compilation sheets, from field-based exercises.
2. solve geologic problems in the field by assimilating, synthesizing, and applying fundamental geologic/scientific principles.

The number of declared student majors in this program is limited; therefore, it is currently not assessed independently.

**Chemistry**  
**Examples of activities in General Chemistry**  
**that support**  
**General Education Student Learning Outcomes**

|                      |   |
|----------------------|---|
| <b>Communication</b> | During the spectroscopy pre- and post-lab spectroscopy activities, students write brief explanations for readily and commonly observed natural phenomena involving the interaction of light and matter, e.g. why is a red food coloring solution red? |
|----------------------|---|

|                                |   |
|--------------------------------|---|
| <b>Critical thinking</b>       | Students predict absorption and transmittance curves for red, blue, and yellow solutions and speculate the origin of the green solution in <i>Durkee Food Colors</i> product even though there is no green dye listed as an ingredient. |
| <b>Quantitative analysis</b>   | Students determine the photochemical stability of various dyes and determine graphically the order of reaction of photo oxidation.  |
| <b>Technology applications</b> | Students carry out a series of spectroscopy experiments using the two high-end, computer controlled scanning ultraviolet-visible spectrophotometers.  |

### Assessment

#### A.S. in Chemistry

Graduates will demonstrate (1) basic knowledge in chemistry that will prepare them for transfer to the university and (2) competency in communication, critical thinking, quantitative analysis, and technological applications.

Graduates in Chemistry are assessed on their ability to:

1. perform chemical analysis using traditional and modern instrumental methods/techniques, especially related to spectroscopic principles
2. solve mathematical chemistry problems and graph data.

To provide evidence of meeting expected outcomes CHM 154 students will complete, with a minimum of 70% accuracy:

1. an exam devoted exclusively to spectroscopic principles-both conceptually and mathematically- and instrumental methods
2. a series of pre- and post-spectroscopy activities in lab, which will be used to monitor a student's grasp of spectroscopy

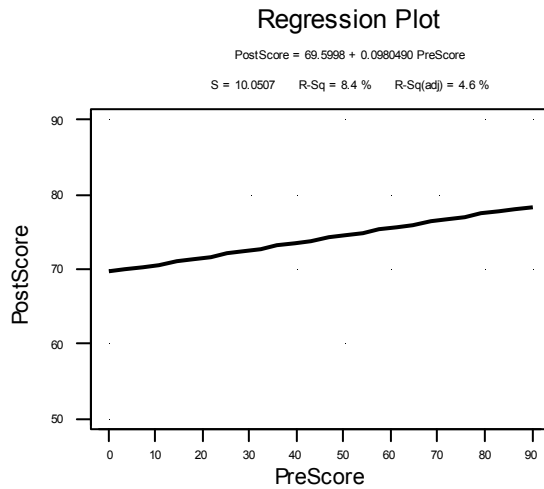
Data analysis from the Spring 2004 class indicates that greater than 70% of CHM 154 students scored 70% or higher on the comprehensive spectroscopy exam. Analysis of the pre-and pot-spectroscopy lab activities also indicates that CHM 154 students gained a better understanding of spectroscopic principles and the interaction of matter and energy. Third, student surveys indicate that students found the spectroscopy labs a positive learning experience and intellectually challenging.

CHANGES BEING MADE AS A RESULT OF ASSESSMENT

**Chemistry majors/CHM 154 students successfully demonstrated the required competency levels as defined; consequently, no remedial action is deemed necessary at this time. Due to the small sample size, formal assessment for the A.S. in Chemistry will not be conducted in 2005**

## Appendix A

### Results for: Math 082 Spanish



### Regression Analysis: PostScore versus PreScore

The regression equation is  
PostScore = 69.6 + 0.0980 PreScore

| Predictor | Coef    | SE Coef | T     | P     |
|-----------|---------|---------|-------|-------|
| Constant  | 69.600  | 3.917   | 17.77 | 0.000 |
| PreScore  | 0.09805 | 0.06618 | 1.48  | 0.151 |

S = 10.05      R-Sq = 8.4%      R-Sq(adj) = 4.6%

#### Analysis of Variance

| Source         | DF | SS     | MS    | F    | P     |
|----------------|----|--------|-------|------|-------|
| Regression     | 1  | 221.7  | 221.7 | 2.20 | 0.151 |
| Residual Error | 24 | 2424.4 | 101.0 |      |       |
| Total          | 25 | 2646.2 |       |      |       |

#### Unusual Observations

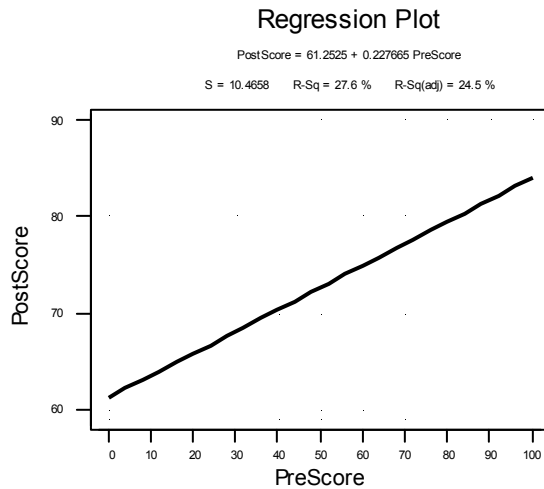
| Obs | PreScore | PostScore | Fit   | SE Fit | Residual | St Resid |
|-----|----------|-----------|-------|--------|----------|----------|
| 5   | 0.0      | 90.00     | 69.60 | 3.92   | 20.40    | 2.20R    |
| 26  | 0.0      | 50.00     | 69.60 | 3.92   | -19.60   | -2.12R   |

R denotes an observation with a large standardized residual

The regression analysis produced the following equation that describes the linear relationship:  $\text{PostScore} = 69.6 + 0.0980 \cdot \text{PreScore}$ . The regression analysis and ANOVA show a positive linear association, with data scattered throughout. Since  $p = 0.151 > 0.05$ , we fail to reject the null hypothesis that there is no significant relationship between the scores. Also, since our value of R-Sq is 8.4, very little of the variation in the initial scores is accounted for by the relationship. Thus, the scatterplot shows very little trend.

