

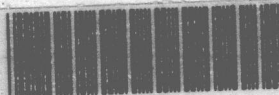
BULLETIN
OF THE
UNIVERSITY
OF SOUTHERN
CALIFORNIA
SCHOOL OF
ENGINEERING
1979-80



G771.249

B936

8060096



E8050096

BULLETIN OF THE
UNIVERSITY OF SOUTHERN CALIFORNIA

SCHOOL OF ENGINEERING

Aerospace Engineering Department

Biomedical Engineering Department

Chemical Engineering Department

Civil Engineering Department

Computer Science Department

Electrical Engineering Department

Electrophysics

Systems

Engineering Management Program

Environmental Engineering Program

Industrial and Systems Engineering Department

Materials Science Department

Mechanical Engineering Department

Operations Research Program

Petroleum Engineering Department



General Information / Degrees and Requirements / Courses of Instruction

The University of Southern California reserves the right to change its policies, procedures, rules, regulations, requirements for graduation, course offerings, and any other contents of this bulletin at any time.

8060036

THE COVER: Archimedes, Greek mathematician, physicist, and inventor — "Give me a place to stand and I will move the world."

CONTENTS

CALENDAR	5
BOARD OF TRUSTEES	6
UNIVERSITY ADMINISTRATION	7
SCHOOL OF ENGINEERING ADMINISTRATION AND FACULTY	9
GENERAL INFORMATION	18
The School of Engineering	19
Academic Program	19
Facilities and Equipment	21
Libraries	22
Computers	22
Image Processing Institute	23
Information Sciences Institute	23
Instructional Television Center	24
Off-Campus Instruction	24
Relations with Industry and Alumni	25
Women in Engineering	26
Student Organizations	26
Recognition of Leadership and Scholarship	27
Honors Program	28
Cooperative Education Plans	29
ADMISSION AND REGISTRATION	33
Admission of International Students	35
Registration	37
Tests and Examinations	38
The Grading System	38
Probation and Disqualification	39
FINANCIAL AID, TUITION, AND STUDENT SERVICES	41
Tuition and Fees	41
Deferred Tuition	43
Refund of Tuition	44
Air Force and Naval ROTC	44
Veterans	45
Financial Aid	45
Prizes, Scholarships, and Fellowships	45
1978-79 Awards in the School of Engineering	50
Student Services	57
Housing	57
Student Health and Counseling Services	59
Handicapped Student Services	59
Career Development Center	59
RESEARCH IN ENGINEERING	61
Aerospace Engineering	61
Biomedical Engineering	62
Chemical Engineering	62
Civil Engineering	63
Electrical Engineering	65
Systems Theory and Applications	66
Environmental Engineering	67
Industrial and Systems Engineering	68
Materials Science	68
Mechanical Engineering	70
Petroleum Engineering	71
TLARGI Rubber Technology Foundation	71
Foundation for Cross Connection Control Research	72
Ph.D. Degrees Conferred January 1978-June 1978	73



8800308

DEGREES AND REQUIREMENTS	77
Common Requirements	78
Master of Science	80
Engineer Degree	82
Doctor of Philosophy	83
Ph.D. in Engineering	86
Aerospace Engineering	86
Applied Mechanics	88
Biomedical Engineering	89
Chemical Engineering	92
Civil Engineering	93
Civil Engineering (Building Science)	95
Computer Science	96
Electrical Engineering	99
Industrial and Systems Engineering	102
Operations Research Program	104
Engineering Management	104
Public Service Engineering Program	106
Materials Science	107
Mechanical Engineering	108
Petroleum Engineering	111
COURSES OF INSTRUCTION	115
Aerospace Engineering	117
Biomedical Engineering	120
Chemical Engineering	122
Civil Engineering	125
Computer Science	131
Electrical Engineering	135
Environmental Engineering	144
Industrial and Systems Engineering	146
Materials Science	149
Mechanical Engineering	152
Petroleum Engineering	157

CALENDAR

SPRING SEMESTER 1979

Feb. 1-3	Registration for spring semester
Feb. 19—Monday	Washington's birthday, University holiday
April 9-14 inclusive	Easter recess
April 16—Monday	Classes resume after Easter recess
May 23—Wednesday	Spring semester classes end
May 25-June 6	Final examinations for spring semester
May 28—Monday	Memorial Day, University holiday
June 7—Thursday	Commencement

SUMMER SESSION 1979

June 8-9	Registration, 12-week session
June 11—Monday	12-week session begins
June 15-16	Registration, 7-week session
June 18—Monday	7-week session begins
July 4—Wednesday	Independence Day, University holiday
Aug. 4—Saturday	7-week session ends
Aug. 6—Monday	4-week session begins
Sept. 1—Saturday	12-week and 4-week sessions end

FALL SEMESTER 1979

Sept. 10-15	Registration for fall semester
Sept. 17—Monday	Classes begin
Nov. 22-24	Thanksgiving recess
Dec. 19-Jan. 1	Christmas recess

