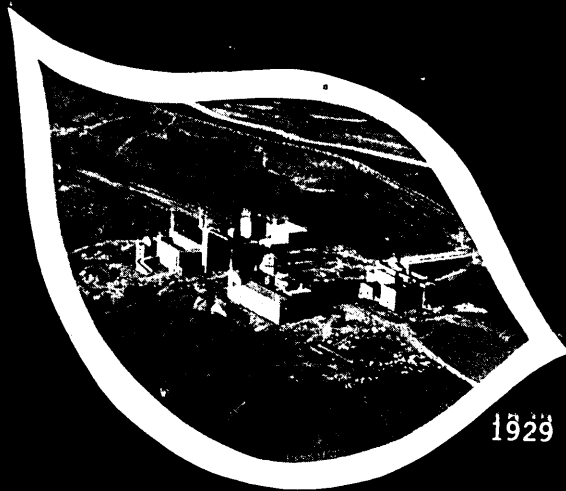


THE 1963 ENGINEERING & MANAGEMENT COURSE

January 21 - January 31, 1963 / An Intensified 10 Day Short Course for Engineers and Managers

College of Engineering / Graduate School of Business Administration / University Extension / University of California, Los Angeles



1929



1963

UNIVERSITY OF CALIFORNIA
COLLEGE OF ENGINEERING

RENO R. COLE
PROFESSOR OF ENGINEERING
COORDINATOR, ENGINEERING AND MANAGEMENT
PROGRAM, UNIVERSITY EXTENSION

ENGR. 6288, UNIT II
BRADSHAW 2-6161 OR
GRANITE 3-0971
EXTENSIONS 9297, 9298

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THE 1963 ENGINEERING & MANAGEMENT COURSE

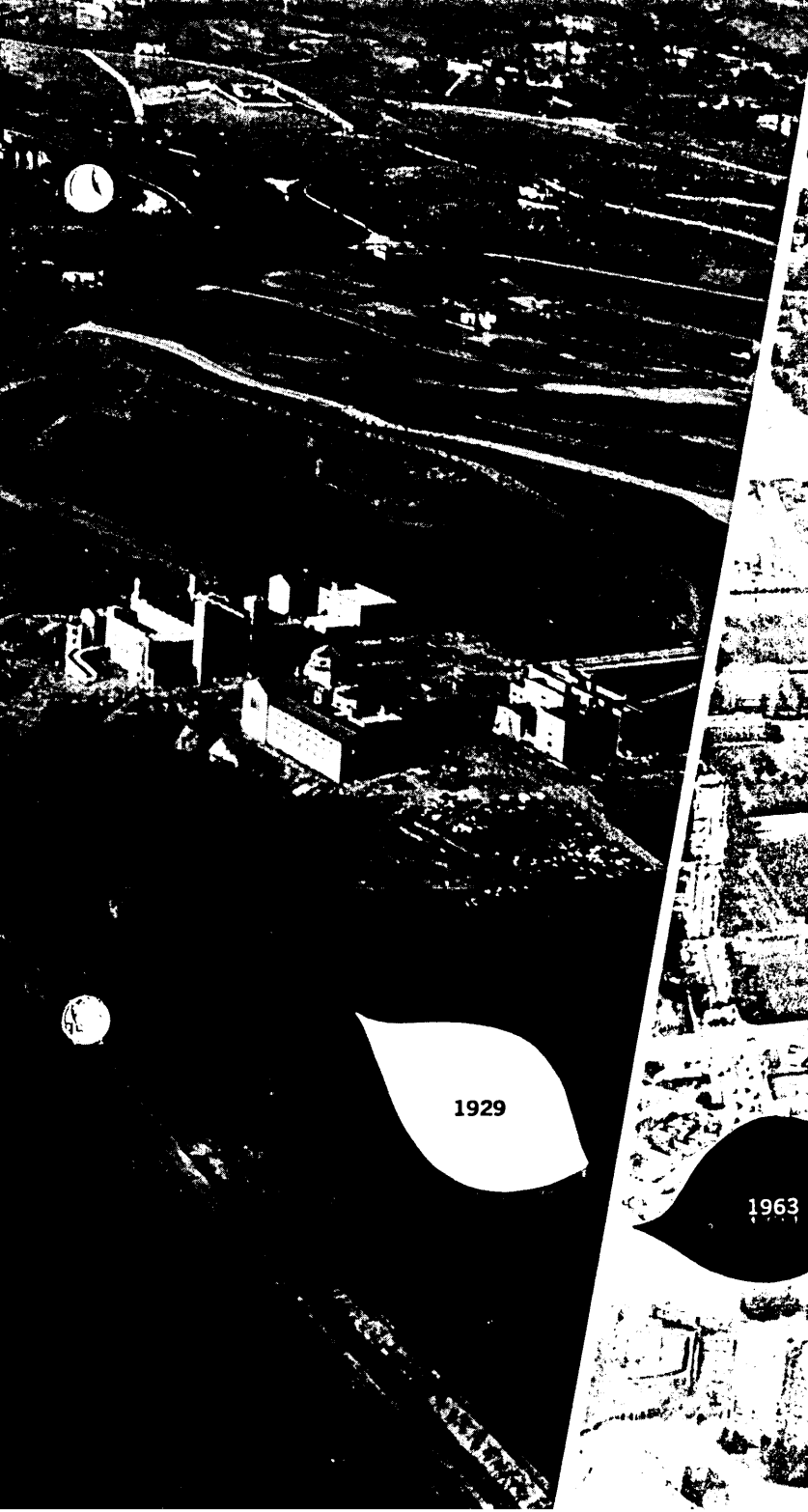
An Intensified 10 Day Short Course for Engineers & Managers

College of Engineering / Graduate School of Business Administration / University Extension / University of California, Los Angeles

January 21–January 31, 1963 (Excluding Sunday)

8:00 a.m. to 5:00 p.m. to be held on the Los Angeles Campus of the University of California

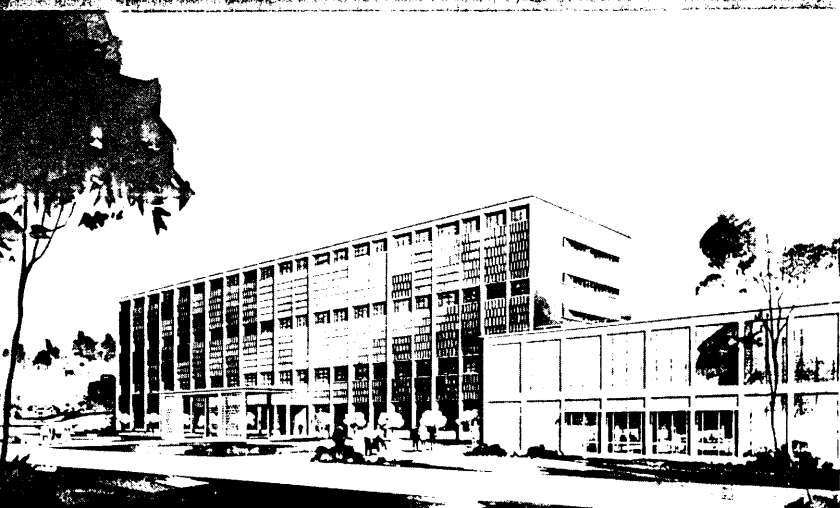
Fee \$450 including all texts and classroom materials—ten luncheons and one dinner



1929



1963



The 1963 Engineering and Management Course will be held in the new Graduate Business Administration Building. This six-story, air conditioned building has the very latest in instructional aid facilities for most effective teaching and for the comfort and convenience of course participants.

Introduction in general session of the course. Luncheons held each day in a special dining room of the new Student Union Building.



Professor Alexander Boldyreff with his class in "Mathematical Bases for Decision and Programming in Industry."

OBJECTIVES

The Engineering and Management Course is an intensified two week program to contribute to the development of engineering and management personnel. The course provides a full time schedule of instruction and study in a university environment designed to prepare individuals for more effective design, installation, and administration of systems coordinating men, materials, machines, and money. Special emphasis is directed toward the development of oral communication ability and an understanding of human relationships.

The course offers an unusual opportunity to engage, both formally and informally, in a challenging interchange of knowledge and experience with the instructional staff and with other engineering and management personnel.

Regardless of the nature of his position or organization, each participant will be able to design a program from the many classes offered, tailored to aid in achieving his goal whether this be improved current job performance or preparation for greater responsibilities.

PARTICIPANTS

There are no formal educational requirements for participation in the course. A desire to contribute to and benefit from, a full interchange of knowledge, ideas, and experience is more important than formal training.

The techniques and practices considered in the wide range of classes offered have such universal applicability that participants have represented organizations both large and small from business, industry, and government. Past participants also have been representative of equally diverse geographical locations having come to the course from countries throughout the world.

