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DEGREES CONFERRED IN STEM FIELDS

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You asked for the total number of degrees and certificates conferred by Connecticut colleges and universities in science, technology, engineering, and mathematics (STEM) in the previous five years. You also asked for this information broken down by gender and institution.

SUMMARY

Connecticut colleges and universities conferred an increasing number of STEM degrees and certificates in recent years, growing from approximately 4,700 in 2005-06 to nearly 5,700 in 2009-10, the most recent year for which data are available. Overall, men earned approximately 63% of STEM degrees and certificates, although the gender differences varied substantially across the different categories.

Tables 4-11 below provide information about the types of degrees and certificates conferred in each field by each Connecticut institution.

DEGREES AND CERTIFICATES CONFERRED

STEM Programs Defined

There is no consensus as to what specific programs are considered to be in STEM fields. For this report, we identified STEM programs based on their Classification of Instructional Program (CIP) codes. Programs are

labeled with CIP codes by the U.S. Department of Education to support the tracking, assessment, and reporting of fields of study and program completion activity. Programs in a particular discipline (e.g., engineering) have a common two-digit prefix, followed by a four-digit identifier for each specific program (e.g., chemical engineering, civil engineering, etc.).

This report classifies as STEM programs those with the following two-digit CIP codes:

1. 11- Computer and Information Sciences and Support Services,
2. 14- Engineering,
3. 15- Engineering Technologies/Technicians,
4. 26- Biological and Biomedical Sciences,
5. 27- Mathematics and Statistics,
6. 40- Physical Sciences, and
7. 41- Science Technologies/Technicians.

Additionally, the report includes programs outside of these CIP codes that are designated as STEM programs by the U.S. Department of Homeland Security (DHS). DHS uses its own list of STEM programs as a basis for awarding extended student visas to foreign students. (The extended visas enable the students to gain work experience, known as Optional Practical Training, in STEM fields.)

These additional programs are labeled as “Other” in this report and include actuarial science, agricultural programs, and environmental science, among others. A complete list of these programs is available in Table 11.

Awards by Gender

The data in this report are taken from the degree completions database on the former Department of Higher Education’s website.

Table 1 shows the number degrees and certificates conferred in each STEM category from the 2005-06 through the 2009-2010 academic years, broken down by gender. They include:

1. certificates,
2. associate's degrees,
3. bachelor's degrees,
4. post-baccalaureate (PB) awards,
5. master's degrees, and
6. doctorates.

A list of awards by type of degree or certificate is available in Table 3.

Overall, men earned approximately 63% of all STEM degrees and certificates during this period, but the gender differences varied substantially across the different categories. For example, men earned more than 78% of the degrees and certificates in four of the categories, while women earned approximately 60% or more in two of them.

Table 1: Total Degrees and Certificates Awarded by Gender, 2005-2010

Field	Male	Female	Total
Computer and Information Sciences and Support Services	2,249 (78.2%)	626 (21.8%)	2,875
Engineering	5,304 (81.7%)	1,188 (18.3%)	6,492
Engineering Technologies/ Technicians	2,614 (85.8%)	432 (14.2%)	3,046
Biological and Biomedical Sciences	2,612 (40.1%)	3,907 (59.9%)	6,519
Mathematics and Statistics	1,071 (53.5%)	930 (46.5%)	2,001
Physical Sciences	1,477 (59.5%)	1,006 (40.5%)	2,483
Science Technologies/ Technicians	45 (84.9%)	8 (15.1%)	53
Other	933 (37.3%)	1,568 (62.7%)	2,501
Total	16,305 (62.8%)	9,665 (37.2%)	25,970

Table 2 shows the number of degrees and certificates awarded in each STEM category in each year, broken down by gender. Overall, the number of degrees and certificates awarded steadily increased from 2005-2010, but there was disparate change across the different categories. For instance, the number of awards in Engineering Technologies/Technicians increased by nearly 75%, while awards in Computer and Information Sciences and Support Services decreased by nearly 30%.

