Journal of Tau Alpha Pi
Volume IV, 1980

Contents

Journal of Tau Alpha Pi

Executive Director/Secretary
Editor Frederick J. Berger

Tau Alpha P1 Journal is the official publication of Tau Alpha Pi, ~National Honor Society of Engineering Technologies. Write Professor Frederick J. Berger (Executive Secretary), Editor, P.O. Box 266, Riverdale, New York 10471. The opinions expressed are those of contributors and do not necessarily reflect those of the editorial staff of Tau Alpha P1.

Statement from the Executive Secretary

It is my distinct pleasure, as it has been for the last few years, to greet the members of Tau Alpha Pi and to take pride in the publication of ourJournal. The Journal serves as a medium whereby the activities of the society and its chapters are shared and as an organ wherein highly professional articles of interest to our members are published.

In order for news items to be included, it is necessary for chapters to forward news and information about their activities and plans to the Executive Secretary. Since the chapters are autonomous, publication in the Journal of significant events is virtually the only way in which to disseminate information. Please address correspondence to me at P.O. Box 266, Riverdale, New York 10471. You will notice that this year's Journal received items of interest from many chapters, and we look forward to responses from all chapters. Include names of officers, please.

This is an opportunity to express my gratitude to sponsors and faculty advisers who assumed these responsibilities and wish them success: Prof. Thomas K. Grady and Prof. Marshal R. Minter (Upsilon Beta, Arizona State University) and Dr. Donald C. Pare (XI Gamma, Cogswell College). Dr. Par~ is to be complimented for establishing alumni chapter membership. We thank also Dr. John Dalphin and Prof. Ron Emery (Pi Gamma, Indiana University-Purdue University at Fort Wayne); Prof. Henry D. Davis (Sigma Gamma, St. Petersburg Junior College); Dr. William S. Byers (Alpha-Alabama, University of Alabama); Dr. David H. Cowling (Alpha-Louisiana, Louisiana Tech); Dr. Christopher Wyatt (Phi Beta Chapter, Nashville State Technical Institute).

My special thanks go to Dr. Cheshier, Pi Alpha chapter (Purdue at West Lafayette), for asking Professor R. Eugene Nix to assist with the induction ceremonies of Pi Gamma chapter; to Professor James P. Todd of Xl Alpha chapter (California Polytechnic, Pomona) for his assistance in the induction ceremonies of Xl Gamma chapter; to Dean Joseph Kopf of Omicron Alpha chapter for serving as keynote speaker at the Omicron Beta initiation ceremonies; to Prof essor John Tridico of Kappa Alpha chapter (Capitol Institute of Technology) for his special efforts in behalf of the chapter; and my thanks to Dr. James A. Chisman for his dedicated services to Mu Beta chapter and best wishes in his new endeavors; to Professor Joseph DeGuilmo of Omicron Delta chapter (Stevens Institute) for his fine cooperation and service.

My very special thanks are due to Dr. Lillian Gottesman, Professor of English, for her able editorial assistance.

During 1979 - 80 twelve new chapters were established. It was indeed my privilege to partake in the initiation ceremonies of Upsilon Beta at Arizona State University; Pi Gamma chapterat Indiana University-Purdue at Fort Wayne; Alpha-Alabama chapter at the University of Alabama; Delta Beta chapter at Lincoln College (Northeastern University); and Lambda Alpha chapter at Norwalk State Technical College.

Tau Alpha Pi, as we know, is an honor society for the engineering technologies. It seeks to recognize and honor those students who achieve superior scholarship. It aims to encourage outstanding scholarship and leadership qualities as well as the development of exemplary character and conduct. The society and its

members are inseparable. For the society to be known as worthy of honor, its purposes and objectives must be publicized and reinforced by its members. For its members to be honored, they must exemplify the ideals of the society and recognize that honor carries the responsibility of participating actively and contributing meaningfully to the college community.

The society needs the assistance of its members in making Tau Alpha Pi more visible through the display of its emblem on campus and the wearing of the key. In the centerfold of this issue, you will see a

copyof the society's engraved charter. It is impressive and if appropriately framed, can help to publicize Tau Alpha Pi. If you wish to have an engraved charter, it would help if you let me have the founding date of your chapter.

Perhaps, too, it would be desirable to hold more frequent initiations--once a semester instead of once a year--in order to make possible the induction of more of the qualified students who might at present be omitted because of the four percent cutoff. In these ways we can better accomplish our objectives to honor, to be seen as a society of honor, and to encourage and motivate students to achieve this high honor.

I look forward to seeing many of you at the A.S.E.E. annual conference on June 23-26 at the University of Massachusetts to discuss our mutual concerns regarding Tau Alpha Pi.

Frederick J. Berger
Executive Secretary
Tau Alpha Pi
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Accreditation Board For Engineering and Technology (ABET) - Formerly ECPD

Introduction

In October1979 the Engineer's Council for Professional Development (ECPD) ceased to exist in name only. This has been replaced by the Accreditation Board for Engineering and Technology (ABET). Thus it becomes necessaryto learn a new set of acronyms--ABET, EAC, (Engineering Accreditation Commission), TAC (Technology Accreditation Commission), and A & RC (Audit and Review Committee).

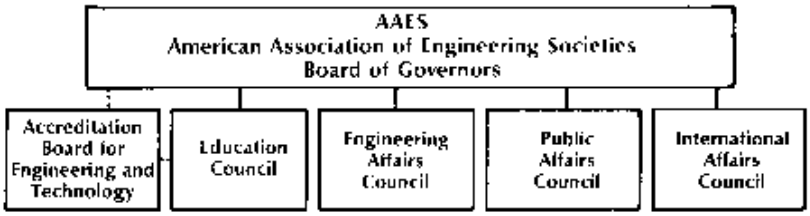
Background

Approximately nine years ago, the officers of the National Association of Industrial Technology (NAIT) and officers of the Engineering Technology Committee (ETC) of ECPD entered into discussions about the possibility of ETC (or some other committee of ECPD) accrediting industrial technology programs. At that time ECPD was not interested in further expansion away from "pure" engineering. Part of its concern was the academically perceived confusion between engineering and engineering technology. Eventually NAIT became its own accreditation body.

Later, some discussion took place with regard to construction technology. Again, ECPD was not interested and the group formed its own accreditation body called the Accreditation Committee for Construction (ACC).

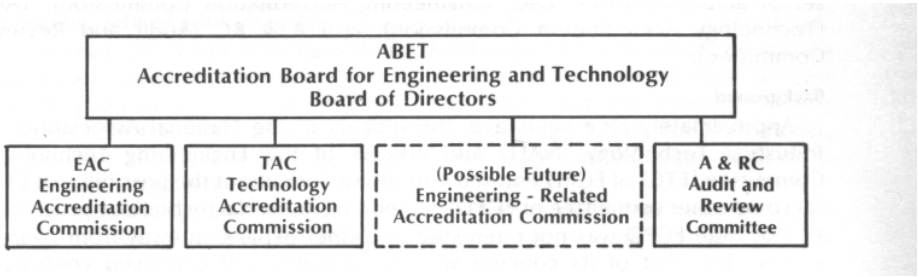
About five years ago the President of ECPD appointed an ad hoc committee to study reorganization of the council. As a result of this committee, ECPD began to move toward a broader arena of accreditation--not just engineering but any engineering "related" programs. As this restructuring was being formulated, two new developments affecting this reorganization were superimposed, causing a slight delay and modification. First was the HEW (Health, Education, and Welfare) department's concern because of the lack of students and the general public being represented on the two accreditation committees or on the Board of Directors of ECPD. This concern has been ameliorated by the addition of the Audit and Review Committee.

The second development was the movement and subsequent completion of a revision in the national structure of the Engineering Joint Council (EJC)-purportedly the national spokesman for the "engineering profession." As a result the EJC was disbanded and replaced by a new revised organization, titled the American Association of Engineering Societies (AAES), effective January 1, 1980. This organization has almost unanimous support from all professional societies and organizations dealing with engineering. The organizational chart for the AAES follows:



Pertinent to this discussion is the fact that the ABET will begin functioning as an affiliate with liaison relations with the AAES and with its Education Council. ECPD's Guidance, JETS, Development of Young Engineers, Ethics, and other non-accreditation educational activities will be maintained during 1979-80 and thereafter if necessary until the AAES and the appropriate councils are sufficiently organized to assume responsibility for these educational activities.

As a result of the ECPD self-study, the H EW pressure, and the AAES formation, the new organization-the Accreditation Board of Engineering and Technology was established. The ABET organization follows:



Two critical changes occurred in the change from ECPD to ABET, one positive and one negative. The positive change was the modification in the Board of Director's rules which states that effective with the revised organization the engineering and technology accreditation commissions will make the final decisions on accreditation. The Board will only handle policy matters and appeals. The negative change involved dropping the adjective "engineering" from the Engineering Technology Committee. At the October meeting of the then Engineering Technology Committee, a motion was unanimously passed charging the executive committee of the ETC to try to reverse the decision to drop the adjective by whatever means it deemed necessary. As a result of further discussion, the Board of Directors of ABET has agreed to review a Resolution and Position paper prepared by the ETC executive committee. This follows as Attachment I. The ultimate decision as to whether logic prevails and the Engineering Technology Accreditation Committee is correctly identified will be determined at the April Board of Directors' meeting of ABET.

Attachment I

ENGINEERING TECHNOLOGY COMMITTEE OF ECPD A POSITION PAPER ON THE USE OF ENGINEERING AS A DEFINITIVE ADJECTIVE WITH TECHNOLOGY

The Engineering Technology Committee of the Engineers' Council for Professional Development recognizes and shares the concern of the Board of Directors of the revised organization (ABET) in terms of clearly identifying and differentiating between engineering programs and engineering technology programs. However, we firmly believe that the deletion of the adjective "engineering" from the Engineering Technology Accreditation Commission will create confusion as viewed by the general public. It is our belief

that this would be interpreted nationally as a signal that engineering technology will no longer be associated with engineering which would lead to disastrous confusion on the part of the public.

In the past, ECPD has been applauded for their thoroughness in completing studies and

for testing important changes prior to implementation. We recognize that because of circumstances beyond the control of the Board, the accreditation committees were not consulted regarding their name change. We believe that input and possible alternatives from these two committees might have assisted the Board in taking more effective steps in solving the identity problem.

With this brief background we present to you the following resolution, recommended

action and position paper.

RESOLUTION

Whereas:

1) engineering as practiced in industry encompasses a broad field and utilizes craftsmen, engineering technicians, engineering technologists, engineers, and engineering scientists;

2) since 1953 ECPD has accredited engineering technology programs through an engineering technology committee;

3) in July 1979, ECPD approved the definition of the engineering team which includes engineers, engineering technologists and engineering technicians;

4) there is evidence to indicate deletion of the definitive adjective engineering will further confuse rather than clarify apparent conflicts;

Now, therefore, be it resolved that:

A) An official study be formulated by the ECPD (ABET) to ascertain the real cause of apparent conflict between engineering and engineering technology; and

B) The study committee be requested to make recommendations to eliminate or at least minimize the causes of such apparent conflict; and

C) The study committee contain a reasonable mix of engineering educators, engineering technology educators, and industrial representatives; and

D) The Engineering Technology Committee be known as the Engineering Technology Accreditation Commission pending the recommendations of the study committee.

Dr. Walter E. Thomas

Dean, Technology and Applied Sciences
Western Carolina University

Technicians and Technologists

- An Update -
Starting Salaries Higher for New Graduates

Starting salaries paid to two-year associate degree graduates of engineering technology programs are about $2,000 per year higher than salaries paid to non-graduates employed in similar positions. Four-year graduates start at about $2,200 per year higher than the two-year graduates, or about $4,200 above the non-graduates. According to the Engineering Manpower Commission Salary Survey of Engineering Technicians and Technologists in 1979, the average technician is thirty years of age, has been working as a technician for 101/2 years, and earns $15,200 per year. Technicians' salaries increased 5.8 percent annually from 1977 to 1979.

Starting salaries offered to graduates of two-year associate degree programs increased 8.1 percent from 1978 to 1979; those of graduates of four-year B.S. programs in technology increased 11.8 percent over the same period. See Table 1. Since starting salaries are increasing at a faster rate than those of experienced technicians, some salary compression is taking place.

Table 1

Average Monthly Starting Salaries

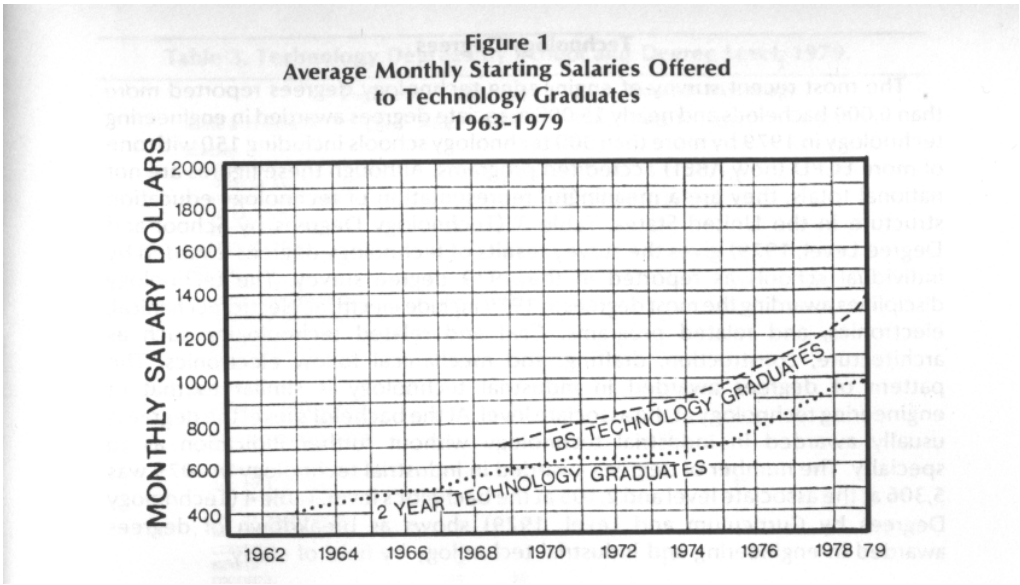
1977-1979

	1979	1978	% Incr.
Technology Graduates			
AS	990	916	8.1
BS	1393	1246	11.8
Consumer Price Index (July)	218.9	196.7	11.3

Sources: Technology starting salaries from the Engineering Manpower Commission placement survey. Consumer price index from Monthly Labor Review, U.S. Department of Labor.

