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Public Health

In the College of Health and Human Services

Faculty

Office of the Director

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Ofelia V. Dirige, Dr.P.H., Adjunct Professor of Public Health
Robert K. Ross, M.D., M.S., Distinguished Visiting Professor of Public Health
Philip Nader, M.D., Research Professor of Public Health
Robert Reese, M.D., Research Professor of Public Health
George Flores, M.D., M.P.H., Adjunct Professor of Public Health
Alvaro Garza, M.D., M.P.H., Adjunct Professor of Public Health

Epidemiology and Biostatistics

Stephanie K. Brodine, M.D., Professor of Public Health, Division Head
Stephen J. Bender, H.S.D., M.P.H., Professor of Public Health
Caroline A. Macera, Ph.D., Professor of Public Health
Donald J. Slymen, Ph.D., Professor of Public Health
Elena S. H. Yu, Ph.D., M.P.H., Professor of Public Health
Louise K. Hofherr, Ph.D., M.P.H., Associate Professor of Public Health
Richard A. Shaffer, Ph.D., M.P.H., Associate Professor of Public Health
John E. Alcaraz, Ph.D., Assistant Professor of Public Health
Ming Ji, Ph.D., Assistant Professor of Public Health
Jeanette J. McCarthy, Ph.D., Assistant Professor of Public Health
Louise S. Gresham, Ph.D., M.P.H., Research Associate Professor of Public Health
Laura Williams, M.D., M.P.H., Research Associate Professor of Public Health
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Biostatistics and Biometry

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Ming Ji, Ph.D., Assistant Professor of Public Health

Health Promotion

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Joni A. Mayer, Ph.D., Professor of Public Health
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Terry L. Conway, Ph.D., Research Professor of Public Health
Eva Teresa Lopez-Madurga, M.D., M.P.H., Research Assistant Professor of Public Health
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Mary M. Mulvihill, Ph.D., Research Associate Professor of Public Health
Bruce Berg, Ph.D., Research Assistant Professor of Public Health
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Ana Martinez-Donate, Ph.D., Research Assistant Professor of Public Health
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Susan I. Woodruff, Ph.D., Research Assistant Professor of Public Health
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Health Services Administration

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K. Michael Peddecord, Dr.P.H., Professor of Public Health
Dennis D. Pointer, Ph.D., Professor of Public Health, The John J. Hanlon Chair in Health Services Research and Policy
William E. Sterk, Ph.D., M.B.A., Professor of Finance
Robert L. Seidman, Ph.D., Associate Professor of Public Health
Nancy Bowen, M.D., M.P.H., Adjunct Professor of Public Health
Michele M. Ginsberg, M.D., Adjunct Professor of Public Health
David V. Kraus, M.S.P.H., J.D., Adjunct Professor of Public Health
Paul S. Kurtin, M.D., Adjunct Professor of Public Health
Michael W. Murphy, B.S., Adjunct Professor of Public Health
James W. Ledwith, M.B.A., Adjunct Associate Professor of Public Health
Terry L. Schmidt, Dr.H.A., Adjunct Associate Professor of Public Health
Michael Seid, Ph.D., Adjunct Associate Professor of Public Health

Occupational and Environmental Health

Richard M. Gersberg, Ph.D., Professor of Public Health, Division Head

Environmental Health

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Ralph J. Delfino, M.D., Adjunct Professor of Public Health

Occupational Health

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William G. Hughson, Ph.D., M.D., Adjunct Professor of Public Health
David A. Ingrum, M.D., Adjunct Associate Professor of Public Health
Michelle Eisenberg, M.P.H., Adjunct Assistant Professor of Public Health

Toxicology

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Stephen B. Harris, Ph.D., Research Associate Professor of Public Health
Anthony S. Manoguerra, Jr., Pharm.D., Adjunct Professor of Public Health
Gregory J. Stevens, Ph.D., Adjunct Professor of Public Health

Health Science/Community Health Education – Undergraduate Division

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Ana M. Navarro, Ph.D., Research Professor of Public Health
Lori J. McNicholas, M.A., Research Associate Professor of Public Health
Virginia S. Kreisworth, Ph.D., Adjunct Associate Professor of Public Health
Nick Macchione, M.P.H. Adjunct Associate Professor of Public Health
Diane Beach, M.P.H., Adjunct Assistant Professor of Public Health
Linda J. Glatte, M.D., M.P.H., Adjunct Assistant Professor of Public Health
Daniel G. Hopwood, M.P.H., Adjunct Assistant Professor of Public Health
Colmar De Von Figueroa-Moseley, Ph.D., Adjunct Assistant Professor of Public Health
Jane Young, M.P.H., Adjunct Assistant Professor of Health

Preventive Medicine Residency

Kevin M. Patrick, M.D., M.S., Adjunct Professor of Public Health, Director
Regina Fleming, M.D., M.P.H., Adjunct Associate Professor of Public Health, Associate Director
Robert Gunn, M.D., M.P.H., Adjunct Associate Professor of Public Health
Wilma Wooten, M.D., M.P.H., Adjunct Associate Professor of Public Health
Michael Wright, M.D., Adjunct Associate Professor of Public Health

Joint Doctoral Program

Stephanie K. Brodine, M.D., Director, Professor of Public Health
Deborah L. Wingard, Ph.D., Professor of Epidemiology, School of Medicine, UCSD, Research Professor of Public Health, Co-Director
Richard A. Shaffer, Ph.D., M.P.H., Associate Professor of Public Health, Coordinator
Kenneth J. Bart, M.D., Professor of Public Health
John P. Elder, Ph.D., M.P.H., Professor of Public Health
Peter R. Francis, Ph.D., Professor of Exercise and Nutritional Sciences
Paul Ganster, Ph.D., Director, Institute for Regional Studies of the Californias
Arthur Getis, Ph.D., Professor of Geography
Melbourne F. Hovell, Ph.D., M.P.H., Professor of Public Health
Alma L. Koch, Ph.D., M.P.H., Professor of Public Health
Caroline A. Macera, Ph.D., Professor of Public Health
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K. Michael Peddecord, Dr.P.H., Professor of Public Health
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James F. Sallis, Jr., Ph.D., Professor of Psychology
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Elena S. H. Yu, Ph.D., M.P.H., Professor of Public Health
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Colleen Kelly, Ph.D., Associate Professor of Statistics
Robert L. Seidman, Ph.D., Associate Professor of Public Health
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John E. Alcaraz, Ph.D., Assistant Professor of Public Health
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Gregory A. Talavera, M.D., M.P.H., Assistant Professor of Public Health
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Frank Garland, Ph.D., Adjunct Professor, Department of Family and Preventive Medicine, School of Medicine, UCSD
Donna Kritz-Silverstein, Ph.D., Adjunct Associate Professor, Department of Family and Preventive Medicine, School of Medicine, UCSD
Deborah Goodman-Gruen, M.D., Ph.D., Adjunct Assistant Professor, Department of Family and Preventive Medicine, UCSD, Research Assistant Professor of Public Health

The John J. Hanlon Chair in Health Services Research and Policy

Alvarado Hospital Medical Center has joined with SDSU's faculty and staff to create The John J. Hanlon Chair in Health Services Research and Policy in the Graduate School of Public Health (GSPH). The chair is named in honor of the late Dr. John J. Hanlon, former assistant surgeon general for the U.S. Public Health Service. Dr. Hanlon coordinated the planning and development of SDSU's Graduate School of Public Health.

The first appointee to the Chair, Dr. Dennis Pointer, is a national authority on health care organization, governance, strategy, and management.

General Information

APPLICATION DEADLINES: Applicants for the MPH, MS, and MD/MPH programs are strongly encouraged to submit *all* application materials as early as possible, no later than May 15 for fall semester consideration, or October 15 for spring consideration (the latter is applicable *only* to those divisions or programs that accept spring applications; contact Coordinator for Admissions and Student Affairs if interested in spring semester admission). The final filing dates are July 1 for fall semester admission, or November 1 for spring semester admission. Although every effort is made to process all applications submitted by the final filing date, we may not have space to accommodate applications received or completed after May 15/October 15, regardless of applicant's qualifications. Students applying for the Ph.D. must submit all application materials (applications, transcripts, letters of recommendation, and GRE scores) by December 15, for fall admission only.

Students interested in the MSW/MPH should contact the School of Social Work. The completed application is due April 30.