1980

Jan. 2—Wednesday	Classes resume after Christmas recess
Jan. 17—Thursday	Fall semester classes end
Jan. 21-30	Final examinations for fall semester
Jan. 31—Thursday	Commencement

BOARD OF TRUSTEES

OFFICERS

J. Robert Fluor, LL.D., Chairman	Los Angeles
Justin Dart, A.B., Hon. Sc.D., LL.D., Vice Chairman	Los Angeles
Leonard K. Firestone, A.B., LL.B., L.H.D., Vice Chairman	Los Angeles
Montgomery R. Fisher, B.S., Vice Chairman	Los Angeles
Mrs. Virginia Ramo, B.S., Vice Chairman	Beverly Hills
Raymond A. Watt, LL.D., Vice Chairman	Santa Monica
Gordon S. Marshall, B.S., Secretary	San Marino
Forrest N. Shumway, A.B., LL.B., LL.D., Treasurer	Beverly Hills

OTHER MEMBERS

Ms. Wallis Annenberg	Beverly Hills
Mrs. Anna Bing Arnold, LL.D.	Beverly Hills
Howard Boyd, A.B., LL.B.	Houston
Robert A. Brown, Jr.	Los Angeles
Yvonne Brathwaite Burke, A.B., J.D.	Los Angeles
Edward E. Carlson	Chicago
Theodore E. Cummings, L.H.D.	Beverly Hills
Davre J. Davidson, L.H.D.	Los Angeles
John J. Elmore, Jr.	Brawley
Kennedy B. Galpin, B.S.	Los Angeles
Marshall A. Green, B.A.	Los Angeles
Carl E. Hartnack	Los Angeles
Herbert S. Hazeltine, B.A., J.D.	Los Angeles
Gavin S. Herbert, B.S.	Irvine
Carla A. Hills, A.B., LL.D.	Rosemead
Jack K. Horton, A.B., LL.D.	Rosemead
Gordon L. Hough, A.B., M.B.A.	San Francisco
John R. Hubbard, Ph.D., D.Hu.L.	Los Angeles
George P. Jenkins	New York
Frank L. King, LL.D.	Los Angeles
Richard H. Lawrence, A.B., A.M.	Los Angeles
Kenneth Leventhal, B.S.	Los Angeles
John A. McCone, B.S., LL.D.	Los Angeles
Paul A. Miller, B.A.	Los Angeles
Walter F. Probst, A.B., J.D.	Nevada
Willard F. Rockwell, Jr., B.S.	Pittsburgh
Henry Salvatori, B.S., M.S., Sc.D.	Century City
George T. Scharffenberger, B.S.	New York
Mrs. Frank R. Seaver, L.H.D., LL.D., D.B.A., Dr. of Public Service	Los Angeles
Norman Topping, M.D., Sc.D., LL.D., L.H.D.	Los Angeles
Paul W. Trousdale	Los Angeles
John C. Wilson, Jr., B.A., M.D.	Los Angeles
Robert D. Wood, B.S., LL.D.	New York

LIFE TRUSTEES

Robert E. Brooker, B.S., LL.D.
Robert A. Hornby, M.E., LL.D.
Willard W. Keith, LL.D.
William C. Mullendore, J.D., LL.D.
Charles B. Thornton, B.S., LL.D.
Gwynn Wilson, A.B., L.H.D.

Chicago
Los Angeles
Los Angeles
Los Angeles
Beverly Hills
Los Angeles

THE PRESIDENT

JOHN R. HUBBARD, Ph.D., D.Hu.L.

THE CHANCELLOR

NORMAN TOPPING, M.D., Sc.D., LL.D., L.H.D.

UNIVERSITY ADMINISTRATION

John R. Hubbard, Ph.D., D.Hu.L.
Zohrab A. Kaprielian, Ph.D.
Paul E. Hadley, Ph.D.
Carl M. Franklin, J.D., J.S.D.
Thomas P. Nickell, Jr., B.S., D.B.A., LL.D.
Anthony D. Lazzaro, B.S., LL.D.
James R. Appleton, Ph.D.
Joseph P. Van Der Muelen, M.D.
Colin MacLeod
Houston I. Flournoy, B.A., M.A., Ph.D.

President of the University
Executive Vice President
Academic Vice President
Vice President, Legal Affairs
Vice President, University Affairs
Vice President, Business Affairs
Vice President, Student Affairs
Vice President, Health Affairs
Vice President, Finance
Vice President, Governmental Affairs

GENERAL ADMINISTRATIVE OFFICERS

Robert Mannes, M.S.M.E., P.E.
Joan M. Schaefer, A.M.
Preston L. Dent, Ph.D.
John Osborne, B.A., M.S.
Roy L. Kidman, M.D. in L.S.

