NORTHLAND PIONEER COLLEGE
FIRE SCIENCE

PROGRAM REVIEW
SPRING 2004

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NORTHLAND PIONEER COLLEGE
FIRE SCIENCE PROGRAM REVIEW

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FIRE SCIENCE PROGRAM REVIEW

I. Introduction

A. A Brief History of Fire Science at Northland Pioneer College

Northland Pioneer College has had a fire science program in its catalog since Spring of 1977. For this report, data will be traced back to Spring 1998, as program reviews are required on a five-year cycle. It should be noted at this point that there does not appear to be a program review on file for Fire Science.

In 1996, oversight of the Fire Science program was moved from the department of Extended Learning Services to the Science and Mathematics division. Under Extended Learning Services, the department chairperson supervised the duties of the program coordinator. Under Science and Mathematics, the division dean supervised the duties of the program coordinator. In November of 2002, FRS was again moved, this time to the Division of Business and Industry Training. The director of that division currently supervises the FRS coordinator.

Until November of 2002, the program coordinator position for FRS was described as half-time FRS and half-time EMS. Since 1996, four different individuals have held the position. The three coordinators who served in the years 1996-2002 had an EMS background. In November 2002, two full-time coordinator positions were created, one for FRS and one for EMS. The full-time FRS coordinator position is currently held by a firefighter from the Snowflake Fire Department. His responsibilities include serving as an instructor of FRS classes; he teaches 15 hours per week. His teaching load consists entirely of classes for the Northern Arizona Vocational Institute of Technology (NAVIT – see Part X-A below).

The Fire Science program underwent major changes in the 2001-2003 college catalog to reflect changing industry standards in the fire fighting field, both for individuals seeking to enter the work force and for career fire fighters. These changes were driven by industry feedback from the Fire Science Advisory Board. Requirements for the Associate of Applied Science degree were revised, and a 25-credit Certificate of Proficiency was added. Twelve new courses were developed, and FRS 104 (Fire Fighter I & II) was revised in course content and changed from 8 to 10 credits. For the purpose of comparison, Appendices 1 and 2 on pages 54-56 show FRS program requirements and courses from the 1999-2001 NPC catalog; Appendices 4 and 5 on pages 58-65 show FRS program requirements and courses from the NPC 2001-2003 catalog.

The most noteworthy change in the Fire Science program since 1998 is the drastic increase in FTSE from the 2001-2002 academic year to the 2002-2003 academic year. This will be discussed in detail under part II F, Enrollment, on page 4.

II. The Current Status of the Fire Science Program

A. Requirements for certificates and degrees, including prerequisites

The Fire Science program offers students an Associate of Applied Science degree, in preparation for careers in fire fighting. To earn an AAS in Fire Science, a student must complete the 21 general education requirements, 28 core requirements, and 15 credits of required and unrestricted electives as described in Appendix 3, page 57. To complete a Certificate of Applied Science (CAS) in Fire Science, a student must complete the core requirements, plus ENL 101 or SPT 120 and MAT 101. To earn a Certificate of Proficiency in Fire Science, a student must complete a prescribed core of seven FRS classes totaling 25 credit hours (see Appendix 3, p. 57). In cooperation with the State Fire Marshall's office and fire departments across the college district, classes are offered to provide fire department personnel with continuing education in fire fighting operations and the use of equipment.

B. Course offerings

With input from NPC's FRS Advisory Board, twelve new FRS courses were developed and added to the 2001-2003 college catalog. To compare the 1999-2001 course descriptions with the 2001-2003 program, see Appendices 2 and 5, pp. 55-56 and 61-65.

The Arizona State Fire Marshall's Office certifies all NPC instructors of FRS 104, Firefighter I & II. In addition, NPC utilizes curricular materials published by the International Fire Service Training Association (IFSTA) and approved by the Arizona State Fire Marshall's Office. Because of this compliance, FRS 104, Firefighter I & II, prepares NPC students to become eligible to take the Firefighter I & II examination for completion through the Arizona State Fire Marshall's Office. This completion is a prerequisite to employment for Arizona fire fighters. In order to enroll in FRS 104, an approved Agency sponsorship is required. Firefighter I & II was revised in the 2001-2003 college catalog to reflect a new, Fourth Edition of the International Fire Service Training Association text. In addition to curricular changes, the course credits were changed from 8 to 10 to reflect student contact hours and to align the course with Firefighter I & II offerings at other state community colleges.

Other FRS courses are open to AAS/CP candidates and working professionals in the fire science field. Short-term, customized training for working professionals is also provided by request through the Division of Business and Industry Training.

C. Occupations and transfer programs for which the program prepares students

Tables 1 through 4 on pages 13-16 illustrate numbers employed and hourly wages for the occupation of Fire Fighter and related occupations for the United States, all of Arizona and the Phoenix/Mesa and Flagstaff metropolitan areas. The category of Firefighter is derived from the Standard Occupational Classification (SOC) System that is used by the Bureau of Labor Statistics to classify workers into occupational categories according to their occupational definition. A survey of the fire departments in the NPC service area imparts that most departments plan to add firefighter positions within the next five years; the number of positions varies and depends upon growth in each community.

D. Licensure/regulatory or national industry skill standards that affect the program

For full-time employment with Arizona fire departments, firefighters must be certified in Firefighter I and II and EMT. Individual departments have other requirements.[1] For example, many municipal fire departments in the state's large metropolitan areas require department-specific training academies. As for volunteer departments, it is left to their discretion as to whether or not volunteer firefighters are certified. A survey of the fire departments in the NPC service area confirms that, while the AAS in FRS is not a requirement for employment, it is valued by these agencies. The survey also indicates that college-credit courses will become increasingly important in the fire fighting field. (See Table 9 on pages 22-25 for details of this survey.)

For academic year 2001-2002, 74 students were enrolled in Firefighter I & II. Of those students, 69 attempted certification and 50 (72.4%) were successful. For 2002-2003, 97 students are enrolled in Firefighter I & II. While 60 are still completing course competencies, 37 have taken the exam for certification successfully.[2]

The NPC FRS Program Coordinator is an instructor/evaluator through the Arizona State Fire Marshall's Office. He believes the success rate in 2001-2002 correlates with the low reading level of some of the students enrolled in Firefighter I & II, and while 72.4% is a good success rate, as compared to statewide figures, he feels it could be even higher. While many other NPC programs require a minimum reading level, measured by the COMPASS exam, as a prerequisite, FRS does not. He has recommended that the minimum reading level of Grade 9 be required, in keeping with State standards, but the local fire chiefs have discouraged the requirement on the grounds that it would discourage or prevent candidates from taking the class, thus reducing the available pool of qualified employees. The FRS Program Coordinator counters that students who were identified as having low reading skills could receive support, which would in turn promote success. Students with a *documented* learning disability may receive accommodations, such as having textbooks available on tape. (See Part VI – Special Populations.)

The Arizona State Fire Marshall's Office requires that all candidates make their first attempt at Firefighter I & II certification without assistance. After the first attempt, the evaluator will meet with an unsuccessful candidate and discuss possible accommodations before the next attempt. If a candidate is unsuccessful through two attempts, he or she meets with the examiner and representatives from the Fire Marshall's Office to determine why. Based on the outcome of this meeting, the candidate may receive some accommodation. For example, the candidate may have an individual not associated with fire science read the test questions to him or her, or the candidate may take the test orally.[3] It should be noted that there can be a delay of as long as two months from when students complete course work to when they can actually take the test, allowing lessons

[1] Source: Fire Science Program Coordinator
[2] Source: Fire Science Program Coordinator
[3] Source: Fire Science Program Coordinator

learned and skills acquired to be forgotten. This delay is due in part to the fact that there are only three proctors in the state.

E. Student organizations/leadership development organizations available for students

Northland Pioneer College has no student organization or leadership development organizations for students in the Fire Science program.

F. Enrollment

As of the start of the Spring 2004 semester, there were 30 degree plans on file in Fire Science.[4] Table 5 on page 17 shows Fire Science enrollment in FTSE since Spring 1998. Table 6 on page 18 breaks down headcount enrolled in each FRS class from 1998-2003, including numbers for the NAVIT program. It is especially noteworthy that total headcount in the FRS program jumped from 77 in the 2000-2001 academic year to 185 in the 2001-2002 year, an increase of 140%. It jumped again to 626 in the 2002-2003 academic year, *an additional increase of 238%.* The FTSE count for FRS in the 2000-2001 academic year averaged 3.44. In the 2001-2002 academic year it increased 192% to 10.03, and in the 2002-2003 year, it jumped again to 21.67, a gain of 116%. Tables 7 and 7A on pages 19-20 illustrate where students actually took classes in Fall of 2002 and Spring of 2003, the years of greatest enrollment in the history of the Fire Science program.

A further examination of Table 6 depicting headcount in FRS classes from Spring of 1998 through Fall of 2003 reveals that much of the increase in enrollment is due to three factors: 1.)Twelve new courses were added to the 2001-2003 catalog, and the degree and certificate requirements were revised according to industry standards. 2.) Business and Industry Training began offering customized FRS training opportunities through 199 classes. 3) The Northeastern Arizona Vocational Institute of Technology (NAVIT) partnered with NPC to offer the FRS program to its students. New classes accounted for 10.81% (20) of the total headcount in 2001-2002, while 199 classes accounted for 61.08% (113) of the total headcount for the same period. In 2002-2003, new classes accounted for 63.1% (395) of the total headcount of 626, while 199 classes accounted for 22.7% (142) of the total headcount of 626. Finally, NAVIT enrollment accounted for 18.51 or 85.4% of total FRS FTSE for 2002-2003. (For more on NAVIT, see Part XA on page 7.) It is worth noting that the course with the greatest headcount for that period was FRS 150, Wildland Firefighter, with an enrollment of 100. This follows the 2002 Rodeo-Chediski Complex, the largest wildfire in Arizona's history, which affected many communities in and adjacent to the NPC service area.

G. Number of students completing program

Table 8 on page 21 reveals that there have been only three students completing a Fire Science program between 1998 and 2003. In 1999 and 2003, one AAS degree was awarded. In 2003, one CAS was awarded. This is in part due to the percentage of students enrolled in short-term training classes, who are not FRS degree seeking. It may also be due in part to the fact that an AAS in FRS is not a requirement for employment

[4] Source: Office of the Coordinator for Student Services Information Systems

with state fire agencies. For entry-level employment, certification in Fire Fighter I & II and EMT are the only requirements. Still, the survey of fire departments in the college service area reveals that the AAS is valued, and sometimes leads to an increase in pay for fire fighters. Moreover, the 2001-2003 changes in course offerings and degree and certificate requirements were industry-driven. As of Spring 2004, there were 30 degree plans on file for FRS, so the number of students completing a FRS degree may be poised to increase in the next year or two.

H. Salary ranges in occupational field

Tables 1-4 on pages 13-16 give average salary ranges for the occupational field for the nation, the State of Arizona, and the metropolitan areas of Phoenix/Mesa and Flagstaff. Results of a survey of fire departments in the NPC service area demonstrate that local salaries for fire fighters range from $26,000 per year to $38,000 per year, while chiefs' salaries range from $39,000 to $81,000, as illustrated in Table 9 on pages 22-25.

I. Program cost per FTSE

Table 10 on page 26 illustrates the amounts budgeted and spent on the Fire Science program since 1998-99, and includes an estimate of the cost per FTSE based on the following: Amount Spent / Annualized FTSE. It is especially worth noting that the amount spent on the FRS program increased by nearly 64% between 2001-2002 and 2002-2003, but the *nearly threefold increase in annualized FTSE*, from 7.39 to 21.67, as well as the addition of course fees to offset instructional materials costs, *actually cut the cost per FTSE by more than 50%.* In fact, the 2002-2003 academic year posted the second-lowest cost per FTSE over the five-year period, 31% less than the five-year average of $5,790.70. Table 10 A on page 27 depicts how course fees are broken out by class.[5]

III. Analysis and Discussion of other State Community College Fire Science Programs

Table 11 on pages 28-30 illustrates the results of a survey of other state community colleges with regard to their fire science programs. This was a telephone survey, conducted, for the purpose of this program review, with the intent of identifying best practices among other state colleges that could be adapted for the NPC FRS program. Coordinators of fire science programs across the State of Arizona were asked to describe their degree and course offerings, operational training facilities, enrollment patterns, and staffing configurations. Analysis of the survey will reveal that state community college fire science programs vary widely in scope and structure. One element all had in common was the use of employing practicing or retired fire fighters and fire chiefs as adjunct or associate faculty. Most colleges also employed these individuals to coordinate their FRS programs and serve as liaisons between the college and the fire fighting community, in order to stay abreast of training needs. Most colleges described strong working partnerships with the fire fighting agencies in their service areas, and in fact,

[5] Prior to the 2002-2003 academic year, only three FRS courses had fees attached. In late 2002, the Director of Business and Industry Training requested course fees for most FRS classes to offset the cost of training materials used. The FRS budget for that year listed only $1,000.00 for Instructional Supplies; training materials required for most classes far exceed that total.

most colleges had agreements with these agencies for use of their operational training facilities for hands-on instruction.

The only community college with its own comprehensive operational training facility is Mesa Community College (MCC), which arguably has the most extensive and well-developed FRS program of all colleges surveyed. In the interest of emulating best practices, the MCC program would probably be worthy of further exploration. Of special interest is an "educational service agreement" between Mesa Community College and the Phoenix Fire Department, developed by Larry Thacker, the Director of MCC's FRS and EMT programs. This innovative agreement establishes MCC as the service provider for training Phoenix fire fighters, while enabling Phoenix Fire Department with a means of developing a state of the art operational facility which is shared by the MCC FRS program. If it is a goal of the NPC FRS program to provide *comprehensive* FRS education and training, (and there is clearly a need in the NPC service area – see Part VIII A) it is essential that the college have access to a complete, *local* operational training facility.

