GENERAL CATALOG
JULY 1976

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COURSES

This chapter represents a compendium of all the courses of instruction offered at the University of California San Francisco. The courses are arranged in numerical order by subject. The information included in each course has been arranged according to the following rules:

Course Description—Course information is arranged in two paragraphs with periods separating items. The first paragraph includes (1) course number; (2) course title; (3) units in parenthesis; (4) session offered; (5) prerequisite; (6) lecture, laboratory, clinic, etc; and (7) instructor in charge. The second paragraph describes the course content.

Abbreviations—These abbreviations are used where applicable: Su = summer term, SS = summer session, F = fall quarter, W = winter quarter, Sp = spring quarter, Yr = three successive quarters; A = course taught in the fall quarter, B = course taught in the winter quarter, and C = course taught in the spring quarter. For courses where units are followed by a #, the courses so designated are open to graduate academic students for credit. Hospitals are designated by the following initials:

A. Alta Bates Hospital, Berkeley.
C. Children's Hospital and Adult Medical Center, San Francisco.
CC. Crippled Children's Hospital, Phoenix, Arizona.
CCP. Center for Training in Community Psychiatry, Berkeley.
CMHC. Children's Hospital Medical Center of Northern California, Oakland.
CMS. Community Hospital of Sonoma County, Santa Rosa.
CM. Cowell Memorial Hospital, Berkeley.
F. Franklin Hospital and Medical Center, San Francisco. Refer to RDMC.
FR. French Hospital, San Francisco.
GS. Good Samaritan Hospital, San Jose.
H. Highland General Hospital, Oakland.
IMBR. Irwin Memorial Blood Bank, San Francisco.
K. Kaiser Foundation Hospital, San Francisco.
KP. Kaiser Permanente Medical Center, Oakland.
KSF. Kaiser Foundation Hospital, South San Francisco.
L. Letterman Army Medical Center, San Francisco. (Formerly Letterman General Hospital)
LPNI. Langley Porter Neuropsychiatric Institute, San Francisco.
MC. Maricopa County Hospital, Phoenix, Arizona.
MG. Marin General Hospital, Ross.
MM. Mills Memorial Hospital, San Mateo.
M2. Mt. Zion Hospital and Medical Center, San Francisco.
NRMC. Naval Regional Medical Center, Oakland. (Formerly Oak Knoll)
OC. O’Connor Hospital, San Jose.
P. Peralta Hospital, Oakland.
PH. Peninsula Hospital and Medical Center, Burlingame. (Formerly Peninsula Hospital)
PHS. United States Public Health Service Hospital, San Francisco.
PMC. Pacific Medical Center, San Francisco.
QMC. Queen's Medical Center, Honolulu, Hawaii. (Formerly Queen's Hospital)
RDMC. Ralph K. Davies Medical Center, San Francisco. (Formerly Franklin Hospital)
RALA. Rancho Los Amigos Hospital, Downey.
S. Stanford Medical Center, Palo Alto.
SCC. Santa Clara Valley Medical Center, San Jose.
SGCH. San Francisco Community Health Service, San Francisco.
SGF. San Francisco General Hospital, San Francisco. (Formerly San Francisco General Hospital)
SGH. Scenic General Hospital, Modesto.
SH. Shinners Hospital for Crippled Children, Honolulu, Hawaii.
SJ. San Joaquin General Hospital, Stockton.
SM. Samuel Merritt Hospital, Oakland.
SRM. Santa Rosa Memorial Hospital, Santa Rosa.
SSF. Shinners Hospital for Crippled Children, San Francisco.
STA. St. Agnes' Hospital and Medical Center, Fresno.
STJ. St. Joseph's Hospital, San Francisco.
STL. St. Luke's Hospital, San Francisco.
STM. St. Mary's Hospital and Medical Center, San Francisco.
T. Tripler Army Medical Center, Honolulu, Hawaii.
UC. University of California Hospitals and Clinics, San Francisco. (Includes UC, Moffitt, and Ambulatory Care Center)
VA. Veterans Administration Hospital, San Francisco.
VAF. Veterans Administration Hospital, Phoenix, Arizona.
VAP. Veterans Administration Hospital, Palo Alto.
Ambulatory and Community Medicine

101. Fundamentals of Epidemiology. (3) W or Sp. Prerequisite: Microbiology 100A-B, or equivalent. Lecture 3 hours, Seminar 1 hour.

Lectures and seminars dealing with distribution and determinants of diseases in population. Emphasis is placed on uses of epidemiologic concepts and techniques in community investigation, and community medicine.

110. Required Clinical Clerkship in Ambulatory and Community Medicine. (1) per week. SU, F, W, for Sp. Prerequisite: Completion of 24 weeks of clinical clerkship, including Pediatrics 110 and either Medicine 110 or Surgery 110.

Integrative ambulatory clerkship experience of wide scope offered in a diversity of patient care settings, including Adult Comprehensive, Family Care, Pediatric, and Dermatology Clinics. Home Care Service, Community Health programs, with additional assignments and seminars in radiology, psychiatry, and emergency care.

130. Introduction to Patient Care. (2) W or Sp. Prerequisite: Psychology 130. Crede, Malloy

An interdepartmental course including the sequence of medical events in patient care, the nature of physician-patient interaction, and the basic methods of identifying and solving problems in patient care. Lectures, small group discussion, and clinical section work.

140.02. Clinical and Community Health Programs. (1) per week. SU, W, Sp. Prerequisite: Determined by students' clinical experiences and elective for which they are applying.

Staff

Effective experience for two weeks to three months in community health projects of varied nature. Students may study and participate in unique health care programs such as Indian Health Service, Diabetic Summer Camp, Planned Parenthood Program, and Family Practice preceptorship. (1 1/2 per week) W, Sp. Prerequisite: Consent of instructor.

Hine, Milby

Clerkship at an industrial medical dispensary, two to four weeks. Individual instruction in diagnosis of industrial disease, surveillance of industrial hazards and health promotion activities.

140.04. Preceptorship in Primary Care. (1 1/2 per week) SU, F, W. Sp. Prerequisite: Consent of instructor.

Vandervoort, H. Davis

Students work with a family practitioner, general internist or pediactrician in the clinic, observing the practice and performing duties as training permits. Experience will teach common health problems and primary care in a community setting. Rural preceptorships will be encouraged.

140.05. Social Medicine Pathway Selective. (1 1/2 per week) SU, W, for Sp. Prerequisite: Consent of instructor.

Wederger

Field work experience or research germane to social medicine, individually arranged with consideration of student's major area of interest.

140.06. Community Rehabilitation Medicine. (1 1/2 per week) SU, W, for Sp. Prerequisite: Consent of instructor.

Sykes, Crede

Students will be assigned to a variety of community medicine and other rehabilitation settings, including Adult Comprehensive, Family Care, Pediatric, and Dermatology Clinics. Home Care Service, Community Health programs, with additional assignments and seminars in radiology, psychiatry, and emergency care.

140.08. Family Practice Clerkship at CHS. (1 1/2 per week) SU, W, Sp. Prerequisite: Third or fourth year standing, Medicine 110 or Surgery 110 and Surgery 110 recommended.

R. Barnett, Dervin

Involvement in comprehensive primary medical care of families (outpatients); participation in team approach to medical care, involving family physicians and allied health personnel, and experience in utilizing appropriate community health resources in solution of medical and family problems.

140.20. Family Practice Clerkship at VMC. (1 1/2 per week) SU, F, W. Sp. Prerequisite: Consent of instructor.

Crede, Howard

Site: Third or fourth year standing, Medicine 110 or Surgery 110 and either Pediatrics 110 or Obstetrics and Gynecology 110. R. Smith

Involvement in comprehensive primary medical care of families (outpatients); participation in team approach to medical care involving family physicians and allied health personnel, and experience in utilizing appropriate community health resources in solution of medical and family problems.


A clerkship offering training in various aspects of emergency medicine. Primary responsibility for patients is included. The elective is divided into the following rotations: ambulatory patients, including minor lacerations, acutely ill patients, and experience with paramedic ambulance systems.

140.22. Problem-Oriented Clinical Clerkship at STA. (1 1/2 per week) SU, F, W. Sp. Prerequisite: Third or fourth year standing, Medicine 110 or Ambulatory and Community Medicine 110, and working knowledge of problem-oriented medical records.

Joseph, Crede

Practical experience in supervised patient work-up, using problem-oriented medical records for case review, patient management, audit of student's progress. Introduction to private hospital administration and community health activities.

140.23. Rehabilitation Medicine Clerkship. (1 1/2 per week) SU, F, W. Sp. Prerequisite: Medicine 110 or Ambulatory and Community Medicine 110.

Kirby, Holmes, Crede

Practical experience with additional assignments and seminars in radiology, psychiatry, and emergency care.

140.24. Primary Care Clerkship in a Semi-Rural Community Hospital at Visalia. (1 1/2 per week) SU, F, W. Sp. Prerequisite: Third or fourth year standing, Pediatrics 110, Medicine 110, or Medicine 110, or Ambulatory and Community Medicine 110.

Sharrar, Crede

Supervised work-up of ambulatory patients with emphasis on interdisciplinary patient management in a private practice setting, close association with the medical community and introduction to a semi-rural locale.

150.01. Community Health Field Work. (1 1/2 per week) SU, F, W. Sp. Prerequisite: Consent of instructor.

Crede, Howard

Field work to explore one area or more in social medicine, community health, or cooperative projects of varied nature. Students may study and participate in unique health care programs such as Indian Health Service, Diabetic Summer Camp, Planned Parenthood Program, and Family Practice preceptorship in comprehensive primary medical care of families (outpatients); participation in team approach to medical care involving family physicians and allied health personnel, and experience in utilizing appropriate community health resources in solution of medical and family problems.

150.02. Clinical Aspects of Community Medicine. (1 1/2 hours) W, F. Sp. Prerequisite: Consent of instructor.

Barbecco, Howard

Students are assigned to participate in public health agencies where they will have contact with patients. Seminars may be used to clarify issues. In community health agencies, Students will be assigned to help in Schools of Medicine, Public Health, Dentistry, and Social Welfare participate where needed.

150.03. Clinical Observational Medicine. (1 1/2 hours) W, F. Sp. Prerequisite: Consent of instructor.

Vlcek, Crede

Clinical demonstrations and case presentations representative of occupational and environmental disease.

150.05. Centro Latino Elective. (1-2) SU, F, W. Sp. Prerequisite: Consent of instructor. Sanchez, Pascoe

Students participate in a program serving the needs of the Latino population at all age levels, from prekindergarten to elderly. Health care, free breakfast, and lunch programs are conducted at the Centro Latino, 1292 Potrero Avenue.