The Graduate School of Public Health offers advanced study leading to the degrees of Doctor of Philosophy, Master of Public Health, Master of Science, and a program that allows students to earn the Master of Public Health and the Master of Social Work, and a Doctor of Medicine and Master of Public Health, concurrently. The Ph.D. is offered with a concentration in epidemiology with various specialization opportunities (see doctoral program); the M.P.H. with concentrations in the areas of biometry, environmental health, epidemiology, health promotion, and health services administration. The Division of Health Services Administration has two specializations. The specialization in public health management is designed for mid-career professionals and may be completed in one year. The concentrations in the M.S. degree are in the areas of environmental health science, industrial hygiene, and toxicology.

In addition to these advanced degree programs, the school offers a preventive medicine residency program that prepares qualified physicians to sit for the American Board of Preventive Medicine certification examination. Residents may receive the M.P.H. degree along with completion of this residency program. Finally, the public health faculty directs academic study leading to a Bachelor of Science degree in health science for those undergraduate students interested in community health education. For more information concerning this undergraduate program, see the General Catalog.

The Graduate School of Public Health is nationally accredited by the Council on Education for Public Health (CEPH). The graduate program in health services administration is accredited by the Accrediting Commission on Education for Health Services Administration (ACEHSA), and the preventive medicine residency program is accredited by the Accrediting Commission for Graduate Medical Education (ACGME). The graduate program in industrial hygiene is accredited by the Accreditation Board for Engineering and Technology (ABET).

The curriculum in the Graduate School of Public Health has been designed to prepare students as practitioners of public health as well as for careers in teaching and research and as leaders in both public and private sector agencies and organizations. To accomplish this mission effectively, the faculty of the Graduate School of Public Health is augmented by expert practitioners in specialized fields related to public health who contribute to both the academic and practical experiences of students pursuing public health degrees. These professionals, who hold research or adjunct professorships in the school, come from a variety of settings such as the County Health and Human Services Agency, military services, hospitals, HMOs, managed care agencies, industry, and other academic institutions.

The Graduate School of Public Health has established close cooperation between the GSPH at San Diego State University and the Department of Family and Preventive Medicine in the School of Medicine at the University of California, San Diego. The UCSD medical school faculty has joined the public health faculty at SDSU in offering the Ph.D. in public health as well as the preventive medicine residency program. Under a special affiliation agreement between the two institutions, medical students at UCSD may take public health courses at SDSU while pursuing their medical studies and, if they choose, earn the M.D. and M.P.H. degrees concurrently. Likewise, SDSU students pursuing advanced study in the GSPH may enroll for specialized courses in the medical school.

This broad network of individual practitioners and the institutions they serve provides a variety of health facilities in which students at the GSPH may meet field studies and practicum requirements. Many of these opportunities are available not only in the San Diego region, but also in Mexico. The school's proximity to the Mexican border has led to the development of strong professional ties between the faculty and students of the GSPH and their counterparts in Baja California. Special arrangements with Universidad Autonoma de Baja California enables students to take courses for credit at the Tijuana campus. This connection has produced a continuing series of jointly sponsored binational research and service projects designed to improve public health conditions and health services on both sides of the border.

Research

Faculty and student research in the broad interdisciplinary field of public health is conducted within the various specialized areas that are generally defined by the degree concentrations. The following descriptions illustrate the focus of research within each of these areas.

Biometry and Biostatistics: Development and application of statistical methods and models in the fields of public health, medicine, and biology. A concentration in biometry, and the scope of the academic and research opportunities in the University may be seen in the listing for the program in biostatistics and biometry presented earlier in this bulletin.

Environmental and Occupational Health Science: Isolation and identification of chemical and microbiological disease agents in air, water, soil, hazardous, and other solid wastes.

Epidemiology and Biostatistics: Identification of biological, environmental, social, and behavioral risk factors of human disease; determination of the distribution and etiology of disease in human populations, particularly infectious and chronic diseases.

Health Promotion: Behavioral science applied to health-related behavior for the identification of risk factors for physical and mental health "illnesses," and the experimental evaluation of interventions aimed at changing risk practices or promoting health enhancing behavior; emphasis is placed on vulnerable populations, such as low income, minority, women, and children.

Health Services Administration: Management of health care facilities, services, and organizations; planning and evaluation of public and private sector programs; administration and operations in specialty services, hospitals, ambulatory care, insurance companies, HMOs, and other health-related organizations.

Industrial Hygiene: Recognition, evaluation and control of chemical, physical, and biological hazards in the work place; current emphasis is on studies of airborne contaminants and respiratory protection.

Toxicology: Study of toxicity, biologic mechanisms of action, and the health risk of exposure to chemicals in the environment.

Affiliated Research Centers

In an effort to serve better the community at large, the Graduate School of Public Health sponsors the Institute of Public Health. The Institute serves as the school's bridge with the community, facilitating field practice opportunities, community-based research and program evaluations, and a venue for continuing education.

In addition, a number of research centers have been established to integrate the specialized research of its faculty and students. These are the Center for Injury Prevention Policy and Practice, the Center for Behavioral and Community Health Studies, the Center for Behavioral Epidemiology and Community Health, and the Center for Injury Prevention and Research. For more information on these centers, see Part Four of this bulletin.

Section I. Master's Degree Programs

Master of Public Health Degree

Admission to Graduate Study

Applicants seeking admission to public health concentration areas leading to either the Master of Public Health or Master of Science degree should contact the Graduate School of Public Health requesting appropriate descriptive materials. Application material and detailed application instructions can be obtained from our Web site (www-rohan.sdsu.edu/dept/gsph/) or ordered from the Campus Bookstore [call (619) 594-7535 to order the GSPH application/information packet].

In addition to satisfying the requirements for admission to the University with classified graduate standing, students applying for admission should electronically submit the University application available at www.csumentor.edu, as described in Part Two of this bulletin. The student seeking admission to the Graduate School of Public Health must also submit the following to the department: (1) GSPH Application Parts I and II (includes narrative statement); (2) two sets of official transcripts, sent directly to the GSPH by the colleges/universities the student attended; (3) GRE score report (SDSU code 4682, department code 0616), or GMAT score report (for applicants to the Health Services Administration program only); (4) three letters of recommendation (preferably academic); (5) additional evidence of promise of success in academic and professional activities; and (6) document competence or prior academic preparation in the biological sciences, social sciences, and quantitative methods. Applicants for the biometry concentration are required to have successfully completed undergraduate courses in single and multivariate calculus. Applicants for the concentration in health services administration with a specialization in public health management are required to have a graduate or professional degree in a health or health-related discipline or a minimum of five years of progressively responsible managerial experience in health care or a related field.

Students who do not fully meet the requirements for admission with classified graduate standing may be considered for conditionally classified graduate standing upon recommendation of the admissions committee and the graduate adviser.

Advancement to Candidacy

All students must: (1) meet the general requirements for advancement to candidacy as described in Part Two of this bulletin; (2) satisfactorily pass a faculty evaluation of the progress that they are making in their graduate course of study; (3) complete the core courses, Public Health 601, 602, 603, 604, 605 (students in health services administration will substitute Public Health 641 for Public Health 605, and students in health promotion will substitute Public Health 661 and 662 for Public Health 603); have a grade point average of at least 3.0 and no grade less than a B– in each core course completed; and (4) have completed at least 12 semester units of approved public health coursework.

In addition, the student must be recommended for advancement to candidacy by the faculty of the Graduate School of Public Health.

Specific Requirements for the Master of Public Health Degree

(Major Code: 12141)

In addition to meeting the requirements for classified graduate standing and the basic requirements for the master's degree as described in Part Two of this bulletin, the student must complete an officially approved course of study of not less than 48 units (exceptions are 55 units for students in health services administration concentration with a specialization in health services management and 34 units for students in the health services administration concentration with a specialization in public health management) including: (1) Public Health 601, 602, 603, 604, and 605 (students in health services administration will substitute Public Health 641 for Public Health 605 and students in health promotion will substitute Public Health 661 and 662 for Public Health 603); (2) a minimum of 21 units of graduate courses in the area of concentration; (3) a maximum of twelve units of supervised field placement (if the student has not had equivalent field experience); and (4) electives selected with the approval of the graduate adviser. In addition, Public Health 799A, Thesis, must be included in the program except in the concentrations in biometry, health promotion, and health services administration, where the student may select the Plan B option, with a comprehensive examination in lieu of the thesis or project when approved by the graduate adviser.

In the environmental health concentrations, students registering for 799A may complete a major project or thesis; and six units of supervised field placement are required.