A cross section of past participant job titles includes:

Assistant Department Manager
Branch Manager
Chief Chemist
Chief Engineer
Deputy Personnel Director

Development Division Manager

Director of Organization

Director of Research

Director of Systems

Executive Assistant

General Foreman

General Manager

Head Cost Accountant

Industrial Engineer

Inspection Supervisor

Manager of Manufacturing Engineering

Plant Engineer

President

Production Control Manager

Project Engineer

Quality Control Manager

Senior Engineer

Superintendent of Tool Fabrication

Supervisory Marine Engineer

Vice President, Production

Vice President, Sales

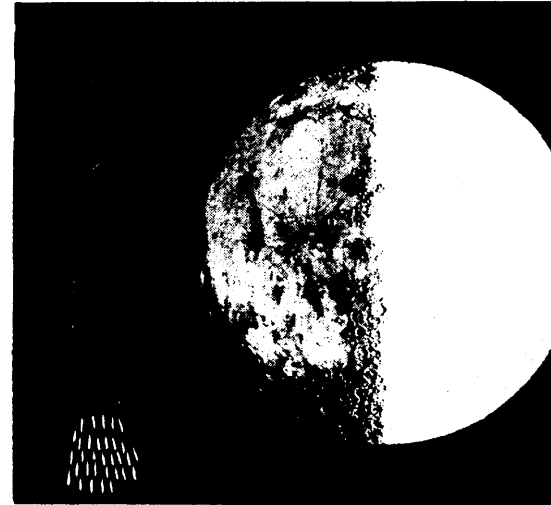
CHOICE OF PROGRAMS

Each participant may select a total of four classes from among the 23 subjects of instruction—one during each of the four daily 1½ hour instructional periods.

In addition, each participant may at his option enroll in either or both of the public speaking classes—the early morning voice laboratory and the late afternoon public speaking class.

OPERATION OF THE COURSE

The regular activities of the Engineering and Management Course occupy the hours from 8:00 a.m. to 5:00 p.m. daily during the period January 21 through January 31, 1963 (Sunday excluded). A detailed time schedule is given on the inside back cover.



SUBJECTS OF INSTRUCTION

The following descriptions of class material do not include all details, and minor changes may be made to fit the needs of those enrolled. Each class is presented at the same instructional period each day for the ten days of the course. Four regular classes may be selected—one in each instructional period. In addition, either or both the early morning voice laboratory and late afternoon public speaking class may be elected.

For convenience, a summary of the class schedule is given on the last page of this brochure.

Class No. 1

EARLY MORNING PUBLIC SPEAKING VOICE LABORATORY

WESLEY LEWIS, Professor of Speech, University of California, Los Angeles.

JAMES MURRAY, Lecturer in Speech, University of California, Los Angeles.

This voice laboratory will enable each participant to objectively study his voice and oral phrasing by means of high fidelity tape recordings. Analysis will be made of voice projection, voice placement, pronunciation, enunciation, pitch variety, emphasis, etc. Individual exercises will be undertaken to remedy any negative voice qualities which tend to interfere with speech communication. For each class period a specific time will be designated for instructional work with individuals and small groups. When not working on their own vocal projects participants are welcome to attend all laboratory periods as observers. In addition to these exercises, two lectures will be presented: (1) Audience Analysis in Terms of Effective Oral Communication, (2) The Vocal Requirements for Effective Communication. The general lecture schedule contains the time and place of these lectures. This class will not meet the first day of the course.

Class No. 2

ELECTRONIC DATA PROCESSING FOR BUSINESS AND INDUSTRY

R. CLAY SPOWLS, Associate Professor of Business Statistics, and Assistant Director, Western Data Processing Center, University of California Los Angeles.

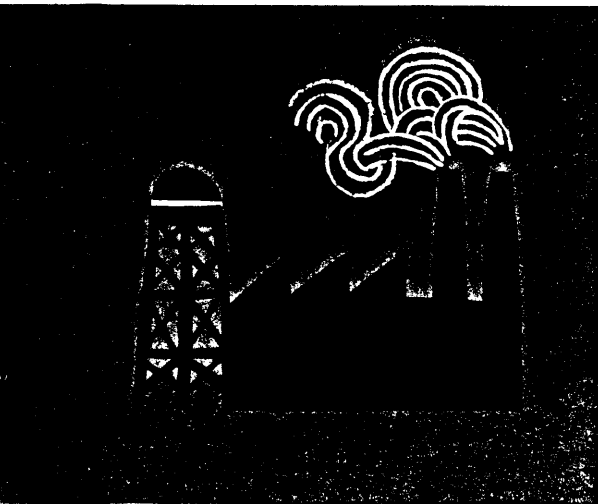
This is a course in the fundamentals of data processing for which no technical knowledge is required. Among the topics to be covered are: basic operations of an electronic computer; functional components of a data processing system; comparison of typical small to large scale configurations of equipment and capabilities; stored programming concepts including the study of one programming language; classroom analysis, programming, testing, and running of one data processing problem on the computing facilities of the Western Data Processing Center (IBM 7090-1401 machine complex); remote installation-data transmission possibilities with demonstrations; computer applications of interest to individual members of the class such as business games, simulation, operations research.

Class No. 3

MANAGING THE USE OF VALUE ANALYSIS AND ENGINEERING TECHNIQUES

LAWRENCE D. MILES, Manager, Value Service, General Electric Co., Schenectady, New York.

The techniques, procedures, and knowledge in the new technology of Value Engineering are normally not required for cost reduction or prevention in the range of 10%. However, when it becomes necessary to remove 25-50% of cost at any one time without decreasing quality or customer values, this technology is definitely needed. New techniques, approaches, and understanding which will allow the engineer and manager to deal effectively with such situations are developed in guided individual participation type of study. Methods for determining the requirements of the work, the organization of the men, their pacing, their measurement and the evaluation of the degree of effectiveness will be included in this instruction.



Class No. 4

**GENERAL MANAGEMENT PRINCIPLES —
SECTION A**

CYRIL J. O'DONNELL, Professor of Business Organization and Policy, University of California, Los Angeles.

GEORGE A. STEINER, Director, Division of Research; Professor of Business Administration; and Managing Editor, California Management Review; University of California, Los Angeles.

JOHN W. CAVE, Lecturer in Business Administration, University of California, Los Angeles.

As the engineer or manager progresses "up the ladder," he has increasing need for understanding the principles of management. This class will place emphasis on the application of these principles to the general management of enterprise, as distinguished from functional management. The material will deal with principles and techniques which are applicable to the executive functions of organization, staffing, planning, direction and control, and thus will provide the professional training required of modern managers. The class is designed for men at all management levels in all types of enterprises.

Class No. 5

**LABORATORY IN LEADERSHIP —
SECTION A**

JEROME REISEL, Acting Assistant Professor, Graduate School of Business Administration; Graduate Research Psychologist, Institute of Industrial Relations, University of California, Los Angeles.

FOR DESCRIPTION SEE CLASS NO. 25

Class No. 6

**THE MANAGEMENT OF INDUSTRIAL
RELATIONS**

JOHN R. VAN DE WATER, Associate Professor of Industrial Relations and Business Law, Graduate School of Business Administration, University of California, Los Angeles.

This class covers the following subject matter: Industry's method of operation in the field of industrial relations. The structure of industrial relations departments and the handling of disputes. The growth of labor unionism in America, its patterns of organization and labor-management relations, and American industry's philosophy of union-company relations. The growth of industry-wide bargaining; problems posed by mammoth union and company power groups, and a study of solutions. Management action in the presence of union organizing campaigns. A comprehensive view of the law which governs this field, studied from a practical case approach. A look to the future, and to our role as managers and employees in a free society—the challenge we face in a world of ideological conflict.

Class No. 7

**ADVANCED PROJECT MANAGEMENT
INFORMATION SYSTEMS**

RUSSELL D. ARCHIBALD, Manager, Management Information Systems, Hughes Aircraft Company, Culver City, California.

Project-type efforts are continually assuming a more dominant role in our age of massive engineering. This course will convey a sound and thorough understanding of the advanced project management information systems growing out of the nation's defense effort (PERT) and the construction industry (Critical Path Method). The fundamentals of these systems, their application, operation, and use as a management tool will be discussed using a fully documented text prepared by Mr. Archibald. The role and usage of the computer will be explained realistically, and the problems of organization, personnel, and procedures related to the practical use of PERT and CPM will be explored. Advanced network-plan based systems which link time, cost, and manpower estimates and actuals will be presented. The course objective will be to provide the manager with a mature understanding of concepts, benefits and limitations, as well as current and future problem areas.

Class No. 8

**GENERAL MANAGEMENT PRINCIPLES —
SECTION B**

CYRIL J. O'DONNELL, Professor of Business Organization and Policy, University of California, Los Angeles.

GEORGE A. STEINER, Director, Division of Research; Professor of Business Administration; and Managing Editor, California Management Review; University of California, Los Angeles.