Dean for Student Life
Dean of Women
Associate Dean for Curriculum and Instruction
Acting Registrar
University Librarian

A MESSAGE FROM THE DEAN

No academic discipline affects our lives in so many ways as does engineering. The substance of engineering is technology, and technology permeates the fabric of life in modern society.

Engineering provides the sinews of our industrial and economic might and the first line of our national defense. The entire world looks to engineering for solutions to global problems of pollution, hunger, and dwindling resources.

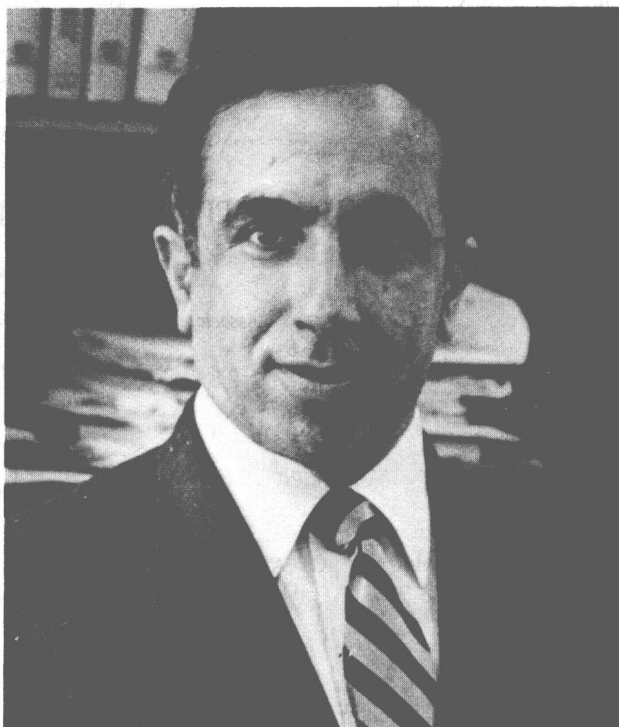
Every major business or government undertaking needs some understanding of technology and its impact on society, and modern decisionmaking increasingly requires the rigors of scientific analysis.

Engineering education is effective preparation for a variety of careers. Just as law for years has been considered a useful general background because of the legal complexities of business and public life, so engineering is highly valued today as a result of the technological complexities of modern society.

The University of Southern California has a major commitment to quality engineering education that dates back to the beginning of the century. Engineering at USC is highly interdisciplinary. The complexity of modern technology and its growing interaction with social and political issues requires engineering to borrow from other disciplines in designing an optimal curriculum.

In both course work and research, students may emphasize either applied or theoretical aspects of engineering. Curricula are flexible and faculty advisors strive to structure each student's program to fit individual interests and needs.

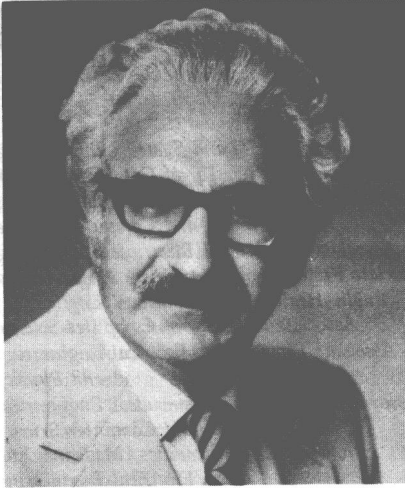
Zohrab A. Kaprielian, Dean, School of Engineering



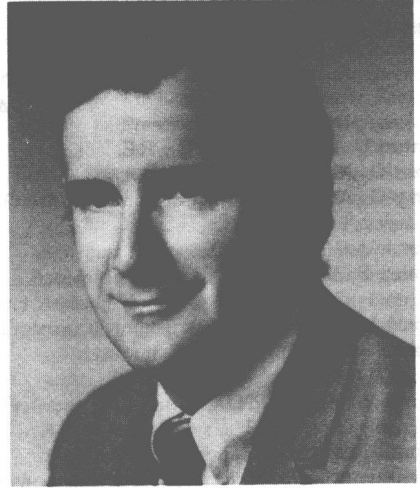
ZOHRAB A. KAPRIELIAN, Dean, School of Engineering

SCHOOL OF ENGINEERING ADMINISTRATION AND FACULTY

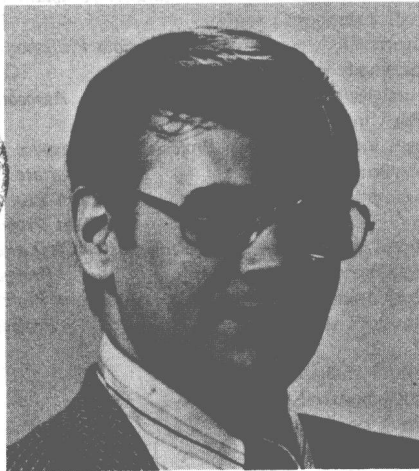
Zohrab A. Kaprielian
Dean



Melvin Gerstein
Associate Dean for Graduate Affairs



Clarke T. Howatt
Assistant Dean for Student and Alumni Affairs



Frederic R. Carlson, Jr.
Assistant Dean for Academic Development

LIBRARIAN

John Vandermolen

EMERITUS FACULTY

Robert E. Vivian, Ph.D.