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## Results for: Math 122 Spanish



### Regression Analysis: PostScore versus PreScore

The regression equation is  
PostScore = 61.3 + 0.228 PreScore

| Predictor | Coef    | SE Coef | T     | P     |
|-----------|---------|---------|-------|-------|
| Constant  | 61.252  | 4.485   | 13.66 | 0.000 |
| PreScore  | 0.22767 | 0.07687 | 2.96  | 0.007 |

S = 10.47      R-Sq = 27.6%      R-Sq(adj) = 24.5%

#### Analysis of Variance

| Source         | DF | SS     | MS    | F    | P     |
|----------------|----|--------|-------|------|-------|
| Regression     | 1  | 960.7  | 960.7 | 8.77 | 0.007 |
| Residual Error | 23 | 2519.3 | 109.5 |      |       |
| Total          | 24 | 3480.0 |       |      |       |

The regression analysis produced the following equation that describes the linear relationship:  $\text{PostScore} = 61.3 + 0.228 \cdot \text{PreScore}$ . The regression analysis and ANOVA show a positive linear association, with data scattered throughout. Since  $p = 0.007 < 0.05$ , we reject the null hypothesis that there is no significant relationship between the scores. Also, since our value of R-Sq is 27.6, less than one-third of the variation in the initial scores is accounted for by the relationship. Thus, the scatterplot shows very little trend.

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**SCIENCE, MATH, AND AGRICULTURAL SCIENCES FULL-TIME FACULTY AND STAFF**

|   |   |
|---|---|
| Cynthia Broughton, Division Chair –<br>Professor of Mathematics                         | Paul Koblas, Professor of<br>Physics/Astronomy                      |
| David Baughman, Professor of<br>Mathematics   | Allyn Leon, Professor of Math (1 year<br>temporary)                 |
| Karen Bedard, Senior Secretary, Math,<br>Science, and Agricultural Sciences<br>Division | Renee Macaluso, Professor of<br>Mathematics                         |
| Roy Cavanaugh, Professor of<br>Mathematics  | Quincy Magby, Professor. of<br>Mathematics                          |
| Michael Conway, Professor of<br>Geology/Chemistry                                       | Marie McGee, Professor of Biology                                   |
| Fred Croxen, Professor of Geology   | George Montopoli, Professor of<br>Mathematics                       |
| Scott Donnelly, Professor of Chemistry  | Kurt Nolte, Professor of Agricultural<br>Sciences                   |
| Lauryn Geritz, Professor of<br>Math (1 year temporary)                                  | Rakesh Pangasa, Professor of<br>Mathematics                         |
| Charles Godfrey, Professor of<br>Mathematics  | Daniel Russow, Professor of<br>Mathematics                          |
| Zoe Hawk, Professor of Biology  | Cecilia Vigil, Professor of Biology (1<br>year temporary)           |
| Brian Karasek, Professor of Mathematics   | Tim Whittier, Professor of Biology                                  |
| John King, Professor of Biology   | Ian Watkinson, Professor of<br>Biology/Chemistry (1 year temporary) |

**SCIENCE, MATH, AND AGRICULTURAL SCIENCES ASSOCIATE FACULTY**

|                              |  |
|------------------------------|--|
| Lee Gibbs, Math              | Wayne Johnson, Geology<br>(Oceanography) |
| Laurence Anderson, Math      | John Hess, Math                          |
| Jesus Arrizon, Math          | Richard Jennings, Chemistry              |
| Conrad Ballweg, Math         | Joseph LeVeque, Biology                  |
| Felicity Knight, Math        | Frank Macaluso, Math                     |
| Anthony Bottone, Math        | Dick Mitchell, Math                      |
| Eric Weick, Math             | Erin Isis, Math                          |
| Earl Burnett, Geology        | Robert Predmore, Geology                 |
| David Vidro, Math            | Jimmy Pruitt, Math                       |
| Alice McAfee, Math/Chemistry | Carlos Sanchez, Math                     |
| David Sisson, Math           | Teresa Shaffer, Biology/Geology          |
| John Wharton, Geology        | Sam Shearrow, Math                       |
| Tina DeLeon, Biology         | David Sussman, Biology                   |
| Jessica Mathios, Biology     | Light Bryant, Astronomy/Math             |
| Santos Moran, Math           | Tim Vlasak, Physics                      |
| Maureen Garrett, Geology     | Judy Watson, Chemistry                   |
| Ted Martinez                 | Clark Webb, Agriculture                  |
|                              |  |

## **Report on Assessment Activity for the calendar year 2004**

The **Social Sciences and Fine Arts** Division offers programs that are organized under three faculty groups: Public Safety Institute, Social Sciences (including philosophy and Administration of Justice), and Fine Arts (including computer graphics and photo). The division devoted the past two years to educate faculty about assessment: what it is and what it wasn't. The faculty originally had the preconceived idea that assessment was their individual grading and it would somehow reflect upon them and their performance as an instructor. While we have a long way to go, the division seems to understand that assessment is basically "are we doing what we say we are doing when it comes to degrees and certificates." Besides the formal grids that the division has created for each degree or certificate, this report also includes changes and innovations the division is doing to increase student-learning outcome. Using bullets has highlighted this information.

