

ELECTRIC POWER ENGINEERING EDUCATION RESOURCES 2005-06

IEEE POWER ENGINEERING SOCIETY COMMITTEE REPORT

The Power Engineering Education Committee (PEEC) Task Force on Educational Resources

J. McCalley (Chair), L. Bohmann, K. Miu, and N. Schulz

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 2005-06 academic year. The report is limited to colleges and universities that replied to a questionnaire on a voluntary basis. For the 125 colleges and universities (115 U.S., 10 Canadian) that submitted data on their power programs, the report contains a list of faculty active during the 2005-06 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: *courses, enrollments, faculty, graduate students, power engineering education, research, survey.*

1. Introduction

A task force 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 13 previous such efforts [1-13]. 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 May 4 and July 1 of 2006 via the internet site powerlearn.ee.iastate.edu/survey/. There were 125 colleges and universities that responded (115 U.S., 10 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 8 figures showing the variation through time, since the first survey in 1969, of certain attributes of interest to the community.

Although there were 125 survey respondents, not all provided data for all survey sections. We indicated in each section how many respondents provided data for it.

2. Electric power engineering schools and faculty

The roster of faculty active in Electric Power Engineering Education in each university in the year 2005-06 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 2005 in academics, the power industry, and non-power industry, and the activity level for 2005-06, by percentage, in power-related teaching, power-related research, and non-power-related activities. There were 122 respondents providing data for this section.

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 2006. The percentage of power faculty at the assistant professor level declined from about 20% in the early- to mid-1990s to about 15% in 2001-2002, and to about 12% in 2005-06, 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 2005-06. 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. There were 114 respondents providing data for this section.

Figure 2 uses data from Table 4 and previous surveys to show variation through time in total institution average funding and government average funding. It is notable that total average funding increased from \$375k to \$650k per institution between 1993-94 and 2001-02, but decreased to \$540k in 2005-06. This decrease has been entirely due to decreased government funding (\$490k to \$305k per institution) while industry funding increased (\$160k to \$235k per institution).

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. There were 114 respondents providing data for this section.

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 increased since 2001-02 from 15 per institution to 16, and average number of part-time students has decreased from 5 to 4 per institution¹. Figure 4 shows that the average number of Masters students has decreased since 2001-02 from 14 to 12 and that the average number of PhD students has increased from 7 to 8. Figure 5 shows that the ratio of average number of international students per institution to average number of domestic graduate students per institution has changed from 12:9 in 2001-02 to 11.7:8, indicating the percentage of international students comprising the power engineering graduate student population, which was 53% in 1993-94, has grown from 57.1% in 2001-02 to 59.4% in 2005-06.

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, a code identifying the level of the course (undergraduate or graduate) and whether the course is required or elective, the enrollment (if it was provided), and technologies used in delivering the course off-campus if it was run in a distance-education mode. Of the 118 respondents providing data for this section, 22 are delivering at least one of their power engineering courses in a distance-education mode.

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% in 2001-02 to about 59% in 2005-06. Figure 7 indicates that the average number of students in undergraduate elective power classes with highest enrollment has declined from 32 in 1993-94 to 31 in 2001-02 to 29 in 2005-06.

¹ The number of part-time students for 2002 was erroneously indicated as 4 in the text of the 2001-2002 paper; it should have been 5 as reported here.

Figure 8 also uses data from Table 7 and previous surveys to show variation through time of total number of students in the undergraduate class with highest enrollment. It indicates this number increased from 2912 in 1993-94 to 3565 in 2001-02, and then decreased to 3335 in 2005-06. These data provide some indication of the trend in the number of trained power engineers entering the North American power industry. However, it should be recognized that these data are sensitive to the numbers of universities reporting in this section of the survey, which does change from survey to survey (91 in 1993-94, 115 in 2001-02, and 115 in 2005-06).

6. Conclusion

This task force report provides information on education resources in the United States and Canada in the 2005-06 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 powerlearn.ee.iastate.edu/survey/.

7. References

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Name of Faculty	Rank/Title	Highest Degree	PE Registration	IEEE Membership Level	Experience No.Years			Activity(%)		
					Academic	Power Industry	Other Industry	Power Teaching	Power Research	Non-Power
ILLINOIS INSTITUTE OF TECHNOLOGY Email: emadi@iit.edu					Ali Emadi (312) 567-8940					
Axelrod, L.	LCT	M	Y	M	7	40	0	100	0	0
Emadi, A.	P	D	N	S	8	3	0	30	70	0
Flueck, A.	ACP	D	N	S	11	0	0	30	50	20
Li, Z.	ATP	D	N	M	3	0	0	40	60	0
Nagel, N.	LCT	D	N	S	2	7	0	100	0	0
Pinnello, J.	LCT	M	Y	M	9	25	0	100	0	0
Shahidehpour, M.	PPC	D	N	F	25	1	0	30	40	30
Williamson, G	P	D	N	S	17	0	0	40	60	0
INDIANA U.-PURDUE U. INDIANAPOLIS Email: srovnyak@iupui.edu					Steven M. Rovnyak (317) 278-1960					
Rovnyak, S.	ATP	D	N	M	10	0	1	25	35	40
IOWA STATE UNIVERSITY Email: jdm@iastate.edu					James McCalley (515) 294-4844					
McCalley, J.	P	D	Y	F	14	5	3	30	45	25
Ajjarapu, V.	P	D	N	S	20	0	0	45	45	10
Liu, C.	PPC	D	Y	F	28	1	2	25	45	30
Lamont, J.	P	D	Y	S	30	13	0	70	20	10
Kruempel, K.	ACP	D	N	M	37	4	0	85	0	15
Baird, T.	LCT	M	Y	S	3	40	0	10	0	90
KANSAS STATE UNIVERSITY Email: pahwa@ksu.edu					Anil Pahwa (785) 532-4654					
Pahwa, A.	P&C	D	N	F	22	3	0	20	25	55
Morcos, M.	P	D	N	S	21	0	15	45	50	5
Starrett, S.	ACP	D	N	S	12	0	0	0	0	0
KETTERING UNIVERSITY Email: hhizirog@kettering.edu					Huseyin Hiziroglu (810) 762-7962					
Hiziroglu, H.	P	D	N	S	26	4	0	70	30	0
Guru, B.	P	D	N	N	0	0	0	0	0	0
Hiziroglu, H.	P	D	N	S	26	4	0	70	30	0
Guru, B.	P	D	N	N	22	6	1	100	0	0
LAWRENCE TECHNOLOGICAL UNIVERSITY Email: johnston@ltu.edu					Richard R. Johnston (258) 204-2534					
Johnston, R.	P	D	Y	M	21	0	5	15	5	80
LOUISIANA STATE UNIVERSITY Email: scalzojr@ece.lsu.edu					John D. Scalzo (225) 578-5481					
Czarnecki, L.	P	D	N	F	37	0	0	45	45	10
Mendrela, E.	P	D	N	M	41	0	0	45	45	10
MANHATTAN COLLEGE Email: gordon.silverman@manhattan.edu					Gordon Silverman (718) 862-7154					
Fardanesh, B.	ACP	D	Y	M	25	25	0	45	45	10
MCNEESE STATE UNIVERSITY Email: f.denny@ieee.org					Fred I. Denny (337) 478-8649					
Denny, F.	ACP	D	Y	F	11	25	0	0	0	0
MEMORIAL U. OF NEWFOUNDLAND Email: jeyas@engr.mun.ca					Benjamin Jeyasurya (709) 737-8902					
Jeyasurya, B.	P	D	Y	S	22	2	0	50	50	0
Quaicoe, J.	P	D	Y	S	24	2	1	25	25	50
Rahman, M.	P	D	Y	F	44	5	5	50	50	0
Iqbal, M.	ATP	D	Y	N	15	5	5	50	50	0
MICHIGAN STATE UNIVERSITY Email: schluete@egr.msu.edu					Robert Schlueter (517) 355-5244					
Peng, F.	ACP	D	Y	F	8	2	6	30	60	10
Strangas, E.	ACP	D	Y	M	20	2	0	50	40	10
Schlueter, R.	P	D	Y	F	35	5	2	50	40	10
MICHIGAN TECHNOLOGICAL UNIVERISTY Email: ljbohman@mtu.edu					Leonard J. Bohmann (906) 487-2861					
Bohmann, L.	ACP	D	Y	S	18	1	0	70	30	0
Mork, B.	ACP	D	Y	M	15	6	0	50	50	0
Wiitanen, D.	P	D	Y	S	37	2	0	66	0	33
MINNESOTA STATE UNIVERSITY, MANKATO Email: paul.lindfors@mnsu.edu					Paul A. Lindfors (507) 389-6608					
Lindfors, P.	P	D	N	M	19	3	11	10	0	0

Name of Faculty	Rank/Title	Highest Degree	PE Registration	IEEE Membership Level	Experience No.Years			Activity(%)		
					Academic	Power Industry	Other Industry	Power Teaching	Power Research	Non-Power
MISSISSIPPI STATE UNIVERSITY Email: schulz@ece.msstate.edu					Noel N. Schulz (662) 325-2020					
Schulz, N.	PPC	D	N	S	13	0	1	50	50	0
Grzybowski, S.	P	D	N	F	50	2	0	50	50	0
Ginn, H.	ATP	D	N	M	4	0	3	50	50	0
Gao, D.	ATP	D	N	S	4	0	0	0	100	0
Srivastava, A.	ATP	D	N	M	1	2	0	12	88	0
MIT Email: kirtley@mit.edu					James L. Kirtley (617) 253-2357					
Kirtley, J.	P	D	Y	F	35	1	2	35	50	15
Lang, J.	P	D	N	F	30	0	0	0	25	75
Leeb, s.	P	D	N	S	18	0	0	25	50	25
Kassakian, J.	P	D	Y	F	37	0	0	25	50	25
Perreault, d.	ACP	D	N	S	12	0	0	35	50	15
MONTANA STATE UNIVERSITY Email: hnehrr@ece.montana.edu					Hashem Nehrir (406) 994-4980					
Nehrir, H.	P	D	N	S	33	2	0	50	50	0
Gao, H.	ATP	D	N	N	4	0	0	50	40	0
NC STATE UNIVERSITY Email: baran@ncsu.edu					Mesut E. Baran (919) 515-5081					
Baran, M.	ACP	D	N	S	14	2	0	50	60	0
Grainger, J.	P	D	Y	S	25	10	0	50	0	50
Huang, A.	P	D	N	N	10	0	0	30	40	30
Bhattacharya, S.	ATP	D	Y	N	2	5	0	40	60	0
NCA&T STATE UNIVERSITY Email: homaifar@ncat.edu					Abdollah Homaifar (336) 334-7760					
Lebby, G.	P	D	N	N	20	0	0	30	30	40
Olson, D.	ACP	D	N	N	25	0	0	50	0	50
Homaifar, A.	P	D	N	M	18	0	0	20	30	50
Song, D.	P	D	Y	M	8	0	3	20	20	60
Bikdash, M.	ACP	D	N	N	12	0	0	10	25	65
NEBRASKA-LINCOLN Email: j.hudgins@ieee.org					Jerry L. Hudgins (402) 472-5177					
Asgarpoor, S.	ACP	D	Y	M	17	3	0	20	40	40
Patterson, D.	P	D	N	S	30	0	3	40	40	20
Hudgins, J.	P&C	D	N	F	21	0	0	10	20	70
NORTH DAKOTA STATE UNIVERSITY Email: rajesh.kavasseri@ndsu.edu					Rajesh Kavasseri (701) 231-7614					
Kavasseri, R.	ATP	D	N	M	4	1	0	40	40	20
Yuvarajan, S.	P	D	N	M	25	0	0	40	40	20
NORTHEASTERN UNIVERSITY Email: astankov@ece.neu.edu					Alex M. Stankovic (617) 373-3007					
Abur, A.	P&C	D	Y	F	21	0	0	20	30	50
Lehman, B.	ACP	D	N	S	15	0	0	30	70	0
Mulukutla, S.	P	D	Y	F	37	0	2	100	0	0
Stankovic, A.	P	D	N	F	14	0	5	30	70	0
NORWICH UNIVERSITY Email: sfitzhug@norwich.edu					Stephen L. Fitzhugh (802) 485-2559					
Klinger, L.	LCT	D	Y	L	35	14	0	0	0	100
Goodrich, R.	LCT	D	Y	L	25	22	0	20	5	75
Fitzhugh, S.	LCT	D	Y	M	6	25	0	0	0	100
OHIO NORTHERN UNIVERSITY Email: k-al-olimat@onu.edu					Khalid S. Al-Olimat (419) 772-2389					
Al-Olimat, K.	ACP	D	N	M	9	0	3	100	15	5
OHIO STATE UNIVERSITY Email: sesebo@ieee.org					Stephen A. Sebo (614) 292-7410					
Kasten, D.	ACP	D	Y	S	34	4	0	50	30	20
Keyhani, A.	P	D	N	F	33	5	0	50	50	0
Xu, L.	P	D	N	F	17	10	0	35	45	20
Sebo, S.	EMT	D	N	F	44	5	0	25	75	0
OHIO UNVIERSITY Email: giesey@ohio.edu					Jefferey J. Giesey (740) 593-1573					
Giesey, J.	ACP	D	Y	M	18	1	0	30	25	45
Manhire, B.	P	D	N	M	30	4	0	50	10	40

Name of Faculty	Rank/Title	Highest Degree	PE Registration	IEEE Membership Level	Experience No. Years			Activity(%)		
					Academic	Power Industry	Other Industry	Power Teaching	Power Research	Non-Power
THE UNIVERSITY OF TENNESSEE Email: fl16@utk.edu					Fangxing (Fran) Li (865) 974-8401					
Li, F.	ATP	D	N	S	1	5	0	50	50	0
Tolbert, L.	ACP	D	Y	S	7	8	0	50	50	0
Lawler, J.	P	D	N	S	26	1	4	25	25	50
THE UNIVERSITY OF TEXAS AT AUSTIN Email: baldick@ece.utexas.edu					Ross Baldick (512) 471-5879					
Baldick, r.	P	D	N	S	14	2	0	50	50	0
Grady, W.	P	D	Y	F	23	6	0	50	25	25
Driga, M.	P	D	Y	M	0	0	0	0	0	0
Santoso, S.	ATP	D	Y	M	0	0	0	0	0	0
UNIVERSITY AT BUFFALO Email: zirnheld@eng.buffalo.edu					Jennifer L. Zirnheld (716) 645-3115					
Hopkins, D.	ACP	D	N	M	15	10	0	15	35	0
Safiuddin, M.	P	D	Y	M	20	20	0	20	40	0
Sarjeant, W.	P	D	N	M	20	20	0	20	40	0
Zirnheld, J.	LCT	D	N	M	10	0	0	10	10	0
UNIVERSITY OF ALASKA FAIRBANKS Email: ffrww@uaf.edu					Richard Wies (907) 474-7071					
Wies, R.	ACP	D	N	M	8	1	2	60	30	10
Bogosyan, s.	ACP	D	N	N	15	0	0	60	30	10
UNIVERSITY OF ALBERTA Email: dinavahi@ece.ualberta.ca					Venkata Dinavahi (780) 492-1003					
Koval, D.	P	D	Y	F	26	16	0	50	50	0
Salmon, J.	P	D	Y	M	19	0	1	40	40	20
Knight, A.	ACP	D	Y	M	8	0	0	40	50	10
Xu, W.	P	D	Y	F	10	7	0	35	55	10
Dinavahi, V.	ACP	D	Y	M	5	0	0	30	50	20
UNIVERSITY OF ARKANSAS Email: jbalda@uark.edu					Juan C. Balda (479) 575-6578					
Balda, J.	P	D	Y	N	20	2	0	40	50	10
UNIVERSITY OF BRITISH COLUMBIA Email: wgd@ece.ubc.ca					William G. Dunford (604) 822-6660					
Dunford, W.	ACP	D	Y	N	24	0	4	40	30	30
Jatskevich, J.	ATP	D	N	N	0	0	0	0	0	0
Marti, J.	P	D	Y	F	0	0	0	0	0	0
Palmer, P.	ACP	D	N	N	0	0	0	0	0	0
UNIVERSITY OF CALGARY Email: maliko@ieee.org					Om P. Malik (403) 220-6178					
Rosehart, W.	ACP	D	Y	M	5	1	0	45	45	10
Nowicki, E.	ACP	D	Y	S	13	1	0	35	50	15
Osman, A.	ATP	D	N	M	3	1	0	50	50	0
Malik, O.	EMT	D	Y	F	40	10	0	5	55	40
UNIVERSITY OF CENTRAL FLORIDA Email: batarseh@mail.ucf.edu					Issa E. Batarseh (407) 823-0185					
Batarseh, I.	P	D	Y	F	15	1	0	20	20	60
UNIVERSITY OF COLORADO AT BOULDER Email: Ewald.Fuchs@Colorado.edu					Ewald F. Fuchs (303) 492-7010					
Fuchs, e.	P	D	N	F	30	7	0	30	37	0
Erickson, R.	P	D	N	F	20	0	1	20	21	0
Maksimovic, D.	P	D	N	S	15	0	1	15	16	0
UNIVERSITY OF FLORIDA Email: law@tec.ufl.edu					Mark E. Law (352) 392-6459					
Ngo, K.	P	D	N	S	20	0	5	25	25	50
Arnold, D.	ATP	D	N	M	1	0	0	10	25	65
UNIVERSITY OF HOUSTON Email: ocrisan@uh.edu					Ovidiu Crisan (713) 743-4432					
Crisan, O.	P	D	N	S	46	2	0	50	35	15
Maniscalco, P.	LCT	M	Y	M	3	16	0	100	0	0
Shireen, W.	LCT	D	N	M	13	0	1	40	40	20
UNIVERSITY OF IDAHO Email: b.k.johnson@ieee.org					Brian K. Johnson (208) 885-6902					
Law, J.	ACP	D	Y	M	19	2	0	50	15	35
Johnson, B.	P	D	Y	S	15	0	0	50	15	35
Hess, H.	P	D	Y	S	14	0	1	50	10	40