JOHN W. CAVE, Lecturer in Business Administration, University of California, Los Angeles.

FOR DESCRIPTION SEE CLASS NO. 4

Class No. 9

**LABORATORY IN LEADERSHIP —
SECTION B**

JAMES V. CLARK, Assistant Professor of Business Administration, University of California, Los Angeles.

FOR DESCRIPTION SEE CLASS NO. 25

Class No. 10

**MATHEMATICAL BASES FOR DECISION
AND PROGRAMMING IN INDUSTRY**

ALEXANDER W. BOLDYREFF, Professor of Engineering and Production Management, University of California, Los Angeles; Consultant, The RAND Corporation, Santa Monica, California.

The increasing complexity of modern man-machine system has created a growing need for objective and quantitative techniques upon which managements can base their decisions. In this class, the mathematical bases for decision-making and programming in industry and business are critically examined. The models, methods, and objectives of systems engineering are compared to those of the physical sciences and mathematics. Among the specific areas to be examined are the transportation problem, linear programming, and the theory of games. The practical validity of these techniques and of common sense and empirical techniques, which can be effectively employed by persons without an extensive mathematical background, will be evaluated.

Class No. 11

ENGINEERING AND RESEARCH ADMINISTRATION

ROYAL WELLER, Director of Engineering, Space Systems Division, Lockheed Missiles and Space Company, Sunnyvale, California.

These sessions will discuss some of the philosophies of research in modern industrial organizations with particular emphasis on those industries, such as electronics and communications, which are growing explosively. Topics to be covered will include: program development; selection and training of professional staff; relationship between research, development, engineering, production, and marketing groups; the motivation of scientists and engineers; use of consultants; evaluation of productivity, etc. Some time will be devoted to relationships with other company functions, the problem of communication between

technical and non-technical people, budgetary considerations, and the economic justification for research. Time will also be devoted to questions of government-supported research in industry, proprietary rights and advantages, professional activities outside the company, and the rewards necessary for individual scientific and technical people.

Class No. 12

PRINCIPLES OF PRODUCTION AND OPERATIONS MANAGEMENT

JOHN G. CARLSON, Director of Management Planning and Control, Librascope Division, General Precision, Inc., Glendale, California.

This course will integrate the principals and decision analyses related to the effective utilization of the factors of production in manufacturing and non-manufacturing activities for both intermittent

and continuous systems. Factors to be considered are job design and evaluation, work simplification, work measurement, work sampling, inventory plans, inventory control, quality control, production planning and control, plant layout, cost reduction and control, integrated management controls, union relations, linear programming, manufacturing process functions, simulation, systems engineering, and the interrelationships between the industrial revolution, scientific management, operations research, and automation. The course is designed for people who desire an over-all perspective of the many schematic and analytical models and methods of production and operations management and industrial engineering. It is intended to be helpful to people engaged in all activities where goods or services are produced and operations are managed. The lecture presentations will be supplemented by numerous visual aids. There are no required prerequisites for this course.

Class No. 13

ACCOUNTING FOR ENGINEERS AND MANAGERS

A. B. CARSON, Professor of Accounting and Vice-Chairman in Charge of Accounting, Department of Business Administration, University of California, Los Angeles.

This class will present the fundamental principles and central problems of modern business accounting. Particular emphasis will be placed upon managerial interpretation and use of common accounting information and reports. Among the topics to be covered are the basic concepts of accounting, cost accounting, profit-volume analysis, and budgeting.

Class No. 14

INDUSTRIAL OPERATIONS RESEARCH

PAUL STILLSON, Consultant in Operations Research; President, Stillson Associates, Los Angeles, California.

Operations Research provides the manager with the capability of solving complex operational problems involving interrelated activities within the company. These methods and techniques have



(L to R) Leonard Stevens, Vice President of Mobil Oil Company; Professor John Van de Water, UCLA; and Robert Pot, Chief Engineer of Canadian Fina Oil Ltd., enjoying a coffee break discussion.

now been successfully applied to such problem areas as production scheduling, inventory control, process optimization, marketing, distribution, and competitive practice in most major industrial and business organizations. This class will examine the methods and techniques of Operations Research as it is applied to typical industrial and business problems. Actual case histories of problem solutions will be presented, reviewed, and evaluated. A special feature of the class is a workshop "solution" of an operational problem presented by one of the class members.

Class No. 15
LABORATORY IN LEADERSHIP—
SECTION C

WARREN H. SCHMIDT, Lecturer in Business Administration, Graduate School of Business Administration, University of California, Los Angeles; and Senior Vice President, Leadership Resources, Inc.

FOR DESCRIPTION SEE CLASS NO. 25

Class No. 16
CASE STUDIES IN BUSINESS
MANAGEMENT

CYRIL J. O'DONNELL, Professor of Business Organization and Policy, University of California, Los Angeles.

REED M. POWELL, Lecturer in Business Administration, University of California, Los Angeles.

This class is designed to help participants develop their capacity for planning, decision making, and policy formation. Actual business cases involving issues relating to the functions of managers will be analyzed in general class discussions. The class should be of particular interest and value to management men who wish to test and improve their ability to analyze business problems similar to those met in the daily operation of enterprises.

Class No. 17
PROFIT MANAGEMENT AND COST
CONTROL

FRED V. GARDNER, Senior Partner, Fred V. Gardner and Associates, Milwaukee, Wisconsin.

Present-day business conditions require that decisions be based upon a dynamic view of the profit situation rather than static accounting figures. This class will present a methodology for solving the profit control problem without the necessity to struggle through a mass of detailed data, and in such a way the plan can be understood by non-accountants. It will present a study of the problems surrounding profitable operations based on actual experience in all types of industries; how to determine, use, interpret, and compare the breakeven behavior of any company. Among the topics to be discussed are: the breakeven concept, breakeven analysis arithmetic, time and variable factors, capital growth factors, the coordination of profit potential and capital requirements. The class will also cover the important question of direct costing and the problems involved in return on investment. This latter problem will be presented to cover the final and important coordination of the breakeven point and the

capitalgraph. Extensive use will be made of examples which show how breakeven analysis can be used in managerial decisions concerning control of overhead, determination of selling prices, bonus plans, labor relations, and retail cost controls. This class will help non-accounting people understand and know how to secure more discerning information for control of costs and profits, and will help accounting people realize the importance of this requirement.

Class No. 18
LEADERSHIP PRINCIPLES—SECTION A

ROBERT TANNENBAUM, Vice-Chairman, Department of Business Administration and Professor of Personnel Management and Industrial Relations, Graduate School of Business Administration; Research Economist, Institute of Industrial Relations, University of California, Los Angeles.

There is great need today for most managers to



Fred Spina, Division Industrial Engineer for Safeway Stores, checks his mail box between classes.

understand the factors that make for effectiveness in interpersonal relations. To meet this need, this class will consider: (1) The interpersonal leadership process; (2) What makes for effective leadership?; (3) Understanding the individual; (4) Communication: sending and listening; (5) Understanding the group; and (6) Introducing change—the individual group, and organization. This class is recommended for those who desire to survey current ideas and methods based on both research and practice. This is a companion class to "Laboratory in Leadership." Although these classes may be taken separately, many past participants have stressed the value of taking both since they are closely related. There are no prerequisites for the class.

Class No. 19 **EFFECTIVE MANAGERIAL** **COMMUNICATION**

ARTHUR J. SHEDLIN, Lecturer in Business Administration and Director of Placement, Graduate School of Business Administration, University of California, Los Angeles.

To be effective, information must be conveyed and received clearly and accurately. The size and diversity of modern organizations make the task of maintaining effective interpersonal and inter-departmental communications exceedingly difficult. This class will focus on the individual's thinking, evaluating, and analyzing, especially as they are related to his communication (speaking-listening-writing-reading) and his other interpersonal relations. Specific patterns of miscommunication will be analyzed and corrective measures will be offered. Research and experiments in communication will be presented and discussed.

Class No. 20 **ECONOMICS OF MANAGERIAL POLICY** **DECISIONS**

J. MORLEY ENGLISH, Manager, Engineering Design Department, Space Technology Laboratories, Redondo Beach, California.

Technological change is occurring at such a rapid rate in the present day that it presents serious problems for management in projecting needs for new plant investment, in predicting the possible effects of obsolescence, and in establishing sound policies for replacement of equipment. Furthermore the growing need for research and development programs requires proper allocation of capital funds to meet these needs in competition with budgets for other capital expenditure. Fundamental principles governing economic investment alternatives will be developed. Economic criteria involving money, price, time and other value parameters will be discussed. The precise formulation of such criteria and the definition of problems in which they are applicable will be used for deriving practical working bases for decision making. In addition to such formal approaches as the MAPI method, various rule-of-thumb methods for replacement policy will be examined to determine the limits of their usefulness and to explore inherent errors in their application. Principles of capital budgeting will be discussed. No prior formal training in economics is assumed.