IV. Integration of Previous Program Review Findings

There does not appear to be a previous review of Northland's Fire Science program on record.

V. Integration of Academic and Vocational Education

All students completing the AAS degree in Fire Science are required to complete twenty-one credits of general education courses. All students completing a Certificate of Applied Science are required to take six general education credits, which include three credits of math and three credits of English. These requirements are consistent with other fire science degree and certificate programs throughout the State of Arizona.

VI. Special Populations

Services to special populations are the responsibility of the Coordinator of Disability Resources and Access (DRA). The DRA Coordinator provides accommodations as well as support services to students with disabilities under the guidelines of the Americans with Disabilities Act (ADA). These include, but are not limited to the following: assisting with registration; coordinating services with other local, state, and federal agencies and programs; and monitoring facilities to make sure they meet ADA access guidelines. In addition, the DRA Coordinator provides training to faculty and staff on issues related to the ADA and oversees ADA issues that may arise with regard to staff and faculty. Table 12 on page 31 fully describes services to special populations under Disability Resources and Access.[6]

There is no record of any specific effort to recruit persons from minority groups or from non-traditional genders (women in fire fighting) to the NPC FRS program.

[6] Source: Office of the Coordinator of Disability Resources and Access

VII. Equipment

Table 13 on pages 32-51 lists equipment owned by the Fire Science program; many items are owned by NAVIT. Northland Pioneer College relies *heavily* upon local departments for instructional and training materials. For example, vehicle extrication is taught using cars and extrication tools belonging to local fire departments, not to the college. To outfit one FRS student with turnout gear costs from $1,500.00-$3,000.00. This is why students in FRS 104 – Firefighter I & II are required to have agency sponsorship. NAVIT itself is a sponsoring agency, because NAVIT students are provided with turnout gear by NAVIT itself. Examination of Table 13 demonstrates that in fact the college owns very little in the way of hands-on instructional and training materials. Furthermore, the college must pay the Cities of Holbrook or Globe to do live burns at their facilities in order to cover course competencies in fire suppression. If it were not for partnering with local fire departments, Northland Pioneer College would not be able to offer the hands-on elements of the FRS program, and these departments would have to go elsewhere for training. The relationship between NPC and its fire agencies is both mutually beneficial, even symbiotic, and imperative to the development of a well-prepared fire fighting work force in Navajo and Apache Counties.

VIII. Business-Industry Partnerships

A. NPC Fire Science Advisory Board

An NPC Fire Science Advisory Board has existed throughout much of the history of the Fire Science program, in keeping with the college requirement that all vocational programs receive input from employers within the respective disciplines. In 2001, the FRS Program Coordinator invited all the fire chiefs in the NPC service area, as well as representatives of the U.S. Forest Service, Abitibi Consolidated, and the power stations owned by Arizona Public Service, Salt River Project, and Tucson Electric Power to attend biannual meetings. Stuart Bishop of Pinetop Fire Department holds the presidency of the board. According to the FRS Program Coordinator, only a handful of representatives attend regularly: Clay Wood of Taylor, Pat Hancock of Snowflake, Jeff Farkas of Heber-Overgaard, and Matt Weber, Assistant Superintendent of NAVIT. This group would like to meet every other month, rather than once per semester, and would like better attendance from all departments, as well as the power plants and other industries that must have fire battalions or emergency response teams.

The NPC FRS Advisory Board was instrumental in making the changes to the FRS degree and certificate plans and course offerings found in the 2001-2003 catalog. Theirs is not a decision making role, but their input guides the college in development of curriculum that will best serve their needs as employers of college graduates. Ideally, an ongoing connection between the college and representatives from its fire fighting community through the activities of the advisory board helps to sustain the positive relationship that is so critical to both.

B. NATA/NAFCA

"The Northeastern Arizona Training Academy (NATA) is a proposed regional training facility that will serve the interests of the Northeastern Arizona Fire Chief's Association

(NAFCA) and their associate members, in partnership with the law enforcement agencies of Apache, and Navajo Counties, and the Arizona Department of Public Safety, Navapache Regional Medical Center, Navajo County Community College District (Northland Pioneer College) and the US Forest Service. The Northeastern Arizona Fire Chief's Association represents 22 communities across Navajo and Apache Counties, and several state agencies. All of the members and associate members are required to train employees to a high standard meeting the requirements of the certifying bodies that govern their industry. Existing training facilities in Arizona and New Mexico are difficult to schedule, due to the high demand for training at these centers. Moreover, the commitment to send employees away from their response areas places tremendous burden on the communities that rely on their services. A regional training center is needed to provide instruction in five basic theme areas: 1) Structural Fire Suppression, 2) Wildland Fire Suppression, 3) Law Enforcement, 4) Industrial and 5) Hazardous Materials.

The proposed training academy will feature state of the art fire training grounds, an integrated emergency vehicle driver instruction course and a law enforcement marksmanship course. Site development will include didactic classroom and conference facilities. The ever-increasing growth in the White Mountains has placed a demand on the various departments and agencies for trained personnel. Both the prohibitive cost of independent training and the demand for increased services make the academy an essential element to the development of qualified emergency professionals."[7]

NATA has made significant achievements in developing this project:

- Acquired 8 acres of land in Taylor, along Papermill Road, which was legally transferred and recorded in the name of the Northeast Arizona Fire Chiefs Association.
- Received a $50,000 grant for surveying, concept development and site planning for the Training Academy. NATA has completed the first two items and are 40% through the site planning. This grant was awarded through the USDA Rural Community Assistance Program.
- Received a $5,000 grant for Business Plan Development. This work is currently out for bid. NATA anticipates completion by February 1, 2004.
- Developed informal partnerships with the following:
  - Northeast Arizona Fire Chief's Association
  - Northland Pioneer College
  - Navajo County Sheriff
  - Town of Taylor
  - Town of Snowflake
  - Abitibi Consolidated
  - Arizona Public Service, Cholla Power Station
  - Salt River Project, Coronado Power Station
  - Tucson Electric Power, Springerville Power Station
  - Burlington Northern Santa Fe Railroad

[7] Source: "NATA Project Description", by Tom Beddow, Deputy Director of Fire/Aviation Management, US Forest Service

- Pinetop, Lakeside, and Show Low Police Depts.
- Snowflake/Taylor Police Department
- Northern Arizona Vocational Institute of Technology (NAVIT)
- USDA Forest Service, Apache-Sitgreaves National Forests

• NATA has completed a peer agreement with Navajo County and has applied for 501C3 status as a non-profit..[8]

Northland Pioneer College has been an informal partner of the NATA group since its inception, attending and hosting meetings and facilitating discussions among other NATA affiliates. If the NPC Fire Science program is to be able to offer a full complement of academic and training opportunities, both to AAS/CP candidates and to fire fighters in need of continuing education, a full and formal partnership with the NATA group, and ownership of a role in the development and operation of the proposed academy is essential. The only other *comprehensive* hands-on training facilities for FRS students are in the Phoenix area and in Soccorro, New Mexico. The proposed NATA facility fills a critical niche for operational training for students of fire science, law enforcement, and industrial/hazardous materials.

IX. Facilities and Services that Support the Program

Virtually all fire departments in the NPC service area have allowed the college to use their facilities as classrooms for NPC classes. They have also allowed the use of their fire apparatuses, extrication equipment, and other equipment for classroom instruction and hands-on training. (See Part VII, Equipment, on page 7.) Pinetop Fire Department and Snowflake and Taylor Fire Departments both teach the NAVIT program in-house by allowing students to do hands-on training activities, and Pinetop Fire has even offered NAVIT students ride-along experiences for career exploration. Sound relationships with the departments are crucial to the continued success of the NPC FRS program.

X. Articulation and Collaboration

A. NAVIT

The Northern Arizona Vocational Institute of Technology (NAVIT) is a Joint Technological Education District (JTED) formed in 1999 to assist high school juniors and seniors in completing community college technical education classes. NAVIT serves 11 school districts in Navajo, Apache and Gila Counties. Students enrolled in NAVIT can get a jump-start on the Associate of Applied Science degree by taking community college classes beginning in the junior year of high school. NAVIT assists these students with tuition, books and fees, and NAVIT students take classes at the community college from community college instructors for part of their high school day.

Through its partnership with Northland Pioneer College, NAVIT began a Fire Science program in the 2003-2004 school year in Snowflake and Pinetop. Earlier attempts had been made at offering Fire Science in Apache County, but those attempts were not optimally successful due to scheduling and staffing problems. In Snowflake, 19 students

[8] Source: Tom Beddow, Deputy Director of Fire/Aviation Management, US Forest Service

take FRS classes five days per week for three hours per day. Their instructor at NPC is also the coordinator of the Fire Science program. At the Pinetop location, 13 NAVIT students and some adults also take classes five days per week for three hours per day. These NAVIT high school students will receive a Certificate of Proficiency in Fire Science by the completion of their senior year in high school, and will have earned over 40 credits each – approximately 2/3 of the credits required for the AAS. They will also have passed Firefighter I & II and have had the opportunity to test through the Arizona State Fire Marshall's Office for Firefighter I & II certification.

To be eligible for the NAVIT Fire Science program, students must earn a grade of 70 or better on the Reading portion of the COMPASS, an evaluation tool that assists with placement in college-level courses. They must also pass a strength and fitness test administered by the college, and have a physician's signature verifying that they are in good health.[9]

NAVIT FRS enrollment accounted for 18.51 FTSE for the 2002-2003 academic year, or about 85.4% of the total FRS FTSE for that period. There are 29 students enrolled in the program for 2003-2004, or 16.03 FTSE.[10] Table 6, FRS Enrollment by Headcount, illustrates the FRS classes in which NAVIT students are enrolled.

B. Dual/concurrent enrollment

Dual or concurrent enrollment is a partnership program between NPC and the high schools in its service area. Through dual/concurrent enrollment, high school students can take approved college courses as part of their high school curriculum. They get high school credit toward graduation, as well as college credit. There are no fire science classes listed among the agreements with local high schools, nor is there any record of there having been fire science classes under the program. This is probably due to the fact that fire science classes are not among regular high school vocational course offerings, such as welding, computer technology, building trades, etc. Unless an area high school (with the exception of the Northern Arizona Vocational Institute of Technology – see above) begins offering fire science classes, it is unlikely that there will be any dual/concurrent enrollment agreements with NPC in the future.

XI. Marketing Plan

According to the Office of Marketing and Public Relations, there has never been a formal marketing plan for FRS. Course offerings appear in the college catalog and course schedules, and on the NPC web site. In years past, there have been occasional news releases about happenings in the program, but there is no official brochure or other printed material produced by Marketing and Public Relations. The Division of Business and Industry Training does produce flyers to advertise course offerings; these flyers are sent to the various campuses and centers and to the fire chiefs in the NPC service area.

XII. Summary of Program Review Findings

[9] Source: Office of the Assistant Superintendent of the Northern Arizona Vocational Institute of Technology
[10] Source: Office of the Coordinator for Student Services Information Systems

The Fire Science Program at Northland Pioneer College has enjoyed a renaissance of sorts since the 2001-2002 academic year when FTSE grew by 192% while program cost per FTSE fell by over 50% in 2002-2003. Still the merit of any college program, especially a *community* college program, cannot be measured solely from a financial perspective. While the NPC FRS program appears to be operating efficiently and on a par with most other state community colleges with regard to offerings, it also manifests a wealth of unmet potential.

The Northeastern Arizona Fire Chiefs Association (NAFCA) and the Northeastern Arizona Training Academy (NATA) have concisely identified a need for an operational training facility and for concomitant training in the NPC service area. The NATA group has initiated the process of making this facility a reality. Northland Pioneer College needs access to a comprehensive operational training facility if it is to serve the needs of its constituency. Formalization of the partnership between NPC and NATA, and establishment of a clearly defined role for NPC in the NATA plan would be mutually beneficial. The educational service agreement between Mesa Community College and Phoenix Fire Department may serve as a model for the relationship between NATA and NPC.

The survey of fire departments in the NPC service area indicates that these agencies value the AAS in FRS, as well as continuing college credits for their fire fighters. The survey also reveals that most of these departments have found their relationship with NPC to be unsatisfactory in the past, but improved in the past two years. Still, there is clearly room for further improvement. It is essential that avenues of communication between the college and fire departments be further broadened through the ongoing efforts of the FRS Advisory Board. NPC should be seen as the resource of choice for fire science preparation and training, and fire departments can also be viewed as the resource of choice for associate faculty to teach FRS courses. The coordinator of the FRS program must play a key role in nurturing these relationships. Survey responses indicate that since the position was made full-time and filled by a career fire fighter, satisfaction with NPC has improved. To that end, clearly defined expectations for the FRS coordinator with regard to quality, content, consistency and distribution of the outreach message and program offerings are vital.

The growth of the NPC FRS program in the past two years, not only in FTSE and headcount, but also in approval within the fire fighting community, is a great coup for the college and its constituents. NPC has been a contributing presence in meetings of the NATA group, and the college has solicited feedback from the fire agencies in its service area and made inroads toward meeting their needs with regard to preparation of the workforce and continued training of working professionals. Because of this progress and the tremendous need that still exists in the service area, the Fire Science program appears ripe for growth. Through nurturing partnerships between local fire agencies and the college, coherently articulating the needs of those agencies to the college, and a willingness to invest in the future, Fire Science can become a true standout program at Northland Pioneer College. Indeed, it can become benchmark for fire science programs around the state.

XIII. Committee Recommendations – The program review report, and the appendices that follow were analyzed by the FRS Program Review Committee in a meeting held on Wednesday, March 10, 2004 at the White Mountain Campus in Show Low. For committee recommendations, please see Appendices, pp. 52 – 53.