Name of Faculty	Rank/Title	Highest Degree	PE Registration	IEEE Membership Level	Experience No. Years			Activity(%)		
					Academic	Power Industry	Other Industry	Power Teaching	Power Research	Non-Power
UNIVERSITY OF ILLINOIS AT CHICAGO Email: dutta@ece.uic.edu					Mitra Dutta (312) 355-2131					
Mazumder, S.	ACP	D	N	S	5	5	0	40	50	10
U. OF ILLINOIS-URBANA-CHAMPAIGN Email: sauer@ece.uiuc.edu					Peter W. Sauer (217) 333-0394					
Sauer, P.	PPC	D	Y	F	31	5	0	0	0	0
Gross, G.	P	D	Y	F	13	20	0	0	0	0
Krein, P.	PPC	D	Y	F	22	0	2	0	0	0
Overbye, T.	P	D	Y	F	15	5	0	0	0	0
Chapman, P.	ATP	D	N	M	11	0	0	0	0	0
Pai, M.	EMT	D	Y	F	43	4	0	0	0	0
UNIVERSITY OF KENTUCKY Email: yliao@engr.uky.edu					Yuan Liao (859)-257-6064					
Liao, Y.	ATP	D	N	S	1	5	0	40	50	10
Radun, A.	P	D	N	S	13	0	12	40	40	20
Cathey, J.	P	D	N	S	24	10	0	50	45	5
Sottile, J.	ATP	D	N	S	24	0	0	40	40	20
UNIVERSITY OF MANITOBA Email: annakkag@ee.umanitoba.ca					Udaya D. Annakkage (204) 474-6365					
Raghuveer, R.	P	D	Y	S	30	0	0	40	40	20
Kuffel, J.	P&C	D	Y	F	0	29	0	0	30	70
Gole, A.	PPC	D	Y	S	21	3	0	12	80	8
Annakkage, U.	P	D	N	S	20	0	0	25	45	30
Rajapakse, A.	ATP	D	N	M	7	0	0	40	40	20
Filizadeh, S.	ATP	D	N	M	3	2	0	30	50	20
Menzies, R.	P	D	Y	S	39	2	0	0	75	25
Swift, G.	EMT	D	Y	S	36	6	0	0	15	0
Kuffel, E.	EMT	D	Y	F	46	6	0	0	100	0
U. OF MASSACHUSETTS-LOWELL Email: ziyad_salameh@uml.edu					Ziyad M. Salameh (978) 934-3333					
Salameh, Z.	P	D	N	S	24	3	0	50	50	0
UNIVERSITY OF MICHIGAN-DEARBORN Email: taehyung@umich.edu					Taehyung Kim (313) 583-6318					
Mi, C.	ATP	D	Y	M	10	2	0	100	100	0
Kim, T.	ATP	D	N	M	2	1	0	100	100	0
UNIVERSITY OF MINNESOTA Email: mohan@umn.edu					(612) 625-3362 (612) 625-3362					
Wollenberg, B.	P	D	N	F	30	17	0	40	40	20
Mohan, N.	P	D	N	F	30	0	0	50	50	0
Imbertson, P.	ACP	D	N	M	13	0	7	45	5	50
UNIVERSITY OF MISSOURI-ROLLA Email: crow@umr.edu					Mariesa Crow (573) 341-6305					
Crow, M.	P	D	Y	S	16	0	0	15	35	50
Chowdhury, B.	P	D	N	S	18	0	0	45	45	10
Ferdowsi, M.	ATP	D	N	M	3	0	0	45	45	10
Corzine, K.	ATP	D	N	S	12	2	0	45	45	10
Venayagamoorthy, K.	ATP	D	N	M	6	0	0	0	40	60
UNIVERSITY OF NEVADA-RENO Email: etezadi@engr.unr.edu					Mehdi Etezadi-Amoli (775) 784 6066					
Etezadi-Amoli, M.	P	D	Y	S	36	4	0	50	20	30
Trzynadlowski, A.	P	D	N	F	40	0	0	40	40	20
UNIVERSITY OF NEW BRUNSWICK Email: venkat@unb.ca					Bala Venkatesh (506) 447-3474					
Venkatesh, B.	ACP	D	N	M	12	1	0	40	40	20
Sharaf, A.	P	D	Y	M	25	0	0	50	50	0
Chang, L.	PPC	D	Y	S	14	0	3	30	70	0
UNIVERSITY OF N. CAROLINA-CHARLOTTE Email: lukic@unc.edu					Vasilije P. Lukic (704) 687-8411					
Lukic, V.	P	D	Y	S	26	2	2	70	0	0
Miri, M.	ACP	D	Y	S	20	2	4	40	0	0
Cox, r.	ACP	D	N	M	0	0	0	0	0	0
UNIVERSITY OF NORTH DAKOTA Email: hsalehfar@und.nodak.edu					Hossein Salehfar (701) 777-4432					
Salehfar, H.	P	D	N	S	15	2	0	0	0	0
Miles, A.	ACP	D	N	S	20	5	3	0	0	0

Name of Faculty	Rank/Title	Highest Degree	PE Registration	IEEE Membership Level	Experience No. Years			Activity(%)		
					Academic	Power Industry	Other Industry	Power Teaching	Power Research	Non-Power
UNIVERSITY OF OKLAHOMA Email: fleec@ou.edu					Fred N. Lee (405) 325-6598					
Lee, F.	P	D	Y	F	21	28	0	40	35	25
UNIVERSITY OF PITTSBURGH Email: kusic@ee.pitt.edu					George Kusic (412) 624-9678					
Kusic, G.	ACP	D	Y	N	25	12	0	30	10	0
UNIVERSITY OF RHODE ISLAND Email: gvlengyel@aol.com					Gabriel Lengyel (401) 874-5871					
Lengyel, G.	EMT	D	N	N	40	10	25	5	20	80
UNIVERSITY OF SASKATCHEWAN Email: rajesh.karki@usask.ca					Rajesh Karki (306) 966-5384					
Billinton, R.	EMT	D	Y	F	0	0	0	0	0	0
Sachdev, M.	EMT	D	Y	F	0	0	0	0	0	0
El-Serafi, A.	EMT	D	Y	F	0	0	0	0	0	0
Karki, R.	ACP	D	Y	S	0	0	0	0	0	0
Gokaraju, R.	ACP	D	NO	M	0	0	0	0	0	0
Chowdhury, N.	ACP	D	Y	M	0	0	0	0	0	0
Faried, S.	P	D	NO	S	0	0	0	0	0	0
UNIVERSITY OF SOUTH ALABAMA Email: arahman@southal.edu					Arifur Rahman (251) 460-7508					
Rahman, A.	P	D	N	S	48	0	0	50	30	20
UNIVERSITY OF SOUTHERN CALIFORNIA Email: tcheng@usc.edu					T.C. Cheng (213) 740-4712					
Cheng, T.	PPC	D	N	F	32	0	0	30	60	10
UNIVERSITY OF TEXAS AT ARLINGTON Email: shoults@uta.edu					Raymond R. Shoults (817) 272-3472					
Dillon, W.	ACP	D	Y	S	36	6	0	0	0	100
Fahimi, B.	ATP	D	N	S	4	0	3	40	50	10
Gou, B.	ATP	D	N	M	6	3	0	33	57	10
Kenarangui, R.	LCT	D	Y	M	25	0	0	60	30	10
Lee, W.	LCT	D	Y	S	19	0	0	25	50	25
Shoults, R.	LCT	D	Y	S	31	9	0	10	10	80
UNIVERSITY OF TOLEDO Email: rking@eng.utoledo.edu					Roger J. King (419) 530-8196					
King, R.	P&C	D	Y	S	23	1	2	10	0	90
Stuart, T.	P	D	Y	S	34	0	6	50	50	0
UNIVERSITY OF VIRGINIA Email: marshall@virginia.edu					(434) 924-3164 (434) 924-3164					
Marshall, P.	P	D	N	M	30	0	2	25	25	50
UNIVERSITY OF WASHINGTON Email: christie@ee.washington.edu					Richard D. Christie (206) 543-9689					
Christie, R.	ACP	D	N	M	17	6	5	50	35	15
Damborg, M.	P	D	N	S	44	1	0	40	20	40
El-Sharkawi, M.	P	D	N	F	32	1	4	25	30	45
Mamishev, A.	ACP	D	N	S	8	0	0	15	35	50
Strunz, K.	ATP	D	N	M	5	5	2	25	50	25
UNIVERSITY OF WATERLOO Email: ehab@hivolt.uwaterloo.ca					Ehab F. El-Saadany (519) 888-4567					
Salama, M.	P	D	Y	F	30	10	0	40	40	20
Cañizares, C.	P	D	Y	S	22	2	0	40	40	20
Bhattacharya, K.	ACP	D	Y	S	0	0	0	40	40	20
El-Shatshat, R.	LCT	D	Y	M	0	0	0	60	20	20
Jayaram, S.	LCT	D	Y	S	0	0	0	40	40	20
Kazerani, M.	LCT	D	Y	S	9	5	0	4	4	20
El-Saadany, E.	LCT	D	Y	S	20	4	0	40	40	20
UNIVERSITY OF WESTERN ONTARIO Email: gmoschopoulos@eng.uwo.ca					Gerry Moschopoulos (519) 661-2111					
Moschopoulos, G.	ATP	D	Y	M	5	0	3	30	40	30
Sidhu, t.	P&C	D	Y	F	16	4	1	20	40	40
Varma, R.	ACP	D	N	M	17	0	0	40	40	20
Jiang, J.	PPC	D	Y	S	18	0	1	40	50	10
Yazdani, A.	ATP	D	N	M	0	7	0	0	100	0
UNIVERSITY OF WINDSOR Email: nkar@uwindsor.ca					Narayan C. Kar (519) 253-3000					
Kar, N.	ATP	D	Y	M	3	2	0	40	50	10

Name of Faculty	Rank/Title	Highest Degree	PE Registration	IEEE Membership Level	Experience No. Years			Activity(%)		
					Academic	Power Industry	Other Industry	Power Teaching	Power Research	Non-Power
UNIVERSITY OF WISCONSIN-PLATTEVILLE Email: muslu@uwplatt.edu					Mesut Muslu (608) 342-1536					
Muslu, M.	P&C	D	Y	M	22	1	0	25	25	50
Shultz, r.	R	D	Y	S	28	3	0	0	10	90
Kou, x.	ATP	D	N	M	3	1	0	75	25	0
UNIVERSITY OF WISCONSIN-MADISON Email: demarco@engr.wisc.edu					Christopher L. DeMarco (608) 262-5546					
DeMarco, C.	P	D	N	M	21	0	1	25	40	35
Dobson, I.	P	D	N	F	17	0	5	15	40	45
Hiskens, I.	P	D	N	F	14	12	0	35	40	25
Jahns, T.	PPC	D	N	F	8	19	0	35	40	25
Lipo, T.	PPC	D	Y	F	25	12	0	15	60	25
Muetze, A.	ATP	D	N	M	2	0	0	35	45	20
Venkataramanan, g.	ACP	D	N	M	14	0	0	35	40	25
UNIVERSITY OF WISCONSIN-MILWAUKEE Email: nasiri@uwm.edu					Adel Nasiri (414) 229-4955					
Nasiri, A.	ATP	D	N	S	1	5	0	50	50	0
Yu, D.	P	D	N	M	25	10	0	50	50	0
US NAVAL ACADEMY Email: voigt@usna.edu					Robert Voigt (410) 293-6152					
Ciezk, J.	ACP	D	N	N	12	2	0	25	25	50
Salem, T.	ATP	D	Y	M	11	3	0	0	0	0
VALPARAISO UNIVERSITY Email: Alan.Kraft@valpo.edu					Leonard A. Kraft (213) 464-5171					
Kraft, L.	P	D	Y	S	25	11	1	33	0	67
Hart, D.	P	D	Y	S	27	7	0	25	0	75
Olejniczak, K.	P	D	Y	S	14	4	0	0	0	100
VILLANOVA UNIVERSITY Email: frank.mercede@villanova.edu					Frank J. Mercede (610) 519-4982					
Singh, P.	P&C	D	N	M	22	0	0	20	40	20
Mercede, F.	ATP	D	Y	N	17	0	4	20	20	60
McKeough, C.	ATP	M	N	M	35	0	0	40	0	60
VIRGINIA TECH Email: virgilio@vt.edu					Virgilio A. Centeno (540) 231-2045					
Thorp, J.	P&C	D	N	F	45	1	1	0	20	80
Phadke, A.	EMT	D	N	F	28	14	0	0	80	20
Rahman, S.	P	D	N	F	29	2	0	15	30	55
Liu, Y.	P	D	N	F	18	2	0	30	60	10
Broadwater, R.	P	D	N	M	25	7	3	0	50	50
Mili, L.	P	D	N	S	18	6	0	30	60	10
Tam, K.	ACP	D	N	S	18	0	0	30	30	40
De La Ree, J.	ACP	D	Y	S	18	0	0	30	0	60
Centeno, V.	ATP	D	N	M	8	8	0	30	60	10
WASHINGTON STATE UNIVERSITY Email: tomsovic@eecs.wsu.edu					Kevin Tomsovic (509) 335-8260					
Tomsovic, K.	P	D	N	S	18	0	0	50	50	0
Bose, A.	PPC	D	N	F	30	10	0	50	50	0
Olsen, r.	P	D	N	F	30	0	0	0	25	75
Venkatasubramanian, M.	P	D	N	M	15	0	0	50	50	0
WEST VIRGINIA UNIVERSITY Email: choudhry@csee.wvu.edu					Muhammad M. Choudhry (304) 293-0405					
Choudhry, M.	P	D	N	S	25	2	0	50	20	30
Fellachi, A.	PPC	D	N	S	24	0	0	0	0	0
Klein, r.	P	D	N	S	36	0	0	0	0	0
Famouri, P.	P	D	N	S	16	0	0	0	0	0
WESTERN MICHIGAN UNIVERSITY Email: joseph.kelemen@wmich.edu					Joseph A. Kelemen (269) 372-1608					
Kelemen, J.	ACP	M	Y	N	46	6	4	50	0	50
WEST VIRGINIA TECH Email: sram@wvutec.edu					Surinder K. Ram (304) 442-3282					
Ram, S.	P	D	N	N	45	7	0	38	4	0
WICHITA STATE UNIVERSITY Email: ward.jewell@wichita.edu					Ward Jewell (316) 978-6340					
Teshome, A.	ACP	D	N	M	25	15	0	25	0.3	50
Jewell, W.	P	D	N	F	22	4	0	50	50	0
WIDENER UNIVERSITY Email: smbrahma@widener.edu					Sukumar Brahma (610) 499-4058					
Brahma, S.	ATP	D	N	M	14	2	0	30	45	25

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

	FACULTY	ACADEMIC RANK							DEGREE				PE License	IEEE Membership
		Professor and Sponsored Power Chair	Professor and Department Chair	Professor	Associate Professor	Assistant Professor	Emeritus	Lecturer	PhD	Professional Degree	Master	Bachelor		
Number	380	30	15	167	79	48	14	26	364	1	13	0	163	349
Percent	100	7.9	3.9	43.9	20.8	12.6	3.7	6.8	95.8	0.3	3.4	0	42.9	91.8

Table 3: Average years faculty experience and average percentage activity

EXPERIENCE			ACTIVITY (%)		
Academic	Industry	Other Industry	Power Teaching	Power Research	Other
20.5	4.14	0.8	37.8	35.4	24.1

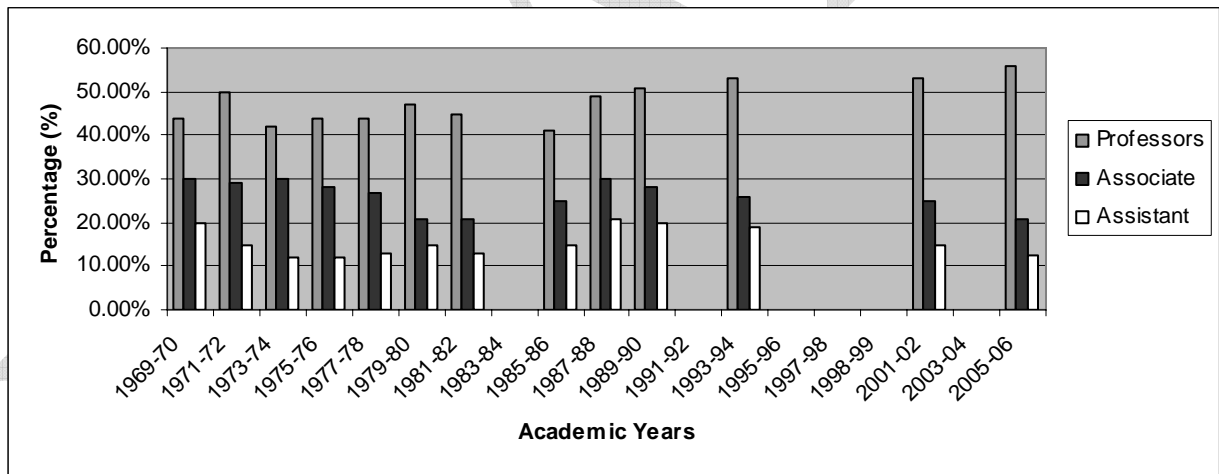


Figure 1: Percentages of full, associate, and assistant professors per academic year

