



AACC-RB-01-4

RESEARCH BRIEF

Hot Programs at Community Colleges

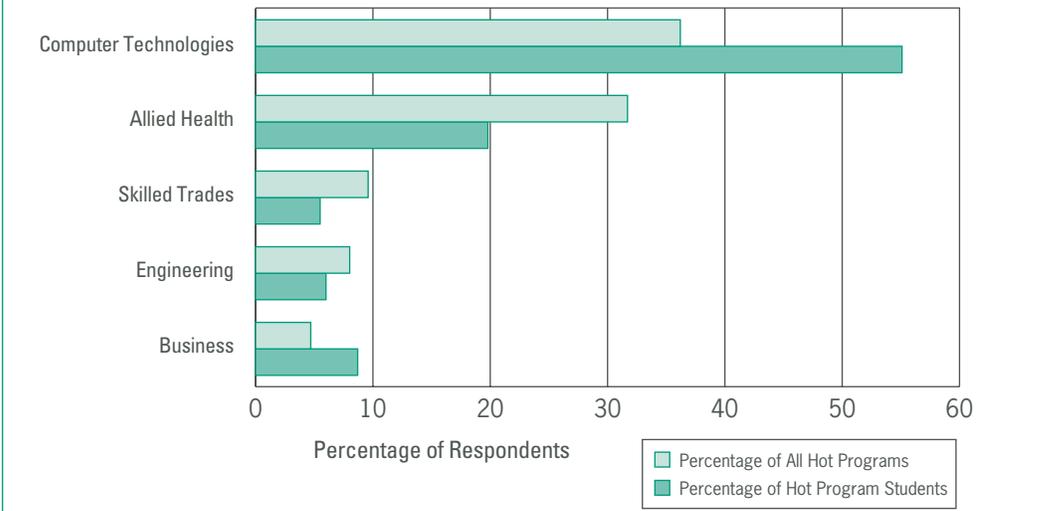
By Maryam M. Nock and Christopher Shults

EXECUTIVE SUMMARY

The American Association of Community Colleges (AACC) periodically conducts a survey of community colleges to identify their “hot” programs, defined as programs from which students are hired immediately upon graduation. In the 2000 survey, responding colleges indicated the number of students enrolled in hot programs and the average starting salary received by graduates, as well as credit and noncredit programs added to the curriculum in response to specific business and industry demands. Respondents also indicated which types of information technology (IT) vendor certification training they provide. Survey findings include the following:

- Reported starting salaries for hot program graduates increased by 21 percent between 1997 and 2000.
- 75 percent of students in the credit hot programs identified in this survey are enrolled in either computer technology or allied health.
- Dental hygiene has the highest reported salary increase, with a 32 percent jump since 1997.
- 65 percent of respondents offering training for IT vendor certification offer the training on a for-credit basis.
- Nine percent of new credit courses/programs were added in response to a demand for workers in skilled trades such as construction, welding, and carpentry.
- The Bureau of Labor Statistics projects that between 1998 and 2008, jobs requiring an associate degree will increase by 31.2 percent, the largest percentage increase among all educational levels.

FIGURE 1 Top 5 Credit Fields of Study, by Percentage of All Hot Programs and Percentage of Hot Program Students Served



Methodology

This report includes findings from the 2000 hot programs survey, the third of its kind. Most of the questions matched those of the 1994 and 1997 surveys, but some new questions were added. For example, the 2000 survey examined the types of credit and noncredit IT-credentialing programs offered by community colleges.

AACC sent the survey to chief academic officers at more than 1,100 community colleges. A total of 205 colleges responded, for a 19 percent response rate. For analysis, the various unique programs that colleges identified were classified into program areas, such as computer networking or office support, which for the purpose of this report are called *programs*. Similar programs were then grouped into

broad *fields of study*. Appendix A lists nine credit fields of study and their programs. Appendix B lists 14 noncredit fields of study and their programs. Again, these breakdowns were created for the purpose of analysis and this report only.

Respondents were asked to estimate the starting salary of hot program students. The survey did not discern between those individuals new to the workforce and those who have been working in the program area for some time.

The hot programs survey provides a sample of the trends in community college programs, based on the opinions of administrators at responding colleges. Because of the relatively low response rate, the authors caution against viewing these results as representative of a definitive national trend.