### **A.A. in Administration of Justice**

**Graduates will demonstrate: (1) basic knowledge in administrative of justice studies that will prepare them to transfer to the university and (2) competency in communication, critical thinking, quantitative analysis, and technological applications.**

Graduates will use and understand Criminal Justice terminology and be able to define the organization of the Criminal Justice system.

- Graduates will define the organization of the Criminal Justice System. Graduates will effectively communicate orally, and will effectively communicate in writing.

Students will receive at least a 70% on an exit exam addressing criminal justice terminology and the organization of the Criminal Justice System.

- Students will receive at least a 70% on an exit exam. Students will provide an oral presentation to the class, and will present a "word processed" paper that provides a clear, specific thesis. The paper shall contain fully developed examples to support the thesis in a logical, coherent manner.

71 % of graduates scored a 70% or higher. Graduates did not do as well on terminology as they did on organization. There was no distinction made between the AA and the AAS degree.

- Fourteen randomly selected graduating seniors took the exit exam. The results of this one semester practicum were as followed:

- 10 of 14 85% or higher. Grades were from 50 to 100%. Future exit exams must be coordinated by Test Center and including as many graduating seniors as possible. Every AJS major submitted at least one (1) or more computer-generated reports in each AJS course. AJS instructors to increase the use of legal glossary in AJS courses.

Instructors will emphasize criminal justice terminology in classes to improve students' scores. The instructors plan to meet regularly to discuss the best way to approach the above.

- SPC 115 has been added as a requirement to the degree to help students in oral communication skills
- AJS classes are be offered on ITN, Web based, Saturdays and evenings to accommodate student schedules
- Developing a pre-test and a post test to assess basic knowledge in criminal justice
- All AJS classes have a web component to them and legal briefs in each class must include internet research
- "Hands on Forensics" classes are mandatory beginning Spring 2004
- Interactive video tapes for Arizona State Law are being test piloted in the classroom

### **A.A. in History**

Graduates will demonstrate: (1) basic knowledge in history that will prepare them for transfer to the university and (2) competency in communication, critical thinking, quantitative analysis, and technological applications.

Graduates will be able to define historical vocabulary and be able to define major historical concepts.

Students will receive at least a 70% on an exit exam.

Students received a 65% on the exit exam on the historical vocabulary and 63% on the exit exam on the major historical concepts section of the exam.

Include a portion/selection of the historical vocabulary on all exams. This will build a stronger knowledge base for exit exam. Include a selection of the major historical concepts on all exams. This will build a stronger knowledge base for exit exams.

- Western Civilization has been condensed from 3 courses to 2 courses to encourage more students to take the classes
- GEO 105, Geography, has been added to the degree
- History of Mexico and Arizona History has been made GE courses to encourage multi-cultural awareness in learning outcomes.
- US History is now Web based to adapt to student needs.

## A.A. in Music

Graduates will demonstrate: (1) basic knowledge in music that will prepare them for transfer to the university and (2) competency in communication, critical thinking, quantitative analysis, and technological applications.

Graduates will understand and be able to apply the concepts of music theory. Will be able to hear, write and apply the concepts or ear training. Graduate will reach a minimum level of proficiency on the piano, reach a minimum level of proficiency on their chosen instrument and perform in a variety of instrumental and/or vocal ensembles.

Students will demonstrate an understanding of music theory through examination, quizzes and writing assignments at 70% or better. They will also demonstrate an understanding of ear training through oral, aural and written examinations, quizzes and assignments at 70% or better. Students will demonstrate a minimum level of piano proficiency by performance in class and in recital. Students will demonstrate a minimum level of proficiency on their chosen instruments in weekly lessons and through recitals and juries.

All graduates of the music program achieved 70% or better in the following areas and were prepared for transfer to 4-year colleges or university. Each showed competency in communication, critical thinking, quantitative analysis, and technological applications.

1. Theory
2. Dictation & Sight Singing

All graduates in class piano demonstrated a minimum level of proficiency. All graduates of private lessons achieved a minimum level of proficiency on their instrument.

- 41% of entering freshman music majors from Fall 2003 have continued into Fall 2004. We have found that this is due to multiple factors including the lack of preparation in high school, not realizing the rigors of the pursuit of major in music and life situations outside of school. Of those that continued 100% attained a 70% or better on all written examinations, quizzes and assignments. 100% of continuing Music Majors demonstrated the required level of piano proficiency. 100% of continuing Music Majors taking private lessons demonstrated the minimum proficiency or better on their chosen instrument.

These results show us that students that continue and finish the program achieve the goals and competency needed to continue as music majors at the university level. The results indicate that we need to assess the first year students with the purpose of increasing the number of students completing the program. We have at least 12 students that have completed the AWC music program and are now teaching in Yuma from the past 6 to 7 years. We still have another 12 that have completed the program and are teaching elsewhere or continuing in the Bachelor and Master programs.

Through the assessment we are looking at ways to increase these numbers. The department is also looking into hiring a fulltime piano instructor.

