

ELECTRIC POWER ENGINEERING EDUCATION RESOURCES 2001-02

IEEE POWER ENGINEERING SOCIETY COMMITTEE REPORT

Abstract: *This report is based on a survey of power engineering education resources in the U.S. and Canada similar to 12 earlier such efforts. This survey is conducted to determine the electric power engineering education resources available in ABET (Accreditation Board of Engineering and Technology) accredited engineering programs in the U.S. and Canada for the 2001-02 academic year. The report is limited to colleges and universities that replied to a questionnaire on a voluntary basis. For the 115 colleges and universities (107 U.S., 8 Canadian) that submitted data on their power programs, the report contains a list of faculty active during the 2001-02 academic year with academic participation and professional experience, each school's research area and funding levels, PhD and MS student enrollment by type of support and by domestic vs. international, and each school's power course offerings with enrollments and other data.*

Keywords: *power engineering education, survey, faculty, research, graduate students, courses, enrollments.*

1. Introduction

A task force¹ of the Power Engineering Education Committee (PEEC) was appointed to provide a summary report on the power engineering education resources of U.S. and Canadian universities and colleges, consistent with 12 previous such efforts [1-12]. This report includes data on faculty, research activities and funding, graduate enrollment, and course enrollments, supplied by the universities and colleges, plus derived totals, averages, and trends. The task force has not attempted to rank or categorize programs in terms of quality nor does it encourage the use of the data herein to do so.

All U.S. and Canadian universities with an ABET accredited curriculum in electrical engineering received a request from the task force to complete the survey. The survey was conducted between March 1 and July 1 of 2003 via the internet site www.powerlearn.org/survey/. There were 115 colleges and universities that responded (107 U.S., 8 Canadian). The task force has summarized and comprehensively and concisely reported the information as submitted by the responding universities.

The data supplied by the respondents form the basis for four main types of information presented in this report: (1) the composition of the electric power faculty, (2) power program research activities and funding, (3) breakdown of graduate enrollments and (4) undergraduate and graduate courses offered and their enrollments. This data is provided in raw and summarized forms via 7 tables. In addition, we have also included 7 figures showing the variation through time, since the first survey in 1969, of certain attributes of interest to the community. All of these figures show a

gap between 1994 and 2001. The reason for this is that, although this survey was regularly conducted between 1969 and 1994 (every 2 years with the exception of 1983-1984), the paper covering 1993-1994 [12] provides the last set of survey results published, until this paper.

2. Electric power engineering schools and faculty

The roster of faculty active in Electric Power Engineering Education in each university in the year 2001-02 is shown in Table 1, along with the name, telephone number and e-mail address of the power program contact person. For each faculty member listed, the table provides the rank, highest degree obtained, professional engineering (PE) license status, IEEE membership level, years of experience prior to 2001 in academics, the power industry, and non-power industry, and the activity level for 2001-02, by percentage, in power-related teaching, power-related research, and non-power-related activities.

Tables 2 and 3 summarize the data contained in Table 1. Table 2 provides total number and percentage of faculty by rank, by degree, that have PE licenses, and that are IEEE members. Table 3 provides average faculty experience in years and average percentage activity. Figure 1 uses data from Table 1 and previous surveys to show variation through time in the different faculty ranks from 1970 to 2002. The percentage of faculty at the assistant professor level has declined from about 20% in the early- to mid-1990s to about 15% in 2001-2002, with total number of faculty remaining relatively constant.

3. Research activities and funding

Table 4 indicates the research activities and funding levels at each school for 2001-02. The respondents were asked to identify their research activities in terms of the IEEE Power Engineering Society Subcommittee names. Table 4 also provides funding levels broken down by sources (internal, government, manufacturing, utility, other industry, and foreign) and by whether it was equipment or non-equipment related. Figure 2 uses data from Table 4 and previous surveys to show variation through time in total institution average funding and government average funding. Although total average funding increased from \$375k to \$650k per institution since 1993-1994, this increase has been entirely due to increased government funding (\$110k to \$490k per institution) while industry funding has decreased (\$265k to \$160k per institution).

¹ Task Force Members: Jim McCalley (Chair), Leonard Bohmann, Karen Miu, Noel Schulz.

4. Graduate enrollments

Table 5 identifies graduate student enrollment at each institution in terms of degree program (Masters or PhD), source of financial support (teaching or research assistantship, scholarship, or self support), international vs. domestic, and part-time vs. full-time. Tables 6a and 6b summarize the data in Table 5. Figures 3, 4, and 5 use data from Table 5 and previous surveys to show variation through time in the average number of graduate students per institution that are part-time vs. full-time, Masters vs. PhD, and domestic vs. international, respectively. Figure 3 shows that the average number of full-time students has grown since 1994 from 12 per institution to 15, and average number of part-time students has grown from 2 to 4 per institution. Figure 4 shows that the average number of Masters students has increased since 1994 from 10 to almost 14 and that the average number of PhD students has increased from 4 to almost 7. Figure 5 shows that the ratio of average number of international students per institution to average number of domestic graduate students per institution has grown from 8:7 in 1994 to 12:9, indicating the percentage of international students comprising the power engineering graduate student population has risen from 53% to 57%.

5. Undergraduate and graduate course work

Table 7 identifies electric power engineering course offering of each responding university. Table 7 also contains the title of the course, the number of credit hours, the enrollment (if it was provided) and a code identifying the level of the course and whether the course is required or elective. Figures 6 and 7 use data from Table 7 and previous surveys to show variation through time of percentages of institutions with required power courses in the EE undergraduate curriculum and also average number of students in undergraduate elective power classes with highest enrollment. Figure 6 indicates that the percentage of institutions requiring a power course in the EE undergraduate curriculum has decreased from an all-time high of about 80% in 1994 to about 65%. Figure 7 indicates that the average number of students in undergraduate elective power classes with highest enrollment is 30, about the same as in 1994.

6. Conclusion

This task force report provides information on education resources in the United States and Canada in the 2001-02 academic year. All U.S. and Canadian colleges and universities with ABET accredited curricula in electrical engineering were advised of the survey and invited to participate. The data presented in this report are those received from the 115 departments of electrical engineering (or electrical and computer engineering) with power programs and/or related courses responding to the questionnaire. Neither the IEEE (under whose

auspices the committee functions) nor the Power Engineering Education Committee intends any value judgment as to the quality of any program included in the data. The committee feels that, although data is part of making value judgments, other factors not reducible to statistics are vital considerations in evaluating such specialized programs as electric power engineering. It is the committee's intention that the data reproduced here will be useful to persons interested in power engineering education in the United States and Canada. In an attempt to make this information more readily available, the task force has placed all of the old surveys on the World Wide Web at www.powerlearn.org/survey/.

7. References

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- [4] IEEE Power Engineering Society Committee Report, Electric Power Engineering Education Resources, 1975-1976, IEEE Transactions, PAS Vol. 97, No. 3, pp. 802-809, May-June 1978.
- [5] IEEE Power Engineering Society Committee Report, Electric Power Engineering Education Resources, 1977-1978, IEEE Transactions, PAS Vol. 100, No. 2, pp. 721-728, February 1981.
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Abbreviations used in Table 1:

1. Rank

PPC: Professor and Sponsored Power Chair

P&C: Professor and Department Chair

P: Professor

ACP: Associate Professor

ATP: Assistant Professor

LCT: Lecturer

INS: Instructor

2. Highest Degree

B – Bachelors E – Professional

M – Masters D - PhD

3. Professional Engineer (PE) registration

Y – Yes N – No

4. IEEE Membership Level

F – Fellow S – Senior Member

M – Member N – Not a Member

Table 1: FACULTY ENGAGED IN ELECTRICAL POWER ENGINEERING TEACHING IN 2001-2002

Name	Rank	Highest Degree	PE Registration	IEEE Membership Level	Experience Prior to 2002			Activity (%) in 2001-2002		
					Academic	Pwr Industry	Other Industry	Pwr Teaching	Pwr Research	Non Pwr
THE UNIVERSITY OF AKRON Email: alexis4@uakron.edu Jose A. De Abreu-Garcia 330 972-6709										
Ebuluk, M.	P	D	Y	S	17	0	0	.50	.45	.05
Husain, I.	ACP	D	N	S	9	2	0	.40	.55	.05
ALABAMA A&M UNIVERSITY Email: vgoteti@aamu.edu Venkata r. Goteti (256) 372-5591										
Goteti, V.	ACP	N	N	N	40	0	0	.25	.05	.70
UNIVERSITY OF ALABAMA AT BIRMINGHAM Email: jjones@uab.edu James R. Jones 205-934-8440										
Jones, J.	ACP	M	Y	S	26	5	13	.20	.00	.80
Hsu, S.		D	Y	S	3	15	0	.20	.00	.80
Horton, R.		M	Y	M	1	10	0	.00	.00	1.00
Franklin, G.		M	Y	M	0	6	0	.00	.00	1.00
THE UNIVERSITY OF ALABAMA, TUSCALOOSA Email: l.morley@ieee.org Lloyd A. Morley 205 348 0672										
Morley, L.	P&C	D	N	F	32	0	7	.25	.05	.70
El-Keib, A.	P	D	N	S	21	0	0	.50	.50	.00
Haskew, T.	ACP	D	N	S	12	0	0	.25	.75	.00
Daniel, D.	ATP	D	N	M	6	0	2	.50	.50	.00
UNIVERSITY OF ALASKA FAIRBANKS Email: ffrww@uaf.edu Richard W. Wies 907-474-7071										
Wies, R.	ATP	D	N	M	14	2	2	.60	.30	.10
Aspnes, J.	E	D	Y	S	30	5	0	.25	.25	.50
Bogosyan, S.	ACP	D	N	N	10	0	1	.60	.30	.10
UNIVERSITY OF ALBERTA Email: wxu@ee.ualberta.ca Wilsun Xu 780-492-5965										
Salmon, J.	P	D	Y	M	15	0	0	.30	.45	.25
Koval, D.	P	D	Y	F	20	5	0	.30	.45	.25
Xu, W.	P	D	Y	S	7	7	0	.30	.45	.25
Knight, A.	ATP	D	Y	M	4	0	0	.30	.45	.25
Dinavahi, V.	ATP	D	Y	M	2	0	0	.30	.45	.25
ARIZONA STATE UNIVERSITY Email: heydt@asu.edu Gerald T. Heydt (480) 965-8307										
Heydt, G.	P	D	Y	F	33	3	0	.34	.33	.33
Karady, G.	PPC	D	Y	F	16	24	0	.40	.35	.25
Farmer, R.	P	M	Y	F	9	40	3	.35	.04	.08
Gorur, R.	P	D	N	F	20	2	0	.25	.75	.00
Holbert, K.	ACP	D	Y	S	13	5	0	.20	.20	.60
Ayyanar, R.	ATP	D	N	M	3	4	0	.50	.50	.00
Albu, M.	P	D	N	S	15	3	0	.00	1.00	.00
Tylavsky, D.	ACP	D	N	S	22	0	2	.75	.25	.00