TABLE 1 15 Most Frequently Cited Hot Credit Programs

Programs	Percentage of Credit Programs in Survey	Reported Average Starting Salary	Average Students per Program
Registered Nursing	15.3%	\$32,757.01	128
General Computer Technologies	12.5%	\$34,242.19	221
Computer Networking	8.2%	\$38,767.94	170
Engineering-Electric/Electronics	5.3%	\$29,464.29	103
Computer Technician/Networking	4.5%	\$36,092.15	122
Manufacturing Technology	4.1%	\$30,291.65	31
Radiology Technology	3.3%	\$32,478.27	22
Digital Media	3.3%	\$35,409.08	172
Computer Programming	3.3%	\$30,838.11	291
General Skilled Trades	3.1%	\$25,598.03	70
Law Enforcement	2.7%	\$27,975.27	65
Dental Hygiene	2.5%	\$41,907.12	37
Computer-Aided Design	2.5%	\$27,968.63	313
Automotive	2.5%	\$29,305.72	103
General Allied Health	2.2%	\$24,781.57	53

TABLE 2 Most Frequently Cited Hot Credit Programs, by Region

Programs	Percentage	Programs	Percentage
Northeast		Pacific	
General Computer Technologies	22.7%	Networking	16.7%
Registered Nursing	13.3%	Computer Technician/Networking	9.5%
Radiology Technology	6.7%	General Computer Technologies	8.3%
Dental Hygiene	5.3%	Registered Nursing	7.1%
Medical Office Assistant	5.3%	Digital Media	6.0%
Southern		North-Central	
Registered Nursing	16.9%	Registered Nursing	10.5%
General Computer Technologies	11.0%	General Computer Technologies	10.5%
Computer Networking	10.3%	Computer Networking	10.5%
Engineering-Electric/Electronics	7.4%	General Allied Health	7.9%
Manufacturing Technology	5.9%	Engineering-Electric/Electronics	7.9%
South-Central		Midwest	
Registered Nursing	18.3%	Registered Nursing	16.9%
General Computer Technologies	15.5%	General Computer Technologies	10.0%
Radiology Technology	7.0%	Networking	10.0%
Aviation	5.6%	Computer Technician/Networking	5.6%
Computer-Aided Design	4.2%	Manufacturing Technology	5.6%

Credit Programs

As in the previous surveys, allied health and computer technologies are among the hottest fields, with 75 percent of all students reported in the survey enrolled in these fields. Table 1 shows the top 15 programs reported by responding colleges, along with their average salaries and the average number of students per program. Registered nursing was the program most frequently reported as hot, both overall and within the allied health field of study, as was the case in both the 1994 and 1997 surveys. Radiology technology, which did not rank

among the top hot programs in 1997, is now the seventh-hottest program. Physical therapy assistant, the fourth-hottest program in 1997, did not make the 2000 top 15 list.

Table 2 shows a regional perspective. Following the national trend, registered nursing and general computer technologies are hot in most regions. The exception to this is in the Pacific region, where networking and computer technician/networking programs are in the greatest demand. This finding may be attributed to the concentration of IT companies in the Pacific Northwest and California.

As Table 3 shows, six of the 10 programs with the highest student enrollments fall into the computer technologies field. The general computer technologies program attracts the most hot program students, 21 percent. Nursing accounts for 15 percent of all hot program students served.

According to the 2000 survey, the average reported starting salary for hot program graduates is \$32,200. This figure represents a 21 percent increase since the 1997 survey, in which the average starting salary was \$25,500. Between 1996 and 1999, the average income for all employees with an associate degree rose by 13 percent, from \$28,514 to \$32,152 (Table 4).

The dramatic rise in reported starting salary may be a result of a growing demand for skilled workers in an increasingly tight labor market, especially in the computer and IT fields. The program with the highest increase in reported starting salary, however, is not IT related. Dental hygiene had the highest reported salary increase, with a 32 percent jump since 1997.

The starting salary for registered nursing increased by nearly 14 percent since 1997. Although registered nursing is the top hot program

by definition (students hired immediately upon graduation), it has the eighth-highest starting salary. Table 5 shows the top 10 credit programs by starting salary.

