State of Arizona Office of the Auditor General

PERFORMANCE AUDIT

UNIVERSITIES' ENROLLMENT MANAGEMENT

Report to the Arizona Legislature
By Douglas R. Norton
Auditor General
July 1998
Report No. 98-12

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STATE OF ARIZONA
OFFICE OF THE
AUDITOR GENERAL

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July 8, 1998

Members of the Arizona Legislature

The Honorable Jane Dee Hull, Governor

Dr. Frank H. Besnette, Executive Director
Arizona Board of Regents

Dr. Lattie Coor, President
Arizona State University

Dr. Clara Lovett, President
Northern Arizona University

Dr. Peter Likins, President
University of Arizona

Transmitted herewith is a report of the Auditor General, A Performance Audit of the Universities' Enrollment Management. This report is in response to a July 10, 1998 resolution of the Joint Legislative Audit Committee. The performance audit was conducted as set forth in A.R.S. §41-2958.

This is the fourth in a series of reports to be issued on the universities. The report addresses ways the universities and the Board of Regents can better manage current enrollment and plan to manage future enrollment growth. Specifically, the universities and the Board of Regents need to develop better enrollment forecasts to help plan for the future. While several forecasts have been prepared in the past, they have tended to overstate the number of students who actually enrolled at the universities. Further, the universities and the Board of Regents need to revisit the plan used to guide the universities in managing enrollment growth, and make modifications as necessary. Some of the plan's projections, especially those relating to anticipated enrollment at the branch campuses, are likely unrealistic. The plan identified several strategies for managing enrollment growth, including expanding the universities' evening and weekend programs, distance learning programs, partnerships with community colleges, and establishing two new branch campuses. While the universities have experienced success enrolling students in most of the main campus alternatives, they have had difficulties attracting students to the branch campuses.

As outlined in their response, the universities agree with all of the findings and recommendations.

My staff and I will be pleased to discuss or clarify items in the report.

This report will be released to the public on July 9, 1998.

Sincerely,

Douglas R. Norton
Auditor General

Enclosure

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SUMMARY

The Office of the Auditor General has conducted a performance audit of enrollment management at Arizona's universities. This audit was conducted pursuant to a June 10, 1996, resolution of the Joint Legislative Audit Committee, and is the fourth in a series of four performance audits of the universities performed in response to the requirements of A.R.S. §41-2958. The previous audits dealt with the universities' space utilization, research parks, and auxiliary enterprises.

Arizona's three universities, Arizona State University (ASU), Northern Arizona University (NAU), and the University of Arizona (UA), serve more than 100,000 students at three main campuses, four branch campuses, and other sites statewide. Similar to the State's population increase, enrollment at the universities during the 1980s grew significantly and is likely to continue growing. However, the universities have limited space on their main campuses to accommodate substantial growth. As a result, they have managed enrollment through forecasting and planning for enrollment changes.

Arizona's University System Can Improve Enrollment Forecasts

(See pages 7 through 12)

Arizona's universities can improve the enrollment forecasts they use to plan for future enrollment growth. Although several forecasts have been developed to estimate enrollment for Arizona's universities, they appear to have overestimated enrollment growth. The most widely cited forecast, developed in 1991, predicted that enrollment demand would likely grow by 37,000 to 77,000 students who would enroll in the Arizona University System by the year 2010, with a "most likely" estimate of 55,000 students. This estimate was used to support initiatives such as the development of new branch campuses. When the Board of Regents later determined that this estimate was unrealistic, the forecast was revised in 1995 to predict that the additional students would not enroll until 2015. The Board of Regents has discussed updating the forecasts; however, a specific date has not been established.

Although the model's forecasts appear to have overestimated enrollment demand, revising it may be costly because it is complex and would need to be restructured. Instead of revising the current model, the universities could explore other, simpler approaches to forecasting enrollment. Other university systems have used different forecasting techniques, which are often less costly to implement and maintain, since they are not as complex as Arizona's model. In addition, other university systems update their long-term forecasts more regularly than the Arizona university system and one produces campus-by-campus forecasts, in contrast to Arizona's systemwide approach. Regardless of the forecasting model Arizona's universities use, they should supplement the forecasts with additional research on enrollment trends and demand for Arizona's universities.

Universities Need to Revise Plan for Meeting Growth

(See pages 13 through 20)

In 1993, a commission established by the Arizona Board of Regents developed a plan that recommended a set of strategies for the universities to manage future enrollment growth. The universities appear to be ahead of schedule in implementing some of the commission's strategies, such as those associated with increasing their evening and weekend program offerings. However, they have experienced difficulties attracting students to their branch campuses. In addition, the universities do not know if new programs, taught through technology such as the Internet, are accommodating the predicted enrollment growth or attracting additional students who would otherwise not have enrolled at the university.

The universities should revisit the existing enrollment growth plan and ensure that it reflects current enrollment data. A revised plan is needed, since enrollments anticipated for some strategies may never meet projections. For example, it appears unlikely that UA's branch campus in Sierra Vista would serve the anticipated 4,000 to 5,000 students. In addition to developing a new enrollment growth plan, the universities and the Board of Regents should continue to work with other higher-education agencies in the State to plan for statewide enrollment growth. Other states, such as California, have developed plans that describe how its higher-education agencies will collaborate to meet future enrollment growth statewide.

ASU West Can Do More to Increase Enrollment

(See pages 21 through 25)

Although its enrollment was planned to accommodate up to 10,000 students, ASU West's enrollment growth has been slow and limited. With little room available on the ASU main campus, ASU West provides a unique opportunity to help manage enrollment overflow from this campus. However, ASU West's enrollment has not increased during the last five years. Additionally, many students who live near the ASU West campus enroll at the ASU main campus instead of ASU West.

Several factors have contributed to ASU West's difficulties in attracting students. For example, the campus offers only a limited number of courses and programs, which makes recruiting students difficult. Additionally, although the West campus is a branch of ASU, it is not as integrated with the main campus as it could be, which can cause difficulties for students enrolled at both campuses. Similar departments at the two campuses do not always accept each other's courses, and therefore, course credits do not always transfer between programs at the campuses. To increase enrollment at ASU West, administrators should ensure that students' course credits transfer between programs at the schools. In addition, administrators should consider several options, such as transferring or adding programs to the campus, or offering students incentives to enroll there.

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INTRODUCTION AND BACKGROUND

The Office of the Auditor General has conducted a performance audit of enrollment management at Arizona's universities. This audit was conducted pursuant to a June 10, 1996, resolution of the Joint Legislative Audit Committee, and is the fourth in a series of four performance audits of the universities performed in response to the requirements of A.R.S. §41-2958. The previous audits dealt with the universities' space utilization, research parks, and auxiliary enterprises.

State appropriations to the universities' main campuses for fiscal year 1997-1998 were over $745 million. Of this amount, the Legislature appropriated $314.6 million to Arizona State University (ASU), $305.7 million to the University of Arizona (UA), and $125.4 million to Northern Arizona University (NAU). The universities receive enrollment growth funding that is based on two factors: 1) their average enrollment over a three-year period, and 2) a funding formula that ensures the universities have a certain proportion of faculty, staff, and students. If enrollment increases, the university receives additional funding for faculty and staff; however, if enrollment declines, this funding decreases. For fiscal year 1997-98, the ASU main campus received an additional $6,054,400 in enrollment growth funding, since its average enrollment over a three-year period increased. However, since their enrollment declined over this period, UA received $2,939,300 less in enrollment funding, and NAU received $276,700 less.

Arizona's Universities Serve Students at Many Locations

Arizona's university system serves more than 100,000 students at three main campuses, branch campuses, and other sites, through a variety of programs. The Arizona Board of Regents, the policy-setting body for the universities, has established a policy that assigns each university a certain geographic portion of the State it is responsible for serving.

Arizona State University (ASU)—ASU serves over 50,000 students at four primary locations in Maricopa County. For the fall 1997 semester, the ASU main campus had 44,255 students enrolled. While its main campus offers over 250 degree programs in 13 colleges and schools, ASU also provides courses at its Downtown Center in Phoenix and at its two branch campuses, ASU West and ASU East. ASU West was established by the Legislature in 1984 to accommodate demand for higher education in the western part of metropolitan Phoenix. ASU West offers upper-level and graduate-level courses leading to baccalaureate and selective master's programs and had 4,807 students enrolled for fall 1997. In addition, ASU has created a new East campus at the former Williams Air Force Base. ASU East was created by transferring the Schools of Technology and Agribusiness from the main campus to the new location. ASU East had 1,052 students enrolled in the fall of 1997.

Northern Arizona University (NAU)—NAU offers programs at its main campus in Flagstaff and through a partnership program with the community colleges at many sites statewide. For fall 1997, NAU had 19,618 students enrolled. NAU provides over 130 degree programs in 11 colleges and schools. In contrast with the other two universities, the Arizona Board of Regents' policy designated NAU with a unique mission to provide statewide higher education. NAU delivers instruction at sites across the State, through means such as interactive television and on-site faculty.

University of Arizona (UA)—UA serves over 34,000 students at three locations, including the main campus in Tucson, the Sierra Vista Campus, and the Arizona International Campus. For fall 1997, its main campus had 33,737 students enrolled. UA's main campus offers more than 370 degree programs in 15 colleges, schools, and divisions. Additionally, the Sierra Vista Branch Campus (UASV) was established as a branch campus in 1995 to serve this southeastern Arizona community. UASV offers several degree programs, as well as a non-credit language program, and serves about 330 students. In addition, the Board of Regents authorized UA to initiate planning for the Arizona International Campus in 1993, which is currently located at the UA Science and Technology Park. The Arizona International Campus, which was designed as a liberal arts institution with a focus on teaching, serves about 100 students, and will be moved back to the UA main campus as another college in the fall of 1998.

Additionally, all three universities offer courses through extended education. Extended education provides credit and noncredit education through a wide variety of means, including evening and weekend courses, noncredit personal enrichment courses, and independent learning courses.

National and Statewide Enrollment Trends

National enrollment trends are mixed. While enrollment at some universities has increased recently, it has declined at others. One recent study conducted by a nationally known consultant found that nearly 40 percent of the four-year institutions surveyed had experienced a decrease in their enrollment. In contrast, some universities are experiencing rapid enrollment growth. According to a recent article in the *Chronicle of Higher Education*, 1997 freshman enrollment grew 26 percent at the University of New Mexico, 20 percent at the University of Texas at Austin, and 16 percent at the University of Florida.