Table 2: Degrees and Certificates Awarded Each Year by Gender

Field	2005-06		2006-07		2007-08		2008-09		2009-10	
Computer and Information Sciences and Support Services	690		589		565		533		498	
	M 536	F 154	M 471	F 118	M 443	F 122	M 418	F 115	M 381	F 117
Engineering	1,083		1,118		1,342		1,547		1,402	
	M 860	F 223	M 903	F 215	M 1,110	F 232	M 1,280	F 267	M 1,151	F 251
Engineering Technologies/Technicians	480		491		558		683		834	
	M 404	F 76	M 432	F 59	M 491	F 67	M 573	F 110	M 714	F 120
Biological and Biomedical Sciences	1,176		1,302		1,313		1,373		1,355	
	M 473	F 703	M 538	F 764	M 540	F 773	M 534	F 839	M 527	F 828
Mathematics and Statistics	358		356		403		456		428	
	M 180	F 178	M 195	F 161	M 224	F 179	M 234	F 222	M 238	F 190
Physical Sciences	464		499		492		485		543	
	M 273	F 191	M 297	F 202	M 297	F 195	M 278	F 207	M 332	F 211
Science Technologies/Technicians	4		11		11		10		17	
	M 3	F 1	M 10	F 1	M 9	F 2	M 9	F 1	M 14	F 3

Table 2 (continued)

Field	2005-06		2006-07		2007-08		2008-09		2009-10	
Other	427		460		509		504		601	
	M 153	F 274	M 170	F 290	M 176	F 333	M 213	F 291	M 221	F 380
Total	4682		4826		5193		5591		5678	
	M 2,882	F 1,800	M 3,016	F 1,810	M 3,290	F 1,903	M 3,539	F 2,052	M 3,578	F 2,100

TYPES OF DEGREES AND CERTIFICATES AWARDED

Table 3 lists, for each STEM category, the number and type of degrees or certificates awarded from 2005-2010.

Table 3: Types of Degrees or Certificates Awarded

Field	Type	2005-06	2006-07	2007-08	2008-09	2009-10	Total
Computer and Information Sciences and Support Services	Certificate	46	28	27	21	19	141
	Associate	134	70	71	69	46	390
	Bachelor	274	243	215	166	192	1,090
	PB	12	19	5	8	3	47
	Master	219	221	242	259	227	1,168
	Doctorate	5	8	5	10	11	39
Engineering	Associate	30	23	25	37	39	154
	Bachelor	510	605	639	656	690	3,100
	PB	10	3	10	3	7	33
	Master	455	415	585	798	607	2,860
	Doctorate	78	72	83	53	59	345
Engineering Technologies/ Technicians	Certificate	123	103	154	147	345	872
	Associate	169	173	169	211	173	895
	Bachelor	151	174	184	176	121	806
	PB	0	0	1	0	0	1
	Master	37	41	50	149	195	472
Biological and Biomedical Sciences	Associate	1	0	0	1	2	4
	Bachelor	758	846	869	940	931	4,344
	PB	5	5	4	5	20	39
	Master	284	306	300	297	269	1,456
	Doctorate	128	145	140	130	133	676
Mathematics and Statistics	Associate	3	2	1	5	1	12
	Bachelor	229	219	256	289	267	1,260

Table 3 (continued)

Field	Type	2005-06	2006-07	2007-08	2008-09	2009-10	Total
	PB	10	5	5	13	4	37
	Six Year Certificate	0	0	2	0	0	2
	Master	102	102	123	121	136	584
	Doctorate	14	28	16	28	20	106
Physical Sciences	Associate	6	0	1	0	0	7
	Bachelor	237	278	267	280	304	1,366
	PB	10	8	6	0	0	24
	Master	144	137	133	139	141	694
	Doctorate	67	76	85	66	98	392
Science Technologies/ Technicians	Associate	3	9	11	9	13	45
	Bachelor	1	2	0	1	4	8
Other	Certificate	31	21	24	38	23	137
	Associate	43	41	64	42	48	238
	Bachelor	225	249	272	285	329	1,360
	PB	25	17	15	2	11	70
	Master	79	96	111	109	171	566
	Doctorate	24	36	23	28	19	130

Degrees by STEM Category And Institution

Tables 4-11 lists the types of degrees and certificates awarded from 2005-2010 in each STEM category by each institution.