Name	Rank	Degree	PE	IEEE	Acc	Pwr Ind	Other Ind	Pwr Tch	Pwr Res	Non Pwr
AUBURN UNIVERSITY Email: nelms@eng.auburn.edu Mark Nelms (334) 844-1830										
Gross, C.	P	D	Y	S	34	6	0	.00	.00	.00
Nelms, M.	P	D	Y	S	19	0	0	.00	.00	.00
THE UNIVERSITY OF BRITISH COLUMBIA Email: jrms@ece.ubc.ca Jose R. Marti 604-822-2364										
Marti, J.	P	D	Y	F	21	6	0	.22	.33	.45
Jatskevich, J.	ATP	D	N	M	1	2	0	.40	.40	.20
Dunford, W.	ACP	D	Y	S	22	1	2	.15	.25	.60
Linares, L.	ATP	D	N	N	11	5	2	.18	.20	.62
Nimura, T.	ATP	D	N	M	11	12	0	.40	.40	.20
Dommel, H.	E	D	Y	F	30	10	0	.10	.10	.80
BUCKNELL Email: wismer@bucknell.edu Margaret Wismer										
Wismer, M.	ATP	D	N	N	8	4	0	.20	.35	.45
UNIVERSITY AT BUFFALO Email: safium@acsu.buffalo.edu Mohammed Safiuddin 716 645 3115-X-1225										
Safiuddin, M.	P	D	N	M	25	15	25	.25	.50	.50
CAL POLY STATE UNIVERSITY, SAN LUIS OBISPO Email: taufik@calpoly.edu Taufik Taufik (805) 756-2318										
Taufik, T.	ATP	D	N	M	4	3	0	.75	.05	.20
Shaban, A.	P	D	N	M	20	0	0	.75	.05	.20
Nafisi, A.	P	D	N	M	20	0	0	.75	.05	.20
Ahlgreen, W.	ATP	D	N	N	4	0	0	.25	.00	.00
Tandon, S.	P	D	N	M	20	0	0	.75	.25	.00
CALIFORNIA STATE UNIVERSITY, LONG BEACH Email: nour@csulb.edu H. Mohamed-Nour 562-985-1515										
Mohamed-Nour, H.	P	D	N	M	18	4	0	1.00	.00	.00
Das, R.	P	D	Y	M	22	6	0	1.00	.00	.00
CALIFORNIA STATE UNIVERSITY, SACRAMENTO Email: gonent@ecs.csus.edu Turan Gonen (916) 278-6756										
Gonen, T.	P	D	Y	S	38	14	2	.80	.20	.00
Yousif, S.	P	D	Y	M	38	14	2	.80	.20	.00
Balachandra, J.	P	D	N	N	38	11	2	.75	.00	.25
Markovic, M.	P	D	Y	N	26	6	9	.80	.00	.20
Calvin College Email: pribeiro@calvin.edu Paulo F. Ribeiro 616-957-6407										
Ribeiro, P.	P	D	Y	F	10	17	0	.20	.20	.60
UNIVERSITY OF CALGARY Email: mailko@ieee.org Om P. Malik 403-220-6178										
Rosehart, W.	ATP	D	Y	M	2	2	0	.25	.50	.25
Nowicki, E.	ACP	D	Y	N	10	1	0	.35	.50	.15
Malik, O.	E	D	Y	M	37	9	0	.10	.80	.10
UNIVERSITY OF CALIFORNIA, IRVINE Email: smedley@uci.edu Keyue Smedley 949-824-6710										
Schinzinger, R.	E	D	Y	F	40	40	0	.50	.10	.40
Smedley, K.	P	D	Y	S	20	20	0	.50	.50	.00
CEDARVILLE UNIVERSITY Email: laramore@cedarville.edu Robert D. Laramore (937) 766-7686										
Laramore, R.	ACP	M	Y	S	24	5	0	.50	.00	.50
CLARKSON UNIVERSITY Email: pillayp@clarkson.edu Pragasen Pillay (315) 268-6509										
Pillay, P.	PPC	D	Y	S	15	2	0	.50	.50	.00
Ortmeyer, T.	P&C	D	Y	F	25	3	0	.25	.25	.50
McGrath, P.	P	D	N	M	25	0	0	.60	.40	.00
CLEMSON UNIVERSITY Email: adly.girgis@ces.clemson.edu Adly A. Girgis (864) 656-5936										
Collins, R.	ACP	D	Y	S	18	0	0	.50	.30	.20
Girgis, A.	PPC	D	Y	F	35	0	0	.40	.40	.20
Makram, E.	PPC	D	Y	S	24	9	0	.40	.40	.20
UNIVERSITY OF COLORADO AT BOULDER Email: Ewald.Fuchs@Colorado.edu Ewald F. Fuchs (303) 492-7010										
Fuchs, E.	P	D	N	F	25	8	0	.70	.20	.10
Erickson, R.	P	D	N	F	20	0	0	.60	.20	.20
Maksimovic, D.	ACP	D	N	S	15	0	0	.30	.30	.40
Zane, R.	ATP	D	N	M	3	1	0	.30	.40	.30
CORNELL UNIVERSITY Email: jst6@cornell.edu James S. Thorp (607) 255-3347										
Thorp, J.	P	D	N	F	41	1	1	.50	.50	.00
Thomas, R.	P	D	N	F	30	2	0	.50	.50	.00
Chiang, H.	P	D	N	F	20	2	0	.50	.50	.00
DREXEL UNIVERSITY Email: karen@ece.drexel.edu Karen N. Miu 215-895-6207										
Nwankpa, C.	P	D	N	M	15	2	0	.40	.40	.20
Niebur, D.	ATP	D	N	M	7	0	7	.40	.40	.20
Miu, K.	ATP	D	N	M	4	0	0	.40	.40	.20
EMBRY-RIDDLE AERONAUTICAL UNIVERSITY Email: shaffer@erau.edu Randall A. Shaffer 928-777-6943										
Shaffer, R.	ACP	D	N	M	15	4	0	.80	.10	.10

Name	Rank	Degree	PE	IEEE	Acad	Pwr Ind	Othr Ind	Pwr Tch	Pwr Res	Non Pwr
NEW MEXICO TECH Hasan M. Shanechi Email: shanechi@ee.nmt.edu 505-835-5122										
Shanechi, H.	ACP	D	N	S	23	10	0	.15	.50	.35
Wedeward, K.	ACP	D	N	N	10	0	0	.00	.50	.50
UNIVERSITY OF NEW ORLEANS Henri A. Alciatoire Email: halciatoire@uno.edu 504-280-3950										
Alciatoire, H.	ATP	M	N	M	16	14	2	1.00	.00	.00
MEMORIAL UNIVERSITY OF NEWFOUNDLAND Benjamin Jeyasurya Email: jeyas@enr.mun.ca 709-737-8902										
Rahman, M.	P	D	Y	F	30	0	0	.50	.50	.00
Quaicoe, J.	P	Y	S	S	25	0	0	.50	.50	.00
Jeyasurya, B.	P	Y	N	N	18	2	0	.50	.50	.00
NORHTERN ILLINOIS UNIVERSITY Donald S. Zinger Email: d.zinger@ieee.org 815-753-0540										
Zinger, D.	ACP	D	Y	N	20	2	3	.40	.01	.59
NORTH CAROLINA STATE UNIVERSITY Mo-Yuen Chow Email: chow@ncsu.edu (919) 515-7360										
Chow, J.	P	D	Y	F	25	5	0	.00	.00	.00
Chow, M.	P	D	N	S	15	0	0	.00	.00	.00
Baran, M.	ACP	D	N	M	12	2	0	.00	.00	.00
UNIVERSITY OF NORTH DAKOTA Hossein Salehfar Email: hsalehfar@und.nodak.edu 701-777-4432										
Salehfar, H.	ACP	D	N	S	13	3	0	.00	.00	.00
Miles, A.	ACP	D	N	S	23	5	0	.00	.00	.00
UNIVERSITY OF NORTH FLORIDA Joseph L. Campbell Email: jlcampbe@unf.edu 904-620-1390										
Kore, L.	ATP	D	N	N	1	0	0	.25	.25	.50
NORTHEASTERN UNIVERSITY, BOSTON Alex M. Stankovic Email: astankov@ece.neu.edu 617.373.3007										
Mulukutla, S.	P	D	Y	F	33	2	0	1.00	.00	.00
Lehman, B.	ACP	D	N	M	11	0	0	.20	.80	.00
Stankovic, A.	P	D	N	S	10	0	4	.30	.70	.00
OHIO NORTHERN UNIVERSITY Khalid S. Al-Olimat Email: k-al-olimat@onu.edu 419-772-2389										
Al-Olimat, K.	ACP	D	N	M	5	0	3	.40	.10	.50
THE OHIO STATE UNIVERSITY Stephen A. Sebo Email: sesebo@ieee.org 614-292-7410										
Kasten, D.	ACP	D	Y	F	30	4	0	.60	.10	.30
Keyhani, A.	P	D	N	F	29	5	0	.50	.50	.00
Sebo, S.	PPC	D	N	F	39	5	0	.50	.50	.00
Xu, L.	P	D	N	S	13	10	0	.35	.45	.20
OKLAHOMA STATE UNIVERSITY, STILLWATER, OK R. Ramakumar Email: ramakum@okstate.edu 405-744-5157										
Ramakumar, R.	PPC	D	Y	F	45	1	0	.50	.30	.10
Gedra, T.	ACP	D	N	M	12	0	4	.50	.40	.10
UNIVERSITY OF OKLAHOMA Fred N. Lee Email: flee@ou.edu 405-325-6598										
Lee, F.	P	D	Y	F	18	27	0	.40	.60	.00
Youn, Y.	ATP	D	Y	M	2	3	0	.60	.40	.00
PENN STATE UNIVERSITY - HARRISBURG Peter Idowu Email: pbi1@psu.edu 717-948-6110										
Idowu, P.	ACP	Y	M	K	13	3	0	.60	.40	.00
PENNSYLVANIA STATE UNIVERSITY Kwang Y. Lee Email: kwanglee@psu.edu 814-865-2621 0										
Lee, K.	P	D	Y	F	31	1	2	.50	.50	.00
Jeffrey, M.	ACP	D	N	M	12	0	0	.50	.50	.00
Heath, H.	ATP	D	N	M	5	0	0	.50	.50	.00
Ralph, P.	ATP	M	Y	F	11	36	0	.00	.00	1.00
UNIVERSITY OF PITTSBURGH George I. Kusic Email: kusic@ee.pitt.edu 412-624-9678										
Kusic, G.	ACP	D	Y	N	20	10	0	.50	.00	.50
POLYTECHNIC UNIVERSITY Zivan Zabar Email: zzabar@poly.edu 718-260-3495										
Czarkowski, D.	ACP	D	Y	M	10	2	0	.50	.30	.20
Zabar, Z.	P	D	N	M	36	2	0	.50	.30	.20
Birenbaum, L.	E	M	N	S	42	0	5	.00	1.00	.00
PORTLAND STATE UNIVERSITY James E. Morris Email: jmorris@cecs.pdx.edu 503-725-9588										
Sharifnia, H.	LCT	M	Y	N	0	0	0	.00	.00	.00
UNIV. OF PUERTO RICO-MAYAGUEZ Efrain Oneill Email: oneill@ieee.org 787-642-3705										
Cedeño, J.	ATP	D	Y	M	2	3	0	.50	.50	.00
Madani, S.	ATP	D	N	M	1	3	0	.50	.50	.00
Orama, L.	ACP	D	Y	M	6	3	0	.12	.25	.63
Perez, R.	P	M	Y	N	25	20	0	.88	.12	.00
Ramirez, A.	ATP	D	N	S	1	25	0	.50	.50	.00
Santiago, J.	P	M	Y	N	23	33	0	.88	.12	.00
Caro, J.	P	M	Y	N	25	5	0	.12	.00	.88
Velez-Reyes, A.	P	D	Y	S	11	1	1	.12	.50	.38
Irizarry, M.	ACP	D	Y	M	6	5	1	.50	.50	.00
Venkatesan, K.	P	D	Y	S	20	15	0	.75	.25	.00

Name	Rank	Degree	PE	IEEE	Acad	Pwr Ind	Othr Ind	Pwr Tch	Pwr Res	Non Pwr
PURDUE UNIVERSITY Oleg Wasynczuk Email: wasynczuk@ecn.purdue.edu 765-494-3475										
Wasynczuk, O.	P	D	N	S	23	0	3	.50	.25	.25
Krause, P.	P	D	N	F	40	2	0	.80	.10	.10
Ong, C.	P	D	Y	S	23	2	0	.80	.17	.03
Sudhoff, S.	P	D	N	S	11	1	0	.40	.50	.10
RENSELAER POLYTECHNIC INSTITUTE Kenneth A. Connor Email: connor@rpi.edu 518-276-8552										
Nelson, J.	PPC	D	Y	F	31	5	0	.35	.35	.30
Salon, S.	P	D	Y	F	24	7	0	.35	.35	.30
Degeneff, R.	P	D	Y	F	18	17	0	.30	.40	.30
Torrey, D.	ACP	D	Y	S	19	1	0	.35	.35	.30
Chow, J.	P	D	Y	F	19	9	0	.00	.30	.70
ROSE-HULMAN INSTITUTE OF TECHNOLOGY Cliff Grigg Email: cliff.grigg@rose-hulman.edu 812-877-8333										
Grigg, C.	P	D	Y	S	20	8	6	.40	.20	.40
Brockhurst, F.	P	D	Y	S	25	0	10	.20	.20	.60
Rostamkolai, N.	P	D	Y	S	10	8	0	.40	.20	.40
ROWAN UNIVERSITY Peter M. Jansson Email: jansson@rowan.edu 856.256.5373										
Jansson, P.	ACP	D	Y	S	3	19	1	.25	.35	.40
ROYAL MILITARY COLLEGE OF CANADA Derrick E. Bouchard Email: bouchard-d@rmc.ca 613.541.6000										
Chikhani, A.	P	D	Y	S	31	0	0	.20	.20	.60
Bouchard, D.	ATP	D	Y	M	13	0	9	.40	.40	.20
Tarbouchi, M.	ATP	D	N	N	9	0	0	.40	.40	.20
SAGINAW VALLEY STATE UNIVERSITY Mohamed A. El-Kasabi Email: elkasabi@svsu.edu 989-964-7007										
El-Kasabi, M.	P	D	N	M	20	0	0	.18	.05	.00
SAN DIEGO STATE UNIVERSITY Mao S. Lin Email: mao.lin@sdsu.edu 619-594-2493										
Betancourt, R.	ACP	D	Y	M	15	5	0	.50	.40	.10
Lin, M.	E	D	N	M	38	1	2	.20	.10	.70
SAN FRANCISCO STATE UNIVERSITY ShySheng Liou Email: ssl@sfsu.edu 415 338-7733										
Liou, S.	P&C	D	N	M	12	14	0	.40	.40	.20
Trauner, R.	P	M	N	M	15	15	0	.80	.20	.00
UNIVERSITY OF SOUTH ALABAMA Arifur Rahman Email: arahman@usouthal.edu 251-460-7508										
Rahman, A.	ACP	D	N	S	45	0	0	.60	.20	.20
SOUTH DAKOTA STATE UNIVERSITY Steven M. Hietpas Email: steven_hietpas@sdsu.edu 605.688.4419										
Hietpas, S.	ACP	D	N	M	9	0	5	.70	.20	.10
Ropp, M.	ATP	D	N	M	4	0	0	.70	.25	.05
UNIVERSITY OF SOUTHERN CALIFORNIA T. C. Cheng Email: tcheng@usc.edu 213-740-4712										
Cheng, T.C.	PPC	D	N	F	29	0	0	.30	.60	.10
SOUTHERN ILLINOIS UNIVERSITY, EDWARDSVILLE Luis T. Youn Email: lyoun@siue.edu 618-650-2809										
Youn, L.	P	D	N	N	19	1	2	.40	.40	.20
UNIVERSITY OF SOUTHERN MAINE Carlos L. Luck Email: luck@usm.maine.edu 207-780-5583										
Luck, C.	ACP	D	N	N	8	0	2	.25	.00	.75
SOUTHERN POLYTECHNIC STATE UNIVERSITY Charles L. Bachman Email: cbachman@spsu.edu 770-528-7246										
Bachman, C.	P	M	Y	M	37	3	0	.50	.00	.50
TENNESSEE STATE UNIVERSITY Satinderpaul S. Devgan Email: sdevgan@tnstate.edu (615) 963-5362										
Devgan, S.	P&C	D	Y	S	33	2	0	.10	.10	.80
Marpaka, D.	ACP	D	N	M	35	1	0	.50	.05	.45
TENNESSEE TECHNOLOGICAL UNIVERSITY Pritindra Chowdhuri Email: pchowdhuri@ieee.org 931-372-3682										
Chowdhuri, P.	P	D	Y	F	16	33	0	.30	.55	.15
Ojo, J.	P	D	N	S	23	1	0	.50	.50	.00
Radman, G.	ACP	D	Y	M	27	2	0	.70	.30	.00
Sekar, A.	P	D	N	S	40	4	0	.50	.50	.00
THE UNIVERSITY OF TENNESSEE Leon M. Tolbert Email: tolbert@utk.edu 865-974-2881										
Chiasson, J.	ATP	D	N	M	12	2	3	.25	.50	.25
Lawler, J.	P	D	N	S	23	1	4	.75	.25	.00
Tolbert, L.	ATP	D	Y	S	4	8	0	.50	.50	.00