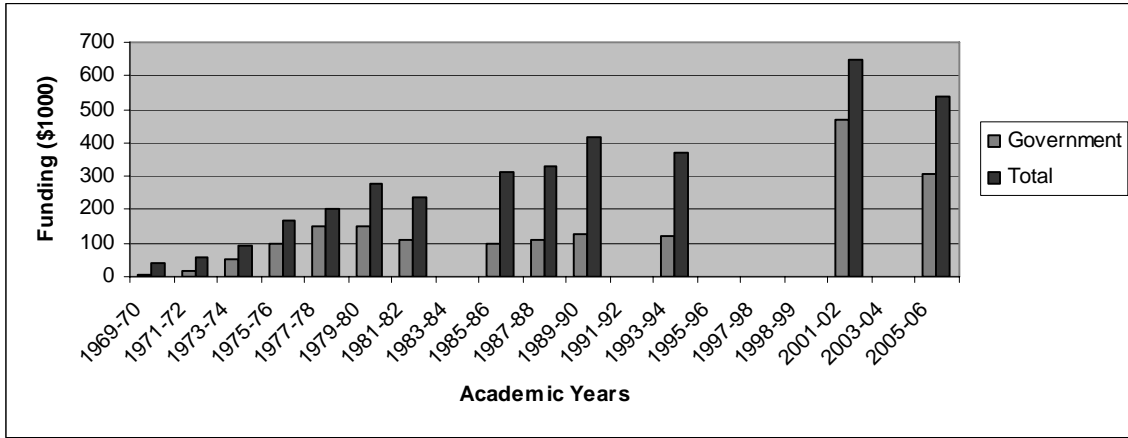


Figure 2: Institution Average Funding from Government and All Sources

DRAFT

Table 5: Power Program Graduate Enrollment 2005-06

School	GRADUATE ENROLLMENT (M=Masters, D=PhD, PT=part time, FT=full time)																												
	Supported by TA				Supported by RA				Supported by Fellowship or Scholarship				Self Support		Domestic Student		International Student		Total Enrolled										
	Pt	Tm	Fl	Tm	Pt	Tm	Fl	Tm	Pt	Tm	Fl	Tm	Pt	Tm	Pt	Tm	Pt	Tm	Pt	Tm									
	M	D	M	D	M	D	M	D	M	D	M	D	M	D	M	D	M	D	M	D									
ARIZONA STATE	0	0	0	4	0	0	11	17	0	0	3	1	0	0	5	2	0	0	3	6	0	0	16	18	0	0	19	24	
AUBURN	0	0	2	2	0	0	4	5	0	0	0	0	1	0	1	0	1	0	4	2	0	0	0	5	1	0	5	7	
BUCKNELL	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	
CAL POLY ST. U. S. LUIS OBISPO	0	0	5	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	4	0	0	0	0	0	0	0	4	0	
CAL. STATE-FRESNO	2	0	0	0	0	0	0	0	0	0	0	3	0	0	0	2	0	0	0	3	0	0	0	0	0	5	0	0	
CAL. STATE-SAC	5	0	0	0	2	0	0	0	0	0	0	20	0	10	0	17	0	10	0	0	0	10	0	17	0	20	0	0	
CARNEGIE MELLON	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	
CITADEL	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	
CLARKSON	0	0	1	0	0	0	4	1	0	0	1	1	0	0	0	0	0	4	0	0	0	2	2	0	0	6	2	0	
CLEMSON	0	0	4	2	2	0	6	4	0	0	2	0	2	0	1	0	2	0	6	2	0	0	6	2	2	0	12	4	
COL. SCHOOL OF MINES	0	0	4	0	0	0	2	1	0	0	0	0	35	6	0	1	39	7	0	0	0	0	2	1	35	6	6	2	
COLORADO 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	
DREXEL	0	0	1	0	0	0	3	8	0	0	2	0	1	1	5	0	8	1	8	2	0	0	2	6	15	0	15	8	
ECOLE DE TECHNOLOGIE SUPERIEURE	0	0	12	10	0	0	32	21	0	0	16	21	0	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	
FAMU-FSU	2	0	0	1	10	0	0	16	0	0	0	1	0	0	0	5	0	0	5	7	0	0	0	13	12	0	0	18	
FROSTBURG 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	
GANNON	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	6	0	0	0	0	0	0	
GEORGIA TECH	0	0	4	2	0	1	0	29	0	0	0	0	0	8	0	0	0	8	1	0	0	4	30	0	0	12	31	0	
GONZAGA	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	
HOWARD	0	0	2	2	0	1	4	6	0	0	0	1	0	0	0	0	1	1	2	0	0	5	7	0	2	6	9	0	
ILLINOIS TECH	0	0	0	6	0	0	3	14	0	0	0	3	15	3	35	2	15	3	5	4	0	0	30	21	15	3	35	25	
INDIANA-PURDUE-INDPLS	0	0	0	0	0	1	2	0	0	0	0	0	0	1	0	0	0	0	0	0	2	2	0	0	0	2	2	0	
IOWA STATE	0	0	2	0	0	0	6	16	0	0	0	0	4	0	0	0	0	3	1	4	0	5	15	4	0	8	16	0	
JOHNS HOPKINS	0	0	0	0	0	0	3	0	0	0	0	0	0	0	2	0	0	2	0	0	0	3	0	0	0	0	0	5	0
KANSAS STATE	0	0	1	0	0	0	1	1	0	0	0	0	19	2	0	0	19	2	1	0	0	1	1	19	0	2	1	0	
KETTERING	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	0
LAWRENCE TECH	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	0	0	2	0	0	2	0	0	0
LOUISIANA STATE	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	3	1	0
MCNEESE STATE	8	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	8	0	1	0	8	0	2	0	0	
MICHIGAN STATE	0	0	1	0	0	0	3	6	0	0	0	2	0	0	3	0	0	7	3	0	0	0	5	0	0	7	8	0	
MICHIGAN TECH	0	0	2	0	0	0	4	1	6	0	0	1	0	1	2	1	5	0	1	0	1	1	7	3	6	1	8	3	
MISSISSIPPI STATE	0	0	2	0	0	0	16	10	0	0	0	1	0	0	0	0	0	3	4	0	0	15	7	0	0	18	11	0	
MONTANA STATE	0	0	0	0	2	0	2	3	0	0	0	0	0	0	0	0	0	0	2	0	2	2	3	0	0	4	3	0	
NC STATE	0	0	0	4	0	0	4	20	0	0	0	0	0	0	0	0	0	2	2	0	0	2	18	0	0	4	20	0	
NCA&T	0	0	2	0	0	0	2	3	0	0	1	1	0	0	0	0	0	2	1	0	0	3	3	0	0	5	4	0	
NCA&T STATE	0	0	2	2	0	0	7	5	0	0	0	0	0	0	0	0	0	6	4	0	0	3	3	0	0	9	7	0	
NEBRASKA-LINCOLN	0	0	1	1	0	0	0	2	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2	0	0	1	3	0	
NEWFOUNDLAND	0	0	0	0	0	0	0	0	0	0	10	7	4	0	0	0	4	0	2	1	0	0	8	6	4	0	10	7	
NORTHEASTERN	0	2	9	2	0	0	6	8	0	0	2	0	0	2	0	0	2	2	0	0	0	15	8	0	2	17	10	0	
NORWICH	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	0
OHIO	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0
OHIO NORTHERN	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	0
OHIO STATE	0	0	2	5	0	0	0	8	0	0	0	3	2	0	0	0	2	0	2	0	0	0	16	2	0	2	16	0	
OKLAHOMA STATE	0	0	2	1	0	0	3	1	0	0	0	0	0	2	0	0	0	0	0	0	0	7	2	3	0	7	2	0	
OLD DOMINION	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	
PENN ST - HARRISBURG	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	6	0	0	0	0	0	0	0	6	0	0	0	0	0
PENN STATE	0	0	1	3	0	0	3	10	0	0	1	2	0	0	3	3	0	0	4	8	0	0	4	10	0	0	8	18	0
POLYTECHNIC	0	0	2	0	0	1	0	3	0	0	2	0	10	2	20	0	10	2	0	0	0	24	3	10	2	24	3	0	
PORTLAND STATE	0	0	1	0	0	0	1	2	4	3	0	0	1	1	1	0	5	4	1	0	0	2	2	5	4	3	2	0	
PURDUE	0	0	1	1	0	2	9	11	0	0	0	1	0	0	0	0	0	8	10	0	0	2	3	0	2	10	13	0	

School	GRADUATE ENROLLMENT (M=Masters, D=PhD, PT=part time, FT=full time)																											
	Supported by TA				Supported by RA				Supported by Fellowship or Scholarship				Self Support				Domestic Student				International Student				Total Enrolled			
	Pt Tm		FI Tm		Pt Tm		FI Tm		Pt Tm		FI Tm		Pt Tm		FI Tm		Pt Tm		FI Tm		Pt Tm		FI Tm		Pt Tm		FI Tm	
	M	D	M	D	M	D	M	D	M	D	M	D	M	D	M	D	M	D	M	D	M	D	M	D	M	D	M	D
RENSELAER	0	0	0	6	0	0	0	8	0	0	0	0	10	1	2	2	10	1	2	3	0	0	0	13	10	1	2	16
ROSE-HULMAN	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	0
ROWAN	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RUTGERS	0	0	1	2	0	0	0	7	0	0	0	0	0	0	2	0	0	0	0	0	0	0	3	10	0	0	3	10
SAGINAW VALLEY ST.	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
SEATTLE	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
SMITH	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
SOUTH DAKOTA STATE	3	0	0	0	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	6	0	0	30	0	0	0	0
SOUTHERN ILL.-CARBONDALE	0	0	4	2	0	0	0	2	0	0	0	0	2	3	0	0	2	2	0	0	0	5	4	0	2	5	4	0
SOUTHERN ILL.-EDWARDSVLE	2	0	0	0	2	0	0	0	0	1	0	0	0	1	0	10	0	15	0	30	0	30	0	0	0	0	0	0
SOUTHERN U. A&M	1	0	0	0	1	0	1	0	0	0	0	0	0	1	0	1	0	1	0	1	0	0	0	2	0	1	0	0
SYRACUSE	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0
TEMPLE	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	2	0	0	0	0
TENNESSEE STATE	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0
TEXAS A&M	0	0	5	5	0	0	30	30	0	0	0	0	0	0	0	0	0	5	5	0	0	30	30	0	0	35	35	0
TEXAS TECH	0	0	0	0	0	12	5	0	0	0	0	0	0	0	0	0	0	11	5	0	0	1	0	0	0	12	5	0
U. ALASKA FAIRBANKS	0	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0	0	3	3	0
U. ALBERTA	0	0	15	6	0	1	15	17	0	0	5	4	0	0	13	0	0	22	2	0	0	6	20	0	0	76	49	0
U. ARKANSAS	0	0	1	0	0	0	1	0	0	0	0	1	0	0	1	0	0	0	1	1	0	0	2	0	0	0	3	1
U. BRITISH COLUMBIA	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
U. BUFFALO	0	0	5	0	0	0	8	5	0	0	3	5	0	1	1	0	25	1	14	3	1	0	6	3	26	1	20	5
U. CALGARY	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
U. CENTRAL FLORIDA	0	0	0	2	0	1	2	6	0	0	0	2	0	0	0	0	1	2	2	0	0	0	4	0	1	2	6	0
U. COLORADO-Boulder	3	1	0	4	5	6	5	8	0	2	0	2	5	2	10	3	2	2	2	5	3	2	8	17	5	4	10	22
U. FLORIDA	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
U. HOUSTON	0	0	3	0	0	0	2	0	0	0	0	0	0	0	0	0	0	17	0	0	0	3	0	0	0	20	0	0
U. IDAHO	0	0	3	0	0	0	0	2	0	0	0	0	28	9	1	0	25	7	2	0	3	2	2	28	9	4	2	0
U. ILLINOIS-CHICAGO	0	0	0	2	0	0	1	4	0	0	0	0	0	0	0	0	0	0	0	0	0	1	6	0	0	1	6	0
U. ILLINOIS URB-CHAM	0	0	2	3	0	0	17	18	0	0	3	0	0	0	1	0	0	12	11	0	0	11	10	0	0	23	21	0
U. KENTUCKY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	2	0	0	3	2	0	0	0	0	0
U. MANITOBA	0	0	0	0	0	0	5	14	0	0	3	4	3	6	0	0	3	6	5	9	0	0	3	9	3	6	8	18
U. MASS-LOWELL	0	0	0	4	0	0	0	3	0	0	0	0	0	1	5	0	0	1	1	0	0	0	4	0	0	1	5	0
U. MICHIGAN-DEARBORN	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
U. MINNESOTA	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
U. MISSOURI-ROLLA	0	0	3	4	0	0	7	14	0	0	0	0	0	0	0	0	0	5	1	0	0	5	17	0	0	10	18	0
U. N.C.-CHARLOTTE	0	0	1	1	0	0	1	0	0	0	0	1	0	0	6	0	0	4	0	0	0	4	0	0	0	8	2	0
U. NEVADA, RENO	0	0	3	1	0	0	3	1	0	0	0	0	1	1	1	1	0	1	1	1	1	0	6	2	1	1	7	3
U. NEW BRUNSWICK	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
U. NORTH DAKOTA	0	1	1	0	0	1	2	6	0	0	0	0	0	0	0	0	0	1	3	0	0	1	3	0	2	3	6	0
U. OKLAHOMA	0	0	1	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	2	0	0	1	2	0
U. PITTSBURGH	0	0	1	0	0	0	1	0	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	0	0	0	3	0
U. S. CALIFORNIA	0	0	0	0	0	0	0	0	0	0	3	0	23	2	1	0	23	2	1	0	0	3	0	23	2	4	0	0
U. SASKATCHEWAN	0	0	0	0	0	4	5	0	0	0	1	2	2	6	0	2	0	5	1	0	0	5	5	2	0	10	6	0
U. SOUTH ALABAMA	0	0	3	0	0	0	12	0	0	0	0	0	110	0	0	0	15	0	0	0	115	0	0	0	130	0	0	0
U. TENNESSEE	0	0	1	0	0	0	4	12	0	0	1	0	1	0	2	0	1	0	7	0	0	0	1	12	1	0	8	12
U. TEXAS-ARLINGTON	3	0	4	5	1	0	2	9	2	0	0	2	4	2	1	1	1	1	1	2	10	0	4	15	21	3	12	34
U. TEXAS-AUSTIN	0	0	1	3	0	0	0	6	0	0	0	3	0	0	0	2	0	0	8	0	0	2	6	0	0	2	14	0
U. TOLEDO	0	2	2	0	0	0	1	1	0	0	1	0	0	0	0	0	0	4	1	0	2	0	0	0	2	4	1	0
U. WASHINGTON	0	0	1	0	0	0	0	6	0	0	2	1	0	1	1	0	0	1	4	2	0	0	5	0	1	4	7	0
U. WATERLOO	0	0	0	0	0	6	19	0	0	2	8	1	0	0	0	1	0	5	15	0	0	3	12	1	0	8	27	0
U. WESTERN ONTARIO	0	0	0	0	1	0	16	13	0	0	0	4	2	0	1	0	2	0	6	5	0	0	11	11	2	0	17	16
U. WINDSOR	0	0	4	2	0	0	3	1	0	0	0	0	0	2	1	0	0	3	0	0	0	1	2	0	0	4	2	0
U. WISC-MADISON	0	0	6	5	0	0	20	16	0	0	1	8	8	3	7	0	8	3	19	9	0	0	15	20	8	3	34	29
U. WISC-MILWAUKEE	0	0	0	1	0	0	0	4	0	0	0	0	3	2	2	0	3	2	0	0	0	0	5	3	2	2	5	0
U. WISC-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
US NAVAL 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
VALPARAISO	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
VILLANOVA	0	0	4	0	0	0	3	0	0	0	1	0	15	1	1	0	15	1	3	0	0	0	6	0	15	1	9	0
VIRGINIA TECH	0	0	2	9	0	0	0	8	0	0	0	4	3	3	2	2	3	0	3	11	0	3	1	12	3	3	4	23
WASHINGTON STATE	0	0	1	2	0	0	2	6	0	0	0	0	0	0	1	0	0	2	0	0	0	2	8	0	0	4	8	0
WEST VIRGINIA	0	0	2	0	0	0	7	1	0	0	0	0	0	0	0	1	0	0	0	0	0	9	2	0	0	9	2	0
WESTERN MICHIGAN	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
WICHITA STATE	0	0	2	1	0	0	5	2	0	0	0	0	8	3	0	0	8	3	2	0	0	0	5	3	8	3	7	3
WIDENER	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0

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

Supported by TA				Supported by RA				Fellowship or Scholarship				Self Supported			
Master		Doctor		Master		Doctor		Master		Doctor		Master		Doctor	
PT	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT	FT
29	162	6	128	28	363	15	514	12	72	5	102	248	380	61	165

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

DOMESTIC				INTERNATIONAL				Total			
Master		Doctor		Master		Doctor		Master		Doctor	
PT	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT	FT
287	339	56	230	84	601	13	600	371	940	69	830

*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.