150.06. Latino School Elective. (3) SU, F, W. Sp. Prerequisite: Consent of instructor. Seminar 3 hours, Lab 6 hours.

Sanchez, Pascoe

This project is a continuous outreach program dealing primarily with Spanish-speaking children, parents, teachers, and administrators in Mission District elementary schools. Students participate in health screening, dissemination, and delivery of health care.


Ransom, Schroeder

Students meet in small group seminars led primarily by family physicians. Through small group discussion, reading, research, case presentation, and continuing contact with families undergoing medical care, students will be introduced to family medicine in the broadest sense.

150.08. Introduction to Family Therapy. (1) F, W. Seminar 3 hours.

Ransom, Schroeder

This course provides an introduction for students expecting to take more advanced training in family therapy. Students will not see families themselves, but will participate in

VPC, Valley Park Convalescent Hospital, Mill Valley.

Course Numbers—All courses are numbered according to the following system: 100 series = upper division professional course, 200 and 300 series = graduate academic course, and 400 series = postdoctoral professional course. The meanings of the second (tens) and first (units) digits vary among the schools. A detailed explanation of course numbering is available from the Office of the Dean of each school.

Ambulatory and Community Medicine / 73
178.01. Practitioner-Patient Relationship (1) F. Seminar 1½ hours.
Schröder, Dienst
Explores communication skills and vari-
eties of interviewing techniques in medical
and related fields. Direct observation of inter-
views conducted by physicians and other
practitioners; post-interview discussion with
providers and/or patients. Analysis of key
components of practitioner-patient interaction
through videotape review.

178.02. Practitioner-Patient Relationship (1) F. Seminar 1½ hours.
Schröder, Dienst
Provides experience in various interview-
ing contexts through role playing and other
simulation situations. Objective of the course
is the development of self-awareness as well
as improved understanding of medical skills in practitioner-
patient interaction.

178.01. Health Policy Seminar (2) F. P. Lee and Staff
An introductory series relating health care issues to health policy and ethical
analysis, specifically, "Primary Health Care."

178.02. Health Policy Seminar (2) F. P. Lee and Staff
An introductory series relating health care issues to health policy and ethical
analysis, specifically, "Principles of Health Policy and Ethical Analysis: A Case Study Review."

178.03. Health Policy Seminar (2) F. P. Lee and Staff
An introductory series relating health care issues to health policy and ethical
analysis, specifically, "Financing Health Care."

178.04. Practitioner in Therapeutic Re-
lationships: An Interdisciplinary View. (2) F. P. Lee, Shenk
Descriptions of practitioner-patient inter-
actions, followed by explanation of prac-
titioner's actions by past forces of education,
social class, personality, and present work
organization. Psychological, sociological,
economic, political and health policy view-
points are explored. Discussion of articles and
Freidson's "Profession of Medicine."

178.08. Health and Human Rights (3) Sp.
Jonsen, Parker
Concepts of patient's rights, right to care,
right of informed consent, right to treatment,
are analyzed in legal and ethical cases. Objec-
tive is to increase awareness of claims to cer-
tain "rights" which impose duties on provid-
er of health care.

Ambulatory and Community Medicine / 75

Jonsen, Bioethics Workshop. (1) § F. Jonsen, Garland, P. Lee
Lecture and workshop discussion of sev-
eral health care situations in light of their
ethical and public policy dimensions. Confi-
dentiality, genetic screening and counseling,
therapeutic experimentation, and medical
processes and testing of pharmaceutical products are discussed.

Jonsen, Workshop in Ethics and Medical
Care. (1) § F. Jonsen, Garland, P. Lee
Lecture and workshop discussion of sev-
eral medical care situations in respect to their
ethical and political dimensions: care of en-
dangered and defective newborns, experi-
menting using normal children, public funding of sterilization programs, and
chronic disease and quality of life.

Jonsen, Workshop in Ethics and Bio-
medicale issues. (1) § Sp.
Jonsen, P. Lee, Garland
Lecture and workshop discussions of ethical and policy dimensions of several cur-
rent biomedical issues: aging and health
future, research, behavior technology, and
the role of the pharmaceutical industry in
health care.

Jonsen, Family Counseling and Psycho-
therapy. (1) § F. W. Sp. Prerequisite: Consent of Instructor. Seminar 3 hours.
Romm, Schröder
Students observe family therapy ses-
sions, both live and on videotape. Role play-
ning family situations and therapeutic strategies will be emphasized. Appropriate
readings are assigned and discussed in seminar.

Jonsen, Supervised Study in Ambulatory and Community Medicine. (1-5) § Su. F. W. Sp. Prerequisite: Consent of instructor.
Staff
Library research and directed reading
under supervision of a member of the faculty
with the approval of the chairman of the
department.

Jonsen, Scientific, Ethical and Legal
Design of Clinical Research Involving Human Subjects. (2) W. Prerequisite: Graduate
standing.
Jonsen, M. Parker, Steiner
Analysis of protocols for clinical research in terms of criteria for scientific validity and
legal suitability; description of federal and
national review process for approval of
funded research.

Jonsen, Ethical Theory. (4) § F. Prerequisite: Consent of instructor. Limited to graduate students.
Jonsen, Lebacq
Ped study 3 hours.
The basic concepts and methods of philosophical ethics, with particular emphasis on respect for persons and justice, will be traced in classical and modern authors. Emphasis will be placed on critical analysis of ethical problems.

400. Family Practice: Seminars in Medical Literature. (1) Su, F, W, Sp. Gude
Monthly seminars are held on recent literature in the field of medical disciplines and subspecialties as permitted to the training and practice of the family physician.

Radiologists on attending staff present systematic review of techniques of interpretation of X-rays as required by the family physician. Roentgen findings in selected medical, surgical, gynecological, urological, obstetric, and orthopedic problems are covered. Normal findings and their variants are stressed.

402. Family Practice: Office Counseling and Family Therapy at CHS. (11a) Su, F, W, Sp. Ransom, Grace
Theory and techniques for working with common emotional, behavioral and interpersonal problems are developed. The process is facilitated by the use of a one-way mirror, video-recording, and case conferences.

403. Family Practice: Staff Conferences at CHS. (3) Su, F, W, Sp. Menachof
Family practice residents and members of attending staff prepare and present case histories of patients as well as clinical reviews of selected problems in various aspects of orthopedic surgery.

404. Family Centered Health Care at CHS. (4) F, W, Sp. Lecture 3 hours, Lab 5 hours. Grace, Ransom
Theory and techniques of family-centered care are presented through a series of cases observed directly through a one-way mirror and on video tape. Reading assignments are discussed in seminars and role playing is occasionally used.

405. Family Practice: Visiting Professor Program at CHS and VMC. (2) Su, F, W, Sp. Barnett, VMC, Mohapatra, VMC
Weekly lectures, rounds, informal seminars, and case presentations are conducted by visiting faculty members from the University of California San Francisco representing diverse clinical disciplines and basic sciences.

406. Family Practice: Conferences in Obstetrics and Gynecology at CHS. (2) Su, F, W, Sp. R. Adams
Family practice residents and members of attending staff prepare and present case histories of patients as well as clinical reviews of selected problems in obstetrics and gynecology.

406.01. Family Practice: Staff Conferences in Internal Medicine at CHS. (4) Su, F, W, Sp. Gude
Family practice residents and members of attending staff prepare and present case histories of patients as well as clinical reviews of selected problems in family practice, internal medicine, and its various subspecialties.

Family practice residents and members of attending staff prepare and present case histories of patients as well as clinical reviews of selected problems in surgery and its various subspecialties.

406.03. Family Practice: Conferences in Orthopedics at CHS. (3) Su, F, W, Sp. Campbell, Gullah
Family practice residents and members of attending staff prepare and present case histories of patients as well as clinical reviews of selected problems in various aspects of orthopedic surgery.

407. Family Practice Preceptorships at CHS. (11a) per week Su, F, W, Sp. Dervin, Neal
Resident physicians spend blocks of time in clinical practice settings learning the philosophy of applied family medicine, office management, and how to function as a member of the health care team.

408. Introduction to Rural Health at CHS. (1) Su, F, W, Sp. Rodnick
Resident physicians are exposed to problems in health care delivery in rural, primarily Mexican-American and counter-culture issues in two rural settings.

Resident physicians meet weekly to discuss a broad range of issues and problems related to family practice and family practice training. Topics range from the management of specific cases to the role of the family physician in the health care system.

A systems approach to the understanding of family dynamics and family therapy; utilizes lectures, case discussions, and technique demonstrations in seminar format.

Conferences on family process and family change, utilizing speakers prominent in the field of family therapy. A forum type program is encouraged with interchange between speaker and audience.

432. Family Practice: Clinical Conferences at SFGH. (11a) Su, F, W, Sp. Massad
Conferences on medical subjects relevant to ambulatory care with participation by members of the faculty of the Family Practice Residency and appropriate representatives of diverse clinical specialties. Series of meetings on methods of control are scheduled.

A series of seminars in which specific projects of Family Practice residents are presented, or in which broad issues are discussed that relate health care problems to the patients' sociocultural milieu.

450. Clinical Ambulatory and Community Medicine Residency Program. (11a) per week Su, F, W, Sp. Prerequisite: One year postinternship in medicine or pediatrics.

Clinical training is predominately in an ambulatory setting, but includes hospital assignments as may be provided. Residents are encouraged to participate in community health activities under the supervision of the faculty and are expected to participate in undergraduate medical student instruction.

460. Clinical Primary Care—Medicine. (11a) per week Su, F, W, Sp. Prerequisite: Refer to Medicine 460. Crede and Staff
Interns in the Primary Care Track of Internal Medicine are responsible for patient care in a multispecialty primary care clinic. Other rotations include those common to the regular Medicine Internship Program as well as related clinical services, e.g., Dermatology, Neurology.

461. Clinical Primary Care—Medicine. (11a) per week Su, F, W, Sp. Prerequisite: Refer to Medicine 461. Crede and Staff
Residents in the Primary Care Track of Internal Medicine are responsible for patient care in a multispecialty primary care clinic. Other rotations include those common to the regular Medicine Internship Program as well as related clinical services, e.g., Dermatology, Neurology.

462. Clinical Primary Care—Pediatrics. (11a) per week Su, F, W, Sp. Prerequisite: Refer to Pediatrics 462. Grumbach, Dower
Interns in the Primary Care Track of Pediatrics are responsible for patient care in a multispecialty primary care clinic. Other rotations include those common to the regular Pediatrics Internship Program as well as related clinical services, e.g., Dermatology, Otolaryngology.