Table 2: Summary of faculty ranks, degrees, professional registration, & IEEE membership

	FACULTY	ACADEMIC RANK							DEGREE				PE	IEEE
		Professor and Sponsored Power Chair	Professor and Department Chair	Professor	Associate Professor	Assistant Professor	Emeritus	Lecturer	PhD	Professional Degree	Master	Bachelor		
Number	357	23	12	156	89	52	14	8	327	2	24	1	180	351
Percent	100	6.4	3.4	43.7	24.9	14.6	3.9	2.2	91.6	5.6	6.7	0.3	50.4	98.3

Table 3: Average years faculty experience and average percentage activity

Average Experience (yrs)			Average Activity %		
Academic	Power Industry	Other Industry	Power Teaching	Power Research	Other
17.8	4.4	.99	39 %	35%	26%

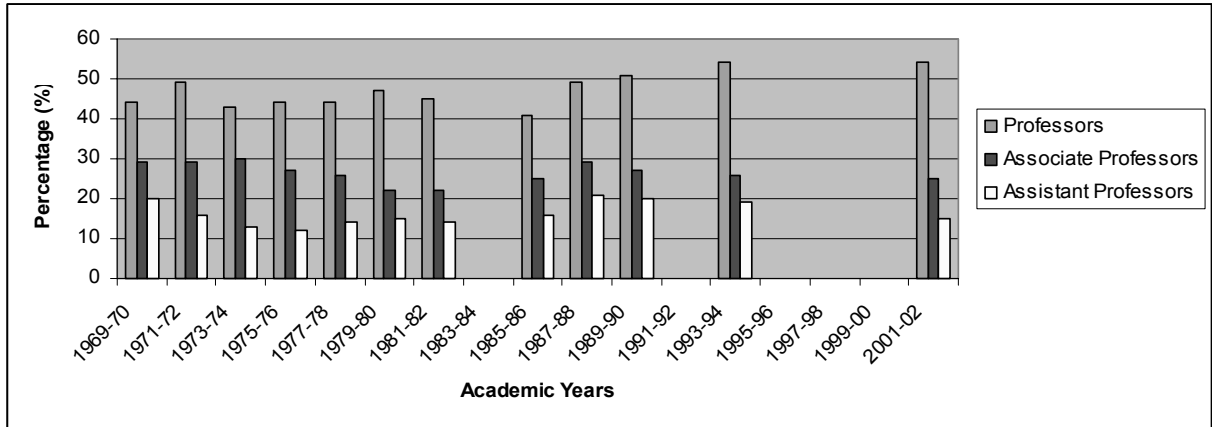


Figure 1: Percentages of full, associate, and assistant professors per academic year

SCHOOL	RESEARCH ACTIVITIES														FUNDING DOLLARS EXPENDED (1000's)																				
	ANAL, COMP, ECON	DYNAMICS	OPERATIONS	PLANNING	INSULATED COND	MACHINERY	PWR SYS COMM	INSTR & MEASR	PWR SYS RELAYING	SUBSTATIONS	SURGE PROTECTION	NUCLEAR PWR ENG	TRANSFORMERS	T & D	ENG DEV & PWR GEN	PWR ELECTRONICS	PWR ENG EDU	INTERNAL - ENDWMTS		INTERNAL - OTHER		GOV		DOMESTIC MANUF.		DOMESTIC UTILITY		OTHER DOMESTIC IND		FOREIGN		TOTAL			
																		NON-EQUIP	EQUIP	NON-EQUIP	EQUIP	NON-EQUIP	EQUIP	NON-EQUIP	EQUIP	NON-EQUIP	EQUIP	NON-EQUIP	EQUIP	NON-EQUIP	EQUIP	NON-EQUIP	EQUIP		
Polytechnic	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0	0	0	0	30	20	0	0	300	20	0	0	0	0	0	0	330	40
Puerto Rico	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0	0	110	141	295	2,31	0	0	0	0	0	0	0	0	0	0	405	372
Purdue	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0	0	0	0	700	200	1	0	0	0	0	0	0	0	0	0	0	0
Rensselaer Poly	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	14	0	0	0	214	0	329	0	319	0	0	0	0	0	0	876	28	
Rose-Hulman Tech	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Rowan	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Royal Military	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0	0	15	0	17	4	0	0	0	0	0	0	0	0	0	0	32	4
Saginaw Valley State	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Diego State	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0	0	10	0	200	0	25	0	50	0	10	0	0	0	0	295	0	
San Francisco State	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0	0	20	10	50	50	0	0	10	0	0	0	0	80	60	0	0	
South Dakota State	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	35	0	0	85	28	87	0	0	0	0	0	0	0	0	63	172		
Southern Illinois	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Syracuse	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tennessee State	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0.5	5	
Tennessee Tech	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	9.3	0	237	0	73.5	0	0	35	0	0	0	0	0	356	0	0	0	
Tennessee	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	50	0	0	0	200	0	0	0	0	0	0	0	0	0	0	0	0	0
Texas A&M	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	50	100	25	25	1000	200	200	0	100	0	50	0	0	1425	325	0	0	
Texas A&M-Kgsvll	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Texas Tech	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	350	0	0	0	2000	0	0	0	0	0	0	0	2350	0	0	0	0	
Texas-Arlington	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0	0	23	0	0	0	135	55	64.8	120	140	0	395	143	0	0		
Texas-Austin	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0	0	0	0.1	0.6	0	0.1	0.1	0	0	0	0	0.7	0.1	0	0		
Texas-Tyler	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0	0	7.5	8	0	0	0	0	0	0	0	7.5	8	0	0	0		
Toronto	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0	0	0	0	456	114	0	0	380	114	0	836	228	0	0	0	0	
U.S. Military Acade.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USAF Academy	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vanderbilt	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0	0	0	0	30	0	0	0	0	0	0	0	0	0	0	0	0	30
Villanova	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Virginia Tech	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	75	0	0	0	400	380	0	0	0	0	40	895	0	0	0	0	0	
Virginia	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0	0	0	20	10	10	0	0	0	0	15	0	55	0	0	0		
Washington State	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0	0	0	0	600	0	250	0	0	0	0	850	0	0	0	0	0	
Washington	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0	0	0	0	30	0	0	0	0	0	0	0	0	0	0	0	0	
Waterloo	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	60	0	0	250	100	100	0	0	0	0	0	410	100	0	0	0	0	
West Virginia	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Western Michigan	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	10	25	0	0	0	0	0	12	30	0	0	22	55	0	0	0	0	
Wichita State	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0	0	25	25	0	0	40	0	0	0	65	25	0	0	0	0	0	
Wisconsin-Madison	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0	68	0	1034	0	870	589	0	0	0	61	2622	0	0	0	0	0	
Wisconsin-Mlwaukee	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0	40	0	150	0	150	0	0	0	0	0	340	0	0	0	0	0	
Wisconsin-Platteville	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0	3	0	0	0	0	8	0	20	21	20	0	0	0	0	0	0	
WPI	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0	0	0	0.1	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0
WVU Tech	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0	0	0	28	3	0	0	0	0	0	0	0	0	0	0	0	0	0

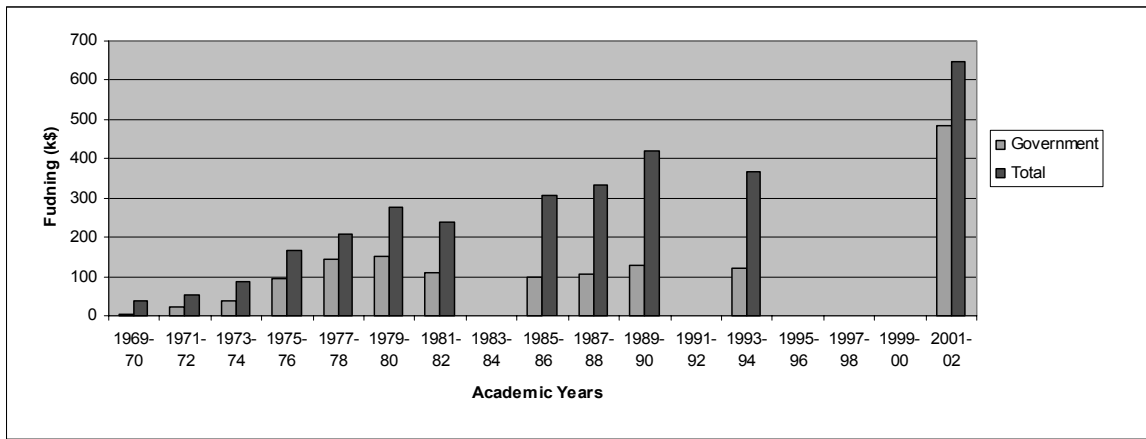


Figure 2: Institution Average Funding from Government and All Sources

SCHOOL	GRADUATE ENROLLMENT (M=Masters, D=PhD, PT=part time, FT=fulltime)																														
	TA				RA				fellow/ scholar				Self Support				Domestic				International				Total Enrolled						
	M		D		M		D		M		D		M		D		M		D		M		D		M		D				
	PT	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT
Polytechnic	0	1	1	0	2	3	1	6	0	2	0	3	2	1	1	3	0	1	0	1	2	3	1	5	2	4	1	6			
Puerto Rico-Mayaguez	0	6	0	0	0	14	0	0	0	0	0	0	2	0	0	0	2	12	0	0	0	8	0	0	2	20	0	0			
Purdue	0	1	0	1	0	3	0	5	0	5	0	1	0	1	0	4	0	7	0	4	0	3	0	7	0	10	0	11			
Rensselaer Polytechnic	0	9	0	0	0	0	0	9	0	0	0	0	6	13	3	16	4	5	2	9	2	17	1	16	6	22	3	25			
Rose-Hulman Tech	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0			
Rowan	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Royal Military	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	0	0			
Saginaw Valley State	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
San Diego State	6	0	0	0	10	0	0	0	3	0	0	0	111	0	0	0	95	0	0	0	0	35	0	0	95	35	0	0			
San Francisco State	0	0	0	0	0	0	0	0	0	0	0	0	2	3	0	0	2	0	0	0	0	3	0	0	2	3	0	0			
South Dakota State	4	0	0	0	4	0	0	0	0	0	0	0	2	0	0	0	0	0	0	10	0	0	0	10	0	0	0	0			
Southern Illinois	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0			
Syracuse	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Tennessee State	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	3	0	0	1	0	0	0	4	0	0	0	0			
Tennessee Tech	0	4	0	1	0	5	0	2	0	0	0	0	5	0	0	0	5	1	0	0	0	8	0	3	5	9	0	3			
Tennessee	0	2	0	2	0	2	0	4	0	0	0	0	0	1	0	0	0	2	0	0	0	3	0	6	0	5	0	6			
Texas A&M	0	5	0	5	0	10	0	22	0	0	1	3	0	0	4	5	0	2	8	0	13	3	27	0	15	5	35				
Texas A&M-Kingsville	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Texas Tech	0	0	0	0	0	10	0	5	0	2	0	3	0	0	0	0	9	0	4	0	1	0	1	0	10	0	5				
Texas-Arlington	0	3	0	0	0	5	0	4	0	0	0	2	5	15	2	0	5	12	2	0	0	11	0	6	5	23	2	6			
Texas-Austin	0	3	0	3	0	3	0	6	0	0	0	0	5	20	6	2	5	10	6	6	0	16	0	5	5	26	6	11			
Texas-Tyler	0	0	0	0	0	0	0	0	1	2	0	0	1	0	0	0	2	2	0	0	0	0	0	0	2	2	0	0			
Toronto	0	0	0	0	0	0	0	0	0	9	0	15	1	0	0	0	1	7	0	8	0	2	0	7	1	9	0	15			
U.S. Military Acade.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
USAF Academy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Vanderbilt	0	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0	0	0	0	2	0	1				
Villanova	0	0	0	0	3	5	0	0	0	0	0	0	0	0	0	0	2	0	0	1	5	0	0	3	5	0	0				
Virginia Tech	0	0	0	0	0	6	0	8	0	0	0	0	0	1	5	0	0	4	2	2	0	3	3	6	0	7	5	8			
Virginia	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0				
Washington State	0	1	0	2	0	2	0	8	0	0	0	1	0	1	0	0	0	0	1	0	4	0	11	0	4	0	12				
Washington	0	2	0	2	0	8	0	15	0	2	0	1	1	0	2	0	0	9	1	8	0	3	1	10	0	12	2	18			
Waterloo	0	0	0	0	0	5	0	20	0	0	0	5	2	0	0	0	2	5	0	15	0	0	15	2	5	0	25				
West Virginia	0	0	0	0	0	10	0	8	0	0	0	0	0	0	0	1	0	1	0	0	0	9	0	8	0	10	0	8			
Western Michigan	0	3	0	0	0	1	0	0	0	1	0	0	0	3	0	0	0	15	0	0	0	45	0	0	0	60	0	0			
Wichita State	0	3	0	2	0	3	0	0	0	0	0	0	5	12	1	0	5	5	1	1	0	13	0	1	5	18	1	2			
Wisconsin-Madison	0	3	0	3	0	22	0	14	0	2	0	3	0	3	0	3	0	15	0	10	0	15	0	15	0	30	0	25			
Wisconsin-Milwaukee	0	2	0	1	0	3	0	2	0	0	0	2	3	0	1	0	3	2	1	1	0	3	0	3	3	5	1	4			
Wisconsin-Platteville	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
WPI	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	0	0	1	0	0	0	2	0	0	0	3	0	0			
WVU Tech	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0			

Table 6a: Total reported electric power engineering enrollment by financial support*

Supported by TA				Supported by RA				Fellowship/Scholarship				Self Support			
M		D		M		D		M		D		M		D	
PT	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT	FT
16	146	7	81	39	334	21	318	8	68	4	69	296	274	60	58

Table 6b: Total reported electric power engineering enrollment: domestic, international, totals

DOMESTIC				INTERNATIONAL				TOTAL			
M		D		M		D		M		D	
PT	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT	FT
256	331	40	126	80	567	39	372	336	898	79	498

*The survey did not force respondents to reconcile graduate student numbers reported by financial support with graduate student numbers reported by international/domestic. Therefore, the sum of students for any of the four categories (M-PT, M-FT, D-PT, D-FT) in Table 6a may differ slightly from the totals indicated in Table 6b.