- Continue to offer the Summer Fundamentals of Music course and require entering scholarship students that demonstrate a deficiency in theory and ear training skills, on the placement exam, to take the course before entering the first year series of courses. Be more informative of the demands of being a music major while recruiting new students. Discuss the possibility of having the high schools offer some sort of fundamentals course for those that are thinking of majoring in music. Spend more time on intervals and chord identification, add familiar melodies with solfeg syllables. Rely less on CD Rom and use quizzes earlier for real time assessment. Divide music major piano classes into two separate courses to allow the second year student to improve faster and have more teacher involvement. Work more on developing technical skills. Raise expectations for majors in private lessons with a focus on developing higher technical skills, preparing more of the standard repertoire for each discipline, having students work with the accompanist as early as possible and placing students in a performance situation as soon as possible.
- Temporary full-time piano instructor
- Technology classroom with computerized keyboards mini-lab for class piano and composition
- Web based classes
- Youth Choir and Orchestra Workshop
- Additional associate faculty hired
- Created specific tools for performance evaluation

### **A.A. in Philosophy**

Graduates will demonstrate (1) basic knowledge in philosophy that will prepare them for transfer to the university and (2) competency in communication, critical thinking, quantitative analysis, and technological applications.

Graduates will be able to define philosophical vocabulary and will be able to define the major historical issues in philosophy.

Students will receive at least a 70% on an exit exam.

Students will receive at least a 70% on an exit exam.

- On a test (7 questions) given throughout the department to 210 random students taking philosophy:
  - 65 scored 100%
  - 41 scored 86%
  - 25 scored 71%
  - 21 scored 57%
  - 19 scored 43%

- 15 scored 29%
  - 11 scored 14%
  - 13 scored 0%
- On a test (4 questions) given throughout the department to 210 random students taking philosophy:
    - 44 scored 100%
    - 65 scored 75%
    - 53 scored 50%
    - 37 scored 25%
    - 11 scored 0%
2. On a test (7 questions) given throughout the Department to 127 random students taking philosophy:
- 8 scored 100%
  - 1 scored 86%
  - 35 scored 71%
  - 35 scored 57%
  - 19 scored 43%
  - 19 scored 29%
  - 7 scored 14%
  - 3 scored 0%

2. On a test (4 questions) given throughout the Department to 127 random students taking philosophy:
- 32 scored 100%
  - 0 scored 75%
  - 48 scored 50%
  - 38 scored 25%
  - 9 scored 0%

We will continue to reinforce vocabulary and historical issues to achieve a 70% success rate.

- Common Areas:
  - Words/vocabulary words, reading list, create a common vocabulary list and create a common reading list.
- Looking at ways to incorporate basic skills from ENG 101 into a writing component for all philosophy classes

### **A.A. in Political Science**

Graduates will demonstrate (1) basic knowledge in political science that will prepare them for transfer to the university and (2) competency in communication, critical thinking, quantitative analysis, and technological applications.

Graduates will use and understand Political Science terminology, and understand global issues and follow current events and crisis.

Students will receive at least a 70% on an exit exam.

- Students received 75% on the exit exam, which addressed competencies in Political Science terminology. They also received 70% on global issues and current events.

12 questions related to the Political Science discipline were given to students enrolled in POS 100, 110 & 130 – results below

15 received 100%  
1 received 92%  
7 received 83%  
1 received 75%  
5 received 67%  
4 received 58%  
1 received 42%  
1 received 17%

The results will be used to identify issues for future learning that could include terminology, global issues and analyzing current events.

- More emphases will be placed on students being actively involved in current events to raise their awareness of global issues. This will include more emphases on daily news events and international crises.
- Web based classes have been added to the schedule
- Evening classes are offered in town
- Comparative World Politics class has been created because of student requests

### **A.A. in Psychology/Sociology**

Graduates will demonstrate expertise in psychology that will prepare them for transfer to the university level and will demonstrate competency in communication, critical thinking, quantitative analysis, and technology applications

Students wishing to obtain the psychology/sociology degree need to demonstrate competencies in **Research Methodology** and in **Historical Perspectives** as a basic component of both their psychology and sociology classes

- A Student enrolling in psychology and sociology courses will be able to read and understand their textbook, online information instructions, research articles, and reference resource. They will also demonstrate technological proficiency with computer and online materials. Upper level students will be involved in outcomes assessment on a regular basis.

**Research Methods:** Hypothesis formation is a basic step in research methodology. Students will be asked to develop research hypothesis in their upper level classes. They will be assessed either as a homework assignment or as a laboratory assignment in PSY 290 Research Methods, PSY/SOC 170 Human Sexuality, and PSY/SOC 270 Social Psychology for this semester. Hypothesis statements will be graded pass/fail based upon feasibility of testing the hypothesis and demonstration of understanding of what a hypothesis statement is. Criterion for success: a minimum of 80% passes.

- We are gathering scores on the Degrees of Reading Test for Intro to Psychology students to determine if test scores are related to and can account for academic success on quizzes and homework assignment. Also for completion/none completion of the course. Critics for success – a C or better in introduction to Psychology. Mrs. Baas PSY 101, 227, 290 students must log in to blackboard and change their email address, then email a message to the instructor. Students take their exams on blackboard. Criterion for success = completion of task.
- Professor Vielbig's classes use email. Students use the Internet and library research resources for homework assignments criterion for success = completion of task. We are currently collecting reading scores for Introduction to Psychology 101 classes including ITN Satellite sites. For Psychology 290 classes, students' data is inputted into Minitab and is analyzing the relationship between the reading score and the quiz totals, homework totals, course completions, and final grade using a variety of Correlation Coefficients, tests, and regression analysis.

### **Research Methods:**

Hypothesis writing assignments were given in Social Psychology and Research Methods classes. The assignment was graded as pass-fail. All students eventually passed the assignment with many in Research Methods needing several tries. The main difficulty for students was in clarifying their ideas and in making them more specific. PSY/SOC 170 Human Sexuality was harder to assess due to the large rate of drop out. Of those who remained in the course and who turned in their research paper, 100% had created correctly formulated hypothesis statements.

