

ENGINEERING TECHNOLOGY PROGRAMS PROVIDE STRONG SUPPORT FOR U.S. INDUSTRIES

Engineering technology programs produce graduates that are well-suited to serve U.S. industries. Closely related to, but different from, engineering, their graduates are very important parts of the technological team. They complement the work of engineers, often contributing to the design of new systems. They also interface readily with the production workforce that makes the products, and are invaluable for installing and maintaining high technology equipment.

This publication contains data from 85 institutions offering baccalaureate engineering technology degrees. In fall 2003, these programs enrolled 30,444 full-time and 7,245 part-time students and yielded 5,999 baccalaureate degrees in engineering technology. The 2002-2003 Accreditation Board for Engineering and Technology annual report shows that there are 125 institutions offering 321 baccalaureate programs accredited by the Technology Accreditation Commission (TAC). The statistics from 85 of these 125 institutions are indicative of the national output since the programs reported in this volume represent the largest ones.

There are also two-year associate degree engineering technology programs. These can also be accredited by TAC/ABET. During 2002-2003, there were 140 institutions that offered 347 A.S. programs. Approximately 38 institutions offer both A.S. and B.S. engineering technology programs, so that the total number of institutions offering TAC/ABET-accredited engineering technology programs is 226.

Engineering technology programs are, by design, strongly industry oriented. Characteristically, they involve very active industry advisory councils. These councils provide important feedback that helps engineering technology faculty members refine their curricula so that their graduates are prepared to serve industries effectively upon graduation. Engineering technology graduates are known for their ability to "hit the ground running." The TAC/ABET engineering technology programs contain a significant mathematics-science base that enables graduates to grow professionally in rapidly advancing technological industries. This further increases the value of engineering technology graduates while providing them professionally rewarding careers.

Engineering technology offers attractive career opportunities for women and members of underrepresented groups. The 2003 data show that 11.7 percent of the baccalaureate ET degrees were awarded to women. Asian Americans earned 6.1 percent; African Americans earned 8.3 percent; Hispanics earned 6.2 percent; and Native Americans earned 0.8 percent. International students earned 5.4 percent. The numbers show that progress is being made, but more is required to make significant changes—and to catch up with the graduation percentages of underrepresented groups in engineering.

Engineering is significantly ahead of engineering technology in terms of the percentage of bachelor's degrees awarded to women (20.4 percent) and Asian Americans (14.0 percent), though engineering technology is somewhat ahead of engineering in the percentage of bachelor's degrees granted to Hispanics (5.4 percent for engineering) and African Americans (5.1 percent for engineering).

The engineering technology activity in ASEE, as well as ABET, attests to the dynamic nature of the field. In ASEE, the Engineering Technology

Council (ETC) and the Engineering Technology Division (ETD) are highly active at regional and national ASEE meetings. The *Journal of Engineering Technology* attracts fine authors who prepare well-researched papers on new applied research and new methods of instruction. The number of sessions fielded by the ETD at ASEE's annual conference and the number of ETD members in attendance are good indicators of the ET community's vitality.

Within ABET, the membership of the TAC and the lists of evaluators eligible for making TAC/ABET visits for A.S. and B.S. engineering technology programs show strong representation from industry as well as academe. In consonance with the Engineering Accreditation Commission (EAC) Engineering Criteria 2000, TAC, with substantial input from industry, has developed outcomes-based criteria. These have been approved and are in effect for all ET programs being visited by the TAC of ABET in the fall of 2004. These criteria include 1) program educational objectives, 2) program outcomes, 3) assessment and evaluation, 4) program characteristics (wherein the curriculum is defined), 5) faculty, 6) facilities, and 7) institutional and external support. In addition, Criterion 8 focuses on program criteria for 18 ET specialties.

By being so strongly focused on industry, the community of ET programs helps strengthen U.S. productivity. This helps our industries become more profitable and lessens their tendency to move operations offshore.

The hands-on services provided by ET graduates to U.S. industries and corporations inherently require intimate knowledge of clients' needs. As noted in the March 22, 2004 issue of *Business Week*, this category of jobs is least likely to be outsourced, probably because this type of knowledge is difficult to obtain from remotely located technical teams.