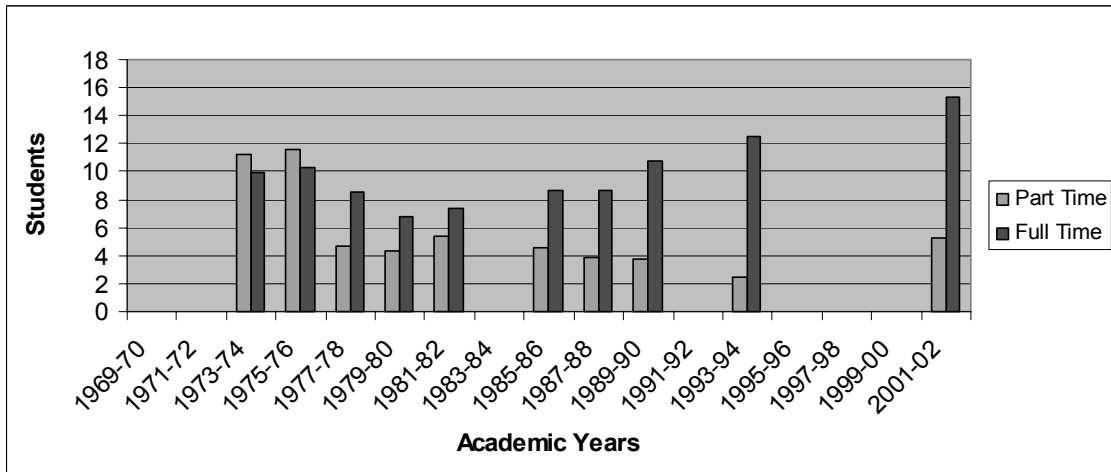


Figure 3: Average Number of Graduate Students per Institution – Part Time and Full Time

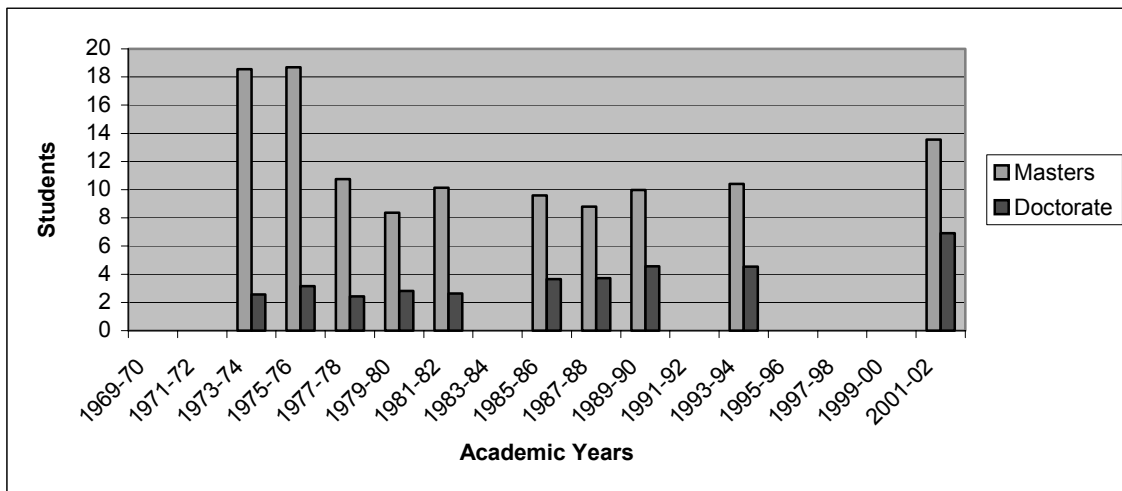


Figure 4: Average Number of Graduate Students per Institution – Masters and PhD

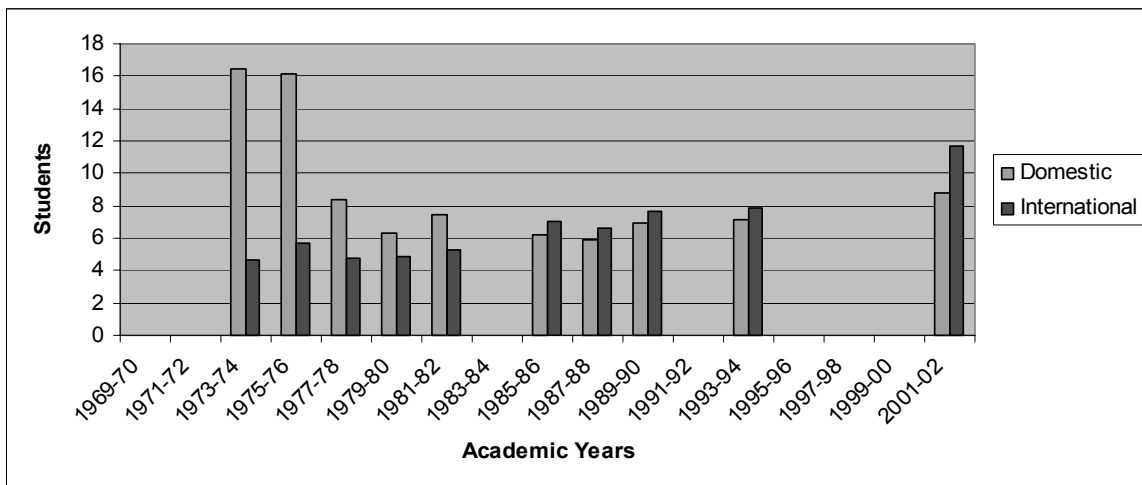


Figure 5: Average Number of Graduate Students per Institution – Domestic and International

	Credits	Lecture Hr	Lab Hr	Reqd	Campus Enroll	Off Campus	Video	Cable	Video Stream	Other
GANNON UNIVERSITY										
Elec Mach	3	3	0	UR	10	0	No	No	No	
Elec Mach lab	1	0	3	UR	10	0	No	No	No	
Pwr Elecs	3	3	0	UR	6	0	No	No	No	
Pwr Sys Eng 1	3	3	0	GR	3	0	No	No	No	
Pwr Sys Eng 2	3	3	0	GR	3	0	No	No	No	
GEORGIA INSTITUTE OF TECHNOLOGY										
Pwr Sys Anal & Cont	3	3	0	UE	13	0	No	No	No	
Pwr Sys Eng	3	3	0	UE	9	0	No	No	No	
PwrSys Cont & Oper	3	3	0	GE	7	3	Yes	No	No	
Pwr Sys Stability	3	3	0	GE	14	0	No	No	No	
Pwr Sys Plan & Rel	3	3	0	GE	0	0	No	No	No	
Pwr Sys Protection	3	3	0	GE	8	3	Yes	No	No	
Pwr Elec Ckts	3	3	0	GE	9	5	Yes	No	No	
Elec Mach Anal	3	3	0	GE	13	5	Yes	No	No	
Dyn&Cont,ElcMachDr	3	3	0	GE	11	0	No	No	No	
Elec Pwr Qual	3	3	0	GE	12	9	Yes	No	No	
Elctrmch Enrg Conv	3	3	0	UE	106	0	No	No	No	
Mechatronics Lab	1	0	1	UE	10	0	No	No	No	
Pwr Elecs	3	3	0	UE	13	0	No	No	No	
ILLINOIS INSTITUTE OF TECHNOLOGY										
Pwr Elecs	4	3	3	UE	30	6	Yes	No	Yes	
Elec Motor Drives	4	3	3	UE	21	4	Yes	No	Yes	
Pwr Sys Anal	3	3	0	UE	20	4	Yes	No	Yes	
Anal MthdsinPwrSys	3	3	0	UE	20	4	Yes	No	Yes	
Applied Optimization	3	3	0	GE	30	6	Yes	No	Yes	
Rel Theory & Sys Imp	3	3	0	GE	30	4	Yes	No	Yes	
Pwr Elec Dyn & Cont	3	3	0	GE	28	4	Yes	No	Yes	
AdjustableSpeedDrives	3	3	0	GE	26	4	Yes	No	Yes	
Pwr Sys Plan	3	3	0	GE	20	4	Yes	No	Yes	
Pwr Sys Rlyng	3	3	0	GE	23	4	Yes	No	Yes	
FaultTolerantPwrSys	3	3	0	GE	25	4	Yes	No	Yes	
Pwr Sys Rel	3	3	0	GE	20	4	Yes	No	Yes	
High Volt Pwr Trans	3	3	0	GE	20	4	Yes	No	Yes	
PwrSysDyn&Stability	3	3	0	GE	22	4	Yes	No	Yes	
Dereg Pwr Sys	3	3	0	GE	30	4	Yes	No	Yes	
PwrSysrnsactnMgmt	3	3	0	GE	21	4	Yes	No	Yes	
CompIntelligenceEng	3	3	0	GE	40	4	Yes	No	Yes	
ContOperElecPwrSys	3	3	0	GE	28	4	Yes	No	Yes	
Special Prob	3	3	0	GE	12	0	Yes	No	Yes	
AdvTopics in PwrSys	3	3	0	GE	15	0	Yes	No	Yes	
Indust Appl of Pwr Elecs & Motor Drives	2	2	0	GE	16	0	No	No	No	
Vehicular Pwr Sys	2	2	0	GE	16	0	No	No	No	
Fund of Pwr Eng	3	3	0	UR	40	8	No	No	No	
Adv Pwr Elecs	3	3	0	GE	20	8	Yes	No	Yes	
IOWA STATE UNIVERSITY										
Adv dist Sys	3	3	0	GE	0	0	No	No	No	
Adv Pwr elec Sys	3	3	0	GE	0	0	No	No	No	
AdvTopics in ElecPwr	3	3	0	GE	8	0	No	No	No	
Course 1	3	2	1	UE	23	3	Yes	No	No	
Course 2	3	3	0	UE	45	5	Yes	No	No	
ElecalMach&PwrElcDr	3	2	3	UE	30	0	No	No	No	
EnrgSys & Pwr elecs	3	3	0	UR	120	5	No	Yes	No	
Intro to EnrgDistSys	3	3	0	UE	27	0	No	No	No	
Pwr Sys Anal I	3	3	0	UE	45	0	No	No	No	
Pwr Sys Anal II	3	3	0	UE	39	0	No	No	No	
Pwr Sys Dyn	3	3	0	GR	5	8	Yes	No	Yes	
Seminar In Elec Pwr	1	1	0	GR	31	0	No	No	No	
Steady State Anal	3	3	0	GR	9	0	Yes	No	Yes	
KANSAS STATE UNIVERSITY										
Adv Pwr Elecs	3	3	0	GE	6	0	No	No	No	
Dist Sys Eng	3	3	0	GE	0	0	No	No	No	
Enrg Conv	3	3	0	UR	73	0	No	No	No	
Oper&ContofPwrSys	3	3	0	GE	3	5	Yes	No	No	
Pwr Elecs	3	3	0	UE	9	4	Yes	No	No	
Pwr Lab	3	2	3	UE	5	0	No	No	No	
Pwr Qual	3	3	0	GE	0	0	No	No	No	
Pwr Seminar	1	1	0	UE	9	0	No	No	No	
Pwr Sys Dsgn	3	3	0	UE	6	0	No	No	No	
Pwr Sys Protection	3	3	0	UE	5	0	No	No	No	
Pwr Sys Stability	3	3	0	GE	0	5	Yes	No	No	