The consumer price index increased 11.3 percent from July 1978 to July 1979. Therefore, although starting rates offered to four-year BS graduates are keeping pace with the cost of living, experienced technicians and beginners with less than a B.S. degree in technology are falling behind. Figure 1 shows a historical picture of starting salaries offered to technology graduates from 1963 to 1979.

Figure 1
Average Monthly Starting Salaries Offered to Technology Graduates 1963-1979



Job Market Good for Technology Graduates

The job market continued to be favorable for 1979 technology graduates. This opinion is supported by data reported in the Engineering Manpower Commission survey "The Placement of Engineering and Technology Graduates." I n the case of the two-year associate graduates, 87 percent had firm plans as of their graduation date. This number includes the 20 percent who were continuing full-time study but does not include the 6 percent who were still considering job offers. Seven percent of the two-year graduates had nojob offers and had no plans. Eighty-four percent of the four-year technology graduates had made commitments as of graduation. This number includes the 2 percent who planned to continue fulltime study. In addition, 9 percent were still considering job offers and the remaining 7 percent had nojob offers or other plans. A summary of responses to the 1979 placement survey is shown in Table 2. The fact that 6 percent of the two-year graduates and 9 percent of the four-year graduates were still consideringjob offers instead of accepting the first employment opportunity is indicative of a fairly strong job market for qualified graduates. The fact that 7 percent of each group had no offers or plans suggests that employers have been selective in making job offers.

TABLE 2 Technology Degree

	Two-Year Associate	Four-Year Bachelor's
Newly Employed	57%	68%
Returning to Job	6	12
Full-time Study	20	2
Considering Job Offers	6	9
Other	4	2
No Job Offers or Plans	7	7

Technology Degrees

The most recent survey of engineering technology degrees reported more than 6,000 bachelor's and nearly 15,000 associate degrees awarded in engineering technology in 1979 by more than 300 technology schools including 150 with one of more ECPD (now ABET) accredited programs. Although these figures are not national totals, they are a meaningful representation of technology education structure in the United States. Table 3 (Technology Degrees by School and Degree Level, 1979) gives the survey results of technology

degrees awarded by individual schools as reported in the 1979 degree survey. The technology disciplines awardingthe most degrees in 1979 include electrical, electromechanical, electronics, and related programs. Civil and related technologies such as architecture, construction, drafting, and mechanical follow electronics. The pattern of degrees awarded in industrial technology is similar to that of engineering technology at the associate level. Atthe bachelor's level the degree is usually awarded in industrial technology without further indication as to specialty. The number of degrees awarded in industrial technology in 1979 was 5,306 at the associate level and 2,105 at the bachelor's level. Table 4 (Technology Degrees by Curriculum and Level, 1979) shows as breakdown of degrees awarded in engineering and industrial technology by field of study.

Technology enrollments 1979-1980

It is still difficult to distinguish some engineering technology programs from those in industrial technology without going into a detailed evaluation of each program. Schools themselves may be unclear as to the distinction. Therefore, for the purpose of collecting enrollment data, curricula were grouped according to basic technical fields such as chemical, electronic, etc. More than 300 schools, including 150 with at least one program accredited by ABET (formerly ECPD), reported more than thirty-eight thousand full-time technology students. Some 29,000 were reported in the first two years, most of whom are associate degree students, and nearly 9,000 third and fourth year bachelor-degree students. Electronic, mechanical, drafting, and computer technology are the most popular programs with associate degree candidates. In the four-year bachelor programs, electronic, industrial, mechanical, and electrical are the most popular courses of study. Table 5 (Enrollments in Engineering Technology Programs in the Fall, 1979, by Program) provides a summary showing 1979 enrollment by curriculum.

The reports here duplicated are available from the Publications Department, Engineers Joint Council, 345 E. 47 St. N.Y.C. 10017.

Patrick J. Sheridan, Manager
Manpower Activities of Engineers' Joint Council

Table 3. Technology Degrees by School and Degree Level, 1979.

State and School	Engineering Technology			Industrial Technology			
	Cert.	ASET	BSET	Cert.	ASIT	BSIT	MSIT
ALABAMA							
ALABAMA			16		1		
ALABAMA A&M U			125			16	
ALABAMA INST AVIA					1		
JC CALHOUN							
JEFFERSON JC AL		17					
REID ST TECH		8					
ARIZONA							
ARIZONA ST U			59			67	14
DEVRY INST-PHOENIX		189	211				
GLENDALE COMM. COLL		1			35		
NORTHERN ARIZONA			44				
PIMA COLLEGE				21	111		
PHOENIX		32					
ARKANSAS							
ARKANSAS LITTLE ROCK		10					
PHILLIPS CO COMM COLL					26		
STHN ARKANSAS U TECH					64		
CALIFORNIA							
CAL POLY ST SLO			137			35	
CAL ST POLY POM							
CAL ST SACRAMENTO							
CAL MARITIME			41			51	
CERRITOS		3					
MERCED		8			27		
COGSWELL		54	20				
CITY COL OF SF		36			19		
DESERT		5			7		
GROSSMONT							
NORTHROP		17	57				
ORANGE COAST							
PACIFIC UNION							
SIERRA							
WEST VALLEY							
COLORADO							
COLORADO TECH		79	23				
MESA COLORADO							
METROPOLITAN ST		27	43				
STHN COLORADO		20	61			14	
CONNECTICUT							
CENTRAL CONN ST						82	
CONNECTICUT U			4				
HARTFORD TECH		190					
NORWALK ST TECH		176					
THAMES VALLEY		116			45		
WARD TC HARTFORD		89					
WATERBURY ST		156					
GTR N HAVEN TC		6		6	1		
DISTRICT OF COLUMBIA							
WASH TECH INST	8	70	4		21		
DELEWARE							
DEL TECH DOVER							
DEL TECH GEORGE							
DEL TECH NEWARK		107					
FLORIDA							
BREVARD CC							
BROWARD CC SO							
DAYTONA BEACH		53		130			
EMBRY RIDDLE		14	14				
FLORIDA			5				
FLORIDA A&M			35				
FLORIDA KEYS CC					19		
FLORIDA INTERNATIONAL			123			113	
FLORIDA TECH U							
GULF COAST CC							
HILLSBOROUGH CC		24					
LAKE SUMTER CC		11					
MIAMI-DADE CC		458					
MIAMI-DADE NORTH		15					
OKALOOSA WALTON		45					
NORTH FLORIDA U						30	
PENSACOLA JC							
SANTA FE CC					57		

Table 3. Technology Degrees by School and Degree Level, 1979.

State and School	Engineering Technology Cert.	ASET	BSET	Industrial Technology Cert.	ASIT	BSIT	MSIT
SOUTH FLORIDA			49				
ST PETERSBURG		211					
TAMPA TECH INST	20	332					
GEORGIA							
BERRY							
DEKALB CC GA		112					
DEVRY ATLANTA		33					
FORT VALLEY ST							
GEORGIA SOUTHERN			39			25	5
SAVANNAH			21				
SOUTHERN TECH		97	292				
WALKER TECH							
IDAHO							
IDAHO ST	85						
RICKS		45					
ILLINOIS							
AERO SPACE INST			6				
BELLEVILLE		15			72		
BRADLEY			55				
DEVRY CHICAGO		235	188				
DUPAGE	19	95		3	25		
EASTERN ILLINOIS						13	
ELGIN CC				15	27		
ILLINOIS ST						78	
LAKELAND							
LINCOLN LAND CC		2			31		
MORAINE VALLEY		4			55		
MORRISON		69					
NORTHERN ILLINOIS			79				
OLIVE HARVEY							
PARKLAND		5					
PARKS		13	1				
RICHLAND CC IL					4		
STHN IL CARBONDALE			52			158	
THORTON CC IL					8		
TRITON		20			113		
WABASH VALLEY							
WESTERN ILLINOIS							
INDIANA							
INDIANA ST					9	81	
INDIANA ST EVANSVILLE		15	5				
IUPU FORT WAYNE		57	35				
PURDUE		147	132				
PURDUE CALUMET		100	93				
PURDUE INDIANAPOLIS		161	61				
PURDUE NORTH CENTRAL		28	2				
PURDUE OTHER		30					
IOWA							
CLINTON CC IA							
DES MOINES AREA							
HAWKEYE		47					
IOWA ST							
IOWA VALLEY CC							
IOWA WESTERN		47					
KIRKWOOD CC IA		23					
NORTH IOWA AREA		18			28		
NORTHERN IOWA							
SCOTT CC IOWA		14					
SOUTHEASTERN CC IOWA							
WESTERN IOWA TC		16					
KANSAS							
EMPORIA KS ST						5	
HUTCHINSON					34		
JOHNSON CITY KS							
KANSAS ST			49				
KANSAS ST PITTS			48			52	
KANSAS TECH	15	55					
PRATT CJC KS					3		
SCHWEITER TECH		17					
WICHITA			8				

Table 3. Technology Degrees by School and Degree Level, 1979.

State and School	Engineering Technology			Industrial Technology			
	Cert.	ASET	BSET	Cert.	ASIT	BSIT	MSIT
KENTUCKY							
LEXINGTON TI KENTUCKY							
LOUISVILLE		37					
MURRAY ST		12	27				
WESTERN KENTUCKY			53				
LOUISIANA							
LOUISIANA STATE U EUNICE			12		2		
LOUISIANA TECH		29	16				
NORTHWESTERN ST LA							
SOUTHERN			29				
SOUTHEASTERN LA					6	44	
MAINE							
MAINE		74	34				
EASTERN MAINE					70		
MARYLAND							
CAPITAL INST		30	48				
ESSEX CC MD							
MARYLAND			11			29	
MONTGOMERY							
PRINCE GEORGE		50			72		
MASSACHUSETTS							
BLUE HILLS TECH				14	105		
BRISTOL CC MASS							
CAPE COD CC		4					
CENTRAL NEW ENGLAND							
FITCHBURG ST							
FRANKLIN INST		68					
GREENFIELD CC		23					
LINCOLN NORTHEASTERN		51	62			71	
LOWELL		33	62			47	
MASSASOIT CC		30					
MOUNT WACHUSETT		25					
NORTHEASTERN							
NORTHERN ESSEX							
NORTH SHORE					38		
SE MASS			50				
QUINSIGANMOND CC		24					
SPRINGFIELD TECH		14					
WENTWORTH		484	103	75			
MICHIGAN							
ALPENA CC MI					61		
ANDREWS							
BAY DE NOC MI					19		
DELTA		36			57		
EASTERN MICHIGAN						26	
GOGEBIC CC							
GRAND RAPIDS CC							
HENRY FORD CC		241					
JACKSON CC MI		1		5	24		
KALAMAZOO VALLEY	4	45					
KELLOG CC							
KIRKLAND CC MI		2			5		
LAKE MICHIGAN CC							
LAKE SUPERIOR		32	27			6	
LANSING CC	20				148		
LAWRENCE TECH		58					
MACOMB CITY SO		54			174		
MICHIGAN TECH		97					
MID-MICHIGAN CC		18					
MONROE CO CC MI							
MONTCALM CC							
MOTT CC MI							
NORTH CENTRAL MI							
SCHOOLCRAFT		30		11	59		
SOUTH-WESTERN MI	4			12	32		
ST CLAIR CO CC							
WASHTENAW							
WAYNE CITY CC MI							
WAYNE STU			30				
WESTERN MICHIGAN							
WESTERN ST							

Table 3. Technology Degrees by School and Degree Level, 1979.

State and School	Engineering Technology			Industrial Technology			
	Cert.	ASET	BSET	Cert.	ASIT	BSIT	MSIT
MINNESOTA							
ANOKA RANSEY CC		8					
MANKATO ST							
NORTH HENNEPIN		5					
NORTHWESTERN ELE INST					161		
ROCHESTER CC MN		46					
SOUTHWEST ST MN			15				
ST CLOUD ST							
MISSISSIPPI							
COANHOMA JC							
COPIAH LINCOLN					22		
JACKSON ST MS						53	
JONES CITY JC MS							
MERIDIAN JMS					23		
MISS GULF ST							
MISS STATE						8	
MISS VALLEY ST						13	
NORTHWEST MJC							
S. MISS			2			30	
TOUGALOO							
MISSOURI							
CENTRAL MO ST					36	87	61
JEFFERSON MO		23			31		
LONGVIEW CC MO		27					
MO INST TECH		35	36				
MO WESTERN ST		13	14				
NORTHEAST MO ST							
NORTHWEST MO ST				9		16	
SOUTHEAST MO ST							
SOUTHWEST MO ST					1	43	
ST LOUIS CC FLO	11	52					
ST LOUIS CC FOR PAR							
MONTANA							
MONTANA ST			59				
NORTHERN MONTANA							
NEBRASKA							
KEARNY ST							
NEBRASKA CURTIS							
NEBRASKA OMAHA		28	26			7	
WESTERN NEBRASKA TI							
NEW HAMPSHIRE							
NEW HAMPSHIRE VT MANCHESTER					79		
NEW HAMPSHIRE			14				
NEW HAMPSHIRE TECH INST		70					
NEW JERSEY							
ATLANTIC CC NJ		18					
CAMDEN CITY CC NJ							
CUMBERLAND					5		
FAIR DICK TEA			80				
KEAN						34	
MERCER		35			16		
MIDDLESEX CO NJ		92			3		
NEW JERSEY TECH			140				
OCEAN COUNTY NJ		22					
SALEM CC NJ				8	68		
SOMERSET CO TECH							
TRENTON ST			69				
UNION TECH		94					
NEW MEXICO							
EASTERN NEW MEXICO		18					
NAVAJO CC							
NEW MEXICO							
NEW MEXICO ST		49	34				
NORTH AMERICAN TECH							
NEW YORK							
ACAD AERONAUTIC		116			78		
ADIRONDACK CC							
BRONX COMM COL.		61					
BROOME		156					

Table 3. Technology Degrees by School and Degree Level, 1979.