There is a significant range between the minimum and maximum starting salaries reported for hot program graduates. These differences may be caused by a variety of reasons, including the varying skills required for jobs, the availability of workers, salary variations by region, or reporting errors.

Community colleges have always been responsive to workforce needs, striving to meet training demands for the fastest-growing occupations. Since 1997, 65 percent of credit courses/programs added to the curriculum by responding community colleges were in computer technologies, with computer networking making up 47 percent of the computer technology courses. Eighteen percent of programs added were in the allied health field, and of those, 20 percent were medical office assistant courses.

Not all new courses are IT or allied health related, however. Nine percent of new credit courses/programs were added in response to a demand for workers in skilled trades such as construction, welding, and carpentry (Figure 2).

TABLE 3 Top 10 Credit Programs, by Percentage of Students Enrolled

Programs	Percentage of Hot Program Students Enrolled
General Computer Technologies	21.2%
Registered Nursing	14.9%
Computer Networking	10.7%
Computer Programming	7.4%
Computer-Aided Design	6.1%
Business Administration	4.9%
Digital Media	4.4%
Computer Technician/Networking	4.2%
Engineering-Electric/Electronics	4.2%
Accounting	2.3%

TABLE 4 Mean Income of U.S. Population Aged 18 and Older, by Educational Attainment: 1996 to 1999

Educational Attainment	1996	1999	Percent Change
High School Graduate	\$22,154	\$24,572	10.9%
Some College, No Degree	\$23,937	\$26,958	12.6%
Associate Degree	\$28,514	\$32,152	12.8%
Bachelor's Degree	\$45,526	\$52,883	16.2%

Source: U.S. Bureau of the Census 2000

TABLE 5 Top 10 Credit Programs, by Starting Salary

Programs	Average Starting Salary	Minimum Reported Starting Salary	Maximum Reported Starting Salary
Dental Hygiene	\$41,907	\$30,000	\$72,800
Computer Networking	\$38,768	\$22,000	\$55,500
Hospitality	\$37,478	\$25,500	\$42,500
Computer Technician/Networking	\$36,092	\$24,250	\$50,000
Digital Media	\$35,409	\$20,000	\$52,500
Fire Services	\$34,483	\$32,000	\$35,000
General Computer Technologies	\$34,242	\$14,560	\$50,000
Registered Nursing	\$32,757	\$21,000	\$50,000
Radiology Technology	\$32,478	\$18,000	\$60,000
Computer Hardware	\$31,434	\$17,368	\$35,000

FIGURE 2 Percentage of Credit Courses/Programs Added, by Field of Study

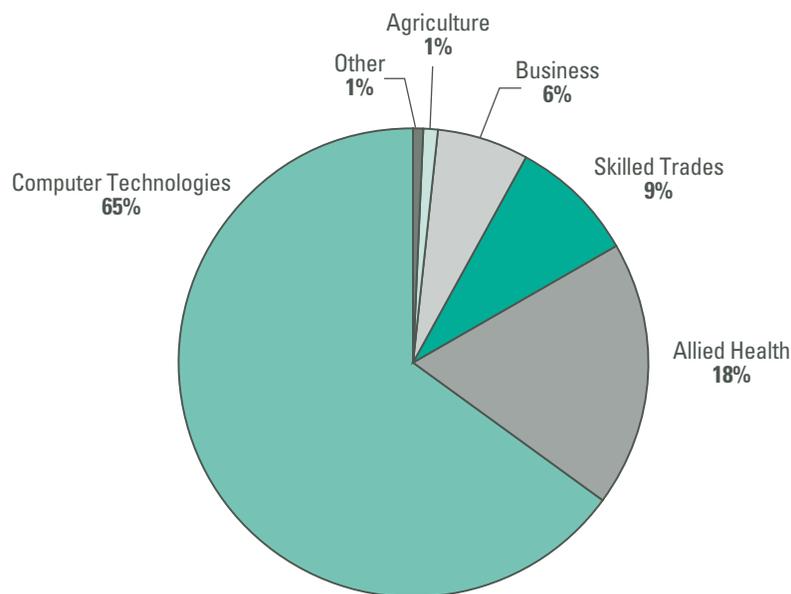


TABLE 6 10 Most Frequently Cited Hot Noncredit Programs

Programs	Percentage of All Reported Hot Noncredit Programs
Computer Networking	15.2%
Computer Literacy	10.9%
Computer Programming	6.0%
Nursing Aide	6.0%
Other Allied Health	4.9%
Workplace Skills	4.9%
General Skilled Trades	4.3%
Office Support	4.3%
Law Enforcement	3.8%
Web	3.8%