463. Clinical Primary Care—Pediatrics. (11a) per week Su, F, W, Sp. Prerequisite: Refer to Pediatrics 463. Grumbach, Dower
Residents in the Primary Care Track of Pediatrics are responsible for patient care in a multispecialty primary care clinic. Other rotations include those common to the regular Pediatrics Internship Program as well as related clinical services, e.g., Dermatology, Otolaryngology.

Anatomy

100A. Systemic, Regional and Developmental Anatomy. (5) F, Lecture 3 hours. Lab 6 hours.

The gross structure of the human body is studied by means of dissection, demonstration, X-ray, surface, and cross-sectional anatomy with special reference to the functional aspects of the structures examined.

100B. Systemic, Regional and Developmental Anatomy. (4) F, W, Lecture 2 hours. Lab 6 hours.

The gross structure of the human body is studied by means of dissection, demonstration, X-ray, surface, and cross-sectional anatomy with special reference to the functional aspects of the structures examined.

100C. Systemic, Regional and Developmental Anatomy. (6) SS, Lecture 4 hours, Lab 12 hours.

The gross structure of the human body is studied by means of dissection, demonstration, X-ray, surface, and cross-sectional anatomy with special reference to the functional aspects of the structures examined.

100D. Systemic, Regional and Developmental Anatomy. (3) F, Lecture 2 hours. Lab 3 hours.

Asling and Staff

The gross structure of the human body is studied by means of dissection, demonstration, X-ray, surface, and cross-sectional anatomy with special reference to the functional aspects of the structures examined.
102. Histology. (5) F. Lecture 3 hours. Lab 4 hours. Long
The course deals with the microscopic structure of tissues, cells, and organs except for the endocrine and reproductive systems.

103. Nervous System: Form and Function. (4-6) Sp. Prerequisite: Consent of instructor for undergraduate graduate students. Lecture 5 hours. Lab 4 hours.
Ralston, Fields and Staff
The structure and function of the mammalian nervous system studied in lectures, conferences, demonstrations and laboratory, with emphasis on the human nervous system and its organization. Intended for students in the School of Medicine and as an introductory graduate course.

115. Histology. (3) Sp. Lecture 2 hours, Lab 3 hours.
Miller and Staff
A study of the microscopic structures of the tissues and organs of the human body by means of lectures, demonstrations, and microscope slides. Functional aspects of the structures are stressed.

116. Gross Anatomy. (3) W. Lecture 2 hours, Lab 3 hours. A. Evans and Staff
A study of the microscopic structure of the human body by means of lectures and dissections. Functional aspects of the structures are stressed.

117A-B. Gross Anatomy. (4-6) F, W, F, F, Lecture 2 hours. Lab 6 hours. Lecture 3 hours. Lab 9 hours. Coleman
A study of the microscopic structures of the trunk, upper extremity, and head and neck are studied by laboratory dissection and demonstration. The course serves as an introduction to neuroanatomy. Emphasis is placed on the functions of the structures and systems examined.

118. General Histology. (3) Lecture 2 hours, Lab 3 hours. McDowell
The microscopic structure of tissues and organs of the body are studied with their histophysiologic considerations.

119. Neuroanatomy. (3) Sp. Lecture 2 hours. Lab 3 hours. Sutherland, Wong-Riley
The structure and function of the nervous system studied in lectures and laboratory.

150.01. Gross and Regional Anatomy. (16) Sp. Prerequisite: Consent of instructor for undergraduate graduate students. Program must be approved by department and adviser during quarter prior to enrollment. Asting
Individual or group dissection; review of gross anatomy.

156. Survey of General and Head and Neck Anatomy. (6) F. Lecture 3 hours, Lab 9 hours. Coleman
The systems of the body are studied by lectures and laboratory demonstrations. The structures of the head and neck, including the central nervous system, receive major consideration. Emphasis is placed upon function and anatomic relationships.

170. Advanced Head and Neck Anatomy. (4) F, W, W, Prerequisite: Consent of instructor. Lindner
The high resolution gross anatomy of the head and neck, and oral anatomy. Coleman
Designed for postgraduate specialty certificate students enrolled in the clinical specialty training programs in the School of Dentistry. Seminar presentation and demonstrations of head and neck anatomy are correlated in their relation to clinical dentistry.

170.01. Problem Areas in Clinical Anatomy. (1) Su, F, W, W, Prerequisite: Consent of instructor or concurrent enrollment in Anatomy 100. First year standing in School of Medicine, Lindner
Discussions of important areas in clinical anatomy such as hernia, thyroid, parotid and perineal cavity. Course correlated with Anatomy 100.

170.02. Survey of Congenital Defects. (2) W, Prerequisite: Consent of instructor. Lindner
This elective course provides information on the more common human congenital defects. Environmental and genetic factors which produce malformations are considered and possible mechanisms discussed. Course is intended primarily for physical therapist students.

170.05. Congenital Abnormalities. (2) Prerequisite: Consent of instructor. Lindner
Weekly seminars on experimental teratology as a tool to understanding the formation of congenital abnormalities in man.

170.06. Experimental Endocrinology. (2) Su, W, W, Prerequisite: Offered in alternate years. Loseth, Poppoff
Basic information on animal hormones, their structure, function and interrelationships. Concepts regarding hormonal actions are derived from chemical structure-function and biological in vivo, in vitro studies.

170.08. Regional Int. Topographical Anatomy. (1) F, W, W, W, Prerequisite: Consent of instructor. Asting
Second and third year medical students. Lindner
Living clinical anatomy is stressed; the diaphragm, complete review of the neck, and abdominal contents. Clinical congenital anomalies are discussed in regard to their relationship to clinical medicine.

170.09. The Language of Anatomy. (1) Su, F, W, Prerequisite: Concurrent enrollment in Anatomy 100.
A three-component elective, to foster vocabulary-building in anatomico-medical terminology. A high priority of medical and cultural themes influencing development of anatomical nomenclature, and through student oral reports on etymonic terms, to introduce some major figures in anatomy.

This course offers training in electron microscopic techniques applicable to basic research and clinical problems.

This course offers advanced training in electron microscopic techniques applicable to basic research and clinical problems.

Course is for students desiring to supplement required course work in anatomy (508 and 515) with additional dissection of the lower extremity.

198. Supervised Study in Anatomy. (1-5) Prerequisite: Consent of instructor. Monroe
Weekly seminars on experimental teratology as a tool to understanding the formation of congenital abnormalities in man.

202. Seminar Course on Tissue Culture Methods in Biological Research. (1) W, Prerequisite: Basic knowledge of biological principles and consent of instructor. Atkins
Course covers potentials and limitations of culture methods, advantages of assessing effects of various agents (e.g., diuretics and vitamins) in controlled environment and use of culture methods with other research tools (e.g., [5-6] Sp, Prerequisite: General microbiology. Papers will be discussed.

205. Biology of Mammalian Development. (3) F, W, Prerequisite: Undergraduate course in embryology and consent of instructor. Caliero and Staff
Aspects of preimplantation and post-implantation mammalian development are considered. Topics include gametogenesis, fertilization, cleavage, in vivo development, implantation, placenta, etc. Prior tissue interaction, fetal development of systems, teratogenesis and carcinogenesis.

215. Cell Structure and Function. (3-4) W, W, W, W, Prerequisite: An elementary knowledge of cell ultrastructure and biochemistry and consent of instructor to enroll for 4 units. Jones
An advanced presentation of the relationship between the subcellular organization and the physiological activities of cells.

Laboratory or library research in mammalian embryology or directed reading on current developments in this field. Fertilization, cleavage, implantation, organogenesis, or molecular differentiation.

217. Anatomy of the Head and Neck for Advanced Students. (2-6) F, W, W, W, Prerequisite: Consent of instructor. Anatomy 117A-B or its equivalent and consent of instructor. Lecture 2 hours, Lab 0-12 hours. Coleman
Course is a critical analysis of selected topics and methods in head and neck anatomy. The topics are correlated with appropriate laboratory experience and are presented by students, staff and guests.

220. Seminar (0-1) F, W, W, W, W, Prerequisite: Consent of instructor. Lab 2 hours. Coleman
A seminar series concerned with current topics in biology. Presentations are structured for graduate students and faculty.

225. Brain Organization. (4) F, W, Prerequisite: Consent of instructor. Lecture 3 hours, Lab 4 hours. Ralston
Examination of the neuronal organization of the nervous system, including neuro-
Anesthesia

The course consists of instruction and experience in operating room anesthesia including preoperative and postoperative evaluation and care. Cardiopulmonary resuscitation and care of the unconscious patient are stressed. The course is conducted at SFGH, UC and VA hospitals.

140.01. Clinical Anesthesia. (1 1/2 per week) Su, F, W, Sp. Prerequisite: Medicine 151A-B, Pharmacology 100A-B, Physiology 100, and Anesthesia 110.

Hamilton and Staff

Clinical clerkship at UC, SFGH, or VA hospitals. Supervised experience in operating room anesthesia, care of unconscious patients, management of pain problems, and various specialized seminars and departmental teaching conferences.

140.02. Clinical Clerkship. (1 1/2 per week) Su, F, W, Sp. Prerequisite: Residents during either second or third year. UC Eger.

Clinical clerkship in approved hospitals by special arrangement and approval of the chairman of the department.

140.03. Intensive Care Clerkship. (1 1/2 per week) Su, F, W, Sp. Prerequisite: Limited to fourth year students with consent of instructor. Hamilton.

Familiarizes students with intensive care techniques, emphasizing clinical respiratory and circulatory physiology applied to support patients with cardiopulmonary insufficiency. Seminar and discussion groups, active participation in techniques utilized in diagnostic care and management of the critically ill.


Course covers anesthesia and analgesia for the normal and abnormal obstetrical patient. Emphasis is placed on effects of anesthetic techniques and drugs on normal and pathological changes in labor and delivery. Special emphasis is given to the placental transfer of drugs and resuscitation of the newborn.


Hamilton and Staff

The systemic effects of the various muscle relaxants, sedatives, and stimulants and the administration of general anesthetic agents.


Stevens, Miller

Course includes didactic lectures in sciences basic to the specialty of anesthesia, as well as case conferences, clinical discussions, and seminars on current medical literature in anesthesia.

450. Anesthesia Clinical Work. (1 1/2 per week) Su, F, W, Sp. Required during first year of residency, also during either second or third year. UC Hamilton.