State and School	Engineering Technology			Industrial Technology			
	Cert.	ASET	BSET	Cert.	ASIT	BSIT	MSIT
CAYUGA CC							
CCNY							
CORNING CC							
DUTCHESS CO COLL		59		8			
ERIE CC		257					
HUDSON VALLEY		254			187		
MOHAWK VALLEY		208		112	68		
MONROE CC NY		242					
NASSAU CO CC							
NY CITY CC							
NY INST TECH OW		4	28				
NY INST TECH NY			9				
ONONDAGO							
ORANGE CO CC		58					
PAUL SMITH ART							
QUEENSBORO CC		268					
ROCHESTER NATIONAL DEAF							
ROCHESTER TECH		39	184		28		
SCHENECTADY		15					
SUNY A&T ALFRED		339			225		
SUNY BINGHAMTON							
SUNY A&T COBLES							
SUNY BUFFALO			64			87	
SUNY CANTON		181					
SUNY FARMINGTON		489			437		
SUNY A&T MORRIS							
TECH CAREER INST		62					
ULSTER CITY CC		11					
WESTCHESTER CC		124					
NEVADA							
NEVADA		18					
NORTH CAROLINA							
ALAMANCE		27			43		
ANSON TECH NC					10		
BEAUFORT TECH NC					8		
BLUE RIDE TNC							
CAPE FEAR					47		
CATAWBA VALLEY							
CENTRAL CAROLINA							
COASTAL CAROLINA		9					
COLL OF ALBEMARLE		15					
DAVIDSON CITY NC		12					
DURHAM TECH NC		6					
EAST CAROLINA							
FAYETTEVILLE TECH		33					
FORSYTH		65					
GASTON		63			1		
GUILFORD		29			18		
HAYWOOD TECH NC					7		
JOHNSTON TI NC							
MARTIN CC NC							
NASH TECH NC							
NORTH CAROLINA A&T						44	
NORTH CAROLINA CHARLOTTE			64				
PITT TECH							
RANDOLPH TECH		10					
RICHMOND TECH		14					
ROANE-CHOWAN							
ROBESON INST							
ROWAN TECH		26					
SAND HILLS CC							
SURRY CC NC		13					
WAKE TECH INST		60					
WESTERN PIEDMONT		11					
WILSON CITY TECH							
WILKES					36		
WESTERN CAROLINA						37	5
NORTH DAKOTA							
LAKE REGIONAL JC				11			
NORTH DAKOTA						8	
NORTH DAKOTA SCH SCI					391		

Table 3. Technology Degrees by School and Degree Level, 1979.

State and School	Engineering Technology			Industrial Technology			
	Cert.	ASET	BSET	Cert.	ASIT	BSIT	MSIT
OHIO							
AKRON		123	41				
BELMONT TECH OHIO							
BOWLING GREEN						51	
CENTRAL OH TECH		29					
CLARK TECH OHIO		33					
CLEVELAND ST			58				
COLUMBUS TECH		78			31		
DAYTON		33	87				
FRANKLIN OHIO	5	15	28				
HOCKING							
JEFFERSON CO OHIO							
KENT ST TRUMBUL		52					
KENT ST TUSCAR		28					
LAKELAND CC	26	59					
LIMA TECH OHIO		17					
LORIAN CO CO OH	10	69					
MARION TECH OHIO		13					
MIAMI OHIO		35	150				
MUSKINGUM ATC		18					
NORTH CENTRAL T OH		48					
NORTHWEST TECH OHIO		28					
OHIO							
OHIO APPLIED SC		138	54		22		
OHIO INST TECH		221	133				
OWENS TECH OHIO		70					
SHAWNEE ST OHIO		47					
SINCLAIR CC		165					
SOUTHERN ST OHIO							
STARK TECH OHIO		80					
TERRA TECH OHIO							
TOLEDO		84	41				
WASH TECH OHIO		30		4			
YOUNGSTON		92	49				
OKLAHOMA							
CAMERON					42	9	
NORTHEASTERN A&M		35			39		
NORTHEASTERN OK ST						29	
OKLAHOMA ST		81	219				
OKLAHOMA ST TECH CITY							
OKLAHOMA ST TECH OK MU		193			413		
OREGON							
BLUE MONT CC		21					
CLACKAMAS CC							
CLATSOP CC OR		4			5		
LINN-DENTON CC		5			7		
OREGON INST TECH		122	107		79	20	
OREGON ST			64				
UMPQUA CC							
PENNSYLVANIA							
ALLEGHENY CO CC		30					
GANNON			15			8	
LEHIGH							
LUZERNE CC							
NORTHHAMPTON CO							
PA ST CAPITOL			224				
PA TECH PITT							
PENN ST		716					
PENN TECH					207		
PITT BRADFORD							
PITT JOHNSON			89				
PITT TECH PA		93					
POINT PARK							
SCRANTON			4				
SPRING GARDEN		55	114				
TEMPLE		27	131				
TRIANGLE IN PA							
WILKES							
WILLIAMSPORT CC							
RHODE ISLAND							
RHODE ISLAND IS JC							
ROGER WILL COLL		61	82				

Table 3. Technology Degrees by School and Degree Level, 1979.

State and School	Engineering Technology			Industrial Technology			
	Cert.	ASET	BSET	Cert.	ASIT	BSIT	MSIT
SOUTH CAROLINA							
AIKEN TECH SC							
CLEMSON			39				
DENMARK TECH		9					
FLORENCE DARLGT		31					
FRANCIS MARION			7				
GREENVILLE INST		81		126			
HORRY MARION		11					
MIDLANDS TECH		95			4		
PIEDMONT TECH SC		21					
SOUTH CAROLINA ST							
SPARTANBURG		21			5		
SUMTER TECH		15					
TRI-COUNTY TECH		32			20		
TRIDENT TECH SC		67					
SOUTH DAKOTA							
LAKE TECH SD				126			
MITCHELL TECH	43						
SD SPRINGFIELD		155	19				
SOUTH DAKOTA ST		13					
TENNESSEE							
AUSTIN PEAY ST							
CHATTANOOGA ST		29					
CLEVELAND ST CC							
DYERSBURG CC							
EAST TENN ST						71	
JACKSON ST TN							
KNOXVILLE TECH		64					
MEMPHIS ST			77				
MIDDLE TENN							
NASHVILLE TECH		111					
ROANE ST CC TN		26					
ST TECH IN ST TN		151			106		
TENN MARTIN			25				
TENN TECH						32	
VOLUNTEER TN							
TEXAS							
AMARILLO							
BEE COUNTY							
BRAZOSPORT				24	27		
DELMAR		35			17		
DEVRY TEXAS	52	12	12				
HOUSTON CC			209		20		
KILGORE							
LE TOURNEAU		45	56				
MAINLAND			2		20		
SAN ANTONIO		52					
SAN JACINTO				77	109		
SOUTH PLAINS				48	13		
TEXAS A&M			180			15	3
TEXAS SOUTHERN			136				
TEXAS ST TDCH HARL							
TEXAS ST TECH WACO					314		
TEXAS TECH			74				
TYLER JC							
UTAH							
BRIGHAM YOUNG		3	58		1	14	
UTAH ST							
UTAH TECH							
UTAH TECH SL CITY							
WEBER ST		25	58				
VERMONT							
NORWICH			10				
VERMONT TECH		149					
VIRGINIA							
DABNEYS LANCTR		18					
DANVILLE							
JOHN TYLER		23			4		
LORD FAIRFAX		8					
NORFOLK ST					8	35	

Table 3. Technology Degrees by School and Degree Level, 1979.

State and School	Engineering Technology Cert.	ASET	BSET	Industrial Technology Cert.	ASIT	BSIT	MSIT
NORTHERN VA CC							
OLD DOMINION			62				
PAUL D CAMP CC							
PIEDMONT VA CC							
RAPPAHANNOCK CC		10					
SOUTHSIDE VA CC	8	22					
SOUTHWEST VA CC		53					
TIDEWATER CC							
VA WESTERN CC		57					
VIRGINIA HLDS		11					
VPI			98				
WESTERN SHORE U		14					
WYTHEVILLE CC							
WASHINGTON							
HIGHLINE CC							
WASHINGTON ST							
YAKIMA VALLEY							
WYOMING							
CENTRAL WYOMING		3					
WESTERN WYOMING		24		12			
WEST VIRGINIA							
BLUEFIELD		66	19				
PARKERSBURG		7			25		
WV TECH		74	9				
WISCONSIN							
MILWAUKEE ENG		149	130				
MILWAUKEE TECH							
MORAINE PARK					25		
NORTH CENTRAL TECH							
WESTERN WISC							
WISC CENTER SYS							
WISC PLATTEVILLE						44	
WISC STOUT						267	
DEGREE TOTAL	430	14622	6609	731	5306	2105	88

Table 4. Technology Degrees by Curriculum and Level, 1979.

	Engineering			Industrial*		
	Cert.	*Assoc.*	*Bach.*	*Cert.*	*Assoc.*	*Bach.*
Air Conditioning	50	274	25	148	275	0
Aircraft	15	349	101	49	263	42
Architectural	28	756	176	47	185	22
Automotive	33	361	11	119	607	83
Chemical, Ceramic	1	252	13	1	25	0
Civil	19	1,013	665	13	191	10
Construction & Structural	0	403	465	78	275	105
Computer	0	996	124	31	451	4
Drafting, Design & Graphics	20	631	100	47	427	80
Electrical	56	1,808	983	10	352	10
Electromechanical	20	338	58	9	135	1
Electronic	136	3,303	1,482	55	945	146
Engineering Science	18	1,104	75	0	0	0
General	0	112	316	0	10	0
Industrial Technology	13	632	505	30	540	1,472
Marine	0	0	41	0	0	51
Mechanical	14	1,765	1,146	20	344	19
Mining	0	146	45	0	0	14
Materials, Metall.	0	15	73	36	93	4
Nuclear	0	38	17	0	6	0
Other	7	326	188	38	182	42
Total	430	14,622	6,609	731	5,306	2,105

*88 master's degrees were reported: aircraft, 13; industrial technology, 74; electrical, 1.

Table 5. Enrollments in Engineering Technology Programs in Fall 1979, by Program — All Students

ALL SCHOOLS	ASSOCIATE DEGREE 1ST YEAR	2ND YEAR	OTHER YEARS	TOTAL FULL TIME	TOTAL PART TIME	BACHELOR OF TECHNOLOGY PROGRAMS 1ST YEAR	2ND YEAR	3RD YEAR	4TH YEAR	TOTAL FULL TIME	TOTAL POST BACC	ALL PART TIME
AEROSPACE	1708	736	17	2461	572	333	254	211	222	1020	-	56
AGRICULTURAL	47	25	-	72	-	-	-	-	-	-	-	-
AIR CONDITIONING	936	523	5	1464	1236	21	16	-	-	37	-	-
ARCHITECTURAL	2796	1500	14	4310	1688	241	98	258	204	801	6	108
AUTOMOTIVE	2598	1301	57	3956	2060	178	149	129	128	584	5	61
BIOENGINEERING	84	71	-	155	47	34	25	18	20	97	-	31
CERAMIC	13	2	-	15	-	-	-	-	-	-	-	-
CHEMICAL	583	370	-	953	379	21	13	16	21	71	1	8
CIVIL	2532	1518	12	4062	1470	388	274	676	616	1954	1	654
COMPUTER	4045	1669	18	5732	5676	445	251	325	277	1298	2	279
CONSTRUCTION	1899	1118	34	3051	1756	637	545	709	634	2525	16	439
DRAFTING & DESIGN	3773	1675	29	5477	2473	266	257	207	197	927	2	202
ELECTRICAL	5114	3006	2	8122	3638	523	490	1137	1074	3224	39	1777
ELECTROMECHANICAL	934	578	3	1515	660	36	28	97	77	238	-	111
ELECTRONIC	9992	5223	448	15663	7746	1707	1138	1671	1632	6148	21	1839
ENG SCIENCE	742	284	22	1048	253	434	7	4	-	445	-	70
ENVIRONMENTAL	369	178	-	547	258	89	81	87	134	391	15	63
GENERAL	1107	471	86	1664	1330	425	418	668	867	2378	11	672
INDUSTRIAL	1405	738	8	2151	2710	1524	1253	1486	1527	5790	113	1115
MANUFACTURING	548	308	21	877	939	166	189	249	326	930	20	340
MARINE	126	80	-	206	33	265	131	162	178	736	-	19
MATERIALS	-	3	-	3	-	-	-	-	-	-	-	-
MECHANICAL	4353	2562	24	6939	4424	683	666	1449	1318	4116	26	1891
METALLURGICAL	192	61	5	258	302	23	19	40	34	116	-	4
MINING	489	469	-	958	710	2	1	76	113	192	-	38
NUCLEAR	37	25	-	62	1	-	-	5	19	24	-	-
OTHER	1041	456	11	1508	914	199	187	173	162	721	16	205
PETROLEUM	54	38	-	92	9	40	57	49	60	206	-	-
SYSTEMS	-	-	-	-	-	-	-	-	2	2	-	-
TOTAL U.S.	47517	24988	816	73321	41284	8680	6547	9902	9842	34971	294	9982
CURRICULA ACCREDITED BY ECPD	15739	9048	455	25242	11133	2363	1937	4458	4312	13070	35	4138
CURRICULA NOT ACCREDITED BY ECPD	31778	15940	361	48079	30151	6317	4610	5444	5530	21901	259	5844

TECHNICAL WRITING-AN OVERVIEW

Industry generally looks to accredited universities with an accredited BSET or BSIT curriculum to recruit technical writers. We look for a background in computer science courses with significantly higher grades in these courses. Our experience has shown that BSEE or other classical engineering curricula are attended by students desiring hardware, software, or system design and development. These graduates placed in a technical writing arena seem to use it only as an entree to design level work. Generally, industry looks for career writers, and hiring the classical engineering graduate rarely satisfies the need for permanency needed in the writing field. BSET's, on the other hand, do not normally strive for long-term design work, for if they did, the classical engineering curricula would have been their choice. To label the BSET an engineer, as I have defined an engineer, would be unfair to the BSET graduate, for there is as much glamour and excitement, and indeed pay, in fields appropriate for the BSET as there is for the BSEE. The work of applying the science is the mainstay of the industry-and that is where we need the BSET.