According to the 2003 *Chronicle of Higher Education Almanac*, the United States has almost 4,200 institutions of higher education, nearly 2,500 being four-year institutions. The population of 12 million students produces about 0.5 million associate's and nearly 1.25 million bachelor's degrees plus graduate and professional degrees. Higher education expenditures exceed \$152 billion. Although engineering and engineering technology programs exist at about 10 percent of the institutions and account for not more than 5 percent of the B.S. graduates, the economic impact of these programs is disproportionately large. Campus placement centers report that industries more vigorously recruit these graduates than most other disciplines. An institution where 25 percent of the students are engineers and engineering technologists might find that up to half of the companies and half of the scheduled interviews will be for these graduates. This was true, for example, even during the recent tough times.

Engineering technology programs are a valuable asset in U.S. higher education from which the graduates and U.S. industries both benefit.

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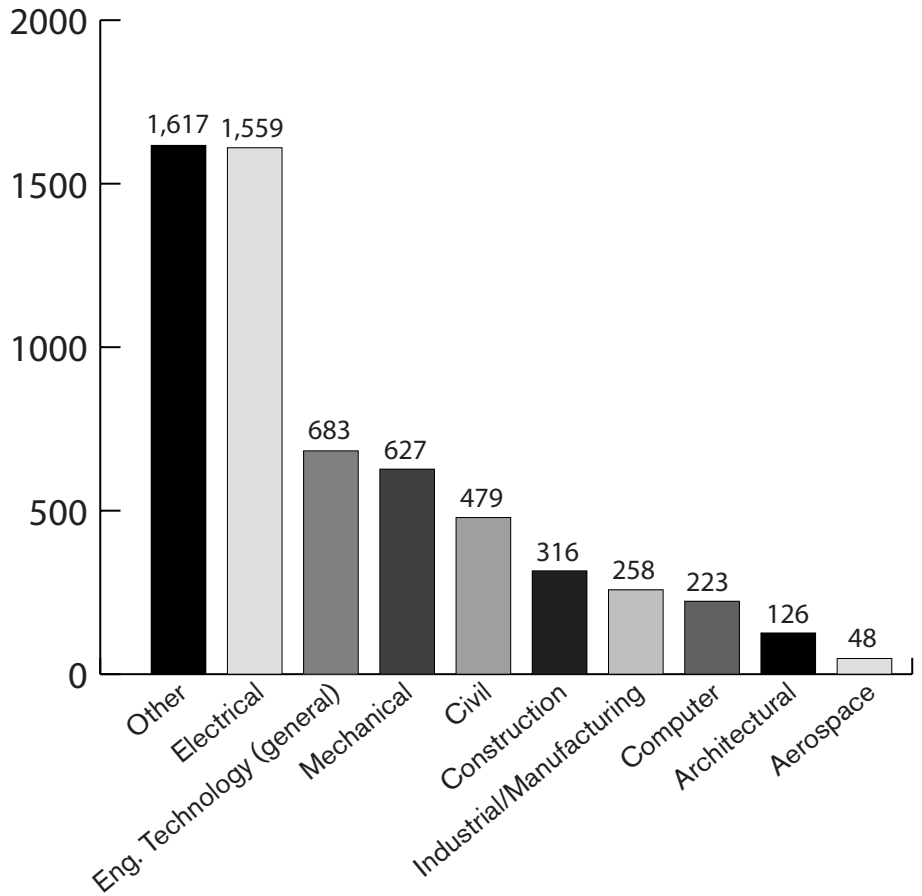
BY JOHN WEESE



ENGINEERING TECHNOLOGY BACHELOR'S DEGREES AWARDED BY SCHOOL

1. Ferris State University	364
1. Purdue University School of Tech.	364
3. Wentworth Institute of Technology	236
4. Indiana U. Purdue U., Indianapolis	223
5. Southern Polytechnic State U.	198
6. DeVry University, Phoenix	185
7. Rochester Institute of Technology	180
8. Texas A&M University	166
9. Univ. of Southern Mississippi	147
10. SUNY Inst. of Tech., Utica/Rome	133
11. Oklahoma State University	130
12. U. of North Carolina, Charlotte	126
13. Northeastern University	123
14. University of Toledo	118
15. New Jersey Inst. of Technology	105
15. Oregon Institute of Technology	105
17. Pennsylvania State U., Erie	104
18. DeVry University, Chicago	102
19. Old Dominion University	93
20. East Tennessee State U.	91
21. Lawrence Technological U.	86
22. DeVry University, Addison	85
23. DeVry University, Columbus	84
24. Northern Illinois University	80
25. University of Dayton	79
26. U. of Houston, Downtown	78
27. Alfred State College	73
27. Pennsylvania State U., Altoona	73
29. Montana State University	68
30. Alabama A&M University	65
30. DeVry University, Pomona	65
30. Weber State University	65
33. University of Maine	62
33. South Dakota State University	62
35. Minnesota State Univ., Mankato	60
36. New York Institute of Technology	59
37. New Mexico State University	58
38. Temple University	55
39. Capitol College	54
40. University of Central Florida	53
40. Milwaukee School of Engineering	53
42. DeVry University, Long Beach	52
43. California State Polytech., Pomona	51
44. DeVry University, Irving	49
44. Prairie View A&M University	49
46. West Virginia U. Inst. of Tech.	48
47. Central Connecticut State U.	46
48. Embry Riddle A.U., Daytona Beach	45
49. Bradley University	44
49. Texas Tech University	44