*Emeritus Dean of the School of Engineering and
Emeritus Professor of Chemical Engineering*

Robert C. Merz, M.S., P.E.

Emeritus Professor of Civil Engineering

Kenneth C. Reynolds, D.Sc.

Emeritus Professor of Civil Engineering

James R. Cady, Ph.D., P.E.

*Emeritus Professor of Mechanical Engineering and
Materials Science*

E. Kent Springer, M.S., P.E.

Professor of Mechanical Engineering

FACULTY

Clinton J. Ancker, Jr., Ph.D., P.E.

Professor of Industrial and Systems Engineering

James C. Anderson, Ph.D.

Assistant Professor of Civil Engineering

Harry C. Andrews, Ph.D.

*Associate Professor of Electrical Engineering
and Computer Science*

Elliot I. Axelband, Ph.D.

Adjunct Associate Professor of Electrical Engineering

Stanley P. Azen, Ph.D.

*Associate Professor of Community Medicine and
Public Health, and Biomedical Engineering*

Robert M. Balzer, Ph.D.

Associate Professor of Computer Science

Michael Bass, Ph.D.

*Research Associate Professor of Electrical Engineering
and Physics*

George A. Bekey, Ph.D.

*Professor of Electrical and Biomedical Engineering
and Computer Science*

Richard Bellman, Ph.D.

*Professor of Mathematics, Medicine, and
Electrical Engineering*

Edwin Lindsley Bidwell III, Ph.D.

Professor of Civil Engineering

Ronnie F. Blackwelder, Ph.D.

Associate Professor of Aerospace Engineering

Edward K. Blum, Ph.D.

Professor of Mathematics and Computer Science

Frank R. Bowerman, M.S., P.E.

Adjunct Professor of Environmental Engineering

Gregg E. Brandow, Jr., Ph.D.

Adjunct Assistant Professor of Civil Engineering

Per Brinch-Hansen, M.S.

Professor of Computer Science

Melvin A. Breuer, Ph.D.

*Associate Professor of Electrical Engineering and
Computer Science*

Frederick K. Browand, Ph.D.

*Associate Professor of Aerospace and
Ocean Engineering*

Richard S. Bucy, Ph.D.

Professor of Aerospace Engineering and Mathematics

Stanley S. Butler, M.S., P.E.

Associate Professor of Civil Engineering

Peter Campbell, Ph.D.

Assistant Professor of Electrical Engineering

Wenji Victor Chang, Ph.D.

Assistant Professor of Chemical Engineering

Kenneth Y. Chen, Ph.D.

Professor of Civil and Environmental Engineering

Hsien Kei Cheng, Ph.D.

Professor of Aerospace Engineering

Tsen-Chung Cheng, Ph.D.

Assistant Professor of Electrical Engineering

George Chilingar, Ph.D.

Professor of Petroleum Engineering

Alfred J. Chomppff, Ph.D.

P. Roy Choudhury, Ph.D.
C. Paul Christensen, Ph.D.
Gerald G. Comisar, Ph.D.
Lee Coopridner, Ph.D.
Stephen M. Copley, Ph.D.

Clarence R. Crowell, Ph.D.
Melvin D. Daybell, Ph.D.
Joseph S. Devinny, Ph.D.

Jean-Claude Diels, Ph.D.
Todd M. Doscher, Ph.D., P.E.

Elmer L. Dougherty, Ph.D.
Richard H. Edwards, Ph.D.
Ward Edwards, Ph.D.

Abbas El Gamal, Ph.D.
Iraj Ershaghi, Ph.D., P.E.
Paul L. Feintuch, Ph.D.
Gerald A. Fleischer, Ph.D., P.E.
Lawrence Flon, Ph.D.
C. Roger Freberg, Ph.D., P.E.
Antranig V. Gafarian, Ph.D., P.E.
Robert M. Garliardi, Ph.D.
G. F. J. Garlick, Ph.D.
Elsa Garmire, Ph.D.
Murray Gershenson, Ph.D.
Melvin Gerstein, Ph.D.
Seymour Ginsburg, Ph.D.
William F. Girouard, M.S., P.E.

Joe D. Goddard, Ph.D.
Solomon W. Golomb, Ph.D.
Fred S. Grodins, M.D., Ph.D.
John V. Guttag, Ph.D.
Lyman L. Handy, Ph.D.

Theodore E. Harris, Ph.D.
John P. Hayes, Ph.D.

Ewald Heer, Ph.D.
Robert W. Hellwarth, Ph.D.
Chih-Ming Ho, Ph.D.
Ellis Horowitz, Ph.D.