Residents are responsible for anesthetic care and management of patients in the operating rooms and outpatient departments, under immediate supervision of the staff. Preoperative and postoperative evaluation of patients, oxygen therapy, and resuscitation are covered.

460. Anesthesia Special Assignments. (1 1/2 per week) Su, F, W, Sp. Residents during either second or third year. UC Eger.

Clinical instruction in anesthesia for children, problems related to open heart surgery, cardiology, and opportunity for research in related fields.

Animal Science


Spinelli

Introduction to the selection, anatomical and physiological peculiarities and preoperative and postoperative care of animals. Laboratory experiments in anesthesia, surgical exercises, application of inhalation, perfusion techniques, and individual experiments are included.

Anthropology

181. Anthropology of Sex Roles. (3) F. Prerequisite: Consent of instructor.

Lewin

A cross-cultural view of sex roles through critique of anthropological research, concentrating on factors affecting women's status and role. Resultant perspectives will be applied to selected current issues and discussed in terms of the implications for change.

201A-B-C. Topics in Medical Anthropology. (1-1-1) F, W, Sp. Prerequisite: Consent of instructor.

Staff

Students, staff or guests present selected topics based on their current work.

211A-B-C. Research Training Seminar. (3-3-3) F, W, Sp. Prerequisite: Consent of instructor.

Staff

Fundamentals of anthropological research and research methods through lectures, readings, and field assignments.

221A-B. History and Theory of Anthropology. (3-3) F, W. Prerequisite: Consent of instructor. Generally limited to students in anthropology.

Ruffini

A review of the history and development of anthropology and its major theoretical approaches. Lectures, discussion and readings focus on major issues, trends, personalities, and present concerns in the field.

330A-B. Culture and Personality. (3-3) F. W. Prerequisite: Consent of instructor.

Winter

Exploration of the relationship between culturally conditioned ways of perceiving, thinking, and personality and behavior.

231. Ethnopsychiatry. (2-3) F. W. Prerequisite: Consent of instructor. Lecture 2 hours, plus 3 hours laboratory for 3 units. M. Clark, Hartog, Lauer, Maduro.

Course examines principles of healing systems in the treatment of mental disorder including folk healing, cross-cultural comparisons, research methods, and applications for community psychology. Students study local examples of folk healers or folk-healing institutions.

233. The Anthropology of Aging. (2-3) F. W. Prerequisite: Consent of instructor. Lecture 2 hours, plus research project for 3 units. M. Clark and cross-cultural approaches to the physiological, pathological, and social aspects of aging. M. Maduro.

234. Culture and Symbolism. (2-3) F. Prerequisite: Anthropology 230A or equivalent, or consent of instructor. Lecture 2 hours, plus research project for 3 units. M. Maduro.

Symbolic expressive behavior is considered from psychocultural life-cycle and psychoanalytic viewpoints. Other relevant systems are analyzed: psychological tests, dreams, folklore, myths, religious rituals, altered states of consciousness, and healing practices.

235. Transcultural Aspects of Childhood. (3) F. W. Prerequisite: Consent of instructor. Lecture 2 hours, plus research paper. Koss.

A review of child development, child rearing and family dynamics in various non-western cultures and in selected ethnic subcultures of the United States. Cultural contexts of personality formation, deviations in
237. Hallucinogens and Culture. (3) Sp. Prerequisite: Consent of instructor.

díos

A cross-cultural survey of the use of mind-altering plants in religion, treatment of disease and magic. A wide range of non-Western societies will be included, from hunters and gatherers, incipient agriculturalists, intensive farmers, to the ancient civilizations.

240. Urban Anthropology. (2-3) F. Prerequisite: Consent of instructor. Lecture 2 hours, plus 3 hours independent study for 3 units.

Ablon

The culture of modern cities. Evaluation of theories and methods for understanding urban behavior. Ethnic, racial, and subcultural variations in the contemporary cities. The relevance of anthropological concepts for health planning. Field research project required.

241. Social Deviance. (3) W. Prerequisite: Consent of instructor. Lecture 2 hours, plus field research project.

A review of theory and concepts dealing with social and cultural deviance. Focus will be on deviant life styles and subcultural groups in urban areas.

242. Anthropological Considerations in the Contempo­ral Health Field. (2-3) Sp. Prerequisite: Consent of instructor. Lecture 2 hours, plus research project for 3 units.

Course surveys principles and practice in the community mental health field. Emphasis is on the role of sociocultural factors in the determination of community needs and the delivery of mental health services.

250. Research. (1-8) F, W. Prerequisite: Consent of instructor.

Staff

Independent study.

255A-B-C. Seminar in Medical Anthropology. (2-4, 2-4, 2-4) F, W, Sp. Prerequisite: Consent of instructor. Lecture 3 hours, plus 3 hours independent study for 6 or more units.

Core seminar in medical anthropology offered in Berkeley in fall and spring, and San Francisco in winter. A review of the principal fields of medical anthropology with emphasis on current research and methods.

260. Epidemiology and Medical Anth­ropology. (2-3) F. Prerequisite: Consent of instructor. Lecture: 2 hours, plus 3 hours independent study for 3 units.

Dunn

A review of the interactions between epidemiology and medical anthropology. Emphasis is on the biomedical perspective in epidemiology. Particular attention is given to behavioral epidemiology and interdisciplinary collaboration in research.

262. Statistical Methods in Medical An­thropology. (2) F. King

Experimental design and statistical methods of data analysis applicable to medical anthropology. Discussion is based on proposed research projects of students in the course. with some emphasis in the area of connective tissue and fundamental tissue. Knowledge is presented in the context of its applicability to clinical health sciences. Primarily for dental students.

111. Special Study for First Year Students. (2) F. Prerequisite: A general course in biochemistry. Lecture and Seminar 2 hours.

Experimental and Study

Discussion of biochemical problems of interest in dentistry including enamel, saliva, mineralization, connective tissue, plaque, and oral bacterial metabolism.

120A-B. Cellular Structure and Func­tion. (4-4) F, W. Prerequisite: Consent of instructor.

Lectures and conferences in biochemistry include aspects of cell physiology and cellular function, and the role of the drug metabolism. Fundamental knowledge is presented in the context of its applicability to clinical medicine. Primarily for pharmacy students.

130. Biochemistry ofGenetic Diseases. (3) Prerequisite: Biochemistry 120A or equivalent.

Eiler

The genotypes, phenotype, and biochemistry of causation and treatment will be considered with the clinical expression of the various diseases. Students will be provided a written report of the literature research on a disease of their choice.

150.1. Research in Biochemistry. (1½ per week) Su, W, F Prerequisite: Consent of instructor.

Staff

Research in biochemistry.


Library research and directed reading under supervision of a member of the faculty with the approval of the chairman of the department.

159. Laboratory Project in Biochemistry. (1-5) Su, F, W. Consent of instructor.

Staff

A laboratory research project under direction of a member of the faculty with the approval of the chairman of the department.

159. Laboratory Project in Biochemistry. (1-5) Su, F, W. Consent of instructor.

Staff

A laboratory research project under direction of a member of the faculty with the approval of the chairman of the department.

120A-B. Cellular Structure and Func­tion. (4-4) F, W. Prerequisite: Consent of instructor.

Lectures and conferences in biochemistry include aspects of cell physiology and cellular function, and the role of the drug metabolism. Fundamental knowledge is presented in the context of its applicability to clinical medicine. Primarily for pharmacy students.

130. Biochemistry ofGenetic Diseases. (3) Prerequisite: Biochemistry 120A or equivalent.

Eiler

The genotypes, phenotype, and biochemistry of causation and treatment will be considered with the clinical expression of the various diseases. Students will be provided a written report of the literature research on a disease of their choice.

150.1. Research in Biochemistry. (1½ per week) Su, W, F Prerequisite: Consent of instructor.

Staff

Research in biochemistry.


Library research and directed reading under supervision of a member of the faculty with the approval of the chairman of the department.
concerning general biochemistry. This course alternates biennially with Biochem-
istry 200D-E.F. 200D-E.F. General Biochemistry. 3-3-3. F, W, Sp. Prerequisite: Calculus, physical chemistry, organic chemistry, intro-
ductive biochemistry, and an advanced course in biology are recommended. Stu-
dents with adequate background may enter at any quarter with the consent of instructor.

Santi, Ramachandran
A comprehensive, year-long course of lectures, problems, and group discussions concerning general biochemistry. This course alternates biennially with Biochemis-
try 200A-B-C.

201A. Physical Biochemistry I. (3) S, Sp. Prerequisite: A year each of organic and phys-
cal chemistry or consent of instructor. Yang
Application of physical concepts and experi-
mental methods to the study of the struc-
ture and function of biopolymers.

201B. Physical Biochemistry II. (3) Sp
Cooke
Interaction of electromagnetic radiation with matter. The theory of light scattering, Spec-
troscopic methods useful in studying bio-
logical systems. Laser light scattering and
molecular biology. Applications of NMR, ESR and spin labels, florescence, X ray dif-
fection, electron microscopy, and X ray spectroscopy.

Martinez
Methods of digital and analog compu-
tation with applications to biochemical and
physiological research. Elements of Fortran programming, numerical analysis, and data
processing. Demonstrations and exercises on
computers.

203. Introduction to Biomechanics. (3) Sp
Martinez, Peller
Mathematical modeling of enzyme kinetics,
metabolic and hormonal control mecha-
nisms, competitive and non-competitive interactions of macro-
molecules, diffusion, passive and active transport, membrane models, excitation and
conduction, flow, irreversible thermodynam-
ic. Course offers student experience in prob-
lem formulation and reading of current litera-
ure.

207. Biochemistry of Connective Tis-
sues. (2) W, Sp. Prerequisite: Biochemistry 110A-B, or consent of in-
structor. Offered in alternate years.

Newbourn
Lectures and assigned reading on chem-
istry, structure, and metabolism of the mucopolysaccharides, collagen, and elastin. Principles of histochemical reactions of con-
nective tissues.

210. Current Topics. (0-5) F, W, Sp. Prerequisite: Consent of instructor. Discussion of selected areas of bio-
chemistry, biophysics, and biometrics.

211. Biological Transport Systems. (1) S
Prerequisite: Biochemistry 105A-B, Physiology 100, and Physical Chemistry 110A-B, or equivalents.

Edelman
A seminar course on mechanisms of trans-
port across lipid membranes, and the ro-
le of specific transport proteins in these processes, and biochemical pathways involved in the regula-
tion of rates of transport.

213A-B. Bio-Organic and Enzyme Mech-
anisms. (2-4) F, W, Sp
Santi
Biochemically important chemical trans-
formations from the physical organic point of
view, emphasizing catalytic mechanisms per-
tenent to enzyme reactions, and to the
development of enzyme model systems. Inter-
membrane and enzyme-substrate in-
teractions. Techniques of investigating en-
zyme mechanism.