	Credits	Lecture Hr	Lab Hr	Reqd	Campus Enroll	Off Campus	Video	Cable	Video Stream	Other
LAMAR UNIVERSITY										
Mach Lab	1	0	3	UR	15	0	No	No	No	
Elecal Mach	3	3	0	UR	15	0	No	No	No	
Nucl Pwr Eng	3	3	0	GE	30	0	No	No	No	
LOUISIANA STATE UNIVERSITY										
Adj Speed Drives	3	3	0	UE	35	0	No	No	No	
AdvTopicsOnElecMach	3	3	0	GE	7	0	No	No	No	
AdvVarSpeedDrives	3	3	0	GE	7	0	No	No	No	
Dist Sys Anal	3	3	0	UE	50	0	No	No	No	
Dist Sys Dsgn	3	3	0	UE	50	0	No	No	No	
Elec mach anal	3	3	0	UE	35	0	No	No	No	
Harmonic filter dsgn	3	3	0	UE	55	0	No	No	No	
Intro to Pwr elecs	3	2	1	UE	45	0	No	No	No	
Intro to Pwr Sys	3	3	0	UR	60	0	No	No	No	
Nonsinusoidal Sys	3	3	0	GE	7	0	No	No	No	
MAINE MARITIME ACADEMY										
Elec Pwr I	4	3	1	UR	80	10	No	No	No	
Elec Pwr II	4	3	1	UR	80	10	No	No	No	
Pwr Elecs	3	3	0	UR	40	10	No	No	No	
MCMASTER UNIVERSITY										
Dsgn&OperofIndMtrs	3	3	0	GE	7	3	No	No	No	
Elec Pwr Trans & Dist	3	3	0	GE	6	2	No	No	No	
Elc Ld Model & Forecast	3	3	0	GE	6	2	No	No	No	
Enrg Sys & Mgmt	4	4	2	UE	34	0	No	No	No	
NumSolPwrDviceProb	3	3	0	UE	0	0	No	No	No	
Pwr Dvcs & Sys	4	4	2	UR	114	0	No	No	No	
Pwr Elecs	3	3	0	GE	8	0	No	No	No	
Rotating Mach	3	3	2	UE	0	0	No	No	No	
Synch Mach Dsgn	3	3	0	GE	0	0	No	No	No	
MEMORIAL UNIVERSITY OF NEWFOUNDLAND										
Cpr & Cont Methods	3	3	0	GE	5	0	No	No	No	
Pwr Elecs	3	3	2	UE	20	0	No	No	No	
Pwr Sys Analysis	3	3	2	UR	25	0	No	No	No	
Pwr Sys Oper	3	3	0	UE	25	0	No	No	No	
Pwr Sys Stability	3	3	0	GE	6	0	No	No	No	
Rotating Mach	3	3	2	UR	25	0	No	No	No	
MICHIGAN TECHNOLOGICAL UNIVERSITY										
AdvMethodsInPwrSys	3	3	0	GR	2	0	No	No	No	
Cpr Model of Pwr Sys	3	3	0	GE	0	0	No	No	No	
Dist Eng	3	3	0	GE	2	2	Yes	No	Yes	VC
Intro to Enrg Sys	3	3	0	UR	120	0	No	No	No	
Intro to Motor Drives	4	3	1	UE	33	0	No	No	No	
Pwr Sys Anal 1	3	3	0	UE	40	0	No	No	No	
Pwr Sys Anal 2	3	3	0	UE	31	0	No	No	No	
PwrSysDyn&Stability	3	3	0	GE	0	0	No	No	No	
Pwr Sys Oper	3	3	0	GE	2	2	Yes	No	Yes	VC
Pwr Sys Protection	4	3	1	GE	15	0	No	No	No	
Trans Anal Methods	3	3	0	GE	0	0	No	No	No	
MINNESOTA STATE UNIVERSITY, MANKATO										
Adv ElecMgnctcs	0	0	0		0	0	No	No	No	
Elctrmch	3	3	1	UE	20	0	No	No	No	
MISSISSIPPI STATE UNIVERSITY										
Fund of Enrg Sys	4	3	3	UR	75	0	No	No	No	
High Volt Eng	3	3	0	GE	25	0	No	No	No	
InsCoordinElecPwrSys	3	3	0	GE	25	0	No	No	No	
Pwr Dist Sys	3	3	0	UE	25	0	No	No	No	
PwrSys Relay&Cont	3	3	0	UE	15	0	No	No	No	
Pwr Trans Sys	3	3	0	UE	25	0	No	No	No	
MONTANA STATE UNIVERSITY										
Adv Pwr Elecs	3	3	0	GE	0	0	No	No	No	
Alt Enrg Dist PwrGen	3	3	0	GE	0	0	No	No	No	
Elec Motor Drives	3	3	0	GE	0	0	No	No	No	
EnrgConv,IntroPwSys	4	3	1	UR	50	0	No	No	No	
Pwr Elecs	3	2	1	UE	5	0	No	No	No	
Pwr Sys Anal	3	0	3	UE	8	0	No	No	No	
Pwr Sys Dyn	3	3	0	GE	0	0	No	No	No	
Pwr Sys Oper&Cont	3	3	0	GE	4	0	No	No	No	
NEW MEXICO TECH										
EE391	3	3	0	UE	12	0	No	No	No	

	Credits	Lecture Hr	Lab Hr	Reqd	Campus Enrt	Off Campus	Video	Cable	Video Stream	Other
SAN FRANCISCO STATE UNIVERSITY										
Cmrcl&Indust PwrSys	3	3	0	UE	12	1	No	No	No	
Elec Pwr Sys	3	3	0	UE	14	2	No	No	No	
Elctrmch Sys	3	3	0	UR	35	3	No	No	No	
Pwr Elecs	4	3	1	UE	16	2	No	No	No	
Pwr Eng Lab	1	0	1	UE	9	1	No	No	No	
SOUTH DAKOTA STATE UNIVERSITY										
Seminar in Pwr Sys	1	1	0	UE	10	0	No	No	No	
Pr - Pwr Sys	3	3	0	UE	7	0	No	No	No	
Pr-Pwr Sys	1	1	0	UE	1	0	No	No	No	
SpTopinPhotovoltaics	3	3	0	UE	1	0	No	No	No	
SpTopinPhotovoltaics	3	3	0	GE	7	0	No	No	No	
Tp-Intro to Pwr Elect	3	3	0	GE	14	0	No	No	No	
SOUTHERN ILLINOIS UNIVERSITY AT EDWARDSVILLE										
Elctrmch Enrg Conv	4	3	1	UR	10	10	No	No	No	
Pwr Dist	3	3	0	UE	15	5	No	No	No	
Pwr Sys Anal	3	3	0	UE	8	7	No	No	No	
SOUTHERN POLYTECHNIC STATE UNIVERSITY										
Indust Motor Cont	4	3	3	UE	16	0	No	No	No	
Lighting, Illum, NEC	4	3	3	UE	16	0	No	No	No	
Pwr Elecs	4	3	3	UE	0	0	No	No	No	
Pwr Sys Anal	4	3	3	UE	16	0	No	No	No	
Survey of Elec Mach	4	3	3	UR	24	0	No	No	No	
SYRACUSE UNIVERSITY										
Elec Pwr Sys	3	3	0	UE	0	0	No	No	No	
Elctrmch Dvcs	3	3	0	UE	0	0	No	No	No	
TENNESSEE STATE UNIVERSITY										
Elec Pwr Dist	3	3	0	UE	0	0	No	No	No	
Enrg Conv	3	3	0	UR	16	0	No	No	No	
Pwr Sys Anal	3	3	0	UR	15	0	No	No	No	
TENNESSEE TECHNOLOGICAL UNIVERSITY										
Adj Speed Drives	3	3	0	GE	4	0	No	No	No	
Adv Elec Mach	3	3	0	GE	6	1	Yes	No	No	
CprMthdsPwrSysAnal	3	3	0	GE	4	0	No	No	No	
Elec Pwr Lab	1	0	1	UE	31	0	No	No	No	
Elec Pwr Trans	3	3	0	GE	5	3	Yes	No	No	
ElcmagTransspwrSys	3	3	0	GE	7	0	No	No	No	
Intro to Pwr Sys	3	3	0	UE	68	0	No	No	No	
Pwr Elecs	3	3	0	UE	7	0	No	No	No	
Pwr Sys Anal	3	3	0	UE	18	1	Yes	No	No	
Pwr Sys Cont	3	3	0	GE	5	1	Yes	No	No	
PwrSys Oper & Cont	3	3	0	UE	14	2	Yes	No	No	
TEXAS A&M UNIVERSITY										
Anal of Pwr Elec Sys	3	3	0	GE	0	0	No	No	No	
Cpr Relays Elec Pwr Sys	3	3	0	GE	0	0	No	No	No	
Cont of Elec Pwr Sys	3	3	0	GE	0	0	No	No	No	
Elec Motor Drives	4	3	3	UE	0	0	No	No	No	
Elec Pwr Sys Rel	3	3	0	GE	0	0	No	No	No	
High Volt Dir Crrnt Trans	3	3	0	GE	0	0	No	No	No	
MthdsElec Pwr Sys Anal	3	3	0	GE	0	0	No	No	No	
Motor Drive Dyn	3	3	0	GE	0	0	No	No	No	
Pwr Elecs	4	3	3	UE	0	0	No	No	No	
PwrSysElcrmagTrans	3	3	0	GE	0	0	No	No	No	
PwrSysFaultAnalProte	3	2	2	UE	0	0	No	No	No	
Pwr Sys Faults & Protct Relayng	3	3	0	GE	0	0	No	No	No	
PwrSys Oper & Cont	3	2	2	UE	0	0	No	No	No	
Pwr Sys Stability	3	3	0	GE	0	0	No	No	No	
PwrSysStateEstmtion	3	3	0	GE	0	0	No	No	No	
Rect & Inverter Ckts	3	3	0	GE	0	0	No	No	No	
TEXAS A&M UNIVERSITY - KINGSVILLE										
Elec Mach	3	2	1	UR	16	0	No	No	No	
Pwr Elecs	3	3	0	UE	12	0	No	No	No	
TEXAS TECH UNIVERSITY										
Mach & Drives	3	3	0	GE	40	0	No	No	No	
Pwr Elecs	3	3	0	GE	40	0	No	No	No	
Pwr Sys Anal	3	3	0	GE	40	0	No	No	No	
Pulsed Pwr	3	3	0	GE	30	0	No	No	No	
THE GEORGE WASHINGTON UNIVERSITY										
Elcal Pwr Dist	3	3	0	GE	6	0	No	No	No	
Elcal Pwr Lab	1	0	3	UE	8	0	No	No	No	
Elcal Pwr Sys	3	3	0	UE	14	0	No	No	No	
Elctrmch Enrg Conv	3	3	0	UR	14	0	No	No	No	
Elctrmch Enrg Conv	3	3	0	GE	6	0	No	No	No	
Pwr Elecs	3	3	0	GE	6	0	No	No	No	
Pwr Sys Cont & Stab	3	3	0	GE	6	0	No	No	No	
ProtectionForPwrSys	3	3	0	GE	6	0	No	No	No	

	Credits	Lecture Hr	Lab Hr	Reqd	Campus Enrt	Off Campus	Video	Cable	Video Stream	Other
THE OHIO STATE UNIVERSITY										
ApplofPwrElcs PwrSys	3	3	0	GE	10	0	No	No	No	
Enrg Conv	3	3	0	UR	80	0	No	No	No	
Elecal Enrg Conv Lab	2	0	2	UE	30	0	No	No	No	
Indust/Comm PwrSys	3	3	0	UE	20	0	No	No	No	
Elec Mach	3	3	0	UE	20	0	No	No	No	
Noise, Inteference, & Safty Issues In EE	3	3	0	UE	10	0	No	No	No	
Micro Controler Sys for Indust Appl Lab.	2	0	2	UE	10	0	No	No	No	
Pwr Elec Dvcs & Ckts	3	3	0	UE	20	0	No	No	No	
Eleca Pwr Sys Anal	3	3	0	GR	10	0	No	No	No	
Elec Pwr Sys Prtctn	3	3	0	GE	10	0	No	No	No	
ElctrmchMotionDvcs	3	3	0	GE	10	0	No	No	No	
Mdrn Cont of Indust Elec Mach	3	3	0	GE	10	0	No	No	No	
High Volt Eng & Lab	4	1	3	GR	10	0	No	No	No	
CprMethdsPwSysAnal	3	3	0	GE	10	0	No	No	No	
PwrSysStability&Cnt	3	3	0	GE	10	0	No	No	No	
High Volt Trans Sys	3	3	0	GE	10	0	No	No	No	
App of Pwr Elec Ckts in Elec Pwr Sys	3	3	0	GE	10	0	No	No	No	
Elctrmch Sys Idntfctn	3	3	0	GE	10	0	No	No	No	
Elec Mach	3	3	0	UE	17	0	No	No	No	
Elctrmch Motion Dvcs	3	3	0	UE	10	0	No	No	No	
Elctrmch Sys Idntfctn	3	3	0	GE	8	0	No	No	No	
Enrg Conv	3	3	0	UR	152	0	No	No	No	
Enrg Conv Lab	2	0	4	UE	57	0	No	No	No	
High Volt Eng	4	3	2	UE	25	0	No	No	No	
Indust/Cmrcl PwrSys	3	3	0	UE	37	0	No	No	No	
Micro Cntrlrs for Ind. Appl. Lab	2	0	4	UE	20	0	No	No	No	
MdrnContOfInd.Mach	3	3	0	UE	15	0	No	No	No	
Noise/Intrfrnce/Sfty	3	3	0	UE	25	0	No	No	No	
Overvolts	3	3	0	UE	10	0	No	No	No	
Pwr Elecs I	3	3	0	UE	60	0	No	No	No	
Pwr Elecs II	3	3	0	UE	12	0	No	No	No	
Pwr Elecs Lab	2	0	4	UE	7	0	No	No	No	
Pwr Sys Anal	3	3	0	UE	11	0	No	No	No	
Pwr Sys Protection	3	3	0	UE	5	0	No	No	No	
Pwr Sys Stability	3	3	0	GE	8	0	No	No	No	
Rel Appl	1	2	0	UE	15	0	No	No	No	
Rel Eng	4	4	0	UE	20	0	No	No	No	
THE UNIVERSITY OF AKRON										
Cont of Elec Mach	3	3	1	GE	0	0	No	No	No	
Dyn&CntPwrElecCkts	3	3	0	GE	0	0	No	No	No	
Dyn of Elec Mach	3	3	8	GE	0	0	No	No	No	
Econs of Pwr Sys	3	3	0	GE	0	0	No	No	No	
Elec Motor Drives	3	3	3	UE	0	0	No	No	No	
Elec Motor Drives	3	3	4	GE	0	0	No	No	No	
Enrg Conv	4	3	3	UR	38	0	No	No	No	
Mdrn Pwr Sys	3	3	0	UE	8	0	No	No	No	
Pwr Elecs I	3	3	0	UE	13	0	No	No	No	
Pwr Elecs I	3	3	0	GE	4	1	No	No	No	
Pwr Elecs II	3	3	0	GE	0	0	No	No	No	
Pwr Elecs Lab & Dsgn Prj	3	1	2	UE	0	0	No	No	No	
Pwr Elecs Lab & Dsgn Prj	3	1	2	GE	0	0	No	No	No	
Pwr Semicndctr Dvcs	3	3	0	GE	0	0	No	No	No	
Pwr Sys Anal	3	3	0	GE	0	0	No	No	No	
Pwr Sys Stability	3	3	0	GE	0	0	No	No	No	
Prtctve Rlyng	3	3	0	GE	0	0	No	No	No	
Surge Protection	3	3	0	GE	0	0	No	No	No	
THE UNIVERSITY OF ALABAMA (LOCATED IN TUSCALOOSA)										
Elctrmch	3	3	0	UR	37	0	No	No	No	
Elec Mach & Drives	3	3	0	UE	6	0	No	No	No	
Pwr/Mach Lab	1	0	3	UE	13	0	No	No	No	
Pwr Sys I	3	3	0	UE	14	0	No	No	No	
Pwr Sys II	3	3	0	UE	3	0	No	No	No	
Elec Mach & Drives	3	3	0	GR	2	0	No	No	No	
Pwr Sys I	3	3	0	GR	0	0	No	No	No	
Pwr Sys II	3	3	0	GE	0	0	No	No	No	
Pwr Sys Stability	3	3	3	GE	3	0	No	No	No	
PwrSysInSteadyState	3	3	2	GE	2	0	No	No	No	
Oper&Cont of PwrSys	3	3	0	GE	0	0	No	No	No	
Optmztn of Pwr Sys	3	3	0	GE	0	0	No	No	No	