Clarke T. Howatt, M.S., P.E.
Patrick Huerre, Ph.D.
Carl E. Johnson, Jr., Ph.D.
George P. Jones, Ph.D.

Robert Kalaba, Ph.D.

Associate Professor of Chemical Engineering and
Materials Science

Associate Professor of Mechanical Engineering
Research Assistant Professor of Electrical Engineering
Adjunct Associate Professor of Materials Science

Assistant Professor of Computer Science
Kenneth T. Norris Professor of Metallurgical Engineering;
Professor of Materials Science and
Mechanical Engineering

Professor of Electrical Engineering and Materials Science
Associate Professor of Electrical Engineering and Physics

Assistant Professor of Civil and
Environmental Engineering

Adjunct Assistant Professor of Electrical Engineering
Shahanshah Aryamehr Pahlavi

Professor of Petroleum Engineering

Professor of Petroleum Engineering

Professor of Aerospace Engineering

Professor of Industrial and Systems Engineering
and Psychology

Assistant Professor of Electrical Engineering

Assistant Professor of Petroleum Engineering

Adjunct Assistant Professor of Electrical Engineering

Professor of Industrial and Systems Engineering

Assistant Professor of Computer Science

Professor of Mechanical Engineering

Professor of Industrial and Systems Engineering

Associate Professor of Electrical Engineering

Research Professor of Electrical Engineering

Research Associate Professor of Electrical Engineering

Professor of Electrical Engineering and Materials Science

Professor of Mechanical Engineering

Fletcher Jones Professor of Computer Science

Adjunct Associate Professor of Industrial and
Systems Engineering

Fluor Corporation Professor of Chemical Engineering

Professor of Electrical Engineering and Mathematics

Professor of Biomedical Engineering and Physiology

Assistant Professor of Computer Science

Omar B. Milligan Professor of Petroleum Engineering
and Professor of Chemical Engineering

Professor of Mathematics and Electrical Engineering

Associate Professor of Electrical Engineering and
Computer Science

Adjunct Professor of Industrial and Systems Engineering

Professor of Electrical Engineering and Physics

Assistant Professor of Aerospace Engineering

Associate Professor of Electrical Engineering and
Computer Science

Assistant Professor of Mechanical Engineering

Assistant Professor of Aerospace Engineering

Adjunct Professor of Petroleum Engineering

Associate Professor of Industrial and Systems
Engineering and Systems Management

Professor of Biomedical Engineering and Economics
and Electrical Engineering

Richard E. Kaplan, Sc.D.	Professor of Aerospace Engineering
Zohrab A. Kaprielian, Ph.D.	Professor of Electrical Engineering
Sarunas K. Karuza, Ph.D.	Adjunct Assistant Professor of Biomedical Engineering (Medicine)
Young B. Kim, Ph.D.	Professor of Electrical Engineering and Physics
Chandra Kintala, Ph.D.	Visiting Assistant Professor of Computer Science and Physics
Solomon J. Klapman, Ph.D.	Adjunct Professor of Civil Engineering
Israel Koren, Ph.D.	Assistant Professor of Electrical Engineering
Ferdinand A. Kröger, Ph.D.	David Packard Professor of Electrical Engineering;
	Professor of Materials Science and Chemistry
	Assistant Professor of Electrical Engineering
Sun-Yuan Kung, Ph.D.	Professor of Electrical Engineering
Hans H. Kuehl, Ph.D.	Adjunct Professor of Industrial and Systems Engineering
Howard Laitin, Ph.D.	Associate Professor of Electrical Engineering and
Kenneth M. Lakin, Ph.D.	Materials Science
	Professor of Materials Science and Mechanical Engineering
Terence G. Langdon, Ph.D.	Professor of Aerospace Engineering
John Laufer, Ph.D.	Associate Professor of Civil Engineering
Jiin-Jen Lee, Ph.D., P.E.	Professor of Electrical Engineering and Materials Science
Kurt Lehovec, Ph.D.	Assistant Professor of Industrial and Systems Engineering
Patrick Leung, Ph.D.	Assistant Professor of Physics and Electrical Engineering
Marc D. Levenson, Ph.D.	Assistant Professor of Biomedical Engineering
Steven M. Lewis, Ph.D.	Adjunct Associate Professor of Aerospace Engineering
Robert H. Liebeck, Ph.D.	Professor of Electrical Engineering
William C. Lindsey, Ph.D.	Professor of Chemical Engineering
Frank J. Lockhart, Ph.D., P.E.	Associate Professor of Computer Science
Ralph L. London, Ph.D.	Professor of Physics and Electrical Engineering
William H. Louisell, Ph.D.	Assistant Professor of Physics and Materials Science
Anupam Madhukar, Ph.D.	Associate Professor of Mechanical Engineering
Robert Mannes, M.S., P.E.	Professor of Physics and Electrical Engineering
John H. Marburger III, Ph.D.	Assistant Professor of Biomedical and Electrical Engineering
Vasilis Marmarelis	Professor of Biomedical Engineering and Physiology
Donald Marsh, M.D.	and Electrical Engineering
	Professor of Civil Engineering
Sami F. Masri, Ph.D.	Professor of Aerospace and Mechanical Engineering
Tony Maxworthy, Ph.D.	Assistant Professor of Computer Science
Dennis McLeod, Ph.D.	Adjunct Assistant Professor of Biomedical Engineering
Donald R. McNeal, Ph.D.	Research Associate Professor of Electrical Engineering
Jerry M. Mendel, Ph.D.	Assistant Professor of Materials Science and
Farghalli A. Mohamed, Ph.D.	Mechanical Engineering
	Professor of Electrical and Biomedical Engineering,
George P. Moore, Ph.D.	Physiology, and Biological Sciences
Hirokazu Muira, Ph.D.	Assistant Professor of Civil and Mechanical Engineering
E. Phillip Muntz, Ph.D.	Professor of Aerospace Engineering and Radiology
Jack Munushian, Ph.D.	Professor of Electrical Engineering
Ramakant Nevatia, Ph.D.	Assistant Professor of Computer Science

