



NUCLEAR ENGINEERING Enrollments Decreased at All Levels in 1996. Undergraduate and Master's Degrees Decreased While Doctoral Degrees Increased.

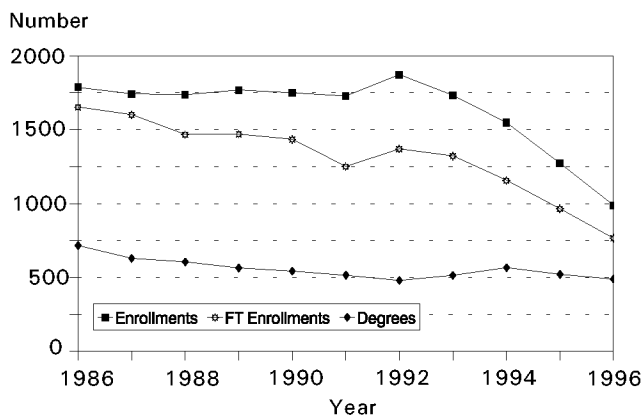
SURVEY UNIVERSE

The survey of "Nuclear Engineering Enrollments and Degrees, 1996" was sent to 50 institutions offering a major in nuclear engineering or an option program in another discipline or department (for example, electrical or mechanical engineering) equivalent to a major that qualifies the graduates to perform as nuclear engineers. Of the 50 institutions surveyed, 2 programs were suspended but were allowing the students to complete their degrees, 3 suspended programs awarded their last degrees in 1996, and the data for 2 programs were estimated.

UNDERGRADUATE ENROLLMENTS AND DEGREES

Nuclear engineering undergraduate enrollments decreased by 22 percent over 1995 (by 159 full-time and 68 part-time students), continuing a downward trend since 1992. (Figure 1.) The decrease was attributed to the suspended programs and a general decline overall among the other programs. Fifty-seven percent of the 790 students were enrolled in the nuclear engineering major. Among the option programs, mechanical engineering accounted for 6 percent of the total, or 45 students.

Figure 1. Nuclear Engineering Undergraduate Enrollments and Degrees, 1986-1996



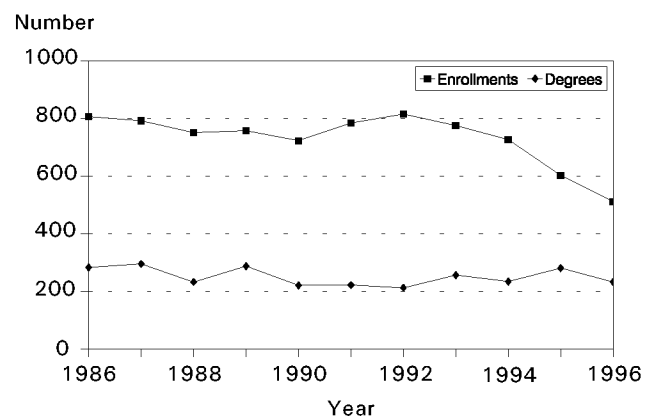
Undergraduate = Junior and Senior Level.
Source: U.S. Department of Energy.

Undergraduate degrees decreased in 1996 by 6 percent or 25 students over 1995. About 58 percent (229 students) received their degrees within the nuclear engineering major programs. The second highest number of degrees awarded was within electrical engineering option programs (9 percent or 23 students).

MASTER'S ENROLLMENTS AND DEGREES

Master's enrollments continued a downward trend since 1992, by 15 percent or 49 full-time and 42 part-time students from 1995. (Figure 2.) Most of the students (97 percent or 497 students) were enrolled in the nuclear engineering major programs.

Figure 2. Nuclear Engineering Master's Enrollments and Degrees, 1986-1996



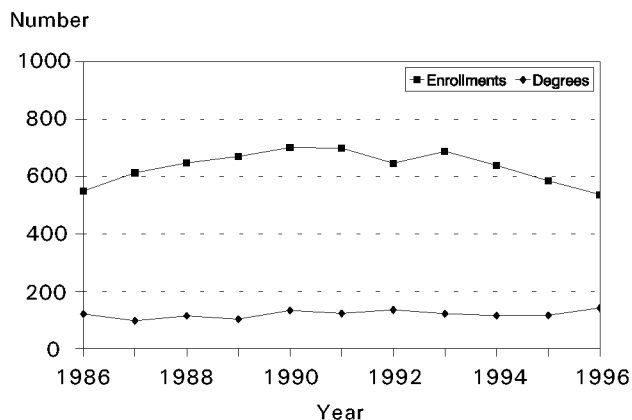
Source: U.S. Department of Energy.