Class No. 21 **DESIGN AND MEASUREMENT OF WORK**

ROBERT B. ANDREWS, Sloan Teaching Intern, School of Industrial Management, Massachusetts Institute of Technology, Cambridge, Mass.

This class is devoted to the identification, analysis, and solution of work problems. An approach is presented for specifying work systems and individual jobs that increases the effectiveness and reduces the cost of production, service, clerical, and technical activities. Both the design of new work and the improvement of existing work are examined. Well established principles and techniques of method engineering are combined with specialized knowledge drawn from the biological and behavioral sciences. Special attention is given to the physiological, psychological, and sociological characteristics of humans that provide limiting and optimal values for work design. The major methods of work measurement, including historical records, stopwatch time study, work sampling, standard data and predetermined motion systems, are evaluated and compared.

Class No. 22 **INDUSTRIAL STATISTICS AND QUALITY** **CONTROL**

R. CLAY SPROWLS, Associate Professor of Business Statistics, and Assistant Director, Western Data Processing Center, University of California, Los Angeles.

Statistics has become an invaluable tool of management. This class will present the fundamental concepts of probability and statistics and the applications to control charts, sampling plans, tests of significance, regression, and correlation. All of the topics will be discussed from the engineering, production, and business administration viewpoints. In addition, the application of electronic computers to solve business and industrial statistical problems will be examined. This class will be of particular value to those without an extensive mathematical background who wish to make better use of statistical methods and quality control.

Class No. 23 **LEADERSHIP IN THE SMALL** **TASK-GROUP**

JAMES V. CLARK, Assistant Professor of Business Administration, University of California, Los Angeles.

This course is designed to help technical specialists and managers increase their capacities to understand and to take useful action toward the determinants of motivation, productivity, and satisfaction in small task-groups. Classroom discussion will center on real-life case descriptions of actual business situations. It will apply many of the findings and methods of current research on organizational behavior as well as useful generalizations from each participant's experience. The goal of the course is to allow students to develop an explicit way of thinking about leadership and membership in small task-groups. The text for the course is the widely-used **Organizational Behavior and Administration: Cases, Concepts and Research Findings**, of which Professor Clark is a co-author. There are no pre-requisites for the course, although practical experience as an administrator of small task-groups and concurrent involvement in the "Laboratory in Leadership" class are helpful.

Class No. 24
ORGANIZATION AND ADMINISTRATION
OF AN INDUSTRIAL ENGINEERING
DEPARTMENT

ROBERT J. ROHR, JR., Assistant Director of the Industrial Engineering Division, Eastman Kodak Company, Rochester, New York.

This class will analyze the administrative problems that must be coped with in all industrial engineering organizations, regardless of size. Specific sessions will be devoted to the organizational and functional responsibilities of the department head; the training, supervision and professional development of personnel; sources and types of assignments; control of work progress and evaluation of results; and the necessary administrative records required for communication and department budget control. Discussion will also center around such necessarily related topics as the operating philosophies underlying the use of the team approach for problem solving, the changing nature of work simplification programs, the dynamics of human engineering, the application of mathematical and statistical techniques to industrial engineering problems, and the increasing need for a well coordinated research and development program in the industrial engineering techniques. This class is designed primarily for key personnel in industrial engineering organizations. It should also be of great value to personnel at all levels of management who are interested in the non-technical aspects of the industrial engineering function.

Class No. 25
LABORATORY IN LEADERSHIP—
SECTION D

ROBERT TANNENBAUM, Vice-Chairman, Department of Business Administration and Professor of Personnel Management and Industrial Relations, Graduate School of Business Administration; Research Economist, Institute of Industrial Relations, University of California, Los Angeles.

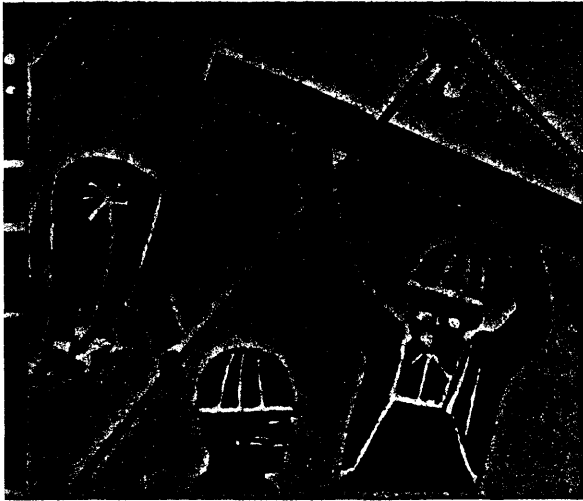
Through active participation and intense personal involvement in a small sensitivity-training group, this laboratory will provide enrollees with opportunity to gain a better understanding of themselves and of their impact upon others, of what people are like and why they act as they do, and of the forces which promote or prevent their effective functioning. It is designed to help the participants feel differently—not merely think differently—about the numerous human relations problems with which they are constantly faced. This class is recommended for those who enjoy learning by doing, since the use of the “sensitivity-training” approach makes possible a high degree of individual participation and involvement. Conventional lectures are not a part of this experience. This laboratory is related to the “Leadership Principles” class and to the “Leadership in the Small Task-Group” class. While it can be taken independently, there are important learning advantages to be gained in combining it with one of these classes. No previous training is required. The laboratory has been scheduled in four different sections. Persons taking this course who have had close previous personal or working associations with each other, should not attend the same section. If this occurs, assignment to another section will be made.

Class No. 26
LATE AFTERNOON PUBLIC SPEAKING
CLASS

WESLEY LEWIS, Professor of Speech, University of California, Los Angeles.

JAMES MURRAY, Lecturer in Speech, University of California, Los Angeles.

Participants desiring training in public speaking may take this intensified class in addition to a full program of technical classes. The class will concentrate upon speaker-listener relationships, purposeful speech, managing ideas, and speaking skills. Each participant will receive critical evaluation of his speaking performances. The instructor will also meet privately with members of the class to discuss any speech problems they may have.



GENERAL LECTURE SERIES

LUNCHEON SESSIONS

11:30 a.m. to 1:30 p.m.

Lectures by outstanding guest speakers on subjects of general interest in the fields of engineering and management will be given during the daily luncheon sessions.

Lectures for the 1963 Course are as follows:

Monday, January 21, 1963:

"The Vitality of A Research Institution and How to Maintain It" Wilford F. Libby, Professor of Chemistry and Director, Institute of Geophysics and Planetary Physics, University of California, Los Angeles.

Wednesday, January 23, 1963:

"Have We Reached the Limits of Our Knowledge?"

Friday, January 25, 1963:

"The Future of Man's Resources from the Sea" Professor of Oceanography, University of California, Scripps Institution of Oceanography, La Jolla, California.

Monday, January 28, 1963:

"Management's Responsibility in Today's Ideological Conflict" John R. Van de Waters, Associate Professor of Industrial Relations and Business Law, Graduate School of Business Administration, University of California, Los Angeles.

Wednesday, January 30, 1963:

"The Management of Technological Operations" Simon Ramo, Vice Chairman, Board of Directors, Thompson Radio, Woodridge, England and Chairman of the balance of the luncheon program. Will consist of informal tours and individual discussions by Engineering and Management Course participants.

DINNER SESSION

6:30 p.m. to 9:30 p.m.

Tuesday, January 22, 1963:

"The Indispensable Elements in A Productive Speaking Situation" Wesley Lewis, Professor of Speech, University of California, Los Angeles.

Wednesday, January 23, 1963:

"The Vocal Requirements of Effective Speaking" Wesley Lewis, Professor of Speech, University of California, Los Angeles.

Tuesday, January 22, 1963:

"The Indispensable Elements in A Productive Speaking Situation" Wesley Lewis, Professor of Speech, University of California, Los Angeles.

Wednesday, January 23, 1963:

"The Vocal Requirements of Effective Speaking" Wesley Lewis, Professor of Speech, University of California, Los Angeles.

FIFTEENTH ANNUAL INDUSTRIAL ENGINEERING INSTITUTE

The Fifteenth Annual Industrial Engineering Institute will be held in Los Angeles on February 1 and 2, 1963, immediately following the Engineering and Management Course. The program will feature a number of outstanding speakers and a number

of sessions on the following subjects: "The Future of Man's Resources from the Sea" and "The Vitality of A Research Institution and How to Maintain It".

For information on the Institute, contact the Extension University of California, Los Angeles, 246 California Hall, Los Angeles, GRaduate 2-5161, or GRaduate 3-0977, Extension 363, or 987.

EARLY MORNING SESSIONS

7:00 to 7:45 a.m.

NOTE: These two lectures are given as a part of the optional Early Morning Public Speaking Voice Laboratory but are open to all participants.