This mixture of increasing enrollment at some universities and decreasing enrollment at others is also seen in Arizona. NAU has experienced decreases in enrollment at its main campus during previous semesters, although enrollment at its statewide sites has increased. In contrast, ASU's freshman class was up 27 percent in 1997, and its total enrollment has been increasing in the last three years. UA enrollment had declined during the last few years, but increased in the fall 1997 semester.

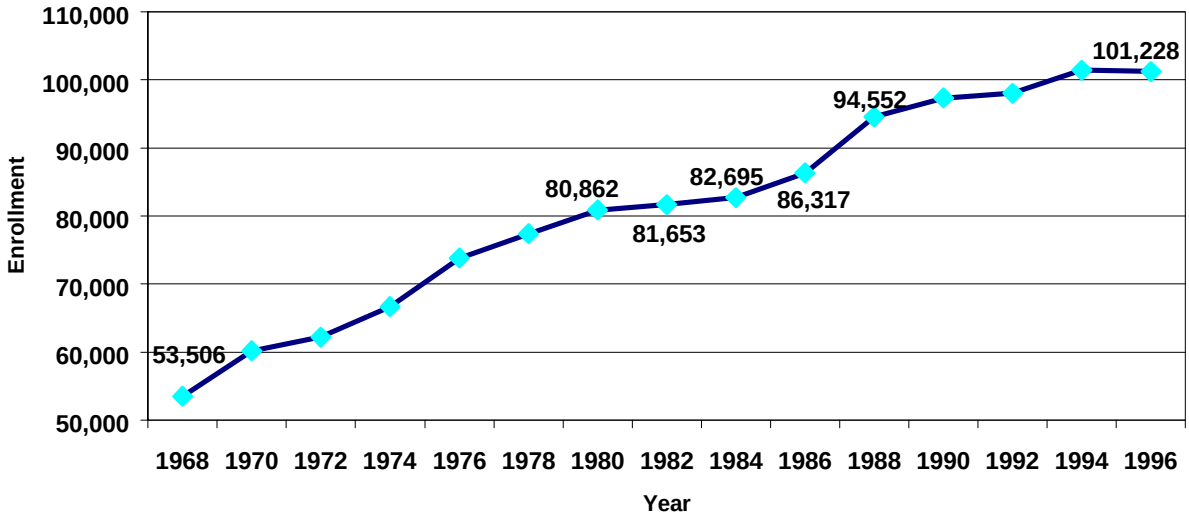
Enrollment Management

While universities have always been concerned about enrollment changes, they have only recently begun to systematically study and attempt to manage factors that can influence enrollment. For example, universities are studying the impact of financial aid policies on students' choices to attend a university. Other activities universities associate with enrollment management include forecasting future enrollment, recruiting students, and retaining them once they enroll.

Enrollment managers in Arizona have faced particular challenges in forecasting and planning for changes in enrollment. Figure 1 illustrates the enrollment growth faced by Arizona's university system during the past three decades.

Figure 1

Arizona University System
Fall Semester Actual Enrollment
1968 to 1996



Source: Arizona Board of Regents' *Annual Fall Report*, 1968 to 1996.

Another challenge facing enrollment managers is that universities have expanded the way they provide education. Although the majority of students still obtain education in the traditional method of professors lecturing to full-time students, other options are now available. An increasing number of part-time students hold jobs and would prefer to enroll in programs that are held at times convenient for them. To meet these needs,

universities have expanded instruction at remote sites through technology such as the Internet, interactive television, and CD-ROM.

Each of Arizona's universities has organized its enrollment management function in a different way. Enrollment management at ASU is handled through a cluster of units that reports to the Vice President for Student Affairs. NAU's Enrollment Services area was recently restructured and includes units such as the Registrar's Office, Financial Aid, Undergraduate Admissions, and a new unit called Orientation, Transition and Retention Services, all of which report to the Assistant Provost for Enrollment Services. UA accomplishes much of its enrollment management work through its Enrollment Management Group, a committee charged with studying a wide array of enrollment issues. The committee is chaired by the Vice President for Undergraduate Education, and includes administrators from various student service units, such as Student Financial Aid and Undergraduate Admissions.

Scope and Methodology

Audit work focused on the universities' and the Board of Regents' efforts to develop and use enrollment forecasts, plan for future enrollment changes, and develop ASU West as a branch campus.

Several methods were used to address the issues in this audit, including interviewing administrators at all three universities and at the Arizona Board of Regents regarding enrollment forecasting techniques and their plans to manage enrollment growth. In addition, administrators at Phoenix College and Glendale Community College were interviewed to determine their satisfaction with partnership programs between their community colleges and ASU West. Further, officials from eight other universities were interviewed regarding the techniques used to forecast enrollment, and officials from five other universities were interviewed to document the methods they have used to plan for enrollment changes.[1] Further, data concerning targets associated with the universities' methods to manage enrollment growth was collected and compared to actual figures. Finally, a literature review was conducted concerning research other universities have done to understand enrollment trends and the strategies they have used to manage enrollment growth.

This report presents findings and recommendations in three areas regarding the need for the Board of Regents and the universities to:

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[1] Universities contacted regarding forecasting techniques were Florida State University, the University of California at Berkeley, the University of Central Florida, the University of Colorado at Boulder, the University of Houston, the University of Nevada at Las Vegas, the University of Nevada at Reno, and the University of Washington. Universities contacted regarding strategies used to manage enrollment growth were the Ohio State University, Old Dominion University, the University of Central Florida, the University of Houston, and the University of Michigan.

- Use simpler techniques for enrollment forecasting and ensure that forecasts are updated and supported by additional research;

- Revisit and modify their current plan for managing enrollment growth and develop a long-term plan for statewide enrollment growth; and

- Increase enrollment at ASU West.

Additionally, the Other Pertinent Information section (see pages 27 through 31) presents information on the universities' graduation and retention rates.

This audit was conducted in accordance with government auditing standards.

The Auditor General and staff express appreciation to the administration and staff at the universities, their branch campuses, and the Arizona Board of Regents for their cooperation and assistance throughout the audit.

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FINDING I

ARIZONA'S UNIVERSITY SYSTEM CAN IMPROVE ENROLLMENT FORECASTS

Enrollment forecasting should be a key component of enrollment management at Arizona's universities and should be used to help make decisions relating to building construction, staffing levels, and strategic planning needs. While the Arizona Board of Regents and the universities have used several forecasting methods, most have tended to overestimate enrollment. However, rather than revising the current forecasting model, the Board of Regents and the universities should consider exploring other techniques. Additionally, the Arizona Board of Regents and the universities should update their forecasts more regularly and supplement them with additional research on future enrollment trends.

Enrollment Forecasts Critical and Challenging

Forecasting short-and long-term enrollment is an important factor in many higher-education decisions, since the size of the student body determines the need for resources such as faculty, staff, and classroom space. University officials use short-term enrollment projections to develop budget requests, schedule courses, and plan for student services. The universities' short-term projections can be fairly accurate, since they are based on relatively concrete indicators such as admission applications. In contrast, long-term projections, which are used to identify capital needs and to support overall strategic planning, are generally less accurate.

While forecasting is important, uncertainty about the future makes it difficult. Future changes in population characteristics, the economy, and the available alternatives to public universities will likely affect the number of students who will enroll in Arizona's universities. Due to increasing choices and competition in higher education, some experts feel that forecasting has become even more challenging than it was in the past.

Arizona's Past Models Have Tended to Overestimate Enrollment

Although several enrollment forecasts have been developed to assist Arizona's universities in long-range planning, these forecasts may overestimate university enrollment. The Board of Regents' forecast from the Arizona Enrollment Demand Model (Model) was widely used for planning purposes, including the development of two new campuses. However, since the Model's forecasts have limitations, using it to forecast future enrollment may not be desirable.

Several forecasts have been used, but the most widely cited figures appear to have overestimated enrollment—Since 1986, several enrollment forecasting models have been developed for Arizona's universities. However, these models appear to have overestimated enrollment growth. Each of the enrollment forecasts was developed in anticipation of continued growth during the 1990s and beyond. Table 1 (see page 9) shows that each forecast projected a range of enrollment 15 to 30 years into the future, and may have overestimated enrollment. For example, the earliest forecast predicted that by the year 2000, the universities would have 33,471 to 47,859 more students than they had in 1985. However, as of fall 1997, the universities had an increase of only 19,432 students. An analysis of systemwide enrollment growth indicates that the universities are unlikely to reach this level of enrollment by the year 2000.

In 1991, the Board of Regents commissioned a consultant to develop a sophisticated model, known as the Arizona Enrollment Demand Model (Model) to forecast demand for higher education as well to assess the effects of policy changes. Based on a computer simulation technique, the Model enabled the Board to analyze the potential effects of policy changes on statewide demand for public higher education. The Model was also used to forecast enrollment demand statewide, and when completed, it projected an increase of 37,000 to 77,000 students for the university system by the year 2010, with a "most likely" estimate of 55,000 students. This represented a 58 percent increase in enrollment over a 20-year period.

Although the Board of Regents later determined that the Model likely overestimated enrollment demand for Arizona's universities, its enrollment forecast had already been widely cited. The Model's prediction of 55,000 additional students appeared in several university and Board of Regents publications to support initiatives, including the development of new campuses at ASU and UA. Additionally, NAU has used the Model's estimate to support expansion of a portion of its statewide distance-learning program. Further, in 1994, the estimate was used to strengthen the Board's request for state appropriations to begin implementing plans for managing future enrollment growth.

Although the Model's forecast was cited frequently, its prediction appears to be somewhat inaccurate and has not been updated since 1995. In 1995, enrollment growth did not appear to be sufficient to reach the growth predicted for 2010. Staff from the universities and the Board of Regents updated the Model with more current data, and determined that the enrollment demand originally forecast for 2010 would not occur until 2015. Although the Board updated the model in 1995, its forecasts have not been updated since that time. According to Board of Regents staff, the Board has discussed updating the Model's forecasts, but it has not established a specific date for updating them.