What are the prominent traits that the industry looks for in selecting technical writers from the campus? We look for the technical and the computer science courses and well above average grades in these areas. The overall GPA (Grade Point Average) obviously insures a greater opportunity for choice. We look for higher grades in the technical subjects, including math. Rarely do we see technical writing as a separate subject, but when we do, it is important to us. I would heartily encourage the engineering technology curricula to include formalized, structured courses in technical writing. They should be late in the four-year cycle and should be supported with interactive terminals, using a text editing language in a computer based system.

The BSET profile reveals a desire for hands-on experiences, make-it-work type interests. It shows a desire to work with people more than restraining environment of the design laboratory or test bench. It has a need for creativity in expression, its fluidity and lucidity. There is a final product that the writer can label as his, the pride of authorship. The writers know for whom they are writing, and they prepare the text accordingly. They use their skills not to display how much the writer knows on a subject, but instead to convey useful data to the user. The writers become experts to be consulted when the data are distributed and the user seeks more information. They become important.

None of us are surprised that inflation affects starting salaries and periodic raises, and so what I am about to say is true only for today. Further, the dollars I am quoting are actual dollars for my company. However, I feel that they are reasonably typical across industry with a few variations in the areas of extras and benefits. A BSET graduate who meets our minimum hiring requirements would start at $17,400 per year. However, many graduates high in their class rank order or having some outside applicable work or perhaps having served in the military in a technical role are given extra compensation, and another $600 annually is not uncommon. We start these writers as beginners on a salary curve that is below the curve used for our experienced writers. Exclusive of inflationary trends, a new writer would be expected to grow along a learning curve of at least 5% per year or as much as 11 % per year. After a nominal two years of on-the-job experience and

demonstrated performance, the technical writer should expect to be promoted to the career level writing position. Here again, he would normally enter the higher level near the bottom of the learning curve. Growth would be similar to the beginner's curve, e.g., 5% minimum to 11 % maximum. The growth proceeds for four years and would probably total a 30% increase. Or, in other words, once the writer reached maturity on the career curve, the average performer would earn about $27,000 annually. Over 20% of our writers are at the senior level, which enjoys still another salary curve of its own. It is identical to the previous curves but higher in dollars. In this category, the average senior writer earns about $31,000. with the best performers earning over $35,000. These figures are based on current salaries and are affected by inflation and Mr.

Carter's guidelines for each salary review.

From this point on, the technical writer has only one way to advance, and that is in supervision.

After college, the writers are expected to continue their education. They are expected to pursue company sponsored courses in technical writing the way the company wants it, logic presentation courses, specific equipment courses dealing with the subjects they will be documenting in the future, and task analysis courses on how to organize their work. In addition, they are expected by most companies to attend courses dealing with current developments in their field. Sometimes this is done on company premises and sometimes, through special arrangement, this is done on selected campuses, using their instructors. Finally, they are encouraged to continue their learning by pursuing additional formal education on-campus, leading, perhaps, to higher degrees.

One should not visualize technical writers as sitting behind a desk eight hours per day, pencil in hand, outlining, writing, and sketching. About one-half of their time is actually spent writing and making changes to their documents. They must design the technical organizational materials and procedures to establish what is needed by the user. They must research their assignments, obtaining the data and information needed from history files, from the designer, and from the field. They must prepare task analyses to lay out precisely what is needed to complete the documents. They must then prepare the schedule in consonance with the need of the field for the total documentation package. The job usually is priced out to know what the service will cost the ultimate user. The text is then prepared, using the text preparation aids that are available. The documents are assigned to editors, who review everything the writers have written and rewrite where necessary to enhance the understandability of the document. The writers then take the document to the field or to a laboratory to validate the procedures, statements, or interpretations. Finally, the validated text is turned over to the shop for typesetting, printing, and distribution.

Modern day uses of computers naturally lead to computer aided text development. There are many text editing and development programs on the market. Each has its own peculiarities and, depending on the product to be documented, each has certain advantages. Someone interested in text development programs or teaching text development using interactive terminals should be willing to study the various programs available before choosing one for his use.

There are many interactive terminals. Some are smart terminals with standalone capability. Others are merely remote input devices into the real-time computers. However, in either case, multiple interactive terminals can be served by one reasonably sized processor. It is not the intent of this paper to design the system, since this is a very individual thing. It suffices to say that the writer has

available a powerful tool to aid in the generation of text materials.

Let us visualize the writer's output remaining in data base accessible to others. For example, maintenance information could reside in the data base. Any user, anywhere, could dial into the data base and, after logging in, would respond to certain questions asked by the machine with the data base. Through this dialogue, the customer is walked through a series of steps until the problem is localized and corrected. This sort of a system is in use today and, while not all that extensive, is promising enough to predict it becoming a way of life in the future.

The writer is a professional. Industry is looking to the universities for technical writing talent. We require four-year graduates. We insist that only the top half of the graduating class be considered for writing assignments. We cultivate creativity of thought and expression. We have national professional societies recognized as the representing body to promote the professionalism of the field. We challenge the intellect by continuous schooling. We speak at professional gatherings. We present papers to technical journals. We are certainly in demand for our services. Our pay is in the professional realm.

Dr. V.K. Schutz, Temple University
G.A. Thorpe, Western Electric Company

1980 Tau Alpha Pi Page 23

The Nation’s First Engineering Technology Program in Process and Piping Design

The University of Houston Downtown College is located in the heart of the fifth largest city in the nation. Houston is one of the fastest growing and strongest economic areas in the nation, and the population has increased over 65,000 people in each of the last eight years. Despite the increase in population, the low unemployment rate in Houston (3% in November 1979 as compared to the national rate of 5.8%) reflects the overall strength of the local job market.

There are over 100 companies in the Houston area which are involved in the design of petrochemical plants, oil refineries, gas processing plants and other hydrocarbon processing facilities. Among these companies are giants like Bechtel, Brown and Root, Pullman Kellogg, and Fluor. There is a shortage of qualified manpower to work on the design teams of these and other companies. Contributing tothis shortage is a current rush to update existingoil refineries. Gulf Oil Corporation, Atlantic Richfield Co., Mobil, Shell, Amoco, and Chevron are some of the companies which have announced plans to redesign and refurbish their refineries to yield more light fraction products such as gasoline from the heavier crudes that refineries must increasingly use as feedstocks. Moreover, the requirement to "scrub out" sulfur oxides from burning coal to reduce environmental impact will result in even more new design and refurbishing projects, thus compounding the shortage of piping facility design personnel. Such redesign and refurbishing projects are expected to increase total spending in this area from $1.2 billion in 1977 to $4 billion a year into the early 1980's. The longer-term outlook for increased expenditures for new facilities is enhanced by the proposed coal gasification and other synthetic fuels projects which may pour additional billions of dollars into the design of piping facilities.

In 1975 an industryneeds survey wasconducted bythe Universityof Houston Downtown College to determine specific areas in which to develop new degree programs. The strong demand for piping designers surfaced from that needs surveyand, in consultation with representatives from local engineering companies, the development of an Engineering Technology degree program with a major in Process and Piping Design was begun. In the Summer of 1977 the Downtown College was authorized by the Texas Coordinating Board to offer a Bachelor of Science degree in Engineering Technology with a major in Process and Piping Design.

In 1977 the University of Houston Downtown College set a goal to become the center for piping design education in the city of Houston by addressing industry piping design needs in the following distinct areas: entry-level piping drafting, baccalaureate-level engineering technology, and continuing education of industry personnel engaged in the design of piping facilities. The programs in the first two areas are fully implemented and have been well received by industry as well as students. The continuing education program was started in the Springof 1980 with the offering of a piping stress analysis course, but the total program is not yet fully implemented.

Entry-Level Program - Summer Institute of Piping Design

Indicative of industry needs for piping draftsmen are the in-house training programs conducted throughout the nation several times each year by companies like Fluor and Pullman Kellogg. The Downtown College recognized that smaller companies had the same need for piping draftsmen, but these companies could not afford to conduct their in-house programs. Consequently, in the Summer of 1978 the Downtown College offered its first Piping Design Summer Institute. Since then, the Institute has been held each summer.The curriculum includes the course content from four full semester courses, and twelve semester credit hours are awarded. Students attend the Institute eight hours a day, five days a week, for ten weeks. The student body is comprised of students sponsored by participating employers and independent non-sponsored students. Those students sponsored by their employers continue to receive full pay and benefits. Student background ranges from those with only basic drafting experience to those with master's degrees in engineering. Courses covered in the Institute include: Piping Drafting I, Piping Drafting II, Process Piping Design I, and Process Piping Design II.

Upon graduation, the independent non-sponsored graduates of the Institute have been enployed by: Bachtel, Inc., Brown and RootSouthwest Fabricatingand Welding, Inc., H.K. Ferguson, Inc., Texas Pipe Bending Co., Turner, Collie and Braden, Inc., National Supply Co., Tenneco Oil Co., and Entex Inc.

The 1979 starting salaries averaged about $6/hour and ranged to $9.60 per hour. The following companies sponsored their employees to attend the Institute: Crawford & Russell, Inc., Dow Chemical Co., Fish Engineering and Constructors, Inc., Foster Wheeler Energy Corp., and the Lummus Co.

B.S. in Engineering Technology - Process and Piping Design Major

The curriculum has been designed to prepare graduates to be productive immediately upon graduation as members of a piping engineering design team. Accordingly, the students are provided significant academic background in piping drafting, piping design, computer science, applied mathematics, physical science, fluid mechanics, thermodynamics, heat transfer, and other applied engineering principles and practices needed to design piping systems for hydrocarbon processing plants. The curriculum was designed in consultation with chief engineers, engineering managers, and chief piping engineers from companies engaged in the design of hydrocarbon processing piping system. These individuals form an active advisory committee to the College. A typical degree plan follows:

UNIVERSITY OF HOUSTON DOWNTOWN COLLEGE
DEGREE PROGRAM FOR BACHELOR OF SCIENCE
IN ENGINEERING TECHNOLOGY
WITH CONCENTRATION IN PROCESS AND PIPING DESIGN

FRESHMAN YEAR

FIRST SEMESTER		SECOND SEMESTER	
Composition II	3	Engr. Graphics II	3
Engr. Graphics I	3	General Phys. Lab. I	1
College Algebra	3	General Phys. I	3
Plane Trigonometry	3	Elementary Functions	3
U.S. History to 1877	3	U.S. History after 1877	3
		Studies in Literature	3
	15		16

SOPHOMORE YEAR

FIRST SEMESTER		SECOND SEMESTER	
General Phys. Lab II	1	Piping Drafting II	3
General Phys. II	3	Strength of Materials	3
Statics	3	Strength of Materials Lab.	1
Piping Drafting I	3	Calculus II	4
Calculus I	4	General Chem. Lab. I	1
Intro. to Comp. Sci.	2	General Chem. I	3
Fortran Prog/Sci. App	2	U.S. Government I	3
	18		18

JUNIOR YEAR

FIRST SEMESTER		SECOND SEMESTER	
Process Piping Design I	3	Process Piping Design II	3
Applied Thermodynamics	3	Elem. Fluid Mechanics	3
Elect. & Electro. Tech.	3	U.S. Government II	3
Gen. Psychology	3	Prin. of Management	3
Technical Electives	3	Technical Writing	3
	15	Engr. Tech. Seminar	1
			16

SENIOR YEAR

FIRST SEMESTER		SECOND SEMESTER	
Applied Fluid Mech.	3	Intern. Piping Design	6
Heat-Power Applications	3	Applied Heat Transfer	3
Technical Electives	3	Technical Electives	6
Humanistic-Social Electives	6		15
	15		

Total hours. 128

TECHNICAL ELECTIVES

Surveying
Computer Assisted Drafting
Material Science
Materials & Processes
Piping Flexibility Analysis
Advanced Strength of Materials

Since its implementation, the degree program has been well received by students. The total engineering technology course enrollment for the three years since the program was authorized is shown below:

Year	Course enrollment
1977-78	596
1978-79	857
1979-80	916

There are currently 170 declared majors.