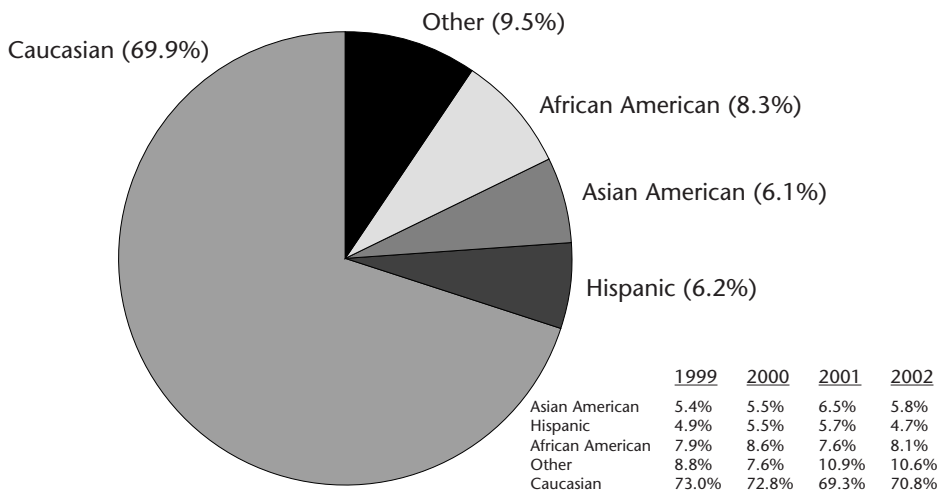
ENGINEERING TECHNOLOGY BACHELOR'S DEGREES BY DISCIPLINE



Note: Data for the Engineering Technology section represents 85 of the 125 institutions with at least one four-year ABET-accredited program.