Up to six units of graduate credit may be accepted in transfer, with the approval of the graduate adviser.

In special circumstances, the graduate adviser may approve one course not on the list of prescribed electives. The substitution must be approved prior to enrollment in the course.

Concentration in Biometry

Courses required for the concentration:

PH 623	Epidemiological Methods (3)
PH 627	Advanced Statistical Methods in Public Health (3)
PH 628	Applications of Multivariate Statistics in Public Health (3)
STAT 551A	Probability and Mathematical Statistics (3)
STAT 551B	Probability and Mathematical Statistics (3)
STAT 560	Sample Surveys (3)

Prescribed Electives: Three units selected from the following Public Health courses:

PH 622	Epidemiology of Chronic Diseases (3)
PH 649	Public Health Surveillance (3)
PH 700A	Seminar in Public Health: Epidemiology (3)

Prescribed Electives: Nine units selected with the approval of the adviser from the following Mathematics courses:

STAT 510	Applied Regression Analysis (3)
STAT 520	Applied Multivariate Analysis (3)
STAT 570	Stochastic Processes (3)
STAT 670A-670B	Advanced Mathematical Statistics (3-3)
STAT 671	Statistical Computing (3)
STAT 672	Nonparametric Statistics (3)
STAT 674	Multivariate Analysis (3)
STAT 677	Design of Experiments (3)
STAT 678	Survival Analysis (3)
STAT 679	Analysis of Discrete Data (3)
STAT 680A-680B	Advanced Biostatistical Methods (3-3)

Concentration in Environmental Health

Courses required for the concentration:

PH 632 Air Quality (3)
PH 634 Environmental Protection (3)
PH 639 Water Quality Investigation (3)

Prescribed electives (a minimum of six additional units selected with the approval of the adviser from):

PH 630 Environmental Health Risk Assessment (3)
PH 635 Occupational Medicine (3)
PH 636 Hazardous Waste Management (3)
PH 637 Biological Mechanisms of Environmental Toxicants (3)
PH 638A Principles of Toxicology (3)
PH 700C Seminar in Public Health: Occupational and Environmental Health (3)
PH 721 Environmental Epidemiology (3)
PH 731 Environmental and Occupational Health Policy (3)
PH 732 Principles of Industrial Hygiene (4)
PH 737A Chemical Agents, Recognition, Evaluation, and Assessment (3)
PH 737B Physical and Biological Agents, Recognition, Evaluation and Assessment (2)
PH 738 Topics in Toxicology (3)
PH 798 Special Study (1-3) Cr/NC/RP

Electives (6 units): These electives may include any public health course or selected graduate level courses in other departments with the approval of the faculty adviser.

Concentration in Epidemiology

Courses required for the concentration:

PH 621 Epidemiology of Infectious Diseases (3)
PH 622 Epidemiology of Chronic Diseases (3)
PH 623 Epidemiological Methods (3)
PH 627 Advanced Statistical Methods in Public Health (3)

Prescribed electives in Epidemiology (two courses selected from):

PH 625 Control of Infectious Diseases (3)
PH 628 Applications of Multivariate Statistics in Public Health (3)
PH 649 Public Health Surveillance (3)
PH 700A Seminar in Public Health: Epidemiology (3)
PH 720 Critical Readings in Epidemiology and Public Health (3)
PH 721 Environmental Epidemiology (3)
PH 722 Seminar in Clinical Trials (3)
PH 724 Advanced Methods in Epidemiology (3)
PH 726 HIV/AIDS Epidemiology and Public Health (3)
PH 729 Ethics for Epidemiology (3)
PH 823 Case-Control Studies (3)
PH 824 Cohort Studies (3)
PH 825 Grantwriting in Epidemiology and Public Health (1-3)

Electives (3 units selected with the approval of the concentration faculty): These electives may include any public health course or selections from the following:

Biology 585, 588
Nutrition 600, 606, 607, 700
Statistics 510, 550, 551A, 560, 672, 674, 677

Concentration in Health Promotion

Courses required for the concentration:

PH 607 Research Methods and Proposal Writing (3)
PH 661 Theoretical Foundations of Health Promotion (3)
PH 662 Motivating Health Behavior (3)
PH 663 Health Promotion Communications Theory and Design (3)
PH 666 Health Promotion Program Planning and Assessment (3)

Prescribed electives (choose two or more different courses from):

PH 664 Health, Society and Human Behavior (3)
PH 667 Prevention and Control of Chronic Diseases (3)
PH 668 Seminar in Health Promotion Research (3)
PH 669 Health Risk Appraisal (3)
PH 700F Seminar in Public Health: Health Promotion (3)
PH 761 Programming Health Promotion (3)
PH 762 Behavioral Medicine (3)
PH 797 Research (3) Cr/NC/RP

Electives (6 units to be chosen with the approval of the faculty from any public health course or Community Health Education 574).

Concentration in Health Services Administration

Graduate Program in Health Services Administration (ACEHSA Accredited)

Specialization in Health Services Management

Courses prerequisite to this specialization are Public Health 640 and 700E or their equivalents as determined by the graduate adviser. If these courses or the equivalent have not been completed prior to admission, they should be included in the first semester course requirements.

PH 640 Public Issues in Financing Health Care (3)
PH 700E Funds Management in Public Health (3)

Courses required for the specialization:

PH 641 Introduction to Health Services (3)
PH 644A Health Services Organization (3)
PH 644B Health Services Management (3)
PH 645 Health Economics (3)
PH 646 Legal and Ethical Aspects of Health Care (3)
PH 647A Quantitative Methods and Health Data Analysis (3)
PH 647B Health Quality and Information Management (3)
PH 742A Health Services Financial Management (3)
PH 742B Financing Health Systems and Services (3)
PH 748 Health Services Competitive Strategy and Marketing (3)

Prescribed electives (six units selected with approval of adviser). In special circumstances, the graduate adviser may approve one course not on the list of prescribed electives. The substitution must be approved prior to enrollment in the course.

PH 649 Public Health Surveillance (3)
PH 700E Seminar in Public Health: Health Services Administration (3)
PH 743 Hospitals and Health Systems (3)
PH 744 Ambulatory and Group Practice Management (3)
PH 746 Quality of Care Assessment and Assurance (3)
PH 798 Special Study (1-3) Cr/NC/RP

The remaining elective units may be selected with the approval of the adviser.

Specialization in Public Health Management

Designed for mid-career professionals. May be completed in one year.

Courses required for the specialization:

PH 641 Introduction to Health Services (3)
PH 645 Health Economics (3)
PH 647A Quantitative Methods and Health Data Analysis (3)
PH 666 Health Promotion Program Planning and Assessment (3)
PH 740 Financial Principles for Public Health Executives (3)
PH 741 Public Health Services Organization and Management (3)
PH 797 Research (3) Cr/NC/RP

Prescribed electives (three units selected with approval of adviser).

PH 647B Health Quality and Information Management (3)
PH 649 Public Health Surveillance (3)
PH 700E Seminar in Public Health: Health Services Administration (3)
PH 742B Financing Health Systems and Services (3)
PH 798 Special Study (1-3) Cr/NC/RP

Master of Science Degree in Public Health

Admission to Graduate Study

The M.S. degree is offered in environmental health, industrial hygiene, and toxicology. In addition to satisfying the requirements for admission to the University with classified graduate standing, students applying for admission should electronically submit the University application available at www.csumentor.edu, as described in Part Two of this bulletin. The student seeking admission to the Graduate School of Public Health master of science programs must also submit the following to the department: (1) GSPH Application Parts I and II (includes narrative statement); (2) two sets of official transcripts, sent directly to the GSPH by the colleges/universities the student attended; (3) GRE score report (SDSU code 4682, department code 0616); (4) three letters of recommendation (preferably academic); (5) document competence or prior academic preparation in laboratory sciences.

Normally, to be considered for admission to these programs, a student must have successfully completed an undergraduate degree (BA or BS) in biology, chemistry, engineering, or other basic or applied natural science. For the industrial hygiene program, admitted students must hold an earned baccalaureate that prepares them to apply the basic principles of college level mathematics, inorganic and organic chemistry, physics, and biology. Exceptions may be admitted with an individually documented plan of study to compensate for any deficiencies. The Graduate School of Public Health should be consulted for specific course preparation recommended for each of the concentrations. In some cases, if an applicant is deficient in certain basic or applied science areas, some remedial coursework can be completed as an unclassified graduate student. However, credits earned by remedial courses cannot be applied toward the required number of units for the master's degree. Students who do not meet all of the above requirements for admission with classified graduate standing may be admitted with conditionally classified graduate standing upon the recommendation of the admissions committee and the graduate adviser. Students so admitted will be advised as to remedial steps to take to satisfy the requirement to achieve classified graduate standing. Courses prerequisite to the master of science degree concentrations are Public Health 601 and Public Health 602 or their equivalents as determined by the graduate adviser. If these courses or their equivalents have not been completed prior to admission, they should be included in the first semester course requirements.