Table 4: Computer and Information Sciences and Support Services Degrees and Certificates Awarded by Institution

School	Type	2005-06	2006-07	2007-08	2008-09	2009-10
Capital	Certificate	1	3	4	0	1
	Associate	0	0	1	2	1
CCSU	Bachelor	17	23	21	11	17
	Master	21	27	18	22	12
Charter Oak	Certificate	0	0	0	0	7
Connecticut College	Bachelor	8	8	6	2	6
ECSU	Bachelor	33	24	25	14	26
Fairfield	Bachelor	6	2	4	3	2
Gateway	Certificate	0	1	3	1	4
	Associate	13	10	11	8	5

Table 4 (continued)

School	Type	2005-06	2006-07	2007-08	2008-09	2009-10
Goodwin	Associate	15	5	0	1	0
Manchester	Certificate	7	3	4	4	3
	Associate	16	7	19	14	10
Mitchell	Associate	1	0	0	0	1
Naugatuck	Certificate	5	0	0	0	0
Northwestern	Certificate	4	3	2	2	1
Norwalk	Certificate	13	5	1	1	2
	Associate	2	4	8	8	2
Quinebaug	Certificate	7	11	10	10	0
	Associate	8	7	9	9	6
Quinnipiac	Bachelor	45	44	45	36	41
	Master	40	27	30	36	27
Renssalaer	PB	12	15	3	0	0
	Master	46	27	13	10	25
Sacred Heart	Associate	2	0	0	3	0
	Bachelor	25	22	21	12	14
	Master	18	28	17	17	28
Sanford-Brown	Certificate	8	2	3	3	1
	Associate	77	37	23	23	19
SCSU	Bachelor	35	33	21	13	12
	Master	6	2	5	2	6
Trinity	Bachelor	14	6	8	5	6
Tunxis	Associate	0	0	0	1	2
U of Bridgeport	Bachelor	2	4	3	1	6
	Master	30	40	94	136	94
UConn	Bachelor	29	21	11	28	10
U of Hartford	Bachelor	23	24	18	18	17
U of New Haven	Certificate	1	0	0	0	0
	Bachelor	8	7	6	1	2
	PB	0	4	2	8	3
	Master	26	48	39	24	19
Wesleyan	Bachelor	9	7	10	4	10
	Master	1	0	0	1	0
WCSU	Bachelor	9	8	5	9	7
Yale	Bachelor	11	10	11	9	16
	Master	31	22	26	11	16
	Doctorate	5	8	5	10	11
Total		690	589	565	533	498

Table 5: Engineering Degrees and Certificates Awarded by Institution

School	Type	2005-06	2006-07	2007-08	2008-09	2009-10
Asnuntuck	Associate	0	0	1	0	0
CCSU	Bachelor	7	3	7	11	31
Fairfield	Associate	1	1	0	0	1
	Bachelor	25	31	19	39	25
	Master	56	59	52	26	55
Gateway	Associate	6	2	2	4	3
Housatonic	Associate	0	0	0	0	1
Manchester	Associate	12	9	12	11	21
Middlesex	Associate	0	1	0	1	0
Naugatuck	Associate	0	0	0	0	1
Northwestern	Certificate	1	0	0	0	0
Norwalk	Associate	5	7	1	9	2
Quinebaug	Associate	1	3	5	9	6
Renssalaer	PB	4	2	8	0	0
	Master	58	69	94	81	97
Three Rivers	Associate	2	0	3	1	4
Trinity	Bachelor	16	26	17	11	16
Tunxis	Associate	0	0	1	2	0
U.S. Coast Guard Academy	Bachelor	104	107	116	121	111
U of Bridgeport	Bachelor	2	3	3	4	7
	Master	99	94	166	427	238
UConn	Bachelor	237	285	310	318	324
	Master	105	76	77	82	88
	Doctorate	52	52	53	26	37
U of Hartford	Bachelor	43	53	73	60	77
	Master	32	30	28	15	2
U of New Haven	Certificate	2	0	0	0	0
	Bachelor	39	34	35	38	43
	PB	6	1	2	3	7
	Master	33	44	82	89	51
Yale	Bachelor	37	63	59	54	56
	Master	72	43	86	78	76
	Doctorate	26	20	30	27	22
Total		1,083	1,118	1,342	1,547	1,402