TABLE 1
SALARY RANGES IN RELATED OCCUPATIONS – US NATIONWIDE[11]

SOC Code Number[12]	Occupation Title	Number Employed	Median Hourly Wage	Mean Hourly Wage	Mean Annual Wage	Mean RSE [13]
33-0000	Protective Service Occupations	2,993,490	$13.87	$16.02	$33,330	0.7%
33-1021	First-Line Supervisors/Managers of Fire Fighting and Prevention Workers	60,900	$26.66	$27.28	$56,750	0.9%
33-2011	Fire Fighters	273,850	$17.42	$18.04	$37,530	1.0%
33-2021	Fire Inspectors and Investigators	12,140	$21.64	$22.11	$46,000	1.0%
33-2022	Forest Fire Inspectors and Prevention Specialists	1,450	$18.04	$19.58	$40,720	3.6%

[11] Source: Bureau of Labor Statistics, "2002 National Occupational Employment and Wage Estimates – Protective Service Occupations", http://www.bls.gov/oes/2002/oes_33Pr.htm 29 January, 2004.
[12] Bureau of Labor Statistics, "Standard Occupational Classification System", http://www.bls.gov/soc/home.htm. 29 January, 2004.
[13] "Relative Standard of Error" – The smaller the RSE, the more precise the estimate.

TABLE 2
SALARY RANGES IN RELATED OCCUPATIONS – ARIZONA [14]

SOC Code Number[15]	Occupation Title	Number Employed	Median Hourly Wage	Mean Hourly Wage	Mean Annual Wage	Mean RSE [16]
33-0000	Protective Service Occupations	60,380	$14.24	$15.36	$31,950	3.4%
33-1021	First-Line Supervisors/Managers of Fire Fighting and Prevention Workers	1,190	$27.53	$26.08	$54,250	4.6%
33-2011	Fire Fighters	4,000	$15.40	$15.54	$32,330	5.2%
33-2021	Fire Inspectors and Investigators	240	$20.00	$22.04	$45,840	5.8%
33-2022	Forest Fire Inspectors and Prevention Specialists	40	$16.37	$15.71	$32,680	6.8%

[14] Source: Bureau of Labor Statistics, "2002 Arizona Occupational Employment and Wage Estimates – Protective Service Occupations", http://www.bls.gov/oes/2002/oes_az.htm#b33-0000 29 January, 2004.
[15] Bureau of Labor Statistics, "Standard Occupational Classification System", http://www.bls.gov/soc/home.htm. 29 January, 2004.
[16] "Relative Standard of Error" – The smaller the RSE, the more precise the estimate.

TABLE 3
SALARY RANGES IN RELATED OCCUPATIONS – PHOENIX/MESA METROPOLITAN AREA [17]

SOC Code Number[18]	Occupation Title	Number Employed	Median Hourly Wage	Mean Hourly Wage	Mean Annual Wage	Mean RSE [19]
33-0000	Protective Service Occupations	37,860	$13.98	$15.53	$32,300	5.4%
33-1021	First-Line Supervisors/Managers of Fire Fighting and Prevention Workers	660	$30.53	$29.88	$62,150	4.0%
33-2011	Fire Fighters	1,760	$20.15	$19.66	$40,880	5.2%
33-2021	Fire Inspectors and Investigators	240	$20.00	$22.04	$45,840	5.8%
33-2022	Forest Fire Inspectors and Prevention Specialists	0				

[17] Source: Bureau of Labor Statistics, "Phoenix/Mesa, Arizona MSA – 2002 OES Metropolitan Area Occupational Employment and Wage Estimates – Protective Service Occupations", http://www.bls.gov/oes/2002/oes_6200.htm#b33-00000 29 January, 2004. The Metropolitan Statistical Area is defined as "a core area containing a large population nucleus, together with adjacent communities having a high degree of economic and social integration with that core." (U.S. Census Bureau, "About Metropolitan Areas," http://222.census.gov/population/www/estimates/aboutmetro.html 29 January, 2004

[18] Bureau of Labor Statistics, "Standard Occupational Classification System", http://www.bls.gov/soc/home.htm. 29 January, 2004.

[19] "Relative Standard of Error" – The smaller the RSE, the more precise the estimate.

TABLE 4
SALARY RANGES IN RELATED OCCUPATIONS – FLAGSTAFF METROPOLITAN AREA [20]

SOC Code Number[21]	Occupation Title	Number Employed	Median Hourly Wage	Mean Hourly Wage	Mean Annual Wage	Mean RSE [22]
33-0000	Protective Service Occupations	1,310	$14.93	$15.66	$32,580	5.4%
33-1021	First-Line Supervisors/Managers of Fire Fighting and Prevention Workers	70	$21.03	$22.34	$46,470	2.0%
33-2011	Fire Fighters	210	$13.16	$12.80	$26,610	4.7%
33-2021	Fire Inspectors and Investigators	0				
33-2022	Forest Fire Inspectors and Prevention Specialists	0				

[20] Source: Bureau of Labor Statistics, " Flagstaff, AZ-UT MSA - 2002 OES Metropolitan Area Occupational Employment and Wage Estimates – Protective Service Occupations", http://www.bls.gov/oes/2002/oes_2620.htm#b33-0000 29 January, 2004. The Metropolitan Statistical Area is defined as "a core area containing a large population nucleus, together with adjacent communities having a high degree of economic and social integration with that core." (U.S. Census Bureau, "About Metropolitan Areas," http://222.census.gov/population/www/estimates/aboutmetro.html 29 January, 2004

[21] Bureau of Labor Statistics, "Standard Occupational Classification System", http://www.bls.gov/soc/home.htm. 29 January, 2004.

[22] "Relative Standard of Error" – The smaller the RSE, the more precise the estimate.

TABLE 5
FIRE SCIENCE FTSE AT NPC FROM SPRING 1998-FALL 2003[23]

S'98	4.26
F'98	8.00
S'99	5.33
F'99	6.40
S'00	6.93
F'00	3.55
S'01	3.33
F'01	8.30
S'02	11.76
F'02	24.47
S'03	18.87
F'03	21.07

[23] Source: Office of the Coordinator of Student Services Information Systems

TABLE 6
FRS ENROLLMENT BY HEADCOUNT
1998-2003[24]

COURSE #	CREDITS	COURSE NAME	1998-1999	1999-2000	2000-2001	2001-2002	2002-2003	Fall 2003	NAVIT
FRS 100	2	Fire Service Orientation & Terminology					5	29	29
FRS 102	2	Fire Service First Responder					20	39	29
FRS 104	10	Firefighter I & II				20	87	60	3
FRS 106	2	Firefighter Health & Safety					25	29	29
FRS 110	2	Hazardous Materials for First Responder	22			51	89	50	29
FRS 120	1	Emergency Vehicle Driving					84	15	
FRS 121	1	Emergency Stabilization & Extraction					31		
FRS 130	1	The Incident Command System					32	13	
FRS 140	2	Fire Service Report Writing					11		
FRS 150	2	Wildland firefighter					100	30	29
FRS 198	1	Internship				11			
FRS 199	1	Confined Space I					15		
FRS 199	1	Confined Space II					10		
FRS 199	2	Emergency Response team					62		
FRS 199	1	Fire Incident Safety					20		
FRS 199	1	Fire Service Orientation & Terminology					15		
FRS 199	2	First Responder					15		
FRS 199	1	Incident Command				10			
FRS 199	2	Industrial Fire Brigade					5		
FRS 199	1.5	Vehicle Extrication				20			
FRS 199	0.5	Wildland Fire Fighter				10			
FRS 199	1	Wildland Fire Fighter				24			
FRS 199	2	Wildland Fire Fighter (NAVIT)							
FRS 199	2	Wildland Fire Fighter		22		9			
FRS 199	0.5	Bloodborne Pathogens			29				
FRS 199	3	Technical Rescue			21				
FRS 204	8	Firefighter I & II	44	37	27	30			
		TOTAL	66	59	77	185	626	265	148

[24] Source: Office of the Director of Business and Industry Training

TABLE 7
FALL 2002 FRS CLASSES BY LOCATION AND HEADCOUNT[25]

CLASS	SHOW LOW	PINETOP	LAKESIDE	WHITE MTN. LAKE	WRV	FT. APACHE	CIBECUE	SNOWFLAKE	TAYLOR	WINSLOW	HOLBROOK	HEBER	OVERGAARD	ST.JOHNS	SPRINGERVILLE	EAGAR	GREER	SANDERS	PINON	GANADO	CHAMBERS	CAMERON	CONCHO	SACATON	YARNELL	GILBERT
FRS100, Fire Service Orientation	3			1										1												
FRS 102, Fire Service First Responder	3			1										1												
FRS 104,Firefighter I& II	11			1				2						1	10	12	2	7	1	2	3	1				
FRS 110, Haz Mat First Responder	8	1		1				10	7			1	3	2												
FRS 120, Emergency Vehicle Driver				1	6	2	4	6	2		1				2	1	3				1					
FRS 150, Wildland Firefighter	3		1	1					7	7		1	3	1												1
FRS 199, Fire Service Orientation									6	6		1	2													
FRS 199, First Responder									6	6		1	2													
FRS 199, Fire Incident Safety	2		1	1	1				5	5				2								1	1	1		
Total	27	1	2	6	7	2	0	4	42	33	0	4	10	7	12	13	5	7	1	2	4	1	1	1	1	1

[25] Source: Office of the Director of Business and Industry Training

TABLE 7A - FRS ENROLLMENT BY HEADCOUNT
Without 199 Courses Itemized
1998-2003

COURSE #	CREDITS	COURSE NAME	1998-1999	1999-2000	2000-2001	2001-2002	2002-2003	Fall 2003
FRS 100	2	Fire Service Orientation & Terminology					5	29
FRS 102	2	Fire Service First Responder					20	30
FRS 104	10	Firefighter I & II				20	87	43
FRS 106	2	Firefighter Health & Safety					25	29
FRS 110	2	Hazardous Materials for First Responder	22			51	89	61
FRS 120	1	Emergency Vehicle Driving					84	
FRS 121	1	Emergency Stabilization & Extraction					31	
FRS 130	1	The Incident Command System					32	9
FRS 140	2	Fire Service Report Writing					11	
FRS 150	2	Wildland firefighter					100	30
FRS 198	1	Internship				11		
FRS 199	0.5 - 3	Workshop		22	50	73	142	
FRS 204	8	Firefighter I & II	44	37	27	30		
		TOTAL	**66**	**59**	**77**	**185**	**626**	**231**

TABLE 7A
SPRING 2003 FRS CLASSES BY LOCATION AND HEADCOUNT[26]

CLASS	SHOW LOW	PINETOP	LAKESIDE	FOREST LAKE	VERNON	WRV	FT. APACHE	WINDOW ROCK	CIBECUE	SNOWFLAKE	TAYLOR	WINSLOW	HOLBROOK	SUN VALLEY	HEBER	OVERGAARD	ST.JOHNS	SPRINGERVILLE	EAGAR	GREER	SANDERS	GANADO	CHAMBERS	CAMERON	CONCHO	GILBERT
FRS 102, Fire Service First Responder																										
FRS 104,Firefighter I& II				2							1	2	5	1												
FRS 106, Firefighter Health & Safety	5	1	1		1				2	3	6				1	4										
FRS 110, Haz Mat First Responder		1						1										3	4	1	6	2	3	1		
FRS 120, Emergency Vehicle Driver	4	1			1	8	1		1	5	12				1	2										
FRS 121, Emergency Stabilization/Extrication	4	1							2	5	12				1	3	2									
FRS 130, The Incident Command System	5	1				1			2	3	11				1	5	2									
FRS 140, Fire Service Report Writing										1	6				1	2										
FRS 150, Wildland Firefighter	6									5	5					1	8								6	1
FRS 199, Emergency Response Team Refresher	5	1								3	4					1										
Totals	29	6	1	2	2	9	1	1	7	25	57	2	5	1	5	18	12	3	4	1	6	2	3	1	6	1

[26] Source: Office of the Director of Business and Industry Training

TABLE 8
FRS DEGREES AWARDED
ACADEMIC YEARS 1998-2003[27]

Academic Year (July-June)							
	1998	1999	2000	2001	2002	2003	ALL
Degree	GRADS	GRADS	GRADS	GRADS	GRADS	GRADS	GRADS
AAS	0	1	0	0	0	1	2
CAS	0	0	0	0	0	1	1
ALL	0	1	0	0	0	2	3

[27] Source: Office of the Dean of Institutional Research and Planning

TABLE 9
RESULTS OF FIRE SCIENCE PROGRAM SURVEY TO LOCAL FIRE CHIEFS[28]

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Abitibi Consolidated, Snowflake Division, Emergency Response Team	Other: Approximately 80 total. Our ERT members have a variety of full-time jobs in a large paper mill. We respond to emergencies only as they occur.	$20-$30 per hour	Must be in a position that requires them to respond or be an acceptable volunteer and must complete 120 hours of initial ERT training provided by the company. Chiefs must complete ERT training, plus additional incident command training.	Tied directly to the seniority clause in the Mill Labor Agreement between several unions and the company. Since we train two-deep, only the senior ERT member on each rotating shift responds to an emergency.	Y	Y	Y	Y. As competition for ERT positions becomes more intense, a college degree would be beneficial to the selection process.	0	None, but a person with more education would be a consideration in the ERT member selection process.	OSHA, IFSTA, NFPA, EPA, and NPC	Y	4; 4	We have a very good, long-standing relationship with NPC and look forward to continuing that relationship.
Alpine Fire	9 V	Chief $800.00 per month	N/A	Education, training & participation	Y	Y	Y	Yes-qualifications	20	FF I&I, First Aid, CPR, Hazmat	NPC, USFS, State Land, AFCA(?),NEAFCA	Y	2; 3	Need in-house classes
AZ State Land														

[28] Survey was developed using suggestions from FRS review committee and distributed via e mail, and in-person where possible. Because of the length of some responses, some remarks were paraphrased. All original survey responses were turned over to the Director of Business and Industry Training for review.