215. Preparation for Research in Bio-
chemistry and Biophysics. (3) F, W, Sp. Prerequisite: Consent of instructor. "H, N. Goodman
A laboratory rotation course to familiarize new departmental graduate stu-
dents with various approaches to biochemi-
cal and biophysical research.

H. N. Goodman
Lectures and discussions on topics of cur-
rent interest in biochemistry and biophysics.

Sudich
Lecture 1 hour.

Sudich
Presentations of selected topics in bio-
chemistry by graduate students in the De-
partment of Biochemistry.

Sudich
A survey of current research on the bio-
chemical fields, including evaluations of re-
cently introduced materials and a review of the latest applications and their uses for all basic materials commonly used.

199. Laboratory Project in Bioma-
terials. (1-5) F, W, Sp. Third or fourth year stand-
ing and approval of the Dean. Lecture 1 hour. Lab 12 hours.

Newbourn
A laboratory research project under di-
rection of a member of the faculty with the approval of the chairmen of the department.

For students engaged in writing the thesis for the master's degree.

299. Dissertation. (0) F, W, Sp. Pre-
requisite: Biomedical 190A-0B, or equivalent.

Staff
For students engaged in writing the dis-
sertation for the Ph.D. degree.

Biomaterials

110B-C. Biomaterials Science. (1-1) W, Sp
Jendresen
Students are introduced to the physics, chem-
istry, and metallurgy of materials used in medi-
cine and how use effects physical and
chemical properties of materials. The mate-
rial systems studied are gypsum, cements, resins, waxes, collodion, and metals.

120. Biomaterials Science. (1) W, Sp
Jendresen
Students are presented with the rationale for
the use of chemical restorative materials.
Each major restorative material system is
studied in respect to material manipulation and clinical application.

130. Biomaterials Science. (1) Sp
Jendresen
Students are taught to analyze accurately
clinical and laboratory problems with respect to
major material systems. Emphasis is placed on understanding why clinical failures
occur with selected materials and what bio-
logical responses can be expected.

An introduction for the dental hygienist to the basic concepts associated with selected dental materials. Emphasis is placed on the uses and manipulation of materials commonly used in the practice of dentistry.

180. Biomaterials Science. (1) Sp
Jendresen
A survey of current research on the bio-
chemical fields, including evaluations of re-
cently introduced materials and a review of the latest applications and their uses for all basic materials commonly used.

199. Laboratory Project in Bioma-
terials. (1-5) F, W, Sp. Third or fourth year stand-
ing and approval of the Dean. Lecture 1 hour. Lab 12 hours.

Newbourn
A laboratory research project under di-
rection of a member of the faculty with the approval of the chairmen of the department.

Biomathematics

193A-B-C. Advanced Calculus and Diff-
ential Equations. (3-3-3) F, W, Sp. Pre-
requisite: Biomedical 190A-0B, or equivalent.

Landahl and Staff
Ordinary differential equations. Systems of algebraic and differential equations. La-
place transform, matrix algebra, vectors. Par-
tial differential equations, boundary value problems. Applications to problems in bi-
ology, pharmacology, biochemistry, and biophysics.

194. Endocrine Dynamics. (3) W, Sp
Jendresen
Biomathematics 190A-B-C or equivalents, or consent of in-
structor.

Liddle
Review of relevant parts of compartmental
analysis and tracer analysis and control theory. Analy-
sis of dynamics of secretory process, dis-
tribution, binding and metabolism of hor-
mones, and hormonal control. Differential
systems and biograph and digital compu-
ter are utilized throughout the course.

Biophysics

Staff
For students engaged in writing the dis-
sertation for the Ph.D. degree.

Biostatistics

151B. Biostatistics. (2) W. Mizis
Elementary statistical concepts including
mean, median, mode, centiles, standard devi-
aton, z-scores, probability, the binomial distribution, normal curve, and one-sample
hypothesis testing. Simple group research
projects are undertaken. Examples taken from:
dentistry, biology and medicine.

151C. Biostatistics. (2) Sp.
Citron
Pearson-r, two-sample tests, standard er-
ror, large and small samples, chi-square;
chi-square tests are covered. Group research
projects will be undertaken summarizing
oral research literature. All tests will be performed on data gathered in the lab.
103. Introductory Statistical Treat-
ment of Clinical and Laboratory Pro-
blems. (2-3) F. Lecture 2 hours, Lab optional 0-3
hours.

Pro
"See Biochemistry 202 and 293."
158. Physical Chemistry—Laboratory. (3) Sp. Prerequisite: Concurrent enrollment in Chemistry 116. Lab 3 hours. Crippen, Shafer

Laboratory exercises in conjunction with Chemistry 151.

159. Organic Chemistry—Laboratory. (3) Sp. Prerequisite: Chemistry 16. Lecture 1 hour, Lab 6 hours. Crippen, Shafer

Advanced experiments in organic chemistry intended to broaden students' knowledge of experiment preparation and techniques.

160. Advanced Physical Chemistry. (3) Sp. Prerequisite: Two quarters of physical chemistry or consent of instructor. Tuck, Shafer

Chemical thermodynamics.

161. Advanced Physical Chemistry. (3) W. Prerequisite: Chemistry 116 or equivalent. Sheltar

Thermodynamics and applications of chemical kinetics.

162. Advanced Physical Chemistry. (4) F. Prerequisite: Chemistry 151 or equivalent. Knowledge of differential equations recommended. Kollman

Quantum mechanics and applications to molecular problems.

165. Organic Chemistry—Analytical Methods. (4) F. Prerequisite: Chemistry 113, Lecture 1 hour, Lab 9 hours. Weinberg

A study of the reactions of organic compounds by applying a system of qualitative analysis towards the determination of characteristic groups.

170. Group Studies Course. (1-4) F. W. Prerequisite: Consent of instructor. Zippin

Group studies of selected topics in chemistry.

175. Supervised Study in Chemistry. (1-9) F. W. Sp.

Library research and directed reading under supervision of a member of the faculty with the approval of the chairman of the department.

190. Introduction to Biostatistics. (3) F. Zippin, Heilbron

Principles of collection and tabulation of data; measures of morbidity, mortality, and health status; standardization; sampling; planning surveys; descriptive and inferential statistics.

191B-C. Introduction to the Theory of Statistics. (2-2) W. Prerequisite: Difference and integral calculus or consent of instructor. Zippin

Introduction to probability, distribution theory, and stochastic processes in biology and medicine.

197. Introductory Statistics. (3) F. Zippin, Heilbron

A modern introduction to statistics emphasizing the data analyses school of statistics. The course is a systematic introduction to statistics and makes full use of the progress in statistics that has occurred in the last few years.

202. Regression, Analysis of Variance, and Design of Experiments. (4) F. W. Prerequisite: Biostatistics 197. Lecture 3 hours, Lab 2 hours. Zippin

This course considers analysis of variance and covariance, regression, and the statistical design of experiments.

263A. Practicum in Biostatistical Consultation. (3) F. W. Prerequisite: Consent of instructor. Zippin

Supervision in statistical consulting.

263B. Practicum in Biostatistical Consultation. (3) F. W. Prerequisite: Consent of instructor. Zippin

Supervision in statistical consulting.

Chemistry

11. Organic Chemistry. (3) F. Prerequisite: Chemistry 1A-B-C or equivalent. R. B. Meyer, Oppenheimer

An introductory study of the structure, stereochemistry, reactivity, and functionality of compounds of carbon.

12. Organic Chemistry. (3) W. Prerequisite: Chemistry 11. Zippin

A continuation of the study of compounds of carbon including some aromatic compounds.
local instruments; calibration procedures, methods for determining accuracy, and procedure of test rendition.

103A-B. Immunology. (1-1) W. Sp. Prerequisite: Clinical Laboratory Science 1208 or equivalent. Shetler
This course covers the fundamentals of immunology, including the role of antibodies and their interaction with antigens. The course content is similar to that of Immunology 1206, but it is much briefer. Emphasis is placed on laboratory aspects of drug therapy.

105. Clinical Laboratory Computer Science. (2) W. Sp. Prerequisite: A.B. in physical or biological science. Nolte
A survey course in management principles important to the clinical laboratory. Special emphasis will be given to laboratory organization, budgeting, and cost analysis.

120. Statistical Methods Applicable to Quantitative Patient Data. (2) F. Sp. Prerequisite: Consent of instructor: a familiarity with basic statistical and biostatistical concepts. Shetler, Elashoff
An overview of modern statistical approaches to the analysis and understanding of quantitative patient data, primarily as available through clinical laboratories. Topics include: quality control, normal values, multivariate structure including parametric and non-parametric approaches, and forecasting and classification methods.

158. Laboratory Project in Clinical Laboratory Science. (1-1) F, W, Sp. Prerequisite: Enrollment in Clinical Laboratory Science master's program. Stoltz
A laboratory research project under the direction of a member of the faculty with the approval of the chairman of the department.

201A-B-C. Clinical Chemistry. (2-2-2) F, W, Sp. Prerequisite: Degree in Chemistry or Medical Technology license. Nussenbaum
Principles and evaluation of chemical laboratory methods used to diagnose abnormalities in metabolism and organ function.

207A-C. Enzymology. (2-2-2) F, Sp. Prerequisite: Consent of instructor. Joyce
The fundamentals of enzymology, including enzyme measurements and autoimmunity, enzyme profiles in various diseases and specific enzyme methodology are presented.

209. Quality Control. (2) W. Sp. Prerequisite: Enrollment in Clinical Laboratory Science master's program. Barr
A review of principles and application to quality control in the clinical laboratory; legal aspects of quality control, preventive maintenance.

210A-B. Clinical Pathology Seminars. (1-1) F, W. Sp. Prerequisite: Consent of instructor. Brecher, Lutten
Seminars on various established and proposed laboratory tests will present interpretation and evaluation of tests as related to pathophysiology.

212A-B. Laboratory Management. (2-2) W, Sp. Prerequisite: Enrollment in Clinical Laboratory Science master's program. Bennington, Westlake
A survey course in management principles important to the clinical laboratory. Special emphasis will be given to laboratory organization, budgeting, and cost analysis.

215. Clinical Toxicology. (2) F. Sp. Prerequisite: Consent of instructor. P. Reynolds, McNichol
This course acquaints students with the implications as well as the systematic scheme and specific techniques of toxicology, neutral and basic drugs, metals, miscellaneous drugs and toxic agents encountered in clinical and forensic laboratories.