Table 6: Engineering Technologies/Technicians Degrees and Certificates Awarded by Institution

School	Type	2005-06	2006-07	2007-08	2008-09	2009-10
Asnuntuck	Certificate	51	45	110	67	234
	Associate	1	2	3	8	6
Capital	Associate	3	6	6	9	8
CCSU	Bachelor	98	97	99	112	91
	PB	0	0	1	0	0
	Master	5	6	2	7	10
Gateway	Certificate	23	20	12	23	26
	Associate	35	35	23	52	26
Manchester	Certificate	2	3	7	29	28
	Associate	1	2	7	5	7
Middlesex	Certificate	1	0	0	0	3
	Associate	2	1	1	2	1
Naugatuck	Certificate	23	7	11	8	25
	Associate	37	41	37	41	44
Northwestern	Certificate	1	0	0	0	0
	Associate	6	10	9	6	3
Norwalk	Certificate	4	0	0	0	0
	Associate	18	9	10	19	7
Quinebaug	Certificate	0	0	0	0	5
	Associate	0	0	0	2	1
Three Rivers	Certificate	16	24	11	19	16
	Associate	48	54	52	51	45
Tunxis	Certificate	0	0	3	1	1
	Associate	5	1	0	7	2
U of Bridgeport	Master	7	21	42	135	175
UConn	Master	0	0	0	0	2
U of Hartford	Associate	13	12	21	9	23
	Bachelor	52	74	84	64	30
U of New Haven	Certificate	1	4	0	0	7
	Bachelor	1	3	1	0	0
	Master	25	14	6	7	8
Total		480	491	558	683	834

Table 7: Biological and Biomedical Sciences Degrees and Certificates Awarded by Institution

School	Type	2005-06	2006-07	2007-08	2008-09	2009-10
Albertus Magnus	Bachelor	3	8	7	5	5
CCSU	Bachelor	38	52	51	63	63
	PB	1	0	2	1	1
	Master	10	14	13	16	12
Connecticut College	Bachelor	62	64	61	59	52
	Master	1	0	1	0	0
ECSU	Bachelor	16	20	43	42	41
Fairfield	Bachelor	33	37	33	50	37
Middlesex	Associate	1	0	0	1	2
Post	Bachelor	6	8	8	6	3
Quinnipiac	Bachelor	32	25	42	43	43
	Master	47	41	42	43	43
Sacred Heart	Bachelor	20	27	25	33	36
Saint Joseph's	Bachelor	11	15	6	14	9
	PB	0	0	1	2	17
	Master	4	11	23	30	31
SCSU	Bachelor	33	37	36	38	51
	Master	29	19	20	15	3
Trinity	Bachelor	34	35	34	34	42
U of Bridgeport	Bachelor	5	12	9	6	6
UConn	Bachelor	284	310	309	341	333
	Master	38	52	34	50	40
	Doctorate	49	49	58	42	45
U of Hartford	Bachelor	4	8	10	7	13
	Master	1	8	3	0	0
U of New Haven	Bachelor	23	19	16	18	44
	PB	4	5	1	2	2
	Master	28	25	31	27	28
Wesleyan	Bachelor	32	35	40	50	37
	Master	3	3	4	4	9
	Doctorate	3	7	5	3	3
WCSU	Bachelor	8	18	7	15	18
	Master	6	4	5	2	10
Yale	Bachelor	114	116	132	116	98
	Master	117	129	124	110	93

Table 7 (continued)

School	Type	2005-06	2006-07	2007-08	2008-09	2009-10
	Doctorate	76	89	77	85	85
Total		1,176	1,302	1,313	1,373	1,355

Table 8: Mathematics and Statistics Degrees and Certificates Awarded by Institution