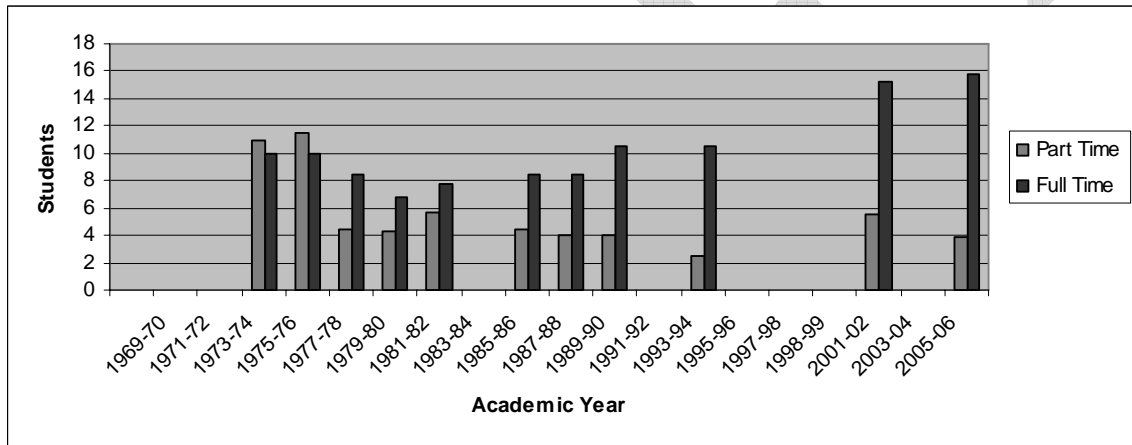


Figure 3: Average Number of Graduate Students per Institution – Part Time and Full Time

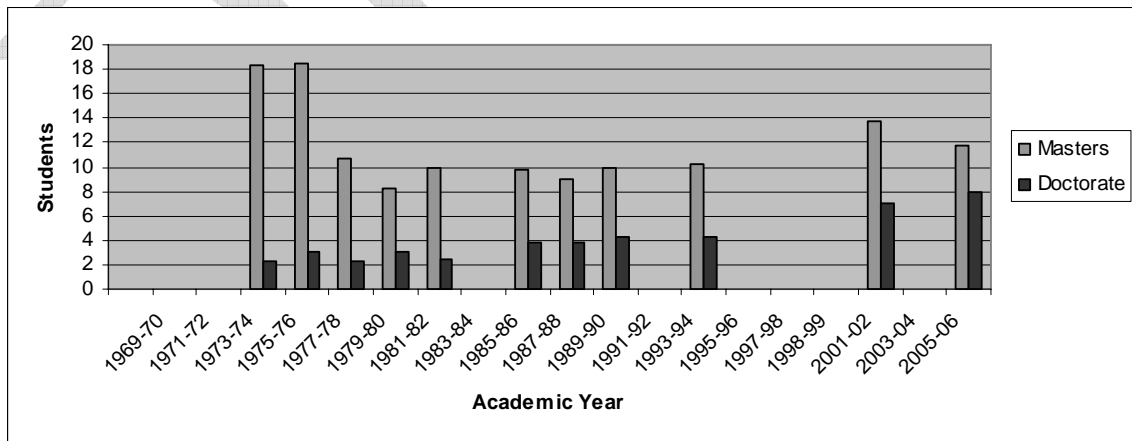


Figure 4: Average Number of Graduate Students per Institution – Masters and PhD

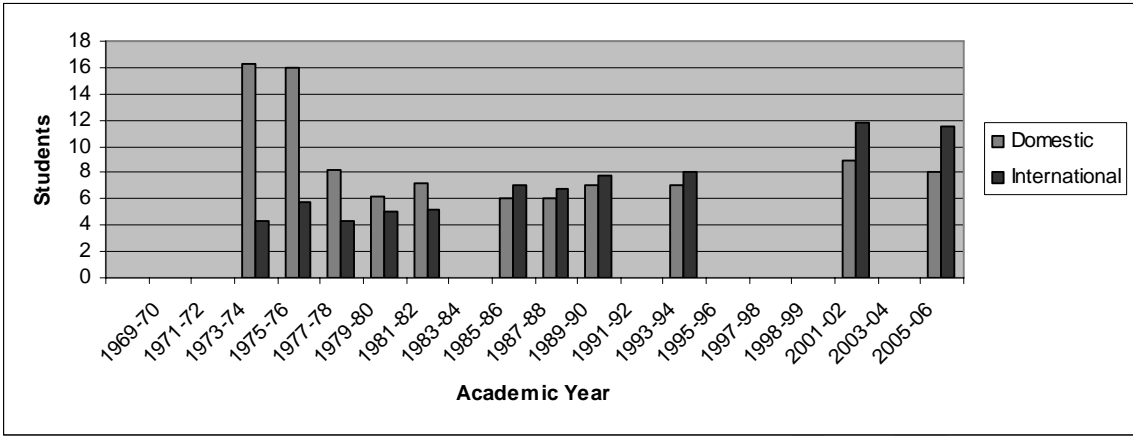


Figure 5: Average Number of Graduate Students per Institution – Domestic and International

DRAFT

Table 7: Power Course Offerings

Course Name	Course Credit	Lecture Hours	Lab Hours	Required for Ugrad/Grad Enrollment On Campus	Enrollment Off Campus	Off Campus Video	Off Campus Cable	Off Campus Video Stream
* Acronyms used in table:								
UE - Undergrad Elective								
UR - Undergrad Requirement								
GE - Graduate Elective								
GR - Graduate Required								
ARIZONA STATE UNIVERSITY								
Adv. Pwr. Elecs	3	2	3	GE	20	0	No	No
Comp. Sol. of Pwr. Sys.	3	3	0	GE	10	0	No	No
Elec. Pwr Devices	3	3	0	UE	20	0	No	No
Elec. Pwr. Quality	3	3	0	GR	15	0	Yes	Yes
Elec. Mach.	3	3	0	UE	15	0	No	No
Elec. Pwr Plants	3	3	0	UE	20	0	No	No
Enrg Conv & Transport	4	3	3	UR	225	0	No	No
Nuc Cncpts for 21st Cent	3	3	0	UE	20	0	No	No
Pwr Elecs	4	3	3	UE	30	0	No	No
Pwr Eng Seminar	1	1	0	GR	50	0	No	Yes
Pwr Sys Anal	3	3	0	UE	20	0	No	No
Pwr Sys Ops & Plan	3	3	0	GR	15	0	No	Yes
Pwr Sys Stability & Control	3	3	0	GE	10	0	No	Yes
Pwr Sys Transnts.	3	3	0	GE	15	0	No	No
Trans & Dist	3	3	0	GR	15	0	No	No
AUBURN UNIVERSITY								
Adv Elec Mach	3	3	0	GE	0	0	No	No
Elec Mach	3	3	0	UE	15	0	No	No
Elec Mach	3	3	0	GE	0	0	No	No
Elec Pwr Eng	3	3	0	UR	55	0	No	No
Pwr Elecs	3	3	0	UE	0	0	No	No
Pwr Elecs	3	3	0	GE	0	0	No	No
Pwr Sys Anal	3	3	0	GE	0	0	No	No
Pwr Sys Anal	3	3	0	UE	0	0	No	No
Pwr Sys Dynamics & Stability	3	3	0	GE	4	1	No	No
Pwr Sys Ops	3	3	0	GE	0	0	No	No
Pwr Sys Protec	3	3	0	UR	15	0	No	No
Pwr Sys Protec	3	3	0	GE	0	0	No	No
Pwr Sys Transnts.	3	3	0	GE	0	0	No	No
BUCKNELL								
Elec Mach	4	3	3	UR	25	0	No	No
Pwr Elecs	4	3	3	UE	10	0	No	No
CAL POLY STATE UNIVERSITY-SAN LUIS OBISPO								
Adv Pwr Elecs	4	4	0	UE	15	0	No	No
Elec Mach Thry	4	4	0	UE	12	0	No	No
Enrg Conv Elecmags	3	3	0	UR	96	0	No	No
Enrg Conv Elecmags Lab	1	0	3	UR	96	0	No	No
Intro to Mag Design	4	4	0	UE	12	0	No	No
Pwr Elecs I	4	3	3	UE	58	0	No	No
Pwr Elecs II	4	3	3	UE	37	0	No	No
Pwr Sys Anal I	4	4	0	UE	58	0	No	No
Pwr Sys Anal II	4	4	0	UE	32	0	No	No
Pwr Sys Design	4	4	0	UE	12	0	No	No
Pwr Sys Lab	1	0	3	UE	12	0	No	No
Pwr Sys Protec	4	4	0	UE	15	0	No	No
Solar-Photovolt Sys Design	4	4	0	UE	15	0	No	No
Sus Elec Enrg Conv	4	4	3	UE	12	0	No	No
CALIFORNIA STATE UNIVERSITY-FRESNO								
Elec Mach. Lab	1	0	3	UE	27	0	No	No
Elec Machiones & Enrg. Conv.	3	3	0	UR	33	0	No	No
Pwr. Sys. Anal.	3	3	0	UE	26	0	No	No
Pwr. Sys. Protec. & Econ.	3	3	0	UE	14	0	No	No

Course Name	Course Credit	Lecture Hours	Lab Hours	Required for Ugrad/Grad	Enrollment On Campus	Enrollment Off Campus	Off Campus Video	Off Campus Cable	Off Campus Video Stream
CALIFORNIA STATE UNIVERSITY-SACRAMENTO									
Adv. Pwr. Sys. Protec.	3	3	0	GE	0	0	No	No	No
Adv. Topics in Pwr. Sys.: Fault Anal.	3	3	0	GE	17	0	No	No	No
Adv. Topics in Pwr. Sys.: Subs. design	3	3	0	GE	14	0	No	No	No
Anal. of Faulted Pwr. Sys.	3	3	0	GR	17	0	No	No	No
Elec Pwr. Dist.	3	3	0	UE	35	0	No	No	No
Elec Pwr. Senior Design Project I	2	1	1	UR	27	0	No	No	No
Elec Pwr. Senior Design Project II	2	1	1	UR	23	0	No	No	No
Electromech. Enrg. Conv.	3	3	0	UR	60	0	No	No	No
Electromech. Lab	1	0	1	UE	32	0	No	No	No
Enrg. Sys. Control & Optim.	3	3	0	UE	26	0	No	No	No
Interconnected Pwr. Sys.	3	3	0	GE	7	0	No	No	No
Pwr. Elecs. Controlled Drives	3	3	0	UE	18	0	No	No	No
Pwr. Elecs. Lab	1	0	1	UE	0	0	No	No	No
Pwr. Sys. Anal.	3	3	0	UR	38	0	No	No	No
Pwr. Sys. Econ& Dispatch	3	3	0	GE	9	0	No	No	No
Pwr. Sys. Lab	1	0	1	UR	26	0	No	No	No
Pwr. Sys. Relay Protec.	3	3	0	UE	30	0	No	No	No
CARNEGIE MELLON UNIVERSITY									
Elec Enrg. Processing: Fndmntls. & Apps.	12	4	0	UE	12	0	No	No	No
Elec Pwr. Eng. & Economics	12	4	1	GE	0	0	No	No	No
Large Scale Dynamic Sys.	12	4	1	GE	12	0	No	No	No
CLARKSON UNIVERSITY									
Adv. Elec Mach.	3	3	0	GE	3	0	No	No	No
Alt. Enrg. Sys.	3	3	0	UE	0	0	No	No	No
Alt. Enrg. Sys.	3	3	0	GE	0	0	No	No	No
Dielecs	3	3	0	GE	0	0	No	No	No
DiElecs	3	3	0	UE	0	0	No	No	No
Elec Mach. & Drives	3	3	0	UE	0	0	No	No	No
Elec Mach. & Drives	3	3	0	GE	0	0	No	No	No
Enrg. Conv.	3	3	0	UR	48	0	No	No	No
High Volt. Techniques & Measmnts.	3	3	0	UE	0	0	No	No	No
High Volt. Techniques & Measmnts.	3	3	0	GE	0	0	No	No	No
Pwr. Dist. & Utilization	3	3	0	UE	24	0	No	No	No
Pwr. Elecs.	3	2	2	UE	14	0	No	No	No
Pwr. Elecs.	3	2	2	GE	7	0	No	No	No
Pwr. Qual& Pwr. Sys. Protec.	3	3	0	UE	8	0	No	No	No
Pwr. Qual& Pwr. Sys. Protec.	3	3	0	GE	1	0	No	No	No
Pwr. Sys. Eng.	3	3	0	UE	44	0	No	No	No
CLEMSON UNIVERSITY									
Adv. Pwr. Elecs.	3	3	0	GE	0	0	No	No	No
Comp. Meth n Pwr. Sys. Anal.	3	3	0	GE	10	0	No	No	No
Dist. Sys. Design	3	3	0	GE	0	0	No	No	No
Elec Mach. & Drives	3	3	0	UE	15	0	No	No	No
Intro. TO Pwr. Sys.	3	3	0	UR	70	20	No	No	No
Motor Control	3	3	0	GE	8	0	No	No	No
Pwr. Sys. Anal.	3	3	0	UE	25	5	Yes	No	No
Pwr. Sys. Dynamics & Control	3	3	0	GE	0	0	No	No	No
Pwr. Sys. LAB	1	0	2	UE	20	0	No	No	No
Pwr. Sys. Ops. & Control	3	3	0	GE	0	0	No	No	No
Pwr. Sys. Protec.	3	3	0	GE	8	3	Yes	No	No
Pwr. Sys. Transnts.	3	3	0	GE	8	0	No	No	No

Course Name	Course Credit	Lecture Hours	Lab Hours	Required for Ugrad/Grad	Enrollment On Campus	Enrollment Off Campus	Off Campus Video	Off Campus Cable	Off Campus Video Stream
COLORADO SCHOOL OF MINES									
Adv. Elec Mach. Dynamics	3	3	0	GE	30	0	No	No	No
Adv. Enrg. Sys. Lab	1	0	1	UE	12	0	No	No	No
Comp. Methods in Pwr. Sys. Anal.	3	3	0	GE	25	0	No	No	No
Fndmntls. of Elec Mach.	4	3	1	UR	70	0	No	No	No
High Volt. AC & DC Trans.	3	3	0	GE	32	0	No	No	No
Pwr. Dist. Sys. Eng.	3	3	0	GE	30	0	No	No	No
Pwr. Elecs.	3	3	0	UE	12	0	No	No	No
Pwr. Quality	3	3	0	GE	20	0	No	No	No
Pwr. Sys. Anal.	3	3	0	UE	35	0	No	No	No
Pwr. Sys. Protec. & Relaying	3	3	0	GE	30	0	No	No	No
Renewable Enrg. & Distributed Gen.	3	3	0	GE	12	0	No	No	No
Variable Freq. Drive	3	3	0	GE	6	0	No	No	No
COLORADO STATE UNIVERSITY									
Pwr. Elecs. 1	3	3	0	GE	10	12	No	No	No
Pwr. Elecs. 2	3	3	0	GE	10	12	No	No	No
Pwr. Sys.	3	3	0	UE	18	2	No	No	No
DREXEL UNIVERSITY									
Motor Control	4	3	1	UE	65	0	No	No	No
Enrg. Management Sys.	4	3	1	UE	40	0	No	No	No
Pwr. Sys. Anal. I	3	3	0	UE	32	0	No	No	No
Pwr. Sys. Anal. II	4	3	1	UE	29	0	No	No	No
Pwr. Sys. Anal. III	3	3	0	UE	28	0	No	No	No
Dist. Sys. I	3	3	0	UE	0	0	No	No	No
Dist. Sys. II	3	2	1	UE	0	0	No	No	No
Dist. Sys. III	3	2	1	UE	0	0	No	No	No
Pwr. Elecs. I	3	3	0	UE	10	0	No	No	No
Pwr. Elecs. II	3	0	3	UE	7	0	No	No	No
Pwr. Elecs. III	3	3	0	UE	7	0	No	No	No
Pwr. Sys. Anal.	3	3	0	GR	12	7	No	No	Yes
Comp. Analytical Method for Pwr. Sys.	3	3	0	GR	12	7	No	No	Yes
Synchro. Mach. Modeling	3	3	0	GR	12	7	No	No	Yes
Dist. Sys. I	3	3	0	GE	0	0	No	No	No
Dist. Sys. II	3	2	1	GE	0	0	No	No	No
Dist. Sys. III	3	2	1	GE	0	0	No	No	No
Pwr. Sys. Dynamics	3	3	0	GE	0	0	No	No	No
Pwr. Sys. Security	3	3	0	GE	0	0	No	No	No
Economic Ops. of Pwr. Sys.	3	3	0	GE	0	0	No	No	No
Relaying & Protec. Sys. I	3	1	2	GE	0	0	No	No	No
Relaying & Protec. Sys. II	3	1	2	GE	0	0	No	No	No
Relaying & Protec. Sys. III	3	1	2	GE	0	0	No	No	No
Pwr. Elecs. I	3	3	0	GE	12	0	No	No	No
Pwr. Elecs. II	3	0	3	GE	10	0	No	No	No
Pwr. Elecs. III	3	3	0	GE	8	0	No	No	No
FAMU-FSU									
Adv. Pwr. Elecs.	3	3	0	GE	8	0	No	No	No
Electromech. Dynamics	3	3	0	UE	15	0	No	No	No
Fndmntls. of Pwr. Sys.	3	3	0	UR	45	0	No	No	No
Pwr. Conv.	3	3	0	UE	10	0	No	No	No
Pwr. Elecs.	3	3	0	UE	30	0	No	No	No
Pwr. Gen. & Control	3	3	0	GE	8	0	No	No	No
Pwr. Sys. Anal.	3	3	0	GR	6	0	No	No	No
Pwr. Sys. Relaying	3	3	0	GE	6	0	No	No	No
Pwr. Sys. Transnts.	3	3	0	GE	9	0	No	No	No
Pwr. Sys. I	3	3	0	UE	21	4	No	No	No
FROSTBURG STATE UNIVERSITY									
Control Sys. Lab	2	1	3	UE	0	0	No	No	No
Pwr. Elecs.	3	3	0	UE	0	0	No	No	No
Specil. Probs in ME: Robot Design & Control	3	2	2	UE	20	0	No	No	No