Table 1

Arizona University System
Enrollment Projection Models
1986 to 1995

	Future Needs of State Committee[1]	Excellence, Efficiency and Competitiveness Task Force[2]	Original Arizona Enrollment Demand Model[3]	Higher Education Enrollment Growth Report[4]	Updated Arizona Enrollment Demand Model[8]
Sponsoring Agency	Arizona Board of Regents	Arizona Board of Regents	Arizona Board of Regents	Joint Legislative Budget Committee	Arizona Board of Regents
Model year	1986	1988	1991	1992	1995
Forecast period	1985-2000	1985-2000	1990-2010	1992-2022	1990-2015
Additional Enrollment Forecasted:					
Low estimate	33,471	15,620	37,000	62,273 [5]	41,000
Middle estimate	40,364	40,351	55,000	84,172 [6]	51,000
High estimate	47,859	72,963	77,000	186,244 [7]	60,000
Period of Actual Enrollment	1985-1997	1985-1997	1990-1997	1992-1997	1990-1997
Increase in fall semester actual enrollment	19,432	19,432	6,136	4,459	6,136
Remaining enrollment increase needed to meet forecasts:					
Low estimate	14,039	(3,812)	30,864	57,814	34,864
Middle estimate	20,932	20,919	48,864	79,713	44,864
High estimate	28,427	53,531	70,864	181,785	53,864
Years remaining to meet forecasts	3	3	13	25	18

1 Low, middle, and high estimates developed for each university. Enrollment forecasts shown here are a summation of individual forecasts.
2 Six forecasts developed: one base model forecast (40,351) and five alternative forecasts. The remaining forecasts fall between the high and the low estimate.
3 Computer-based model, described on page 8, used to develop a range of future enrollment demand for Arizona's universities.
4 Three forecasts developed by the Joint Legislative Budget Committee using three different forecasting techniques.
5 Low projection developed from a regression analysis based on state population.
6 Middle projection for 2022 is based on an extrapolation of the original Arizona Enrollment Demand model's projection..
7 High projection developed by applying the 1962-1992 Arizona University System growth rate of 195% to the future time frame of 1992-2022.
8 Model updated to incorporate new data and revised assumptions about enrollment growth.

Source: Various Arizona Board of Regents reports; June 1992 Joint Legislative Budget Committee report.

Revising the current Model may not be desirable—Even though the current Model likely overestimated future enrollment demand, revising it could require an additional resource investment. According to several researchers, the Model is based upon several complex relationships and may need to be restructured. For example, one of the Model's components assumes a certain set of admission requirements into Arizona's universities, but these requirements will change in fall 1998. Additionally, one UA researcher believes the Model's assumptions regarding graduate student enrollment are incorrect.

Further, even if the Model was revised, its effectiveness would likely be limited. First, it is inherently complex and requires specialized staff to keep its forecasts current. While each university and the Board initially had one staff member who was knowledgeable in the Model's use, most of these staff have left the university system. In addition, the Model was designed to provide information about statewide enrollment demand, rather than university-by-university enrollment forecasts. As a result, each university has encountered difficulties when relying on the Model to forecast its enrollment.

Other Universities Use Different Techniques and Update Forecasts Regularly

Instead of revising the current Model, the universities and the Board of Regents should explore other, simpler approaches and update forecasts more often. Many techniques for enrollment forecasting are simpler than the Model, but any technique tends to produce inaccurate forecasts the further it predicts into the future. Other higher-education systems have used a variety of techniques, ranging from simple to complex. They are subject to the same challenges all forecasting methods are subject to; however, they require less data gathering and staff expertise. Additionally, unlike the Board's forecasts, other university systems' forecasts are regularly updated and one includes campus-by-campus forecasts.

Other methods are used to forecast enrollment—Other universities and higher-education systems use different methods to forecast enrollment. Several higher-education governing boards and universities were contacted during the audit to learn about the methods they use to forecast enrollment, and only one had used a model similar to that used by the Arizona Board of Regents. Instead, researchers at other universities use a variety of forecasting methods, ranging from simple data analysis to complex statistical methods that require specialized staff. For example:

- **Texas—**The Texas Higher Education Coordinating Board developed enrollment forecasts for each of the state's public universities, community colleges, and technical colleges by using a relatively simple technique (in comparison to the Arizona Board of Regents' Model). Texas' model is based on factors such as past enrollment and demographic data. The Board developed enrollment trend data for each Texas institution by age/ethnic/race groups and county.

- **California—**The California Post-secondary Education Commission (CPEC) used a "student flow model" to forecast undergraduate enrollment demand for the University of California and California State systems. The student flow method simulated the flow of students from entry through their final departure from each university system, and allowed CPEC to forecast enrollment demand for these systems.

- **Washington—**The Washington Higher Education Coordinating Board has chosen a very different approach to forecasting long-term enrollment. Enrollment forecasts are driven by the state's population forecasts and a long-term enrollment goal. The Board's goal is to be one of the nation's leaders in enrolling students in its higher-education institutions. Washington officials have also surveyed parents of school-age children to understand their expectations of higher education. Although enrollment forecasts systemwide have proven accurate, campus-by-campus enrollment patterns have been less reliable.

Other university systems update and monitor forecasts regularly—In contrast to Arizona's forecasts, which are not routinely updated, some other university systems regularly update their enrollment forecasts. First, the Texas Higher Education Coordinating Board updates its long-term enrollment forecasts every two years to account for continually changing conditions that may affect university enrollments. Additionally, the Washington Higher Education Coordinating Board updates its long-range forecasts every two years to coincide with its state's budget cycle.

In addition to updating their forecasts regularly, several other university systems continuously monitor the accuracy of their forecasts. For example, the Texas Higher Education Coordinating Board tracks the variance between their forecasts and actual enrollments every two years. In addition, the California Post-secondary Education Commission monitors the differences between actual and forecasted enrollment regularly.

One university system produces campus-by-campus forecasts—While Arizona's model produces only systemwide enrollment forecasts, one university system forecasts enrollment campus-by-campus. The Texas Higher Education Coordinating Board develops long-term enrollment forecasts for the state's university system, as well as for individual universities.

Regardless of the Model Used, Forecasts Should Be Supported by Additional Research

Regardless of the model Arizona's university system uses to forecast enrollment, the forecasts should be supplemented by additional research. Researchers note that forecasting university enrollment many years into the future is difficult, and forecasts should be treated with caution. For example, inaccurate assumptions about the future can make long-term

forecasts incorrect. Models producing long-term forecasts cannot account for unexpected circumstances. Enrollment forecasts are, at best, estimates based on assumptions of human behavior and other factors.

Since forecasting techniques typically do not provide descriptive information about students' decisions to enroll at one of the universities, the universities should conduct additional research to explore these decisions. For example, the universities should consider studying the impact of the many higher-education options on university enrollment, such as the development of for-profit higher-education institutions in the State. Additionally, the number of community colleges in the State has increased, which may also impact enrollment at the universities. The universities could continue to survey potential students and their parents to determine their preferences regarding university experiences and programs. Additionally, the combined effects of the State's changing economy and demographics on university enrollment remain unclear. Since minorities now make up a larger proportion of Arizona's high school population, the universities should consider surveying these students to explore their characteristics as potential university students.

Recommendations

1. The universities and the Arizona Board of Regents should develop one or more simpler forecasting models to help plan for future enrollment changes. Similar to the Arizona Enrollment Demand Model, the new model should reflect such factors as projected demographic changes, differences in college participation rates of different groups, and projected economic changes and their effects.

2. Once the new forecasting model is developed, the universities and the Board of Regents should update the model's forecasts regularly to account for changing conditions.

3. The universities and the Arizona Board of Regents should supplement their enrollment forecasts with additional research on enrollment trends and demand for Arizona's universities. Areas for possible research include:

    a. The impact of the many higher-education options on university enrollment.

    b. Characteristics of changing population demographics as they relate to minority students.

FINDING II

UNIVERSITIES NEED TO REVISE PLAN FOR MEETING GROWTH

Although the universities have managed some of their recent enrollment growth by directing students to main campus alternatives, they have faced challenges attracting students to the branch campuses. To prepare for a projected systemwide increase in students, a commission created by the Arizona Board of Regents recommended that the universities implement several strategies to minimize the impact of this growth on the main campuses. While it appears that the universities may be able to implement most of the strategies to accommodate growth through alternatives to their main campuses, they have encountered difficulties attracting students to their branch campuses. The universities and the Board of Regents should reassess the current plan for managing enrollment growth, and encourage students to enroll at the branch campuses.

Board of Regents Created Commission to Address Enrollment Growth

In 1993, the Board of Regents created the Commission on Planning for Public Higher Education Enrollment Growth in Arizona (Commission) and charged it with making recommendations the universities could use to meet higher education enrollment growth over the next 20 years. The Board of Regents appointed 26 people to the Commission, which included legislators, community college district governing board members, an executive branch representative, a K-12 representative, and members of the business community. The Commission reviewed preliminary university strategies for meeting future enrollment, and recommended a plan regarding these strategies. In 1995, the universities and the Board of Regents updated the Commission's plan to reflect changes in anticipated enrollment.

Commission Established Long-Range Strategies for Meeting Enrollment Growth

The Commission's plan called for the universities to manage future growth by enrolling students in alternatives to their main campuses. One of the plan's strategies limited the number of students the universities would serve on their main campuses during daytime hours. Each of the universities worked with the Board of Regents to develop these estimates. ASU estimated it could accommodate 39,000 daytime students, NAU believed it could serve 16,000

daytime students, and UA determined it could handle 35,000 daytime students. Currently, all three universities are approaching these limits, and ASU's president recently announced that the ASU main campus will likely reach its limit by fall 1998.

To develop recommendations regarding the strategies to manage future enrollment growth, the Commission worked from a prediction that about 55,000 additional students would enroll in Arizona's university system by 2010. The universities and the Board of Regents updated the Commission's plan in 1995. Because the Commission evaluated many strategies for the universities to meet enrollment growth, it was guided by certain assumptions about the university system, including the goal of expanding access to education in rural areas. The Commission's strategies for meeting future enrollment growth are as follows:

- Limit daytime enrollment at each of the main campuses;
- Continue to develop both the ASU West and UA Sierra Vista campuses. The Commission recommended that ASU West should continue to grow to 10,000 students and that the UA Sierra Vista campus be expected to serve 4,000 to 5,000 students by 2015;
- Expand distance-learning programs, which are programs that allow students to take university courses off the main campus, such as programs offered at off-campus centers and through technological means;
- Expand courses offered during evenings and weekends at the main campuses;
- Expand partnership programs between the community colleges and the universities. This involved the expansion of 2+2 programs, where students complete the first two years of their degree at a community college and the last two years at a university; and
- Plan for two new branch campuses, one in eastern Maricopa County and one in Pima County. These two new campuses would provide undergraduate education and some related master's degree programs.