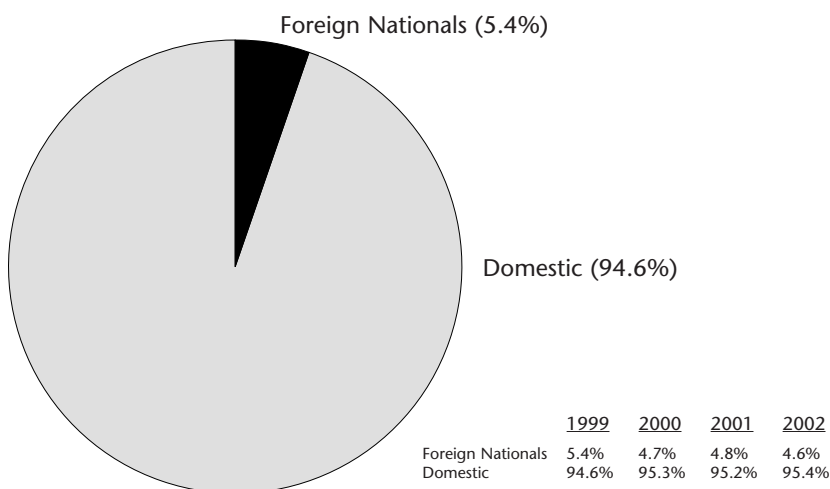
ENGINEERING TECHNOLOGY BACHELOR'S DEGREES BY ETHNICITY



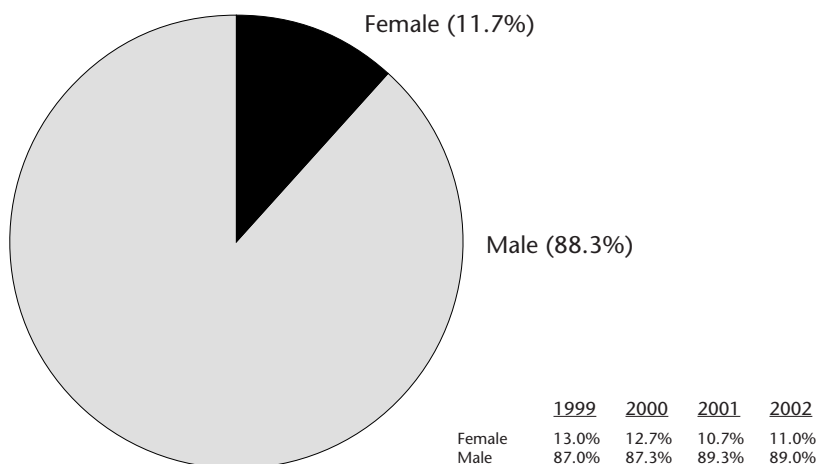
ENGINEERING TECHNOLOGY DEGREES AWARDED TO WOMEN BY SCHOOL

1. Purdue University School of Tech.	60
2. Indiana U. Purdue U., Indianapolis	53
3. Ferris State University	37
4. Wentworth Institute of Technology	32
5. Univ. of Southern Mississippi	30
6. Southern Polytechnic State Univ.	25
7. Texas A&M University	21
8. University of Houston, Downtown	20
9. East Tennessee State University	19
10. DeVry University, Chicago	17
11. University of Dayton	16
11. Lawrence Technological University	16
11. Prairie View A&M University	16
14. DeVry University, Phoenix	15
15. University of Central Florida	13
15. Old Dominion University	13
15. Rochester Institute of Technology	13
18. Northeastern University	12
19. Alfred State College	11
19. Oklahoma State University	11
21. New Jersey Inst. of Technology	10
21. Univ. of North Carolina, Charlotte	10
21. Temple University	10
24. Capitol College	9
24. Montana State University	9
24. SUNY Inst. of Tech., Utica/Rome	9
24. Oregon Institute of Technology	9
24. University of Toledo	9