**Historical Perspectives:** A solid grounding in the history of psychology and sociology is very important as it provides a framework for future learning. Students will be tested on their knowledge of basic historical figures and/or terms and perspectives in Introduction to Psychology PSY 101 and Introduction to Sociology Soc 101 classes this semester. (Historical perspectives appear as part of the syllabi in each course in the degree but we will bring our assessment at the beginning and proceed from there!) Criterion for success: a minimum grade of 70% on the historical perspectives exam/assignment.

### **Historical Perspectives:**

Students achieved an average of 79.3% on the test (36 students averaging 34.1 out of 43 possible points).

- There was no relationship between degrees of reading scores and outcome in Introduction to Psychology. NCA site visitors reported similar finding at their institutions. All PSY/SOC majors must use technology for our classes. They must use email, library search engines, and word processing programs. In addition, all Psychology Majors must take exams using blackboard. Students input, analyzed data, and generated a report. They presented their findings to the NCA site visitors during an hour-long question and answer period.

### **Outcomes:**

We will continue to practice creating hypothesis statements in Research Methods and Social Psychology. Assignments will be given in a stepwise fashion of tries-until-success. Once the student has succeeded then they will use their hypothesis statement either as the basis for a research paper or as part of a laboratory assignment.

Human Sexuality class will have a change in the formulation of the research paper, as many of these students do not appear to have the necessary preliminary skills (there are no pre-requisites for the course) to successfully complete the task (which begins with hypothesis formation).

- We recommend that AWC not change the degree of reading score requirements for general education classes. We recommend that AWC creates a new department that funnels developmental and ESL students through developmental classes up until the completion of English 101 before they take general education or college level classes. We will continue to require the use of technology in our classes. Every effort will be made to find similar projects for PSY 290 students to complete each semester. They gain real world research experience, plus they can add data input and data processing to their resumes making them stronger candidates for undergraduate and graduate research programs.

### **Historical Perspectives:**

We will continue to teach this curriculum in the current manner while attempting to determine if format (live in class, ITN, or cable) affects the exam scores.

- Cultural Diversity components have been added to the curriculum
- Abnormal Psychology is now offered
- Web based, Telecourses, and ITN are regularly scheduled classes
- There is a Psychology newsletter now to inform students about the field

### **A.A. in Studio Art**

Graduates will demonstrate: (1) basic knowledge in studio art that will prepare them for transfer to the university and (2) competency in communication, critical thinking, quantitative analysis, and technological applications.

Graduates will use portfolio-building skills, demonstrate analytical skills and knowledge of media, and they will acquire technical skills.

**Evidence of attainment will include a portfolio review through a body of submitted artwork receiving a score of 70% or better, critique and demonstration of analytical and conceptual skills through the verbal appraisal of works of art receiving a 70% or better and a student exhibition: a body of work is assessed for its originality, consistency of theme and technical level with a 70% or better.**

During Spring semester, of 103 students enrolled in studio art classes, 87 completed coursework with a C or better. This indicates a department success rate of 84.46%.

- During FY 2003/4, of 287 students completing studio art classes \*numbered 100 and above, 264 completed coursework with a C or better. This indicates a department success rate of 91.99%. Withdrawals are not included in the calculation.
- Monitoring the data helps to ensure our department success on a yearly bases

Continue to ensure student success.

- Student Art gallery regularly shows student work
- There is also a on-line gallery integrating art and technology

### **A.A. in Theatre**

Program Purpose: Graduates will demonstrate (1) basic knowledge in theatre that will prepare them for transfer to the university and (2) competency in communication, critical thinking, quantitative analysis, and technological applications.

Graduates will understand theatre terms, concepts and etiquette, be able to develop a character for performance, and be knowledgeable and experienced in the duties and obligations of the performer/technician to the audience/director and cast and crew, or classmates.

- Competency in communication, critical thinking, quantitative analysis, and technological applications. Be prepared to perform artistic or technical duties in venues outside of AWCTheatre.

Students will exhibit knowledge through practical application and will receive at least 70% on an exit survey, will demonstrate this skill through practical application during class exercises, auditions, scene work, and on-stage performance, and will receive at least 70% on an exit survey, and will demonstrate this knowledge through practical application during class exercises, stage performance, and book reports, and will receive at least 70% on an exit survey.

- Graduates will complete an exit survey, which covers the material in item 1 in column 1. Graduates will answer at least seven of the ten survey questions correctly. Students will present a portion of a group assignment (which covers the material in item 2 of column 1) in class and must use email and attachments to turn in homework, papers, and other assignments. They will also demonstrate this skill through practical application during class exercises, auditions, scene

work, and on-stage performance. During each production AWCTheatre audience members will be asked to complete an exit survey, which covers the material in items 2 and 3 of column 2. A sliding scale from 1 to 5 is used to determine the level of success (1=lowest-5=highest). Seven of the ten survey questions must receive responses of 3 or higher. Students will demonstrate this ability in venues outside of AWCTheatre

At the end of the 2002/ 2003 school year, AWC Theatre students completed an Exit Survey Exam. Of the 116 students who took the exam:

**34 or 35%** earned at least a **90%**.

**44 or 45%** earned at least an **80%**.

**19 or 20%** earned at least a **70%**.

**82\*** AWCTheatre students appeared on stage, **20\*** AWCTheatre people appeared in TV commercials during the 2002/2003 school year.