Strategies Have Had Mixed Results

While the universities have implemented the strategies the Commission established for meeting enrollment growth, given the progress to date, it is questionable whether the branch campus will meet the enrollment projections for the year 2015. Additionally, it is unknown whether the strategies the Commission recommended have actually directed students away from the main campuses or if they have increased demand for the new programs.

Some enrollment strategies are on track—As shown by Table 2 (see page 16), the universities are ahead of schedule in meeting some of the enrollment projections the updated plan recommended they implement by 2015. For example:

- **Universities have improved evening/weekend programs—**All three of the universities have expanded the number of courses available during evenings and weekends, and all three universities appear to be on track in meeting their enrollment goals in this area. For example, UA and ASU have implemented programs that allow students to obtain a degree by taking classes entirely during evening and weekend hours. For example, ASU has added a new technology-focused evening MBA program, and UA offers a Bachelor of Arts in Political Science that can be earned entirely through its evening/weekend program.

- **Universities continue to offer distance-learning programs—**The universities continue to offer classes at remote sites, including those where faculty teach students at the remote site as well as those provided through television broadcasts or electronic delivery systems, such as the Internet. For example, between the fall 1994 and fall 1997 semesters, enrollment in NAU's distance-learning programs increased from 4,055 students to nearly 4,700 students. ASU and UA also provide courses through the Internet, television, and correspondence courses; and at off-campus locations such as local corporations and public schools.

- **Partnership programs with community colleges have increased—**The Commission recommended that the universities meet a limited amount of enrollment growth by developing partnerships with Arizona's community colleges. The partnership the Commission envisioned is that students attend a community college for their first two years of university work, and then complete their degree at one of the universities. All three universities meet some of their enrollment growth needs through collaboration with the community colleges. For example, NAU has developed partnerships with all 10 community college districts across the State and has a presence in or near 21 community college campuses through its distance-learning program. In addition, UA has established a partnership with Pima Community College, and enrolls 700 to 800 transfer students from the College each semester. Further, ASU has established a partnership program between ASU West and Glendale Community College through its University College Center.

Unclear if enrollment levels reflect growth directed away from main campuses—Although the universities appear to be on track to meet the Commission's projections associated with the above-mentioned strategies, it is not clear if the expansion in these programs has directed enrollment growth away from the main campus or created new demand. According to a recent *Chronicle of Higher Education* article and interviews with university officials, programs such as distance learning and evening/weekend courses may actually increase demand for

Table 2

Arizona University System
Projected Enrollment Management
Alternatives to Main Campus Day Classes
1997 Fall Semester Actual Enrollment and
2015 Fall Semester Projected Enrollment

Alternatives	1997	2015
Evening and Weekend Programs		
ASU	2,391	2,700
NAU	2,401	1,400 to 1,900
UA	1,216	1,000 to 2,000
Partnership and (2+2) Programs		
ASU [1]	262	NA
NAU	1,896	2,000 to 3,000
UA	849	500
Distance Learning		
ASU	3,400	4,000 to 10,000
NAU	4,355	4,500 to 6,500
UA	1,730	1,000 to 2,000
Branch Campuses		
ASU East	1,052	10,000
ASU West	4,807	10,000
Arizona Int'l Campus (UA)	106	5,000 to 6,000
UA Sierra Vista	338	4,000 to 5,000

[1] The Commission did not have specific recommendations for ASU to manage enrollment growth through partnership programs; however, ASU West has a partnership program with Glendale Community College through its University College Center.

Source: 1997 figures are from an Auditor General analysis of university and Arizona Board of Regents reports. Projected enrollment figures are from the Arizona Board of Regents' *System Summary of Revised Enrollment Growth Strategies.*

education by attracting older, nontraditional students who would not otherwise enroll in the universities. To better evaluate the effect of these enrollment strategies, the universities could consider studying the reasons students enrolled in these programs. For example, Old Dominion University in Norfolk, Virginia, learned by surveying students that nearly a third of their students would not have enrolled at the university without the evening and weekend

programs. A similar survey could give Arizona's universities better information about how well these alternatives could help manage predicted growth.

Branch campus enrollments not growing as projected—Although enrollment has increased in some main campus alternatives that the Commission recommended, the universities' branch campus enrollments have not met expectations. Specifically, although the Commission expected the universities' branch campuses to accommodate nearly half of the State's future enrollment growth, the branches have not yet met these projections.

- **Arizona International Campus (AIC)—**The Commission recommended establishing a new campus in Pima County to absorb about 5,000 students from the UA main campus by 2015. The new campus was intended to provide a four-year liberal arts education, offer interdisciplinary programs, and focus on teaching instead of research. The AIC model is similar to other four-year liberal arts colleges in Washington and New York. AIC opened in fall 1996 at the UA Science and Technology Park. Although AIC administrators had expected 1,000 students to enroll during its first year, only 48 students enrolled in fall 1996, and in 1997 the campus had grown to only 106 students. Due to the low enrollment and lack of tuition revenue, UA administration has decided to move AIC to the main campus, where it will become an academic college.

  Several factors contributed to AIC's problems. First, the development of the AIC may have been premature since it was established during a period of declining enrollment at UA. Second, the AIC was located on the UA Science and Technology Park, approximately 18 miles from the main campus. Buses transported many students from main campus residence halls to the AIC, which lacked dormitories and other amenities found on the main campus. In addition, some of the plans for the new campus were controversial, such as the decision not to provide tenure for its faculty. The campus faced negative publicity from some UA faculty who believed that it was poorly planned and that they had not been adequately involved in the planning process.

- **UA Sierra Vista—**The UA Sierra Vista branch is a small campus located in southeastern Arizona. According to the Commission's recommendations, the UA Sierra Vista campus was anticipated to enroll 4,000 to 5,000 students by the year 2015. However, some administrators have questioned whether the Sierra Vista branch will enroll 5,000 students. While enrollment has increased from 177 students in fall 1995, fall 1997 enrollment totaled only 338 students.

- **ASU East—**Began operation in fall 1996 at the former Williams Air Force Base. ASU East operates in partnership with the Chandler-Gilbert Community College that is also located on the former base. To help ensure adequate enrollment, ASU chose to transfer two programs, the School of Technology and the School of Agribusiness and Resource Management, from the main campus to the new campus. In addition, ASU East recently developed a new Bachelor of Applied Science degree that will allow students with an associate

of arts degree in applied science to transfer to the campus and complete a four-year degree in the same subject. While ASU East began operating with a ready-made enrollment of students from the transferred programs, it is unclear how the campus will enroll 10,000 students by 2015.

ASU West has also fallen short of the Commission's projections for enrollment growth. Finding III (see pages 21 through 25) of this report examines the challenges ASU West has faced regarding growth.

The Commission's Plan Should Be Revised in Light of More Current Data

The universities and the Board of Regents should revise the Commission's enrollment plan to reflect current enrollment data. A revised plan including updated enrollment forecasts is needed, since enrollment associated with some of the recommendations may never meet the Commission's original expectations. In addition, the universities should implement specific techniques to direct future enrollment growth to the branch campuses. Finally, the universities and the Board of Regents should continue to work with other higher-education entities in the State to develop a statewide plan for managing additional enrollment.

Enrollment forecasts should be revised—Before the universities revise their enrollment growth plan, they first should revise their enrollment forecasts, as discussed in Finding I (see pages 7 through 12). Since the Commission used the original enrollment forecasts as a basis for its recommendations, updated enrollment forecasts would be important to develop any new recommendations.

Commission's plan needs revision—Since some of the recommendations the Commission established appear to be unrealistic, the universities should evaluate whether or not the enrollment expectations associated with the strategies were appropriate and revise the original recommendations. Although it was updated in 1995, when the Board's forecasting model was updated and predicted a new enrollment estimate, the Commission's original plan has not been updated since then. For example, the universities should:

- Assess whether their daytime enrollment limits are appropriate. These limits should be reviewed since they were based on estimates of the universities' available space. The Auditor General's performance audit of Arizona Universities' Space Utilization (Report No. 97-16) and a 1997 study requested by the Board of Regents both focused on how the universities can better utilize existing classroom space. Since the audit reported that underutilized space is available on all of the universities' main campuses, the universities may be able to serve additional students on their main campuses through better scheduling and use of classroom space.

- Determine whether the Commission's enrollment projections regarding the branch campuses are appropriate. For example, although enrollment is likely to increase at the UA Sierra Vista campus, the projection of 4,000 to 5,000 students may be unrealistic. Additionally, although the Arizona International Campus was intended to attract students and be a viable campus, it has been unable to accomplish these goals. Since it will be moved back to the main campus, it is not currently a strategy for managing growth at the main campus. And, since ASU East obtained most of its students when ASU's main campus transferred two programs to it, it is unclear how it will expand these programs and add new programs to attract an additional 8,900 students as provided for in the Commission's recommendation.

In addition to evaluating whether the limits and branch campus enrollment projections were appropriate, the universities should consider whether some of the Commission's recommendations, such as distance learning or evening/weekend courses, are likely to accommodate expected growth or if they could create additional demand for programs.

Once the universities have reevaluated and revised the Commission's original enrollment expectations, they should develop a plan describing how they will implement their new goals. For example, this plan could include specific strategies such as recruiting techniques to increase enrollment at the branch campuses, and better defining each campus' role. As part of the effort to plan for using branch campuses to divert main campus growth, the universities could consider adding or transferring programs to the branch campuses.

State needs master enrollment plan for all higher education—The State needs a long-range plan to guide all of the higher-education agencies in planning for enrollment growth statewide. Although each university develops its own strategic plan, there is no long-term master plan that encompasses all of Arizona's higher-education entities. In contrast, other states have developed such plans. For example, the State of California has developed a well-known, in-depth master plan that details how each of the higher educational institutions will meet future enrollment goals.

Since the State's higher education environment encompasses more than the universities, the universities and the Board of Regents should collaborate with other higher-education agencies to develop a long-range master plan for Arizona. For example, the Board of Regents could collaborate with the State Board of Directors for Community Colleges to develop a long-range master plan for Arizona.