Continuing Development Program

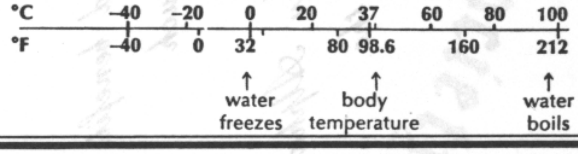
In the Spring of 1980 the first course Pipe Stress Analysis was offered and twenty-five students were enrolled. Future plans include symposiums, short seminars, and courses on piping design problems such as corrosion, instrumentation, valves, pressure vessels, and piping flexibility.

Dr. Stan Ebner
Dean of Technology
University of Houston
Downtown College
Houston, Texas 77002

THINK METRIC

Following are the few metric units of measurement that will be used in our everyday lives and their approximate sizes. Those for time and electricity are the same units with which you are already familiar.

METRIC UNIT	APPROXIMATE SIZE OF UNIT	COMPARATIVE SIZES
(Length)		
millimeter	Diameter of a paper clip wire	
centimeter	A little more than the width of a paper clip (about 0.4 inches)	
meter	A little longer than a yard (about 1.1 yards)	1 METER / 1 YARD
kilometer	Somewhat farther than ½ mile (about 0.6 mile)	
(Weight)		
gram	A little more than the weight of a paper clip	
kilogram	A little more than 2 pounds (about 2.2 pounds)	1 KILOGRAM / 1 POUND
metric ton	A little more than a short ton (about 2200 pounds)	
(Volume)		
milliliter	Five of them make a teaspoon	
liter	A little larger than a quart (about 1.06 quarts)	1 LITER / 1 QUART
(Area)		
hectare	About 2.5 acres	
(Pressure)		
kilopascal	Atmospheric pressure is about 100 kilopascals=29.5 inches of Hg (14.5 psi)	
(Temperature)		



Tau Alpha Pi National Honor Society

Engineering Technologies

Charter

Fellow Members of Tau Alpha Pi — Greeting:

The Executive Council of Tau Alpha Pi National Honor Society has established an affiliate Chapter of that Society in connection with

Milwaukee School of Engineering

and has directed the Executive Secretary to issue a Charter.

Therefore, by virtue of the act of the Council and the authority delegated to us, we do hereby establish you in conformity to the constitution of Tau Alpha Pi National Honor Society as an affiliate to be known as

Alpha Wisconsin Chapter

In recognition thereof we confer upon you the rights, privileges, and benefits appertaining to existing chapters and the responsibilities implicit in such affiliation.

In witness thereof the Executive Council has caused the seal of Tau Alpha Pi National Honor Society to be affixed hereto with the signature of the Executive Secretary on the 6th day of May, 1980.

NATIONAL HONOR SOCIETY TAU ALPHA PI Est. 1953

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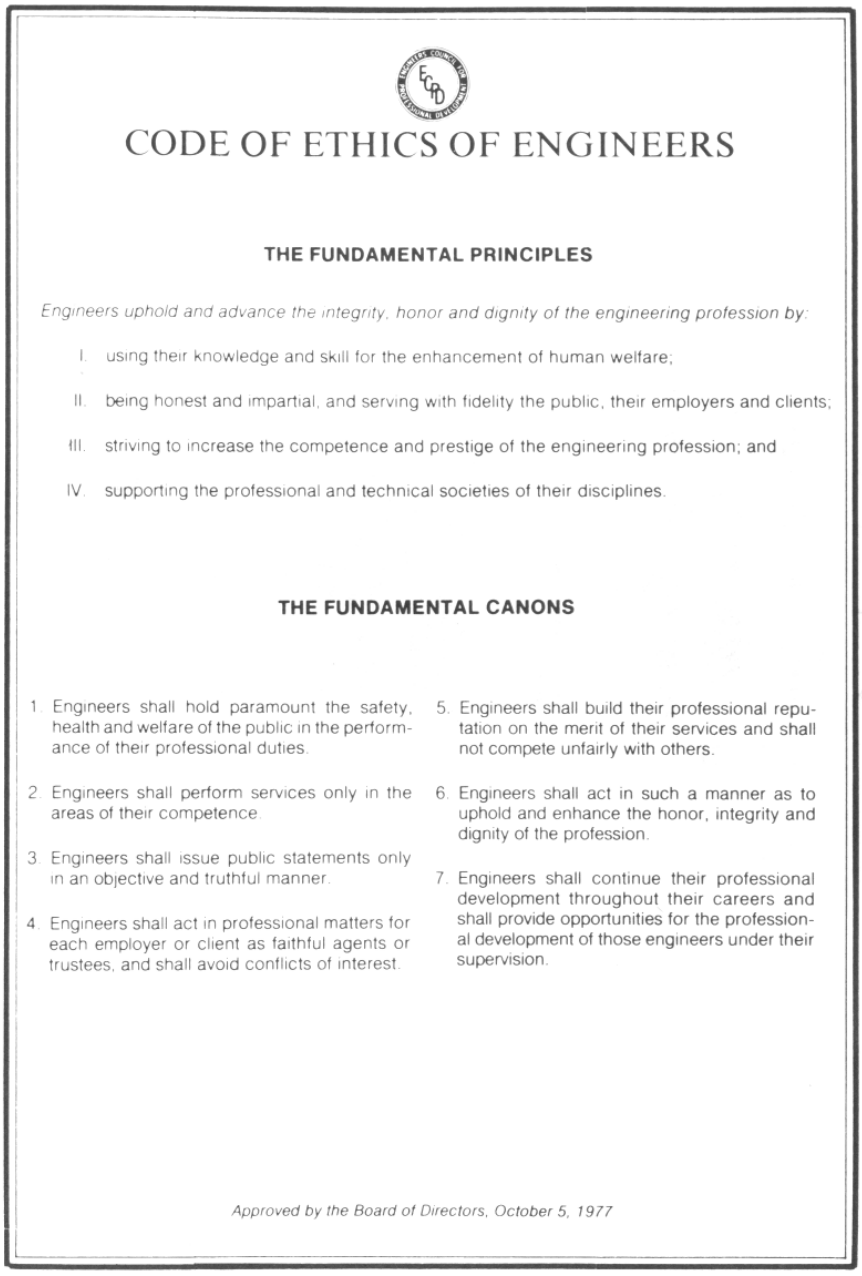


CODE OF ETHICS OF ENGINEERS

THE FUNDAMENTAL PRINCIPLES

Engineers uphold and advance the integrity, honor and dignity of the engineering profession by:

I. using their knowledge and skill for the enhancement of human welfare;

II. being honest and impartial, and serving with fidelity the public, their employers and clients;

III. striving to increase the competence and prestige of the engineering profession; and

IV. supporting the professional and technical societies of their disciplines.

THE FUNDAMENTAL CANONS

1. Engineers shall hold paramount the safety, health and welfare of the public in the performance of their professional duties.
2. Engineers shall perform services only in the areas of their competence.
3. Engineers shall issue public statements only in an objective and truthful manner.
4. Engineers shall act in professional matters for each employer or client as faithful agents or trustees, and shall avoid conflicts of interest.
5. Engineers shall build their professional reputation on the merit of their services and shall not compete unfairly with others.
6. Engineers shall act in such a manner as to uphold and enhance the honor, integrity and dignity of the profession.
7. Engineers shall continue their professional development throughout their careers and shall provide opportunities for the professional development of those engineers under their supervision.

Approved by the Board of Directors, October 5, 1977

Basic Science and Mathematics: Which Topics Are Most Needed?

The engineering technology faculty at Wake Technical College undertook a study in the fall of 1978 to determine if our basic science and mathematics offerings were relevant to graduates' needs on the job. Since 1964, when Wake admitted its first engineering technology students, the engineering technology division had expanded to six fully-accredited two-year associate degree curricula with over 200 students enrolled. Feedback from employers and graduates indicates that the curricula are equipping graduates with the necessary entry level skills. The explosion in technological information, however, has placed demands on two-year ET curricula to include more state-of-the-art subjects at the expense of fundamental science and mathematics subjects. Since only a limited number of topics can be covered in two years, ET curriculum

planners must scrutinize subject matter to ensure that it does help to prepare students for jobs as science and engineering technicians, and to avoid technical obsolescence as their field changes.
We surveyed graduates of Wake's six ET programs and their employers to learn what they considered the basic science and mathematics topics most needed by engineering technicians on the job. We also sought to obtain comments about topics not listed on the survey which may be needed.
Of the 697 participants selected to receive our questionnaire, 470 had graduated from one of the six ET programs at Wake from 1969 through 1977, and 227 were employers of graduates of these programs. The questionnaire was drafted by a group of department heads and a second group of people involved with two-and four-year ET programs nationwide.

Results

Table 1 summarizes the basic science and mathematics topics needed by engineering technicians, as determined by the 29 percent of the enployers and 23 percent of the graduates who responded to the questionnaire. The findings are based on response patterns for a given item in which at least the group of employers or the group of graduates agreed with the combined group of respondents by a majority response in eitherthe essential (E), desirable (X) or not needed (-) categories.
1) The strongest support for the items under mechanics came from respondents in the architectural, chemical, civil engineering, and industrial engineering technologies.
2) The items under the fundamentals of electricity/electronics were unanimously supported by respondents in the computer, electronic engineering, and industrial engineering technologies.
3) All groups of respondents supported the study of the general theory of

light, but only the electronic engineering technology respondents indicated support for all the items under light.
4) The study of the items under sound was supported by three groups of respondents: architectural, computer, and electronic engineering technologies.
5) All groups of respondents supported the study of heat.
6) Modern physics was important only to responding chemical technicians and electronic engineering technicians.
7) Only the chemical technology respondents supported the study of the chemistry subjects.
8) Items listed under biology were needed only by chemical technicians.
9) Civil engineering technicians were the only group who needed a knowledge of all the items under geology.
10) The two items under data processing were important to all but architectural technicians.
11) The study of algebra, trigonometry, logarithms, geometry, analytic geometry, and calculus was supported by all respondents.
12) The chemical, civil, electronic, and industrial engineering technology respondents indicated support for the items under statistics.

At the end of the questionnaire, the study participants were given the opportunity to make further comments, such as to be more specific with regard to certain topics or to list further topics they thought should be included.
In general, their comments addressed specific skills and knowledge required by technicians to do well in their jobs. The comments did reflect an awareness of the rapidly changing requirements in engineering technology and an appreciation of the value of basic science and mathematics in keeping abreast of these changes.
In addition to determining the basic science and mathematics topics most needed by engineering technicians, the study revealed several other trends:
Graduates and employers in all six engineering technology fields indicated that a knowledge of mathematics ranging from algebra to calculus was important for engineering technicians. The extent to which a certain mathematical topic was important depended upon its direct usefulness in solving day-to-day problems on the job. Support for the study of other mathematical topics resulted from a need for a foundation in mathematics which would afford the technician an opportunity to keep abreast of technological changes, as well as to develop analytical skills.
The respondents believed that an engineering technician needs a knowledge of basic science topics, which provide a foundation for applying skills and knowledge in their particular field. For example, chemical technicians indicated support for a study of the basic science of chemistry. Electronic technicians, on the other hand, indicated an interest in the fundamentals of electricity and electronics that explain the electrical phenomena associated with the application of electronics and electricity.
In the case of data processing, all participants except those in architectural technology believed that a knowledge of at least one scientific programming language was important. In addition, respondents indicated an interest in the study of COBOL.
Analysis of the response patterns of employers and graduates showed that graduates were more supportive of a knowledge of basic science and mathematics topics. Employers, on the other hand, tended to support only those topics that

were immediately useful in solving day-to-day problems. This difference in response patterns can be attributed to the desire of engineering technicians to stay abreast of technological change, while their employers appear interested primarily in the knowledge and skills that contribute to immediate productivity.

Timothy I. Edwards and Clarence E. Roberson, Jr. Wake Technical College

Table 1. Summary of Basic Science and Mathematics Topics Most Needed by Engineering Technicians.

	Archit. Tech.	Chem. Tech.	Civil ET	Computer Tech.	Electron. ET	Indus. ET
Mechanics						
Statics	X	X	E	–	X	X
Fluid Mech.	X	X	X	–	–	X
Prop. of Mat'ls	E	E	E	–	X	X
Strength of Mat'ls	E	–	E	–	–	X
Dynamics	X	X	X	X	X	E
Fundamentals of Electricity/Electronics						
Elec. Fields	–	–	–	E	E	X
Magnet. Fields	–	–	–	E	E	X
D. C. Elec.	X	X	X	E	E	X
A. C. Elec.	X	X	X	E	E	X
Electronics	–	–	–	E	E	X
Electronics Devices	X	X	X	E	E	E
Electromag.	–	–	–	X	E	X
Light						
Gen. Theory	X	X	X	X	X	X
Geom. Optics	–	–	–	X	X	–
Phys. Optics	–	X	–	X	X	–
Spectral Anal.	–	X	–	–	X	–
Sound						
Gen. Theory	X	X	–	X	X	–
Recept. Transmiss.	X	–	–	X	X	–
Heat						
Gen. Theory	X	E	X	X	X	X
Heat Trans.	X	X	X	X	X	E
Thermodynamics	X	E	X		X	X
Modern Physics						
Struct. of Atom	–	E	–	–	X	X
Relativity	–	X	–	–	X	–
Fiss./Fus. Radioact.	–	E	–	–	X	–
Chemistry						
Gen. Chemistry	–	E	X	–	X	X
Qualit. Chemistry	–	E	–	–	–	–
Quantit. Chemistry	–	E	–	–	–	–
Phys. Chemistry	–	E	–	–	–	X
Org. Chemistry	–	E	–	–	–	–
Biology						
Gen. Biology	–	X	–	–	–	–
Microbiology	–	E	–	–	–	–
Ecology	X	X	–	–	–	–
Botany	–	–	–	–	–	–
Zoology	–	–	–	–	–	–
Genetics	–	–	–	–	–	–
Geology						
Phys. Geology	X	–	X	–	–	–
Econ. Geology	–	X	X	–	–	–
Struct. Geology	–	–	X	–	–	–
Geophysics	–	–	X	–	–	–
Hydrology	X	–	E	–	–	–