Henry L. Pfister, Ph.D.
 William K. Pratt, Ph.D.
 Donald L. Pyke, M.S.
 Charles J. Rebert, Ph.D.
 Larry G. Redekopp, Ph.D.
 Irving S. Reed, Ph.D.

James B. Reswick, Sc.D.
 William P. Rodden, Ph.D.
 Richard Rosen, Ph.D.
 Willard V. T. Rusch, Ph.D.
 David L. Russell, Ph.D.
 Michael J. Safonov, Ph.D.
 Ronald Salovey, Ph.D.
 Alexander A. Sawchuk, Ph.D.
 Robert A. Scholtz, Ph.D.
 Paul Seide, Ph.D.
 Martin Siegel, M.S., P.E.
 Leonard M. Silverman, Ph.D.
 Jan Smit, Ph.D.
 Jin-Joo Song, Ph.D.
 Dorothy F. Soule, Ph.D.
 William G. Spitzer, Ph.D.
 John Stanley-Miller, Ph.D.
 William H. Steier, Ph.D.
 Timothy C. Strand, Ph.D.
 John Andrew Silvester, Ph.D.
 Armand Tanguay, Ph.D.
 Luis H. Tejada-Flores, Ph.D.
 Mihailo D. Trifunac, Ph.D.
 B. Andreas Troesch, Ph.D.
 Theodore T. Tsotsis, Ph.D.
 Firdaus E. Udwardia, Ph.D.
 Keith W. Uncapher, B.S.
 James B. Vernon, M.S., P.E.
 William G. Wagner, Ph.D.
 Don Walsh, Ph.D.
 Charles L. Weber, Ph.D.
 Max H. Weil, Ph.D.
 Victor I. Weingarten, Ph.D.
 Lloyd R. Welch, Ph.D.
 L. Carter Wellford, Ph.D.
 James M. Whelan, Ph.D.

Curt F. Wittig, Ph.D.
 David B. Wittry, Ph.D.
 Harry Wolbers, Ph.D.
 Hung Leung Wong, Ph.D.
 Stanley M. Yamashiro, Ph.D.
 Hsun-Tiao Yang, Ph.D.
 F. Eugene Yates, M.D.
 Teh Fu Yen, Ph.D.

Yanis C. Yortsos, Ph.D.

Assistant Professor of Industrial and Systems Engineering
 Professor of Electrical Engineering
 Adjunct Professor of Civil Engineering
 Associate Professor of Chemical Engineering
 Associate Professor of Aerospace Engineering
 Charles Lee Powell Professor of Computer Engineering;
 Professor of Electrical Engineering and Computer Science
 Professor of Biomedical Engineering and Community Medicine
 Adjunct Professor of Aerospace Engineering
 Adjunct Associate Professor of Civil Engineering
 Professor of Electrical Engineering
 Assistant Professor of Computer Science
 Assistant Professor of Electrical Engineering
 Professor of Chemical Engineering and Materials Science
 Associate Professor of Electrical Engineering
 Professor of Electrical Engineering
 Professor of Civil Engineering
 Associate Professor of Mechanical Engineering
 Professor of Electrical Engineering
 Professor of Electrical Engineering and Materials Science
 Research Assistant Professor of Electrical Engineering and Physics
 Adjunct Professor of Environmental Engineering
 Professor of Physics, Electrical Engineering, and Materials Science
 Assistant Professor of Civil and Environmental Engineering
 Professor of Electrical Engineering
 Research Assistant Professor of Electrical Engineering
 Assistant Professor of Electrical Engineering
 Assistant Professor of Materials Science and Electrical Engineering
 Adjunct Associate Professor of Electrical Engineering
 Associate Professor of Civil Engineering
 Professor of Aerospace Engineering and Mathematics
 Assistant Professor of Chemical Engineering
 Professor of Computer Science
 Professor of Computer Science
 Associate Professor of Mechanical Engineering
 Professor of Physics and Electrical Engineering
 Professor of Aerospace and Ocean Engineering
 Associate Professor of Electrical Engineering
 Clinical Professor of Medicine and Biomedical Engineering
 Professor of Civil Engineering
 Professor of Electrical Engineering
 Assistant Professor of Civil Engineering
 Professor of Electrical Engineering, Materials
 Science, and Chemical Engineering
 Associate Professor of Electrical Engineering
 Professor of Electrical Engineering and Materials Science
 Adjunct Professor of Industrial and Systems Engineering
 Research Assistant Professor of Civil Engineering
 Associate Professor of Biomedical and Electrical Engineering
 Associate Professor of Aerospace Engineering
 Professor of Biomedical and Electrical Engineering
 Associate Professor of Medicine, Chemical
 and Environmental Engineering
 Assistant Professor of Chemical and Petroleum Engineering