Additionally, the Board of Regents could work with the Arizona Commission for Post-Secondary Education to develop a long-range enrollment growth plan for Arizona. Currently, A.R.S. §15-1852 charges the Commission to "study enrollment demand and examine public policy options to accommodate any increase in demand for postsecondary education services." Additionally, the Commission is required to "promote and encourage coordinated

and capital planning between and among public and private postsecondary education institutions."

Recommendations:

1. The universities and the Board of Regents should revise the enrollment plan and expectations developed by the Commission on Planning for Higher Education Enrollment Growth. As part of revising the plan, the universities should determine whether:

    a. Limits on daytime enrollments are set at appropriate levels;

    b. Enrollment projections for the branch campuses are realistic; and

    c. Enrollment projections set for other enrollment growth strategies, such as evening and weekend courses and distance learning, are appropriate.

2. The universities and the Board of Regents should work with other higher-education agencies to develop a long-term master plan describing how each higher-education institution will collaborate to meet the State's long-term enrollment needs.

FINDING III

ASU WEST CAN DO MORE TO INCREASE ENROLLMENT

Although ASU West's enrollment was expected to accommodate up to 10,000 students, its growth has been limited. Several factors, such as limited course offerings and a lack of community awareness, have contributed to the campus' difficulties in attracting students. To more effectively use ASU West to manage ASU main's enrollment growth, ASU should consider several options to attract students to the West campus.

Background

ASU West was established to accommodate demand for higher education in northwestern Maricopa County. Local citizens requested ASU and the Arizona Board of Regents to develop additional higher-education opportunities in the West Valley. In response to this interest, ASU began offering courses in the late 1970s at the Metrocenter Mall. Increasing enrollment and demand for additional education led to the establishment of a permanent campus in 1984, which cost approximately $75 million to build. For fiscal year 1998, the Legislature appropriated about $41.8 million to the campus, including $5 million for a lease purchase agreement.

With little room available on ASU's main campus, ASU West provides a unique opportunity to accommodate any enrollment overflow. The West campus has traditionally offered the majority of its classes during evening hours, leaving many classrooms available during the daytime. As a result, room is available to accommodate many additional students. In fact, by applying the Board of Regents' guideline of one square foot of classroom space per student credit hour (see Arizona Universities' Space Utilization, Report No. 97-16), the campus' facilities could accommodate at least 6,900 students.

ASU West's Enrollment Has Grown Slowly

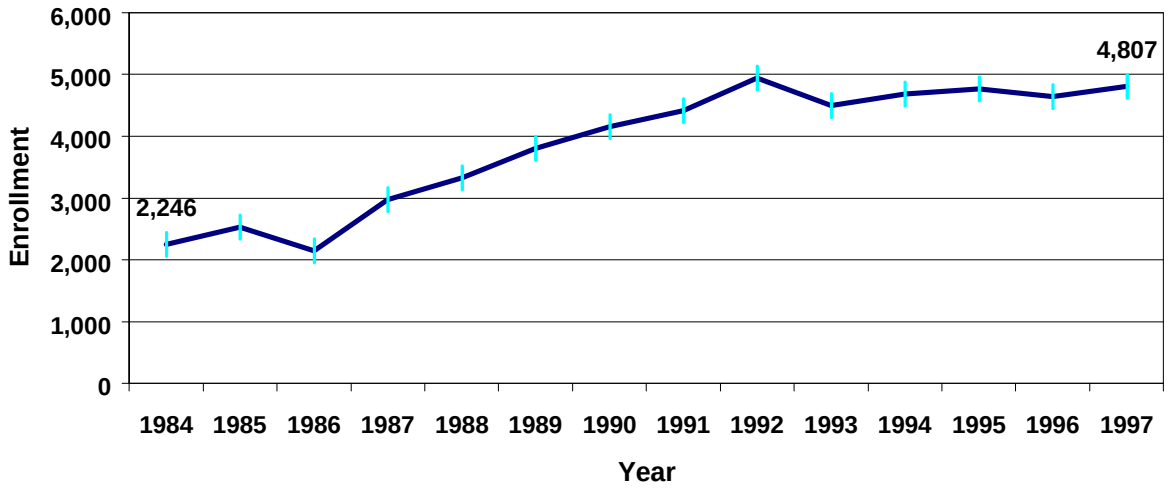
Enrollment at ASU West has increased over time, although it has grown slowly. In addition, ASU West's enrollment growth has been relatively stagnant over the last five years, and it is unclear if future enrollment will increase. Further, many students who live near the West campus choose to attend ASU's main campus instead of ASU West.

Growth has been flat—Although ASU West experienced significant growth during the 1980s, growth has not increased over the last few years. In its first eight years as a permanent campus, enrollment increased by 55 percent. Figure 2 (see page 22), illustrates that, while

enrollment peaked at 4,946 students in 1992, the campus has not yet regained this level. However, ASU West's students have taken more credit hours in recent years.

Figure 2

ASU West
Fall Semester Actual Enrollment
1984 to 1997



Source: ASU West Planning and Budget Office.

According to ASU West's most current strategic plan, the campus' primary goal is to increase enrollment. Although officials plan to enroll 7,000 students by fall 2003, enrollment at the campus has to increase by 8 percent annually to meet this goal. However, reaching this goal may be unlikely since enrollment has been flat during the last five years.

Students instead enroll at ASU main—Many students who live close to the West campus instead choose to attend the ASU main campus. A recent analysis completed by the West campus indicates that many students living in the West Valley are enrolled at ASU main. In fact, more than 5,300 students from the West Valley are enrolled at the ASU main campus instead of ASU West. More than 2,900 of those students are enrolled in programs that are not offered on the West campus, such as engineering or architecture. Out of the remaining 2,419 students, 946 are freshmen and sophomores who are also enrolled in programs similar to those offered at ASU West, but for which classes at ASU West do not exist. However, there are still 1,473 who are juniors, seniors, graduate students, or non-degree-seeking students who are enrolled in programs at ASU main instead of similar programs offered at the West campus.

Several Factors Have Contributed to Limited Growth

ASU West has faced many challenges in attracting students to its campus. First, the campus offers only a limited number of courses and programs. Second, because its programs are not sufficiently distinct from ASU main's programs, the West campus competes for students with the better-known Tempe campus. Third, awareness of the campus and its programs is low, even among residents of nearby neighborhoods. Fourth, the West campus is not well integrated with the main campus, which can present many challenges for students taking courses at both campuses. Finally, the campus does not offer the range of amenities and activities provided by ASU's main campus.

- **Limited courses offered—**The number of courses ASU West offers is limited, which makes recruiting students difficult. First, ASU West provides only upper-division and master's levels courses to students. As a result, ASU West cannot recruit high school seniors, who typically form the largest pool of potential students. Additionally, the campus cannot recruit freshman and sophomore students, since it does not offer lower-division courses.

- **Limited programs offered—**ASU West offers only a limited number of degree programs to which students can transfer, and is unable to provide the range of programs available at the main campus. For example, the West campus does not offer programs in popular areas such as engineering or computer science. As a result, the West campus likely loses students who may have transferred from the community colleges or ASU main. Further, as the Appendix (see page a-i) illustrates, the campus does not offer the wide selection of upper-division programs offered at ASU main.

- **Lack of integration with ASU main—**Although ASU West is a branch campus of ASU, the two institutions are separate. ASU West has separate accreditation from the main campus and has established its own degree programs and requirements. Due to the two campuses' different degree program requirements, students can experience difficulties when transferring courses between programs. According to administrators from ASU West, similar departments at each campus do not always accept each other's courses, and faculty would prefer that students take certain courses at the campus they are currently enrolled at. Students can enroll at both the ASU main and ASU West campuses. However, course credits do not always transfer or apply to programs between the campuses.

- **Lack of community awareness—**Despite the push from local community leaders to develop the West campus, much of the Phoenix community is unaware of ASU West and the academic programs it offers. A recent survey of West Phoenix residents living near the ASU West campus revealed that nearly 60 percent of those surveyed were unaware of the West campus and its programs.

- **Lack of differentiation between similar programs offered at the main campus and ASU West—**Since ASU West offers programs similar to those at the ASU main campus, it can be difficult for students to understand the differences between an ASU West and an ASU main program. For example, both campuses offer bachelor's degrees in business.

- **Lack of amenities—**ASU West does not offer as wide a range of amenities or on-campus experiences as the main campus. For example, ASU West does not provide residential facilities for students who would like to live on campus. In addition, the campus does not offer as many activities as ASU main, such as sports teams, fraternities and sororities, an extensive library, or a recreation center. According to some administrators at both ASU West and the community colleges, many students may be interested in these types of services and may prefer an institution that has them.

ASU Should Consider Options to Increase Enrollment at ASU West

ASU has made recent efforts to increase enrollment at the West campus, and administrators at all of the ASU campuses are discussing different options for increasing enrollment at the branch campuses. However, barriers to increasing ASU West's enrollment still remain. ASU main and ASU West administrators should consider implementing some of the available short-and long-term options for increasing enrollment.

Adding or transferring programs an option—Administrators should consider expanding the number of programs offered at the West campus by transferring existing programs from the main campus or by creating new programs at the West campus. While ASU main has more than 250 programs, ASU West has only 28. Other universities have chosen to expand or transfer programs from the main campus to their branch campuses. For example, ASU East was established by moving two programs from the main campus to the newly created campus. Additionally, George Mason University began offering unique programs, such as public policy, economics, and law at its branch campus in Arlington, Virginia. Further, La Roche College in Pennsylvania has expanded programs at off-campus sites, including the addition of a new nursing program.

Although adding or transferring programs to ASU West could present some potential difficulties, they can be overcome. For example, faculty might be likely to resist relocating to the West campus. In addition, ASU West may be unaware of the types of programs students would likely attend at the campus. Although ASU West has conducted some surveys of Glendale Community College students and students riding the shuttle bus between ASU main and ASU West to determine their interest in ASU West programs, it should continue its efforts and survey other community college students and West Valley residents to determine their interests.

***Other options available*—**Other options may be available to encourage students to attend the West campus. First, the campus could expand its recruiting and marketing efforts. Although it has taken steps to improve these activities, local community college and ASU West administration have expressed concerns that the campus needs to better market itself. According to a public relations agency that wrote an article about marketing universities, universities can increase their marketing success through better positioning themselves to "distinguish a product clearly from its competitors in order to fix it in the buyer's mind."[1] In addition, ASU West and ASU main could examine the reasons students sometimes experience difficulties transferring courses between the two campuses.