	Archit. Tech.	Chem. Tech.	Civil ET	Computer Tech.	Electron. ET	Indus. ET
Data Processing						
Fortran	–	X	X	X	X	X
Basic	–	X	X	X	X	X
Algebra						
Expon./Radical	X	E	E	E	E	E
Sci. Notation	X	E	E	E	E	E
Alg. Express.	E	E	E	E	E	E
Equat./Word Prob.	E	E	E	E	E	E
Determ. Matrices	X	X	E	X	E	X
Solution to Sys. of Equat.	E	E	E	X	E	E
Factoring	X	E	E	X	E	E
Fractions	E	E	E	E	E	E
Quad. Equat.	X	E	E	X	E	E
Complex & Imag. Nos.	X	X	X	X	E	X
Inequalities	X	X	X	X	E	X
Ratio & Proport.	E	E	E	E	E	E
Progressions	X	X	E	X	E	E
Series; Expans.	X	X	X	X	X	X
Trigonometry						
Angles	E	E	E	X	E	E
Trig. Functions	E	E	E	X	E	E
Right Triangles	E	E	E	X	E	E
Obl. Triangles	E	E	E	X	E	E
Graphs of Trig. Funct.	E	E	E	X	E	E
Inv. Trig. Funct.	X	X	E	X	X	E
Logarithms						
Expon. & Log Funct.	X	X	X	X	E	E
Logs of Trig. Funct.	X	X	X	X	E	E
Geometry						
Plane	E	X	E	X	X	E
Solid	E	X	E	X	X	E
Analytic Geometry						
Rect. Coord.	E	X	E	X	E	E
Solving Equat. Graphically	X	X	E	X	E	X
Graphs of Log Funct.	X	X	X	X	X	X
Polar Coord.	X	X	E	X	X	X
Calculus						
Differentiation	X	E	E	X	X	X
Integration	X	E	E	X	X	X
Diff. of Funct.	X	X	X	X	X	X
Diff'l. Equat.	X	X	X	X	X	X
Laplace Trans.	–	–	X	–	X	X
Statistics						
Probability	–	X	X	–	X	E
Freq. Distr.	–	X	X	–	X	E
Variability	–	X	X	–	X	E
Sampling Theory	–	X	X	–	X	E
Hypoth. Testing	–	X	X	X	X	X

E = essential
X = desirable
– = not needed

Request For Publication

The publication committee of Tau Alpha Pi is interested in receiving articles on Engineering Technology for possible publication in the Tau Alpha Pi Journal. Individuals who have articles or ideas on Engineering Technology which they feel would be of interest to other Engineering Technology educators and students should call or send two copies of their work to: Professor Frederick J. Berger, Editor, Tau Alpha Pi Journal, P.O. Box 266, Riverdale, New York 10471, Telephone: 212-884-4162.

Papers on new and innovative programs, the employment picture, utilization of technology graduates, instructional innovations,and book reviews will be given priority.

Please pass this request on to other colleagues at your campus so that theytoo may participate in furthering the professional status of the Engineering Technology students and the profession.

Parts of the Journal will be going to the printer during the first week of April. We need the articles and your news to insure that your chapter's activities will be included and given national recognition when the journal is published.

If pictures are to included, they should be black and white on glossy paper.

Books of Interest

Bennett, S. A History of Control Engineering 1800-1930. London, 1979. Peter Peregrinus, Ltd., P.O. Box 813, Somerset, N.J. 08873.

The publisher offers the following observations concerning Bennett's book:

Feedback is a crucial concept of modern engineering, whose use has spilled over into many other disciplines. Dr. Bennett traces the growing awareness of the importance and the significance of the concept of feedback in engineering and treats in detail the technical developments that contributed to this awareness. Beginning by studying the history of the control of prime movers, he examines in detail the 19th-century work on the stability problem. There follows an account of the development of steam and hydraulic servomechanisms and their application to the control of ships and aircraft. In the latter part of the book, the development of electrical control systems from the arc lamp to the feedback amplifier is considered. The book ends with a brief outline of the theoretical work on circuit analysis which was to provide the background forthe development that took place in the 1930's of techniques for the analysis of feedback systems.

Goody, Roy W. Microcomputer Fundamentals: A Laboratory Approach. 1980. Science Research Associates, Inc., College Division, 1540 Page Mill Road, Palo Alto, California 94304.

Goody's text is a lab manual designed for both the technician and engineer. It contains 42 experiments that cover the major aspects of 8080A/8085 microcomputer technology, including basic theory, architecture, operation, programming, interfacing, and troubleshooting. The purpose of the manual is to provide the beginning to intermediate student a hands-on opportunity to learn microcomputer technology in a balanced hardware/software environment. Beginning with the most basic concepts of computer technology, the manual guides the student step by step from one level of complexity to the next. In the words of the publisher, a modular approach is taken in which individual circuit modules to be added to the system generally do not include the advanced peripherals such as a CRT display or floppy disc memory.

Some Features:

- Designed to fit a wide range of learning environments, student backgrounds, and course objectives.

- 0ffers an approach simple enough for the beginning student to follow, while at the same time providing numerous options to challenge the most advanced student and to provide the design specialist an opportunity to gain first-hand knowledge of microcomputer hardware.

- Takes a balanced hardware/software approach.
- Emphasizes hand-on involvement of the student at all levels.

- Can be used with all popular 8080A/8085-based single board computers presently on the market.

- Presents the three most important troubleshooting techniques: oscilloscope waveform analysis, single-stepping, and breakpointing.

- Introduces technical terminology gradually, and presents even difficult concepts in plain, easy-to-understand language.

Sydenham, P.H. Measuring Instruments: Tools of Knowledge and Control.

London, 1979. Peter Peregrinus, Ltd., P.O. Box 813, Somerset, N.J. 08873.

Sydenham's work is referred to by the publisher as a book written by a specialist in electric measurement technique. It is reviewed furtheras a book that traces the development of ideas and their practical implementation as measuring instruments from ancient times through the electrical era to the current electronic 20th century. Emphasis is mainly, but not exclusively, on electrical techniques, as all measurements are moving steadily towards electrical output forms in order to be compatible with the extensive low-cost data processing now available. The book begins with a description of the fundamental purposes of measuring instruments and the limitations imposed on the ideal by the present cost of science, technology and skill. Subsequent chapters review the pre-electric era (prior to 1800), the electric era (1900) and the electronic era (to present times). Of special interest is a chapter describing major global historic instrument collections, providing the reader with information that will assist observations of real artifacts used for measurement in the past. Three chapters then give account of the sources of literature available on historic instrumentation, grouping the material as non-electric, specifically for electricity, and partially electric. This book, the first on the history of measurement to concentrate on more modern techniques, is a valuable source book for students of science and engineering as well as for instrument craftsmen, technicians and curators of instrument collections. Engineers in general will find the material provides useful background for appreciating the state of today's instrument practice.

Wandmacher, Cornelius. Metric Units in Engineering-Going SI. NewYork,1978.

Industrial Press Inc., 200 Madison Avenue, N.Y.C. 10016.

Wandmacher's book is described by its publisher as having as its purpose assisting the engineer, technician, or student who is familiar with engineering principles to apply this knowledge in terms of SI metric measuring units. A key feature of this book is the comprehensive use of unit check-outs at intermediate and final solution points in the examples, which increases the reader's understanding of the preferred SI units and how they are applied. Emphasis is placed on practical application in a wide range of engineering subjects, with separate chapters on statics, dynamics, strength of materials, mechanics of machines, fluid mechanics, thermodynamics and heat transfer and on electricity magnetism, and light. Complete information is provided by a table in each chapter on the preferred SI units that are encountered. Presentation of the preferred units and their relationship to the base units is provided, as are specific rules for using the symbols and prefixes of the units. These features and others make this an appropriate book for independent study, as well as for use as a textbook on the application of the new metric system in schools and in training programs for engineers and technicians in industry. With its many tables, charts, and graphs, it will also be valuable as a desk top reference source.

Left to right: Mr. Henry H. Boschen, Prof. Frederick J. Berger.

Chapter News

ALPHA BETA (DeVry Institute of Technology): Alpha Beta continues to provide DeVry students with files of practice tests so that students can diagnose their weaknesses and improve their scholastic performances. On February 22 the chapter elected new officers: Jeff Ake (President); Richard Garvey (Vice-President); Jean Stillwell (Secretary-Treasurer).

BETA ALPHA (Academy of Aeronautics): Chapter members continued to provide peer tutorial assistance to freshmen students. They have served also as official guides on Career Day and during the Alumni Homecoming Day. In recognition of the services of an outstanding teacher, they named Professor Edward Jackson the recipient of the Outstanding Teacher Award and presented him with a plaque. To make the society's existence more visible, the members purchased sweaters with the Tau Alpha Pi emblem. Officers: Mohamed K. Abdelnaby (President); Gene Cundelan (Vice-President); Durrani Sardar (Secretary).

BETA GAMMA (Queensborough Community College, CUNY): Beta Gamma continues to provide a student assistance program for Civil Technology, Electrical Technology, Mechanical Technology, and Pre-Engineering students on the campus. Members of the chapter devote ten hours during the semester to tutor other students. Officers: Doris P. Choi (President); Ed Hanzel (Vice-President); Marlon Mawyin (Secretary).

BETA DELTA (Bronx Community College, CUNY): Beta Delta members continue to serve as ushers at commencement exercises. The Tau Alpha Pi medallion in recognition of scholarship and leadership qualities was presented by the Executive Secretary Professor Frederick J. Berger to Mr. Henry H. Boschen, who, upon graduation, will be employed by Bell laboratories. Among its activities, the chapter invited Dr. Lillian Gottesman, Professor of English, and Mrs. Rose Bell of Student Development to discuss resumé writing. Officers: Ohan Karagozian (President); Juan Larrazabal (Vice-President and Secretary).

BETA EPSILON (Hudson Valley CommunityCollege): On October 1 Beta Epsilon held its initiation of new members and elected officers. Future plans call for inviting guest lecturers to speak on placement, on transfer, and on the engineering field in general. The chapter plans also to provide tutoring for students in need of help. At present, the chapter is designing a Tau Alpha Pi banner. Officers: Stephen C. Heckman (President); Gregory Kedge (Vice-President); Theodore Warner (Secretary); Laurel Andrew (Public Relations).

BETA ZETA (College of Staten Island, CUNY): Beta Zeta held several guest lectures. Included in these were speakers from Consolidated Edison, OSHA Film, Ferrand Optical, Grumman Corporation, General Electric, Phillips Test and Measurement, and Loral Corporation. In addition, chapter members visited Bell Laboratories and Grumman. On December 11 the chapter initiated its new members. Officers: Simon Ingwer (President); Marian Monti (Vice-President); Jeff Birch (Secretary); George Falcone (Treasurer).

BETA IOTA (Rochester InstituteofTechnology): On January29 Beta Iota initiated new members. The chapter plans to develop a tutoring program to help students in the engineering technology discipline. Officers: Richard S. Bird, Jr. (President); Thomas A. Guerin (Vice-President); Thomas G. Peaslee (Secretary); John W. Wolff (Public Relations).

GAMMA DELTA (Franklin University): Gamma Delta held a raffle to raise funds to purchase equipment. The picture shows Linda Guthrie, president of the chapter, presenting a $250 gift to the university. Accepting the gift are (from left to right): Dr. Frederick J. Bunte, president of the university; Dr. James D. McBrayer, dean, academic affairs and of the College of Science and Engineering Technology; and Duanne L. Wiseman, executive director for university development, who said, "This check is the largest single gift ever received by Franklin from one of its student organizations." Officers: Linda Guthrie (President); Brian L. Shaffer (Secretary-Treasurer).

President of the chapter Craig Fix *(right)* and faculty adviser Professor Gerald E. McGlothin display charter received on May 19, 1978.

GAMMA EPSILON (Ohio Institute of Technology): On April 1 Gamma Epsilon initiated new members. The chapter is also forming an alumni chapter. Officers: Jerry Cady (President); Ed Allan (Vice-President); Jerry Alston (Secretary); Bob Styles (Treasurer).

DELTA ALPHA (Wentworth Institute of Technology): Delta Alpha continues to administer bloodmobile programs. It also continues to raise money for the Little Wanderers, an orphanage, and to provide tutoring for students. At social functions such as the annual open house, members serve as guide-hosts. Officers: John Russo (President); Bruce Pierce (Vice-President); Guy Jasmin (Secretary); Gregg Sleeper (Treasurer).

DELTA BETA (Northeastern University): Delta Beta held its initiation ceremony on May 16, 1980. The Executive Secretary Professor Frederick J. Berger assisted and delivered the keynote address. During the

year, the chapter helped coordinate an engineering college open house with Tau Beta Pi, Tau Pi Sigma, and Chi Epsilon honor societies at the university. Future social events with these societies are planned. Officers: Daniel McLaughlin (President, Division A); James J: McDermott, Jr. (President, Division B); Brian Mierzejewski (Secretary); Jeffrey Schwartz (Treasurer).

EPSILON ALPHA (Missouri Institute of Technology): Duringthe year the chapter sponsored a seminar at the end of each trimester on graduate placement, job opportunities, and preparation of a resume. Officers: Roger Kroeze (President); Robert Shaw (Vice-President); Michael Junghans (Secretary-Treasurer).

UPSILON ALPHA (Northern Arizona University): Chapter members have been involved in an interactive process with the faculty and administration in curriculum and laboratory development. They are also providing information to engineering students concerning professional registration as an engineering technologist. Future plans include the formulation of a procedure whereby annual recognition may be given to an outstanding engineering technology professor. Officers: Craig Fix (President).