RESEARCH SCIENTISTS

Susan Allen, Ph.D.
 Talal Findakly, Ph.D.
 Anastasios T. Georges, Ph.D.
 David Gold, Ph.D.
 J. Mazunder, Ph.D.
 Haluk Sankur, Ph.D.
 James Stone, Ph.D.
 Randall Swinn, Ph.D.
 Eric van Stryland, Ph.D.

Electrical Engineering
 Electrical Engineering
 Electrical Engineering
 Electrical Engineering
 Electrical Engineering
 Electrical Engineering and Materials Science
 Electrical Engineering
 Electrical Engineering
 Electrical Engineering

SENIOR RESEARCH ASSOCIATE

Seymour Lampert, Ph.D.

Mechanical Engineering

RESEARCH ASSOCIATES

Jean-François Abramatic, Ph.D.
 John G. Anderson, Ph.D.
 Ali Aryafar, Ph.D.
 K. Balasubramanyam, Ph.D.
 David H. Campbell, Ph.D.
 Won-Wook Choi, Ph.D.
 Nirjar Dandekar, Ph.D.
 Norbert Didden, Ph.D.
 Marijan Dravinski, Ph.D.
 Andre Fedotowsky, Ph.D.
 Joseph H. Haritonidis, Ph.D.
 David Heiman, Ph.D.
 Hsiao-Yung Hsu, Ph.D.
 Rong J. Huang, Ph.D.
 Charles L. Kwan, Ph.D.
 Sook-Il Kwun, Ph.D.
 Martin Levy, Ph.D.
 Metin Mangir, Ph.D.
 Peter Monkewitz, Ph.D.
 Heung-Sup Park, Ph.D.
 M. Parvin, Ph.D.
 Lars Pernebo, Ph.D.
 Giancarlo Prati, Ph.D.
 T. R. Ramamohan, Ph.D.
 R. K. Ramanathan, Ph.D.
 Dharani R. Rao, Ph.D.
 Hanna Reisler, Ph.D.
 Irving Schwager, Ph.D.
 Shiban Tiku, Ph.D.
 Timothy Troutt, Ph.D.
 Paul van Dooren, Ph.D.
 Patrick D. Weidman, Ph.D.
 Bruce Westermo, Ph.D.

Electrical Engineering
 Civil Engineering
 Civil Engineering
 Electrical Engineering and Materials Science
 Aerospace Engineering
 Environmental Engineering
 Materials Science
 Aerospace Engineering
 Civil Engineering
 Electrical Engineering
 Aerospace Engineering
 Electrical Engineering
 Chemical Engineering
 Chemical Engineering
 Chemical Engineering
 Electrical Engineering
 Electrical Engineering
 Electrical Engineering
 Aerospace Engineering
 Electrical Engineering
 Chemical Engineering
 Electrical Engineering
 Electrical Engineering
 Electrical Engineering and Materials Science
 Civil Engineering
 Electrical Engineering and Materials Science
 Electrical Engineering
 Chemical Engineering
 Electrical Engineering
 Aerospace Engineering
 Electrical Engineering
 Aerospace Engineering
 Civil Engineering