Noncredit Programs

Noncredit programs attract a broad range of students, from those working to attain a general equivalency diploma, to those with bachelor's or master's degrees seeking a career change, to the many students seeking personal enrichment through a variety of classes and activities. Whereas hot credit programs are primarily academic or occupational in nature, noncredit programs reported as hot usually fall into the categories of vendor certification training (Microsoft or Cisco, for example), skills upgrade, or self-improvement.

Table 6 shows the most frequently cited noncredit programs. Computer literacy, which includes courses on learning to use the Internet and overcoming the fear of computers, accounts for 11 percent of all noncredit programs.

As with the credit programs, a large percentage of noncredit programs defined as hot are found in the computer technologies field of study. Computer networking is the largest of all programs in this field, accounting for 15 percent of all noncredit programs and 56 percent of computer technologies programs.

Office support, in the business field of study,

includes Microsoft Office User Specialist (MOUS) and other courses that could also be defined as computer literacy. Because of their business nature, these were classified as office support, a program area that accounts for nearly half of all noncredit business programs (see Appendix B).

In addition to ascertaining which noncredit offerings are hot, the survey examined the courses/programs that have been added in response to requests from local business and industry. Following overall trends, courses/programs in the computer technologies field of study were among those most frequently added. However, some non-computer courses/programs such as Spanish as a second language and truck driving also were among the noncredit courses/programs added (Table 7).

Certifications

According to a recent survey by the Information Technology Association of America (ITAA 2000), a trade association representing the IT industry, more than 10 million IT jobs exist in the United States today, and 1.6 million more will be created during 2001. Many of these jobs require vendor certifications, and according to the ITAA survey, community

colleges were selected by business and industry as effective in developing the needed IT skills.

Eighty percent of the respondents in the AACC hot programs survey offer training for at least one IT vendor certification listed on the ITAA survey. The AACC survey examined how many colleges offered training for the most sought-after certifications, and whether the training is offered on a for-credit or noncredit basis.

The majority of training leading to a vendor certification (65 percent) is offered on a for-credit basis. Cisco Certified Network Associate (CCNA) certification training is the most frequently reported credit training and is offered by 46 percent of respondents. The most frequently reported non-credit certification training offered is for the MOUS certification, provided by 26 percent of responding institutions (Table 8).

TABLE 7 10 Most Frequently Added Noncredit Courses/Programs: 1997 to 2000

Courses/Programs	Percentage of Total Noncredit Programs/Courses Added
Computer Networking	18.5%
Office Support	8.2%
Workplace Skills	8.2%
Computer Literacy	5.1%
Computer Programming	5.1%
Web	4.1%
Business Administration	3.6%
Spanish as a Second Language	3.6%
Manufacturing Technology	3.6%
Truck Driving	3.1%

TABLE 8 Top 10 Certification Training Programs Offered, by Credit Status

Certification Training Offered	Percentage of Institutions Offering for Credit
Cisco Certified Network Associate	45.9%
Microsoft Office User Specialist	40.5%
Microsoft Certified Professional	35.1%
Microsoft Certified Systems Engineer	34.6%
CompTIA A+	32.7%
Certified Novell Administrator	25.9%
Cisco Certified Network Professional	20.5%
Certified Novell Engineer	16.1%
CompTIA Network+	13.2%
Microsoft Certified Systems Developer	9.8%

Certification Training Offered	Percentage of Institutions Offering Noncredit
Microsoft Office User Specialist	25.9%
CompTIA A+	22.4%
Microsoft Certified Systems Engineer	21.5%
Cisco Certified Network Associate	18.1%
Microsoft Certified Professional	18.1%
CompTIA Network+	9.3%
Cisco Certified Network Professional	8.8%
Certified Novell Administrator	7.3%
Certified Novell Engineer	5.9%
Microsoft Certified Systems Developer	4.9%

Employment Projections

According to the Bureau of Labor Statistics (BLS), between 1998 and 2008, civilian employment will increase from 141 million jobs to 161 million jobs, or 14 percent. During this period, jobs requiring an associate degree are projected to increase from 4.9 million to 6.5 million, an increase of 31.2 percent and the largest percentage increase among all educational levels (Table 9).