School	Type	2005-06	2006-07	2007-08	2008-09	2009-10
Albertus Magnus	Bachelor	1	3	5	1	0
CCSU	Bachelor	27	20	28	36	36
	PB	10	5	5	13	4
	Master	17	13	23	24	29
Connecticut College	Bachelor	2	11	12	12	7
ECSU	Bachelor	34	16	31	27	25
Fairfield	Bachelor	22	22	22	15	23
	Master	12	12	20	13	10
Gateway	Associate	3	2	1	5	1
Quinnipiac	Bachelor	12	7	15	25	22
Sacred Heart	Bachelor	5	8	12	6	10
Saint Joseph's	Bachelor	5	5	2	2	3
SCSU	Bachelor	17	17	19	16	17
	Master	6	6	4	4	1
Trinity	Bachelor	5	2	4	11	10
U of Bridgeport	Bachelor	0	3	1	2	2
UConn	Bachelor	53	42	39	48	51
	Master	41	48	44	45	50
	Doctorate	5	14	8	14	16
U of Hartford	Bachelor	3	6	5	5	2
U of New Haven	Bachelor	3	2	1	2	2
Wesleyan	Bachelor	10	18	18	20	17
	Master	2	2	3	2	2
	Doctorate	1	2	1	4	1
WCSU	Bachelor	5	6	7	13	14
	Master	5	2	1	2	3
Yale	Bachelor	25	31	35	48	26
	Master	19	19	28	31	41

Table 8 (continued)

School	Type	2005-06	2006-07	2007-08	2008-09	2009-10
	Six Year Certificate	0	0	2	0	0
	Doctorate	8	12	7	10	3
Total		358	356	403	456	428

Table 9: Physical Sciences Degrees and Certificates Awarded by Institution

School	Type	2005-06	2006-07	2007-08	2008-09	2009-10
CCSU	Bachelor	19	20	9	18	17
	Master	15	5	9	10	9
Connecticut College	Bachelor	3	8	10	7	3
ECSU	Bachelor	10	7	11	4	21
Fairfield	Bachelor	6	14	17	6	4
Naugatuck	Associate	6	0	1	0	0
Quinnipiac	Bachelor	5	1	0	2	6
Rensselaer	PB	10	8	6	0	0
Sacred Heart	Bachelor	7	6	8	3	9
	Master	8	7	6	7	11
Saint Joseph's	Bachelor	2	0	1	2	2
	Master	4	4	2	2	2
SCSU	Bachelor	13	15	12	15	15
	Master	3	3	2	5	1
Trinity	Bachelor	13	12	11	12	6
U.S. Coast Guard Academy	Bachelor	21	33	32	29	23
UConn	Bachelor	37	33	45	44	56
	Master	13	35	24	37	38
	Doctorate	35	35	31	28	30
U of Hartford	Bachelor	7	6	12	13	15
U of New Haven	Bachelor	16	18	13	19	19
Wesleyan	Bachelor	31	42	42	42	51
	Master	11	6	9	11	14
	Doctorate	6	3	3	6	6
WCSU	Bachelor	7	14	6	15	20
Yale	Bachelor	40	49	38	49	37
	Master	90	77	81	67	66

Table 9 (continued)

School	Type	2005-06	2006-07	2007-08	2008-09	2009-10
	Doctorate	26	38	51	32	62
Total		464	499	492	485	543

Table 10: Science Technologies/Technicians Degrees and Certificates Awarded by Institution

School	Type	2005-06	2006-07	2007-08	2008-09	2009-10
Three Rivers	Associate	3	9	11	9	13
U of New Haven	Bachelor	1	2	0	1	4
Total		4	11	11	10	17

Other STEM Fields

Table 11 lists each STEM program classified as “Other,” along with its CIP code and the institutions that conferred degrees or certificates in that program.