LECTURERS

Neil D. Adams, Ph.D.
 O. Allen Alpay, Ph.D.
 Touaj Assefi, Ph.D.
 Dean P. Athans, Ph.D.
 Joe Ed Baker, M.S.
 Paul E. Baker, Ph.D.
 Robert H. Barbarin, B.S.
 Dale Beckstead, Ph.D.
 Theodore A. Bertness, B.S.
 Melvin Blevins, M.S.
 Nicolai Brovko, Ph.D.
 Adolph Burstein, B.S.
 C. Chen, Ph.D.
 David R. Clarke, Ph.D.
 Lloyd M. Clauss, B.S.
 David W. Cornwell, J.D.
 John Demeree, B.S.
 Ghassam M. Dib, Ph.D.
 Arthur F. Dickerson, B.S.
 Kenneth N. Edwards, M.S.
 James Ellison, Ph.D.
 Claude Fiddler, M.S.
 Steven J. Frank, Ph.D.
 Stewart F. Fredrick, M.S.
 E. King Frey, B.S.
 James G. Gaume, M.D.
 Alfred Gelman, Ph.D.
 Sidney Goodman, M.S.
 Ali Habibi, Ph.D.
 Charles L. Hamermesh, Ph.D.
 Richard Haskell, Engr.
 Charles A. Haskin, B.S.
 Kenneth Hekimian, Ph.D.
 Gerald R. Hintz, Ph.D.
 Shaheen Hovanessian, Ph.D.
 Eli P. Howard, M.S.
 Andrew Hsu, Ph.D.
 Jon Humphrey, Ph.D.
 Patrick Hurdle, Ph.D.
 Mohammad Jahanshahi, Ph.D.
 Joseph Kaellis, Ph.D.
 Lawrence Kashar, Ph.D.
 Bayesteh Kashef, Ph.D.
 Robert Kashef, Ph.D.
 Anette P. Klingman, J.D.
 Edward Knobbe, Ph.D.
 Colin Lau, Ph.D.
 Philip Legendre, Engr.
 David Shiao-Kung Liu, Ph.D.
 Bruno Loran, Ph.D.
 James C. Lu, Ph.D.



Mechanical Engineering
 Petroleum Engineering
 Electrical Engineering
 Mechanical Engineering
 Electrical Engineering
 Petroleum Engineering
 Chemical Engineering
 Mechanical Engineering
 Petroleum Engineering
 Civil Engineering
 Environmental Engineering
 Aerospace Engineering
 Civil and Environmental Engineering
 Materials Science
 Civil Engineering
 Civil Engineering
 Mechanical Engineering
 Civil Engineering
 Electrical Engineering
 Chemical Engineering
 Electrical Engineering
 Petroleum Engineering
 Civil Engineering
 Materials Science
 Mechanical Engineering
 Industrial and Systems Engineering
 Civil Engineering
 Chemical Engineering
 Electrical Engineering
 Chemical Engineering
 Mechanical Engineering
 Petroleum Engineering
 Civil and Environmental Engineering
 Aerospace Engineering
 Electrical Engineering
 Civil Engineering
 Environmental Engineering
 Electrical Engineering
 Mechanical Engineering
 Electrical Engineering
 Chemical Engineering
 Materials Science
 Electrical Engineering
 Electrical Engineering
 Civil Engineering
 Electrical Engineering
 Mechanical Engineering
 Mechanical Engineering
 Civil Engineering
 Chemical and Environmental Engineering
 Civil and Environmental Engineering

Steven Lubard, Ph.D.
 Kenneth Luther, B.S.
 Kenneth F. Marr, B.S.
 Conwell Clayton McCune, Ph.D.
 Ralph Stanley Millhone, M.S.
 Ronald G. Minet, Ph.D.
 Mansour Mansour, Ph.D.
 David Morrison, Ph.D.
 Michael Murphy, Ph.D.
 John Naumann, M.S.
 John Nelson, Ph.D.
 John Olsen, Ph.D.
 Ray Phibbs, Ph.D.
 Allan Piersol, M.S.
 Robert Pilmer, M.S.
 Richard L. Pozzo, M.S.
 Roy Pusey, Ph.D.
 Peter Rosenberg, M.S.
 Richard W. Sherman, M.B.T.
 Donald L. Smith, M.S.
 Albert Stell, Ph.D.
 S. Allan Stewart, B.S.
 Haim D. Tabakman, Ph.D.
 Earl Timpke, Ph.D.
 George Vassilakis, B.S.
 Daniel Veronda, Ph.D.
 Chun-Ching Wang, Ph.D.
 Hugh Washburn, Ph.D.
 Dallas Weaver, Ph.D.
 Sidney A. Weilin, B.S.
 Ira Weiss, Ph.D.
 Kwang W. Won, Ph.D.
 Joseph Yuen, Ph.D.
 Lawrence Zempel, B.S.

Mechanical Engineering
 Industrial and Systems Engineering
 Civil Engineering
 Petroleum Engineering
 Petroleum Engineering
 Chemical Engineering
 Mechanical Engineering
 Industrial and Systems Engineering
 Electrical Engineering
 Industrial and Systems Engineering
 Electrical Engineering
 Environmental Engineering
 Electrical Engineering
 Mechanical Engineering
 Chemical Engineering
 Civil Engineering
 Electrical Engineering
 Electrical Engineering
 Civil Engineering
 Environmental Engineering
 Mechanical Engineering
 Chemical Engineering
 Mechanical Engineering
 Mechanical Engineering
 Computer Science
 Civil Engineering
 Civil and Environmental Engineering
 Electrical Engineering
 Civil and Environmental Engineering
 Electrical Engineering
 Electrical Engineering
 Chemical Engineering
 Electrical Engineering
 Mechanical Engineering