Advancement to Candidacy

All students must meet the general requirements for advancement to candidacy as described in Part Two of this bulletin. Students completing master of science degree concentrations must (1) have satisfactorily completed at least 12 units of coursework of the 36-unit official program including at least two courses chosen from the list of courses required for the student's concentration, with a minimum grade point average of 3.0 (B) and no grade less than a B–; (2) have a thesis proposal which has received the approval of the Graduate School of Public Health faculty.

General Requirements for the Master of Science Degree

(Major Code: 12141)

In addition to meeting the requirements for classified graduate standing and the basic requirements for the master's degree as described in Part Two of this bulletin, the student must complete an officially approved course of study of not less than 36 units in the area of concentration or related disciplines as listed below. Up to six units may be accepted in transfer, with the approval of the graduate adviser. Requirements vary depending on the area of concentration and are as shown below:

	Environmental Health	Industrial Hygiene	Toxicology
Required for all M.S. programs	12	12	12
Required for the concentration	12	14	12
Prescribed electives	12	7	12
Field Practice* (PH 650)	—	3	—
Total units:	36	36	36

* A 3-unit field practice is mandatory for industrial hygiene students and may be taken as an elective by students in the toxicology concentrations with approval of the academic adviser.

Specific Requirements for Master of Science Degree Programs

Courses required for all M.S. programs (12 units):
PH 636 Hazardous Waste Management (3)
PH 638A Principles of Toxicology (3)
PH 797 Research (3)
PH 799A Thesis (3)

Concentration in Environmental Health Science

Courses required for the concentration (12 units):
PH 630 Environmental Health Risk Assessment (3)
PH 632 Air Quality (3)
PH 634 Environmental Protection (3)
PH 639 Water Quality Investigation (3)

Prescribed electives (a minimum of 12 units of coursework selected from the following with the approval of the faculty adviser):
PH 603 Behavioral and Social Science in Public Health (2)
PH 604 Environmental Determinants of Human Health (2)
PH 621 Epidemiology of Infectious Diseases (3)
PH 623 Epidemiological Methods (3)
PH 625 Control of Infectious Disease (3)
PH 637 Biological Mechanisms of Environmental Toxicants (3)
PH 650 Field Practice (3) Cr/NC
PH 700C Seminar in Public Health: Occupational and Environmental Health (3)
PH 721 Environmental Epidemiology (3)
PH 731 Environmental and Occupational Health Policy (3)
PH 732 Principles of Industrial Hygiene (4)
PH 738 Topics in Toxicology (3)
PH 798 Special Study (1-3) Cr/NC/RP

In special circumstances, the graduate adviser may approve one course not on the list of prescribed electives. The substitution must be approved prior to enrollment in the course.

Concentration in Industrial Hygiene

Courses required for the concentration (14 units):

PH 732	Principles of Industrial Hygiene (4)
PH 735	Industrial Ventilation (3)
PH 736	Principles of Ergonomics (2)
PH 737A	Chemical Agents, Recognition, Evaluation, and Assessment (3)
PH 737B	Physical and Biological Agents, Recognition, Evaluation, and Assessment (2)

Prescribed electives (a minimum of seven units of coursework selected from the following list with the approval of the faculty adviser):

PH 603	Behavioral and Social Science in Public Health (2)
PH 604	Environmental Determinants of Human Health (2)
PH 632	Air Quality (3)
PH 634	Environmental Protection (3)
PH 635	Occupational Medicine (3)
PH 639	Water Quality Investigation (3)
PH 700C	Seminar in Public Health: Occupational and Environmental Health (3)
PH 731	Environmental and Occupational Health Policy (3)
PH 733	Principles of Industrial Safety (3)
PH 738	Topics in Toxicology (3)
PH 798	Special Study (1-3) Cr/NC/RP

In special circumstances, the graduate adviser may approve one course not on the list of prescribed electives. The substitution must be approved prior to enrollment in the course.

Concentration in Toxicology

Courses required for the concentration (12 units):

PH 630	Environmental Health Risk Assessment (3)
PH 637	Biological Mechanisms of Environmental Toxicants (3)
PH 638B	Methods in Toxicity Testing (3)
PH 738	Topics in Toxicology (3)

Prescribed electives (a minimum of 12 units of coursework selected from the following list with the approval of the faculty adviser):

BIOL 569	Molecular Pharmacology (3)
PH 603	Behavioral and Social Science in Public Health (2)
PH 604	Environmental Determinants of Human Health (2)
PH 627	Advanced Statistical Methods in Public Health (3)
PH 632	Air Quality (3)
PH 635	Occupational Medicine (3)
PH 639	Water Quality Investigation (3)
PH 650	Field Practice (3) Cr/NC
PH 700C	Seminar in Public Health: Occupational and Environmental Health (3)
PH 721	Environmental Epidemiology (3)
PH 731	Environmental and Occupational Health Policy (3)
PH 732	Principles of Industrial Hygiene (4)
PH 798	Special Study (1-3) Cr/NC/RP

In special circumstances, the graduate adviser may approve one course not on the list of prescribed electives. The substitution must be approved prior to enrollment in the course.

Master of Social Work and Master of Public Health Degrees

General Information

The Graduate School of Public Health and the School of Social Work offer a three year concurrent graduate program leading to a Master of Public Health and a Master of Social Work. The major objective of the concurrent program is to offer preparation in the fields of public health and social work for the purpose of providing the knowledge and skills necessary to promote health, prevent disease, and enhance the delivery of social and health services in the community.

Admission to Graduate Study

To request application materials for the concurrent graduate program in Social Work and Public Health, applicants should write to the Director of the MSW/MPH Advisory Committee, Graduate School of Public Health, San Diego State University. All necessary application forms, instructions for filing them, and information about the program will be sent. In order to be considered for the concurrent MSW/MPH program, applicants must:

1. Meet the general requirements for admission to graduate study at the University (see Part Two of this bulletin).
2. Have a minimum 2.75 grade point average in the last 60 semester or 90 quarter units in undergraduate work completed. Undergraduate preparation in at least one of the following areas is preferred: social work, social or behavioral sciences, or health science.
3. A satisfactory score on the GRE General Test. Applicants already holding another master's degree or higher degree from an acceptable accredited graduate school are exempt from the GRE.
4. Submit a narrative statement as described in Instructions for Applicants.
5. Submit three letters of recommendation.

A committee composed of faculty from Public Health and Social Work will make all admission recommendations to the Dean of the Graduate Division.

Advancement to Candidacy

All students must meet the general requirements for advancement to candidacy as described in Part Two of this bulletin. All core courses in public health and social work must be completed prior to advancement. In addition, the student must: (1) have earned at least 24 units of graduate study within the concurrent program with a minimum grade point average of 3.0 and no grade less than a B– in each core course; (2) have been recommended for advancement by the combined faculty advisory committee; received credit (Cr) in field practicum; (3) have a thesis proposal approved by the combined faculty advisory committee.

Upon advancement to candidacy, the student will enroll in Public Health 797 (Research), Social Work 797 (Research), and Public Health 799A (Thesis) or Social Work 799A (Thesis). A thesis incorporating theory, method, and analytic techniques from both disciplines is the culminating experience for the concurrent program leading to the M.S.W. and M.P.H. degrees.

Specific Requirements for the MSW/MPH Degree

(Major Code: 12991)

In addition to meeting the requirements for classified graduate standing and the basic requirements for the master's degree as described in Part Two of this bulletin, the student must complete an officially approved course of study of not less than 83 units.

Social Work/Public Health – Health Services Administration

Courses prerequisite to the program are Public Health 640 and Business Administration 650 or their equivalents as determined by the graduate adviser. If these courses or the equivalents have not been completed prior to admission, they should be included in the first semester course requirements.