Table 11: Degrees and Certificates Conferred in Other STEM Programs

Animal Science, General 01.0901						
School	Type	2005-06	2006-07	2007-08	2008-09	2009-10
UConn	Associate	14	10	28	13	13
	Bachelor	54	59	53	49	56
	Master	5	6	7	11	3
	Doctorate	5	12	0	5	2
Plant Sciences, General 01.1101						
School	Type	2005-06	2006-07	2007-08	2008-09	2009-10
UConn	Bachelor	4	1	2	4	1
	Master	1	4	5	4	1
Agronomy and Crop Science 01.1102						
School	Type	2005-06	2006-07	2007-08	2008-09	2009-10
UConn	Bachelor	9	6	6	16	7
Horticulture Science 01.1103						
School	Type	2005-06	2006-07	2007-08	2008-09	2009-10
Naugatuck	Certificate	17	12	11	9	12

Table 11 (continued)

	Associate	10	7	5	5	7
UConn	Associate	10	12	7	6	13
	Bachelor	19	12	12	10	13
Environmental Science 03.0104						
School	Type	2005-06	2006-07	2007-08	2008-09	2009-10
Gateway	Certificate	0	0	0	17	0
	Associate	2	2	1	1	1
Middlesex	Associate	4	4	7	3	2
Northwestern	Associate	3	1	0	3	1
Trinity	Bachelor	8	6	6	4	11
UConn	Bachelor	12	7	19	22	20
Yale	Master	0	0	0	0	42
Digital Communication and Media/Multimedia 09.0702						
School	Type	2005-06	2006-07	2007-08	2008-09	2009-10
Naugatuck	Certificate	0	0	0	2	1
	Associate	0	5	8	11	11
Animation, Interactive Technology, Video Graphics, and Special Effects 10.0304						
School	Type	2005-06	2006-07	2007-08	2008-09	2009-10
Northwestern	Associate	0	0	8	0	0
Mathematics and Computer Science (Interdisciplinary) 30.0801						
School	Type	2005-06	2006-07	2007-08	2008-09	2009-10
Yale	Bachelor	0	0	1	2	2
Biopsychology 30.1001						
School	Type	2005-06	2006-07	2007-08	2008-09	2009-10
UConn	Doctorate	0	1	0	0	0
Nutrition Sciences 30.1901						
School	Type	2005-06	2006-07	2007-08	2008-09	2009-10
Saint Joseph's	Master	0	0	0	1	17
UConn	Bachelor	44	42	55	49	54
	Master	4	8	7	7	11
	Doctorate	7	7	7	5	5
Cognitive Science 30.2501						

Table 11 (continued)

School	Type	2005-06	2006-07	2007-08	2008-09	2009-10
Yale	Bachelor	15	12	17	13	18
Cognitive Psychology and Psycholinguistics 42.2701						
School	Type	2005-06	2006-07	2007-08	2008-09	2009-10
The Graduate Institute	Master	4	13	4	18	11
UConn	Bachelor	2	5	2	6	8
Experimental Psychology 42.2704						
School	Type	2005-06	2006-07	2007-08	2008-09	2009-10
U of Hartford	Master	3	5	3	3	4
Physiological Psychology/Psychobiology 42.2706						
School	Type	2005-06	2006-07	2007-08	2008-09	2009-10
Quinnipiac	Bachelor	5	2	3	2	4
Wesleyan	Bachelor	23	22	18	17	31
	Master	2	2	4	4	0
Forensic Science and Technology 43.0106						
School	Type	2005-06	2006-07	2007-08	2008-09	2009-10
U of New Haven	Certificate	14	9	13	10	10
	Bachelor	15	54	36	55	57
	PB	25	17	15	2	6
	Master	53	59	60	34	49
Geographic Information Science and Cartography 45.0702						
School	Type	2005-06	2006-07	2007-08	2008-09	2009-10
UConn	PB	0	0	0	0	5
Medical Scientist 51.1401						
School	Type	2005-06	2006-07	2007-08	2008-09	2009-10
UConn	Master	0	0	1	2	3
Yale	Master	0	0	22	23	29
	Doctorate	3	2	3	4	1
Pharmaceutics and Drug Design 51.2003						
School	Type	2005-06	2006-07	2007-08	2008-09	2009-10
UConn	Master	4	2	1	2	1
	Doctorate	8	10	8	10	10

Table 11 (continued)

Actuarial Science 52.1304						
School	Type	2005-06	2006-07	2007-08	2008-09	2009-10
UConn	Bachelor	19	22	44	40	48
Total		427	460	509	504	601

TA:ro