	Credits	Lecture Hr	Lab Hr	Reqd	Campus Enrl	Off Campus	Video	Cable	Video Stream	Other
THE UNIVERSITY OF ALABAMA, TUSCALOOSA										
Elec Mach	3	3	0	UE	0	0	No	No	No	
Elctrmech	3	3	0	UR	25	0	No	No	No	
Indust Pwr Sys	3	3	0	UE	0	0	No	No	No	
Pwr Sys Oper	3	3	0	GE	0	0	No	No	No	
Pwr Sys Stability	3	3	0	GE	0	0	No	No	No	
Pwr Sys I	3	3	0	UE	26	2	Yes	No	No	
Pwr Sys II	3	3	0	UE	6	0	No	No	No	
PwrSysInSteadyState	3	3	0	GE	0	0	No	No	No	
THE UNIVERSITY OF BRITISH COLUMBIA										
Adv Pwr Sys Anal	3	3	0	GE	7	0	No	No	No	
AdvPwrSysCont&Dyn	3	3	0	GE	30	25	No	No	No	
AppldEles&Elctrmech	3	3	2	UE	106	0	No	No	No	
Cpr Appl in Pwr	3	3	0	UE	21	0	No	No	No	
Dyn Model of Elec Mach & Conts	3	3	0	GE	6	0	No	No	No	
ElecalMach&PwrTrans	3	3	2	UE	19	0	No	No	No	
Elctrmech Enrg Conv & Trans	3	3	1	UR	48	0	No	No	No	
Indust Drives	4	3	2	UE	5	0	No	No	No	
Intelligent Sys Appl to Pwr Sys	3	3	0	GE	7	2	No	No	No	
Network Anal & Sim	3	3	0	GE	30	0	No	No	No	
Pwr Elecs	4	3	2	UE	18	0	No	No	No	
Pwr Sys Anal	3	3	0	UE	15	0	No	No	No	
THE UNIVERSITY OF TENNESSEE										
Adv Pwr Elecs Ckts	3	3	0	GE	10	0	No	No	No	
Elec Enrg Sys	4	3	1	UR	70	0	No	No	No	
Mach Drives	3	3	0	GE	10	0	No	No	No	
Pwr Elecs I	3	3	0	UE	25	0	No	No	No	
Pwr Elecs II	4	3	0	UE	18	0	No	No	No	
Pwr Sys Anal	3	3	0	GE	5	0	No	No	No	
Pwr Sys Anal II	3	3	0	GE	3	0	No	No	No	
Pwr Sys I	3	3	0	UE	20	0	No	No	No	
Pwr Sys II	4	3	0	UE	12	0	No	No	No	
THE UNIVERSITY OF TEXAS AT TYLER										
Elec Pwr Sys Lab	1	0	3	UE	7	0	No	No	No	
Elec Pwr Sys	3	3	0	UR	9	0	No	No	No	
Pwr Sys Anal I	3	3	0	GR	5	0	No	No	No	
PwrSys Anal & Dsgn	3	3	0	UE	5	0	No	No	No	
U.S. MILITARY ACADEMY										
Elec Pwr Eng	3	2	1	UE	10	0	No	No	No	
UNIV. OF PUERTO RICO-MAYAGUEZ										
Adv Enrg Conv	3	3	0	GE	5	0	No	No	No	
Adv Pwr Elecs	3	3	0	GE	8	0	No	No	No	
CprMethdsPwSysAnal	3	3	0	GE	0	0	No	No	No	
CprAidedPwrSysDsgn	3	3	0	UE	0	0	No	No	No	
DsgnPrjctsInPwrElecs	3	3	0	UE	6	0	No	No	No	
Dsgn Prjcts in PwrSys	3	3	0	UE	15	0	No	No	No	
Elec Mach	3	3	0	UR	130	0	No	No	No	
Elec Mach Lab	1	0	3	UR	130	0	No	No	No	
Elec Pwr Qual	3	3	0	GE	6	0	No	No	No	
Elecal Sys Anal III	3	3	0	UR	130	0	No	No	No	
High Freq PwrCnvrtrs	3	3	0	GE	0	1	Yes	No	CPES	
Illumination Eng	3	3	0	UE	25	0	No	No	No	
Indust Sys Dsgn I	3	3	0	UE	70	0	No	No	No	
Indust Sys Dsgn II	3	3	0	UE	15	0	No	No	No	
Motor Cont	3	3	0	UE	8	0	No	No	No	
Pwr Elecs	3	3	0	GR	65	0	No	No	No	
Pwr Sys Anal	3	3	0	GR	80	0	No	No	No	
Pwr Sys Dyn & Cont	3	3	0	GR	7	0	No	No	No	
Pwr Sys Oper & Cont	3	3	0	GR	8	0	No	No	No	
PrtctnDsgnForElecSys	3	3	0	UE	30	0	No	No	No	
Trans Phenomena	3	3	0	GE	6	0	No	No	No	
Trans & Dist Sys	3	3	0	UE	30	0	No	No	No	
UNIVERSITY OF COLORADO AT BOULDER										
Adv Pwr Lab	2	0	4	GE	10	0	No	No	No	
Enrg Conv I	3	3	0	UE	62	0	No	No	No	
Enrg Conv II	3	3	0	UE	18	0	No	No	No	
MachDyn/SynchMach	3	3	0	GE	0	5	Yes	No	CATECS	
Pwr Elecs I	3	3	0	GE	10	15	Yes	No	Yes	CATECS
Pwr Elecs II	3	3	0	GE	8	10	Yes	No	Yes	CATECS
Pwr Elecs III	3	3	0	GE	8	9	Yes	No	Yes	CATECS
Pwr Lab I	2	0	4	UE	60	0	No	No	No	
Pwr Qual Phenomena in Pwr Sys	3	3	0	GE	7	1	Yes	No	No	CATECS
Pwr Sys Anal	3	3	0	GE	0	5	Yes	No	No	CATECS
Rlyng	3	3	0	GE	0	5	Yes	No	No	CATECS
Var-Speed Drives	3	3	0	GE	3	0	No	No	No	

	Credits	Lecture Hr	Lab Hr	Reqd	Campus Enrl	Off Campus	Video	Cable	Video Stream	Other
UNIVERSITY OF ALABAMA AT BIRMINGHAM										
Elecal Mach	4	3	1	UR	0	39	No	No	No	
Mach II	3	3	0	GE	0	17	No	No	No	
Pwr Sys I	3	3	0	GE	0	18	No	No	No	
Pwr Sys II	3	3	0	GE	0	0	No	No	No	
PrtctveRlyngOfPwSys	3	3	0	UR	0	0	No	No	No	
Indust Pwr Sys	3	3	0	UR	0	0	No	No	No	
Adv Elecal Mach	3	3	0	GE	0	0	No	No	No	
Adv Elecal Mach II	3	3	0	GE	0	0	No	No	No	
Cont of Synch Mach	3	3	0	GE	0	0	No	No	No	
Cpr Appl in Pwr Sys	3	3	0	GE	0	0	No	No	No	
Pwr Sys Overvolts	3	3	0	GE	0	0	No	No	No	
Rel of Pwr Sys	3	3	0	GE	0	0	No	No	No	
EconOpr&ContPwrSys	3	3	0	GE	0	0	No	No	No	
SpecialTopicsInPwSys	3	3	0	GE	0	0	No	No	No	
SpecialProbsInPwrSys	3	3	0	GE	0	0	No	No	No	
UNIVERSITY OF ALASKA FAIRBANKS										
Elec Mach	4	3	3	UR	15	0	No	No	No	
Elec Pwr Sys	4	3	3	GR	6	0	No	No	No	
Elec Pwr Eng	4	3	3	GR	4	0	No	No	No	
Pwr Elecs	3	3	0	UE	5	0	No	No	No	
Adv Elec Pwr Sys	3	3	0	GE	0	0	No	No	No	
Elec Pwr Sys Transs	3	3	0	GE	0	0	No	No	No	
Pw Sys Stblty & Cont	3	3	0	GE	0	0	No	No	No	
Elec Pw Sys Prtction	3	3	0	GE	0	0	No	No	No	
Pwr Elecs	3	3	0	GE	1	0	No	No	No	
UNIVERSITY OF ALBERTA										
Circuit sim	3	4	0	GE	6	0	No	No	No	
Elec Mach	3	4	20	UR	140	0	No	No	No	
Electromag Transs	3	4	0	GE	10	0	No	No	No	
Indust Pwr Sys Dsgn	3	4	0	UE	15	0	No	No	No	
Intro to Pwr Eng	3	4	0	UR	140	0	No	No	No	
Pwr elecs	3	4	0	UE	30	0	No	No	No	
Pwr Elecs Dsgn	3	0	40	GE	10	0	No	No	No	
Pwr qual	3	4	0	GR	10	0	No	No	No	
Pwr Sys I	3	4	0	UE	35	0	No	No	No	
Pwr Sys II	3	20	0	UE	35	0	No	No	No	
Rel Eng	3	4	0	UE	40	0	No	No	No	
Var frequency drive	3	4	10	UE	30	0	No	No	No	
UNIVERSITY OF CALGARY										
NumOptmzation&OPF	3	3	0	GE	1	1	No	No	No	
Adv Pwr Sys	3	3	0	GE	13	2	No	No	No	
ElecMch:SteadyState	3	4	3	UR	80	0	No	No	No	
Intro to Pwr Elecs	3	4	2	UE	30	0	No	No	No	
PwrSys:Steady-State	3	5	3	UR	80	0	No	No	No	
Pwr Sys Oper	3	3	0	GE	4	2	No	No	No	
Rotating Mach	3	3	0	GE	12	0	No	No	No	
SwtchModePwCnvrtrs	3	3	0	GE	6	6	No	No	No	
UNIVERSITY OF CALIFORNIA, IRVINE										
Enrg Conv	4	3	1	UE	35	0	No	No	No	
Pwr Elecs	4	3	1	UE	45	1	No	No	No	
Pwr Elecs II	3	3	0	UE	27	0	No	No	No	
Pwr Sys	4	3	1	UE	20	0	No	No	No	
UNIVERSITY OF FLORIDA										
Adv Elec Enrg Sys I	3	3	0	GE	0	0	Yes	No	No	
Adv Elec Enrg Sys II	3	3	0	GE	0	0	Yes	No	No	
Adv Elec Mach	3	3	0	GE	0	0	No	No	No	
Adv Pwr Elecs	3	3	0	GE	0	0	Yes	No	No	
Basic Elec Enrg Eng	3	3	0	UE	0	0	Yes	No	No	
Elec Enrg Conv Lab	1	0	3	UE	0	0	No	No	No	
Elec Motor Cont	3	3	0	UE	0	0	Yes	No	No	
Elec Utility Seminar	1	3	0	UE	0	0	No	No	No	
Individual Prob	3	3	0	GE	0	0	No	No	No	
Individual Prob	3	3	0	UE	0	0	No	No	No	
Pwr Elecs	3	3	0	UE	0	0	Yes	No	No	
Pwr Sys Anaylsis	3	3	0	UE	0	0	No	No	No	
Surge Overvolt Anal	3	3	0	UE	0	0	No	No	No	
UNIVERSITY OF HARTFORD										
Pwr Elecs	3	3	0	GE	6	0	No	No	No	
Pwr Sys Anal	3	3	0	GE	6	0	No	No	No	
Prtctve Rlyng	3	3	0	GE	3	0	No	No	No	
Transformers	3	3	0	GE	2	0	No	No	No	