216. Clinical Toxicology Laboratory. (2) F. Sp. Prerequisite: Consent of instructor. Smith
This course will be offered as a three week seminar in one of the most active toxicology laboratories in the Bay Area.

230A. Clinical Microbiology. (2) F, Sp. Prerequisite: Consent of instructor. Hadley
Principles of clinical laboratory methods for diagnosis of infectious diseases are reviewed. Newer detection methods (immunofluorescence, radioimmunossay, gas chromatography) are examined. In vitro methods of susceptibility testing and assay of antimicrobials are discussed and critically evaluated.

230B. Clinical Microbiology. (2) F, Sp. Prerequisite: Consent of instructor. Hadley
Principles of clinical laboratory methods for diagnosis of infectious diseases are reviewed. Newer detection methods (immunofluorescence, radioimmunossay, gas chromatography) are examined. In vitro methods of susceptibility testing and assay of antimicrobials are discussed and critically evaluated.

A review of principles and application to quality control in the clinical laboratory; legal aspects of quality control, preventive maintenance.

254. Clinical Immunology. (2) W. Sp. Prerequisite: Consent of instructor. Senyk
Principles of clinical laboratory methods for diagnosis of infectious diseases are reviewed. Newer detection methods (immunofluorescence, radioimmunossay, gas chromatography) are examined. In vitro methods of susceptibility testing and assay of antimicrobials are discussed and critically evaluated.

110. Orientation in Pharmacy. (2) F. Conference and field observation 3-4 hours. deLeon, Harding, Beete
An introduction to the scope of pharmaceutical practice including field trips to participating pharmacies where the pharmacist and patient interact.

130. Clinical Pharmacy. (5) F. Sp. Prerequisite: Clinical Pharmacy 125 and 126. Lecture 4 hours, Conference 2 hours.

131. Clinical Pharmacy. (6) W. Sp. Prerequisite: Clinical Pharmacy 130. Lecture 5 hours, Conference 2 hours.


133. Preceptorship Orientation and Drug Information Analysis Service (DIAS) Rotation. (3) F, W, Sp. Prerequisite: Third year standing. Hadley
McCart, Shimomura, McSwain
Orientation to clinical services, including patient interview techniques and monitoring, training and actual work in literature retrieval, and analysis and dissemination of drug information.

145. Senior Clinical Conference. (1) F. Prerequisite: Clinical Pharmacy 132. Conference 2 hours. T. Dupuy and Staff
Orientation to selected areas of medical practice, the clinical evaluation and comparison of drugs used in these areas, and the biopharmaceutics of drug combinations and products.

146. Senior Clinical Conference. (1) W. Prerequisite: Clinical Pharmacy 145. Conference 2 hours. T. Dupuy and Staff
Orientation to selected areas of medical practice, the clinical evaluation and comparison of drugs used in these areas, and the biopharmaceutics of drug combinations and products.

147. Senior Clinical Conference. (1) W. Prerequisite: Clinical Pharmacy 146. Conference 2 hours. T. Dupuy and Staff
Orientation to selected areas of medical practice, the clinical evaluation and comparison of drugs used in these areas, and the biopharmaceutics of drug combinations and products.

Kaysner, Gamberatallo and Staff
Supervised experience in the patient care area of pharmacy service. Course may not be repeated for credit.

DeLeon, Harding, Beete
Supervised experience in the Ambulatory and Community Medicine Outpatient Clinc, including one week of clinical rotation in each of the following: ambulatory care, pediatrics, and primary care clinics. Course may not be repeated for credit.

152. Problems in Drug Induced Diseases. (3) F, W, Sp. Prerequisite: Pathology 135 and third year standing or higher. Lecture 2 hours, Conference and Special project 4 hours. Tong Staff
The phenomena of idiosyncratic diseases will be studied with an emphasis on their significance, pathoanatomy, and management. Assessment of collection and analytic methods of adverse drug reaction information and evaluation of literature will be considered. Special projects will be assigned.

153. Pharmacy Systems. (3) F, W, Sp. Prerequisite: Third year standing or higher. Lecture 1 hour, Conference and Special project 6 hours. deLeon, Harding, Beete
Clinical Pharmacy

Orientation to inpatient and outpatient pharmacy systems. Projects in design, justification and implementation of distribution systems. Focus on dosage, intravenous additives, computer applications, and major grading criteria. Evaluation will be based on ability to implement a program.

154. Seminar in Interprofessional Communications. (2) F. Prerequisite: third or fourth year standing and consent of instructor. Seminar 1 hour. Field trips.

de Leon, Beste

Students serve as preceptors for Clinical Pharmacy 110 to gain experience in leading group conferences, discussing the role of the pharmacist, and identifying and implementing concerns related to patient-oriented pharmacy. Course may be repeated for credit.

156.01. Clinical Clerkship at Ross Valley Pharmacy. (1-4) F, W, Sp. Prerequisite: Clinical Pharmacy 130, 131 and 132. Consent of instructor. Kimber, Lofholm, Wilson

Students interview patients, maintain medication records, explain medication usage to patients, and answer drug therapy questions from medical personnel, physicians, pharmacists, and patients in a pharmacy located within a group medical practice.

156.02. Clinical Clerkship at the South Kent Health Center. (1-6) F, W, Sp. Prerequisite: Clinical Pharmacy 130, 131 and 132. Consent of instructor. Kimber, Wholley, Torioe

Students collect data for a problem-oriented medication record, dispense medication, record patient responses to proper medication usage, and provide drug therapy recommendations for patients assigned to the pharmacy for inpatient and/or outpatient therapy management.

156.20. Clinical Pharmacy Clerkship in Inpatient Pediatrics at UC. (1-4) F, W, Sp. Prerequisite: Clinical Pharmacy 148 or 149. Consent of instructor. Cupit

Students participate in the activities of the inpatient Pediatric Service. Activities include routine review of patient charts, monitoring patient response to drug therapy, attendance at conferences, seminars and rounds, and participation in selected therapeutic consultations.


Students work under supervision of a clinical pharmacist and physicians in preparation of a therapeutic management plan for selected patients. They participate in conferences and seminars and may perform selected therapeutic consultations for the clinical staff.


Students participate in the activities of the Renal Medicine Service, including patient monitoring, attendance at conferences, seminars and rounds, and appropriate pharmacokinetics to drug therapy. Where appropriate, students will prepare detailed consultations regarding individual patient therapy.

156.26. Clinical Pharmacy Clerkship in Thyroid Clinic at UC. (1-8) F, W, Sp. Prerequisite: Clinical Pharmacy 148 or 149. Consent of instructor. Dong

Students participate in the activities of the Thyroid Clinic, including patient monitoring, attendance at conferences and seminars. They will work under supervision of the clinical pharmacist and physicians in the chronic management of selected patients.

156.27. Clinical Pharmacy Clerkship in Dermatology Clinic at UC. (1-8) F, W, Sp. Prerequisite: Clinical Pharmacy 132 and Pharmacy 155. Consent of instructor. Yoshimura

Experience in various subspecialty areas in the Dermatology Clinic. Students take medication histories and instruct patients in proper medication usage. They participate in conferences, seminars and rounds, and provide therapeutic consultation as to proper medication usage. Special projects are assigned.


Students participate in the activities of the Inpatient Pediatric Service. Activities include routine review of patient charts, providing therapeutic consultations where appropriate, monitoring patient response to drug therapy, attending conferences, seminars and rounds. Special projects are assigned.

156.35. Clinical Pharmacy Clerkship in Infectious Diseases at UC. (1-8) F, W, Sp. Prerequisite: Clinical Pharmacy 148 or 149. Consent of instructor. Kimber

Students review Infectious Disease Service therapeutic consultations and evaluate patient responses to local and intravenous drug therapy by following chart records and by direct interviews. Attendance at conferences, seminars and rounds. Special projects are assigned.

156.40. Clinical Pharmacy Clerkship at Sunset Mental Health Clinic. (1-8) F, W, Sp. Prerequisite: Clinical Pharmacy 149 or concurrent enrollment. Consent of instructor. Kimble, Wong

Students work with the clinical pharmacist to evaluate psychiatric patients' response to drug therapy, and present consultation reviews to selected therapeutic management in weekly seminars.

156.42. Clinical Pharmacy Clerkship at Haight-Ashbury Heroin Detoxification Unit. (1-8) F, W, Sp. Prerequisite: Consent of instructor. Kimber, Inaba

Students work as co-therapists under the supervision of a clinical pharmacist and physicians to develop individual therapy plans for drug detoxification. Where needed, students will be assigned to the detoxification unit. Drug information reports appropriate to specific patient care.

156.50. Clinical Pharmacy Clerkship in Inpatient Medical Service at V.A. (1-8) F, W, Sp. Prerequisite: Clinical Pharmacy 148 and consent of instructor. Kimber, Nagata and Staff

Experience in various medical services at VA. Activities include interviewing patients, monitoring drug therapy, consultation with house staff, and participation in conferences, seminars and rounds. Special projects are assigned.


Experience in various medical services at V.A. Activities include monitoring drug therapy, consulting with house staff, and participating in conferences, seminars and rounds. Students will provide selected therapeutic consultations where appropriate.

156.60. I.V. Additives and Parenteral Fluid Therapy at C. (1-8) F, W, Sp. Prerequisite: Clinical Pharmacy 148 and consent of instructor. Kimber, Chan

Students participate in I.V. preparation and selection and preparation, and monitor patients receiving intravenous medications. Conferences will be held on topics related to problems in the use of intravenous fluid therapy in various disease states.

156.70. Clinical Pharmacy Clerkship in Drug Information Analysis Service at UC. (1-8) F, W, Sp. Prerequisite: Clinical Pharmacy 148, 131, 132 and 135. Consent of instructor. McCart and Staff

Advanced experience in drug information retrieval and research. Activities include participation in conferences, seminars and selected teaching assignments in Clinical Pharmacy 135. Special projects are assigned.


Experience in selection, evaluation and dissemination of drug information and application in a community based drug information service. Activities include answering drug information requests from community practitioners.

156.78. Clerkship in Clinical Pharmacology at SFGH. (1-8) F, W, Sp. Prerequisite: Clinical Pharmacy 148 or equivalent. Consent of instructor. Tong

Students in an interdisciplinary setting, assess drug-related patient problems in relation to the selection, pharmacodynamics, and therapeutic merits of drugs and drug products. Activities include participation in rounds and conferences, collaboration on selected consultations, and retrieval and evaluation of drug literature.