**108\* AWC Theatre** students worked in technical theatre positions during the 2002/2003 school year.

**\* These numbers reflect a person being counted more than once for multiple productions and events.**

- At the end of the 2003/2004 school years, AWCTheatre Graduates completed an Exit Survey Exam, which covered the material in item 1 in column 1. 100% of the Graduates answered at least 7 of 10 survey questions correctly. 100% of students have accomplished this task. Partial data collection collate. The process is ongoing. 100% of AWCTheatre performing and/or technical students demonstrated their ability in venues outside of AWCTheatre.

Will continue to track the graduate's progress. We are adding Technical Theatre Components (THE 215 Basic Stage Lighting and THE 130 Stagecraft) to the Degree, and will track the student's progress through that curriculum.

- The Exit Survey will be adjusted and given each year to ascertain the program's effectiveness. The particulars of the assignments will change, but the practical use of technology and group experience will continue and grow. The practical application of the students training continues to receive high praise from audience and colleagues. The surveys will be adjusted and given at each production to continue to ascertain the programs' effectiveness. This aspects of the program continues to provide great benefit to both the students and community. We will endeavor to expand the community involvement of AWCTheatre students.
- We are continuing the relationships with the broadcasting media to continue offering these opportunities to our students.
- Producing a joint theatre venture with the St. Paul's Cultural Center in Yuma.
- Students are actively involved in local commercial and TV productions

- Classes in THE actually perform in front of civic groups as a component of the class.
- Theater was remolded to enhance student learning and productions

### **A.A. S. in Administration of Justice**

Graduates will demonstrate: (1) basic knowledge in Administration of Justice Studies that will prepare them to obtain an entry-level position within the field of law enforcement, juvenile justice, or corrections and (2) competency in communication, critical thinking, quantitative analysis, and technological applications.

Graduates will use and understand Criminal Justice terminology and be able to define the organization of the Criminal Justice system.

- Graduates will effectively communicate in writing.

Students will receive at least a 70% on an exit exam addressing criminal justice terminology and the organization of the Criminal Justice System.

- Students will present a “word processed” paper that provides a clear, specific thesis. The paper shall contain fully developed examples to support the thesis in a logical, coherent manner.

71 % of graduates scored a 70% or higher. Graduates did not do as well on terminology as they did on organization. There was no distinction made between the AA or the AAS degree.

- Graduating seniors will take an exit exam during their last semester before graduating. The exam will cover Criminal Justice Terminology and Organization. All students will submit several computer generated essays, case briefs and term papers to complete the requirements of each AJS class.

Instructors will emphasize criminal justice terminology in classes to improve students’ scores. The instructors plan to meet regularly to discuss the best way to approach the above

- Fourteen randomly selected graduating seniors took the exit exam. The results of this one semester practicum were as follows:
  - 10 of 14 85% or higher. Grades from 50 to 100%. Future exit exams will be coordinated at the Testing Center and including as many graduating seniors as possible. Every AJS major submitted at least one (1) or more computer – generated reports in each AJS course. AJS instructors to increase use of legal glossary in AJS courses.
- SPC 115 has been added as a requirement to the degree to help students in oral communication skills

- AJS classes are be offered on ITN, Web based, Saturdays and evenings to accommodate student schedules
- Developing a pre-test and a post test to assess basic knowledge in criminal justice
- All AJS classes have a web component to them and legal briefs in each class must include internet research
- “Hands on Forensics” classes are mandatory beginning Spring 2004
- Interactive video tapes for Arizona State Law are being test piloted in the classroom

### **A.A.S. in Computer Graphics**

Program Purpose: Graduates will demonstrate: (1) basic knowledge in computer graphics that will prepare them to obtain an entry-level position within the field of computer graphics, printing, and digital imaging and (2) competency in communication, critical thinking, quantitative analysis, and technological applications.

Graduates will perform entry-level operations using a variety of graphic and multimedia related programs and is conversant in aesthetics of design with an emphasis on creative and practical concerns and an awareness of media forms and content. Graduates will effectively communicate with clients, designers, graphic artist, and production teams, assess their needs and resources based on practical production methods.

Graduates will present a professional design portfolio electronically, as in World Wide Web and CD-ROM delivery as well as in a traditional format that receives a 70% or better. Graduates will receive a 70% or better on an exit exam testing their skills as compared to entry-level employment skills. The exit exam questions will be created from feedback from an industry survey.

Seven of seven students have successfully completed the portfolio requirement in GRA 206 with 70% or better. Did not give exit exam as the program is being better developed and making community/industry relationships that will help create the exit exam.

- Review of exit exams found weaknesses in production technologies.

Continuing Graphics program with emphasis on applicable graphics skills in the workplace. Creating exit exam to be given in Spring 2004 based on graphics industry feedback and needs for entry-level workforce.

- Students will continue preparing professional portfolios with emphasis on job skills with resume and cover letter writing. GRA program will incorporate more core concepts in all of the Graphics Program courses. In collaboration with the Print Shop, weaknesses in production areas will be addressed by students creating and being part of the reproduction process. Each instructor will refer to

the same design rules and production references. Program is developing better industry relationship to ensure entry-level skills are being addressed.

### **A.A.S. in Emergency Medical Services – Paramedic**

AWC Paramedic graduates will demonstrate (1) expertise as beginning paramedics with enhanced promotion capability and (2) competency in communication, critical thinking, quantitative analysis, and technological applications.

Students will pass the required state and national exam series demonstrating the requisite written and practical skills. Students will secure employment as paramedics.

Students will pass the NREMT Advanced Level written and practical exam series. 80% of those seeking jobs as paramedics will be successful within 6 months.

The Paramedic Academy is a two-year program that begins 10 November 2003 and will finish 20 May 2005.