Cedar Hills* Cedar Hills does not yet have a fire department. It is a *private fire entity.*	0 FT/C; 0 PBC/R; 0 V	Chief: $1.00 per year	None at this time	None	N	N	N	"Not for me. I'm 65."	N	N	None	Y	1; 3+	Even though we are tiny now, we will need all the services in the future to include 1st responder, EMT-B, FF1&2, FRS degree for all officers. Please continue to support NATA training effort.
Clay Springs/ Pinedale														
Eagar	1 FT/C; 27 V	Chief: $39,100	Chief: AAS in FRS	N/A	Y	Y	Y	Y. Field is becoming more technical; computer and writing skills a must	8 - 10	NPC or State Fire Marshall	NPC; State Fire Marshall; In-house training	Y		More classes in Apache County, presented on weekends, so volunteers can attend.
Ganado														
Greer														
Heber/ Overgaard	10 FT/C; 4 PBC/R	FF- $25,172- $35,420 Chief - $48246- $64,654	FF – FFI&II & EMT Basic Chief – Assoc. degree + 3 yrs exp as Captain or above	Written exam & oral interview	Y	Y	Y	Y. Will be used for promotion.	2	20 hours of in-house training; drilling	NFPA; IFSTA; NPC; State Fire School	Y	2; 3	Class schedules that accommodate shift workers

Holbrook	All Volunteer		HS Diploma & FF I&II Cert.	All firefighters must complete FFI&II to be considered for advancement. The chief is elected by the majority of the membership. The chief appoints all officers as he sees fit.	N	N	Y	Working as volunteers, probably not	0	Monthly training provided by the departme nt	We have our own training facility. Also state fire schools and NPC	Y	5; 5	We need classes scheduled closer to our area; fire service grant writing course.
Lakeside	18 FT/C; 13 PBC/R	FF $28,056-$37,597 Chief $53,250-$71,359	FF HS Diploma + FF I&II & EMT	Competitive examination	Y	Y	Y	Yes – Upward mobility		FF I & II & EMT	NPC, State Fire School, Wildland Fire Academy	Y	3; 4	Better communicatio n between fire department, firefighter & college regarding progress is needed
Linden	4FT/C; 25 V	$26,000-$30,000	FFII;EMT; Fire Science Degree	In-house testing	Y	Y	Y	They will have to have an associate		HS/GED	NPC/Fire School	Y	3; 2	
Navajo Nation														
Pinetop Fire Department	24 FT/C; 10 PBC/R; 10 V	FF $28,000-$38,104 Chief $60,000-$81,651	Firefighter- HS or GED; FFII Cert; EMT Cert Chief: HS or GED; FFII; & thorough educational background in modern personnel administration or management	Testing process to include written test, oral board, resume, physical fitness test	?	?	Y	Y. More and more subjects are being covered that cannot be taught in house.	3 - 5	Bi-weekly training for all firefighte rs; full-time crews train every shift.	NPC, USFS, Fire Marshall's Office, Internet	Y	3; 3+	Continue to provide courses you offer now. Include a full-time coordinator, not instructor with coordinator duties.
Puerco Valley														
Saint Johns														
Show Low														
Snowflake	38 PBC/R	$36,000-$45,000	FFI&II & EMT	Election	Y	Y	Y	Y	4	None	NPC, State Fire Marshall's Office	Y	1; 3	Need live fire training

Springerville														
Sun Valley														
Taylor	1FT		FFI; FFII within 2 years	Seniority	Y	Y	Y	Yes, it will make this area more competitive and skilled		HAZMAT; CPR; Driver Training; Wild Land	AZ State Fire School; NPC; Others that may come up	Y	1; 3	I feel over the last year or so big improvements have been made and that we still have a ways to go but are getting there.
USFS Gerald Beddow														
USFS John Thompson														
USFS Tom Beddow														
WMAT														
White Mountain Lake	4 FT/C; 16 PBC/R	FF & EMTB $10.00-$11.55 per hour $32,500	Chief and Firefighters must have FF I&II & EMTB	Firefighter I & II to Lieutenant, to Captain	Y	Y	Y	Yes – AAS degree – less liability	6	Twice per month hands-on in-house	NPC and training videos	Y	3; 5	
White Mtn. Apache Fire/Rescue	21 FT; 20 PBC/R	$21,000-$30,000 Chief: $32,000-$45,000	Firefighters: FFI&II Chief: FRS degree + ten years experience w/ minimum of 5 years in command position	Appointment	Y	Y	Y	Yes-May be necessary to become an officer	12-18	Bi-weekly in-house training; Min 40 hours outside training	NPC, BIA, SFMO, ITCA	Y	2; 3	More staff, instructors, variety of classes. Satellite campuses still need help. We are really pleased by the improvements and interest shown by NPC & Scott and hope it can continue and expand. Same with EMS & Donna
Winslow														

TABLE 10
COST OF NORTHLAND PIONEER COLLEGE FIRE SCIENCE PROGRAM SINCE 1998-'99

Year	Amount Budgeted[29]	Amount Spent[30]	Annualized FTSE[31]	Cost/FTSE[32]
'98-'99	$17,359.00	$23.213.00	6.67	$3,480.21
'99-'00	$17,077.00	$34,418.00	6.67	$5,160.12
'00-'01	$21,614.00	$28,148.00	3.44	$8,182.56
'01-'02	$31,909.00	$60,141.00	7.39	$8,138.16
'02-'03	$28,248.00	$94,061.00 - $7,545.00 (course fees)[33] = $86,516.00	21.67	$3,992.43

[29] Source: Office of the Vice President for Administrative Services
[30] Source: Office of the Vice President for Administrative Services. Figures in this column include associate faculty salaries and benefits, which are not included in the department budget.

[31] Source: Office of the Coordinator for Student Services Information Systems
[32] Formula Used: Amount Spent / Annualized FTSE
[33] Prior to the 2002-2003 academic year, only three FRS courses had fees attached. In late 2002, the Director of Business and Industry Training requested course fees for most FRS classes to offset the cost of training materials used. The FRS budget for that year listed only $1,000.00 for Instructional Supplies; training materials required for most classes far exceed that total.

TABLE 10A

NORTHLAND PIONEER COLLEGE
FRS COURSE FEE'S
FALL 2003[34]

COURSE	DATE	# OF STUDENTS	COURSE FEE	TOTAL FEES
FIRE SERVICE ORIENTATION	NAVIT	19	$10.00	$190.00
FIRE SERVICE ORIENTATION	NAVIT	10	$10.00	$100.00
FIRE SERVICE FIRST RESPOND	20-Oct-03	9	$15.00	$135.00
FIRE SERVICE FIRST RESPOND	NAVIT	19	$15.00	$285.00
FIRE SERVICE FIRST RESPOND	NAVIT	10	$15.00	$150.00
FIRE SERVICE FIRST RESPOND	9/25/03-12/20/03	1	$15.00	$15.00
FIREFIGHTER I & II	9/15/03-3/06/04	14	$75.00	$1,050.00
FIREFIGHTER I & II	11/03/03-2/28/04	18	$75.00	$1,350.00
FIREFIGHTER I & II	NAVIT	3	$75.00	$225.00
FIREFIGHTER I & II	12/12/03-4/25/04	25	$75.00	$1,875.00
FIREFIGHTER HEALTH A	NAVIT	19	$10.00	$190.00
FIREFIGHTER HEALTH A	NAVIT	10	$10.00	$100.00
HAZ MAT FIRST RESPONDER	NAVIT	19	$20.00	$380.00
HAZ MAT FIRST RESPONDER	NAVIT	10	$20.00	$200.00
HAZ MAT FIRST RESPONDER	12/01/03-12/07/03	20	$20.00	$400.00
HAZ MAT FIRST RESPONDER	9/25/03-12/20/03	1	$20.00	$20.00
EMERGENCY VEHICLE DR	11/04/03-11/25/03	15	$10.00	$150.00
THE INCIDENT COMMAND	11/08/03-11/09/03	13	$10.00	$130.00
WILDLAND FIREFIGHTER	NAVIT	19	$20.00	$380.00
WILDLAND FIREFIGHTER	NAVIT	10	$20.00	$200.00
WILDLAND FIREFIGHTER	9/25/03-12/20/03	1	$20.00	$20.00
TOTAL FALL 2003 FRS FEES COLLECTED				**$7,535.00**

[34] Source: Office of the Director of Business and Industry Training

TABLE 11
FIRE SCIENCE PROGRAMS AT ARIZONA COMMUNITY COLLEGES

College	Program Description	Operations Location	Enrollment (FTSE)	Staffing
Cochise Community College	Firefighter I & II is open to all, but most who take it have an affiliation with a local fire department. Sponsorship is not a requirement. Other FRS classes make up the requirements for an AAS or one-year CP. Cochise is working on a HAZMAT CP with state certification, and is working with the AZ Fire Marshall's Office on providing Fire Officer I &II.	Cochise works with several area departments to use their training facilities for hands-on requirements.	Classes are taught in 8 week sessions, with about 70 students per session. Each student is taking from 4 to 6 credits.	Bill Saathoff (800-966-7943 x 5339), Associate Dean for Technology oversees the Fire Science program and supervises the coordinator. The coordinator is a full-time battalion chief for Sierra Vista Fire Dept. He works for Cochise under a 4-credit-hour associate faculty contract, but spends most of his time acting as a liaison between the college and departments. 4 adjunct faculty teach classes – all are career firefighters from area departments.
Coconino Community College	Fire Science academy for FFI & II and classes for pre and in service firefighters; AAS in Fire Science; CP in Intermediate Fire Science; CP in Advanced Fire Science The program coordinator developed the certificate programs for volunteer firefighters. Earning certificates gives them pay incentives with their departments, and has lead many to completing the AAS.	The college program coordinator has partnered with local departments, Flagstaff Fire Department and Summit Fire Department, to use their facilities	Academy and most classes limited to a headcount of 20. Academy always fills and leaves a waiting list of 5 or 6 Approximately 75-100 annualized FTSE in program About 60% of students are degree-seeking; 40% are firefighters seeking continuing education and training	Department Chair John Cardani (928-226-4245) oversees FRS, EMS, ACJ, Allied Health, Paralegal program One "1/3 time" FRS Coordinator Scott Walton (Pgr: 928-214-4807) is a full-time battalion chief at a local department (and works "much more than 1/3 time" at the college) ~5 associate faculty One divisional secretary for department chair
Glendale Community College	Fire Science academy for FFI &	Leases facilities from municipal	250 annualized FTSE.	1 Department Chair, Doug

	II and classes for pre and in service firefighters; AAS in Fire Science	academies such as Phoenix Fire Department; uses Luke AFB free of charge for some operations	Academy students must be sponsored by an agency	Desanti (623-845-3000) oversees 9 disciplines under Allied Technology: FRS, EMS, Automotive, ACJ, Agriculture, Video Production Technology, Graphic Arts, Welding and Aeronautics 1 FRS Program Director is a FT faculty member / instructor on a 9 month contract; carries a responsibility of 17-23 load hours per semester in addition to directorial duties 2 FT FRS Faculty – One is a retired battalion chief; one is currently a battalion chief 50 adjunct faculty in FRS – more than half are recruit training officers from municipal fire academies 1 FT Secretary for Department Chair Work-studies assist Program Director
Mesa Community College	Fire Science academy (three scheduled each year) for FFI & II and classes for pre and in service firefighters; AAS in Fire Science SRP and Rural Metro train with Mesa CC FRS Program Educational Service Agreement with Phoenix Fire Department to provide training to all their on	The academy utilizes the fire training operations facilities at the former Williams Field AFB in Chandler, as well as municipal fire facilities throughout the Valley Phoenix Fire Department extends use of its equipment and facilities	Each academy is limited to 22 students. There is always a waiting list.	1 Director of FRS/EMS Programs, Larry Thacker (480-472-0843) is a retired firefighter One half-time Academy Coordinator/Instructor, Hans Silberschlag (Cell: 480-797-2248) also serves as an instructor for one of the academies (load factor?)

	staff firefighters	as part of the educational service agreement		4 FT Instructors – 2 per academy ~20 adjunct faculty 1 FT Secretary to the Director 1 FT Secretary to the Academy
Paradise Valley Community College	FRS I & II 12 classes that lead to AAS in FRS, and transfer throughout Maricopa CC system	Working on an agreement with a fire department to get an ops program that will allow for full academy and training opportunities		1 FT Coordinator/Instructor for FRS/EMS, Dan Donahue (602-787-6782) carries a load factor of 15 per semester ~70 adjunct faculty in system
Phoenix College	Certificate of Completion in FRS AAS in FRS, which will transfer to ASU No Firefighter I&II 13 FRS classes Many classes for career firefighters in need of training	No live-burn type classes, but vehicle extrication and the Candidate Physical Agility Test (C-PAT) are taught on-site at Phoenix College	Approximately 75 FTSE, with approximately 40% comprised of career firefighters taking continuing education and training	1 FT Department Chair, Katherine Lewis, in charge of FRS and EMS 2 Resident faculty are also employed with local fire departments ~60 adjunct faculty are also firefighters or other emergency/medical personnel
Scottsdale Community College	Firefighter I&II is offered to 20 students for two 16 week academies per year. There are officer certification classes, and open FRS classes that lead to the AAS in FRS.	SCC leases training facilities from area fire departments.	SCC averages 175 students between the FRS classes and the academy, which is limited to 40 per year (20 per academy).	The program is overseen by the division chair for Nursing, EMS and FRS. She has an administrative secretary to assist her. There is no coordinator; the secretary schedules classes. There are 12-13 adjunct faculty who teach classes. All are career firefighters.
Mohave Community College				Pat Otto (928) 757-4331
Pima Community College				Dan Burke (800) 860-7462 x 7814
Arizona Western College				Tom Ruggles (928) 344-7651
Central Arizona College				Morey Morris (520) 426-4371
Yavapai Community College				1-800-922-6787

Table 12
Services Provided to Special Populations[35]

The Disability Resource and Access (DRA) provides academic accommodations to students with disabilities as mandated by the ADA (Americans with Disabilities Act) and the Rehabilitation Act of 1973. Following are examples of accommodations that may be provided:

- Note takers
- Scribes
- Readers
- Tape recorders
- Other adaptive equipment such as screen readers, voice activated typing, and closed captioning
- Sign language interpreters
- Alternative text
- Coordination of services and communication with instructors

Along with providing accommodations to students with disabilities the DRA also provides support services such as assisting with registration; coordination of services with other local, state, and federal agencies and programs; providing training to faculty and staff on ADA issues; monitoring facilities to make sure they meet ADA access guidelines; and overseeing ADA issues that may arise in regards to staff and faculty.