	Credits	Lecture Hr	Lab Hr	Reqd	Campus Exit	Off Campus	Video	Cable	Video Stream	Other
UNIVERSITY OF HOUSTON, HOUSTON, TEXAS										
Enrg Conv Lab	1	0	14	UE	0	0	No	No	No	
Elctrmech Enrg Conv	3	14	0	UE	0	0	No	No	No	
Pwr Trans & Dist Lab	1	0	14	UE	0	22	No	No	No	
Pwr Trans & Dist	3	14	0	UE	0	13	No	No	No	
PwrElec&Elec Drives	3	14	0	UE	0	12	No	No	No	
Indust Pwr Sys Anal	3	14	0	GE	0	0	No	No	No	
ElecPwrReg&Standrds	3	14	0	GE	0	8	No	No	No	
Pwr Trans & Dist	3	14	0	GE	0	9	No	No	No	
Pwr Sys Anal	3	14	0	GE	0	0	No	No	No	
Adv Pwr Sys Anal	3	14	0	GE	0	0	No	No	No	
PwrElec&Elec Drives	3	14	0	GE	0	3	No	No	No	
IndustSubsSwthEqui	3	14	0	GE	0	13	No	No	No	
Pwr Sys Trans, Harm & Grounding	3	14	0	GE	0	0	No	No	No	
IndustPwrSysProtectn	3	14	0	GE	0	0	No	No	No	
PwrSysCont&Stability	3	14	0	GE	0	10	No	No	No	
UNIVERSITY OF IDAHO										
Adv Mach	3	3	0	GE	0	0	Yes	No	No	
Dyn&ContOFACDrives	3	3	0	GE	3	2	Yes	No	No	
Elec Mach	5	4	3	UR	38	0	Yes	No	No	
Ind Mach	3	3	0	GE	2	8	Yes	No	No	
Intro to Pwr Sys	3	3	0	UE	14	8	Yes	No	No	
Pwr Elec Ckts	3	3	0	UE	20	9	Yes	No	No	
PwSysPlan&Resourcs	3	3	0	GE	0	0	Yes	No	No	
Pwr Sys Anal	3	3	0	UE	7	8	Yes	No	No	
PwSysProtectn&Rlyng	3	3	0	GE	0	0	Yes	No	No	
Protection of Pwr Sys	3	3	0	UE	2	0	No	No	No	
Protection Pwr Sys II	3	3	0	GE	3	0	No	No	No	
Symm Components	3	3	0	GE	6	14	Yes	No	No	
Trans in Pwr Sys	3	3	0	GE	1	0	Yes	No	No	
Undrstndng Pwr Qual	3	3	0	GE	0	0	Yes	No	No	
UtilityApplOfPwrElecs	3	3	0	GE	14	4	Yes	No	No	
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN										
AdvElctrmechEnrgCnv	3	3	0	UE	0	0	No	No	No	
Adv Enrg Project	3	2	3	UE	0	0	No	No	No	
Dyn&StabilityofPwSys	3	3	0	GE	0	3	No	No	Yes	
Elec Mach (with Lab)	4	3	3	UE	36	0	No	No	No	
Elec Resource Plan	3	3	0	GE	0	0	No	No	No	
Eng Decision Techniques	3	3	0	UE	0	0	No	No	No	
Hybrid Elec Vehicles	3	2	3	UE	0	0	No	No	No	
Hybrid Sys Anal of P.S. Dyn	3	3	0	GE	0	0	No	No	No	
Issues in Competitive Elec City Markets	3	3	0	GE	0	0	No	No	No	
Model & Cont of Elctrmech Sys	3	3	0	GE	7	0	No	No	No	
Pwr & Enrg Sys Area Seminar	1	1	0	GR	38	0	No	No	No	
Pwr Ckts & Elctrmch	3	3	0	UE	168	0	No	No	No	
Pwr Elecs	3	3	0	UE	17	3	No	No	Yes	
Pwr Elecs Lab	2	1	3	UE	9	0	No	No	No	
Pwr Sys Anal I	3	3	0	UE	29	2	No	No	Yes	
PwrSys Model & Anal	3	3	0	GE	0	0	No	No	No	
Pwr Sys Oper & Cont	3	3	0	UE	9	0	No	No	No	
Pwr Sys Cont	3	3	0	GE	3	0	No	No	No	
UNIVERSITY OF KENTUCKY										
EE 415	3	3	0	UR	62	0	No	No	No	
EE 416	2	1	3	UE	32	0	No	No	No	
EE 517	3	3	0	UE	25	0	No	No	No	
EE 603	3	3	0	GE	6	0	No	No	No	
EE 604	3	3	0	GE	7	0	No	No	No	
EE518	3	3	0	UE	29	0	No	No	No	
UNIVERSITY OF MAINE										
Enrg Conv	4	3	1	UE	10	0	No	No	No	
IndustPwr & SeqAuto	4	3	1	UR	20	0	No	No	Yes	
ElecMach & PwrElecs	4	3	1	UR	20	0	No	No	Yes	
Elecal Pwr Conv	4	3	3	UE	6	0	No	No	No	
UNIVERSITY OF MANITOBA										
Elec Pwr & Mach	4	3	2	UR	40	0	No	No	No	
Elecal Mach	5	3	3	UR	40	0	No	No	No	
High Volt Ins	3	3	0	GE	10	0	No	No	No	
Hvtechniqs&Insdsng	3	3	0	GE	5	0	No	No	No	
Pwr Elecs	4	3	2	UE	10	0	No	No	No	
Pwr Elecs	3	3	0	GE	4	0	No	No	No	
Pwr Sys Cont	3	3	0	GE	6	0	No	No	No	
Pwr Sys Trans Sim	3	3	0	GE	7	0	No	No	No	
Pwr Trans Lines	4	3	2	UE	10	0	No	No	No	
Static Compensation	3	3	0	GE	6	0	No	No	No	

	Credits	Lecture Hr	Lab Hr	Reqd	Campus Exit	Off Campus	Video	Cable	Video Stream	Other
UNIVERSITY OF MINNESOTA										
Adv Pwr Elecs	3	3	0	GE	20	0	No	No	No	
Drives	3	3	0	UE	50	0	No	No	No	
Enrg, Env & Society	3	3	0	UE	50	0	No	No	No	
Pwr Elecs	3	3	0	UE	40	0	No	No	No	
Pwr Gen Oper Cont	3	3	0	GE	25	0	No	No	No	
Pwr Sys Anal	4	3	1	UE	52	0	No	No	No	
Pwr Sys Eng	3	3	0	GE	25	0	No	No	No	
UNIVERSITY OF MISSOURI-COLUMBIA										
Elec Mach	4	3	2	UE	0	0	No	No	No	
Pwr Elecs 1	4	3	2	UE	30	0	No	No	No	
Pwr Elecs 2	3	3	0	GE	10	0	No	No	No	
Pwr Eng	4	3	2	UR	50	0	No	No	No	
Pwr Semiconductors	3	3	0	GE	0	0	No	No	No	
UNIVERSITY OF MISSOURI-ROLLA										
AdvTheoryElecMach	3	3	0	GE	8	0	No	No	No	
CprMethdsPwSysAnal	3	3	0	GE	11	0	No	No	No	
Econ Oper of Pw Sys	3	3	0	GE	0	0	No	No	No	
Elec Drive Sys	3	3	0	UE	11	0	No	No	No	
Elec Pwr Qual	3	3	0	UE	22	0	No	No	No	
Elctrmech	3	3	0	UE	47	0	No	No	No	
Elctrmech Lab	1	0	1	UE	68	0	No	No	No	
Pwr Elecs	3	3	0	UE	16	0	No	No	No	
Pwr Sys Dsgn & Anal	3	3	0	UE	33	0	No	No	No	
PwrSysDsgn&AnalLab	1	0	1	UE	59	0	No	No	No	
Pwr Sys Protection	3	3	0	GE	7	0	No	No	No	
Pwr Sys Rel	3	3	0	GE	0	0	No	No	No	
Pwr Sys Stability	3	3	0	GE	0	0	No	No	No	
Pwr Sys Eng	3	3	0	UE	8	0	No	No	No	
Surge Phenomena in Pwr Sys	3	3	0	GE	5	2	No	No	No	
UNIVERSITY OF NEBRASKA-LINCOLN										
AdvCprMthdsPwrSys	3	3	0	GE	3	0	No	No	No	
Dist Sys Engr.	3	3	0	UE	7	0	No	No	No	
Enrgy Econ & Environ	3	3	0	UE	30	0	No	No	No	
Intro To Pwr Engr.	3	3	0	UE	25	0	No	No	No	
Pwr Sys Anal	3	3	0	UE	12	0	No	No	No	
Pwr Sys Oper & Cont	3	3	0	UE	10	0	No	No	No	
Pwr Sys Plan	3	3	0	UE	12	0	No	No	No	
Pwr Sys Rel	3	3	0	UE	8	0	No	No	No	
Prob Methods Pw Sys	3	3	0	UE	7	0	No	No	No	
UNIVERSITY OF NEVADA, RENO										
Adv Pwr Sys Anal	3	3	0	GE	5	0	No	No	No	
Elec Drive Sys	3	3	0	GE	5	0	No	No	No	
Elec Pwr Dist	3	3	0	UE	20	0	No	No	No	
Elecal Mach	3	3	0	UE	25	0	No	No	No	
Pwr Elecs	3	3	0	UE	25	0	No	No	No	
Pwr Sys Anal	3	3	0	UE	25	0	No	No	No	
Pwr Sys Fund	3	3	0	UR	80	0	No	No	No	
Pwr Sys Protection	3	3	0	UE	15	0	No	No	No	
UNIVERSITY OF NEW ORLEANS										
Elec Mach	3	3	0	UE	80	0	No	No	No	
Elec Mach Lab	1	1	2	UE	36	0	No	No	No	
Elec Pwr Sys	3	3	0	UR	80	0	No	No	No	
Pwr Elecs	3	3	0	UE	0	0	No	No	No	
Pwr Sys Plan & Dsgn	3	3	0	UE	15	0	No	No	No	
PwrSys Prtctve Rlyng	3	3	0	UE	15	0	No	No	No	
UNIVERSITY OF NORTH DAKOTA										
Elec Mach & Drives	3	3	2	UR	40	17	No	No	Yes	
Pwr Elecs	3	3	2	GE	25	10	No	No	Yes	
Pwr Sys I	3	3	1	UE	20	5	No	No	Yes	
Pwr Sys II	3	3	1	GR	15	4	No	No	Yes	
UNIVERSITY OF NORTH FLORIDA										
Basic Elec Enrg Eng	3	3	0	UE	10	0	No	No	No	
Intro to Pwr Sys	3	3	0	UE	10	0	No	No	No	
UNIVERSITY OF NOTRE DAME										
Elec Mach & Pwr Sys	3	3	0	UE	14	0	No	No	No	
Elec Vehicle Eng	3	2	3	UE	12	0	No	No	No	
UNIVERSITY OF OKLAHOMA										
Anal of Elecal Trans	3	3	0	GR	9	0	No	No	No	
Enrg Conv	3	3	0	UE	40	0	No	No	No	
Enrg Internship	2	3	0	GR	3	0	No	No	No	
Gen Resource Plan	3	3	0	GR	3	0	No	No	Yes	
Gen Resource Sched	3	3	0	GR	10	0	No	No	Yes	
R&om Signals	3	3	0	GR	5	0	No	No	No	

	Credits	Lecture Hr	Lab Hr	Reqd	Campus Enrpt	Off Campus	Video	Cable	Video Stream	Other
UNIVERSITY OF PITTSBURGH										
Cont of Pwr Sys	3	3	0	GE	9	0	No	No	No	
Elec mach	3	3	3	UE	17	0	No	No	No	
Pwr Sys anal II	3	3	0	GE	10	0	No	No	No	
Pwr Sys anal I	3	3	0	UE	20	0	No	No	No	
trans in Pwr Sys	3	3	0	GE	9	0	No	No	No	
UNIVERSITY OF SOUTHERN MAINE										
Elctrmch Enrg Conv	4	3	2	UR	7	0	No	No	No	
UNIVERSITY OF TEXAS AT ARLINGTON										
Fund of Pwr Sys	3	3	0	UR	87	0	No	No	No	
Pwr Elecs Eng	3	3	0	GE	18	0	No	No	No	
Pwr Qual	3	2	3	GE	17	0	No	No	No	
Pwr Sys Dsgn Project	3	3	0	UE	23	0	No	No	No	
Pwr Sys Plan, Oper, & Cont in Dereg Env	3	3	0	GE	13	0	No	No	No	
PwrSys Prtctve Rlyng	3	2	3	GE	28	0	No	No	No	
PwrSys Model & Anal	3	3	0	GE	25	0	No	No	No	
Programmable Logic Contlers Indust Auto	3	2	3	GE	26	0	No	No	No	
Trans I	3	3	0	GE	15	0	No	No	No	
Trans II	3	3	0	GE	12	0	No	No	No	
UNIVERSITY OF TEXAS AT AUSTIN										
Elec Mach & Drives	3	3	0	GE	35	0	No	No	No	
Elecal Trans Pwr Sys	3	3	0	GE	25	0	No	No	No	
Pwr Elecs	3	1	2	UE	76	0	No	No	No	
Pwr Qual & Harm	3	3	0	GE	25	0	No	No	No	
Pwr Sys 1	3	3	0	UE	35	0	No	No	No	
Pwr Sys 2	3	3	0	UE	35	0	No	No	No	
Sys Optimization	3	3	0	GE	30	0	No	No	No	
Trans & Dist Topics	3	3	0	GE	45	0	No	No	No	
UNIVERSITY OF THE DISTRICT OF COLUMBIA										
Elecal Enrg Conv	3	3	3	UE	12	0	No	No	No	
UNIVERSITY OF THE PACIFIC										
Pwr Elecs	4	3	3	UE	0	0	No	No	No	
Pwr Sys	4	3	3	UE	0	0	No	No	No	
UNIVERSITY OF TOLEDO										
Elec Enrg Conv Lab	1	0	1	UE	18	0	No	No	No	
Elec Mach Model	3	3	0	UE	26	0	No	No	No	
Elecal Enrg Conv	3	3	0	UR	52	0	No	No	No	
Elec Enrg Conv	3	3	0	UR	22	0	No	No	No	
Pwr Sys Oper	3	3	0	UE	14	0	No	No	No	
UNIVERSITY OF TORONTO										
AppPwrElecsInPwSys	3	2	0	GE	11	0	No	No	No	
Custom Pwr Contlers	3	2	2	GE	9	0	No	No	No	
Elctrmch Enrg Conv	4	3	2	UR	120	0	No	No	No	
High Volt Eng: Lightning Discharge	3	2	0	GE	8	0	No	No	No	
Indust Elecs	4	3	2	UE	29	0	No	No	No	
Numerical Sol of Fields Prob	3	2	0	GE	7	0	No	No	No	
Pwr Elecs	4	3	0	UE	20	0	No	No	No	
Pwr Sys Anal	4	3	2	UE	65	0	No	No	No	
UNIVERSITY OF VIRGINIA										
Elctrmch Enrg Conv	3	2	2	UE	23	1	No	No	No	
UNIVERSITY OF WASHINGTON										
Enrg Sys	5	4	4	UR	206	0	No	No	No	
Pwr Elecs Dsgns	5	3	3	UE	20	0	No	No	No	
Elec Drives	5	3	3	UE	43	0	No	No	No	
Pwr Sys Anal	4	4	0	UE	18	0	No	No	No	
PwrSysDyn&Protectn	4	4	0	UE	27	0	No	No	No	
CprAidedDsgnPwrSys	4	4	0	UE	12	0	No	No	No	
Elec Enrg Dist Sys	4	4	0	UE	16	0	No	No	No	
GradSeminarInPwSys	1	1	0	GE	38	0	No	No	No	
Pwr Sys Protection	4	4	0	GE	0	0	No	No	No	
Pwr Sys Dyn & Cont	4	4	0	GE	0	0	No	No	No	
Pwr Sys Econs	4	4	0	GE	2	0	No	No	No	
LargeElecEnrSysAnal	4	4	0	GE	9	0	No	No	No	
FundOfIntelligentSys	4	4	0	GE	0	0	No	No	No	
SpTopicsElecEnrgSys	3	3	0		14	0	No	No	No	