Course Name	Course Credit	Lecture Hours	Lab Hours	Required for Ugrad/Grad	Enrollment On Campus	Enrollment Off Campus	Off Campus Video	Off Campus Cable	Off Campus Video Stream
GANNON UNIVERSITY									
Elec Mahcines	3	3	1	UR	10	0	No	No	No
Modeling&Anal. of Elec Mach	3	3	0	GE	15	0	No	No	No
Pwr. Elecs.	3	3	0	GR	10	0	No	No	No
Pwr. Sys. I	3	3	0	UE	4	0	No	No	No
Pwr. Sys. II	3	3	0	UE	4	0	No	No	No
GEORGE WASHINGTON UNIVERSITY									
Direct Elec Enrg. Conv.	3	3	0	GE	0	0	No	No	No
Elec Enrg. Conv.	3	3	0	UR	10	0	No	No	No
Elec Pwr. Sys.	3	3	0	UE	8	0	No	No	No
Electromech. Enrg. Conv.	3	3	0	GR	0	0	No	No	No
Pwr. Elecs.	3	3	0	GE	0	0	No	No	No
Pwr. Sys. Control & Stability	3	3	0	GE	0	0	No	No	No
GEORGIA INSTITUTE OF TECHNOLOGY									
Building Elec Sys. & Illumination	3	3	0	UE	0	0	No	No	No
Dynamics & Control of Elec Mach. Drives	3	3	0	GE	15	0	No	No	No
Dynamics & Control of Elec Mach. Drives	3	3	0	GE	0	0	Yes	No	Yes
Elec Mach. Anal.	3	3	0	GE	0	0	Yes	No	Yes
Elec Mach. Anal.	3	3	0	GE	13	2	Yes	No	No
Elec Pwr. Quality	3	3	0	GE	15	0	No	No	No
Elec Pwr. Quality	3	3	0	GE	0	0	Yes	No	Yes
Electromech. & Electromag. Enrg. Conv.	3	3	0	UE	0	0	No	No	No
Electromech. & Electromag. Enrg. Conv.	3	3	0	UE	85	0	No	No	No
Enrg. Conv. & Mechatronics	3	2	1	UE	0	0	No	No	No
Enrg. Sys. Design	3	3	0	UE	0	0	No	No	No
Pwr. Electr. Circuits	3	3	0	GE	0	0	Yes	No	Yes
Pwr. Electr. Circuits	3	3	0	GE	13	2	Yes	No	No
Pwr. Electr.Devices&SubSys	3	3	0	GE	0	0	Yes	No	Yes
Pwr. Elecs.	3	3	0	UE	0	0	No	No	No
Pwr. Elecs.	3	2	3	UE	15	0	No	No	No
Pwr. Elecs. CAD Lab	3	3	0	GE	0	0	No	No	No
Pwr. Sys. Anal. & Control	3	3	0	UE	0	0	Yes	No	Yes
Pwr. Sys. Anal. & Control	3	3	0	UE	15	0	No	No	No
Pwr. Sys. Eng.	3	3	0	UE	15	0	No	No	No
Pwr. Sys. Eng.	3	3	0	UE	0	0	Yes	No	Yes
Pwr. Sys. Plan. & Reliability	3	3	0	GE	0	0	Yes	No	Yes
Pwr. Sys. Plan. & Reliability	3	3	0	GE	15	0	No	No	No
Pwr. Sys. Protec.	3	3	0	GE	15	0	No	No	No
Pwr. Sys. Protec.	3	3	0	GE	0	0	Yes	No	Yes
Pwr. Sys. Stability	3	3	0	GE	0	0	Yes	No	Yes
Pwr. Sys. Stability	3	3	0	GE	15	0	No	No	No
Pwr. Sys. Control & Ops.	3	3	0	GE	15	0	No	No	No
Pwr. Sys. Control & Ops.	3	3	0	GE	0	0	Yes	No	Yes
GONZAGA UNIVERSITY									
Anal. of Pwr. Sys.	3	3	0	UE	10	0	No	No	No
Comp. Meth. for Pwr. Sys.	3	3	0	UE	8	0	No	No	No
Intro to Elec Pwr. Eng.	3	3	3	UR	20	0	No	No	No
GROVE CITY COLLEGE									
Elec Mach.	3	3	0	UR	10	0	No	No	No
HOWARD UNIVERSITY									
Comp. Aided Pwr. Sys.	3	3	1	GR	5	0	No	No	No
Adv. Pwr. Sytems	3	3	0	UE	6	0	No	No	No
Enrg. Conv. & Lab	5	3	2	UR	70	0	No	No	No
Pwr. Com. & Control	3	3	0	UE	11	0	No	No	No
Pwr. Sys. Control	3	3	0	GR	5	0	No	No	No
Pwr. Sytem Anal. /Pwr. Elecs.	6	6	0	UE	24	0	No	No	No

Course Name	Course Credit	Lecture Hours	Lab Hours	Required for Ugrad/Grad	Enrollment On Campus	Enrollment Off Campus	Off Campus Video	Off Campus Cable	Off Campus Video Stream
ILLINOIS INSTITUTE OF TECHNOLOGY									
Adjustable Speed Drives	3	3	0	UE	24	6	Yes	No	Yes
Adv. Pwr. Electr. Converters	3	3	0	UE	24	6	Yes	No	Yes
Adv. Topics in Pwr. Sys.	3	3	0	UE	20	4	Yes	No	Yes
Analytical Methods in PwrSys	3	3	0	UE	24	6	Yes	No	Yes
Applied Optim. for Engineers	3	3	0	UE	40	8	Yes	No	Yes
Automation & Control	4	3	3	UE	16	0	Yes	No	Yes
Comp. Intelligence in Eng.	3	3	0	UE	50	15	Yes	No	Yes
Cont. & Ops. of Elec Pwr. Sys.	3	3	0	UE	30	8	Yes	No	Yes
Control Sys.	4	3	3	UE	20	4	Yes	No	Yes
Dereg. Pwr. Sys.	3	3	0	UE	30	10	Yes	No	Yes
Discrete Time Sys.	3	3	0	UE	20	4	Yes	No	Yes
Elec Motor Drives	4	3	3	UE	26	6	Yes	No	Yes
Fault-Tolerant Pwr. Sys.	3	3	0	UE	20	4	Yes	No	Yes
Fndmntls. of Pwr. Eng.	4	3	3	UR	60	0	No	No	No
High Volt. Pwr. Trans.	3	3	0	UE	15	4	Yes	No	Yes
Indust. Apps. of Pwr. Elecs. & Motor Drives	2	2	0	UE	20	10	Yes	No	Yes
Indust. Elecs. Design	4	3	3	UE	16	0	Yes	No	Yes
Linear Sys. Theory	3	3	0	UE	20	4	Yes	No	Yes
Market Ops. in Elec Pwr. Sys.	3	3	0	UE	30	10	Yes	No	Yes
Motion Control Sys. Dynamics	3	3	0	UE	20	8	Yes	No	Yes
Optimal Feedback Control	3	3	0	UE	20	4	Yes	No	Yes
Pwr. Electr. Dynam& Control	3	3	0	UE	20	6	Yes	No	Yes
Pwr. Elecs.	4	3	3	UE	30	6	Yes	No	Yes
Pwr. Market Economy & Security	3	3	0	UE	20	4	Yes	No	Yes
Pwr. Sys. Plan.	3	3	0	UE	20	6	Yes	No	Yes
Pwr. Sys. Reliability	3	3	0	UE	20	4	Yes	No	Yes
Pwr. Sys. Transaction Management	3	3	0	UE	20	4	Yes	No	Yes
Pwr. Sys. Anal.	4	3	3	UE	24	6	Yes	No	Yes
Pwr. Sys. Dynamics&Stability	3	3	0	UE	20	4	Yes	No	Yes
Pwr. Sys. Relaying	3	3	0	UE	15	4	Yes	No	Yes
Reliability Theory & Sys. Implementation	3	3	0	UE	20	4	Yes	No	Yes
Vehicular Pwr. Sys.	2	2	0	UE	35	15	Yes	No	Yes
INDIANA UNIVERSITY-PURDUE UNIVERSITY INDIANAPOLIS									
Eng. Conv.	3	3	0	UE	0	15	No	No	No
Spec. Tops Dgtl. Relaying or Ongng Resrch	3	3	0	GE	0	5	No	No	No
IOWA STATE UNIVERSITY									
Economic Sys. for Elec Pwr. Plan.	3	3	0	UE	43	0	No	No	No
Eng. Sys. & Pwr. Elecs.	3	3	0	UR	120	0	No	No	No
Intro. to Eng. Dist. Sys.	3	3	0	UE	54	0	No	No	No
Pwr. Elecs. & Elec Drives	3	2	3	UE	48	0	No	No	No
Pwr. Sys. Anal. I	3	3	0	UE	56	5	Yes	No	Yes
Pwr. Sys. Anal. II	3	3	0	UE	52	5	Yes	No	Yes
Pwr. Sys. Dynamics	3	3	0	GR	12	4	Yes	No	Yes
Pwr. Sys. Steady-State Anal.	3	3	0	GR	13	2	Yes	No	Yes
PwrSys Under Abnrml Op. Cndtns	3	3	0	GE	17	5	Yes	No	Yes
Reliability Evaluation of Elec Pwr. Sys.	3	3	0	GE	10	3	Yes	No	Yes
Seminar in Elec Pwr.	1	1	0	GR	22	0	No	No	No
Volt. Instability & VAR Plan.	3	3	0	GE	10	3	Yes	No	Yes

Course Name	Course Credit	Lecture Hours	Lab Hours	Required for Ugrad/Grad	Enrollment On Campus	Enrollment Off Campus	Off Campus Video	Off Campus Cable	Off Campus Video Stream
KANSAS STATE UNIVERSITY									
Adv. Pwr. Elecs.	3	3	0	GE	1	11	No	No	Yes
Dist. Sys. Eng.	3	3	0	GE	2	0	No	No	Yes
Eng. Conv.	3	3	0	UR	61	0	No	No	No
Pwr. Elecs.	3	3	0	UE	20	11	No	No	Yes
Pwr. Lab	3	2	3	UE	16	0	No	No	No
Pwr. Seminar	1	1	0	UE	13	0	No	No	No
Pwr. Sys. Design	3	3	0	UE	21	0	No	No	Yes
Pwr. Sys. Ops. & Control	3	3	0	GE	0	0	No	No	Yes
Pwr. Sys. Protec.	3	3	0	UE	13	17	No	No	Yes
Pwr. Sys. Stability	3	3	0	GE	0	0	No	No	Yes
KETTERING UNIVERSITY									
Elec Mach.	4	3	2	UE	37	0	No	No	No
Fndmntls. of Pwr. Sys.	4	3	2	UE	55	0	No	No	No
High Volt. Gen. & Measmnt Techniques	4	3	2	UE	51	0	No	No	No
Pwr. Elecs. & Apps.	4	3	2	UE	26	0	No	No	No
Comp. Methods in Pwr. Sys. Anal.	4	4	0	UE	10	0	No	No	No
LAMAR UNIVERSITY									
Elec Mach. Lab	1	0	1	UR	20	0	No	No	No
Elec Mach.	3	3	0	UR	20	0	No	No	No
LAWRENCE TECHNOLOGICAL UNIVERSITY									
Alternative Eng.	3	3	0	UE	30	0	No	No	No
Elec Mach.	4	3	1	UE	12	0	No	No	No
Elec Pwr. Dist.	4	3	0	GE	0	0	No	No	No
Intro to Elec Sys.	4	3	1	UE	12	0	No	No	No
Process Control	4	3	1	UE	12	0	No	No	No
Switch-Mode Pwr. Supplies	3	3	0	UE	6	0	No	No	No
LOUISIANA STATE UNIVERSITY									
Adv. Motors	3	3	0	GE	4	0	No	No	No
Dist. Sys. Design	3	3	0	UE	65	0	No	No	No
Elec Mach. Anal.	3	3	0	UE	29	0	No	No	No
Faulted Pwr. Sys. Anal.	3	3	0	GE	0	0	No	No	No
Hrnc Filter & CompDesign	3	3	0	UE	20	0	No	No	No
Harmonics in Pwr. Sys.	3	3	0	GE	5	0	No	No	No
Intro. to Elec Pwr.	3	3	0	UR	90	0	No	No	No
Non sinusoidal PwrSys Anal.	3	3	0	UE	0	0	No	No	No
Pwr. Elecs.	3	2	2	UE	42	0	No	No	No
Pwr. Gen. & Control	3	3	0	GE	0	0	No	No	No
Pwr. Lab	2	1	2	UE	0	0	No	No	No
Pwr. Sys. Anal.	3	3	0	UE	7	0	No	No	No
Pwr. Sys. Control & Ops.	3	3	0	UE	32	0	No	No	No
Pwr. Sys. Design	3	3	0	UE	0	0	No	No	No
Pwr. Sys. Dynamics	3	3	0	GE	0	0	No	No	No
Pwr. Sys. Protec.	3	3	0	GE	0	0	No	No	No
Pwr. Sys. Reliability	3	3	0	GE	0	0	No	No	No
Pwr. Trans. & Control	3	3	0	GE	0	0	No	No	No
Static Pwr. Converters	3	3	0	GE	8	0	No	No	No
Variable Speed Drives	3	3	0	UE	19	0	No	No	No
MANHATTAN COLLEGE									
Adv. Topics in Pwr. Eng.	3	3	0	GE	0	0	No	No	No
Elec Mach.: Design & Apps.	3	3	0	UE	0	0	No	No	No
Pwr. I	3	3	0	GE	10	0	No	No	No
Pwr. Sys. I	3	3	0	UE	15	0	No	No	No
Pwr. Sys. II	3	3	0	UE	5	0	No	No	No
Protec. Relaying	3	3	0	GE	0	10	No	No	No

Course Name	Course Credit	Lecture Hours	Lab Hours	Required for Ugrad/Grad	Enrollment On Campus	Enrollment Off Campus	Off Campus Video	Off Campus Cable	Off Campus Video Stream
MCNEESE STATE UNIVERSITY									
Anal. of public policies -- Enrg. & Envrn.	3	3	0	GE	20	0	No	No	No
Elec Mach., motors, & motor drives	3	3	0	UE	10	0	No	No	No
Indust. Pwr. Sys.	3	3	0	GE	20	0	No	No	No
Pwr. Elecs.	3	3	0	UE	10	0	No	No	No
Pwr. Gen.	3	3	0	GE	20	0	No	No	No
Pwr. Sys. Anal.	4	3	1	UR	15	0	No	No	No
Pwr. Sys. Ops. & control	3	3	0	UE	10	0	No	No	No
Pwr. Sys. Protec. & relaying	3	3	0	UE	10	0	No	No	No
UNIVERSITY OF NEWFOUNDLAND									
Adv. Control Sys.	3	3	3	GE	6	2	No	No	No
Adv. Elec Mach.	3	3	0	GE	5	1	No	No	No
Adv. Pwr. Elecs.	3	3	0	GE	8	2	No	No	No
Comp. & Control Methods in Pwr. Sys.	3	3	0	GE	4	2	No	No	No
Pwr. Sys. Protec.	3	3	0	GE	5	1	No	No	No
Renewable Enrg. Sys.	3	3	0	GE	8	2	No	No	No
Michigan State University									
Adv. AC Mach.	3	3	0	GE	7	0	No	No	No
Control of Elec Drives	3	3	0	GE	7	0	No	No	No
Elec Mach./Pwr. Elecs.	3	3	0	UE	0	0	No	No	No
Pwr. Elecs. Sys.	3	3	0	GE	6	0	No	No	No
Pwr. Elecs. Fndmntls., Circuit Design & Anal.	3	3	0	GE	6	0	No	No	No
Pwr. Lab	1	0	1	UE	20	0	No	No	No
Pwr. Sys. Anal.	3	3	0	UE	35	0	No	No	No
Pwr. Sys. Ops. & Control	3	3	0	GE	7	0	No	No	No
Pwr. Sys. Stability & Control	3	3	0	GE	8	0	No	No	No
MICHIGAN TECHNOLOGICAL UNIVERSITY									
Adv. Methods in Pwr. Sys.	3	3	0	GE	6	5	No	No	Yes
Comp. Modeling of Pwr. Sys.	3	3	0	GE	5	6	No	No	No
Dist. Engineering	3	3	0	GE	6	0	No	No	Yes
Dist. Eng.	3	3	0	UE	27	0	No	No	No
Intro to Enrg. Sys.	3	3	0	UR	130	0	No	No	No
Motor Drives	4	3	1	UE	56	0	No	No	No
Pwr. Sys. Anal. I	3	3	0	UE	63	0	No	No	No
Pwr. Sys. Anal. II	3	3	0	UE	42	0	No	No	No
Pwr. Sys. Ops.	3	3	0	GE	0	0	No	No	Yes
Pwr. Sys. Protec.	3	3	0	UE	0	0	No	No	Yes
Pwr. Sys. Protec.	3	3	0	GE	0	0	No	No	Yes
Pwr. Sys. Protec. Lab	1	0	1	GE	0	0	No	No	No
Transient Anal. Methods	3	3	0	GE	5	7	No	No	Yes
MINNESOTA STATE UNIVERSITY-MANKATO									
Electromech. Devices	3	2	3	UR	22	0	No	No	No
MISSISSIPPI STATE UNIVERSITY									
Fund Enrg. Sys.	4	3	1	UR	44	0	No	No	No
Fund of High Volt. Engr	3	3	0	GE	4	0	No	No	No
Fund of High Volt. Engr.	3	3	0	UE	15	0	No	No	No
High Volt. Eng	3	3	0	GE	4	0	No	No	No
Insul Coord Pwr. Sys.	3	3	0	GE	6	0	No	No	No
Insul Coord Pwr. Sys.	3	3	0	UE	13	0	No	No	No
Intro to Pwr. Elect Elecs.	3	3	0	GE	10	0	No	No	No
Intro to Pwr. Elecs.	3	3	0	UE	6	0	No	No	No
Pwr. Sys. Relaying & Controls	3	3	0	UE	0	0	No	No	No
Pwr. Trans. Sys.	3	3	0	UE	18	0	No	No	No
Pwr. Trans. Sys.	3	3	0	GE	9	0	No	No	No
Prw Electr. App. in Pwr Sys.	3	3	0	GE	12	0	No	No	No
Pwr Distrib Sys.	3	3	0	UE	21	0	No	No	No
Pwr Distrib Sys.	3	3	0	GE	7	9	No	No	Yes
Pwr Sys Economics & Dereg.	3	3	0	GE	18	0	No	No	No
Pwr Sys. Seminar	1	1	0	GE	12	0	No	No	No