[35] Source: Office of the Coordinator of Disability Resources and Access, 30 January 2004. The resources available to special populations are not limited to the items listed above. This table is provided to give an indication of the variety of resources available through the Office of Disability Resources and Access at Northland Pioneer College.

TABLE 13
INVENTORY LIST OF EQUIPMENT
NPC Fire Science Program
As of Sept. 5, 2003

Item	Description	Serial No.	NPC No.	Ownership	Location
File Cabinet	Tan, 4 drw, letter size		095255	NPC	SCC, Burt, ofc
Command Vest (2)	Black Net			NAVIT	SCC, Burt, ofc clst
Stethoscopes (10)	Sprague Scope	641BKDM		NPC	SCC, Burt, ofc clst
Blood Pressure Cuffs (10)	Cuff & Case, Dynamed			NPC	SCC, Burt, ofc clst
Label Master Placard Kit (1)	Label maker, supplies, case			NPC	SCC, Burt, ofc clst
Measuring Tape (1)	100 ft. Fiberglass			NPC	SCC, Burt, ofc clst
Flashlight (1)	5 cell, Maglite, purple			Scott Burt	SCC, Burt, ofc clst
Walkie Talkie (3)	Motorola			Scott Burt	SCC, Burt, ofc clst
A.E.D. Trainer				NPC	SCC, Burt, ofc clst
Video Tapes (4)	Behind the Wheel			NPC	SCC, Burt, ofc clst
Video Tapes (3)	Basic First Aid and Health			NPC	SCC, Burt, ofc clst
Video Tapes (30)	Essentials of Firefighting NPC produced copies			NPC	SCC, Burt, ofc clst

Item	Description	Serial No.	NPC No.	Ownership	Location
Video Tapes (3)	Essentials of Firefighting I & II, Vol. 4, 5 & 17			NPC	SCC, Burt, ofc clst
Video Tapes (3)	Confined Spaces			NPC	SCC, Burt, ofc clst
Video Tapes (20)	Blank, Sony			NPC	SCC, Burt, ofc clst
Video Tape (4 tape set)	Haz Mat First to Arrive			NPC	SCC, Burt, ofc clst
Video Tapes (20)	Essen. of Firefighting, Firefighter I, Vol. 1-5, 7-11, 14-23			NPC	SCC, Burt, ofc clst
Video Tapes (10)	Essen of Firefighting, Firefighter II, Vol. 1-10			NPC	SCC, Burt, ofc clst
Video Tapes (9)	Emergency Resource, Intro., Modules I-VIII			NPC	SCC, Burt, ofc clst
Video Tapes (4)	Blank, RCA			NPC	SCC, Burt, ofc clst
Video Tapes (5)	Locking Devices Series, #1-5			NPC	SCC, Burt, ofc clst
Video Tapes (6)	Safety & Survival Series			NPC	SCC, Burt, ofc clst
Video Tapes	Fire Attack, Vol. 1-6			NPC	SCC, Burt, ofc clst
Video Tapes (3)	Miscellaneous, Seat Belt, Flashover, Phoenix Warehouse Fire			NPC	SCC, Burt, ofc clst

Item	Description	Serial No.	NPC No.	Ownership	Location
Video Tapes (5)	Pump Apparatus Vo. 1-5		0957273-0957279	NPC	SCC, Burt, ofc clst
Video Tapes (5)	Extrication, Vol. 1-5		095235-095239	NPC	SCC, Burt, ofc clst
Video Tapes (6)	Extrication, Vo. 1-6 Am. Safety Video Publishers				SCC, Burt, ofc clst
Manuals/Binders (6, misc colors/sizes)	Firefighting I & II Curriculum				SCC, Burt, ofc clst
Training Manuals (42 in Binders)	Haz Mat First Reponder			NPC	SCC, Burt, ofc clst
Instr. Manual & Video Tape (1)	Haz Mat Emergency Responders FL-73			Scott Burt	SCC, Burt, ofc clst
Spiral books (25)	Pocket Guide to Chemical Hazards				SCC, Burt, ofc clst
Spiral book (2)	Haz Mat Field Guides				SCC, Burt, ofc clst

Item	Description	Serial No.	NPC No.	Ownership	Location
Manual/Binder (5)	Extrication Manual		095230-095234	NPC	SCC, Burt, ofc clst
Manual./Binder (1)	Firefighters Handbook, Instructors Guide, Delmar (publisher)				SCC, Burt, ofc clst
Manual/Binder (6)	Apparatus Manuals				SCC, Burt, ofc clst
Manual/Binder (1)	Wildland Firefighter Instructors Guide				SCC, Burt, ofc clst
Manual/Binder (1)	First Responder Test Bank			Scott Burt	SCC, Burt, ofc clst
Manual/Binder (1)	First Responder Handbook			NPC	SCC, Burt, ofc clst
Video Tapes (16)	Firefighter, First Responder & Haz Mat			NPC	SCC, Burt, ofc clst
Book (1) Softcover	Respiration Protection for Fire & Emerg Serv	0-8739-204-5	FRS 204 T #1	NPC	SCC, Burt, ofc clst
Books (2) Softcover	Ess of Firefighting Manual & Study Guide	0-87939-149-9	FRS 204 T#1 FRS 204 S6 #1	NPC	SCC, Burt, ofc clst
Manual/Binder	Fire Attack			NPC	SCC, Burt, ofc clst

Item	Description	Serial No.	NPC No.	Ownership	Location
Book (1) Softcover	Essentials of Firefighting, Student Appl.			NPC	SCC, Burt, ofc clst
Books (3) Hardcover	Fire Prevention, Klinoff			NPC	SCC, Burt, ofc clst
Books (3) Hardcover	Fire Protection, Diamantes	0-7668-4958-9		NPC	SCC, Burt, ofc clst
Manuals (2) Softcover	ACLS Prov., American Heart Association	0-87493-327-7		NPC	SCC, Burt, ofc clst
Book (1) Hardcover	OSHA in Emergency Serv.	0-8273-8359-2		NPC	SCC, Burt, ofc clst
Manuals (3) Softcover	First Responder Handbook, Fire Serv. Edition, Law Enforcement Ed., A Skills Approach	0-7668-3919-2 0-7668-4191-x 0-13-098272-5		NPC	SCC, Burt, ofc clst
Book (1) Softcover	Math for the Trades, Carmen/Saunders	0-13-030547-2		Scott Burt	SCC, Burt, ofc clst

Item	Description	Serial No.	NPC No.	Ownership	Location
Books (5) Softcover	IFSTA Fire Inspection-35334 Orient. & Term-35668 Awareness Level-35810 Pumping Apparatus-35337 Essentials of Firefighting -35475	0-87939-072-7 0-87939-117-0 0-87939-085-9 0-87939-101-4		NPC	SCC, Burt, ofc clst
Book (1) Softcover Workbook	First Responder, Essentials of Firefighting & ER Response	0-7668-0582-4		NPC	SCC, Burt, ofc clst
Book (1) Softcover	Fire Service & Law Enforcement	0-7668-3923-0		NPC	SCC, Burt, ofc clst
Book (1) Hardcover	Principles of Patient Assessment, Elling-Elling	0-7668-3899-4		NPC	SCC, Burt, ofc clst
Book (1) Softcover	Firefighter Exam	1-57685-440-X		NPC	SCC, Burt, ofc clst

Item	Description	Serial No.	NPC No.	Ownership	Location
Book (1)	Fundamentals of Emergency Care	0-7668-1498-X		NPC	SCC, Burt, ofc clst
Books (2)	Paralegal Studies, 1 hardcover, 1 softcover Edwards-Edwards	0-7668-1693-1 0-7668-2080-7		NPC	SCC, Burt, ofc clst
Book (1)	Intro to Law of Paralegals	0-7668-1693-1		NPC	SCC, Burt, ofc clst
Books (20)	Law & Firefighters, softcover			NPC	SCC, Burt, ofc clst
Handbook (1)	Firefighter=s Handbook, Essentials of FF & Emergency Resp., Delmar	0-7668-0581-6		NPC	SCC, Burt, ofc clst
Book (1)	Prep. for Terrorism, Buck, Buck & Mogil	1-4018-7131-3		NPC	SCC, Burt, ofc clst
Book (1)	Fire Service First Responder	0-13-098272-5		NPC	SCC, Burt, ofc clst

Item	Description	Serial No.	NPC No.	Ownership	**Location**
Book (1) Spiral Bound	Fire Protection System Insp, Test & Maint. Manual	0-87765-387-9		Scott Burt	SCC, Burt, ofc clst
Book (1) Softcover	Confined Space Rescue	0-8273-8559-5		NPC	SCC, Burt, ofc clst
Book (1) Softcover	Fire Ground Support Operations	0-87939-203-7		NPC	SCC, Burt, ofc clst
Book (1) Softcover	NFPA 921 Guide for Fire & Expl. Inv	2001 Ed		Scott Burt	SCC, Burt, ofc clst
Book (1) Softcover	Encyclopedia of Fire Protection	0-7668-0869-6		NPC	SCC, Burt, ofc clst
Book (1) Softcover	Principles of Vehicle Extrication	0-87939-176-6		NPC	SCC, Burt, ofc clst
Book (1) Softcover	Firefighter Career Starter	1-57685-365-9		NPC	SCC, Burt, ofc clst

Item	Description	Serial No.	NPC No.	Ownership	**Location**
Book (1) Softcover	Fire Department Incident Safety Officer	0-7668-0362-7		Scott Burt	SCC, Burt, ofc clst
Book (1) Softcover	Fire Command	0-87765-284-8		NPC	SCC, Burt, ofc clst
Books (20) Softcover	Law & Firefighters			NPC	SCC, Burt, ofc clst
Book (1) Softcover	Fire Prevention Inspection & Code Inf.	0-7668-5285-7		NPC	SCC, Burt, ofc clst
Book (1) Softcover	Haz Mat Managing the Incident	0-87939-111-1		Scott Burt	SCC, Burt, ofc clst
Books (20) Softcover	2000 Emergency Response Guidebook			NPC	SCC, Burt, ofc clst
Video Tapes (8)	Haz Mat Incident Management, The 8 Step Process			Abitibi	SCC, Burt, ofc clst

Item	Description	Serial No.	NPC No.	Ownership	Location
Coveralls (7)	Spruce Green			NAVIT	SCC, Burt, ofc clst
Coveralls (12)	Yellow			NAVIT	SCC, Burt, ofc clst
Slacks (6)	Spruce Green			NAVIT	SCC, Burt, ofc clst
Vests (10)	Orange net, Incident Command@			NAVIT	SCC, Burt, ofc clst
A.E.D. (1)	Trainer Lifepak 500T			NPC	SCC, Burt, ofc clst
Masks (7)	Full face masks			NAVIT	SCC, Burt, ofc clst
Red Bags (7)	Small red nyl bags w/Fire Dept. logo			NAVIT	SCC, Burt, ofc clst
Safety Helmet (1)	Orange plastic safety helmet w/ ear protection			Scott Burt	SCC, Burt, ofc clst
Books (17) Hardcover	OSHA Safety & Health in Em. Serv.	0-8273-8359-2		NAVIT	SCC, Burt, ofc clst
Books (17) Softcover	Principles of Vehicle Extrication	0-87939-176-6		NAVIT	SCC, Burt, ofc clst
Books (15) Softcover	Essentials of Firefighting, Study Guide	0-87939-146-4		NAVIT	SCC, Burt, ofc clst

Item	Description	Serial No.	NPC No.	Ownership	**Location**
Books (11)	Fire Service First Responder	0-87939-146-4		NPC	SCC, Burt, ofc clst
Video Tape	Fire Facilities Inc. Wesco Steel Fire Training Towers			NPC	SCC, Burt, ofc clst
Book (23) Spiral bound	Incident Command System Manual, Blue cover			NAVIT	SCC, Burt, ofc clst
Book (13) Spiral bound	Incident Management Systems, Student Workbook			NAVIT	SCC, Burt, ofc clst
Head Blocks (20)	Foam (round)			NPC	Old Court House FRS Classrm clst
Spanner Wrenches (2)				NPC	Old Court House FRS Classrm clst
Head Blocks (17)	Flat			NPC	Old Court House FRS Classrm clst
C-Collar Kit	Collars (9), Head Blocks (2) w/bag			NPC	Old Court House FRS Classrm clst
CD (2 piece)	Firefighter I & II Essentials			NPC	Old Court House FRS Classrm clst