BA 650	Financial Accounting (2)
PH 640	Public Issues in Financing Health Care (3)
SWORK 601	Seminar in Social Welfare Policy and Services (3)
SWORK 619	Human Behavior in the Social Environment (3)

SWORK 620B	Seminar in Human Behavior and Social Environment: Administration (3)
SWORK 630	Social Work Practice: A Generalist Perspective (3)
SWORK 631	Social Work Practice: Individuals, Families, and Groups (3)
SWORK 632	Social Work Practice: Organizations and Communities (3)
SWORK 650*	Field Practicum (7) Cr/NC
SWORK 690	Seminar in Social Work Research Methods (3)
SWORK 702C	Seminar in Social Welfare Policy and Services: Health and Aging (3)
SWORK 740	Advanced Seminar in Social Work Administration (3)
SWORK 745	Advanced Seminar in Selected Topics in Social Work Administration (3)
SWORK 750B*	Advanced Field Practicum: Social Work Administration (8) Cr/NC
SWORK 797	Research (3) Cr/NC/RP
PH 601	Epidemiology (3)
PH 602	Biostatistics (3)
PH 604	Environmental Determinants of Human Health (2)
PH 641	Introduction to Health Services (3)
PH 644A	Health Services Organizations (3)
PH 644B	Health Services Management (3)
PH 645	Health Economics (3)
PH 647A	Quantitative Methods and Health Data Analysis (3)
PH 742A	Health Services Financial Management (3)
PH 742B	Financing Health Systems and Services (3)
PH 797	Research (3) Cr/NC/RP
PH 799A or SWORK 799A	Thesis (3) Cr/NC/RP

* Social Work 650 and 750 (field practica) must have the approval of the faculty advisory committee. Responsibility for faculty field supervision will be assigned in social work.

Transfer units will not be accepted toward the concurrent MSW/MPH degree program. Graduate study or degrees obtained previously will not be accepted toward meeting the unit requirements of the concurrent MSW/MPH degree program.

If a student after entering the concurrent MSW/MPH program returns to a single degree program, all the requirements for the single degree program must then be met.

Section II. Doctoral Program

Ph.D. in Public Health with a Concentration in Epidemiology

(Major Code: 12141)

A Ph.D. in public health with a concentration in epidemiology is offered by the joint faculties of the Division of Epidemiology and Biostatistics, Graduate School of Public Health at San Diego State University, and the Department of Family and Preventive Medicine, School of Medicine at the University of California, San Diego (UCSD). Emphasis is on producing graduates with a mastery of the central concepts and analytic processes of epidemiology for application to a multitude of disciplines. Specializations are offered through both campuses, including infectious and chronic diseases, exercise science, medical geography, and behavioral epidemiology. Graduates of this program are competitive for a variety of research, teaching, and community service positions in areas such as academic institutions, local and state health departments, federal and international agencies, and both privately and publicly sponsored research institutes.

Admission to Doctoral Study

Applicants for admission to the doctoral program must present evidence of capacity for graduate study in public health. A multidisciplinary field such as public health draws from a wide variety of undergraduate majors, but the student is expected to have a strong grounding in the quantitative and biological sciences. A master's degree in epidemiology is preferred. Admission to the program requires acceptance by both institutions on recommendation of the participating units at SDSU and UCSD. It is understood that acceptance of a student into the joint program by each of the units will be conditioned by their respective standards for graduate admissions and also the available facilities.

Application for admission to the Ph.D. program must be received by the Graduate School of Public Health not later than December 15.

Application

A complete application to the joint doctoral program in public health requires the following information:

- The appropriate application form, Parts I and II.
- Doctoral Admissions Form.
- Three letters of recommendation.
- Transcripts of academic work already completed.
- Results of the Graduate Record Examination.

To be considered for admission to the joint SDSU-UCSD doctoral program in public health, students must meet the general requirements for admission to both universities with classified graduate standing as outlined in the respective current catalogs. These include (a) an acceptable baccalaureate degree from an institution accredited by a regional accrediting association or equivalent academic preparation, as determined by the deans of the two graduate divisions; (b) a GPA of at least 3.0 in the last 60 semester (90 quarter) units attempted; (c) good standing at the last institution attended; and (d) an acceptable score (verbal and quantitative) on the GRE General Test. Preference will be given to students with an M.P.H. or M.S. degree in epidemiology.

Residency Requirements

After formal admission to the joint doctoral program, the student must spend at least one academic year in full-time residence on each of the two campuses. The definition of residence must be in accord with the regulations of San Diego State University and University of California, San Diego.

Advisory Committee

Upon admission to the program, the steering committee of the two institutions will establish an advisory committee for the student. This committee will consist of three faculty members chosen jointly from the two institutions. In consultation with the student, the committee will develop the student's course of study, prepare and guide a preliminary examination, and establish the student's joint qualifying committee. At least one member of the advisory committee must be from SDSU and one from UCSD.

Course Requirements

Core courses in epidemiology and biostatistics are offered at both SDSU and UCSD. Prior to taking the qualifying examination, every student is expected to have a firm understanding of modern principles of public health as well as knowledge and application of epidemiology and biostatistical methods. Elective coursework may be selected from offerings at both campuses.

Course Requirements for Students with an Existing M.P.H. or M.S. Degree in Epidemiology

Epidemiology: Public Health 623, 724, 800 (Doctoral Seminar in Epidemiology); six units in advanced study design selected from Public Health 722, 823, 824; and six-unit UCSD course series in applied epidemiology (FPM 259A, 259B, 259C).

Biostatistics: Public Health 628 and six units in advanced biostatistics.

Electives: 24 units in specialty area.

Graduate Assistantship in Epidemiology: 6 units

Dissertation Research and Proposal: 15 units

Students who do not possess an existing M.P.H. or M.S. degree in epidemiology are required to take the following additional courses: Public Health 601, 602, 621, 622, and 627. Once the student is matriculated at SDSU, the final curriculum will be determined by the doctoral advising committee.

Preliminary Examinations

The preliminary examinations will test knowledge and the application of epidemiology and biostatistical methods.

Doctoral Committee

A five-member committee, composed of faculty at SDSU and UCSD, will be recommended by the advisory committee for each student and approved by the graduate deans from both campuses. One member must be nonprogram faculty and there must be at least one tenured faculty member from each university. The student's dissertation adviser will chair the committee. At least two members must be from SDSU and two from UCSD.

The doctoral committee will conduct a written and oral comprehensive qualifying examination, which will evaluate the student's understanding and knowledge of his or her special area of epidemiologic interest. The purpose of this examination is for the student to demonstrate competence in the major research field.

The doctoral committee may specify a course of study to strengthen any weaknesses identified during the qualifying examination. Upon successful completion of the qualifying examination the student must make application to the Graduate Division at UCSD for advancement to candidacy. Upon payment of the candidacy fee to UCSD, and after approval by the graduate deans on both campuses, the student will be notified of advancement to candidacy by the UCSD Graduate Division.

Faculty

Faculty members of the cooperating institutions participate in the joint doctoral program in Public Health Epidemiology and are available for direction of research and as members of joint doctoral committees.

Dissertation

Following successful completion of the qualifying examination and advancement to candidacy, the major remaining requirement for the Ph.D. degree will be satisfactory completion of a dissertation consisting of original and significant research carried out under the guidance of the dissertation adviser, who may be from either SDSU or UCSD. The doctoral committee becomes the dissertation committee after the student's advancement to candidacy. Requirements currently in force at SDSU and UCSD must be met for completing and filing the dissertation.

Award of the Degree

The Doctor of Philosophy degree will be awarded jointly by the Trustees of The California State University and the Regents of the University of California in the names of both institutions.

Financial Support

The Graduate School of Public Health at SDSU and the Department of Community and Family Medicine at UCSD endeavors to provide financial support that will enable all students to devote full time to research training and study.

Medical Students Interested in Obtaining the Master of Public Health (M.P.H.) Degree

San Diego State University, Graduate School of Public Health, and University of California, San Diego, School of Medicine, offer a collaborative education effort to enable UCSD medical students to also obtain the M.P.H. degree. The program is designed for those UCSD medical students who anticipate careers in one or more of the following fields: public health, preventive medicine, maternal and child health, epidemiology, occupational and/or environmental health, health promotion, health services administration, or aerospace medicine, and to those with special interest in such areas as nutrition, demography, international health, and behavioral medicine. In addition, it provides public health training for those planning careers in family practice, pediatrics, general internal medicine, and other aspects of primary care who wish to enhance their knowledge and skills in clinical preventive medicine and in the managerial aspects of health care. The M.P.H. degree or an equivalent academic experience is required for certification by the American Board of Preventive Medicine.