UPSILON BETA (Arizona State University): Upsilon Beta received its charter on October 13,1979. The chartering ceremonies were followed with a banquet. Ms. Lynn Daniels and Mr. Dave Dacquino, charter committee members, welcomed and introduced the guest speakers. Prof. Frederick J. Berger, Executive Secretary, delivered the keynote speech, and Prof. Frank E. Cox, chairman of the Technology division, addressed the audience. Future plans call for appropriate tours and speakers to enhance students' knowledge of technology. Officers: Steven S. Strauss (President); Ruth Catherine Ashton (Vice-President); Frank A. Torres (Secretary-Treasurer).

ZETA ALPHA (University of Houston, College of Technology): The chapter is proceeding with plans to erect the Tau Alpha Pi key in front of the College of Technology building. It plans also to continue student evaluations of technology faculty and to present an award to an outstanding teacher. Student excellence awards are under consideration. Officers: David P. Lehman (President); Victoria S. Conti (Vice-President and Treasurer); Eric D. Weber (Secretary).

ZELTA DELTA (Texas Tech University): The chapter is involved in raising funds for the engineering honor banquet to be sponsored by the society. Officers: Luis M. Correa (President); Bruce Bott (Vice-President); David Seaman (Secretary); David Miller (Treasurer).

ETA BETA (University of North Carolina, Charlotte): Since the engineering technology students at this university are third-and fourth-year students, active members are comparatively few, making the planning of future programs impractical. The chapter serves in whatever appropriate way it can to help students to be achievers. Officers: Mike Propst (President); Mark Kavanaugh (Vice-President); Tom Crabtree (Secretary); Paula Foster (Treasurer).

LAMBDA BETA (Thames Valley State Technical College): Lambda Beta installed new officers, and the chapter plans for spring and fall initiation ceremonies. Officers: Mark J. Patton (President); Michael J. Jones (Vice-President); Paul J. Trama (Secretary-Treasurer).

XI BETA (Northrop University): The chapter held its chartering ceremony on April 20, 1979. The chairman of Engineering Technology at Cal Poly (Pomona) Professor James P. Todd and Robert Ramsey, president of XI Alpha Chapter, participated in the ceremony.

XI DELTA (California Polytech State University): The chapter conducted initiation ceremonies on March 31, 1980. One of its members Mr. Paul Pepe, a student in the Electronics Option, was named outstanding senior engineering technology student for 1979-80 and was honored at the annual engineers week banquet. As part of the chapter's future plans, the faculty and student members of the Manufacturing Processes Option will arrange for the construction of a large replica of the Tau Alpha Pi key and emblem which will be displayed outside the Engineering and Technology building and used at awards functions. Officers: Barbara Parton (President); Ted Ryan (Secretary-Treasurer).

XI GAMMA (Cogswell College, San Francisco): The twelve charter members and the four alumni members were honored at the graduation exercises on Sunday, June 10, 1979. Professor Jim Todd of XI Alpha chapter, chairman of Engineering

Technologies at California State Polytechnic University at Pomona, performed the initiation and chartering ceremonies.

OMICRON BETA (Union County Technical Institute): The chapter held its initiation ceremony on April 15, followed by a breakfast for new members and guests. Mr. N. Michael Terzian, Dean of Engineering Technology, was awarded honorary membership. Dr. Joseph Kopf, Dean of Technology at New Jersey Institute of Technology, attended the function and was keynote speaker. Officers: Mary Fealey (President); Patricia Kruse (Secretary).

OMICRON DELTA (Hudson County Community College Commission, Stevens Institute of Technology): Initiation ceremonies were held on April 26, 1980. Future plans call for members to give talks to students on duties of various electronics technicians' positions with which they are familiar. Officers: John W. Beck, Jr. (President); Nicole Mastropierro (Vice-President); Viet T. Nguyen (Secretary-Treasurer).

PI ALPHA (Purdue University, West Lafayette): The chapter is in the process of purchasing a new Tau Alpha Pi display case for the new School of Technology building. It is also the recipient of over $600 in donations from industries. Officers: Paul Manicke (President); Gary Hunt (Vice-President); Daniel Davis (Secretary-Treasurer).

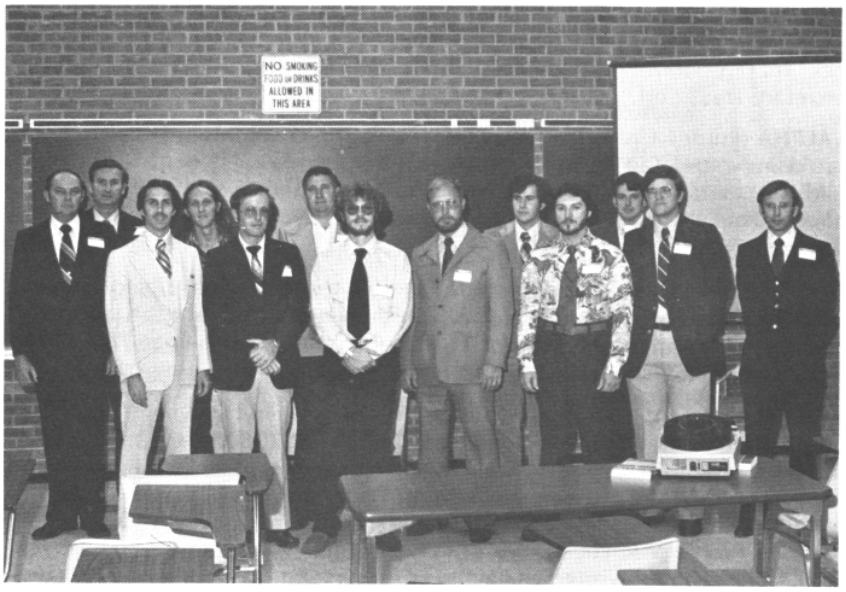
PI DELTA (Purdue University, Calumet): The chapter held its initiation ceremony on April 11. Dr. Steve Chessier of Pi Alpha Chapter assisted with the induction ceremony. Officers: Michael Mercier (President); Steve Wajvoda (Vice-President); James C. Russell (Secretary-Treasurer).

PI GAMMA (Indiana University - Purdue University at Fort Wayne): Chartering and initiation ceremonies were conducted on April 20,1980. A reception for the initiates and guests followed. The Executive Secretary Professor Frederick). Berger presented the Pi Gamma charter to Dean John F. Dalphin and was the keynote speaker. Dean Dalphin presented certificates and keys to the new members. Professor R. Eugene Nix of EET at Purdue, West Lafayette (adviser of the Pi Alpha chapter), visited and acted as escort for the new initiates. Officers: Dale R. Adams (President); Mark E. Massenthin (Vice-President); MaryAnn Might (Secretary).

RHO ALPHA (Colorado Technical College): The chapter sponsored a lecture by Air Force Captain Erie Jumper, who observed and made tests on the "Shroud of Turin." The lecture was open to all who could attend. In the making is a clock project; the clock uses as its time base the signal transmitted from WWVB in Boulder, Colorado, which is referenced byan atomic clock. Future plans include a field trip to the North American Air Defense Command (NORAD). Officers: Jon Dyer (President); Kirt Bailey (Vice-President); Steve Guerrant (Secretary-Treasurer).

RHO BETA (University of Southern Colorado): At its annual initiation and banquet, the guest speaker was Mr. Ray Evans, Acting Forest Supervisor, who spoke on "Wildlife in Colorado National Forest." In addition, Dr. Harvey Gates of the National Bureau of Standards delivered a speech on Data Communication and Land Management. In the future, the chapter will hear a speaker from the Solar Energy Research Institute. Officers: Tim Ferris (President); Kenneth Hill (Vice-President); Samuel Corey (Secretary-Treasurer).

SIGMA BETA (University of Central Florida): Sigma Beta held its recent initiation ceremony on May 30, 1980. Among its activities, the chapter investigated the availability of master's degree programs for technologists and found seven such programs. The schools offering them are: Arizona State University, Texas A. and M. University, Brigham Young University, Western Michigan University, Memphis State University, Georgia Southern College, and Florida International University. Of these programs, the ones at Brigham Young, Memphis State, and Florida International are specialized and pertinent to only some disciplines of technology. The other schools here enumerated offer more general-type programs. Officers: W. Dale Dietzman (President); Peter Kajka (Vice-President).



Initiation, January 18, 1980: *Left to right:* Dr. Denning (Adviser), Jerry Lewis, Tom Wells, Tom Dempsey, John Servis, Carlos Daniels, Hugh Blair, Nolon Johnson, Clayton Glenn, Tim Herlinger, Dale Dietzman, Peter Kajka, and Michael Johns.

OMEGA ALPHA (New Mexico State University): At its initiation and banquet, the guest speaker was Carl A. Schultz, a graduate of the engineering technology program at New Mexico State University, who is at present the manager of the Energy Utilization Department at El Paso Electric Company. As one of its activities, the chapter members continue to offer free tutoring to students on two evenings a week. Plans include visits to high schools to promote the engineering technology program. Officers: Roy Martin (President); Bill Loos (Vice-President); Kent Peay (Secretary).

ALPHA ALABAMA (University of Alabama): Chartering and initiation ceremonies were held on September 28, 1979. The Executive Secretary of Tau Alpha Pi, Professor Frederick J. Berger, presented the charter and conducted the initiation

of members. Dr. Richard Thigpen, vice-president for academic affairs, delivered the address and was presented a certificate of honorary membership.

Left to right: W.S. Byers, F.J. Berger, C. Hall, C. Guterriez, R.G. Smith, S.A. Hitt, F.D. Allen, J.Antrim, R. Thigpen.

ALPHA KENTUCKY (MurrayState University): Alpha Kentucky held its chartering ceremony on May 4, 1979. Charter members were inducted, and Dr. Ken Winters, dean of the College of Industry and Technology, was awarded honorary membership. Dr. Constantine W. Curris, president of the University, spoke at the banquet which followed the ceremony. Officers: Greg Williams (President); Keith Haneline (Vice-President); Chuck Williams (Secretary-Treasurer).

CHARTER MEMBERS — Charter Members of the Alpha Kentucky Chapter of Tau Alpha Pi are *front row, left to right,* Don Futrell, student; Dr. Ken Winters, honorary member; Jennifer Gray, student; Tom Begley, faculty; Larry Dages, student; Bob Jones, faculty; James Weatherly, faculty; *back row,* Mark Donohoo, student; Bill Whitaker, faculty; Chuck Williams, student and secretary - treasurer; Greg Williams, student and president; Keith Haneline, student and vice-president; and John Farell, faculty. Not present for the picture was Mehdi Hashemi.

ALPHA LOUISIANA (Louisiana Tech University): The induction ceremony took place at the home of the chapter's faculty adviser David H. Cowling, followed bya dinner. Officers: Henry E. Lee (President); Brian D. Pecquet (Vice-President); David L. Brown (Secretary); Paul Gatzke (Treasurer).

ALPHA OKLAHOMA (Oklahoma State University): The chapter celebrated its founding on November 15, 1979, and inducted its charter members. Dr. James E. Bose, director of the School of Technology, was the speaker, and Dr. Kenneth McCollom, dean of the Division of Engineering, Technology, and Architecture, performed the ceremonywith Professor Dale Janes assisting. The chapter's future plans include inviting guest speakers from engineering technology-related occupations and developing organizational projects. Officers: David Roberts (President); Tina Larson (Secretary-Treasurer); John Barrick (Membership Chairman); David Porter (Publicity Chairman).

Left to right: John Barrick, David Porter, Tina Larson, David Roberts, Dr. Raymond Neathery (Faculty Adviser).

Honor Roll

The officers and members of Tau Alpha Pi National Honor Society hail and greet the following affiliate chapters newly elected during the yearof 1979-1980. We congratulate the institutions for having the foresight to initiate affiliate chapters of Tau Alpha Pi at their respective campuses. We congratulate these charter members and say to them that they should be proud of their designation, for TauAlpha Pi National Honor Society for students in Engineering Technology is the most selective of all honor societies, accepting onlythe top 4% of all technical students enrolled at a college or university.

We hope that the charter members will establish a solid and firm foundation so that those who follow them will be able to build upon it. Our best wishes for success in the endeavors of Tau Alpha Pi.

Frederick J. Berger
Executive Secretary
Tau Alpha Pi

BETA KAPPA CHAPTER

Chartered May 7,1980. State University of New York College of Technology: Dr. Louis J. Galbiati, Jr. Sponsor; Prof. Nicola Berardi, Prof. James F. Vize, Faculty Advisors.

Charter Members
Bernard Baldyga

John A. Cymburch
Gary Maggi
Robert Rossini
David Trevisani

Patrick A. Fitzgerald
Rudolph C. Kanclerz
William I. Merrick
Daviel H. Strobel

GAMMA UPSILON CHAPTER

Chartered June 6, 1980. Cuyahoga Community College: Dr. Lorin V. Waitkus, Sponsor.

Charter Members
Jules Wayne Rhine
Richard J. Britanik, Jr.
Maxine Giddings

PSI BETA CHAPTER

Mark Robert Karim
Linda A. Geissenhainer

Chartered May 14, 1980. Nashville State Technical Institute: Christopher Wyatt, Faculty Advisor.

Charter Members
W. Frank Evans, Jr.
Vicki Watts
Randy Scott Nave

Lynn Soloman
Joseph C. Chester
Eric Gasser

UPSILON BETA CHAPTER

Chartered October 13, 1979, Arizona State University; Thomas K. Grady, Marshal R. Minter, Faculty Advisors.