Item	Description	Serial No.	NPC No.	Ownership	Location
A.E.D. Trainers				NPC	Old Court House FRS Classroom clst
Fire Shelters (9)	Practice shelter in bag			NPC	Old Court House FRS Classroom clst
Compass (10)	Folding compass w/laniard		095260-095269	NPC	Old Court House FRS Classroom clst
Video Tapes (6)	Rope Tech	Vol. 1-5 & 9		Snowflake Fire Department	Old Court House FRS Classroom clst
Video Tapes (5)	Extrication	Vol. 1-5	095245-49	NPC	Old Court House FRS Classroom clst
Manuals (5)	Extrication	Vol. 1-5	095240-44	NPC	Old Court House FRS Classroom clst
Video Tapes (10)	Miscellaneous Firefighting			NPC	Old Court House FRS Classroom clst
Manual/Binder (5)	Haz Mat Training for First Responder			NPC	Old Court House FRS Classroom clst
Manual/Binder (1)	Vehicle Firefighting			NPC	Old Court House FRS Classroom clst
Manual/Binder (1)	Volunteer Firefighting Training			NPC	Old Court House FRS Classroom clst

Item	Description	Serial No.	NPC No.	Ownership	**Location**
Book (1) Hardcover	Principles of Patient Assessment in EMS	0-7668-3899-4		NPC	Old Court House FRS Classroom clst
Manual/Binder (1)	Haz Mat Instructor Manual			Scott Burt	Old Court House FRS Classroom clst
Manual/Binder (1)	Haz Mat Student Manual			NPC	Old Court House FRS Classroom clst
Air Tanks (2)	2216 Pressure OUT-OF-SERVICE			NAVIT	Old Court House FRS Classroom
Books (47) Softcover	Essentials of Firefighting			NAVIT	Old Court House FRS Classroom clst
Books (20) Softcover	Essentials of Firefighting Study Guide			NAVIT	Old Court House FRS Classroom clst
Books (40) Softcover	Confined Space Rescue	8273-8559-5		NAVIT	Old Court House FRS Classroom clst
Books (40) Hardcover	Firefighting Strategies & Tactics	0-7668-1344-4		NAVIT	Old Court House FRS Classroom clst
Books (40) Softcover	Firefighting Strategies & Tactics Workbook	0-7668-1345-2		NAVIT	Old Court House FRS Classroom clst
Smoke flares (1 box)	3 minute Smoke flares			NAVIT	Old Court House FRS Classroom clst

Item	Description	Serial No.	NPC No.	Ownership	Location
Books (9) Softcover	Emergency Response Handbook			NAVIT	Old Court House FRS Classroom clst
Books (23) Softcover	Emergency Response Handbook			NPC	Old Court House FRS Classroom clst
Books (8)	Wildland Firefighting for Structural Firefighters	0-87939-214-2		NAVIT	Old Court House FRS Classroom clst
Manual/Binder, 3in.	Wildland Instr. Guide			NPC	Old Court House FRS Classroom clst
Manual/Binder, 1 in.	Haz Mat Trainer for First Responder			Scott Burt	Old Court House FRS Classroom clst
Books (11) Softcover	Essentials of Firefighting	0-87939-146-4		NPC	Old Court House FRS Classroom clst
Books (16) Softcover	Fire Service F[ir]stesponder	0-8359-5314-9		NAVIT	
Book (1) Softcover	Principles of Patient Assessment in EMS	0-7668-3899-4		Scott Burt	Old Court House FRS Classroom clst
Books (2) Softcover	First Responder A Skills Approach	0-8359-5106-5		NPC	Old Court House FRS Classroom clst

Item	Description	Serial No.	NPC No.	Ownership	Location
Books (22) Spiral bound	Incident Command, Blue cover			NAVIT	Old Court House FRS Classroom clst
Books (24)	Incident Management System, Yellow cover			NAVIT	Old Court House FRS Classroom clst
File Cabinet	2 drw, Grey, letter		Green NPC label	NPC	Old Court House FRS Classroom
V.C.R.	RCA	C362NJ1ZE	Green NPC label	NPC	Old Court House FRS Classroom
Proxima		SN-AGFN24600084	095440	NPC	Old Court House FRS Classroom
Laptop	Compaq	N800CP200P5 60WC512US	095464	NPC	Old Court House FRS Classroom
Books (22) Softcover	Principles of Vehicle Extrication	0-87939-176-6		NAVIT	Old Court House FRS Classroom
Books (25)	Occupational Safety & Health in Emergency Services	0-8273-8359-2		NAVIT	Old Court House FRS Classroom
T-Shirts (14)	Snowflake F.D. Logo, Red, short-sl			Snowflake Fire Department	Old Court House FRS Classroom clst
Video Tapes (6)	Sony			NPC	Old Court House FRS Classroom clst

Item	Description	Serial No.	NPC No.	Ownership	Location
Jump Ropes (5)	White nylon, wood handles, new			NPC	Old Court House FRS Classroom clst
Smoke Machine (1)	Model ST 10	6001795		NAVIT	Old Court House FRS Classroom clst
Duffel Bags, (10) new, (6) used	Red, AFirefighter@ logo, black straps			NAVIT	Old Court House FRS Classroom clst
CD=s (23)	Firefighting I, Essentials Series 1-23			Snowflake Fire Department	Old Court House FRS Classroom clst
CD=s (10)	Firefighting II, Essentials Series			Snowflake Fire Department	Old Court House FRS Classroom clst
CD=s (6)	Incident Command System, 5 Fires Tutorial			Snowflake Fire Department	Old Court House FRS Classroom clst
CD (1)	Test & Evaluation of Water supplies			Snowflake Fire Department	Old Court House FRS Classroom clst
Video Tape (1)	Essentials of Firefighting I & II Vol. 1-23			Snowflake Fire Department	Old Court House FRS Classroom clst

Item	Description	Serial No.	NPC No.	Ownership	Location
Video Tape (1)	Essentials of Firefighting I & II Vol. 1-10			Snowflake Fire Department	Old Court House FRS Classroom clst
Duffel Bag (1)	Red, Containing C-Collars, splints, bandages, misc ems items			Scott Burt	Old Court House FRS Classroom clst
Air Tanks (12)	MSA Yellow			NAVIT	Old Court House FRS Classroom/ Exercise Room
Air Tanks (13)	Stealth H30, Grey			NAVIT	Old Court House FRS Classroom/ Exercise Room
Boots (16 Pairs)				NAVIT	Old Court House FRS Classroom/ Exercise Room
Turn-Outs (18)	Jacket			NAVIT	Old Court House FRS Classroom/ Exercise Room
Turn-Outs (18)	Pants			NAVIT	Old Court House FRS Classroom/ Exercise Room

Item	Description	Serial No.	NPC No.	Ownership	Location
Mannequin (1)	Male			NAVIT	Old Court House FRS Classroom/ Exercise Room
Helmets (21)	Orange			NAVIT	Old Court House FRS Classroom/ Exercise Room
Helmets (6)	Yellow			NAVIT	Old Court House FRS Classroom/ Exercise Room
Helmets (2)	Red			NAVIT	Old Court House FRS Classroom/ Exercise Room
Masks (32)				NAVIT	Old Court House FRS Classroom/ Exercise Room
Mannequin	Child CPR			SVFD (Red Bag)	Old Court House FRS Classroom/ Exercise Room
Fire Hoses (7)	Brown			SVFD	Old Court House FRS Classroom/ Exercise Room

Item	Description	Serial No.	NPC No.	Ownership	Location
Fire Hose (1)	Yellow			SVFD	Old Court House FRS Classroom/ Exercise Room
Ice Chest	Igloo, Red			SVFD	Old Court House FRS Classroom/ Exercise Room
Jump Ropes (17)	White nylon- Wood handles			NPC	Old Court House FRS Classroom/ Exercise Room
Mannequin (1)	Female			NAVIT	Old Court House FRS Classroom/ Exercise Room
Fire Hose (2)	Orange			SVFD	Old Court House FRS Classroom/ Exercise Room
Fire Hose (1)	Red			SVFD	Old Court House FRS Classroom/ Exercise Room
Coveralls (1)	Blue			Scott Burt	Old Court House FRS Classroom/ Exercise Room

Item	Description	Serial No.	NPC No.	Ownership	Location
Coveralls (1)	Yellow			SVFD	Old Court House FRS Classroom/ Exercise Room
Helmet (1)	Yellow (New)			SVFD	Old Court House FRS Classroom/ Exercise Room

TABLE 14 – COMMITTEE RECOMMENDATIONS

The Northland Pioneer College Fire Science Program Review Committee held a meeting on Wednesday, March 10, 2004, to examine and analyze the FRS Program Review document and make recommendations based upon it. Present at the meeting were the following committee members:

Peggy Belknap – NPC Director of Business & Community Services
Stuart Bishop – Deputy Fire Chief at Pinetop Fire Department and NPC Associate Faculty in FRS
Scott Burt – NPC FRS Coordinator and FRS Faculty
Leslie Collins – NPC Advisor
Matt Weber – Assistant Superintendent of Northern Arizona Vocational Institute of Technology (NAVIT)

Excused were Donna Farkas - NPS EMS Coordinator, Jeff Farkas, CEP with Heber-Overgaard Fire Department and NPC Associate Faculty, and Laurie Winder – NPC Coordinator of Disability Resources and Access.

Each committee member had received a copy of the complete program review document, including the complete appendices (Tables 1-13), so all were prepared in advance for discussion. The recommendations that follow were agreed upon by the committee to guide the NPC Fire Science Program.

Recommendation I: *The position of Fire Science Coordinator should continue to be full-time but should carry a teaching load of six credits per semester, rather than the current ten credits.* While it was made clear that the coordinator position is a twelve-month position, and that the ten-credit teaching load is commensurate with that of other FRS coordinator positions around the state, committee members cited that NPC is unique in that it has multiple campuses that are widely dispersed. Fire departments served by the college are also distributed over a large geographic area. The reduction in teaching load would allow the coordinator to more effectively perform other duties, such as marketing the program throughout the college service area, and coordinating with area fire departments in order to be responsive to their training needs.

Recommendation II: *Based on the percentage of FRS FTSE generated by NAVIT, there should be two full-time FRS faculty for NAVIT.* The chief justification for this recommendation is that the annual forest fire season, which typically runs from April through October, takes faculty away from teaching duties. It was also felt that NAVIT class numbers should be limited to 15 students. There are currently 19 in Snowflake, which taxes equipment and facilities.

Recommendation III: *There must be an operational training facility.* In order to offer a full complement of fire science training that meets the needs of the college service area, including the continuing education and training needs of regional fire departments, there must be a training facility in Northeastern Arizona. NATA has made strides toward the development of such a facility; NPC has been invested in it, but progress has been extremely slow. This facility is *essential* to the growth of the NPC FRS program, and when it comes to pass, FRS should be

housed there. If it appears that the NATA group is not able to move to complete the facility, the college must move to ensure its completion.

Recommendation IV: *There must be a formal marketing plan for Fire Science.* A formal plan would provide direction to the FRS Coordinator, so he could effectively promote the program throughout the college service area.

Recommendation V: *The FRS Advisory Committee should be restructured to include fire department training officers; the committee should meet monthly.* The college must do a better job of coordinating training for regional fire departments. While NPC has been involved with regional fire chiefs' meetings, and representatives of various departments have participated in the FRS Advisory Committee, there is sometimes a lack of coordination between chiefs and training officers.

Recommendation VI: *There should be a minimum reading level of 70 on the COMPASS for admission into the FRS program.* There is currently no minimum reading level for FRS students, and some struggle with the written materials. The committee felt that a minimum reading level would ensure that students were prepared to handle course content, and would lend credibility to the program.

Recommendation VII: *The college FRS program must stay current with changes at the State Fire Marshall's Office and be ready to adapt to them readily.* The State Fire Marshall's Office is currently rewriting policies and procedures that may affect community college FRS programs.

Recommendation VIII: *The FRS program should come up with criteria for Instructor Assistants for FRS classes, and use Instructor Assistants instead of Associate Faculty.* Because of safety concerns, some classes require multiple instructors. Other community colleges use Instructor Assistants at $9.55 per hour, rather than Associate Faculty at $16.55 per hour. Instructor Assistants could make classes safer and more efficient in a cost-effective manner.

Recommendation IX: *NPC should implement a course fee to cover the cost of the state test for Firefighter I & II.* In order to administer the test, a proctor from the Arizona State Fire Marshall's Office is required, in addition to five state evaluators. It is the responsibility of the sponsoring agency, in this case NPC, to pay the salaries of the five state evaluators. Each evaluator works for eight hours at $16.33 per hour (associate faculty rate), so at 8 x $16.33 x 5, the cost to NPC for administering the test is $653.20. Moreover, the State Fire Marshall's Office may be poised to implement a fee for the proctor's services. (Currently there is no charge.) This would be an additional financial burden for the college.

This concludes the committee recommendations for the 2003 NPC Fire Science Program Review.

CERTIFIED EMERGENCY PARAMEDIC • 15 cr.

EMT	220	Advanced Life Support II	3 cr.
EMT	221	Pharmacology II	1 cr.
EMT	222	Clinical II	5 cr.
EMT	223	Cardiology	5 cr.
EMT	224	Advanced Cardiac Life Support	1 cr.

OTHER ELECTIVES • 6 cr.

FIRE SCIENCE

The Fire Science program, through cooperation with the State Fire Marshal's Office and fire departments throughout NPC's district, trains fire department personnel in fire fighting operations and in the use of equipment. Employment areas related to firefighting include fire inspectors, arson investigators, fire prevention specialists, insurance investigators, hazardous materials specialists, business/industry fire protection system engineers, and others.

The firefighter is an indispensable asset to the small and rural communities within NPC's district. However, career and employment opportunities in firefighting are limited in the college district as most fire departments within the district are volunteer fire departments. Those persons seeking career opportunities should understand that opportunities exist in greater numbers in all metropolitan and suburban areas of the state, as well as the nation. The training is available, though, at most NPC campuses and centers because of the existence of the volunteer fire departments.