With approval, certain UCSD courses can be counted toward fulfilling the M.P.H. degree requirement at the SDSU Graduate School of Public Health.

Further information about these programs can be obtained from the Dean of Students, Maria Savoia, M.D., (858) 534-3703 or Michael Criqui, M.D., (858) 534-3723.

Section III. Other Programs

Preventive Medicine Residency Certificate

The purpose of the Preventive Medicine Residency Certificate is to train physicians to assure that they have adequate knowledge, attitudes, and skills germane to general preventive medicine and occupational medicine. The physician will be eligible to sit for the board certification examination administered by the American Board of Preventive Medicine.

In addition to satisfying the requirements for admission to the University with classified graduate standing, as described in Part Two of this bulletin, the student seeking admission to the preventive medicine residency must (1) fulfill the admission requirements given above, and (2) have completed a Doctor of Medicine degree from an accredited institution.

The student will be expected to complete a three year course of study which involves the completion of a clinical year provided by the University of California, San Diego, School of Medicine, the completion of an academic year leading to the Master of Public Health degree provided by the Graduate School of Public Health at San Diego State University, and appropriate practicum experiences under the supervision of faculty of one of the two cooperating institutions.

The student is expected to complete the number of units required for the Master of Public Health degree as well as those additional units which may be prescribed in order to complete the practicum year, i.e., Public Health 750.

The student is expected to have maintained a 3.0 average overall in the coursework at the Graduate School of Public Health and at the University of California, San Diego, School of Medicine.

Preventive Medicine Residency Faculty:

Regina Fleming, M.D., M.P.H., Director, Adjunct Associate Professor of Public Health

Kevin M. Patrick, M.D., Adjunct Professor of Public Health, Associate Director

Michael H. Criqui, M.D., M.P.H., Professor of Epidemiology, UCSD, Adjunct Professor of Public Health, Associate Director

Robert A. Gunn, M.D., Adjunct Associate Professor of Public Health

Fellowships

A variety of fellowships, scholarships, and traineeships are funded by the federal government and the Graduate School of Public Health.

Fellowship in Medical Toxicology

Residents in emergency medicine, preventive medicine, and other medical specialties are eligible for this fellowship. The Fellowship in Medical Toxicology within the Preventive Medicine Residency Program extends the certification in medical toxicology of qualified physicians through didactic courses and a practicum. These may be used in partial fulfillment of the requirements for the M.P.H. degree. Physicians interested in more information may contact Richard F. Clark, M.D., Medical Director, California Poison Control System, UCSD School of Medicine, (619) 543-6835 or Ann de Peyster, Ph.D., SDSU Graduate School of Public Health, (619) 594-3690 for information on coursework offered at SDSU.

Fellowships in Community Pediatrics, Family Medicine, or Internal Medicine

UCSD, School of Medicine Fellows in Pediatrics, Medicine or Internal Medicine will develop experiences in community practice through didactic courses and practicum leading to both completion of a fellowship and a Master of Public Health degree.

The Division of Community Pediatrics at UCSD and the Graduate School of Public Health at SDSU have developed opportunities and experiences for medical students, residents, and practitioners in community practice to provide physicians a population-based understanding of disease and its determinants.

Further information about this program can be obtained from Philip R. Nader, M.D., (619) 681-0688 or Kenneth J. Bart, M.D., (619) 594-1255.

Macy Foundation/Synergistic Education in Public Health and Health Care

Philip R. Nader, M.D., Professor of Pediatrics, UCSD, Research Professor of Public Health

Kenneth J. Bart, M.D., M.P.H., M.S.H.P.M., Professor of Public Health

National Research Service Award Fellowship in Community Health

Philip R. Nader, M.D., Professor of Pediatrics, UCSD, Research Professor of Public Health

Family Medicine Faculty Development Program

Ellen L. Beck, M.D., Director of Community Education, Associate Clinical Professor of Epidemiology, UCSD

William J. Wooten, M.D., M.P.H., Associate Clinical Professor of Epidemiology, UCSD

Stuart H. Gilbreath, Ph.D., Professor of Public Administration and Urban Studies

Fellowship in Applied Child Health Services

The Center for Child Health Outcomes at Children's Hospital is offering a one year fellowship in applied child health service research. The fellowship may be associated with the preventive medicine residency for fellows wishing Preventive Medicine Board Certification. Experiences will be developed through didactic courses or a practicum leading to both the completion of a fellowship and a Master of Public Health. Further information may be obtained by contacting Paul S. Kurtin at (858) 576-4047, Kevin M. Patrick at (619) 594-5332, or Kenneth J. Bart at (619) 594-1255.

Courses Acceptable on Master's and Doctoral Degree Programs (C H E) (P H)

Community Health Education

UPPER DIVISION COURSES

560. Introduction to Public Health (3) I, II
Prerequisite: Community Health Education 290.
Epidemiological methods, behavioral and biological determinants, modes of transmission, risk factors, prevention of common infectious and chronic disease. Evaluation of health information to develop health education programs.

561. Health and Medical Care (3) II
Prerequisite: Senior or graduate standing with a major or minor in health education or a closely related area.
Health values, concepts, and attitudes; health products and facilities; hospital care and hospitalization plans; governmental health controls; economic and cultural influences on health and medical care; professional contributions, relationships, and careers; national and international health programs.

574. Habit-Forming Substances (3) I
Tobacco, alcohol, and other drugs; their use, misuse and abuse.

596. Workshop in Health Education (1-3)
Selected problems in health science are used as a basis for workshop experiences. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree. Maximum credit of six units of 596; maximum credit of three units of 596 applicable to a master's degree. Maximum combined credit of six units of 596 and 696 applicable to a 30-unit master's degree.

Community Health Education

GRADUATE COURSE

920. Health Education for Teachers (3)
Prerequisite: For professional, multiple, or single subject clear credential teaching applicants.
Covers all topics designated in the health framework for California including nutrition, physiological, and sociological effects of substance abuse, consumer health, injury prevention, and child abuse.

Public Health

GRADUATE COURSES

601. Epidemiology (3)
Prerequisite: Consent of instructor.
Distribution and determinants of diseases; role of epidemiology in public health. Descriptive, analytic and experimental epidemiology.

602. Biostatistics (3)
Prerequisite: Consent of instructor.
Statistical reasoning applied to public health; probability, hypothesis testing, regression and correlation, analysis of variance, measurement theory and modeling.

603. Behavioral and Social Science in Public Health (2)
Prerequisites: Psychology 316, 340, and Sociology 436.
Role of psychological, social and environmental variables in health and illness. Multifactorial psychosocial model of disease susceptibility.

604. Environmental Determinants of Human Health (2)
Prerequisites: Biology 100, Chemistry 100.
Environmental determinants and their influence on human health. Biological, physical, and chemical factors which affect the health of a community.

605. Health Services Administration (2)
Overview of health services administration and delivery in U.S. Characteristics of utilization of health care, financing and system structure, types of providers, nonfinancial resources, and assessment and regulation.

607. Research Methods and Proposal Writing (3)
Two lectures and three hours of laboratory.
Prerequisites: Public Health 601, 661, and consent of instructor. Recommended: Public Health 602.
Direct observation measurement, group and intensive experimental designs. Laboratory exercises and proposal writing applicable to public health.

621. Epidemiology of Infectious Diseases (3)
Prerequisite: Public Health 601.
Utilizing selected infectious diseases and environmental settings, provides scientific background on which epidemiological investigations and control measures are based.

622. Epidemiology of Chronic Diseases (3)
Prerequisite: Public Health 601.
Epidemiology of selected chronic diseases.

623. Epidemiological Methods (3)
Prerequisites: Public Health 602, 621 or 622.
Topics include: analysis of descriptive data, design of studies, evaluation of data, development of biological models. Examples of both acute and chronic diseases.

625. Control of Infectious Diseases (3)
Prerequisite: Public Health 621.
Theoretical and practical experience in techniques available for control of infectious diseases.

627. Advanced Statistical Methods in Public Health (3)
Prerequisite: Public Health 602.
Applications of advanced statistical methods for analysis of public health and biomedical data. Topics include multiple linear regression, analysis of variance, logistic regression, and introduction to survival analysis.

628. Applications of Multivariate Statistics in Public Health (3)
Prerequisite: Public Health 627.
Statistical methods for multivariate problems in public health including regression diagnostics, cluster analysis, discriminant analysis, principal components, multivariate discrete analysis and Poisson regression. Computer applications included.