INSTRUCTIONAL STAFF



ROBERT B. ANDREWS, Sloan Teaching Intern, School of Industrial Management, Massachusetts Institute of Technology, Cambridge, Massachusetts; and Assistant Coordinator, Engineering and Management Program.

Bob Andrews received degrees in engineering from the University of California, Berkeley and in Business Administration from the University of California, Los Angeles. He has served on the industrial engineering staffs of the Aluminum Company of America and Parker Aircraft Company. At UCLA he was engaged in research in the application of physiological and statistical methods to work studies and wrote the scripts for three work sampling films in addition to his teaching assignments. He has been associated with both small and medium sized firms in a variety of consulting capacities and is the author or co-author of articles and syllabi on industrial engineering and work physiology topics.



RUSSELL D. ARCHIBALD, Manager, Management Information Systems, Hughes Aircraft Company, Culver City, California.

Mr. Archibald was educated at the University of Missouri and the University of Texas, where he majored in mechanical engineering. At present he is directing the development of PERT and other

management information systems at Hughes Aircraft Company. His industrial experience also includes positions with Aerojet-General Corporation and with the Creole Petroleum Corporation, Venezuela. He operated the POLARIS PERT system at Aerojet and has written and lectured extensively on network-based management information systems. He has also served as a private consultant to the USAF on PERT. Mr. Archibald's extensive experience includes pilot and engineering assignments in research and development, such as Technical Advisor to the B-70 Source Selection Board and facilities construction and public works planning. He is active in the Institute of Aerospace Sciences, Institute of Management Sciences, and several other professional organizations and is a member of Pi Tau Sigma honorary society.



MORRIS ASIMOW, Professor of Engineering and Coordinator of the Engineering Executive Program, University of California, Los Angeles.

Mr. Asimow is recipient of three degrees in engineering areas from the University of California, Berkeley. His industrial experience includes Senior Metallurgist for U.S. Steel Corporation where he was in charge of Research and Development at the Gary Works, General Manager of Central Metals Corporation and of the Western Aluminum Smelting Company and of the Enterprise Ductile Iron Foundry Company. During 1949-50, while on leave from his position as Professor of Engineering at the University of California, Los Angeles, he had responsibility for the planning and construction of an aluminum smelting plant in Dutch New Guinea for the government of Holland. Mr. Asimow is the author of many professional publications. He is also a Registered Professional Engineer and the 1941 Henry Marion Howe Medalist of the American Society for Metals.



RALPH M. BARNES, Professor of Engineering and Production Management, University of California, Los Angeles.

Ralph Barnes is the author of *Motion and Time Study*, 4th Ed., *Industrial Engineering and Management, Work Measurement Manual*, 4th Ed., *Work Sampling*, 2nd Ed., and other books and articles. He was awarded the Gilbreth Medal and the industrial Incentive Award by the Society for the Advancement of Management for his contributions to the field of industrial engineering and management. He is a Fellow of the American Society of Mechanical Engineers, the American Institute of Industrial Engineers, the American Association for Advancement of Science, and the Society for Advancement of Management. Currently, he is a member of the Advisory Committee of the Management Division of the American Society of Mechanical Engineers. He assisted in organizing and developing the Industrial Engineering Center of the Armstrong Cork Company, and served as its first director. He also organized and conducted engineering and management training programs in England, Norway, Sweden, Spain, Mexico, Costa Rica, Uruguay, and Japan, and he has served as consultant for American, European, and South American companies.



L. M. K. BOELTER, Dean of the College of Engineering, University of California, Los Angeles.

Mr. Boelter has taught and conducted research at the University of California, Berkeley, where he was appointed Associate Dean in 1943. He is active in the field of engineering education and is known for his work in unifying the engineering profession and the undergraduate engineering curriculum. He was the 1956 recipient of one of the top honors in the engineering field, the Lamme Medal, awarded by the American Society for Engineering Education. In 1957 he was awarded the ASME Medal by the American Society of Mechanical Engineers. He is the author of articles in the areas of heat and mass transfer, thermodynamics, production, traffic, and engineering education. Mr. Boelter is a member of several professional societies and is a Fellow of the Illuminating Engineering Society and the American Society of Mechanical Engineers. He is a member of the City Planning Commission, Los Angeles, and a member of the Board of Trustees of the California Museum Foundation.



ALEXANDER W. BOLDYREFF, Professor of Engineering and Production Management, University of California, Los Angeles; Consultant, The RAND Corporation, Santa Monica, California.

Alexander Boldyreff received his academic training at Western Reserve University and the University of Michigan where he chose chemistry and mathematics as fields of specialization. He has taught and conducted research at the Universities of Arizona, Illinois, and New Mexico. Active in the field of systems engineering and a pioneer in operations research, he has worked with the Air Force, Sandia Corporation, North American Aviation and The RAND Corporation. He has authored numerous publications on operations research, chemistry, and mathematics. Mr. Boldyreff's affiliations include a fellowship of the American Association for the Advancement of Science and of the Operations Research Society of America.



JOHN G. CARLSON, Director of Management Planning and Control, Librascope Division, General Precision, Inc., Glendale, California.

Mr. Carlson attended Northwestern University receiving a B.S. in Mechanical Engineering and an M.B.A. At the University of California, Los Angeles, he received his Ph.D. in Engineering and taught production management from 1950 to 1960 in the Graduate School of Business. During 1960-1962 he taught in the Graduate School of Business at Stanford University until his present assignment. Mr. Carlson has been a consultant with many companies, and consulted in Denmark in 1961. He has conducted several management development programs, most recently in Central America and Ceylon.



A. B. CARSON, Professor of Accounting and Vice Chairman in Charge of Accounting, Department of Business Administration, University of California, Los Angeles.

Mr. Carson received his formal education at Colorado College, Northwestern University, and the University of Nebraska. He was associated with Kaiser Company, Inc. and with the C.P.A. firm of Beesley, Wood and Co. He conducts the Managerial Accounting portion of the Executive Program of the Graduate School of Business Administration and is an instructor in the

Engineering Executive Program. He is senior author of the text, **College Accounting**, and author of **The Public Accounting Profession in California**, as well as numerous articles in the **Accounting Review** and the **Journal of Accountancy**. Mr. Carson is a past president of the American Accounting Association and a member of the American Institute of Certified Public Accountants. He serves on the Educator-Consultant Committee to the Comptroller General of the United States. In the summer of 1962, Mr. Carson was a Fulbright Lecturer at the University of Adelaide in South Australia.



FRED E. CASE, Associate Professor and Assistant Dean - Executive Education, Graduate School of Business Administration, University of California, Los Angeles.

Fred Case came to the University of California, Los Angeles, from the University of Florida where he served as Assistant Professor in the School of Business. He served in a similar position of Indiana University after he obtained his doctorate in Business Administration from that institution. He has also held academic positions in Turin, Italy, and Dublin, Ireland. Mr. Case has been active as a consultant on business management problems, problems of business location, appraising, market, and economic background analysis and urban renewal studies. He has had extensive experience in academic administration in such positions as Assistant Dean; Director, Real Estate Research Program; and Statewide Coordinator, Real Estate Certificate Program. He has served the City of Los Angeles on the Building and Safety Commission. He is the author of a number of books and publications in the fields of business, real estate, and economics.



JOHN W. CAVE, Lecturer in Business Administration, University of California, Los Angeles.

John Cave received his education at the United States Military Academy, West Point. He is a graduate of numerous service schools and post graduate programs such as Columbia University's Graduate Executive Program, and the Industrial College of the Armed Forces for which he subsequently served on the faculty. His industrial experience includes five years in command of the weapons and ammunition testing divisions of the Army Ordnance Research and Development Center at Aberdeen Proving Ground, Maryland, and he also commanded two large ordnance maintenance depots in central Germany. He organized and conducted extensive technical investigations of German and Japanese ordnance developments. Just prior to his promotion to Brigadier General, he headed the Ordnance Board at Aberdeen Proving Ground. He was the principal planning officer of the Ordnance Corps, serving four years in Washington as Assistant Chief of Ordnance, U.S. Army.



JAMES V. CLARK, Assistant Professor of Business Administration, University of California, Los Angeles.

James Clark has recently joined the University of California, Los Angeles staff having come from the Harvard Business School where he was Assist-

ant Professor of Business Administration. He also received his formal education at Harvard. He has had extensive experience as a consultant in research and training with such companies as Esso Standard Oil, Aluminum Company of Canada, Ltd., General Electric, and Aerojet General. He is an Associate of the National Training Laboratories and a Senior Associate of Leadership Resources, Inc., both in Washington D. C. He is a co-author of the book **Organizational Behavior and Administration** published by Richard D. Irwin in 1961, and is the author of other publications in the human relations and management field.



RENO R. COLE, Professor of Engineering and Coordinator, Engineering and Management Course, University of California, Los Angeles.