Furthermore, other options could attract students to ASU West. The campus could offer incentives to encourage students to enroll. For example, Old Dominion University in Norfolk, Virginia, offers a lower rate of tuition for students taking classes off the main campus. The lower rate is most noticeable for out-of-state students who can save $90 per credit hour if they are undergraduate students. The lower tuition rate has encouraged some students to attend the branch campus rather than enroll at the main campus.

Recommendations

1. To better determine demand from the local community for academic programs, ASU West should consider surveying students from the community colleges and residents from the West Valley. ASU West should use this information in planning to develop programs to meet the needs in the community.

2. To more effectively use ASU West to manage enrollment growth at the ASU main campus, administrators at ASU main, ASU West, and the Arizona Board of Regents should:

    a. ensure that course credits are transferable between programs at ASU and ASU West.

    b. consider transferring or adding programs to ASU West.

    c. expand recruiting and marketing efforts at ASU West.

    d. consider offering incentives to encourage students to enroll at ASU West.

3. The Board of Regents, ASU, and ASU West administrators should consider expanding ASU West's mission to include providing lower-division courses.

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1 Mackey, Maureen. *Change.* May / June 1994, Vol. 26, Issue 3, page 5.

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OTHER PERTINENT INFORMATION

During the audit, other pertinent information about the universities' retention and graduation rates was developed.

Retention and Graduation Rates Showing Some Improvement

Graduation and retention rates have both shown some improvement since the 1994 audit report, *Universities—The Student Experience* (Auditor General Report No. 94-7). The universities have implemented many programs to improve these rates, and the Board of Regents has developed three annual reports that monitor progress in these areas.

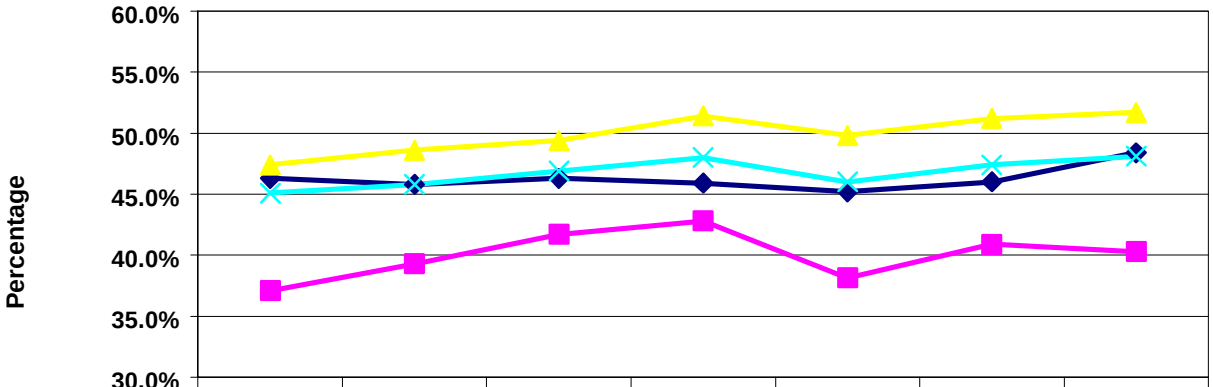
Graduation rates slightly higher—The 1994 audit reported that about 45 percent of the freshmen who entered Arizona's universities during 1985 as full-time students graduated from the same university within six years. Since the 1994 report, graduation rates have increased slightly. Still, less than half the freshmen students at Arizona's universities graduate from the same university within six years. As Figure 3 (see page 28) illustrates, the system-wide graduation rate increased from about 45 percent to about 48 percent for freshmen entering the system during 1985 to 1988, but the rate has not continued to rise for students entering in subsequent years. However, because six years have not yet passed since the 1994 report, the effects of the universities' efforts to improve graduation rates may not be apparent.

Retention rates showing signs of progress—In addition to addressing graduation rates, the 1994 audit report presented information about the universities' retention rates, which measure the percentage of freshman students who return to the university as sophomores. Overall, the universities' retention rate for new freshmen enrolled during 1985 to 1991 was approximately 72 percent. For freshmen who entered in 1996, the rate increased to over 75 percent. As shown in Figure 4 (see page 29), ASU experienced the largest gains, with an increase from just over 68 percent in 1994 to over 75 percent in 1996.

The universities have implemented programs—Each of the universities has implemented programs designed to improve retention rates. Most of the programs focus on keeping freshmen, since many of the students who leave the university do so after their first year. The following are just a few examples of the programs the universities have developed to improve retention rates:

Figure 3

Arizona University System
Six-Year Graduation Rates for Entering Freshmen [1]
1985 to 1991



	1985	1986	1987	1988	1989	1990	1991
ASU	46.3%	45.8%	46.3%	45.9%	45.2%	46.0%	48.4%
NAU	37.1%	39.3%	41.7%	42.8%	38.1%	40.9%	40.3%
UA	47.4%	48.6%	49.4%	51.4%	49.8%	51.2%	51.7%
Systemwide	45.1%	45.8%	46.9%	48.0%	46.0%	47.4%	48.1%

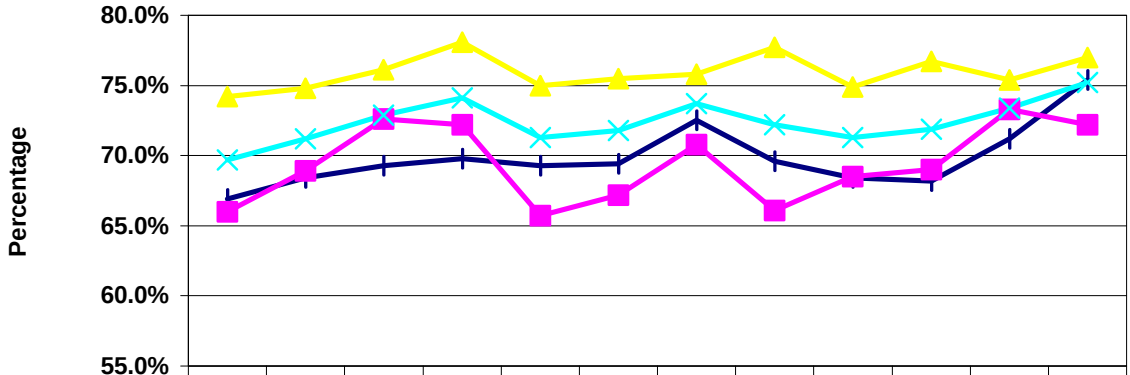
[1] Graduation rates presented in this report differ from those presented in the 1994 Auditor General report because the universities analyze the rates annually and adjust them as necessary.

Source: Arizona Board of Regents, *1997 Cohort Survival Study*.

- **ASU—**ASU has implemented a number of programs designed to help students succeed at the University, including academic support and personal development programs. For example, the University has implemented the Freshman Year Experience (FYE) program, a support program that offers tutoring, advising, classes, and computer labs in four residence halls. The 1996 retention rate for this program was 78 percent, which was higher than the campuswide rate of 75.4 percent. Additionally, university officials restructured freshman mathematics and English courses to better focus on freshmen needs.

Figure 4

Arizona University System
Retention Rates for Entering Freshmen [1]
1985 to 1996



	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
ASU	66.9%	68.4%	69.3%	69.8%	69.3%	69.4%	72.5%	69.6%	68.4%	68.2%	71.2%	75.4%
NAU	66.0%	68.9%	72.6%	72.2%	65.7%	67.2%	70.8%	66.1%	68.5%	69.0%	73.3%	72.2%
UA	74.2%	74.8%	76.1%	78.1%	75.0%	75.5%	75.8%	77.7%	74.9%	76.7%	75.4%	77.0%
Systemwide	69.7%	71.2%	72.9%	74.1%	71.3%	71.8%	73.7%	72.2%	71.3%	71.9%	73.4%	75.2%

[1] Retention rates presented in this report differ from those presented in the 1994 Auditor General report because the universities analyze the rates annually and adjust them as necessary.

Source: Arizona Board of Regents, *1997 Cohort Survival Study*.

- **NAU—**NAU has also developed programs to improve retention rates. For example, the University has developed a first-year experience program for all new freshmen and transfer students. This program provides each first-year student with a group of 20 to 25 other students with whom he or she shares the same core of classes and a common peer mentor. Further, the Freshman Connections Program provides a residence hall experience designed to link students to academic support services such as tutoring and computer laboratories.

- **UA—**The University has implemented many programs designed to improve retention. For example, the University developed the First Year Center in 1996 to provide students with academic advising, tutoring, and a study center. In addition, the University Partners Advising Program, developed in 1997, assigns faculty advisers to freshmen who have a

high risk of dropping out. Further, the University's Courses in Common program allows freshmen to take three courses with the same students, which helps to foster connections between students. Also, the UA has a program called First Year Colloquia, which are small classes for first-year students that are taught by senior faculty. This program is designed to increase students' contact with experienced faculty who want to share their enthusiasm about their fields of study.

The Board of Regents now monitors graduation and retention rates—The Board of Regents has three reports it uses to monitor the universities' progress in improving retention and graduation rates. In 1997, the Regents developed the *Arizona's Universities: Report Card* to evaluate the universities' performance in various areas. For the 1997 report card, the Regents assigned the universities a "Needs Improvement" grade regarding their freshman retention and graduation rates. The 1998 report card assigned the universities a "Needs Improvement plus" grade for the retention and graduation rates, recognizing that the universities' performance in these areas had improved somewhat since 1997.

In addition to the report card, the Regents monitor retention and graduation rates through the *Annual Report on Measurable Goals for Linking Faculty Teaching Effort to the Quality of Undergraduate Education*. This report includes goals for the universities (such as the availability of classes and the adequacy of advising), which the Regents compare to baseline measures. The 1997 report stated that while UA's graduation rate is above its baseline measure, ASU's rate is equal to its baseline measure and NAU's is below. In regard to retention rates, ASU and NAU are above their baseline measures, while UA's rate is lower than its baseline rate. Finally, in 1994 the universities began to report graduation rates by race and ethnicity in the *Minority Student Progress Report*.