BLS tracks information on individual occupations and on entire industries. For the decade 1998 to 2008, the bureau projects that nine of the top 10 fastest-growing occupations will be found in either the computer or allied health fields (Table 10). Similarly, the computer technologies and allied health industries will have the largest growth through 2008 (Table 11).

In both credit and noncredit areas of the AACC hot programs survey, programs in the computer technologies and allied health fields accounted for the most students and were among the most frequently reported hot program areas. These educational areas may lead to jobs in the computer and data processing services and health services industries.

BLS projects that the management and public relations industry will be the fourth fastest-growing industry. Business administration was one of the most frequently reported hot noncredit programs.

Community colleges train students for many occupations in demand by business and industry. The examples included here are just a sample of the results and BLS comparisons that illustrate community colleges' continuing commitment and responsiveness to the nation's workforce needs.

TABLE 9 Employment and Total Projected Job Openings, by Education and Training Category: 1998 to 2008

Education & Training Category	Employment				Change, 1998-2008		Total Job Openings due to Growth & Net Replacements	
	Number		Percent Distribution		Number	Percent	Number	Percent Distribution
	1998	2008	1998	2008				
First professional degree	1,908	2,215	1.4%	1.4%	308	16.1%	617	1.1%
Doctoral degree	996	1,228	0.7%	0.8%	232	23.3%	502	0.9%
Master's degree	940	1,115	0.7%	0.7%	174	18.6%	374	0.7%
Work experience plus bachelor's or higher degree	9,595	11,276	6.8%	7.0%	1,680	17.5%	3,372	6.1%
Bachelor's degree	17,379	21,596	12.4%	13.4%	4,217	24.3%	7,822	14.2%
Associate degree	4,930	6,467	3.5%	4.0%	1,537	31.2%	2,422	4.4%
Postsecondary vocational training	4,508	5,151	3.2%	3.2%	643	14.3%	1,680	3.1%
Work experience in a related occupation	11,174	12,490	8.0%	7.8%	1,316	11.8%	3,699	6.7%
Long-term on-the-job training	13,436	14,604	9.6%	9.1%	1,168	8.7%	4,411	8.0%
Moderate-term on-the-job training	20,521	21,952	14.6%	13.7%	1,430	7.0%	6,218	11.3%
Short-term on-the-job training	55,125	62,701	39.2%	39.0%	7,576	13.7%	23,890	43.4%

Source: U.S. Bureau of Labor Statistics 2000a

TABLE 10 The 10 U.S. Occupations with the Fastest Projected Employment Growth: 1998 to 2008 (number of jobs in thousands)

Occupation	Employment (Number of Jobs)		Change, 1998-2008	
	1998	2008	Number	Percent
Computer engineers	299	622	323	108%
Computer support specialists	429	869	439	102%
Systems analysts	617	1,194	577	94%
Database administrators	87	155	67	77%
Desktop publishing specialists	26	44	19	73%
Paralegals and legal assistants	136	220	84	62%
Personal care and home health aides	746	1,179	433	58%
Medical assistants	252	398	146	58%
Social and human service assistants	268	410	141	53%
Physician assistants	66	98	32	48%

Source: U.S. Bureau of Labor Statistics 2000b

TABLE 11 The 10 U.S. Industries with the Fastest Projected Employment Growth: 1998 to 2008 (number of jobs in thousands)

Industry Description	Employment (Number of Jobs)		Change, 1998-2008	
	1998	2008	Number	Percent
Computer and data processing services	1,599	3,472	1,872	117%
Health services, not elsewhere classified	1,209	2,018	809	67%
Residential care	747	1,171	424	57%
Management and public relations	1,034	1,500	466	45%
Personnel supply services	3,230	4,623	1,393	43%
Miscellaneous equipment rental and leasing	258	369	111	43%
Museums, botanical and zoological gardens	93	131	39	42%
Research and testing services	614	861	247	40%
Miscellaneous transportation services	236	329	94	40%
Security and commodity brokers	645	900	255	40%