ENGINEERING TECHNOLOGY BACHELOR'S DEGREES BY RESIDENCY



ENGINEERING TECHNOLOGY BACHELOR'S DEGREES BY GENDER

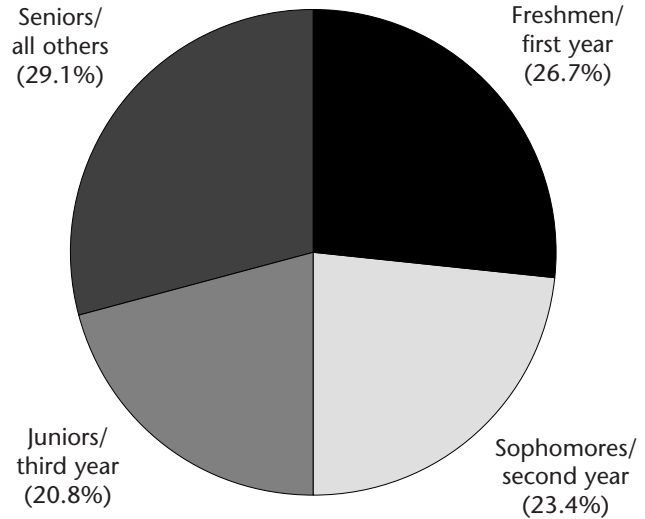




ENGINEERING TECHNOLOGY ENROLLMENT BY SCHOOL*

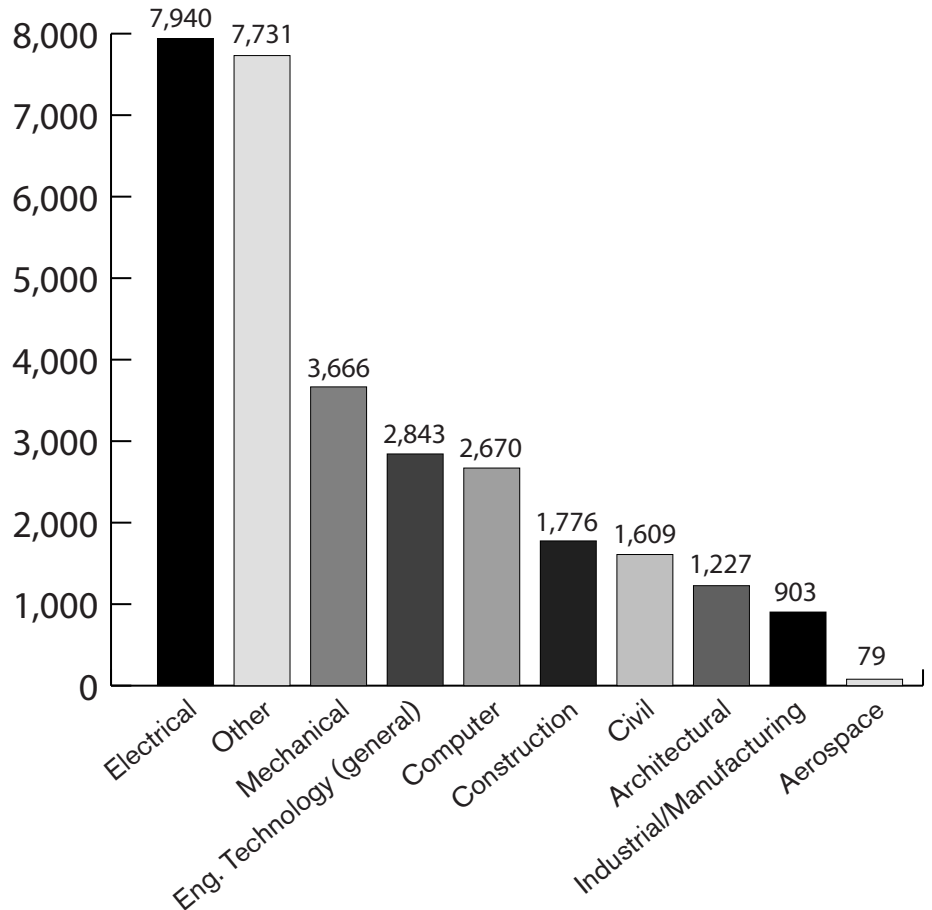
1. Indiana U. Purdue U., Indianapolis	1,890
2. Ferris State University	1,886
3. Wentworth Institute of Technology	1,628
4. Purdue University School of Tech.	1,610
5. Rochester Institute of Technology	1,057
6. DeVry University, Columbus	900
7. Southern Polytechnic State U.	863
8. University of Toledo	822
9. Alfred State College	803
10. Oklahoma State University	671
11. California State Polytech., Pomona	649
12. Univ. of Southern Mississippi	645
13. Oregon Institute of Technology	605
14. Old Dominion University	591
15. DeVry University, Chicago	583
16. DeVry University, Phoenix	562
17. DeVry U., North Brunswick	557
18. East Tennessee State University	493
19. Northeastern University	452
20. DeVry University, Addison	419
21. DeVry University, Irving	411
22. Texas A&M University	391
23. Youngstown State University	382
24. University of North Texas	375
25. DeVry University, Pomona	373
26. University of Maine	367
27. New York Institute of Technology	342
28. Univ. of North Carolina, Charlotte	339
29. Montana State University	338
30. Texas Tech University	333
31. DeVry University, Decatur	326
32. Pennsylvania State U., Erie	323
33. Prairie View A&M University	309
34. DeVry University, Long Beach	304
35. DeVry University, Kansas City	286
35. University of Hartford	286
37. Michigan Technological University	284
37. Minnesota State U., Mankato	284
39. Weber State University	280
40. Capitol College	265
41. University of Nebraska, Lincoln	258
42. Kansas State University	257
43. Western Michigan University	256
44. South Dakota State University	250
45. Western Kentucky University	237
46. University of Arkansas, Little Rock	235
47. New Mexico State University	232
48. University of Dayton	221
49. SUNY Inst. of Tech., Utica/Rome	220
50. Arizona State University East	216

ENGINEERING TECHNOLOGY ENROLLMENT BY CLASS



	1999	2000	2001	2002
Freshmen/first year	28.0%	24.4%	27.9%	26.5%
Sophomores/second year	21.4%	23.8%	22.0%	24.1%
Juniors/third year	21.3%	22.9%	22.9%	20.8%
Seniors/all others	29.3%	28.9%	27.2%	28.6%

ENGINEERING TECHNOLOGY ENROLLMENT BY DISCIPLINE



* Enrollments are solely for bachelor's degree programs.