Charter Members
Kerry N. Bumpas
Robert Camponoro
David J. Dacquino
Cheryl Diewald
Richard D. Coes
Robert H. Stocking
Ruth Catherine
Mari Lynn Daniels

Clinton B. Eckard
Stephen G. Huff
Thomas). Marcinko
Robert H. Randall
Thomas B. Strauss
Frank A. Torre, Jr.
Sheryl Lynnetti Cramer
Thnmas A. Hitzeman

UPSILON DELTA CHAPTER
Chartered May 23, 1980. DeVry Institute of Technology: Prof. Martin

Halperin, Sponsor.

Charter Members
Thomas D. Boe

Theodore). Ridl,)r.

Randell James Seidlitz

XI GAMMA CHAPTER

Scot Keith Burden Timothy A. Meier

Chartered June 10, 1979, Cogswell College; Donald C.Pare', Faculty Advisor.

Charter Members
John Chin
Greg Crowe
Fred Hennes
Bryan Hayer
David Hutchinson
Timothy O'Hara
Gerald Penyweit
Jesse Roberts
Danette Roukema
Karlyn Tasto

Nick Unmanita
Ming Wu
Jeffrey Crosby
David Drury
Linda Lydon
Charles Wong

PI GAMMA CHAPTER Chartered April 20,1980, Indiana University-Purdue Universityat Fort Wayne; Dr. John Dalphin, Sponsor; Prof. Ron Emery, Faculty Advisor.

Charter Members

Dale R. Adams
Mark E. Mesenthin
Mary Ann Might
Doyle T. Miller
Jon C. Smith
C. Jack Quinn
Lloyd W. Smith
John J. Beuchel
Gregory L. Bieberich
Albert E. Andreas, II.

Thomas A. Bearman
Mark R. Landis
David E. Keith

SIGMA GAMMA CHAPTER

Chartered April 21, 1980, St. Petersburg Junior College; Henry D. Davis, Sponsor.

Charter Members

Thomas M. Everett
Steven R. Oliver
Erik A. Lusis
Brian P. Morse

Richard W. Howe
Richard). Thompson
Donald G. Hendrickx
Mark A. Passaforo

ALPHA ALABAMA CHAPTER

Chartered September 28, 1979. The University of Alabama; Dr. William S. Byers, Sponsor; Dr. Richard Thigpen, Honorary Member.

Charter Members

Carlos Gutierrez
Fred D. Allen
Norman H. Mathews

Carlos Hall
Rhonda G. Smith

Steven A. Hitt

ALPHA OKLAHOMA CHAPTER

Chartered November 5, 1979, Oklahoma State University; Dr. Raymond F. Neathery, Sponsor; Dr. James E. Bose, Dr. Garold D. Oberlender, Dr. Perry R. McNeill, Dr. Marvin D. Smith, Dale F. James, Advisors.

Charter Members

Sayed Kamaledin Adel
Steven Bryan Anderson
John B. Barrick
Billy Joe Benda
Randy Black
Bekkaye Bor
Eric Borcherding
Rodney L. Branch
John C. Burnside
Bob A. Coyle
Kirk R. Elliot
John William Ezrow
Gregg A. Frank
John Cameron Hammond
Francisco Hernandez
Robert Warren Healey
Tony Lee Hines
David C. Jackson
Michael Jarvis
Garry R. Kendle
Thomas Alan Krone
Jeff L. Lake
Tina Louise Larson
Scott Laverde
Steven Wayne Maxwell
Douglas R. McCullough

Brent Meadows
Steven K. Metcalf
James W. Morgan
Roger Dale Nance
Jim Nash
David Kirk Nelsen
Arlen Nipper
James Dwain Nuse
Mike W. Penquite
David A. Porter
Joel David Rabinovitz
Jim Reese
Kenneth Rempe
R. Steve Richardson
David Bryan Roberts
Ricardo Ruiz C.
James R. Schlittler
Michael D. Shepherd

Terrel D. Siemens
Paul A. Smith
Sam Britt Smith
Randolph). Stayton
W. Rory D. Thompson
Edward Roy Townsend
Vafi Habib
Jose Luis Vallesteros Pinto

Doyle Edwin Wilkins William W. Winkle

David Leon Wuerflein Randal G. Fralix

ALPHA LOUISIANA CHAPTER

Chartered January 15,1980, LouisianaTech University; Dr. David H. Cowling, Sponsor.

Charter Members
Henry E. Lee
Brian D. Pecquet
Thomas Michael Weems
Allen Danders

Paul L. Gatzke
Andrew L. Banjemin
Bart Patten
David L. Brown

ALPHA WISCONSIN CHAPTER

Chartered May 6, 1980. Milwaukee School of Engineering: Prof. Ray W. Palmer, Dr. Vincent R. Canino, Sponsors.

Charter Members
John D. Mertens
Leland Zook
Hubert A. Zettel

Susan Lorenz
Marlin Peterson

Collegiate Chapters of Tau Alpha Pi National
Honor Society for Engineering Technology

ALPHA ALPHA CHAPTER
Southern Technical Institute
Clay Street
Marietta, Georgia 30060
Prof. Paul Wojnowiak

ALPHA BETA CHAPTER
DeVry Institute of Technology
828 W. Peachtree Street, N.W.
Atlanta, Georgia 30308
Prof. John Blankenship

BETA ALPHA CHAPTER
Academy of Aeronautics
La Guardia Airport
Flushing, New York 11371
Mr. Joseph J. Scalise

BETA GAMMA CHAPTER

Queensboro Community College of the City University of N.Y. Bayside, New York 11364 Dr. Nathan Chao

BETA DELTA CHAPTER

Bronx Community College of the City University of N.Y.
West 181 St. & University Avenue Bronx, New York 10453
Prof. Frederick]. Berger

BETA EPSILON CHAPTER
Hudson Valley Community College
Troy, New York 12180
Dr. Leonard Spiegel

BETA ZETA CHAPTER

College of Staten Island of the City University of N.Y. 715 Ocean Terrace Staten Island, N.Y. 10301 Prof. Sol Lapatine

BETA THETA CHAPTER

Broome Community College Binghamton, N.Y. 13902 Prof. Robert L. Reid

BETA IOTA CHAPTER

Rochester Institute of Technology One Lamb Memorial Drive Rochester, New York 14623 Prof. Robert McGrath, Jr.

BETA KAPPA CHAPTER

State University of New York College of Technology 811 Court Street Utica, New York 1 3502 Dr. Louis J. Galbiati, Jr. Prof. Nicola Berandi Prof. James F. Vize

GAMMA BETA CHAPTER University of Dayton Dayton, Ohio 45469 Prof. Robert L. Mott

GAMMA DELTA CHAPTER

Franklin University 201 S. Grant Ave. Columbus, Ohio 43215 Dr. James D. McBrayer

GAMMA EPSILON CHAPTER

Ohio Institute of Technology 1350 Alum Creek Drive Columbus, Ohio 43209 Prof. Ira Jay Sheer Prof. Barry Brey

GAMMA UPSILON CHAPTER

Cuyahoga Community College Metropolitan Campus 2900 Community College Ave. Cleveland, Ohio 44115 Dr. Lorin V. Waitkus

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Wentworth Institute
550 Huntington Avenue
Boston, Massachusetts 02115
Prof. James A Tressel
Dr. Carl A. Swanson

DELTA BETA CHAPTER

Lincoln College Northeastern University 360 Huntington Ave. Boston, Massachusetts 02115 Dr. William F. King

EPSILON ALPHA CHAPTER

Missouri Institute of Technology 9001 State Line Kansas City, Missouri 64114 Mr. Tom Colvin

EPSILON BETA CHAPTER

St. Louis Community College at Florisant Valley 3400 Pershall Road St. Louis, Missouri 63135 Mr. Nicholas Pappas Prof. Carl H. Dietz Richard T. Stevens Vincent). Cavanaugh, Marlin Geer

UPSILON ALPHA CHAPTER

Northern Arizona University Box 15600 Flagstaff, Arizona 86011 Dr. Gerald McGlothin

UPSILON BETA CHAPTER

Arizona State University Tempe, Arizona 85281 T.K. Grady Marshall Minter

UPSILON DELTA

DeVry Institute of Technology 4702 North 24th Street Phoenix, Arizona 85016 Prof. Martin Halperin

ZETA ALPHA CHAPTER

University of Houston Cullen Boulevard Houston, Texas 77004 Dr. B.C. Kirklin

ZETA BETA CHAPTER

DeVry Institute of Technology 5353 Maple Avenue Dallas, Texas 75235 Dr. David H. Robison Prof. J.E. Turner Prof. Allan Escher

ZETA DELTA CHAPTER

Texas Tech. University P.O. Box 4360 Lubbock, Texas 79409 Prof. Michael E. Parten Prof. Robert Mason Dr. Fred P. Wagner, Jr.

ETA BETA CHAPTER

University of North Carolina UNCC Station Charlotte, N.C. 28223 Dr. Richard Phelps Mr. Pao Lien Wang Prof. Edward M. Willis

THETA ALPHA CHAPTER

Virginia Western Community College, P.O. Box 4195 3095 Colonial Ave., S.W. Roanoke, Virginia Dr. Martin Levine

THETA BETA CHAPTER
Old Dominion University
P.O. Box 6173
Norfolk, Virginia 23508
Prof. Leonard A. Hobbs

IOTA BETA CHAPTER (17 Chapters)

of the Commonwealth Campuses of Pennsylvania State University Worthington Scranton Campus 120 Ridge View Drive Dunmore, Pennsylvania 18512 Prof. Frank Yatsko

Altoona Campus,
Altoona, PA 16603
Prof. Mervin H. Hostetler

Beaver Campus, Monaca, PA 15061 Mr. Raymond E. Lunney

Behrend Campus,
Wesleyville, PA 16510
Prof. Howard T. Wilson

8erks Campus, Reading, PA 19608
Prof. Arthur P. Hill

Delaware County Campus,
Media, PA 19063
Prof. John Sidoriak

Dubois Campus, Dubois, PA 15801
Prof. Gilbert Hutchinson

Fayette Campus, Uniontown, PA 15401
Prof. Henry M. Stankey

Hazleton Campus, Hazleton, PA 18201
Prof. Elliot R. Eisenberg

McKeesport Campus,
McKeesport, PA 15132
Prof. Duane R. Prosser

Mont Alto Campus,
Mont Alto, PA 17237
Prof. Charles Golab

New *Kensington Campus,*
New Kensington, PA 15068
Prof. Bernard L. Guss

Ogontz Campus, Abington, PA 19001 Prof. Charles H. Taylor, Jr.

Schuylkill Campus,
Schuylkil Haven, PA 17972
Prof. Glenn Gerhard

Shenango Valley Campus,
Sharon, PA 16146
Prof. Merlin F. Jenkins

Wilkes-Barre Campus,
Wilkes-Barre, PA 18708
Prof. Lee Sweinberg

Worthington Scranton Campus,
Dunmore, PA 18512
Prof. Frank Yatsko

York Campus, York, PA 17403 Prof. P. Karapin

IOTA GAMMA CHAPTER

Spring Garden College 102 East Mermaid Lane Chestnut Hill, PA 19118 Prof. Anna B. Hyde

KAPPA ALPHA CHAPTER

Capitol Institute of Technology 10335 Kensington Parkway Kensington, Maryland 20795 Prof. John Tridico

LAMBDA ALPHA CHAPTER

Norwalk State Technical College 181 Richards Avenue Norwalk, Connecticut 06854 Prof. Marie S. Kiss

LAMBDA BETA CHAPTER
Thames Valley State
Technical College
574 New London Turnpike
Norwich, Connecticut 06360
Prof. Robert S. Golart

LAMBDA GAMMA CHAPTER

Hartford State Technical College 401 Flatbush Ave. Hartford, Connecticut 06106 Prof. Bryant Boyd, Dr. Ralph L. Boyers

MU BETA CHAPTER

Clemson University Clemson, South Carolina 29631 Prof. David V. Hutton Prof. Ronald Kopczyk

NU ALPHA CHAPTER Lake Land College Mattoon, Illinois 61938 Prof. Larry J. Hymes Prof. Carrol Livesay

XI ALPHA CHAPTER

California State Polytech. Univ. 3801 West Temple Ave. Pomona, California 91768 Prof. James P. Todd
Prof. Earl E. Schoenwetter

NATIONAL HONORS
FOR
ENGINEERING TECHNOLOGY STUDENTS

Tau Alpha Pi National Honor Society has affiliate chapters on the campuses of many of the country's leading technical colleges and universities. The Society is intended to be for the engineering technology student what Phi Beta Kappa is for the arts and sciences student and what Tau Beta Pi is for the engineering science student.

The Society was founded in 1953 to provide recognition for high standards of scholarship among students in technical colleges and universities and to engender desirable qualities of personality, intellect, and character among engineering technology students by offering membership in the Society to those with outstanding records.

Membership is restricted to students with averages in the top four percent in engineering technology programs. Both associate and baccalaureate degree students are eligible. Membership in Tau Alpha Pi does not conflict with membership in any local honor society.

Realizing student achievement is an important aspect of every educational institution, Tau Alpha Pi will serve as a further recognition of academic excellence, and it welcomes new chapters. If you are interested in establishing a chapter at your institution or in obtaining additional information, please communicate with Professor Frederick). Berger, Executive Secretary, Tau Alpha Pi, P.O. Box 266, Riverdale, New York 10471, or telephone: 212-884-4162.

Chapter News

Name of Chapter College

Advisor: Telephone: Home
Business

New Officers: President: Secretary:

Vice President: Treasurer:

Newsworthy Chapter Activities (since those published in 1979)

Future Plans of Chapter:

Add an additional sheet if you wish.

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Alumni Notes

Tau Alpha Pi is interested in its alumni. Please use the space below to share with us your whereabouts and activities. Mail to Prof. Frederick). Berger, P.O. Box 266, Riverdale, New York 10471.

Name Chapter

Address Zip Code

Add an additional sheet if you wish.