	Credits	Lecture Hr	Lab Hr	Reqd	Campus Enrpt	Off Campus	Video	Cable	Video Stream	Other
UNIVERSITY OF WATERLOO										
Enrg Sys	1	3	1	UR	100	0	No	No	No	
Model&ContElecDrivs	1	3	1	UR	100	0	No	No	No	
Dsgn & Appl of Pwr Elec Convrtrs	1	2	1	UE	20	0	No	No	No	
Cpr Sim of Pwr Sys	1	2	1	UE	10	0	No	No	No	
Enrg Processing	1	3	0	GE	5	0	No	No	No	
Pwr Sys Cpr Appl	1	3	0	GE	5	0	No	No	No	
High Volt Eng Appl	1	3	0	GE	5	0	No	No	No	
Special Topics in Pwr Sys & High Volt Eng	1	3	0	GE	5	0	No	No	No	
AppNonlnrSysTheory	1	3	0	GE	5	0	No	No	No	
Dist Sys Eng	1	3	0	GE	5	0	No	No	No	
UNIVERSITY OF WISCONSIN-MADISON										
Adv Pwr Sys Anal	3	3	0	GE	0	0	No	No	No	
Digital Cpr Anal of Large Pwr Sys	3	3	0	GE	0	0	No	No	No	
Dyn& Cont AC Drives	3	0	3	GE	18	0	No	No	No	
ElecMach&DrvSysLab	2	0	2	GE	6	0	No	No	No	
Elec Pwr Sys	3	3	0	UE	28	0	No	No	No	
Electromagnetic Dsgn of AC Mach	3	3	0	GE	0	0	No	No	No	
Intro Elec Drives	3	3	0	UE	30	0	No	No	No	
OnLineContofPwrSys	3	3	0	GE	0	0	No	No	No	
Pwr Elecs	3	3	0	UE	34	0	No	No	No	
Pwr Elecs Lab	3	0	3	GE	5	0	No	No	No	
Solid State Pwr Conv	3	3	0	GE	3	0	No	No	No	
Theory & Cont of Synch Mach	3	3	0	GE	1	0	No	No	No	
Utility App Pwr Elecs	3	3	0	GE	17	0	No	No	No	
UNIVERSITY OF WISCONSIN-MILWAUKEE										
Element of Pwr Sys	3	3	0	UE	12	0	No	No	No	
Enrg Conv	4	3	2	UR	25	0	No	No	No	
Motor Drive	3	3	0	UE	20	0	No	No	No	
Pwr Elecs	3	3	0	UE	20	0	No	No	No	
Sp Topics in Pwr Sys	3	3	0	GE	8	0	No	No	No	
UNIVERSITY OF WISCONSIN-PLATTEVILLE										
Intro to Pwr Sys Eng	3	2	2	UR	48	0	No	No	No	
PwrElecs & ElecMach	4	3	3	UE	24	0	No	No	No	
Pwr Sys Anal & Dsgn	4	3	3	UE	18	0	No	No	No	
UNIVERSITY OF MICHIGAN - DEARBORN										
Elec Vehicles	3	3	0	GE	32	0	No	No	No	
Pwr Elecs	4	3	1	UE	50	0	No	No	No	
USAF ACADEMY										
Elecal Pwr Sys	3	3	0	UR	23	0	No	No	No	
V&RBILT										
Pwr Sys Anal I	3	3	0	UE	13	0	No	No	No	
Pwr Sys Anal II	3	3	0	UE	4	0	No	No	No	
VILLANOVA UNIVERSITY										
Elec Mach	3	3	0	UE	15	0	No	No	No	
Elec Mach	3	3	0	GE	0	10	No	No	No	
Pwr Elecs	3	3	0	GE	2	10	No	No	No	
Pwr Sys Anal	3	3	0	UE	15	0	No	No	No	
Pwr Sys Dyn	3	3	0	GE	0	10	No	No	No	
Pwr Sys Model	3	3	0	GE	0	10	No	No	No	
VIRGINIA TECH										
Alternate Enrg Sys	3	3	0	UE	0	66	No	No	No	WBC
Elec Pwr Eng Lab	1	0	3	UR	80	0	No	No	No	
Elec Pwr Qual	3	3	0	UE	26	0	No	No	No	
ElecEnrg&EnvmntlSys	3	3	0	GE	0	12	No	No	No	WBC
Intro to Pwr Sys	3	3	0	UR	80	0	No	No	No	
Pwr Sys Anal & Cont	3	3	0	UE	24	0	No	No	No	
Pwr Sys Dsgn	3	3	0	UE	40	0	No	No	No	
Pwr Sys Dyn	3	3	0	GE	12	0	No	No	No	
Pwr Sys Protection	3	3	0	UE	11	0	No	No	No	
PwrSysProtectionLab	1	0	3	UE	5	0	No	No	No	
Pwr Sys Transs	3	3	0	GE	9	0	No	No	No	
WASHINGTON STATE UNIVERSITY										
Enrg Lab I	2	1	5	UR	36	0	No	No	No	
Enrg Lab II	2	0	4	UE	5	0	No	No	No	
High Volt Eng	3	3	0	GE	5	0	No	No	No	
Intro to Enrg Sys	3	3	0	UR	55	0	No	No	No	
Pwr Elecs	3	3	0	UE	5	0	No	No	No	
Pwr Sys Protection I	3	3	0	UE	15	0	No	No	No	
Pwr Sys Protection II	3	3	0	GE	5	0	No	No	No	
Pwr Sys Anal I	3	3	0	UE	25	0	No	No	No	
Pwr Sys Anal II	3	3	0	GR	10	0	No	No	No	
Protection Lab	2	1	3	UE	10	0	No	No	No	
Sp Topics in Pwr Sys	3	3	0	GE	10	0	No	No	No	

	Credits	Lecture Hr	Lab Hr	Reqd	Campus Enrl	Off Campus	Video	Cable	Video Stream	Other
WEST VIRGINIA UNIVERSITY										
ElctrmchEnrConv&Sys	4	3	3	UR	60	0	No	No	No	
WESTERN MICHIGAN UNIVERSITY										
ECE 330	4	3	3	UR	30	0	No	No	No	
ECE 420	3	3	0	UE	20	0	No	No	No	
ECE 430	3	3	0	UE	20	0	No	No	No	
ECE 520	3	3	0	GE	20	0	No	No	No	
WESTERN MICHIGAN UNIVERSITY, KALAMAZOO, MICHIGAN										
Elec Mach	4	3	3	UE	20	0	No	No	No	
Electmgnctcs	3	3	0	UR	30	0	No	No	No	
Elecs	4	3	3	UR	45	0	No	No	No	
Pwr Elecs	3	3	0	UE	25	0	No	No	No	
Pwr Sys	3	3	0	UE	20	0	No	No	No	
WESTERN NEW ENGL& COLLEGE										
Elec Pwr & Magnetics	3	3	1	UE	6	6	No	No	No	
Electmgnctcs	3	3	1	UR	20	8	No	No	No	
Pwr Sys	3	3	1	UE	2	1	No	No	No	

	Credits	Lecture Hr	Lab Hr	Reqd	Campus Enrl	Off Campus	Video	Cable	Video Stream	Other
WICHITA STATE UNIVERSITY										
Adv Topics Elec Pwr	3	3	0	GE	0	0	No	No	No	
Elec Motor Appl	3	3	0	UE	25	0	No	No	No	
Elec Pwr Sys Anal I	3	3	0	UE	35	0	No	No	No	
Elec Pwr Sys Anal II	3	3	0	UE	20	0	No	No	No	
Elctrmch Enrg Conv	4	3	1	UR	40	0	No	No	No	
Oper & Cont Pwr Sys	3	3	0	GE	0	0	No	No	No	
Pwr Elecs	4	3	1	UE	30	0	No	No	No	
Principles of Pwr Dist	3	3	0	UE	20	0	No	No	No	
WIDENER UNIVERSITY										
Elec Mach Lab	1	0	3	UE	0	0	No	No	No	
Elec Mach	3	3	0	UR	15	0	No	No	No	
WPI										
Adv Pwr Elecs	1	3	0	GE	5	15	No	No	No	
Powerw Qual	1	3	0	GE	0	20	No	No	No	
Trans in Pwr Sys	1	3	0	GE	0	20	No	No	No	

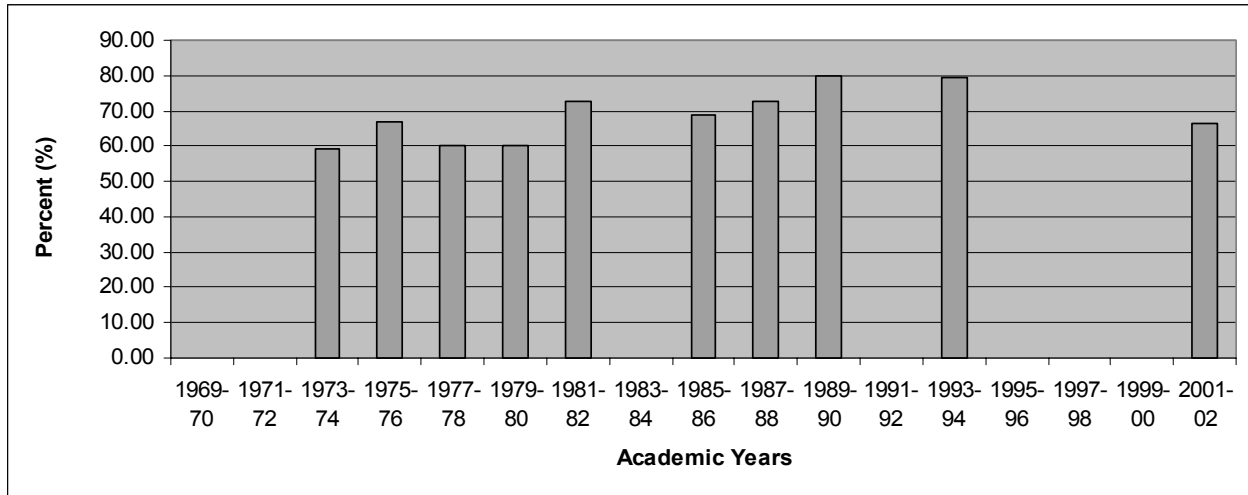


Figure 6: Percentages of Schools with Required Power Classes for Electrical Engineering Undergraduates

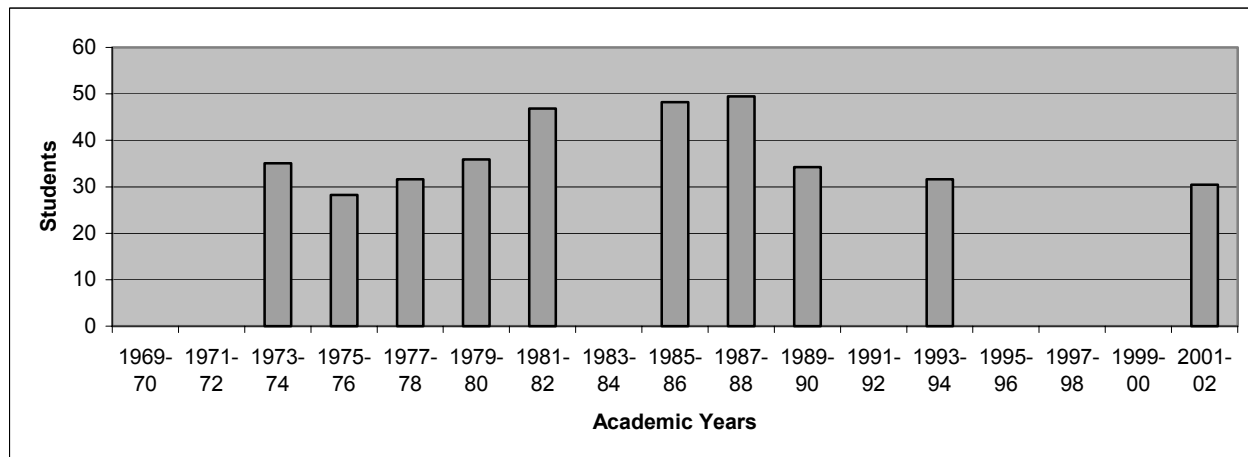


Figure 7: Average Number of Students in Elective Power Classes with Highest Enrollment