Nuclear engineering master's degrees decreased in 1996 by 17 percent (48 students), continuing their fluctuating pattern. Ninety-five percent of the degrees were awarded to students in the nuclear engineering major programs (221 students) with mechanical and engineering science option programs receiving the remaining (9 and 2 students, respectively).

DOCTORAL ENROLLMENTS AND DEGREES

Doctoral enrollments declined to 537 in 1996, down 48 students from 1995. This continues the trend of decreases of about 8 percent per year since 1993. The decrease was attributed mostly to the suspended programs. (Figure 3.) Ninety-nine percent of the students were within the nuclear engineering major programs (445 full-time and 87 part-time students).

Figure 3. Nuclear Engineering Doctoral Enrollments and Degrees, 1986-1996



Source: U.S. Department of Energy.

The number of doctoral degrees awarded rose from 116 in 1995 to 141 students (22 percent), the highest number of Ph.D. degrees awarded since 1976. The vast majority of the degrees were awarded through the nuclear engineering major programs (133 students).

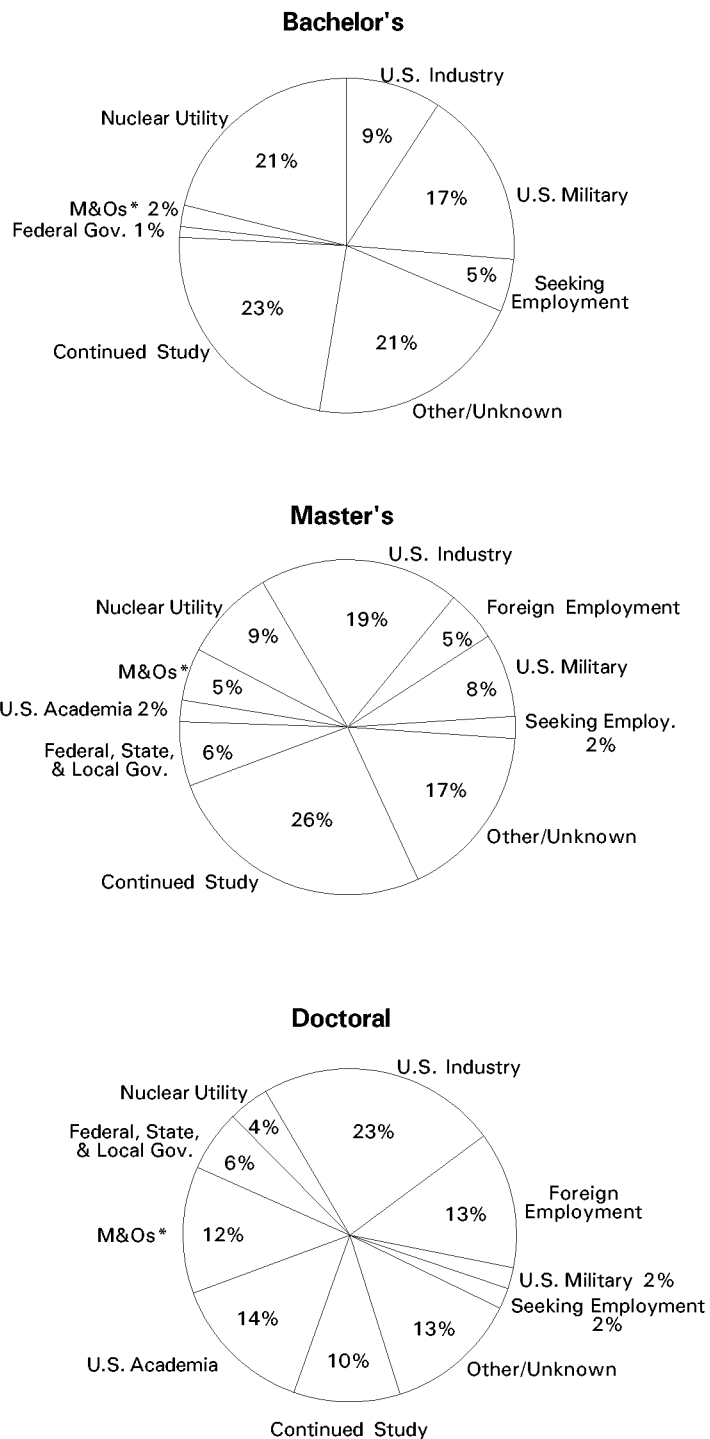
NUCLEAR ENGINEERING COMPARED WITH ALL ENGINEERING DEGREES

As a percent of "all engineering" degrees (data provided by the American Association of Engineering Statistics), nuclear engineering degrees (both majors and option programs) represented less than 1 percent of the undergraduate and master's degrees and a little more than 2 percent of the doctorates in 1996.

EMPLOYMENT OR POSTGRADUATION PLANS

The largest proportion of the bachelor's and master's (about one-fourth) chose to continue study for a higher degree. (Figure 4.) Of the bachelor's, one-fifth went to work for nuclear utilities; and one-fifth of the master's were working in U.S. industry. Almost one-fourth of the doctorates went to work in U.S. industry,

Figure 4. Employment or Postgraduation Plans of Nuclear Engineering Graduates, by Degree Level, 1996



*DOE contractor facilities.
NOTE: Percentages may not add to 100 percent due to rounding.
Source: U.S. Department of Energy.

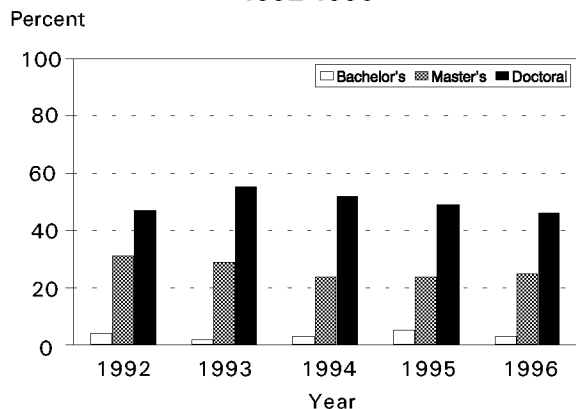
followed by 14 percent in U.S. academia, and 13 percent in foreign employment.

FOREIGN NATIONAL PARTICIPATION