630. Environmental Health Risk Assessment (3)
Four major steps of risk assessment to include hazard identification, dose-response assessment, exposure assessment, and risk characterization. Will also include risk communication and risk management in environmental arena.

632. Air Quality (3)
Prerequisites: Biology 100, Chemistry 251, Physics 180A.
Properties of airborne gases, vapors, and particulate matter. Effects of air pollution on community. Mobile and stationary sources of air pollution. Meteorology and dispersion of air pollutants. Ambient air quality standards.

634. Environmental Protection (3)
Rationale and mechanisms for control of water supplies, liquid and solid waste disposal, lighting, heat, food and housing, pesticides and community noise.

635. Occupational Medicine (3)
Etiology, diagnosis of disease, and stress in the modern industrial environment.

636. Hazardous Waste Management (3)
Prerequisite: Chemistry 201.
Rationale, methods, and regulations governing the proper management of hazardous and toxic wastes.

637. Biological Mechanisms of Environmental Toxicants (3)
Two lectures and three hours of laboratory.
Prerequisites: Biology 261 and Chemistry 160.
Biologic effects and underlying mechanisms of action of harmful environmental agents on mammalism cells and tissues. Emphasis on toxic chemicals and applications of basic mechanisms research to public health situations.

638A. Principles of Toxicology (3)
Prerequisites: Biology 261 and Chemistry 160.
Dose-response and other principles for evaluating the effects of toxic chemicals on mammalian organ systems.

638B. Methods in Toxicity Testing (3)
One lecture and six hours of laboratory.
Prerequisite: Credit or concurrent registration in Public Health 638A.
Laboratory methods used in evaluating chemicals for potential human toxicity.

639. Water Quality Investigation (3)
Two lectures and three hours of laboratory.
Prerequisite: Public Health 604 or 634.
Human health problems associated with water usage and with various aquatic environments.

640. Public Issues in Financing Health Care (3)
Prerequisite: Open to Health Services Administration majors and students in related fields with consent of instructor.
Orientation to growing role of public intervention in health care sector, including equity versus efficiency aspects of taxation and health care financing, social insurance programs, and methods of evaluating public health activities.

641. Introduction to Health Services (3)
Health care systems in the U.S. Underlying needs, insurance and uninsurance, public programs, reimbursement, managed care, resources, providers, regulation outcome measurement and evaluation, and health policy issues.

644A. Health Services Organizations (3)
Prerequisite: Public Health 641.
Structure and functioning of organizations that provide and finance health services. Systems theory approach to environments, visions and goals, strategies, structure, and processes of healthcare organization.

644B. Health Services Management (3)
Prerequisite: Public Health 644A.
Functions of manager in healthcare organizations. Behavioral science perspective on interpersonal, informational, decision, ethical, and conflict resolution roles of manager.

645. Health Economics (3)
Prerequisite: Public Health 640.
Economics of health care, including supply and demand factors, efficiency, incentives facing physicians, hospitals, and health plans, economic evaluation of provider performance, health workforce issues, and cost-effectiveness analysis.

646. Legal and Ethical Aspects of Health Care (3)
Prerequisite: Public Health 641.
Legal topics in health care include tort law and reform, malpractice, risk management, patient consent, patient rights, contracts, antitrust, managed care, and organizational restructuring. Ethical subjects include patient rights, procreation and abortion, and issues of death and dying.

647A. Quantitative Methods and Health Data Analysis (3)
Prerequisites: Public Health 602 and 641.
Quantitative methods and data analyses in health services administration. Topics include decision analysis, forecasting and regression, project management techniques, data analysis, and data and information management applications. (Formerly numbered Public Health 647.)

647B. Health Quality and Information Management (3)
Prerequisite: Public Health 647A.
Health quality measurement and improvement, focusing on managed care computer applications. Topics include outcomes and performance measurement; health and patient databases; types of databases and their management; hardware, software, and networks; systems analysis and design; and project control methods.

649. Public Health Surveillance (3)
Two lectures and three hours of laboratory.
Prerequisites: Public Health 601 and 602.
Public health data sources, including vital statistics, hospital discharge systems, the census, annual and special federal surveys through use of computer files. Methods of data quality control and analysis, communication of information, survey research, and public health surveillance.

650. Field Practice (3-6) Cr/NC
Field instruction in public health settings. Application of public health principles and skills to practical problems. Maximum credit six units of Public Health 650 applicable to a master's degree.

A. Epidemiology
C. Occupational Health
D. Environmental Health Administration
E. Health Services Administration
F. Health Promotion

651A. Legislation and Policy Affecting Women and Children's Health (3)
Prerequisite: Open to graduate students in the College of Health and Human Services.
Health policies and legislation affecting programs and services for women, children, adolescents, and families.

655. Child and Adolescent Health (3)
Health problems of children and adolescents in the U.S. with identification of needs and services which address these problems.

658. Program and Data Management in Maternal and Child Health (3)
Planning and evaluation, program implementation, budgeting, personnel issues, quality assurance, and data management for services in maternal and child health programs.

661. Theoretical Foundations of Health Promotion (3)
Prerequisite: Community Health Education 290.
Psychological, sociological, economic, and political theories relevant to the mission and processes of health promotion. (Formerly numbered Community Health Education 621.)

662. Motivating Health Behavior (3)
Prerequisite: Community Health Education 401.
Application of behavioral change techniques and health education methodology to health promotion targeting individuals and whole communities. (Formerly numbered Community Health Education 606.)

663. Health Promotion Communications Theory and Design (3)
Prerequisite: Community Health Education 402.
Theory, design and implementation of health education communications in community contexts. Extensive use of student design, analysis, and projects.

664. Health, Society and Human Behavior (3)
Prerequisites: Psychology 101, Sociology 101.
Historical and contemporary examination of health problems of individuals and communities. Health needs, resources; impact of society on health and health on society.

666. Health Promotion Program Planning and Assessment (3)
Prerequisites: Public Health 661, 662.
Program planning and assessment, theories, systems and procedures relevant to health promotion and education.

667. Prevention and Control of Chronic Diseases (3)
Prerequisites: Public Health 601 and 602.
Health promotion strategies for modification of individual behaviors and social practices to lower risk of chronic disease.

668. Seminar in Health Promotion Research (3)
Prerequisite: Graduate standing in public health.
Philosophical, ethical and methodological issues in current health promotion research and services.

669. Health Risk Appraisal (3)
Prerequisites: Public Health 601, 602, 661, 662.
Techniques available for identifying personal health risk. Use of these methods for inducing change. Evaluation of effectiveness of methodologies.

696. Contemporary Topics in Public Health (1-3)
Intensive study in specific areas of public health and health services administration. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units applicable to a master's degree.

700. Seminar in Public Health (1-3)
Prerequisites: Public Health 601, 602, and 603.
Investigation of current problems in one of the fields of public health. May be repeated with new content. See Class Schedule for specific content. Maximum credit nine units of Public Health 700 applicable to a master's degree. These units may be in a single concentration area or any of the public health concentration areas.

A. Epidemiology

C. Occupational and Environmental Health
Seminar: Environmental Health: Risk Assessment
Seminar: Research Design
Seminar: Exposure Assessment and Methods of Sampling and Analysis

E. Health Services Administration
Seminar: Funds Management in Public Health

F. Health Promotion
Seminar: Women's Health

G. Preventive Medicine
Seminar: Preventive Medicine

720. Critical Readings in Epidemiology and Public Health (3)
Prerequisites: Public Health 601 and 602. Recommended: Public Health 623, 627, 724.
Recurrent and emerging public health issues. Weighing evidence in epidemiologic studies by reading and critiquing classical and recent journal articles representing study designs and statistical methods.

721. Environmental Epidemiology (3)
Prerequisites: Public Health 601 and 602. Recommended: Public Health 623.
Uses of epidemiological methods in study of environmental hazards affecting community health and health of workers. Case studies.

722. Seminar in Clinical Trials (3)
Prerequisites: Public Health 601 and 602. Recommended: Public Health 627.
Public health perspective on current methodological issues in clinical trials to include study design, concepts of controls, masking, randomization, monitoring, data analysis procedures, and reporting of results.

724. Advanced Methods in Epidemiology (3)
Prerequisites: Public Health 601, 602, 623, and 627.
In-depth methodological issues in performance and interpretation of epidemiologic studies. Study design, cluster analysis, effect modification, accuracy and precision, adjustment of attributable risk, life tables, Kaplan-Meier, Cox proportional hazards modeling, and meta-analysis.