In response to the 1994 audit, the universities conducted a study in 1996 to determine why students leave the universities prior to graduation. They found that most students leave the university for personal reasons such as wanting to live closer to family and friends, and for financial reasons.

Universities making progress but have not reached goals—While the university system has made progress since the 1994 report, they have not met their goals with respect to graduation and retention rates. All of the universities have set retention and graduation goals that they expect to meet beginning with the fall 1998 class. As illustrated by Table 3 (see page 31), one of NAU's goals is for 55 percent of its students to graduate within six years, and one of UA's goals is for 84 percent of its freshmen students to stay enrolled after their first year. The universities plan to continue to add to the programs already in place to improve their future graduation and retention rates.

Table 3

Arizona University System
Current Graduation and Retention Rates and Goals[1]
for 1998 Fall Semester Entering Freshmen

	Six-Year Graduation Rates		Retention Rates	
University	**1991**	**Goal**	**1996**	**Goal**
ASU	48.4%	55%	75.4%	78%
NAU	40.3	55	72.2	75
UA	51.7	63	77.0	84

[1] The most current research data is from 1991 for graduation rates and 1996 for retention rates.

Source: Arizona Board of Regents *1997 Annual Report on Measurable Goals for Linking Faculty Teaching Effort to the Quality of Undergraduate Education*.

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July 1, 1998

Douglas R. Norton, Auditor General
Office of the Auditor General
2910 North 44th Street, Suite 410
Phoenix, AZ 85018

Dear Mr. Norton:

This is in response to your letter of June 23, 1998, transmitting a revised preliminary report draft of the performance audit of the universities. Enrollment Management. We wish to thank you and your staff for the opportunity to respond to the revised draft. In addition to this letter, the universities will also respond as well.

We recognize that a long-term strategic planning process is one of the more complex and difficult public policy areas to assess. The following discussion provides additional context to readers of the audit in the areas of planning, the Enrollment Growth Decision Summary Plan, enrollment demand projections, and the branch campuses. A specific response to the audit recommendations follows this discussion.

Planning. Arizona is one of the fastest growing states in terms of population and, consequently, there is a need to plan for the expected growth of enrollment in Arizona.s public institutions of higher education. Additionally, there is increasing demand for greater access to university-level academic programs throughout the state. At the same time, there is a desire to provide quality education in the most cost-effective way. The Board of Regents Enrollment Growth Decision Summary Plan provides the framework for coordinating these goals with other education entities and the broader Arizona community.

As a result of this planning process, Arizona is now positioned with potential higher education capacity to meet future enrollment demand through various means:

1. expansion of 2+2 partnership programs that have been developed with community colleges throughout Arizona,
2. expansion of evening and weekend programs,
3. expansion of extended education programs, including electronic delivery, and
4. development of new branch campuses.

Some of these strategies offer increased capacity to educate additional students, some provide access to education for geographically bound students and those who cannot attend during traditional daytime hours, and some provide for the more effective utilization of resources.

Enrollment Growth Decision Summary Plan. In the Board.s enrollment planning process, enrollment demand projections were made and existing university capacity to meet demand was determined. The difference between the two is the potential unmet need. Each university was then asked to recommend strategies for increasing capacity to meet unmet need up to 20 years into the future. These strategies became part of the Enrollment Growth Decision Summary Plan. The audit has characterized these strategies of how each university can provide capacity to meet future enrollment growth as the *expectations.* The perspective taken by the audit implies that when these enrollment expectations are not met, interventions should be made to meet the expectations.

It would be more appropriate to view the plan as a .work-in-progress., where many dynamic and complex variables are at play and where the universities have flexibility--within the broad framework of the plan-- to meet ever-changing enrollment demand with programs and delivery systems adapted to particular situations. In other words, the Plan identifies ways that the capacity of the universities can be increased <u>if enrollments actually increase</u>. Developing the capacity to educate more students is contingent upon actual enrollment growth.

There have been major revisions in the Plan every four or five years. This seems a reasonable planning interval given the time and cost of developing projections and planning alternative strategies. The marginal benefit of more frequent enrollment demand projections may not exceed the additional costs.

Enrollment Demand Projections. Any projections invite retrospective criticism. Long-range enrollment demand projections are no different. The important question is whether the direction and order of magnitude of future enrollment demand projections has been correctly anticipated. Enrollment demand is defined as the number of <u>potential</u> students that may seek higher education in Arizona, while enrollments refer to the number of actual students that enroll in higher education institutions in Arizona.

The Arizona Enrollment Demand Model was not designed to predict enrollments at the public universities, or to provide short term projections. It was designed to project and analyze long-term statewide enrollment demand and perform .what if. simulations for higher education, based upon various assumptions. The model is one of the most sophisticated enrollment demand projection models in the country and it incorporates many of the techniques used in simpler models by other states.

The model provides a useful tool for educating policy-makers about the ways in which a variety of factors can influence projections. That task is being accomplished. Simpler projection models could provide policy-makers with forecasts, but they would not provide them with the same insight into the effects of policy changes on the demand for higher education.
The projections of the model are dependent upon the initial assumptions, policy choices, and subsequent environmental conditions. Since the model was developed, a number of assumptions in the model have not been borne out and the external environment has changed in unanticipated ways.
Examples are:

1. The national and state economies have been unusually strong during the latter half of the 1990's. When employment is high, enrollment demand is typically reduced as the opportunity cost of being in school increases.
2. A number of new community colleges, including Coconino Community College and Estrella Mountain Community College have been established. Also, Pima Community College has new branches and Rio Salado has grown. These alternatives have decreased university enrollment demand.
3. The stronger than anticipated growth of the private education sector has met some of the enrollment demand that would have otherwise been served by the state universities.
4. A change in state law reduced the incentive for teachers to obtain a master.s degree.
5. Another enactment provides vouchers for community college graduates to enroll in Arizona private post-secondary institutions.

These and other unanticipated events not only affect over-all demand for higher education; they shift demand among the sectors of education. After accounting for the shifting demand, projections of the Arizona Enrollment Demand Model may not have substantially overestimated overall higher education enrollment demand.

Branch Campuses. The original Enrollment Growth Decision Summary Plan anticipated that the least capital intensive strategies like evening and weekend programs should be implemented first. However, .windows of opportunity. such as the availability of Williams Air Force Base and the Tucson IBM facility presented themselves. Considerable political support accompanied the use of these facilities to develop branch campuses.

Responses to Audit Recommendations. In summary, the findings of the Auditor General are agreed to and the audit recommendations will be implemented.

Sincerely,

Frank Besnette
Executive Director

c: Arizona Board of Regents
University Presidents
Encs.

June 30, 1998

Douglas R. Norton, Auditor General
Office of the Auditor General
2910 North 44th Street Suite 410
Phoenix AZ 85018

Dear Mr. Norton:

On behalf of Arizona State University, I am pleased to respond to the performance audit of university enrollment management. The report presents a thoughtful analysis of enrollment management practices used in Arizona's public universities and at some of our peer institutions across the country. The Arizona Board of Regents Central Office has provided comments on the findings and recommendations related to statewide issues of enrollment forecasting and management of enrollment growth. We concur with their statement.

Regarding enrollment at ASU West, we agree with the finding of the Auditor General and will implement the audit recommendations. ASU West has made steady progress in recent years in enrollment growth and will continue to pursue that goal in the future.

We greatly appreciate your staff's cooperation in the development of this report.

Sincerely,

Lattie F. Coor
President

LFC:lv
/p

c: Frank H. Besnette, Arizona Board of Regents

June 30, 1998

Mr. Douglas K. Norton, Auditor General
Auditors General's Office
2910 North 44th Street Suite 410
Phoenix, Arizona 85018

Dear Mr. Norton:

Thank you for the opportunity for The University of Arizona to respond to the revised draft report on the University's Enrollment Management. The changes made in response to our suggestions dated June 4, 1998 are much appreciated, and we believe have made the report more balanced and accurate. Although the University has agreed to all findings and recommendations, we would like to comment specifically on the first two findings at this time.

Finding 1: Arizona's University System Can Improve Enrollment Forecasts

The University of Arizona agrees to the finding and will implement all recommendations, but we want to emphasize how difficult it is to make accurate long term enrollment projections. As page 7 of the report notes: "Some experts feel that forecasting has become even more challenging than in the past." Many variables influence students' decisions to enroll at a university, including those driven by demographic, perceptual, academic, political and economic issues. Even small change in any one of these variables--and in subsequent University enrollment--will be magnified many times when projected 10 or 20 years into the future. There is no magic model that can give us just what we need. Long term projections are difficult.

Finding 2: Universities Need to Revise Plan for Meeting Growth

The University of Arizona agrees to this finding and all recommendations will be implemented. Our Enrollment Management Committee meets regularly to research, analyze and discuss enrollment issues, including potential revisions to our plans for meeting expected increases in enrollment demand, and will continue to do so.

We believe that it is indisputable that the demand for University enrollment will continue to increase, and that we need a multi-faceted approach to meeting this need. I would add that enrollment is only one part of the picture when planning for alternative approaches to meeting growth. Politics, economics and unforeseen opportunities are also critical to the planning process. Enrollment projections are one part of a large, complex situation.

Finding 3: ASU West Can Do More to Increase Enrollment

The University of Arizona has no comments on this section.