Participation of foreign nationals enrolled in nuclear engineering increased slightly at the undergraduate level in 1996, but decreased at both master's and doctoral levels. Master's enrollments declined 131 to 121 students, and doctoral enrollments from 250 to 216.

Degrees awarded to foreign nationals decreased at the bachelor's and master's levels, from 19 to 11 and 68 to 57 students, respectively, while doctoral participation rose from 57 to 65 students. (See Figure 5 for percentage of degrees awarded to foreign nationals.)

Figure 5. Percentage of Nuclear Engineering Degrees Granted to Foreign Nationals, 1992-1996



Source: U.S. Department of Energy.

The postgraduation plans for 5 of the foreign national undergraduates were unknown, 3 elected to continue study, 1 went to work in U.S. industry, and 2 were seeking employment. Most of the 57 master's students (24) planned to continue study for a higher degree, 10 were employed in a foreign country, and 9 were employed in U.S. industry. Seventeen of the 65 doctorates went to work for a foreign employer, 12 were working in U.S. industry, and 9 were employed in U.S. academia.

FEMALE PARTICIPATION

Female undergraduate enrollments in nuclear engineering decreased at the junior level from 58 to 32 students and increased at the senior level from 64 to 68. The number of females decreased at both the master's and doctoral levels, from 67 to 63 and 64 to 61, respectively. As in the past, females accounted for about 10 percent of the total enrollments.

Degrees awarded to women increased at the bachelor's level from 29 to 42 students, at the master's level from 30 to 35, and stayed the same at the doctoral level as 1995 with 10 students.

MINORITY PARTICIPATION

Participation of minorities (excluding foreign nationals) in nuclear engineering programs remained low (within the 1 to 5 percent range overall in 1996). The number of African American enrollments decreased slightly overall, although seniors rose by 2 students (from 9 to 11). Hispanic enrollments remained about the same as 1995 with the exception of seniors that decreased from 21 to 14 students. Asian Americans rose slightly at the master's level (from 13 to 17 students) and decreased from 30 to 16 at the doctoral level. Degrees awarded to minorities remained about the same as in past years with only slight increases and decreases at all levels, although B.S. degrees were down for African Americans (from 10 to 3 students), the lowest since 1992.