Source: U.S. Bureau of Labor Statistics 2000c

Field of Study	Program	Percentage of Credit Programs in Survey	Percentage of Field of Study
Allied Health		31.7%	
	Dental Hygiene	2.5%	8.0%
	General Allied Health	2.2%	6.8%
	General Allied Health Technologies	1.2%	3.7%
	Licensed Practical Nursing	1.4%	4.3%
	Medical Office Assistant	2.0%	6.2%
	Occupational/Physical Therapy Assistants	0.8%	2.5%
	Radiology Technology	3.3%	10.5%
	Registered Nursing	15.3%	48.1%
	Respiratory Technology	1.0%	3.1%
	Surgical Technology	1.2%	3.7%
	Veterinary Technician/Assistant	1.0%	3.1%
Business		4.7%	
	Accounting	1.4%	29.2%
	Business Administration	1.4%	29.2%
	General Business	0.8%	16.7%
	Office Support	1.2%	25.0%
Computer Technologies		36.2%	
	Computer-Aided Design	2.5%	7.0%
	Computer Hardware	1.0%	2.7%
	Computer Networking	8.2%	22.7%
	Computer Programming	3.3%	9.2%
	Computer Software	0.2%	0.5%
	Computer Technician/Networking	4.5%	12.4%
	Digital Media	3.3%	9.2%
	General Computer Technologies	12.5%	34.6%
	Web	0.6%	1.6%
Education		0.6%	
	Education	0.6%	100.0%
Engineering		8.0%	
	Civil Engineering	0.6%	7.3%
	Engineering-Electric/Electronics	5.3%	65.9%
	Engineering Technology	2.2%	26.8%
Hospitality Management		0.6%	
	Hospitality Management	0.6%	100.0%
Manufacturing Technology		4.1%	
	Manufacturing Technology	4.1%	100.0%
Public Services		4.5%	
	Emergency Medical Technician	1.0%	21.7%
	Environmental Services	0.4%	8.7%
	Fire Services	0.4%	8.7%
	Law Enforcement	2.7%	60.9%
Skilled Trades		9.6%	
	Automotive	2.5%	26.5%
	Aviation	0.8%	8.2%
	Cosmetology	0.6%	6.1%
	General Skilled Trades	3.1%	32.7%
	Heating, Ventilation, & Air Conditioning	1.2%	12.2%
	Truck Driver	0.6%	6.1%
	Welding	0.8%	8.2%

Field of Study	Program	Percentage of Noncredit Programs in Survey	Percentage of Field of Study
Allied Health		16.3%	
	Dental Hygiene	1.1%	6.7%
	Medical Coding	2.7%	16.7%
	Nursing Aide	6.0%	36.7%
	Other Allied Health	4.9%	30.0%
	Radiology Technology	1.1%	6.7%
	Veterinary Technician/Assistant	0.5%	3.3%
Business		9.2%	
	Business Administration	3.3%	35.3%
	General Business	1.6%	17.6%
	Office Support	4.3%	47.1%
Computer Literacy		10.9%	
	Computer Literacy	10.9%	100.0%
Computer Technologies		27.2%	
	Computer Networking	15.2%	56.0%
	Computer Programming	6.0%	22.0%
	General Computer Technologies	2.2%	8.0%
	Web	3.8%	14.0%
Education		2.2%	
	Education	2.2%	100.0%
Engineering Technology		1.6%	
	Engineering Technology	1.6%	100.0%
Hospitality Management		1.6%	
	Hospitality Management	1.6%	100.0%
Languages		3.8%	
	English as a Second Language	1.6%	42.9%
	Spanish as a Second Language	2.2%	57.1%
Manufacturing Technology		2.2%	
	Manufacturing Technology	2.2%	100.0%
Miscellaneous		3.3%	
	Miscellaneous	3.3%	100.0%
Public Services		6.5%	
	Emergency Medical Technician	2.2%	33.3%
	Fire Services	0.5%	8.3%
	Law Enforcement	3.8%	58.3%
Real Estate		2.2%	
	Real Estate	2.2%	100.0%
Skilled Trades		8.2%	
	General Skilled Trades	4.3%	53.3%
	Truck Driving	2.7%	33.3%
	Welding	1.1%	13.3%
Workplace Skills		4.9%	
	Workplace Skills	4.9%	100.0%

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