Revisions to the Fire Science degree program are expected. See program coordinator for possible changes.

Associate of Applied Science Degree

GENERAL EDUCATION REQUIREMENTS • 25 cr.

Communications	6 cr.
Mathematics	
MAT 101 Basic Technical Math	3 cr.
Humanities from at least 2 departments	6 cr.
Social and Behavioral Sciences	6 cr.
Physical and Biological Sciences	4 cr.

MAJOR AREA OF EMPHASIS • 35 cr.

Student must complete the following 26 core credits:

FRS	204	Fire Operations I & II	8 cr.
FRS	107	Fire Fighting Apparatus and Equipment	3 cr.
FRS	110	Hazardous Materials First Responder	2 cr.
FRS	210	Fire Fighting Tactics and Practices	3 cr.
FRS	220	Arson Investigation I	3 cr.
EMT	102	Emergency Medical Training-Basic	7 cr.

In addition, a minimum of 9 credits must be taken from the following list:

FRS	109	Hazardous Materials Awareness	0.5 cr.
FRS	115	Fundamentals of Fire Prevention	3 cr.
FRS	198	Internship	1-8 cr.
FRS	199	Workshop	0.5-6
FRS	221	Arson Investigation II	3 cr.
FRS	250	Fire Hydraulics	3 cr.
FRS	260	Fire Officer Supervision and Management	3 cr.
FRS	299	Special Topics	1-3 cr.

OTHER ELECTIVES • 4 cr.

Certificate of Applied Science

To complete a Certificate of Applied Science in Fire Science, a student must complete the Major Area of Emphasis core, MAT 101, and ENL 101.

HOSPITALITY

This program provides the student with the knowledge and skills for employment in the restaurant and hotel industry, by offering educational curriculum in Front Office Operations, Food Service, and Housekeeping.

Three certification options are available. Students have the opportunity to earn certification in Front Office Operations, Food Service or Housekeeping upon successfully completing nine credit hours in each area.

EMT 221 • Pharmacology II **1 cr.**

The drugs a Certified Emergency Paramedic administers in pre-hospital care. Covering mechanism of drug actions, effects, dosages, including techniques for administration. **Prerequisites:** EMT 211 and acceptance into a DHS approved IEMT to CEP course required before enrollment. One lecture.

EMT 222 • Clinical II **5 cr.**

Advanced clinical experience required for Paramedic Certification. In-depth hospital and vehicular exposure based on CEP skills learned in the class. Experience in various specialty areas related to trauma, medical and cardiac emergencies provided. **Prerequisites:** EMT 212 and acceptance into a DHS approved IEMT to CEP course required before enrollment. Fifteen lab.

EMT 223 • EMT Cardiology **5 cr.**

Anatomy and physiology of the human heart, involving electrical conduction system, EKG interpretation, management of dysrhythmia, assessment of patients presenting with cardiac problems. **Prerequisite:** Acceptance into a DHS approved IEMT to CEP course required before enrollment. Five lecture.

EMT 224 • Advanced Cardiac Life Support **1 cr.**

Didactic and psychomotor skill training techniques of Advanced Cardiac Life Support, including endotracheal intubation, defibrillation, dysrhythmia recognition, cardiovascular pharmacology and newborn resuscitation. **Prerequisite:** Acceptance into a DHS approved IEMT to CEP course required before enrollment. One lecture.

ENGLISH (ENL)

ENL 100 • Fundamentals of Composition **3 cr.**

An integrated reading/critical thinking/writing approach to skills needed for success in college. Extensive writing practice with emphasis on purpose, organization and revision for clarity and correctness. **Prerequisite:** Satisfactory placement. Three lecture.

ENL 101 • College Composition I **3 cr.**

A course in the basic principles of writing college-level, academic essays, including a short research paper. **Prerequisite:** Satisfactory placement. **Prerequisite:** Satisfactory placement. Three lecture.

ENL 102 • College Composition II **3 cr.**

A course in the basic principles of writing college-level, documented critical essays, including a longer research paper. **Prerequisite:** A grade of 'C' or better in ENL 101. Three lecture.

ENL 109 • Technical Writing **3 cr.**

A course surveying the basic principles of preparing reports and other work-related documents. The course will emphasize the generation of documents used in engineering, science and business. **Prerequisite:** A grade of 'C' or better in ENL 101. Three lecture.

ENL 220 • World Literature I **3 cr.**

A survey of influential and widely-known literature of the Western world. First semester ends with the Renaissance. **Prerequisite:** Satisfactory placement. Three lecture.

ENL 221 • World Literature II **3 cr.**

A survey of literature of the Western world from the Renaissance to the 19th Century. **Prerequisite:** Satisfactory placement. Three lecture.

ENL 224 • English Literature I **3 cr.**

A survey of significant writers, works and developments in English literature from the Middle Ages through the Restoration and 18th Century. Meets the common program requirements for English majors. **Prerequisite:** Satisfactory placement. Three lecture.

ENL 225 • English Literature II **3 cr.**

A survey of the significant writers, works and developments in English literature from the Romantic Movement to the Modern/Post-Modern period. Meets the common program requirements for English majors. **Prerequisite:** Satisfactory placement. Three lecture.

ENL 230 • American Literature I **3 cr.**

A survey of selected readings in American literature from the colonial period to 1865. **Prerequisite:** Satisfactory placement. Three lecture.

ENL 231 • American Literature II **3 cr.**

A survey of readings in American literature from 1865 to the present. **Prerequisite:** Satisfactory placement. Three lecture.

ENL 233 • Literature of the Southwest **3 cr.**

A survey of writers of the Southwestern United States, emphasizing Anglo, Native American and Mexican-American writers. **Prerequisite:** Satisfactory placement. Three lecture.

ENL 234 • Native-American Literature **3 cr.**

Native-American literature, including traditional oral literature as well as related problems and perspectives of understanding of contemporary Native-American writing. **Prerequisite:** Satisfactory placement. Three lecture.

ENL 236 • Creative Writing I **3 cr.**

Elements of drama, fiction, poetry and literary non-fiction. The student will be required to create and submit individually designed projects according to his/her specific writing interests. **Prerequisite:** ENL 101. Three lecture.

ENL 237 • Creative Writing II **3 cr.**

Extended practice in the art of writing drama, fiction, poetry and literary non-fiction. Emphasis on creative, individual expression and critical rewriting. **Prerequisite:** ENL 236. Three lecture.

FIRE SCIENCE (FRS)

FRS 107 • Fire Fighting Apparatus and Equipment **3 cr.**

The care, maintenance and operation of fire apparatus and pumps. **Prerequisite:** FRS 204 or instructor's permission. Three lecture.

FRS 109 • Hazardous Materials Awareness 0.5 cr.

Identifies hazardous materials as well as the role of various agencies at the scene of a hazardous materials incident. Instruction in recognition and identification, safety consideration, capabilities and limitations and pre-emergency planning are provided.

FRS 110 • Hazardous Materials First Responder 2 cr.

Hazardous Materials Training for First Responders will provide students with needed information relating to the increased risk of emergency responders exposure to toxic substances. One lecture; one lab.

FRS 115 • Fundamentals of Fire Prevention 3 cr.

Fire department organizations, inspection, public cooperation and image, recognition of fire hazards, development of implementation of a systematic and deliberate inspection program, survey of local, state and national codes pertaining to fire prevention and related technology. Three lecture.

FRS 204 • Fire Operations I & II 8 cr.

Designed for the new fire department recruit. Covers all basic aspects of fire fighting and safety to take untrained personnel off the street and prepare them to meet all State and National safety and fire fighting standards toward certification as Fire Fighter II. Meets NFPA 1001. **Prerequisite:** Instructor's permission. Six lecture; four lab.

FRS 210 • Fire Fighting Tactics and Practices 3 cr.

The use of manpower, equipment, apparatus and other resources on the fire ground to safely attack, control and extinguish structural, LPG, flammable liquid and other various types of fires encountered by fire departments. **Prerequisite:** FRS 204 *or* instructor's permission. Three lecture.

FRS 220 • Arson Investigation I 3 cr.

Stresses fire behavior, building construction, determining origin of fire, accidental fires, incendiary fires, insurance basics, motives, photography, fire scene sketching, fire investigation, rural and wildland fires, vehicle fires, and fatal fires. (For fire fighters only). **Prerequisite:** FRS 204 *or* instructor's permission. Three lecture.

FRS 221 • Arson Investigation II 3 cr.

Stresses legal aspects, interview and interrogation, collecting and preserving evidence, forensic lab services, field notes, and report writing and field activities. **Prerequisite:** FRS 220 (For fire fighters only). Three lecture.

FRS 250 • Fire Hydraulics 3 cr.

The hydraulic laws used in fire fighting including water supply, pump requirements and friction losses. **Prerequisite:** FRS 107 *or* instructor's permission. Three lecture.

FRS 260 • Fire Officer Supervision and Management 3 cr.

Covers principles of supervising fire fighters under normal and emergency conditions, department operations, department management, personnel problem solving and leadership qualities. Seminars in tactical and personnel problem solving will be part of the course. Teaching methodology will be covered. **Prerequisite:** Instructor's permission. Three lecture.

FRENCH (FRE)

FRE 100 • Introduction to French 3 cr.

Introduction to French through emphasis on phonology, basic structures and vocabulary manipulation. Three lecture.

FRE 101 • Elementary French I 4 cr.

Focus on speaking and understanding French through an audio-aural approach comprised of dialogues, pattern drills, grammar and situation. The skills of reading and writing are introduced. **Prerequisite:** FRE 100. Four lecture.

FRE 102 • Elementary French II 4 cr.

Continuation of FRE 101. Emphasis continues on the four basic skills of hearing, speaking, reading and writing. Augmented basic vocabulary, new grammatical structures and increased focus on culture. **Prerequisite:** FRE 101. Four lecture.

GEOGRAPHY (GEO)

GEO 110 • World Regional Geography 3 cr.

Basic physical, cultural and economic elements and their integration on a world and regional basis. **Prerequisite:** Satisfactory placement. Three lecture.

GEOLOGY (GLG)

GLG 101 • Introduction to Geology I- Physical Geology 4 cr.

Basic geological, geophysical and geochemical concepts and principles, minerals, rocks, weathering, earthquakes, mountain building, volcanoes, water and glaciers. Three lecture; three lab.

GLG 102 • Introduction to Geology II- Historical Geology 4 cr.

Basic principles of applied geology and their application to the interpretation of the earth's geological history, stratigraphy, geologic maps, and fossils. Possible weekend field trips. **Prerequisite:** GLG 101. Three lecture; three lab.

GERMAN (GER)

GER 100 • Introduction to German 3 cr.

Introduction concentrating on phonology, vocabulary, basic patterns and structure drills that will prepare the way for rapid acquisition of conversational German and for German 101. Three lecture.

GER 101 • Elementary German I 4 cr.

Systematic approach to develop the skills of comprehension, speaking, reading, and writing. Fundamentals of grammar, basic vocabulary and conversation. **Prerequisite:** GER 100. Four lecture.

GER 102 • Elementary German II 4 cr.

Emphasis continues on the four basic skills introduced in German 101 – comprehension, speaking, reading and writing. Augmented basic vocabulary, new grammatical structures, more conversation and increased focus on culture. **Prerequisite:** GER 101. Four lecture.

DEGREE PROGRAMS	EMERGENCY MEDICAL TECHNOLOGY	FIRE SCIENCE	HERITAGE PRESERVATION	INDUSTRIAL TECHNOLOGY
RECOMMENDED HIGH SCHOOL/ OTHER PREPARATORY COURSES	Mathematics Chemistry Anatomy Health First Aid Driver Training Communications Aptitude/Career Interest Inventory	Health Chemistry First Aid Physical Education Driver Training Mathematics Communications Aptitude/Career Interest Inventory	History English General Science	Communications Computer Science/Programming Industrial Arts Mathematics Science Electronics Aptitude/Career Interest Inventory
NPC DEGREE PROGRAM ENTRANCE REQUIREMENTS	1. Minimum or higher acceptable scores on ASSET or other placement tests (writing 35, reading 41, math 34). 2. 18 years old or older. 3. Current CPR card. 4. Immunizations up-to-date 5. For IEMT/CEP coursework certification by Arizona Department of Health Services (DHS) as an EMT.	1. Minimum or higher acceptable scores on ASSET or other placement tests (writing 35, reading 35, math 34). 2. No other requirements beyond institutional admission.	1. No minimum acceptable scores on ASSET or other placement tests are required on entrance. However, program completion does require enrollment in general education courses that have these (writing 35, reading 35, math 34) or other course enrollment criteria. 2. No other requirements beyond institutional admission.	1. No minimum or higher acceptable scores on ASSET or other placement tests are required on entrance. However, program completion does require enrollment in general education courses that have these (writing 35, reading 35, math 34) or other course enrollment criteria. 2. No other requirements beyond institutional admission.
PROGRAM SCHEDULE	IEMT and CEP courses are not scheduled on a regular basis, but are offered on demand through the needs of local fire departments and ambulance companies. Contact the college EMT program coordinator.	Major courses are primarily offered at most NPC campuses and centers on demand through the needs of local fire departments; evenings and/or weekends.	Major areas of emphasis primarily offered on video/audio. General Education available at most NPC campuses/centers.	Major courses are primarily offered at Show Low, days and evenings. Others where classes are needed and "make". High school Tech-Prep articulation may be available.
DEGREE TYPE RECOGNIZED AT GRADUATION	Associate of Applied Science (AAS)	Associate of Applied Science (AAS) Certificate of Applied Science (CAS)	Associate of Applied Science (AAS) Certificate of Applied Science (CAS) Certificate of Proficiency (CP)	Associate of Applied Science (AAS) Certificate of Applied Science (CAS) Certificate of Proficiency (CP)
EMPLOYMENT OPPORTUNITIES	Interm. Emergency Medical Tech. Certified Emergency Paramedic (Ambulance Companies, Fire Departments, Industrial Safety Offices)	Fire Fighter Fire Inspector Arson Investigator Fire Prevention Specialist Insurance Investigator Hazardous Materials Specialist Fire Protection System Engineer Note: Most career jobs are in suburban and metropolitan areas.	Field Archaeologist Museum Staff Interpretive Guide Archives Staff Avocational Archaeologist	Plant Technician (various) Plant Operator Plant System Engineer Line Supervisor Production Control Supervisor Water Treatment Operator Wastewater Treatment Operator Others

NOTE: In addition, other credentialing may be available from state, federal and other agencies.