Course Name	Course Credit	Lecture Hours	Lab Hours	Required for Ugrad/Grad	Enrollment On Campus	Enrollment Off Campus	Off Campus Video	Off Campus Cable	Off Campus Video Stream
MIT									
Elec Mach.	12	3	0	GE	12	0	No	No	No
Electromag. Fld.s, Forces & Motion	12	3	0	GE	20	0	No	No	No
Intro. to Pwr. Sys.	12	3	0	UE	18	0	No	No	No
Pwr. Elecs.	12	3	0	GE	20	0	No	No	No
Pwr. Elecs. Project Lab	12	3	6	UE	30	0	No	No	No
Seminar in Adv. Pwr. Sys.	12	3	0	GE	8	0	No	No	No
MONTANA STATE UNIVERSITY									
Adv. Pwr. Elecs.	3	3	0	GE	0	0	No	No	No
Alternative Enrg. Distributed Gen.	3	3	0	GE	0	0	No	No	No
Enrg. Conv.	4	3	2	UR	34	0	No	No	No
Indust. Pwr. Sys.	3	3	0	UE	7	0	No	No	No
Pwr. Elecs.	3	2	2	UE	4	0	No	No	No
Pwr. Sys. Dynamics	3	3	0	GE	2	0	No	No	No
Pwr. Sys. Anal.	3	3	0	UE	5	0	No	No	No
NC STATE UNIVERSITY									
FACTS for Pwr Syst Stbl & Cntrl	3	3	0	GE	10	0	No	No	No
Intr. to Pwr. Sys.	3	3	0	UE	30	0	No	No	No
Pwr. Elecs.	3	3	0	UE	25	0	No	No	No
Pwr. Semiconductor Devices	3	3	0	GE	15	0	No	No	No
Pwr. Sys. Anal.	3	3	0	UE	25	0	No	No	No
Pwr. Sys. Oper. & Contrl.	3	3	0	GE	10	0	No	No	No
Three phase Pwr. Converters	3	3	0	GE	18	0	No	No	No
Utility Apl of Pwr. Elecs.	3	3	0	GE	15	0	No	No	No
NCA&T STATE UNIVERSITY									
Adv. Pwr. Sys. Lab	2	0	4	UE	9	0	No	No	No
Pwr. Elecs.	3	3	0	UE	22	0	No	No	No
Pwr. Sys. Anal.	3	3	0	UE	12	0	No	No	No
Pwr. Sys., Enrg. Conv. & Elec Mach.	3	3	0	UR	28	0	No	No	No
NEBRASKA-LINCOLN									
Comp. Methods in Pwr. Sys.	3	3	0	GE	0	0	No	No	No
Elec Mach.	3	3	0	UE	24	0	No	No	No
Intro to Pwr. Sys.	3	3	0	UE	26	0	No	No	No
Pwr. Electr. Semiconductor Devices	3	3	0	GE	4	0	No	No	No
Pwr. Elecs.	3	3	0	UE	25	0	No	No	No
Pwr. Sys. Anal.	3	3	0	UE	0	0	No	No	No
Pwr. Sys. Ops. & Control	3	3	0	UE	0	0	No	No	No
Pwr. Sys. Plan.	3	3	0	UE	22	0	No	No	No
Renewable Enrg. Sys.	3	3	0	UE	0	0	No	No	No
NORTHEASTERN UNIVERSITY									
Pwr. Elecs.	4	4	0	GE	20	10	No	No	Yes
Pwr. Sys. Anal. I	4	4	0	GE	15	0	No	No	No
Elec Drives	4	4	0	GE	15	0	No	No	No
Elec Mach.	4	4	0	GE	15	0	No	No	Yes
Pwr. Sys. Anal. II	4	4	0	GE	10	0	No	No	No
Pwr. Sys. Ops. & Control	4	4	0	GE	15	0	No	No	No
Spec. Topics in Pwr. Elecs.	4	4	0	GE	5	0	No	No	No
Spec. Topics in Elec Drives	4	4	0	GE	0	0	No	No	No
Spec. Topics in Pwr. Sys.	4	4	0	GE	3	0	No	No	No
Pwr. Sys. Anal.	4	4	0	UE	20	0	No	No	No
Pwr. Elecs.	4	4	0	UE	20	5	No	No	Yes
Elec Mach.	4	4	0	UE	15	5	No	No	Yes
Pwr. Sys. Lab	1	0	1	UE	20	0	No	No	No
NORWICH UNIVERSITY									
Adv. Topics - Pwr. Sys.	3	3	0	UE	0	0	No	No	No
Elec Mach.	4	3	2	UR	11	0	No	No	No

Course Name	Course Credit	Lecture Hours	Lab Hours	Required for Ugrad/Grad	Enrollment On Campus	Enrollment Off Campus	Off Campus Video	Off Campus Cable	Off Campus Video Stream
SEATTLE UNIVERSITY									
Enrg. Conv. Lab	2	0	4	UE	16	0	No	No	No
Enrg. Conv.	4	4	0	UE	18	0	No	No	No
Pwr. Sys.	4	4	0	UE	17	0	No	No	No
SMITH COLLEGE									
Elec Enrg. Sys.	4	3	0	UE	8	0	No	No	No
SOUTH DAKOTA STATE UNIVERSITY									
Electromech. Sys. Lab	1	0	3	UR	28	0	No	No	No
Electromech. Sys.	3	3	0	UR	28	0	No	No	No
Hybrid Photovolt Pwr Sys Lab	1	0	1	UE	10	0	No	No	No
Hybrid Photovolt. Pwr. Sys.	3	3	0	UE	20	0	No	No	No
Hybrid Photovolt. Pwr. Sys.	3	3	0	GE	5	0	No	No	No
Pwr. Sys. I	3	3	0	UE	0	0	No	No	No
SOUTHERN ILLINOIS UNIVERSITY CARBONDALE									
Adv. Appl of Pwr. Elecs. Sys.	3	3	0	GE	4	0	No	No	No
Adv. Elec Network Theory	3	3	0	GR	0	0	No	No	No
Comp. Aided Elec. Circuit	4	4	0	UE	0	0	No	No	No
Elec Enrg. Sources	4	4	0	UE	5	0	No	No	No
Elec Pwr. Dist.	4	4	0	UE	25	0	No	No	No
Electromag. Enrg. Conv.	4	3	1	UR	45	0	No	No	No
High Volt. DC Trans. Sys	3	3	0	GE	4	0	No	No	No
Linear & Non-linear Networks	3	3	0	GE	0	0	No	No	No
Plan. & Automation of Elec Pwr. Dist.	3	3	0	GE	3	0	No	No	No
Pwr. Elecs.	4	3	1	UE	21	0	No	No	No
Pwr. Sys. Anal.	4	3	1	UE	20	0	No	No	No
Pwr. Sys. Anal. II	3	3	0	GE	2	0	No	No	No
Pwr. Sys. Ops. & Control	3	3	0	GE	2	0	No	No	No
Pwr. Sys. Eng.	4	4	0	UE	20	0	No	No	No
SOUTHERN ILLINOIS UNIVERSITY EDWARDSVILLE									
Gen. Control & Protec.	3	3	0	GE	10	0	No	No	No
Pwr. Dist. Sys.	3	3	0	UE	15	0	No	No	No
Pwr. Sys. Anal.	3	3	0	UE	0	0	No	No	No
Principles of Electromech. Enrg. Conv.	3	3	1	UE	15	0	No	No	No
SOUTHERN POLYTECHNIC STATE UNIVERSITY									
Indust. Motor Control	4	3	3	UE	16	0	No	No	No
Lighting, Illumination, & NEC	4	3	3	UE	20	0	No	No	No
Pwr. Sys. Anal.	4	3	3	GE	16	0	No	No	No
Survey of Elec Mach.	4	3	3	UR	96	0	No	No	No
SOUTHERN UNIVERSITY & A&M COLLEGE									
Elec Mach. I	3	3	0	UR	55	0	No	No	No
Elec Mach. Lab. I	1	0	3	UR	24	0	No	No	No
Pwr. Sys. Anal.	3	3	0	UE	0	0	No	No	No
Pwr. Sys. Design	3	3	0	GE	0	0	No	No	No
SYRACUSE UNIVERSITY									
Elec Pwr. Sys.	3	3	0	UE	0	0	No	No	No
Electromech. Devices	3	2	1	UE	0	0	No	No	No
TEMPLE UNIVERSITY									
Electromech. Enrg. Sys.	3	3	0	UE	30	0	No	No	No
Modern Pwr. Eng. & Pwr. Elecs.	3	3	0	UE	20	0	No	No	No
TENNESSEE STATE UNIVERSITY									
Enrg. Conv.	3	3	0	UR	15	5	No	No	No
Pwr. Sys. Anal.	3	3	0	UR	15	5	No	No	No

Course Name	Course Credit	Lecture Hours	Lab Hours	Required for Ugrad/Grad	Enrollment On Campus	Enrollment Off Campus	Off Campus Video	Off Campus Cable	Off Campus Video Stream
TEXAS A&M UNIVERSITY									
Anal. of Pwr. Electr. Sys.	3	3	0	GE	0	0	No	No	No
Comp. Relays for Elec Pwr. Sys.	3	3	0	GE	0	0	No	No	No
Control of Elec Pwr. Sys.	3	3	0	GE	0	0	No	No	No
Elec Motor Drives	4	3	2	UE	57	0	No	No	No
Elec Pwr. Sys. Reliability	3	3	0	GE	12	0	No	No	No
High Volt. Direct Current Trans.	3	3	0	GE	0	0	No	No	No
Methods of Elec Pwr. Sys. Anal.	3	3	0	GE	0	0	No	No	No
Motor Drive Dynamics	3	3	0	GE	0	0	No	No	No
Pwr. Elecs.	4	3	2	UE	63	0	No	No	No
Pwr Sys ElectromagsTransnts	3	3	0	GE	0	0	No	No	No
Pwr Sys Fault Anal & Protec	4	3	2	UE	26	0	No	No	No
Pwr Sys Fault & Prtc Rlyng	3	3	0	GE	0	0	No	No	No
Pwr. Sys. Ops. & Control	4	3	2	UE	58	0	No	No	No
Pwr. Sys. Stability	3	3	0	GE	0	0	No	No	No
Pwr. Sys. State Estimation	3	3	0	GE	0	0	No	No	No
Rectifier & Inverter Circuits	3	3	0	GE	0	0	No	No	No
TEXAS TECH UNIVERSITY									
Elec Mach. & Drives	3	3	0	UE	40	0	No	No	No
Pwr. Elecs.	3	3	0	UE	40	0	No	No	No
Pwr. Sys.	3	3	0	UE	40	2	No	No	Yes
Pulsed Pwr.	3	3	0	GE	25	0	No	No	No
THE CITADEL									
Elec Mach. Lab	1	0	2	UR	30	0	No	No	No
Elec Pwr. Sys.	3	3	0	UE	9	0	No	No	No
Electromech. Enrg. Conv.	3	3	0	UR	30	0	No	No	No
Nuc. Eng.	3	3	0	UE	15	0	No	No	No
THE JOHNS HOPKINS UNIVERSITY									
Enrg. Plan. & Policy Sys.	3	3	0	GR	0	5	No	No	No
Optim of Urban&EnvrnSys	3	3	0	GE	0	12	No	No	No
THE UNIVERSITY OF TENNESSEE									
Alternative Enrg. Sources	3	3	0	GE	15	2	No	No	No
Elec Enrg. Sys. Components	4	3	1	UR	40	0	No	No	No
Pwr. Elecs.	3	3	0	GE	7	0	No	No	No
Pwr. Elecs. I	3	3	1	UE	18	0	No	No	No
Pwr. Elecs. II	3	3	1	UE	12	0	No	No	No
Pwr. Semiconductor Devices	3	3	0	GE	9	0	No	No	No
Pwr. Sys. Anal. I	3	3	0	GE	7	0	No	No	No
Pwr. Sys. Anal. I	3	3	0	UE	15	0	No	No	No
Pwr. Sys. Anal. II	3	3	0	UE	11	0	No	No	No
Pwr. Sys. Anal. II	3	3	0	GE	7	0	No	No	No
Pwr. Sys. Economics	3	3	0	GE	10	1	No	No	No
Traction Drive	3	3	0	GE	10	0	No	No	No
Utility Apps. of Pwr. Elecs.	3	3	0	GE	11	1	No	No	No
THE UNIVERSITY OF TEXAS AT AUSTIN									
Elec Drives & Mach.	3	3	0	UE	0	0	No	No	No
Intro. to Nuc. Pwr. Sys.	3	3	0	UE	0	0	No	No	No
Pwr. Elecs. Lab	3	0	3	UE	0	0	No	No	No
Pwr. Quality & Harmonics	3	3	0	UE	0	0	No	No	No
Pwr. Sys. Eng.	3	3	0	UE	40	0	No	No	No
Pwr. Trans. & Dist.	3	3	0	UE	45	0	No	No	No
Renewable Enrg. Sys.	3	3	0	UE	0	0	No	No	No
Solar Enrg. Sys. Design	3	3	0	UE	0	0	No	No	No
Wind Enrg. Sys.	3	3	0	UE	0	0	No	No	No

Course Name	Course Credit	Lecture Hours	Lab Hours	Required for Ugrad/Grad	Enrollment On Campus	Enrollment Off Campus	Off Campus Video	Off Campus Cable	Off Campus Video Stream
UNIVERSITY AT BUFFALO									
Principles of Eng. Management I	3	3	0	GE	0	0	No	No	Yes
Indust. Control Sys.	4	4	0	UE	12	0	Yes	No	Yes
Elec Devices (Mach.)	4	3	1	UE	42	0	Yes	No	Yes
Current Research Topics in Pwr. Modulation	4	4	0	UE	2	0	No	No	No
Current Research Topics in Pulsed Pwr.	4	4	0	UE	6	0	No	No	No
Pwr. Sys. Eng. I	4	3	1	UE	39	0	Yes	No	Yes
High Volt. Eng.	3	3	0	UE	8	0	No	No	No
Elec Devices (Mach.)	3	3	0	GE	5	1	Yes	No	Yes
Indust. Control Sys.	3	3	0	GE	9	3	Yes	No	Yes
Static Pwr Conv for PwrSys	3	4	0	GE	0	26	No	No	Yes
Pwr. Elecs. Sim.	3	3	0	GE	0	0	No	No	No
Pwr. Sys. Eng. I	3	3	0	GE	2	0	Yes	No	Yes
Pwr. Sys. Eng. II	3	3	0	GE	0	0	Yes	No	Yes
Pwr. Sys. Eng. III	3	3	0	GE	5	0	No	No	Yes
Specil. Topics in Elec Pwr. Dist.	3	3	0	GE	0	0	No	No	Yes
High Volt. Eng.	3	3	0	GE	6	0	No	No	No
Distributed Gen.	3	3	0	GE	0	26	No	No	Yes
Pwr. Sys. Protec.-Theory & Applic.	3	3	0	GE	0	32	No	No	Yes
Adv. High Volt. Eng.	3	3	0	GE	3	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	6	0	No	No	No
Pwr. Elecs.	3	3	0	UE	6	0	No	No	No
UNIVERSITY OF ALBERTA									
Adv. Topics in Pwr. Eng.	3	3	0	GE	8	0	No	No	No
Design of Rlibl. Indust. & Cmmercl. Pwr. Sys.	3	3	0	GE	14	0	No	No	No
Elec Mach.	4	3	0	UR	109	0	No	No	No
Electromag. Transnts.	3	3	0	GE	14	0	No	No	No
Intro. to Pwr. Eng.	3	3	0	UR	123	0	No	No	No
Pwr. Elecs.	4	2	2	UE	75	0	No	No	No
Pwr. Quality	4	3	0	GR	11	0	No	No	No
Pwr. Sys. I	3	3	0	UE	68	0	No	No	No
Pwr. Sys. II	4	3	1	UE	40	0	No	No	No
Reliability Eng.	3	3	0	UE	102	0	No	No	No
Sim. Techniques for Pwr. Elecs.	3	3	0	GE	1	0	No	No	No
Variable Freq. Drives	4	3	0	UE	46	0	No	No	No
UNIVERSITY OF ARKANSAS									
Elec Pwr. Dist. Sys.	3	3	0	UE	14	0	No	No	No
Electromech. Enrg. Conv.	3	3	0	UR	30	0	No	No	No
Electromech. Enrg. Conv. Lab	1	0	3	UR	30	0	No	No	No
Pwr. Elecs. & Motor Drives	3	3	0	GE	10	0	No	No	No
UNIVERSITY OF CALGARY									
Elec Mach.: Steady State	3	3	2	UR	80	0	No	No	No
Intro. to Pwr. Elecs.	3	3	2	UE	40	0	No	No	No
Pwr. Sys. Ops.	3	3	2	GR	15	0	No	No	No
Pwr. Sys. Protec.	3	3	1	GE	10	0	No	No	No
Pwr. Sys.: Steady State	3	3	2	UR	80	0	No	No	No
Rotating Mach.	3	3	0	GR	11	0	No	No	No
Switch Mode Pwr. Converters	3	3	1	GE	6	0	No	No	No
UNIVERSITY OF CENTRAL FLORIDA									
Mach.	3	3	0	UR	35	0	No	No	No
Pwr. Elecs. I	3	3	0	GE	40	5	Yes	No	Yes
Pwr. Sys. I	3	3	0	UE	40	0	No	No	No
Pwr. Sys. II	3	3	0	GE	25	0	Yes	No	Yes