Yours sincerely,

Peter Likins
President

PL:cd

Appendix

ASU and ASU West Degree Programs

ASU Degree Programs

Bachelor of Arts

Anthropology
Art
Asian Languages
Broadcasting
Chemistry
Chicano and Chicano Studies
Communication
Economics
English
Family Resources and Human Development
French
Geography
German
History
Humanities
Interdisciplinary Studies
Italian
Journalism
Mathematics
Music
Philosophy
Political Science
Psychology
Religious Studies
Russian
Sociology
Spanish
Theatre
Women's Studies

Bachelor of Arts in Education

Early Childhood Education
Elementary Education
Secondary Education
Selected Studies in Education
Special Education

Bachelor of Fine Arts

Art
Dance
Theatre

Bachelor of Interdisciplinary Studies

Bachelor of Music

Music Education
Music Therapy
Performance
Theory and Composition

Bachelor of Science

Accountancy
Biology
Chemistry
Clinical Laboratory Science
Communication
Computer Information Systems
Computer Science
Conservation Biology
Construction
Economics
Engineering Interdisciplinary Studies
Environmental Resources
Exercise Science / Physical Education
Family Resources and Human Development
Finance
Geography
Geology
History
Interdisciplinary Studies
Justice Studies
Management
Marketing
Mathematics
Microbiology

ASU and ASU West Degree Programs (cont'd)

ASU Degree Programs

Bachelor of Science (concl'd)

Physics
Plant Biology
Political Science
Psychology
Real Estate
Recreation
Speech and Hearing Science
Supply Chain Management
Women's Studies

Bachelor of Science in Design

Architecture Studies
Design Science
Graphic Design
Housing and Urban Development
Industrial Design
Interior Design

Bachelor of Science in Engineering

Aerospace Engineering
Bioengineering
Chemical Engineering
Civil Engineering
Computer Systems Engineering
Electrical Engineering
Engineering Special Studies
Industrial Engineering
Materials Science and Engineering
Mechanical Engineering
Medical Engineering

Bachelor of Science in Landscape Architecture

Bachelor of Science in Nursing

Bachelor of Science in Planning

Urban Planning

Bachelor of Social Work

Master of Accountancy

Master of Architecture

Master of Arts

Anthropology
- Archaeology
- Bioarchaeology
- Linguistics
- Medical anthropology
- Museum studies
- Physical anthropology
- Social-cultural anthropology

Art
- Art education
- Art history

Communication
Curriculum and Instruction
- Bilingual education
- Communication arts
- Early childhood education
- Elementary education
- English as a second language
- Indian education
- Mathematics education
- Multicultural education
- Reading education
- Science education
- Secondary education
- Social studies education

Educational Psychology
English
- Comparative literature
- English linguistics
- Literature and language
- Rhetoric and composition

French
- Comparative literature
- Language and culture
- Literature

ASU and ASU West Degree Programs (cont'd)

ASU Degree Programs

Master of Arts (concl'd)

Geography
German
- Comparative literature
- Language and culture
- Literature

History
- Asian history
- British history
- European history
- Latin American history
- Public history
- U.S. history
- U.S. Western history

Humanities
Learning and Instructional Technology
Mathematics
Music
- Ethnomusicology
- Music history and literature
- Music theory

Philosophy
Political Science
- American politics
- Comparative politics
- International relations
- Political theory

Religious Studies
Social and Philosophical Foundations of Education
Sociology
Spanish
- Comparative literature
- Language and culture
- Linguistics
- Literature

Special Education
Theatre

Master of Business Administration

Master of Computer Science

Master of Counseling

Master of Education

Counselor Education
- Counseling and student personnel

Curriculum and Instruction
- Bilingual education
- Communication arts
- Early childhood education
- Elementary education
- English as a second language
- Indian education
- Mathematics education
- Multicultural education
- Reading education
- Science education
- Secondary education
- Social studies education

Educational Administration and Supervision
Educational Media and Computers
Business Education
Educational Psychology
Higher and Postsecondary Education
- Higher education

Learning and Instructional Technology
Special Education
- Gifted
- Mildly handicapped
- Multiculturally exceptional
- Severely / multiply handicapped

Master of Environmental Planning

Environmental Planning
- Urban planning

ASU and ASU West Degree Programs (cont'd)

ASU Degree Programs

Master of Fine Arts

Art
- Ceramics
- Drawing
- Fibers
- Intermedia
- Metals
- Painting
- Photographic studies
- Photography
- Printmaking
- Sculpture
- Wood

Creative Writing
Dance
Theatre
- Acting
- Scenography
- Theatre for youth

Master of Health Services Administration

Master of Mass Communication

Master of Music

Composition
Music Education
- Choral music
- General music
- Instrumental music

Performance
- Music theatre musical direction
- Music theatre performance
- Performance pedagogy
- Piano accompanying
- Solo performance

Master of Natural Science

Natural Science
- Biology
- Chemistry
- Geology
- Mathematics
- Microbiology
- Physics
- Plant biology

Master of Physical Education

Master of Public Administration

Public Administration
- Public information management
- Public management
- Public policy analysis and evaluation
- Urban management and planning

Master of Science

Aerospace Engineering
Bioengineering
Biology
- Ecology

Building Design
- Computer-aided design
- Energy performance and climate-responsive architecture
- Facilities development and management

Chemical Engineering
- Biomedical and clinical engineering
- Chemical process engineering
- Chemical reactor engineering
- Energy and materials conversion
- Environmental control
- Solid-state processing
- Transport phenomena

Chemistry
- Analytical chemistry
- Biochemistry
- Geochemistry

ASU and ASU West Degree Programs (cont'd)

ASU Degree Programs

Master of Science (cont'd)

- Inorganic chemistry
- Organic chemistry
- Physical chemistry
- Solid-state chemistry

Civil Engineering
- Environmental / sanitary
- Geotechnical / soil mechanics
- Structures
- Transportation
- Water resources / hydraulics

Communication Disorders
Computer Science
Construction
- Construction science
- Facilities
- Management

Economics
Electrical Engineering
Engineering Science
Environmental Resources
Exercise Science / Physical Education
Family Resources and Human Development
- Family studies
- General family resources and human development

Geology
Industrial Engineering
Information Management
Justice Studies
Mechanical Engineering
Microbiology
Molecular and Cellular Biology
Nursing
- Adult health nursing
- Community health nursing
- Community mental health / psychiatric nursing
- Nursing administration
- Parent-child nursing

Master of Science (concl'd)

Physics
Plant Biology
- Ecology
- Photosynthesis

Recreation
- Outdoor recreation
- Recreation administration
- Social / psychological aspects of leisure
- Tourism and commercial recreation

Statistics

Master of Science in Design

Design
- Graphic Design
- Industrial design
- Interior design

Master of Science in Engineering

Aerospace Engineering
Chemical Engineering
- Biomedical and clinical engineering
- Chemical process engineering
- Chemical reactor engineering
- Energy and materials conversion
- Environmental control
- Solid-state processing
- Transport phenomena

Civil Engineering
- Environmental / sanitary
- Geotechnical / soil mechanics
- Structures
- Transportation
- Water resources / hydraulics

Electrical Engineering
Engineering Science
Industrial Engineering
Mechanical Engineering

Master of Social Work

ASU and ASU West Degree Programs (cont'd)

ASU Degree Programs

Master of Taxation

Master of Teaching English as a Second Language

Doctor of Education

Curriculum and Instruction
- Bilingual education
- Communication arts
- Curriculum studies
- Early childhood language
- Elementary education
- English as a second language
- Indian education
- Mathematics education
- Multicultural education
- Reading education
- Science education
- Secondary education
- Social studies education

Educational Administration and Supervision

Higher and Postsecondary Higher Education

Doctor of Musical Arts

Music
- Choral music
- Composition
- General music
- Instrumental music
- Solo performance

Doctor of Philosophy

Aerospace Engineering

Anthropology
- Archaeology
- Physical anthropology
- Social-cultural anthropology

Bioengineering

Biology
- Ecology

Business Administration

Accountancy
- Finance
- Health services research
- Information management systems
- Management
- Marketing
- Supply chain management

Chemical Engineering
- Biomedical and clinical engineering
- Chemical process engineering
- Chemical reactor engineering
- Energy and materials conversion
- Environmental control
- Solid-state processing
- Transport phenomena

Chemistry
- Analytical chemistry
- Biochemistry
- Geochemistry
- Inorganic chemistry
- Organic chemistry
- Physical chemistry
- Solid-state chemistry

Civil Engineering
- Environmental / sanitary
- Geotechnical / soil mechanics
- Structures
- Transportation
- Water resources / hydraulics

Communication
- Communicative development
- Intercultural communication
- organizational communication

Computer Science

Counseling Psychology

ASU Degree Programs

Doctor of Philosophy (cont'd)

- Curriculum and Instruction
  - Curriculum studies
  - Early childhood education
  - Educational media and computers
  - Elementary education
  - English education
  - Exercise and wellness education
  - Music education
  - Physical education
  - Reading education
  - Science education
  - Special education
- Economics
- Educational Leadership and Policy Studies
- Educational Psychology
  - Lifespan development psycholoby
  - Measurement, statistics, and methodological studies
  - School psychology
- Electrical Engineering
- Engineering Science
- English
  - Literature
  - Rhetoric / composition and linguistics
- Environmental Design and Planning
  - Design
  - History, theory, and criticism
  - Planning
- Exercise Science
  - Biomechanics
  - Motor behavior / sports
  - Psychology
  - Physiology of exercise
- Family Science
  - Marriage and family therapy
- Geography
- Geology
- History

Doctor of Philosophy (cont'd)

  - Asian history
  - British history
  - European history
  - Latin American history
  - U.S. history
- Industrial Engineering
- Justice Studies
  - Criminal and juvenile justice
  - Dispute resolution
  - Law, justice, and minority population
  - Law, policy, and evaluation
  - Women, law, and justice
- Learning and Instructional Technology
  - Instructional technology
  - Learning
- Mathematics
- Mechanical Engineering
- Microbiology
- Molecular and Cellular Biology
- Physics
- Plant Biology
  - Ecology
  - Photosynthesis
- Political Science
  - American politics
  - Comparative politics
  - International relations
  - Political theory
- Psychology
  - Behavioral neuroscience
  - Clinical psychology
  - Cognitive / behavioral systems
  - Developmental psychology
  - Environmental psychology
  - Social Psychology
- Science and Engineering of Materials
  - High resolution nanostructure analysis
  - Solid-state device materials designs
- Social Work
- Sociology

ASU Degree Programs

Doctor of Philosophy (concl'd)

Spanish
Speech and Hearing Science

- Developmental neurolinguistic disorders
- Neuroauditory processes
- Neurogerontologic communication disorders

Theatre

- Theatre for youth

Doctor of Public Administration

Juris Doctor

ASU and ASU West Degree Programs (cont'd)

ASU West Degree Programs

Bachelor of Arts

American Studies
Communication Studies
English
History
Integrative Studies
Interdisciplinary Arts and Performance
Politics
Psychology
Social and Behavioral Sciences
Sociology
Spanish
Women's Studies

Bachelor of Arts in Education

Elementary Education
Secondary Education

Bachelor of Science

Accountancy
Administration of Justice
Communication Studies
Global Business

Bachelor of Science in Nursing

Nursing (ASU main program)

Bachelor of Social Work

Master of Business Administration

Master of Education

Educational Administration and
Supervision
Elementary Education
Secondary Education