Beste, Owayg, Herfindal

Course is intended for students who plan to apply for the resident program in hospital pharmacy. Other students may enroll with consent of instructor.


Group studies of selected topics in clinical pharmacy.


Clinical Pharmacy practice for students in the pharmacy profession, with emphasis on evaluation and interpretation of medication usage, and the role of the pharmacist in the community pharmacy setting.

196.03. Clerkship in I.V. Additive Services at Mary's Help Hospital. (1-4) F, W, Sp. Prerequisite: Fourth year standing.

Kimble, Koteba, Rupp

Students participate in the preparation of I.V. irrigation and infusion solutions and are exposed to various types of I.V. equipment. Conferences will be held on topics related to intravenous fluid therapy and drug distribution systems.
Students attend rounds with physicians and pharmacists, participate in seminars with the pharmacy staff, monitor drug therapy, and research drug therapy formsulated by physicians and pharmacists.

146.48. Clinical Pharmacy Clerkship in Medicine at MM. (1-6) F.W. Sp. Prerequisite: Clinical Pharmacy 148 or 149. Consent of instructor.

Experience in various medical services at a community hospital. Students interview patients, monitor drug therapy, and research drug therapy formsulated by physicians and pharmacists. Enrollment limited: Tong

146.55. Medical Specialties Clerkship at SFHG. (1-6) F.W. Sp. Prerequisite: Clinical Pharmacy 148 or 149. Consent of instructor.

Students participate in drug therapy with patients and pharmacists, participate in seminars with the pharmacy staff, and research drug therapy formsulated by physicians and pharmacists. Enrollment limited: Tong

146.56. Medical Specialties Clerkship at SGHG. (1-6) F.W. Sp. Prerequisite: Clinical Pharmacy 148 or 149. Consent of instructor.

Students rotate through the Medical Department of the Hospital. Students interview patients, perform drug therapy and research drug therapy formsulated by physicians and pharmacists. Enrollment limited: Tong

146.59. Developmental Clinical Pharmacy Clerkship in Various Medical Specialties at SGHG. (1-6) F.W. Sp. Prerequisite: Clinical Pharmacy 148 or 149. Consent of instructor.

Experience in various medical specialties at SGHG. Students interview patients, monitor drug therapy, and research drug therapy formsulated by physicians and pharmacists. Enrollment limited: Tong

146.76 Clinical Pharmacy Clerkship at GS. (1-6) F.W. Sp. Prerequisite: Clinical Pharmacy 103, 131 and 132. Consent of instructor.

Experience in various medical services at a community hospital. Students interview patients, perform drug therapy and research drug therapy formsulated by physicians and pharmacists. Enrollment limited: Kimble, Rainey

146.42. Clinical Pharmacy Clerkship in Medicine at STJ. (1-6) F.W. Sp. Prerequisite: Clinical Pharmacy 148 or 149. Consent of instructor.

Experience in various medical services at a community hospital. Students interview patients, monitor drug therapy, and research drug therapy formsulated by physicians and pharmacists. Enrollment limited: Kimble, Miya

146.44. Clinical Pharmacy Clerkship in Medicine at Medco. (1-6) F.W. Sp. Prerequisite: Clinical Pharmacy 148 or 149. Consent of instructor.

Experience in various medical services at a community hospital. Students interview patients, monitor drug therapy, and research drug therapy formsulated by physicians and pharmacists. Enrollment limited: Kimble, Miya
Dental Health Education

156B. Introduction to Patient Education. (2) W. Taibot
The student is acquainted with theories and methods of education and motivational techniques that apply to their role as a private practitioner. Appropriate experiences are provided to utilize this knowledge.

156A. Community Dental Health. (2) F. Prerequisite: Dental Health Education 150B and 150C. Novak
Students are acquainted with theories and methods of education and motivational techniques that apply to their role as a school dental hygienist. Appropriate experiences are provided to utilize this knowledge in local junior high schools.

160B. Community Dental Health. (2) W. Novak
Students are acquainted with theories and methods of education and motivational techniques that apply to their role as a professional resource person in the community. Appropriate experiences are provided to utilize this knowledge in local colleges and universities.

198. Supervised Study in Dental Health Education. (1-5) F, W. Prerequisite: Dental Health Education 150B, 150C, 160A, 160B and Biostatistics. Francisco
Library research and directed reading under supervision of a member of the faculty with the approval of the chairman of the department.

199. Laboratory Project in Dental Health Education. (1-5) F, W. Prerequisite: Dental Health Education 150B. Francisco
A laboratory research project under direction of a member of the faculty with the approval of the chairman of the department.

Dental Hygiene

109. Clinical Dental Hygiene. (1-2) SS. Clinic 3-4 hours. Prerequisite: Dental Hygiene 155A-B. Pittman
Provides additional clinical dental hygiene experience before entry into the second year clinic.

150A-B-C. Introduction to Dental Hygiene. (2-2-1) Yr. Halterman
The role of the dental hygienist in preventive dentistry is studied with emphasis on the objectives and principles of oral prophylaxis. Introduction to the anatomy and physiology of the oral cavity and to dental disease.

150.01. Dental Morphology. (2) F. Prerequisite: Concurrent enrollment in Dental Hygiene 150A. Martin
The development and form of deciduous and permanent dentition and occlusion. Study of individual tooth and arch form to interpret relationships as well as endodontic morphology.

151. Orientation to Dentistry. (1) W. Novak
The systems of the body are studied through lectures and laboratory demonstrations. The structures of the head and neck, including the central nervous system, receive major attention through lectures and laboratory dissection. Emphasis is placed upon function and anatomic relationships.

155A-B. Introduction to Clinical Prophylaxes. (2-2) F, W. Lab 3 hours. Clinic 3 hours. Goulard and Staff
Mankin as well as practical experiences in the laboratory and clinic for the purpose of learning instrumentation techniques of oral prophylaxis in addition to taking medical histories and performing oral inspections.

159. Clinical Oral Prophylaxes. (2) Prerequisite: Dental Hygiene 155A-B. Clinic 6 hours. Goulard
Continuation of clinical experiences from Dental Hygiene 155A-B with emphasis on improved proficiency in all areas.

160A-C. Office Management and Ethics. (2-2) F, Sp. Taibot
Students identify their personal and professional roles as members of the dental health team and are informed of general office policies and procedures. Other subjects discussed include: selection of a position, taxes, ethics, jurisprudence, and insurance.

161A-B. Orientation to Dentistry. (2-2) F, W. Prerequisite: Dental Hygiene 151. Novak
Continuation of Dental Hygiene 151.

159A-B-C. Advanced Clinical Oral Prophylaxes. (3-4) Yr. Prerequisite: Dental Hygiene 155A-B. Clinic 11 hours. Francisco
Advanced oral prophylaxis techniques including work in institutional dental clinics.

189. Special Study. (0-4) F, W. Prerequisite: Fourth year standing and consent of instructor. Poupart
Students select an area of interest for independent study or research. These may include clinical, community, educational, institutional, or other areas.

189.01. Clinical Experience in Mobile Dental Clinics. (1-3) SS. Clinic Variable. Francisco
Clinical experience in mobile dental clinics.

189.02. Community Health Clinical Practice Program. (1-2) F, W. Prerequisite: Winter or spring quarter standing of first year dental hygiene curriculum; or fall, winter or spring quarters of second year dental hygiene curriculum. Poupart
One-half unit of credit for every five hour-hour visits made to off-campus clinics or institutions. Objective is to secure community experience and involvement. This elective is above the required eight visits to off-campus clinics and institutions.

199. Laboratory Project in Dental Hygiene. (1-5) F, W. Prerequisite: Staff A laboratory research project under direction of a member of the faculty with the approval of the chairman of the department.

Dental Jurisprudence

160. Dental Jurisprudence. (1) W. Lecture 1 hour, for five sessions. Bradley
The course broadens student insight into the legal problems and obligations of dental practice.

Dental Techniques

115A-C. Basic Dental Techniques. (1-1) F. Lab 3 hours. Stark

The first year student is oriented to the necessity for accuracy in manipulation of materials. Impression taking, pouring of casts, waxing, carving, investing, casting, and soldering are covered. Manipulation of restorative materials will be demonstrated and used in the laboratory.

185. Introduction to Basic Dental Techniques. (2) SS Lab 18 hours, for three weeks. Brignate
Technical orientation to the basic techniques taught in the first year of dentistry such as morphology, prosthodontics, biomaterials, operative dentistry.

Dermatology

First-Year Coordinated Instruction—Medicine 131A-C. Lecture-demonstrations and section work devoted to the supervised examination of patients.

Core Clerkship—Laboratory and Community Medicine 110 includes lectures and case demonstrations on the examination and diagnosis of dermatological diseases. This includes instruction in history-taking, physical diagnosis, and diagnostic and therapeutic procedures.

140.01. Clinical Research Dermatology. (1½ per week) Su, F, W, Sp. Prerequisite: Consent of instructor. Crum
Activities of enrollees are determined after an initial interview with the instructor. Emphasis is placed on routine outpatient and inpatient care and research methods, according to individual interest.

140.02. Clinical Clerkship. (1½ per week) Su, F, W, Sp. Prerequisite: Consent of instructor. Fenwick Clinical clerkship in approved hospitals by special arrangement and approval of the Dean and chairman of the department.

150.01. Research in Dermatology. (1½ per week) Su, F, W, Sp. Prerequisite: Consent of instructor. Fukuyama
Research project under the direction of a member of the faculty.

160.01. Clinical and Research Dermatology. (1½) Su, F, W, Sp. Prerequisite: Consent of instructor. Epstein
Activities of enrollees are determined after an initial interview with the instructor. Emphasis is placed on routine outpatient and inpatient care and research methods, according to individual interest.

160.02. Inpatient Management. (1) Su, F, W, Sp. Prerequisite: Third or fourth year standing. Contant
Daily rounds of inpatient dermatology patients. Informal discussions of diagnosis and management of the hospitalized dermatology patient.

160.03. Introduction to Dermatology. (1) W. Prerequisite: Second year standing.

Introduction to the basic language, diagnostic techniques, and recognition of common skin disorders seen by the practitioner. Course is by permission and demonstrations followed by open discussions and color slides of the pertinent disease.

199. Laboratory Project in Dermatology. (1-5) F, W. Prerequisite: Consent of instructor.

Fukuyama A laboratory research project under direction of a member of the faculty with the approval of the chairman of the department.


W. L. Epstein and Staff

Residents prepare and present case histories of patients at conferences making reference to appropriate literature, special studies, and laboratory work. Conferences include discussions of new developments and research investigation by staff members and from other UC departments and other universities.