ELC	110	DC Analysis and Laboratory	3 cr.
ELC	111	AC Analysis and Laboratory	3 cr.
ELC	140	Semiconductor Theory and Laboratory	3 cr.
ELC	141	Electronic Circuits Theory and Laboratory	3 cr.
ELC	210	Digital Theory and Laboratory	3 cr.
ELC	245	Microprocessor Theory and Laboratory	3 cr.
ELC	246	Microprocessor Interfacing and Laboratory	3 cr.
ITP	105	Unified Technical Concepts of Physics I	3 cr.
ITP	150	Pneumatics and Hydraulics Control Systems	3 cr.

CERTIFICATE OF PROFICIENCY

Power Plant Electronics • 18 cr.

ELC	110	DC Analysis and Laboratory	3 cr.
ELC	111	AC Analysis and Laboratory	3 cr.
ELC	140	Semiconductor Theory and Laboratory	3 cr.
ELC	141	Electronic Circuits Theory and Laboratory	3 cr.
ELC	210	Digital Theory	3 cr.
ELC	245	Microprocessor Theory and Laboratory	3 cr.

Special Note: The Power Plant Electronics Certificate of Proficiency is offered in-house at area industries.

EMERGENCY MEDICAL TECHNOLOGY

BASIC LIFE SUPPORT (BLS)

The Emergency Medical Technology program, under the regulations of the Arizona Department of Health Services (DHS) and with the cooperation of local and state medical institutions in Arizona, trains people from First Responder up through Certified Emergency Paramedic. Employment opportunities exist within fire departments which offer First Responder, and ambulance service companies and fire departments which hire EMT's, IEMT's and CEP's both locally and statewide.

Levels of training are: First Responder (not regulated by DHS), Emergency Medical Technician (EMT), Intermediate Emergency Medical Technician (IEMT) and Certified Emergency Paramedic (CEP). EMT, IEMT and CEP are all certified by DHS. IEMT and CEP levels are considered Advanced Life Support (ALS) and acceptance into a DHS-approved course is a requirement prior to enrollment.

To obtain further information on these two certification areas you should contact the Program Coordinator on the Painted Desert Campus in Holbrook.

ASSOCIATE OF APPLIED SCIENCE DEGREE

The AAS degree in Emergency Medical Technology requires 64 total semester hours. The 32 core credits of the program are Certified Emergency Paramedic certification. The core is divided into the Intermediate Emergency Medical Technician (IEMT) certification (first 17 credits) and the upgrade from IEMT to Certified Emergency Paramedic (CEP) (final 15 credits). To qualify for acceptance in the degree program, a student must be certified by the Arizona Department of Health Services (DHS) as an EMT.

Revisions to EMT degree program are expected. Contact the program Coordinator for possible changes.

GENERAL EDUCATION REQUIREMENTS • 26 CR.

BIO	201	Human Anatomy and Physiology I	4 cr.
BIO	202	Human Anatomy and Physiology II	4 cr.
ENL	101	College Composition I	3 cr.
ENL	102	College Composition II	3 cr.
MAT	112	Algebra II: Intermediate	3 cr.
		or	
MAT	121	Intermediate Algebra	4 cr.
PSY	101	Introduction to Psychology	3 cr.
PSY	240	Developmental Psychology	3 cr.
Humanities - any course from AAS Humanities list			3 cr.

MAJOR AREA OF EMPHASIS • 32 CR.

Intermediate Emergency Medical Technician • 17 cr.

EMT	210	Advanced Life Support I	13 cr.
EMT	211	Pharmacology I	2 cr.
EMT	212	Clinical I	2 cr.

Certified Emergency Paramedic • 15 cr.

EMT	220	Advanced Life Support II	3 cr.
EMT	221	Pharmacology II	1 cr.
EMT	222	Clinical II	5 cr.
EMT	223	EMT Cardiology	5 cr.
EMT	224	Advanced Cardiac Life Support	1 cr.

OTHER ELECTIVES • 6 CR.

FIRE SCIENCE

The Fire Science program, through cooperation with the State Fire Marshal's Office and fire departments throughout Northland's district, trains fire department personnel in fire fighting operations and in the use of equipment. Employment areas related to firefighting include fire inspectors, arson investigators, fire prevention specialists, insurance investigators, hazardous materials specialists, business/industry fire protection system engineers, and others.

The firefighter is an indispensable asset to the small and rural communities within Northland's district. However, career and employment opportunities in firefighting are limited in the college district as most fire departments within the district are primarily volunteer fire departments. Those persons seeking career opportunities should understand that opportunities exist in greater numbers in all metropolitan and suburban areas of the state, as well as the nation. The training is available, though, at Northland campuses and centers because of the existence of the volunteer fire departments.

Revisions to the Fire Science degree program are expected. Contact the program Coordinator for possible changes.

ASSOCIATE OF APPLIED SCIENCE DEGREE

GENERAL EDUCATION REQUIREMENTS • 25 CR.

Communications			6 cr.
Mathematics			
	MAT 101	Basic Technical Math	3 cr.
Humanities from at least 2 departments			6 cr.
Social and Behavioral Sciences			6 cr.
Physical and Biological Sciences			4 cr.

MAJOR AREA OF EMPHASIS • 35 CR.

Student must complete the following 26 core credits:

EMT	102	Emergency Medical Training-Basic	7 cr.
FRS	107	Fire Fighting Apparatus and Equipment	3 cr.
FRS	110	Hazardous Materials First Responder	2 cr.
FRS	204	Fire Operations I and II	8 cr.
FRS	210	Fire Fighting Tactics and Practices	3 cr.
FRS	220	Arson Investigation I	3 cr.

In addition, a minimum of 9 credits must be taken from the following list:

FRS	109	Hazardous Materials Awareness	0.5 cr.
FRS	115	Fundamentals of Fire Prevention	3 cr.
FRS	198	Internship	1-8 cr.
FRS	199	Workshop	0.5-6 cr.
FRS	221	Arson Investigation II	3 cr.
FRS	250	Fire Hydraulics	3 cr.
FRS	260	Fire Officer Supervision and Management	3 cr.
FRS	299	Special Topics	1-3 cr.

OTHER ELECTIVES • 4 CR.

CERTIFICATE OF APPLIED SCIENCE

To complete a Certificate of Applied Science in Fire Science, a student must complete the Major Area of Emphasis core, MAT 101 and ENL 101.

HERITAGE PRESERVATION

The Heritage Preservation Program offers students the opportunity to learn about environmental and cultural resources. Furthermore, students apply the information gained from the program in a variety of fields, including heritage administration, museum administration, archaeological survey and fieldwork, and interpretive guides. The program emphasizes the management of cultural resources to maintain them for future generations and also to provide the ability to market those resources to a potential tourism industry.

ASSOCIATE OF APPLIED SCIENCE DEGREE

GENERAL EDUCATION REQUIREMENTS • 24 CR.

Communications			6 cr.
Mathematics			
	MAT 103	Business Math	3 cr.
		or	
	MAT 105	Mathematics for General Education	3 cr.
ANT	102	Cultural Anthropology	3 cr.

Students must complete 12 credits from the following courses:

ART	115	Art History I	3 cr.
ART	116	Art History II	3 cr.
BIO	181	General Biology I	4 cr.
BIO	182	General Biology II	4 cr.
GLG	101	Introduction to Geology I-Physical	4 cr.
GLG	102	Introduction to Geology II-Historical	4 cr.
HIS	105	U.S. History I	3 cr.
HIS	106	U.S. History II	3 cr.

MAJOR AREA OF EMPHASIS •31 CR.

Students may choose one of the following emphasis areas:

Field Archaeology Technician • 13 cr.

ANT	210	Southwest Archaeology	3 cr.
CIS	230	Introduction to Microsoft Office	3 cr.
HPP	101	Cultural Preservation	3 cr.
HPP	108	Archaeological Field Methods	3 cr.
HPP	198	Internship	1 cr.

Interpretive Guide • 13 cr.

ANT	210	Southwest Archaeology	3 cr.
CIS	230	Introduction to Microsoft Office	3 cr.
EMT	199	First Aid	0.5 cr.
HPP	101	Cultural Preservation	3 cr.
HPP	111	Map Reading	0.5 cr.
HPP	112	Survival Skills	0.5 cr.
HPP	114	Plant Identification	0.5 cr.
HPP	115	Arizona Geology	0.5 cr.
HPP	116	Arizona History	0.5 cr.
HPP	198	Internship	1 cr.

Museum Technician • 13 cr.

ANT	210	Southwest Archaeology	3 cr.
CIS	230	Introduction to Microsoft Office	3 cr.
HPP	101	Cultural Preservation	3 cr.
HPP	105	Collections Development for Museums	3 cr.
HPP	198	Internship	1 cr.

EMPHASIS ELECTIVES • 18 CR.

ENL 234 • Native-American Literature 3 cr.

Native-American literature, including traditional oral literature as well as related problems and perspectives of understanding of contemporary Native-American writing. Prerequisite: Satisfactory placement. Three lecture.

ENL 236 • Creative Writing I 3 cr.

Elements of fiction, poetry, literary non-fiction, and drama. The student will be required to create and submit individually designed projects according to his/her specific writing interests. Prerequisite: ENL 101. Three lecture.

ENL 237 • Creative Writing II 3 cr.

Extended practice in the art of writing fiction, poetry, literary non-fiction and drama. Emphasis on creative, individual expression and critical rewriting. Prerequisite: ENL 236. Three lecture.

FIRE SCIENCE (FRS)

FRS 107 • Fire Fighting Apparatus and Equipment 3 cr.

The care, maintenance and operation of fire apparatus and pumps. Prerequisite: FRS 204 *or* instructor's permission. Three lecture.

FRS 109 • Hazardous Materials Awareness 0.5 cr.

Identifies hazardous materials as well as the role of various agencies at the scene of a hazardous materials incident. Instruction in recognition and identification, safety consideration, capabilities and limitations and pre-emergency planning are provided.

FRS 110 • Hazardous Materials First Responder 2 cr.

Hazardous Materials Training for First Responders will provide students with needed information relating to the increased risk of emergency responders exposure to toxic substances. One lecture; one lab.

FRS 115 • Fundamentals of Fire Prevention 3 cr.

Fire department organizations, inspection, public cooperation and image, recognition of fire hazards, development of implementation of a systematic and deliberate inspection program, survey of local, state and national codes pertaining to fire prevention and related technology. Three lecture.

FRS 204 • Fire Operations I and II 8 cr.

Designed for the new fire department recruit. Covers all basic aspects of fire fighting and safety to take untrained personnel off the street and prepare them to meet all State and National safety and fire fighting standards toward certification as Fire Fighter II. Meets NFPA 1001. Prerequisite: Instructor's permission. Six lecture; four lab.

FRS 210 • Fire Fighting Tactics and Practices 3 cr.

The use of manpower, equipment, apparatus and other resources on the fire ground to safely attack, control and extinguish structural, LPG, flammable liquid and other various types of fires encountered by fire departments. Prerequisite: FRS 204 *or* instructor's permission. Three lecture.

FRS 220 • Arson Investigation I 3 cr.

Stresses fire behavior, building construction, determining origin of fire, accidental fires, incendiary fires, insurance basics, motives, photography, fire scene sketching, fire investigation, rural and wildland fires, vehicle fires, and fatal fires. (For fire fighters only). Prerequisite: FRS 204 *or* instructor's permission. Three lecture.

FRS 221 • Arson Investigation II 3 cr.

Stresses legal aspects, interview and interrogation, collecting and preserving evidence, forensic lab services, field notes, and report writing and field activities. Prerequisite: FRS 220 (For fire fighters only). Three lecture.

FRS 250 • Fire Hydraulics 3 cr.

The hydraulic laws used in fire fighting including water supply, pump requirements and friction losses. Prerequisite: FRS 107 *or* instructor's permission. Three lecture.

FRS 260 • Fire Officer Supervision and Management 3 cr.

Covers principles of supervising fire fighters under normal and emergency conditions, department operations, department management, personnel problem solving and leadership qualities. Seminars in tactical and personnel problem solving will be part of the course. Teaching methodology will be covered. Prerequisite: Instructor's permission. Three lecture.

FRENCH (FRE)

FRE 100 • Beginning French Conversation 3 cr.

Introduction to French through emphasis on phonology, basic structures and vocabulary manipulation. Three lecture.

FRE 101 • Elementary French I 4 cr.

Focus on speaking and understanding French through an audio-aural approach comprised of dialogues, pattern drills, grammar and situation. The skills of reading and writing are introduced. Prerequisite: Satisfactory placement. Four lecture.

FRE 102 • Elementary French II 4 cr.

Continuation of FRE 101. Emphasis continues on the four basic skills of hearing, speaking, reading and writing. Augmented basic vocabulary, new grammatical structures and increased focus on culture. Prerequisite: FRE 101. Four lecture.

GEOGRAPHY (GEO)

GEO 110 • World Regional Geography 3 cr.

Basic physical, cultural and economic elements and their integration on a world and regional basis. Prerequisite: Satisfactory placement. Three lecture.