Reno Cole received his formal education at the University of California, Berkeley. He has had extensive experience in industrial work in the fields of industrial engineering, production engineering, and metallurgical engineering, having served at various times as Director of Research, Production Engineer, Chief Metallurgist, and Manager of Time Study and Methods activities. He is the author of papers on industrial engineering subjects and has published in the field of advanced methods of material shaping. He is a member of Sigma Xi, honorary society for research, the American Institute of Industrial Engineers, the American Society of Metals, and is a Registered Professional Engineer.



JOHN C. DILLON, Head, *Engineering Extension*, University of California, Los Angeles.

A graduate of the University of California, John Dillon's first service with the University was in the War Training Program of World War II. He has been responsible for the Engineering Extension program at the University of California, Los Angeles, since its inception in 1945. The present activities of Engineering Extension include over 300 courses given at the Los Angeles campus, the Hillstreet Building downtown, China Lake, Long Beach, Point Mugu, Pomona, Riverside, Van Nuys, El Segundo, and San Diego. Mr. Dillon is a member of the American Society for Engineering Education and other professional organizations.



J. MORLEY ENGLISH, Manager, Engineering Design Department, Space Technology Laboratories, Inc., Redondo Beach, California.

Morley English received his education at the University of British Columbia, Canada; The University of Southern California and the University of California, Los Angeles. He came to California in 1940 as the Resident Technical Representative for the British Government to the Lockheed Aircraft Corporation and subsequently joined the Lockheed Company. He has been with UCLA since 1949, Professor of Engineering since 1958, and during the past two years,

Director, Engineering Research. At the University, from which he is now on leave, he taught and published principally in Structures and in Engineering Economics. He is Coordinator of "Modern Engineering," a six-weeks, full-time course for top-level engineering executives. Mr. English has consulted for many companies, notably for Harvey Aluminum Company on the Air Force Heavy Press program and PI Steel Corporation on the "Jetway" passenger loading system. He has been active in a number of professional societies.



FRED V. GARDNER, Senior Partner, Fred V. Gardner and Associates, Milwaukee, Wisconsin.

Mr. Gardner received degrees in engineering and in business administration from the University of Missouri and Harvard University. Prior to forming his present associations, he served in various management positions with the General Electric Company. In addition to his management consulting activities, in which he has served industry for over twenty years, Mr. Gardner has been an officer or a director of a number of industrial firms including Chain Belt Company, The Smith Steel Foundry, and the Appliance Corporation of America. At present he is a director of a Belgian, a Mexican, and a Japanese company. He also serves as a director of a company owned jointly by Ansul Chemical Company and Continental Oil Company. His publications include the books *Variable Budget Control* and *Profit Management and Control*. He is a member of numerous professional societies.



JOHN D. ISAACS, Professor of Oceanography, University of California, Scripps Institution of Oceanography, La Jolla, California.

John Isaacs received his education at the University of California and has served in various capacities with the University since 1944. He has held positions at Scripps such as Oceanographer, Assistant to the Director, and Program Director of Marine Life Research. He is now Professor and Director of Marine Life Research, and Acting Director, Institute of Marine Resources. Mr. Isaacs has been a consultant to the U.S. Army and is a consultant to the White House at the present time. He has acted as scientist to such operations as Crossroads, Ivy, Castle, Wigwam, and Redwing. He has served on a number of national committees and is now Chairman, NAS-NRC Pacific Coast Committee on Disposal of Atomic Wastes.



NEIL H. JACOBY, Professor and Dean, Graduate School of Business Administration, University of California, Los Angeles.

Dean Jacoby was educated at the University of Saskatchewan, Canada, and at the University of Chicago. He was supervisor of the Legal and Research Division of the Department of Finance of Illinois during 1933-1936. Later he was manager of the Research Department of Lawrence Stern and Company,

Chicago investment bankers; Professor of Finance and Vice President of the University of Chicago. He became Dean of UCLA's School of Business Administration in 1948. From September through December, 1954, he served as a member of President Eisenhower's Council of Economic Advisers in Washington, D. C. From June to December 1947, he served as U. S. Representative in the Economic and Social Council of the United Nations. He has been Economic Consultant to government and business corporations, and has conducted economic missions to India and Laos. Dean Jacoby is actively engaged in research and writing on problems of business economics and finance and has published extensively in the fields of economics, finance, and taxation.



WESLEY LEWIS, Professor of Speech, University of California, Los Angeles.

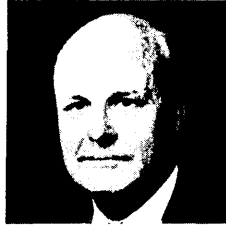
In addition to his university teaching, Wesley Lewis has conducted numerous courses for service organizations, for officials of the Edison Company, for the Los Angeles Real Estate Board, for banking institutions, for legal groups for the Naval Ordnance Test Station at China Lake, California, and for The Interstate Bakeries Company, etc.. He was also Director of the Los Angeles Water and Power Speakers Bureau for seven years. Mr. Lewis has become well known through his texts and through his activities as director of extempore speaking, oral reading, and debate on the Los Angeles campus.



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WILLARD F. LIBBY, Professor of Chemistry and Director, Institute of Geophysics and Planetary Physics, University of California, Los Angeles.

Dr. Libby combines a half dozen careers as administrator, research scientist, teacher, author, public speaker, and advisor to government agencies. Before joining the UCLA faculty in 1959, he was a member of the U. S. Atomic Energy Commission. As a research scientist, he is best known for developing the carbon-14 "atomic time clock" method of measuring the geological age of objects, for which he received the 1960 Nobel Prize in Chemistry. As an author, Dr. Libby has contributed some 130 articles to scientific journals, and has published a book on **Radiocarbon Dating**. His leadership at the 1955 Geneva Conference on Peaceful Uses of Atomic Energy, and his contribution in this field, earned him the unofficial title of "AEC vice president in charge of Atoms for Peace." In a long series of honors, Dr. Libby was awarded the American Chemical Society's Willard Gibbs Medal in 1958, the Albert Einstein Medal in 1959, and the Day Medal Award of the Geological Society of America in 1961. He is a member of numerous honorary societies and scientific organizations.



LAWRENCE D. MILES, Manager, Value Service, General Electric Company, Schenectady, New York.

Larry Miles received a degree in education from Nebraska Wesleyan University and a degree in electrical engineering from the University of Nebraska. Joining the General Electric Company as a design engineer, he was motivated by economic factors in design and became a purchasing engineer, then a purchasing agent. In 1947, he was given opportunity by General Electric to develop a new set of techniques for more efficiently identifying more and less costly cost sooner. These techniques were called Value Analysis of Value Engineering. His work during the past decade has consisted of guiding the development of new, more advanced techniques for identification and elimination of unnecessary cost. He is the author of several dozen articles on various phases of this technology and more recently has written the textbook **Techniques of Value Analysis and Engineering** (McGraw-Hill). General Electric has awarded him its highest honor for extra achievement; and, for benefits to the United States as the first group of Navy men learned these techniques, Secretary of the Navy Gates awarded him the Distinguished Public Service Award. Mr. Miles is recognized as the creator of this basic technology and an international authority on the subject.



JAMES MURRAY, Lecturer in Speech, University of California, Los Angeles.

James Murray attended the University of California, Berkeley, and the University of Southern California where he received his Doctor of Education degree. He also did work in law at the University of Southern California and the Southwestern Law School. Since 1929 he has conducted speech classes at the University of California, Los Angeles. He has also conducted classes and assisted on speech problems for banking groups, toastmasters clubs, travel organizations, civic speakers' clubs, and for many professional organizations. Mr. Murray is the author of numerous articles and reviews in national, state, and local journals and is co-author of the speech text **Cardinal Aspects of Speech**. He has been elected to several honorary societies and is a member of a number of professional organizations.



CYRIL J. O'DONNELL, Professor of Business Organization and Policy, University of California, Los Angeles.

Educated at the University of Alberta and the University of Chicago, where he received a Ph.D. in the field of management, Cyril O'Donnell has since augmented his academic background with extensive business and professional experience. He has served with the War Labor Board, as an industrial engineer for the P. R. Mallory Company,

Incorporated, and as President of the Indianapolis Distributing Company. He is a consultant to several domestic and foreign firms and government agencies, member of the Board of Directors, Everest & Jennings, Inc., and Director, Case Development Program, Graduate School of Business Administration, University of California, Los Angeles. Mr. O'Donnell has written extensively in the field of management and is the author of **Business Management, Cases in General Management**, and the co-author of **Principles of Management**.



REED M. POWELL, Lecturer in Business Administration, University of California, Los Angeles.