Course Name	Course Credit	Lecture Hours	Lab Hours	Required for Ugrad/Grad	Enrollment On Campus	Enrollment Off Campus	Off Campus Video	Off Campus Cable	Off Campus Video Stream
UNIVERSITY OF COLORADO-BOULDER									
Conventional & Renewable Enrg. Sys.	3	3	0	GE	6	0	No	No	No
Enrg. Conv. I (Endmntls.)	3	3	0	UE	50	3	No	No	No
Enrg. Conv. II (Variable-Speed Drives)	3	3	0	UE	15	2	No	No	No
Pwr. Elecs. 1	3	3	0	GR	20	10	Yes	No	No
Pwr. Elecs. 2	3	3	0	GR	20	10	No	No	No
Pwr. Elecs. 3	3	3	0	GE	15	5	Yes	No	No
Pwr. Lab 1	2	1	3	UE	50	2	No	No	No
Pwr. Lab 2	3	1	3	GR	20	1	No	No	No
Pwr. Quality of Pwr. Sys. & Mach.	3	3	0	GE	5	5	Yes	No	No
Specil. topics	3	3	0	UE	8	2	No	No	No
UNIVERSITY OF FLORIDA									
Enrg. Sys.	3	3	0	UE	100	0	No	No	No
Enrg. Sys. Lab	1	0	1	UE	100	0	No	No	No
Pwr. Elecs.	3	3	0	UE	0	0	No	No	No
Pwr. Elecs.	3	3	0	GE	0	0	No	No	No
UNIVERSITY OF HOUSTON									
Adv. Pwr. Sys. Anal.	3	3	0	GE	7	0	No	No	No
Elec Pwr. Regulation & Standards	3	3	0	GE	0	0	No	No	No
Electromech. Enrg. Conv.	3	3	0	UE	17	0	No	No	No
Enrg. Conv. Lab	1	0	3	UE	17	0	No	No	No
Indust. Pwr. Sys. Anal.	3	3	0	GE	15	0	No	No	No
Indust. PwrSys Mngmnt	3	3	0	GE	15	0	No	No	No
Indust. Pwr. Sys. Monitoring & Control	3	3	0	GE	0	0	No	No	No
Indust. Pwr. Sys. Protec.	3	3	0	GE	0	0	No	No	No
Indust. Subs. & Switching Equipment	3	3	0	GE	0	0	No	No	No
Pwr. Elecs. & Elec Drives	3	3	0	GE	4	0	No	No	No
Pwr. Elecs. & Elec Drives	3	3	0	UE	19	0	No	No	No
Pwr. Sys. Anal.	3	3	0	GE	6	0	No	No	No
Pwr. Sys. Control & Stability	3	3	0	GE	0	0	No	No	No
PwrSysTrnsntsHrmncs&Grnd	3	3	0	GE	0	0	No	No	No
Pwr. Trans. & Dist.	3	3	0	UE	21	0	No	No	No
Pwr. Trans. & Dist.	3	3	0	GE	4	0	No	No	No
Pwr. Trans. & Dist. Lab	1	0	3	UE	21	0	No	No	No
UNIVERSITY OF IDAHO									
Adv. Elec Mach.	3	3	0	GE	2	7	No	No	No
Dynmcs&Cntrl of AC Drives	3	3	0	GE	2	6	No	No	No
Enrg. Sys. I	3	3	0	UR	35	8	No	No	No
Enrg. Sys. I Lab	1	0	1	UR	32	0	No	No	No
Enrg. Sys. II	3	3	0	UE	42	6	No	No	No
Induction Mach.	3	3	0	GE	0	0	No	No	No
Pwr. Elecs. & Drives	3	3	0	UE	27	9	No	No	No
Pwr. Sys. Protec. & Relaying	3	3	0	GE	0	0	No	No	No
Pwr. Sys. Stability	3	3	0	GE	0	0	No	No	No
Pwr. Sys. Anal.	3	3	0	UE	17	10	No	No	No
Protec. of Pwr. Sys. II	3	3	0	GE	2	0	No	No	No
Symmetrical Components	3	3	0	GE	0	0	No	No	No
Transnts. in Pwr. Sys.	3	3	0	GE	5	24	No	No	No
Underst&ng Pwr. Quality	3	3	0	GE	0	0	No	No	No
Utility Apps. of Pwr. Elecs.	3	3	0	GE	5	8	No	No	No
UNIVERSITY OF ILLINOIS-CHICAGO									
Adv. Pwr.-Elecs. Design	4	3	3	GR	10	0	No	No	No
Anal. & Design of Pwr. Electr. Circuits	4	3	3	UE	31	0	No	No	No
Optimal Control	4	3	0	GE	25	0	No	No	No
Pwr. Semicnd. Devices & Intgrtd. Circuits	4	3	3	UE	35	0	No	No	No

Course Name	Course Credit	Lecture Hours	Lab Hours	Required for Ugrad/Grad	Enrollment On Campus	Enrollment Off Campus	Off Campus Video	Off Campus Cable	Off Campus Video Stream
UNIVERSITY OF ILLINOIS-URBANA-CHAMPAIGN									
Adv. Elec Mach.	3	3	0	UE	0	0	No	No	No
Adv Mding&Cnt Elctrmchs	3	3	0	GE	12	0	No	No	No
Adv. Topics in Pwr. Elecs.	3	3	0	GE	0	0	No	No	No
Anal. Technqs. for Large-Scale Elect. Sys.	3	3	0	GE	10	0	No	No	No
Elec Mach.	4	3	3	UE	39	0	No	No	No
Electricity Resource Plan.	3	3	0	GE	10	0	No	No	No
Future Enrg. Challenge	3	2	3	UE	10	0	No	No	No
Hybrid Sys. Anal. of Pwr. Sys. Dynamics	3	3	0	GE	0	0	No	No	No
Issues in Competitive Electricity Markets	3	3	0	GE	0	0	No	No	No
Pwr. Circuits & Electromechanics	3	3	0	UE	167	0	No	No	No
Pwr. Electr. Devices & Sys.	3	3	0	GE	0	0	No	No	No
Pwr. Elecs.	3	3	0	UE	36	0	No	No	No
Pwr. Elecs. Lab	2	1	3	UE	20	0	No	No	No
PwrSysDynamics & Stability	3	3	0	GE	15	2	No	No	Yes
Pwr. Sys. Ops. & Control	3	3	0	UE	0	0	No	No	No
Pwr. Sys. Control	3	3	0	GE	0	0	No	No	No
Pwr. Sytem Anal.	3	3	0	UE	25	3	No	No	Yes
Renewable Enrg. Sys.	3	3	0	UE	35	0	No	No	No
Seminar in topics of Pwr. Sys.	1	1	0	GE	45	0	No	No	No
Tchnqs for EngDec Making	3	3	0	UE	12	0	No	No	No
UNIVERSITY OF KENTUCKY									
Adv. electromechanics	3	3	0	UE	0	0	No	No	No
Elec drives	3	3	0	UE	0	0	No	No	No
Elec Pwr. components & Sys.	3	3	0	UE	0	0	No	No	No
Elec Pwr. Sys. Anal. - I	3	3	0	UE	0	0	No	No	No
Elec Pwr. Sys. Anal. - II	3	3	0	UE	0	0	No	No	No
Electromechanics	3	3	0	UE	0	0	No	No	No
Electromechanics - labs	3	1	2	UE	0	0	No	No	No
Mine Pwr. Sys. design	3	3	0	UE	0	0	No	No	No
Mine Pwr. Sys. Protec.	3	3	0	GE	0	0	No	No	No
Pwr. Elecs.	3	3	0	GE	0	0	No	No	No
UNIVERSITY OF MANITOBA									
Elec Enrg. Sys. I	4	3	2	UE	16	0	No	No	No
Elec Mach.	5	3	3	UR	44	0	No	No	No
High Volt. Techniques & Ins. Design Criteria	3	3	0	GE	3	0	No	No	No
HVDC Trans. - I	3	3	0	GE	13	0	No	No	No
Intro. to Elec Mach. & Pwr.	4	3	2	UR	80	0	No	No	No
Pwr. Electr. Circuits	3	3	0	GE	19	0	No	No	No
Pwr. Elecs.	3	3	0	UE	24	0	No	No	No
Pwr. Sys. Anal.	3	3	0	GE	12	0	No	No	No
Pwr. Sys. Protec.	3	3	0	GE	13	0	No	No	No
Pwr. Sys. Transnts. Sim.	3	3	0	GE	15	0	No	No	No
Pwr. Trans. Lines: Fld. Effcs. & Ins. Coord.	4	3	2	UE	14	0	No	No	No
UNIVERSITY OF MASSACHUSETTS-LOWELL									
Alternative Enrg. Sources	3	3	0	GE	21	0	No	No	No
Elec Drives	3	3	0	GE	0	0	No	No	No
Elec Vehicle Technology	3	3	0	GE	14	0	No	No	No
Electromechanics	3	3	0	UR	60	0	No	No	No
Pwr. Elecs.	3	3	0	GR	15	0	No	No	No
Pwr. Sytem Dist.	3	3	0	GE	19	0	No	No	No
UNIVERSITY OF MICHIGAN-DEARBORN									
Pwr. Elecs.	3	3	1	UE	35	0	No	No	No
Electromech. Enrg. Conv.	3	3	1	UE	30	0	No	No	No
Vehicle Elecs. II	3	3	0	GE	15	15	No	No	Yes
Automotive Sensors & Actuators	3	3	0	GE	15	15	No	No	Yes
Elec Vehicles	3	3	0	GE	15	15	No	No	Yes

Course Name	Course Credit	Lecture Hours	Lab Hours	Required for Ugrad/Grad	Enrollment On Campus	Enrollment Off Campus	Off Campus Video	Off Campus Cable	Off Campus Video Stream
UNIVERSITY OF MISSOURI-ROLLA									
Adv. Theory of Elec Mach.	3	3	0	GE	6	0	No	No	No
Comp. Methods in Pwr. Sys.	3	3	0	GE	12	0	No	No	No
Economic Ops. of Pwr. Sys.	3	3	0	GE	0	0	No	No	No
Elec Drive Sys.	3	3	0	UE	18	0	No	No	No
Elec Pwr. Quality	3	3	0	UE	20	0	No	No	No
Elec Dist. Sys. Design & Protec.	3	3	0	UE	0	0	No	No	No
Electromechanics	4	3	1	UR	55	0	No	No	No
Pwr. Elecs.	3	3	0	UE	16	0	No	No	No
Pwr. Elecs. Lab	2	0	2	UE	8	0	No	No	No
Pwr. Sys. Design & Anal.	4	3	1	UR	75	0	No	No	No
Pwr. Sys. Protec.	3	3	0	GE	0	0	No	No	No
Pwr. Sys. Reliability	3	3	0	GE	13	3	No	No	Yes
Pwr. Sys. Stability	3	3	0	GE	0	0	No	No	No
Pwr. Sys. Eng.	3	3	0	UE	31	0	No	No	No
George Electromechanics in Pwr. Sys.	3	3	0	GE	0	0	No	No	No
UNIVERSITY OF NEVADA-RENO									
Elec Mach.	3	3	0	UE	10	0	No	No	No
Pwr. Elecs.	3	3	0	UE	10	0	No	No	No
Pwr. Sys. Anal.	3	3	0	UE	9	0	No	No	No
Pwr. Sys. Fundamental	3	3	0	UR	35	0	No	No	No
Pwr. Sys. Protec.	3	3	0	UE	9	0	No	No	No
Renewable Enrg. Sources	3	3	0	UE	10	0	No	No	No
UNIVERSITY OF NEW BRUNSWICK									
Elec Mach. I	3	0	0		0	0	No	No	No
Elec Mach. II	3	0	0		0	0	No	No	No
Environmental Eng.	3	0	0		0	0	No	No	No
LV Sys.	3	0	0		0	0	No	No	No
Pwr. Elecs. - PG	3	0	0		0	0	No	No	No
Pwr. Elecs. - UG	3	0	0		0	0	No	No	No
Pwr. Sys. Stability	3	0	0		0	0	No	No	No
Pwr. Sys. Anal.	3	3	0		0	0	No	No	No
Pwr. Sys. Optim.	3	0	0		0	0	No	No	No
Renewable Enrg.	3	0	0		0	0	No	No	No
UNIVERSITY OF NORTH CAROLINA-CHARLOTTE									
Electromag. Devices	3	3	1	UR	24	0	No	No	No
Pwr. Gen. Ops. & Control	3	3	0	GE	6	0	No	No	No
Pwr. Sys. Anal. I	3	3	0	UE	18	0	No	No	No
Pwr. Sys. Anal. II	3	3	0	UE	10	0	No	No	No
Pwr. Sys. Cntrl Active Pwr. & Freq. Cntrl	3	3	0	GE	6	0	No	No	No
Pwr. Sys. Dynamic Stability Anal. & Control	3	3	0	GE	6	0	No	No	No
Theory of Dlectrical Mach.	3	3	0	GE	4	0	No	No	No
UNIVERSITY OF NORTH DAKOTA									
Elec Mach. & Drives	3	3	1	UR	30	10	No	No	Yes
Pwr. Sys. I	3	3	1	UE	20	10	No	No	Yes
Pwr. Elecs.	3	3	1	GE	16	4	No	No	Yes
Pwr. Sys. II	3	3	1	GE	15	5	No	No	Yes
UNIVERSITY OF NOTRE DAME									
Elec Mach. & Pwr. Sys.	3	3	0	UE	8	0	No	No	No
UNIVERSITY OF OKLAHOMA									
Anal. of Elec Trans.	3	3	0	GR	12	0	No	No	No
Enrg. Conv. I	3	3	0	UE	45	0	No	No	No
Enrg. Internship	3	1	0	GR	1	0	No	No	No
Gen. Resource Plan.	3	3	0	GR	0	0	No	No	No
Gen. Resource Scheduling & Portfolio Op	3	3	0	GR	4	2	Yes	No	Yes
R&m Signals	3	3	0	GR	6	0	No	No	No

Course Name	Course Credit	Lecture Hours	Lab Hours	Required for Ugrad/Grad	Enrollment On Campus	Enrollment Off Campus	Off Campus Video	Off Campus Cable	Off Campus Video Stream
UNIVERSITY OF PITTSBURGH									
Control of Pwr. Sys.	3	3	0	GE	0	0	No	No	No
Pwr. Sys. Anal. I	3	3	0	UE	25	0	No	No	No
Pwr. Sys. Anal. II	3	3	0	GE	0	0	No	No	No
Transnts. I	3	3	0	GE	0	0	No	No	No
UNIVERSITY OF RHODE ISLAND									
Elec Pwr. Dist.	3	3	0	UE	10	0	No	No	No
UNIVERSITY OF SOUTH ALABAMA									
Electromech. Enrg. Conv.	3	3	0	UR	15	0	No	No	No
Electromech. Enrg. Conv. Lab	1	0	3	UR	25	0	No	No	No
Illumination Eng.	3	3	0	UE	6	0	No	No	No
Pwr. Elecs.	3	3	0	UE	10	0	No	No	No
Pwr. Sys. I	3	3	0	UE	10	0	No	No	No
Pwr. Sys. II	3	3	0	UE	10	0	No	No	No
UNIVERSITY OF SOUTHERN CALIFORNIA									
Adv. Elec Mach. design	3	3	0	GE	0	0	No	No	No
Economic Ops. of Pwr. Sys.	3	3	0	GE	0	0	No	No	No
Elec Mach. design	3	3	0	GE	0	0	No	No	No
Elec Pwr. Dist.	3	3	0	GR	0	0	No	No	No
Intro. to Pwr. Sys.	3	3	0	GR	18	0	No	No	No
Pwr. Sys. Anal.	3	3	0	GE	0	0	No	No	No
Pwr. Sys. Protec.	3	3	0	GR	0	0	No	No	No
Symmetric Components	3	3	0	GR	0	0	No	No	No
Transnts. in Pwr. Sys.	3	3	0	GR	23	0	No	No	No
UNIVERSITY OF TEXAS-ARLINGTON									
Fndmntls. of Pwr. Sys.	3	3	0	UR	78	0	No	No	No
Pwr. Sys. Anal. & Control	3	3	0	UE	0	0	No	No	No
Capstone Pwr. Sys. Design Project	3	2	3	UE	15	0	No	No	No
Capstone Pwr. Elecs. Design Project	3	2	3	UE	0	0	No	No	No
Pwr. Sys. Modeling & Anal.	3	3	0	GR	15	0	No	No	No
Pwr. Sys. Plan., Ops. & Cntrl in Dereg. Envrn.	3	3	0	GE	16	0	No	No	No
Congestion Management	3	3	0	GE	11	0	No	No	No
Unbundling Services of a Dereg. Pwr. Sys.	3	3	0	GE	0	0	No	No	No
Pwr. Sys. Protec.	3	3	0	GE	12	0	No	No	No
Pwr. Sys. Dist.	3	3	0	GE	0	0	No	No	No
Pwr. Sys. Reliability in Plan. & Ops.	3	3	0	GE	0	0	No	No	No
Prog. Logic Contrls. in Indust. Automation	3	3	0	GE	22	0	No	No	No
Pwr. Quality	3	3	0	GE	0	0	No	No	No
High Volt. Eng.	3	3	0	GE	0	0	No	No	No
Pwr. Elecs. Eng.	3	3	0	GE	0	0	No	No	No
UNIVERSITY OF TOLEDO									
Elec Enrg. Conv.	3	3	0	UR	42	0	No	No	No
Electr. Enrg. Processing I	3	3	0	UR	42	0	No	No	No
Electr. Enrg. Processing I	3	3	0	GE	1	0	No	No	No
Enrg. Conv. Lab	1	0	2	UE	13	0	No	No	No
Pwr. Sys. Ops.	3	3	0	GE	2	0	No	No	No
Pwr. Sys. Ops.	3	3	0	UE	6	0	No	No	No
UNIVERSITY OF VIRGINIA									
Electromech. Enrg. Conv.	3	2	2	UE	22	0	No	No	No