- No graduates at this time. Two year program graduates in May 2005

DNA

### **A.A.S.in Fire Science**

Graduates will demonstrate expertise in fire science at a level that prepares them for an entry-level position in fire science technology. Graduates will also demonstrate competency in communication, critical thinking, quantitative analysis and technology applications as required for fire fighter service.

Students will demonstrate competency in practical fire fighting skills. They will describe the principals and practices of the fire science field at its various levels. Graduates will qualify for advancement in the fire service.

Students will perform all skills with 80% accuracy with no more than 3 attempts. There are no graduates this year and will score 80% or higher on an exit exam for the program. All students seeking employment or advancement in the fire service will be successful as determined by graduate surveys.

There are no graduates this year.

- No graduates at this time. This is a new program and it is expected that Spring 2005 should see the first graduates.

DNA

## **Detention Officer Operations Certificate**

Graduates will demonstrate: (1) basic knowledge in Administration of Justice Studies that will prepare them to obtain an entry-level position within the field of detention officer programs and (2) competency in communication, critical thinking, quantitative analysis, and technology applications.

Graduates will use and understand Criminal Justice terminology and be able to define the organization of the Criminal Justice system and be certified by the Yuma County Sheriff's Office as Detention Officers.

Students will receive at least a 70% on the Yuma County Detention Officer's exam and be certified by the Yuma County Sheriff's Office.

28 graduates passed the exam with a 70% or better and were certified as Detention Officers.

- All (15) students took an exit exam and passed with 85% or higher. Yuma County Sheriff Office certified all 15 students.

At this time, there is no change in the program. The class started with 32 students. 4 of the students were dismissed from the class for legal reasons by Yuma County Sheriff's Office.

## **Emergency Medical Technician Certificate**

Provide students with the cognitive, affective and psychomotor training necessary for entry level EMT-Basics.

Students will demonstrate the practical skills required to perform the duties of an EMT-Basic and will pass the required state and national exam series. Students will secure employment as EMTs.

**100% of students will pass the NREMT written and practical exam series within the 3 allowed attempts. 100% graduates who desire employment as EMT will secure employment within 6 months as determined by a graduate survey.**

92% of the students passed the exam series in the first attempt with 100% passing in 3 allowable attempts. 100% of students who successfully completed the exam series were employed within 6 months of program completion.

- 68% of students passed the NREMT written and practical exam series.

Adding co-requisite classes to enhance retention of critical knowledge and skills. Academy format (shift work, teams, uniforms) continues to encourage student unity.

- Developing a weekly quiz program to help students retain knowledge.

### **Fire Academy Certificate**

AWC Fire Academy cadets will demonstrate expertise, both written and practical, as entry-level fire fighters.

Students will demonstrate skill competencies required for the designations as Fire Fighter I and Fire Fighter II in Arizona. Students will obtain a job as a Fire Fighter.

Students will pass the AZ state written Fire Fighter I & II exam. Students will pass the IFSAC Practical Exam. Students will pass Hazardous Materials First responder level written and practical exams. The department tracks students hiring rate.

24/24 students took the state test and all passed on the first attempt. 20/24 students are employed as a fire fighter. The other 4 need to take EMT Basic before they can seek employment.

- 28 students completed the Fire Academy. All 28 students passed the state test with a 80% or better. 27 students were placed into employment. The one student who didn't is an active duty Marine and is currently in the Paramedic Academy.

No change required at this time.

### **Juvenile Detention Studies Certificate**

Graduates will demonstrate basic knowledge in juvenile studies that will prepare them to obtain an entry-level position within the field.

Graduates will use and understand Criminal Justice terminology and will define the organization of the Criminal Justice system.

Students will receive at least a 70% on an exit exam.

At this time there is no student taking the courses needed for the certificate.

The AJS Department is evaluating the need for the certificate.

### **Law Enforcement Training Academy Certificate**

Graduates will demonstrate (1) basic knowledge in law enforcement that will prepare them for an entry-level position within the field and (2) competency in communication, critical thinking, and technological applications.

Graduates will acquire an understanding of the laws and procedures governing peace officers. The graduate, upon successful completion of the course, receives their certification as a peace officer for the State of Arizona.

Students will be required to pass an exit exam developed by AZPOST that measures Law and Legal Review, Firearms, Defensive Tactics, Patrol Procedures, Traffic Control, Report Writing, Introduction to Law Enforcement, Crime Scene Management, Community and Police Relations, First Aid and Driving with at least a 70% (AZPOST Passing Level).

33 out of 40 graduates passed the exam with a 70% or better. All 40 graduates were certified as a Peace Officer for the State of Arizona.

- 26 students scored an average of 76%. 26 students scored an average of 73.4%. Individual testing towards the end of the academy and evaluated by instructors. No passing criteria: this is more of a critique program for cadets to improve their skills. 21 students out of 26 successfully passed the AZPOST exam.

This is a pilot exam for AZPOST. AWC volunteered cadets for testing to help POST determine the quality of the pilot exam. All cadets take standardized, computer driven tests during the entire academy. These tests are under the authority of AZPOST. As of May 2004, graduates will have to pass with a 70% in order to be certified as Peace Officers. The Academy is developing a 16-hour study review into its schedule the weekend before the AZPOST exam. The Academy has also moved driving to Phoenix under the teaching Phoenix Police Department so that graduates are better prepared in driving skills. First aid/Responder classes have been added to the Academy at the request of local law enforcement agencies.

- Developing a weekly quiz program to help students retain knowledge. Requiring English 100 or higher to be admitted to the academy.