Reed Powell attended Brigham Young University, Michigan State University, and did post doctoral work at Harvard University. He has served on the faculties of the Graduate School of Business, Harvard University, the University of Oklahoma, and the University of San Carlos. His industrial experience includes positions with Sears, Roebuck and Company, ALCOA, and positions in the furniture industry. He is a management consultant to business and industrial firms such as North American Aviation, Litton Systems Inc., and the General Telephone Company. Mr. Powell is the author of numerous publications in the fields of economics, sociology, and business administration. He has been recipient of a number of academic awards and is a member of several professional organizations.



ANTHONY P. RAIA, Teaching Fellow, Ph.D. Graduate Studies Director, Graduate School of Business Administration, and Assistant Coordinator, Engineering and Management Course, University of California, Los Angeles.

Tony Raia received a B.S. in Business Administration from Columbia University and a M.B.A. from the University of California, Los Angeles. He has also received Distinguished Graduate Awards from the Officer Candidate School and from the Squadron Officer School of the United States Air Force. His work experience, which began in 1944, has been primarily in the fields of military communications and industrial electronics. Mr. Raia has been at the University of California, Los Angeles, since 1959 and, in addition to his teaching activities, is working toward the Doctoral degree in the field of management. He is a member of several professional and honorary societies, including Beta Gamma Sigma and Alpha Kappa Psi.



SIMON RAMO, Vice Chairman, Board of Directors, Thompson Ramo Wooldrige, Inc., Canoga Park, California.

Dr. Ramo received his formal education at the University of Utah and the California Institute of Technology where he received his doctorate (*magna cum laude*) in electrical engineering and physics. He attained prominence on General Electric's research staff for his

work in microwaves and electron optics. He has held the positions of Director of Research, Electronics Department; Director of Guided Missile and Research Development, and Vice President and Director of Operations at Hughes Aircraft. Prior to his present appointment Dr. Ramo served as Executive Vice President and also as President of TRW's subsidiary, Space Technology Laboratories, Inc., where he served as Scientific Director of the Air Force Ballistic Missile Program (Atlas, Titan, and Thor). Dr. Ramo is the author of numerous articles and several books. He has received a long list of honors and awards for his achievements.



JEROME REISEL, Acting Assistant Professor, Graduate School of Business Administration; Graduate Research Psychologist, Institute of Industrial Relations, University of California, Los Angeles.

Dr. Reisel has degrees from the City College of New York and from the University of California, Los Angeles. He is a clinical psychologist practicing now in Hollywood, California. Part of his time is spent as a research psychologist with the Human Relations Research Group, Institute of Industrial Relations, UCLA, and he is co-author of the monograph "Inside A Sensitivity Training Group." Dr. Reisel has contributed other articles on sensitivity training and his major interest is in problems associated with the trainer role. He is a member of the American Psychology Association and several other professional societies and organizations.



ROBERT J. ROHR, JR., Assistant Director of the Industrial Engineering Division, Eastman Kodak Company, Rochester, New York.

Mr. Rohr became affiliated with the Eastman Kodak Company in 1938 and shortly thereafter was appointed Administrative Supervisor of the Accounting Department. In 1946 he was appointed Head of Industrial Engineering Methods Department for Kodak Park Works, and in 1951 he assumed his present position as Assistant Director of the Industrial Engineering Division. The Division employs over 330 people who provide Industrial Engineering services for the Kodak Park Works, processing laboratories, branches, and associated companies in the United States and foreign countries. Mr. Rohr is a member of several professional and civic organizations including the American Institute of Industrial Engineers, of which he is past National Public Relations Director, and a former member of the Long Range Planning Committee; National Association of Accountants, past President of the Rochester Chapter; Operations Research Society of America, and the Industrial Engineering Society of Rochester.



WARREN H. SCHMIDT, Lecturer in Business Administration, Graduate School of Business Administration, University of California, Los Angeles; and Senior Vice President, Leadership Resources, Inc.

Mr. Schmidt, an alumnus of Wayne University, Detroit, did his graduate work in Psychology at Washington University, where he received the M.A. and Ph.D. degrees. He has taught psychology at a number of institutions including UCLA. At the University of California, Mr. Schmidt has held both teaching and administrative positions. Before joining the Business School faculty full-time, he served as Director of State-wide Conferences and Community Services for University Extension. For the past year he has been in charge of an experimental integrated program for management in the School. His wide experience in management and leadership development includes consultation and training for industrial, governmental, and community organizations throughout the country—including such organizations as IBM, Aerojet, Esso, and others. He has been Project Coordinator for the Adult Education Association of the USA and is a Fellow of the National Training Laboratories. Mr. Schmidt is co-author of the book, **Techniques that Produce Teamwork**, and has contributed numerous articles to professional journals. He is currently editor of **Looking Into Leadership**—a series of illustrated monographs.



ARTHUR J. SHEDLIN, Lecturer in Business Administration and Director of Placement, Graduate School of Business Administration, University of California, Los Angeles.

Arthur Shedlin received his formal education at New York University and the University of Chicago where he later served as Dean of Students of University College. He is a recent addition to the University of California, Los Angeles staff having previously been Head, Professional Personnel Staff, System Development Corporation. Mr. Shedlin's industrial experience also includes Director of Arthur Shedlin Associates, a firm rendering management consulting service to corporations, educational

institutions, and government agencies. During 1957-1959 he was consultant and Professor at the School of Industrial Management, Madrid, Spain. Mr. Shedlin is the author of a number of technical papers published both here and abroad. He is a member of several professional and honorary societies.



R. CLAY SPROWLS, Associate Professor of Business Statistics, and Assistant Director, Western Data Processing Center, University of California, Los Angeles.

Mr. Sprowls engaged in advanced study in statistics at the University of Chicago. Before joining the faculty of the University of California, Los Angeles, Mr. Sprowls had industrial experience in quality control and has served as consultant to a number of industrial organizations. In addition to numerous articles in the field of statistics, he is the author of the textbook **Elementary Statistics**. His professional memberships include the Association for Computing Machinery and the American Statistical Association.



GEORGE A. STEINER, Director, Division of Research; Professor of Business Administration; and Managing Editor, California Management Review; University of California, Los Angeles.

Mr. Steiner received his formal education at Girard College, Temple University, the University of Pennsylvania,

and the University of Illinois. He has had wide experience in industry, governmental administration, consulting, and academic work. Typical of the positions he has held are Senior Economic Advisor, Lockheed Aircraft Corp., Director, Policy Development, Office of Defense Mobilization, Executive Office of the President; consultant to many agencies of the federal government on economic and defense affairs. His academic experience includes Assistant Professor and Assistant Director, Bureau of Business Research, Indiana University and Professor of Economics, University of Illinois. Mr. Steiner is the author of numerous books, pamphlets, articles, and monographs on economic and business subjects.



PAUL STILLSON, Consultant in Operations Research, President, Stillson Associates, Los Angeles, California.

Paul Stillson established Stillson Associates after a long and varied experience in the practice and teaching of Operations Research. In the industrial field, he has held positions at the Ramo-Wooldrige Corporation, the Los Alamos Scientific Laboratories, Lockheed Aircraft Corporation, Ernst and Ernst Company, and the Commercial Solvents Corporation, where he was Director of Operations Research and Design of Experiments. More recently, he was Supervisor of Operations Research and Statistics at Shell Development Company. Concurrently, Paul Stillson has been a Lecturer in Operations Research at the University of California, both at Los Angeles and Berkeley, since 1956. Studies at C.C.N.Y., the University of Pennsylvania, and the University of New Mexico, where he received his Ph.D. in Physical Chemistry, comprise Paul Stillson's academic background. His organizational memberships include the National Honorary Research Society of America, Operations Research Society, Institute of Management Science, and the American Chemical Society.



FRANK F. TALLMAN, M.D., Professor of Psychiatry, University of California, Los Angeles.

Dr. Tallman received his M.D. degree at the University of Alberta, Canada. He later served as medical officer, Provincial Medical Hospital, Alberta Canada; Kings Park State Hospital, Long Island; and senior assistant physician and Director of Clinical Psychiatry, Rockland State Hospital, New York. He has been a practicing psychiatrist since 1947. He is familiar with management and administrative problems having served in such positions as Director, Mental Hygiene, Michigan; Director, Community Mental Hygiene, Ohio; and State Director, Mental Hygiene, California. He is a consultant to the Veterans Administration and to a number of other institutions and hospitals. Dr. Tallman is a member of a number of professional organizations and a Fellow of four of them, including the American Medical Association. He has published numerous papers in the field of psychiatry and is the author of the book **Treatment of Emotional Problems in Office Practice** (McGraw-Hill 1960).



ROBERT TANNENBAUM, Vice-Chairman, Department of Business Administration and Professor of Personnel Management and Industrial Relations, Graduate School of Business Administration; Research Economist, Institute of Industrial Relations, University of California, Los Angeles.