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All opinions expressed in this report are the authors' and do not necessarily reflect policies and views of the U.S. Department of Energy or the Oak Ridge Institute for Science and Education.

Additional survey information, providing details by individual schools and by type of program, is available from:
 Oak Ridge Institute for Science and Education
 Education and Training Division
 Analysis and Evaluation Programs
 P.O. Box 117
 Oak Ridge, TN 37831-0117

Nuclear Engineering Enrollments and Degrees, by State and Institution, 1996

State	Institution	Enrollments			Degrees		
		Undergraduate	Master's	Doctoral	B.S.	M.S.	Ph.D.
ARIZONA	Arizona State University ¹	-	-	-	1	2	-
	University of Arizona	10	5	10	8	3	3
ARKANSAS	University of Arkansas	1	1	1	2	1	-
CALIFORNIA	University of California, Berkeley	21	25	27	19	11	8
	University of California, Los Angeles ²	-	3	4	-	2	5
	Univ. of California, Santa Barbara ¹	-	-	-	1	1	4
FLORIDA	University of Florida, Gainesville	25	35	28	4	20	4
GEORGIA	Georgia Institute of Technology	22	6	28	13	2	8
IDAHO	Idaho State University	5	17	11	2	3	1
	University of Idaho	-	3	6	-	1	-
ILLINOIS	University of Illinois, Urbana	27	23	23	9	13	4
INDIANA	Purdue University	25	19	14	13	7	5
	University of Notre Dame	11	-	-	1	-	-
IOWA	Iowa State University	-	1	1	-	1	3
KANSAS	Kansas State University	15	5	6	10	-	-
KENTUCKY	University of Kentucky*	2	-	-	3	-	-
LOUISIANA	Louisiana State University	-	2	3	-	-	1
MAINE	University of Maine	6	-	-	2	-	-
MARYLAND	U.S. Naval Academy	35	-	-	17	-	-
	University of Maryland	16	17	26	11	9	-
	University of Maryland, Univ. College	163	-	-	58	-	-
MASSACHUSETTS	Massachusetts Institute of Technology	13	60	51	8	25	21
	University of Massachusetts Lowell	9	5	1	4	2	1
	Worcester Polytechnic Institute	14	-	-	8	-	-
MICHIGAN	University of Michigan, Ann Arbor	22	22	44	12	9	15
MISSOURI	University of Missouri, Columbia	-	7	8	-	1	-
	University of Missouri, Rolla	27	10	5	9	1	1
NEW JERSEY	Stevens Institute of Technology ¹	-	-	-	1	-	-
NEW MEXICO	University of New Mexico	8	33	27	8	14	4
NEW YORK	Clarkson University	-	-	-	6	-	-
	Columbia University	-	-	3	-	-	-
	Cornell University	-	5	3	-	1	1
	Manhattan College	2	6	-	3	8	-
	Rensselaer Polytechnic Institute	21	12	14	17	3	3
	U.S. Military Academy	41	-	-	27	-	-
NORTH CAROLINA	North Carolina State University	37	22	19	8	8	6
OHIO	Air Force Institute of Technology	-	6	4	-	3	1
	Ohio State University	7	16	15	-	11	1
	University of Cincinnati*	11	22	20	11	10	2
	Youngstown State	10	-	-	5	-	-
OREGON	Oregon State University	17	6	7	6	3	-
PENNSYLVANIA	Pennsylvania State University	39	33	28	25	12	7
TENNESSEE	Tennessee Technological University	23	-	-	9	-	-
	University of Tennessee, Knoxville	24	15	17	9	12	5
TEXAS	Texas A&M University	33	27	23	17	16	4
	University of Texas, Austin	-	4	9	-	1	1
UTAH	University of Utah	20	9	10	12	-	3
VIRGINIA	University of Virginia ³	-	6	10	1	3	-
WASHINGTON	University of Washington ²	-	-	3	-	-	1
WISCONSIN	University of Wisconsin, Madison	28	23	28	11	13	18
TOTALS		790	511	537	391	232	141

*Estimated.

NOTES: ¹The programs at Arizona State University, the University of California, Santa Barbara, and Stevens Institute of Technology have been suspended; last degrees awarded in 1996.²Program suspended; students are being allowed to complete their degrees.³The undergraduate program at the University of Virginia has been suspended; last degrees awarded in 1996.