Course Name	Course Credit	Lecture Hours	Lab Hours	Required for Ugrad/Grad	Enrollment On Campus	Enrollment Off Campus	Off Campus Video	Off Campus Cable	Off Campus Video Stream
UNIVERSITY OF WASHINGTON									
Comp. Aided Design of Pwr. Sys.	4	4	0	UE	11	0	No	No	No
Elec Drives	5	3	3	UE	23	0	No	No	No
Elec Enrg. Dist. Sys.	4	4	0	UE	21	0	No	No	No
Elec Enrg. Sys. & Devices	5	4	4	UR	195	0	No	No	No
Fndmntls. of Intelligent Sys.	4	4	0	GE	16	0	No	No	No
Graduate Seminar in Pwr Sys	1	1	0	GE	8	0	No	No	No
Large Elec Enrg. Sys. Anal.	4	4	0	UE	5	0	No	No	No
Pwr. Elecs. Design	5	3	3	UE	32	0	No	No	No
Pwr. Sys. Anal.	4	4	0	UE	18	0	No	No	No
Pwr. Sys. Dynamics & Control	4	4	0	GE	0	0	No	No	No
Pwr. Sys. Dynamics & Protec.	4	4	0	UE	31	0	No	No	No
Pwr. Sys. Economics	4	4	0	GE	5	0	No	No	No
Pwr. Sys. Protec.	4	4	0	GE	0	0	No	No	No
Specil. Topics in Enrg. Sys.	3	3	0	GE	8	0	No	No	No
UNIVERSITY OF WATERLOO									
Actuators & Pwr. Elecs.	1	3	2	UE	115	0	No	No	No
Comp. Sim. of Pwr. Sys.	1	2	2	UE	6	0	No	No	No
DC & Flexible AC Trans.	1	3	0	GE	8	0	No	No	No
Design & Apps. of Pwr. Elecs. Converters	1	2	2	UE	23	0	No	No	No
DiElec Materials	1	3	0	GE	6	0	No	No	No
Dist. Sys. Eng.	1	3	0	GE	10	0	No	No	No
Electromech. Devices & Pwr. Processing	1	3	2	UE	90	0	No	No	No
Enrg. Processing	1	3	0	GE	10	0	No	No	No
Enrg. Sys.	1	3	2	UR	100	0	No	No	No
High Volt. Eng. Apps.	1	3	0	GE	5	0	No	No	No
Ins. Diagnosis & Dgtl. Protec.	1	2	2	UE	6	0	No	No	No
Modeling & Control of Elec Drives	1	3	2	UR	100	0	No	No	No
Pwr. Quality Issues	1	3	0	GE	10	0	No	No	No
Pwr. Sys. Comp. Apps.	1	3	0	GE	6	0	No	No	No
UNIVERSITY OF WESTERN ONTARIO									
Comp.-Based Pwr Sys Protec	39	3	0	GE	7	0	No	No	No
Elec Pwr. Sys. II	39	3	0	UE	41	0	No	No	No
Elec Enrg. Conv.	39	3	0	UE	38	0	No	No	No
Electromechanics & PwrSys I	39	3	1	UR	68	0	No	No	No
Electromechanics & PwrSysII	39	3	1	UR	65	0	No	No	No
FACTS	39	3	0	GE	7	0	No	No	No
Nuc. Instrument. & Control	36	6	0	GE	0	18	No	No	No
Pwr. Elecs. (Graduate)	39	3	0	GE	4	0	No	No	No
Pwr. Elecs. (Undergraduate)	39	3	0	UE	39	0	No	No	No
Pwr. Sys. Protec.	39	3	0	UE	28	0	No	No	No
Theory & Apps. of Protec. Relays	39	3	0	GE	6	0	No	No	No
UNIVERSITY OF WINDSOR									
Anal. Elec Mach.	3	3	0	GE	10	0	No	No	No
Elec Motors	4	3	2	UE	115	0	No	No	No
Electromech. Sys.	4	3	2	UR	76	0	No	No	No
Pwr. Elecs.	4	3	2	UE	70	0	No	No	No
UNIVERSITY OF WISCONSIN-PLATTEVILLE									
Elec Dist. Sys.	4	3	3	UE	0	0	No	No	No
Elec Motor Drives	4	3	3	UE	18	0	No	No	No
Elec Mach. & Pwr. Elecs.	4	3	3	UE	24	0	No	No	No
Intro. to Electric Pwr. Eng.	3	2	1	UR	35	0	No	No	No
Pwr. Sys. Anal. & Design	4	3	3	UE	20	0	No	No	No

Course Name	Course Credit	Lecture Hours	Lab Hours	Required for Ugrad/Grad	Enrollment On Campus	Enrollment Off Campus	Off Campus Video	Off Campus Cable	Off Campus Video Stream
UNIVERSITY OF WISCONSIN-MADISON									
Adv. Pwr. Sys. Anal.	3	3	0	GE	0	0	No	No	No
Dgttl. transient Anal. for Large Pwr. Sys.	3	3	0	GE	0	0	No	No	No
Dynamics & Control of AC drives	3	3	0	GE	15	3	Yes	No	No
Elec Pwr. Sys.	3	3	0	UE	37	3	Yes	No	No
Electromag. Design of AC Mach.	3	3	0	GE	0	0	No	No	No
Electromech. Drive Sys. Lab	2	0	2	GE	6	0	No	No	No
Intro. to Elec Drives	3	3	0	UE	28	0	No	No	No
On-Line Control of Pwr. Sys.	3	0	3	GE	11	0	No	No	No
Pwr. Elecs.	3	3	0	UE	31	6	Yes	No	No
Pwr. Elecs. Lab	3	0	3	UE	5	0	No	No	No
Solid State Pwr. Conv.	3	3	0	GE	7	2	Yes	No	No
Theory & Control of Synchro. Mach.	3	3	0	GE	9	2	Yes	No	No
Utility Apps. of Pwr. Elecs.	3	3	0	GE	0	0	No	No	No
UNIVERSITY OF WISCONSIN-MILWAUKEE									
Adjustable Speed Drives	3	3	0	GE	10	0	No	No	No
Adv. Pwr. Elecs.	3	3	0	GE	10	0	No	No	No
Anal. of Elec Mach. & Motor Drives	3	3	0	UE	15	0	No	No	No
Electromech. Enrg. Conv.	4	3	1	UR	35	0	No	No	No
Pwr. Elecs.	3	3	0	UE	20	0	No	No	No
Pwr. Sys. Anal. I	3	3	0	UE	15	0	No	No	No
Pwr. Sys. Anal. II	3	3	0	UE	12	0	No	No	No
US NAVAL ACADEMY									
Elec Mach. & Drives	4	3	2	UE	8	0	No	No	No
Mach. Control	4	3	2	UE	2	0	No	No	No
Pwr. Elecs.	4	3	2	UE	5	0	No	No	No
VALPARAISO UNIVERSITY									
Enrg. Conv. & Trans.	3	3	2	UE	4	0	No	No	No
Pwr. Elecs.	3	3	2	UE	10	0	No	No	No
VILLANOVA UNIVERSITY									
Elec Drives	3	3	0	GE	0	9	No	No	No
Elec Mach.	3	3	0	GR	2	10	No	No	No
Elec Mach. & Drives	3	3	0	UE	10	0	No	No	No
Pwr. Elecs.	3	3	0	GE	2	8	No	No	No
Pwr. Sys. Anal.	3	3	0	UE	10	0	No	No	No
Pwr. Sys. Dynamics	3	3	0	GR	0	8	No	No	No
Pwr. Sys. Modeling & Anal.	3	3	0	GR	2	9	No	No	Yes
Renewable Enrg. Sys.	3	3	0	GE	6	2	No	No	No
VIRGINIA POLYTECHNIC INSTITUTE & STATE UNIVERSITY									
Adv. Topics in Pwr.	3	3	0	GE	24	0	No	No	No
Alt. Enrg. Sys.	3	3	0	UE	122	0	No	No	Yes
Comp. Methods in Pwr. Eng.	3	3	0		6	0	No	No	No
Control & Apps. of Elec Mach.	3	3	0	UE	0	0	No	No	No
Design In Pwr. Eng.	3	3	0	UE	70	0	No	No	No
Elec. Pwr. Eng. Lab	1	0	1	UR	143	0	No	No	No
Elec Enrg & Environmental Sys	3	3	0	GE	0	0	No	No	No
Elec Mach. & Transnts.	3	3	0	GE	0	0	No	No	No
Elec Pwr. Quality for the Dgttl. Economy	3	3	0	UE	0	0	No	No	No
Electr. Control of Mach.	3	3	0	UE	0	0	No	No	No
Intro. to Pwr. Sys.	3	3	0	UR	110	0	No	No	No
Pwr. Sys. Anal. & Control	3	3	0	UE	29	0	No	No	No
Pwr. Sys. Ops. & Control	3	3	0	GE	20	0	No	No	No
Pwr. Sys. Plan.	3	3	0	GE	0	0	No	No	No
Pwr. Sys. Protec.	3	3	0	UE	15	3	No	No	No
Pwr. Sys. Protec. Lab	1	0	1	UE	3	0	No	No	No

Course Name	Course Credit	Lecture Hours	Lab Hours	Required for Ugrad/Grad	Enrollment On Campus	Enrollment Off Campus	Off Campus Video	Off Campus Cable	Off Campus Video Stream
WASHINGTON STATE UNIVERSITY									
Enrg. Sys. Lab	2	0	2	UR	75	0	No	No	No
Intro. to Enrg. Sys.	3	3	0	UR	75	0	No	No	No
Plasma Eng.	3	3	0	GE	5	0	No	No	No
Pwr. Sys. Anal.	3	3	0	UE	25	0	No	No	No
Pwr. Sys. Anal.	3	3	0	GR	10	0	No	No	No
Pwr. Sys. Protec.	3	3	0	UE	25	0	No	No	No
Pwr. Sys. Protec. Lab	2	0	2	UE	10	0	No	No	No
Specil. Topics in Pwr. Sys. - Dynamics	3	3	0	GE	10	0	No	No	No
Specil. topics in PwrSys- Ops	3	3	0	GE	0	0	No	No	No
Specil. topics in PwrSys-Optim	3	3	0	GE	0	0	No	No	No
WEST VIRGINIA UNIVERSITY									
Electromech. Enrg. Conv. & Sys.	3	3	0	UR	48	0	No	No	No
Electromech. Enrg. Conv. & Sys. Lab	1	0	3	UR	48	0	No	No	No
Elec Pwr. Dist. Sys.	3	3	0	UE	8	0	No	No	No
Intro. to Pwr. Elecs.	3	3	0	UE	14	0	No	No	No
Pwr. Sys. Control & Stability	3	3	0	GE	5	0	No	No	No
WESTERN MICHIGAN UNIVERSITY									
Elec Mach.	4	3	3	UR	44	0	No	No	No
Pwr. Elecs.	3	3	0	UE	19	0	No	No	No
Elec Pwr. Sys.	3	3	0	UE	17	0	No	No	No
WEST VIRGINIA UNIVERSITY INSTITUTE OF TECHNOLOGY-									
Electromag. Devices & Lab Pwr. Sys. I	7	6	1	UR	15	0	No	No	No
Protec. Relaying Pwr. Sys. II	6	6	0	UE	10	0	No	No	No
WIDENER UNIVERSITY									
Basic Pwr. Eng.	3	3	0	UR	7	0	No	No	No
Pwr. Lab	1	0	3	UR	0	0	No	No	No
Pwr. Sys. Anal.	3	3	0	UE	7	0	No	No	No
Pwr. Sys. Anal.	3	3	0	GE	3	0	No	No	No

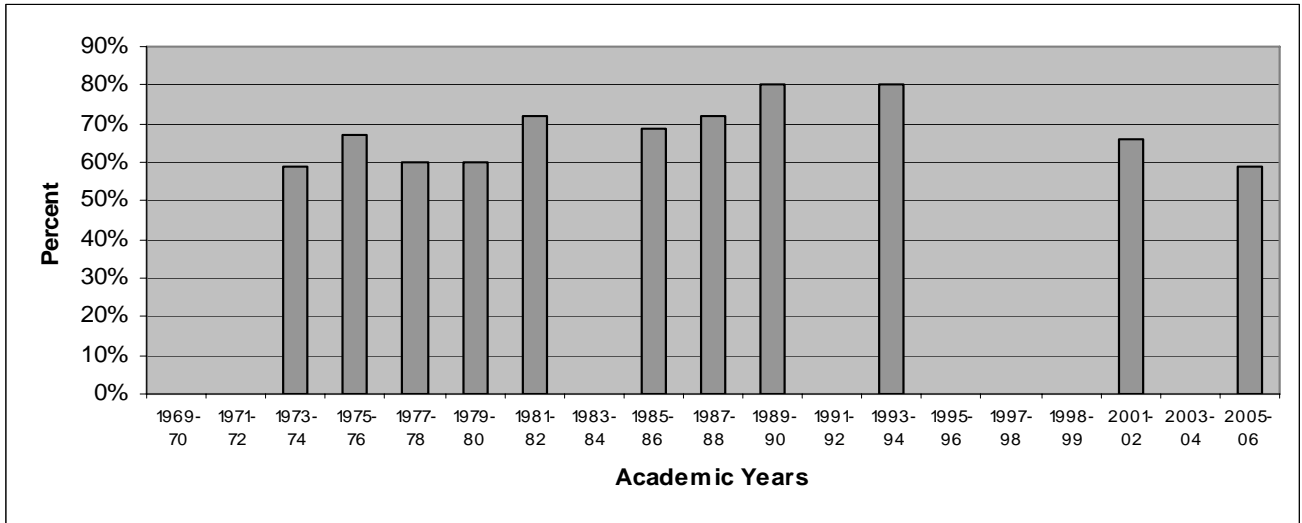


Figure 6: Percentages of Schools with Required Power Classes for Electrical Engineering Undergraduates

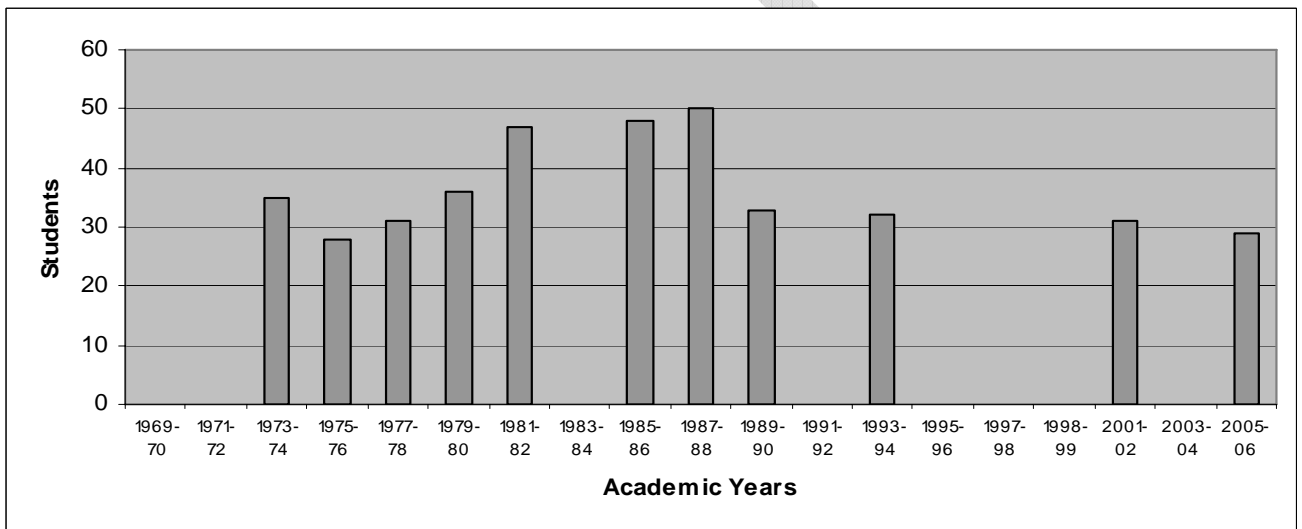


Figure 7: Average Number of Students in Elective Power Classes with Highest Enrollment

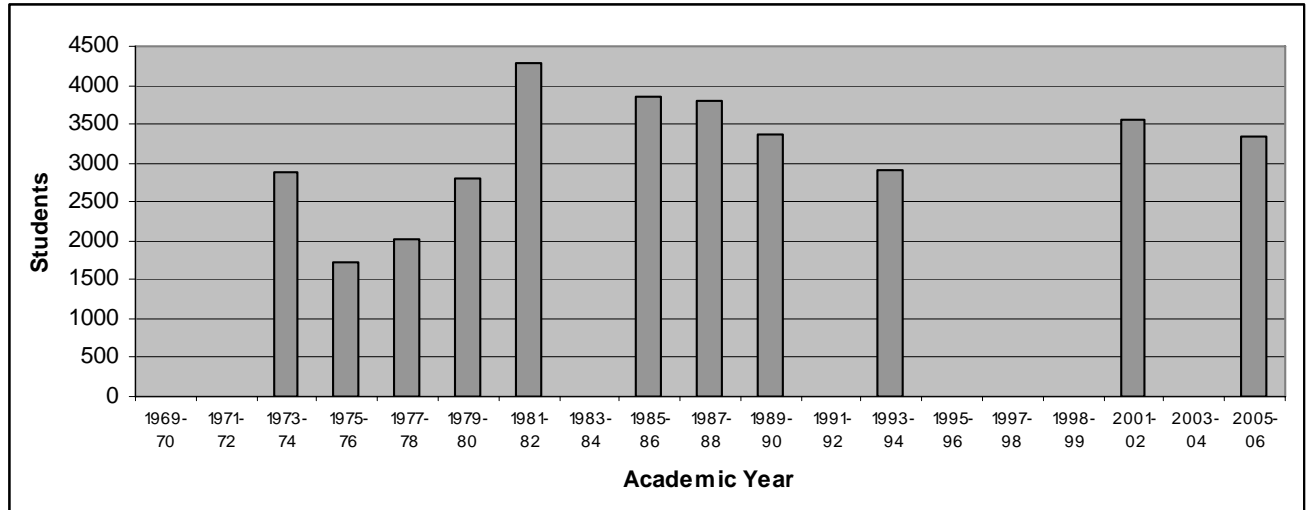


Figure 8: Total Number of Students in Elective Power Classes with Highest Enrollment

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