726. HIV/AIDS Epidemiology and Public Health (3)
Prerequisite: Public Health 601. Recommended: Public Health 621.
State-of-the-art review of HIV and AIDS within a public health framework. Biology, transmission, host susceptibility, screening and surveillance, domestic and international epidemiology, study design, intervention, and options for prevention (including community-based trials).

729. Ethics for Epidemiology (3)
Prerequisite: Consent of instructor.
Public health perspective on major ethical concepts and issues confronting researchers, including informed consent, human subjects, environment, justice, beneficence, autonomy, confidentiality, internal investigation, student issues, and mentorship.

731. Environmental and Occupational Health Policy (3)
Prerequisite: Credit or concurrent registration in Public Health 604.
Current issues in environmental and occupational health, including risk assessment, policy development, and program management.

732. Principles of Industrial Hygiene (4)
Three lectures and three hours of laboratory.
Prerequisites: Chemistry 251, 431, and Physics 180A.
Fundamental principles of recognition, evaluation, and control of hazardous chemical, physical, and biological agents in the work place.

733. Principles of Industrial Safety (3)
Prerequisite: Public Health 732.
Introduction to field of industrial safety including accident prevention as a function of training people in safe work behaviors and maintaining and monitoring the machine interface.

735. Industrial Ventilation (3)
Two lectures and three hours of laboratory.
Prerequisite: Public Health 732.
Techniques of general, dilution, and local exhaust ventilation. Ventilation system design. Techniques and strategies of ventilation survey and testing. OSHA ventilation regulations.

736. Principles of Ergonomics (2)
Prerequisite: Public Health 732.
Application of ergonomics and connection of ergonomics to occupational hygiene. Work-related musculoskeletal disorders, occupational risk factors, work method study and evaluation, risk factor assessment techniques, and tool selection.

737A. Chemical Agents, Recognition, Evaluation, and Assessment (3)
Two lectures and three hours of laboratory.
Prerequisite: Public Health 732.
Recognition and exposure assessment of hazardous chemical agents in the workplace. Emphasis on air sampling and analytical procedures. (Formerly numbered Public Health 737.)

737B. Physical and Biological Agents, Recognition, Evaluation, and Assessment (2)
One lecture and three hours of laboratory.
Recognition and exposure assessment of hazardous physical and biological agents in the workplace (Formerly numbered Public Health 737.)

738. Topics in Toxicology (3)
Prerequisite: Public Health 638A.
Topics in toxicology to include food toxicants, pesticides, soil and groundwater pollutants, industrial toxicology and quality assurance, toxicokinetics, genetic toxicology and toxicology in risk assessment.

740. Financial Principles for Public Health Executives (3)
Prerequisite: Registration in public health management specialization.
Advanced contemporary financial management in public and nonprofit healthcare organizations, including financial statement analysis, budgeting concepts, capital management, long-term financing, and asset valuation.

741. Public Health Services Organization and Management (3)
Prerequisite: Public Health 641 and registration in public health management specialization.
Public health management and organizational theory for students with progressively responsible healthcare experience. Emphasis on systems modeling, organizational design, and management practices as applied to public health and nonprofit healthcare organizations and programs.

742A. Health Services Financial Management (3)
Prerequisites: Public Health 641 and Business Administration 650.
Activities in health care financial management. Topics include discounted cash flow analysis, long-term debt financing, equity valuation and financing, risk and return, capital budgeting, financial statements and analyses, financial forecasting, and short-term financing.

742B. Financing Health Systems and Services (3)
Prerequisite: Public Health 742A.
U.S. healthcare financial systems at macro-level. Principles of public programs and private health insurance, types of reimbursement for healthcare organizations and providers, issues of cost containment, effects of uninsurance and underinsurance, and financial practices of other advanced nations.

743. Hospitals and Health Systems (3)
Prerequisite: Public Health 644A.
Organization and management of hospitals and integrated healthcare systems. Emphasis on governance, management, operations, and clinical systems. Senior executives of regional healthcare organizations participate as guest faculty.

744. Ambulatory and Group Practice Management (3)
Prerequisite: Public Health 644A.
Organization and management of group practice and other ambulatory or outpatient facilities, services, programs, and plans. Includes managed care aspects of ambulatory health service delivery.

746. Quality of Care Assessment and Assurance (3)
Prerequisite: Public Health 647B.
Methods for development and evaluation of quality assurance programs in health service organizations. Alternative methods of assessment. Evaluation of consumer, professional, institutional, and governmental responsibilities.

748. Health Services Competitive Strategy and Marketing (3)
Prerequisite: Public Health 644A.
Ways in which healthcare organizations can gain and sustain competitive advantage. Both organization and service level competition and strategies/tactics examined.

750. Advanced Field Practice (3-6) Cr/NC
Prerequisite: Public Health 650.
Advanced field instruction in public health setting. Intensification and continuation of application of public health principles and skills to public health problems. Maximum credit six units of Public Health 750 applicable to a master's degree.

A. Epidemiology
C. Occupational Health
D. Environmental Health
E. Health Services Administration
F. Health Promotion

751. Studies in Perinatal and Reproductive Health (3)
Perinatal mortality and morbidity. Review of methods and findings in studies of reproductive exposures and outcomes.

761. Programming Health Promotion (3)
Prerequisites: Public Health 661 and 663.
Current programs, practices, and problems in health promotion activities of hospitals, clinics, public health departments, and government. Issues necessitating health promotion programs. Formulation of effective promotion programming in various settings.

762. Behavioral Medicine (3)
Prerequisites: Public Health 661 and 662.
Behavioral management approaches to health care problems. Diseases and conditions that arise from physical, psychological and environmental causes; behavioral interventions that attenuate disease process and improve compliance.

797. Research (1-3) Cr/NC/RP
Prerequisite: Consent of instructor.
Research in one of the fields of public health. Maximum credit six units applicable to a master's degree. Maximum combined credit six units of Public Health 797 and 798 applicable to a master's degree.

798. Special Study (1-3) Cr/NC/RP
Prerequisite: Consent of staff, to be arranged with the director and instructor.
Individual study. Maximum credit six units applicable to a master's degree. Maximum combined credit six units of Public Health 797 and 798 applicable to a master's degree.

799A. Thesis (3) Cr/NC/RP
Prerequisite: An officially appointed thesis committee and advancement to candidacy.
Preparation of a project or thesis for the master's degree.

799B. Thesis Extension (0) Cr/NC
Prerequisite: Prior registration in Thesis 799A with an assigned grade symbol of RP.
Registration required in any semester or term following assignment of RP in Course 799A in which the student expects to use the facilities and resources of the university; also student must be registered in the course when the completed thesis is granted final approval.

800. Seminar (1-9)
Prerequisite: Admission to the doctoral program.
Investigation of a particular topic or issue, emphasis on empirical research; topic to be announced in the Class Schedule. Maximum credit nine units applicable to a doctoral degree.

823. Case-Control Studies (3)
Prerequisites: Public Health 601, 602, 623, and 627. Recommended: Public Health 724.
Design, conduct, and analysis of case-control studies. Methodologic issues, control of biases and misclassification errors, proper use of interpretation of stratification and logistic regression in study of diseases of multifactorial etiology.

824. Cohort Studies (3)
Prerequisites: Public Health 601, 602, 623, and 627. Recommended: Public Health 724.
Design, analysis, and application of cohort studies. Cohort study designs, importance of time-varying exposures and outcomes, external and internal validity, and in-depth treatment of approaches to analysis based on cohort sampling methods.

825. Grantwriting in Epidemiology and Public Health (1-3)
Prerequisites: Public Health 601, 602, 623, 627, and 724.
Trains students to prepare NIH proposal. Students work with community-based organizations, faculty advisers, expert consultants, institutional review board, and SDSU Foundation personnel to complete research proposals and budgets.

897. Doctoral Research (1-15) Cr/NC/RP
Prerequisite: Admission to the doctoral program.
Independent investigation in the general field of the dissertation.

898. Doctoral Special Study (1-9) Cr/NC/RP
Prerequisite: Admission to the doctoral program.
Individual study in the field of specialization. Maximum credit nine units applicable to the doctoral degree.

899. Doctoral Dissertation (3-15) Cr/NC/RP
Prerequisites: An officially constituted dissertation committee and advancement to candidacy.
Preparation of the dissertation for the doctoral degree. Enrollment is required during the term in which the dissertation is approved.