Mr. Tannenbaum attended the University of Chicago where he received a varied background in accounting, business administration, and industrial relations. He taught at Oklahoma A&M College and the University of Chicago before coming to the University of California, Los Angeles, where he is a staff member of the popular seminars in Sensitivity Training and head of the Human Relations Research Group. Early in 1958, he was a visiting professor at IPSOA, a post-graduate school for managers in Turin, Italy, and he lectured before management groups in Germany, Switzerland, Norway, and England later that year. His extensive writings include the co-authored book **Leadership and Organization: A Behavioral Science Approach** (McGraw-Hill Book Co., 1961) and articles in numerous professional and management journals.



JOHN R. VAN DE WATER, Associate Professor of Industrial Relations and Business Law, Graduate School of Business Administration, University of California, Los Angeles.

John R. Van de Water attended the University of Chicago where he received his B.A. and J.D. degrees. He has held labor relations positions at North American Aviation and The Ford Motor Company. He is an Attorney at Law, a member of the California Bar and serves extensively as an industrial relations and management consultant. He has directed the Executive Development Programs of the Graduate School of Business Administration at UCLA. Mr. Van de Water has written numerous articles on labor law and industrial relations and is a member of the American Management Association, the Personnel and Industrial Relations Association, and the Industrial Relations Research Association.

(Continued on next page)



ROYAL WELLER, Director of Engineering, Space Systems Division, Lockheed Missiles and Space Company, Sunnyvale, California.

Royal Weller received his undergraduate degree in electrical engineering from the Massachusetts Institute of Technology and his graduate degrees in physics from Ohio State University where he also instructed in physics. His academic experience also includes an assistant professorship in mechanical engineering at the State College of Washington. He has served as Chief, Engineering Department, U. S. Naval Ordnance Laboratory, Silver Springs, Maryland; as Chief Scientist, U. S. Naval Missile Center, Point Mugu, California; and as Vice President, Engineering, General Dynamics Electronics Division, Rochester, New York. Mr. Weller is the author of numerous papers in stress analysis and applied mathematics and has published a number of reports for the Department of Defense. He is a Fellow of the Physical Society, a member of several other societies, and a Registered Professional Engineer in California, New York, and Maryland.



THE 1963 ENGINEERING & MANAGEMENT COURSE



ADMINISTRATIVE STAFF

Reno R. Cole Coordinator
Robert B. Andrews Assistant Coordinator
Anthony P. Raia Assistant Coordinator

PLANNING COMMITTEE

Morris Asimow Professor of Engineering
Ralph M. Barnes Professor of Engineering
and Production Management
L. M. K. Boelter Dean, College of Engineering
Fred E. Case Associate Professor and
Assistant Dean, Graduate
School of Business Administration
Reno R. Cole Professor of Engineering
John C. Dillon Head, Engineering Extension
Neil H. Jacoby Dean, Graduate School of
Business Administration

ENROLLMENT

In order that each individual may have maximum opportunity for class participation, enrollment in the course and in each class will be limited. Priority of space will be determined by order of receipt of course fee. Complete choice of subjects can be assured only by early enrollment.

A specific choice of classes must be forwarded with each application. However, organizations may exercise the privilege of enrollment for unnamed individuals and supplying the application blank and names at a later date. Space, however, cannot be reserved in all classes for such enrollments.

FEE

The fee for the 1963 Engineering and Management Course, including the cost of all required texts and classroom materials, the ten lunches and one dinner, and the use of all required University facilities and equipment, is \$450. These elements are all essential to the planned instruction of the course and no provision can be made for reduced or partial fees for less than full participation. Lodging and meals other than those specified are not included.

ARRIVAL

To insure prompt arrival for the first instructional period in the Economics Building on January 21, each participant should arrive in Los Angeles not later than January 20. Upon the acceptance of an application for enrollment, and when time permits, a complete informational packet will be mailed to each participant. However, regardless of receipt of packet, enrolled persons are requested to report to Room 147, Economics Building, at 8:00 a.m., Monday, January 21, 1963.

LIVING ACCOMMODATIONS

Living accommodations for all budgets are available within reasonable distance of the University. For lodging only, these vary in price from \$5.00 to \$10.00 per day for single occupancy. A second person may share a room for an additional charge of approximately one dollar per day. For those who desire them, single and double apartments with kitchenettes are also obtainable. More deluxe accommodations at higher prices are available at resort-type hotels near the University of California campus.

For breakfast and other meals, not included as part of the course program, facilities will be available on some days at the UCLA Residence Halls and always at the Student Union or at nearby Westwood Village restaurants.

RECREATION

Southern California provides a wide variety of winter and summer sports, concerts, plays, television studio programs, and other entertainment for visitors. Specific information can be obtained from the Chambers of Commerce and other such sources in the various Southern California cities. The Engineering and Management Course staff will be glad to provide assistance and information.

FURTHER INFORMATION

Additional information may be obtained by phoning the course office at BRadshaw 2-6161 or GRanite 3-0971 extension 9297 or 9298, or by writing Reno R. Cole, College of Engineering, Room 6288, University of California, Los Angeles 24, California.

SCHEDULE OF CLASSES

The participant may choose one class in each of the four instructional periods and in addition, either or both of the early morning and late afternoon classes.

PERIOD	HOURS	CLASS NUMBER	DESCRIPTION AND INSTRUCTOR
	7:00-7:45 a.m.	1	Early Morning Public Speaking Voice Laboratory, LEWIS, MURRAY
I	8:00-9:30 a.m.	2	Electronic Data Processing for Business and Industry, SPROWLS
		3	Managing the Use of Value Analysis and Engineering Techniques, MILES
		4	General Management Principles, Section A, O'DONNELL, STEINER, CAVE
		5	Laboratory in Leadership, Section A, REISEL
		6	The Management of Industrial Relations, VAN DE WATER
		7	Advanced Project Management Information Systems, ARCHIBALD
			9:30-10:00 a.m.
II	10:00-11:30 a.m.	8	General Management Principals, Section B, O'DONNELL, STEINER, CAVE
		9	Laboratory in Leadership, Section B, CLARK
		10	Mathematical Bases for Decision and Programming in Industry, BOLDYREFF
		11	Engineering and Research Administration, WELLER
		12	Principles of Production and Operations Management, CARLSON
		13	Accounting for Engineers and Managers, CARSON
	11:30-1:30 p.m.		Luncheon Session
III	1:30-3:00 p.m.	14	Industrial Operations Research, STILLSON
		15	Laboratory in Leadership, Section C, SCHMIDT
		16	Case Studies in Business Management, O'DONNELL, POWELL
		17	Profit Management and Cost Control, GARDNER
		18	Leadership Principles, TANNENBAUM
		19	Effective Managerial Communication, SHEDLIN
	3:00-3:30 p.m.		Intermission and Individual Discussion
IV	3:30-5:00 p.m.	20	Economics of Managerial Policy Decisions, ENGLISH
		21	Design and Management of Work, ANDREWS
		22	Industrial Statistics and Quality Control, SPROWLS
		23	Leadership in the Small Task Group, CLARK
		24	Organization and Administration of an Industrial Engineering Dept., ROHR
		25	Laboratory in Leadership, Section D, TANNENBAUM
	5:10-6:00 p.m.	26	Late Afternoon Public Speaking Class, LEWIS, MURRAY
	6:30-9:30 p.m.		Dinner Meeting Tuesday, January 22

APPLICATION FOR ENROLLMENT

: Reno R. Cole, Coordinator
Engineering and Management Course
College of Engineering, Room 6288
University of California
Los Angeles 24, California

Please enroll the applicant listed below in the Engineering and Management Course for the subjects indicated.

NAME LAST FIRST MIDDLE

TITLE

COMPANY

COMPANY ADDRESS TELEPHONE NUMBER

HOME ADDRESS TELEPHONE NUMBER

Please check box above for preferred mailing address.

Early Morning		7:00-7:45 a.m.	1*						
	I	8:00-9:30 a.m.	2	3	4	5	6	7	
Please circle one class number	II	10:00-11:30 a.m.	8	9	10	11	12	13	
	III	1:30-3:00 p.m.	14	15	16	17	18	19	
for each period	IV	3:30-5:00 p.m.	20	21	22	23	24	25	
Late Afternoon		5:10-6:00 p.m.	26*						

*Please circle if you desire to attend extra-hour class(es) in Public Speaking.

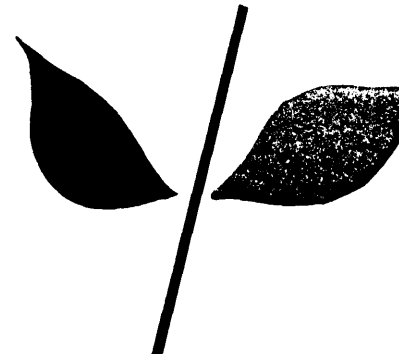
Please indicate below how we are to bill you:

COMPANY

ADDRESS

TO ATTENTION OF

A purchase order will be issued by my company for this enrollment.



THE 1963 ENGINEERING
& MANAGEMENT COURSE