### **Paramedic Certificate**

AWC Paramedic Certificate graduates will demonstrate beginning expertise as Paramedics.

Students will pass the required state and national exam series demonstrating the requisite written and practical skills. Students will secure employment as paramedics.

Students will pass the NREMT Advanced Level written and practical exam series. 80% of those seeking jobs as paramedics will be successful within 6 months

The Paramedic Academy is a two-year program that begins 10 November 2003 and will finish 20 May 2005.

- No graduates at this time. 2 year program graduates in May 2005.

DNA

**SOCIAL SCIENCE AND FINE ARTS FULL-TIME FACULTY AND STAFF**

|  |  |
|--|--|
| Tom Ruggles, Division Chair –<br>Professor of Philosophy                 | Carl Posch, Professor of Instrumental Music                      |
| Mohammad Bahramzadeh, Professor of<br>Political Science                  | Charles Smalley, Professor of Choral and Vocal<br>Music          |
| Ken Barnes, Professor of Administration of<br>Justice                    | Timothy Smith, Professor of Administration of<br>Justice         |
| Chuck Beasley, Professor of Fire Science                                 | Karen Spencer, Professor of Speech<br>Communications/Education   |
| William Blomquist, Professor of Fine Arts                                | Forrest (Chip) Straley, Professor of Theater                     |
| Sheri Cole, Professor of History   | Beth Tibbs, Professor of Music                                   |
| Lupe Fuentes, Senior Secretary, Social Science<br>and Fine Arts Division | Michelle Thurman, Senior Secretary, PSI                          |
| Lindette Lent, Professor of Psychology                                   | Joseph Vielbig, Professor of Sociology                           |
| Angel Luna, Professor of Art   | Dr. James Walker, MD, Professor of Emergency<br>Medical Services |
| Scott McLean, Professor of Speech<br>Communications                      |  |
| Gary Neumeyer, Professor of Administration of<br>Justice                 |  |
| Brad Pease, Professor of Computer Graphics                               |  |

### SOCIAL SCIENCE AND FINE ARTS ASSOCIATE FACULTY

|                            |                            |                            |
|----------------------------|----------------------------|----------------------------|
| Raymond Albert, ART        | Mildred Hadcock, ART       | Amanda Perry, PSY          |
| Walt Ashenfelter, ART      | Randy Hartless, ART        | Jeff Peters, HIS           |
| Sonia Austin, PHO          | Wanda Heath, ART           | Todd Pinnt, GEO            |
| Jim Austin, PHO            | Clifford Hetz, ANT         | Shawn (Louis) Pollard, MUS |
| Janice Bailey, SPC         | Barry Holloway, ORI        | Luisa Ruth, ORI            |
| Jean Bancroft, ART         | Margareta Jennings, ART    | Deann Sandry, AJS          |
| Myra Barber (Garlit), AJS  | Janet Jones, MUS           | Richard Sennet, HIS        |
| Nathan Bir, GRA            | Mary Jean Klingenberg, ART | Sheryl Seale, MUS          |
| Dawn Blake, AJS            | Elmon Krupnik, GEO         | Cortni Sinz, ART           |
| Howard Blitz, POS          | Ruth Kuntzelman, ORI       | Andrew Smith, MUS          |
| Phil Broughton, GEO        | Marina LaMarque, PSY       | Dearrion Snead, SOC        |
| James Lee Brouillette, SPC | Louis LeRoy, ART           | Gary Snyder, MUS           |
| David Bussick, MUS         | Peter Lhotka, PHI          | Dawn Stiles, HIS           |
| Brian Carlson, MUS         | Billie Jean Lord, MUS      | Kavin Stiven, HIS          |
| John Cicala, AJS           | Troy Love, SOC             | Tom Tacke, MUS             |
| Mary Claw, ART             | Georgene Lysen, ART        | Dan Taylor, PHI            |
| Mames Cleere, ART          | Maria Maintanis, ORI       | James Thiessen, AJS        |
| Bill Coke, MUS             | Ernestine Mathis, ART      | Ruth Thompson, ART         |
| James Colville, HIS        | Haleen Matthews, SOC       | Arnold Trujillo, ORI       |
| Brandon Coz, MUS           | Marc McNulty, PHI          | Abram Verdugo, PHI         |
| Amanda Dallabetta, MUS     | Gloria Mielke, ART         | Robert W. Walker, PHI      |
| Dessa DeAnda, ART          | Arturo Miranda, EMS        | Catherine Ward, PSY        |
| Rosalia Delgado, ORI       | Ian Mitchell, ART          | Larry Watson, HIS          |
| Geoffrey Dewhurst, PSY     | Dixie Mitchell, ART        | Kazuko Welch, ART          |
| Robert Drew, ANT           | Matt Molenaar, GRA         | Villa Willis, PHI          |
| Frankling Durham, MUS      | Dori Morril, MUS           | Marion Wolsey, PSY         |
| Patricia Easton, ART       | Betty Rae Norfleet, MUS    | Barry Woodward, ORI        |
| Juan Espinoza, MUS         | Nikki Olson, THE           | John Woody, MUS            |
| Cesar Fazz, AJS            | Irma-Liza Ortiz, PHO       | Christine Wright, MUS      |
| Gary Fesperman, PHO        | John Ostrowski, SPC        | Chuck Wullenjohn, POS      |
| Leonard Fox, ART           | Suman Pangasa, SOC         | Kathy Younker, MUS         |
| Lois Fox, ART              | James Parker, PHI          |                            |
| Mario Garibay, ORI         | Addison (Mel) Parker, ORI  |                            |
| Betsy Gottsponer, HIS      | Paul Perroni, MUS          |                            |