410. Dermatopathology. (Su, F, W, Sp.) UC Goodman

Lectures and demonstrations on histopathology of skin diseases with special emphasis on correlation with clinical findings. Activities include the study of microscopic sections and discussions of material presented.


Malbach and Staff Seminar covers recent literature in dermatology. Included is assigned reading with required reports which are evaluated by members of the faculty.


W. L. Epstein and Staff

Seminars include discussions, required reading, and problems on dermatology and the related basic sciences: embryology, mycology, histopathology, and parasitology in relation to dermatologic conditions, and oncology as it relates to the skin.


W. L. Epstein and Staff Seminar involves the evaluation of recent clinical cases of special interest. Cases are presented by the faculty and resident staff.


Fukuyama Instruction in the conduct of research projects dealing with electron microscopy, biochemistry, and immunology of the skin under normal and pathological conditions.

406. Basic Science Seminars. (Su, W, Sp.) W. L. Epstein and Staff

In-depth discussion of the sciences basic to an understanding of the diseases and function of skin, including anatomy, physiology, microbiology, pharmacology, biochemistry, genetics and pathology. Over a three-year period, course covers all aspects of basic sciences relevant to dermatology.

407. Medical Cutaneous Microbiology. (2) F, W, Sp. Prerequisite: Consent of instructor.

Lyons Course is designed to familiarize dermatology residents with the techniques of isolation and identification of dermatophytes, skin bacteria and viruses. Occasional lectures on specialized topics are given.

450. Clinical Dermatology. (10) Su, F, W.

K McGinley, PhD, FASD, Hoke, UC Comant, SFGH Gellin, VA Tuffnellani Residents, under supervision, are responsible for patient care in the wards and outpatient clinic. Duties include history-taking, physical examinations, and consultations. In addition, the senior resident has certain administrative, teaching, and clinical responsibilities.


J. H. Epstein Residents, under supervision, are responsible for patient care in the wards and outpatient clinic. Duties include history-taking, physical examinations, and consultations. In addition, the senior resident has certain administrative, teaching, and clinical responsibilities.


W. L. Epstein Assistant residents work at off-campus hospitals in the United States and other countries approved by the Dean and the chairman of the department. Course includes training in clinical and investigative dermatology.

Economics

150. Economics of the Health Services. (3) W. Prerequisite: Consent of instructor.

Staff Consideration of the health service sector of the economy. Study of its structure and the pricing, financing, and allocation of health services. Emphasis on questions of public policy. Laboratory research under the direction of a member of the faculty with the approval of the chairman of the department.

151. Principles of Economics. (3) Staff

An introduction to the principles of economic analysis. Investigation of the factors determining the allocation of resources, the composition of output, and the level of income and employment in the American economy. Not recommended for students who have received credit for either Economics 1A or 1B.

180A-B. Economics. (1-1) F, W, Winters

Lectures and group discussions related to current areas covered include economic policy, exchange rates and the techniques of macroeconomic policy.

Endocrinology

190. Animal Hormones and Their Actions. (2) § Lecture 2 hours. Offered in alternate years.

Lostroh, Papkoff Basic information on animal hormones, their effects, functions, and interrelationships. Concepts concerning hormonal actions are derived from chemical structure of function and biological in vivo, in vitro studies. Where possible, mechanisms will be discussed.

191. Topics in Endocrinology. (1) § Prerequisite: Endocrinology 190 or consent of instructor. Offered in alternate years.

Papkoff, Lostroh Selected topics of current interest.

192. Structure and Function of the Hormones. (2) W. Prerequisite: Course in basic biochemistry recommended.

Papkoff, Ramachandran Course will examine the chemical nature of the hormones; the methods employed for purification, characterization, structural determination, and synthesis; the relationship of molecular structure to biological activity will be studied, as well as comparative and evolutionary aspects.


Staff Library research and directed reading under supervision of a member of the faculty with the approval of the chairman of the department.

Endodontics

199. Laboratory Project in Endodontology. (1-5) § Su, F, W, Sp. Prerequisite: Consent of instructor.

Ganong and Staff A laboratory research project under the direction of a member of the faculty with the approval of the chairman of the department.

202. Mechanisms of Hormone Action. (2) § F, W. Prerequisite: Physiology and Cellular and Molecular Biology 200A and 200B, or Biochemistry 100A-B or consent of instructor.

Ganong, A. Williams Reading and discussion of classical and current literature concerning known and speculative mechanisms of hormone action. Major hormones covered are insulin, glucagon, thyroid and steroid.

220. Seminar in Experimental Endo- nology. (Su, F, W, Sp.) Lectures 2 hours, given in alternate weeks.

Papkoff, Ramachandran Students will attend. Resident participation in seminar series devoted to topics of current interest in endocrinology.

222. Reproductive Endocrinology Sem- inar. (1) § F, W, Sp. Prerequisite: Consent of instructor.

Weiner Seminar presentations in areas of current interest in reproductive endocrinology by guest lecturers and members of the Reproductive Endocrinology Center. Term paper required. Course may be repeated for credit.

230. Reproductive Endocrinology. (2) § W. Prerequisite: Consent of instructor.

Weiner Lectures and assigned readings in the reproductive endocrinology of the male and female, topics and regulation of hypothalamic, pituitary and gonadal hormones, with special emphasis on hormones.


Staff
Clinical procedures in fixed prosthodontics. This course provides a continuation of experience received in Fixed Prosthodontics 172.01A-B.

176A-B.C. Special Study for Postdoctoral Students. (1-5, 1.5-1.5) F, W. Pr. Research 3-1.4. Lorenz
Original investigation in the field of fixed prosthodontics.

180. Oral Rehabilitation. (1) W. Seminar hour. 1 hour.
The field of fixed prosthodontics and its relationship to other dental disciplines will be explored by means of case presentations to provide the student with a broad base of experience in oral rehabilitation techniques.

180.01. Special Study Seminar. (1) F. Seminar hour. Individual staff members will offer seminar-type instruction on selected topics related to fixed prosthodontics.

180.02. Senior Restorative Elective. (1) F.
Advanced clinical restorative elective. Lectures describe the restorative general practice. Topics include those such as office layout, laboratory relations, treatment limitations, etc. and additional treatments.

180.03. Special Study Seminar. (1) F. Seminar hour. Individual staff members will offer seminar-type instruction on selected topics related to fixed prosthodontics.

180.04. Senior Restorative Elective. (1) F.
Advanced clinical restorative elective. Lectures describe the restorative general practice. Topics include those such as office layout, laboratory relations, treatment limitations, etc. and additional treatments.

Exfoliative Cytology
401A-B.C-D. Exfoliative Cytology. (14-14-14-14) F, S, W. Pr. E. King.
Lectures in cytology include normal tissue and normal and abnormal nonmalignant cells. Instructs covers methods of specimen collection, preparation, staining, and microscopic examination of specimens; development of speed and accuracy in microscopic examination; and correlation of cellular and tissue pathology.

Fixed Prosthodontics
Clinical fixed prosthodontics. This year standing in fixed prosthodontics. Clinical Variable.

Principles of fixed prosthodontics. This year standing in fixed prosthodontics.

111. Clinical Fixed Prosthodontics. (2) S. Pr. Consent.
Clinical fixed prosthodontics. This year standing in fixed prosthodontics.

Clinical fixed prosthodontics. This year standing in fixed prosthodontics.

Clinical fixed prosthodontics. This year standing in fixed prosthodontics.

Clinical fixed prosthodontics. This year standing in fixed prosthodontics.

130A-B-C. Fixed Prosthodontics Clinical Theory. (2) F. W. Pr. Consent.
Clinical fixed prosthodontics. This year standing in fixed prosthodontics.

Clinical procedures in fixed prosthodontics. This year standing in fixed prosthodontics.

171.02. Clinical Procedures in Fixed Prosthodontics. (2) S. Pr. Consent.
Clinical procedures in fixed prosthodontics. This year standing in fixed prosthodontics.

171.03. Clinical Procedures in Fixed Prosthodontics. (2) S. Pr. Consent.
Clinical procedures in fixed prosthodontics. This year standing in fixed prosthodontics.

Clinical procedures in fixed prosthodontics. This year standing in fixed prosthodontics.

171.05. Clinical Procedures in Fixed Prosthodontics. (2) S. Pr. Consent.
Clinical procedures in fixed prosthodontics. This year standing in fixed prosthodontics.

171.06. Clinical Procedures in Fixed Prosthodontics. (2) S. Pr. Consent.
Clinical procedures in fixed prosthodontics. This year standing in fixed prosthodontics.

Clinical procedures in fixed prosthodontics. This year standing in fixed prosthodontics.

171.08. Clinical Procedures in Fixed Prosthodontics. (2) S. Pr. Consent.
Clinical procedures in fixed prosthodontics. This year standing in fixed prosthodontics.

Clinical procedures in fixed prosthodontics. This year standing in fixed prosthodontics.

Clinical procedures in fixed prosthodontics. This year standing in fixed prosthodontics.

171.11. Clinical Procedures in Fixed Prosthodontics. (2) S. Pr. Consent.
Clinical procedures in fixed prosthodontics. This year standing in fixed prosthodontics.

Clinical procedures in fixed prosthodontics. This year standing in fixed prosthodontics.

Clinical procedures in fixed prosthodontics. This year standing in fixed prosthodontics.

Clinical procedures in fixed prosthodontics. This year standing in fixed prosthodontics.

171.15. Clinical Procedures in Fixed Prosthodontics. (2) S. Pr. Consent.
Clinical procedures in fixed prosthodontics. This year standing in fixed prosthodontics.

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Clinical procedures in fixed prosthodontics. This year standing in fixed prosthodontics.

Forensic Pathology and Medicine
170.01. Forensic Pathology and Medicine. (1) S. Seminar hour. R. Wright
The course covers basic legal principles; torts and contracts; medical records and documents; medicolegal issues and certification; forensic pathology; the expert witness; malpractice and professional liability.

General Dentistry

G. Hall

An elective course in which the student performs patient treatment in a variety of clinical settings.

189.01. Advanced Clinical Clerkship in General Dentistry at VA. (0-20) F, W, S. Pr. Consent.
Fourth year standing. Approval of the VA, and of the Dental Advisory Committee.

Students provide comprehensive dental care to patients assigned to them under the guidance of the VA and the medical and hospital environment. Attendance at seminars and conferences included.

Health Sciences Education
200. Introduction to Health Sciences Training. (2) F. Prerequisite: Consent of instructor.
K. Jacoby
Course focuses on instructional techniques and strategies useful for beginning teachers. Emphasis is on the development of an effective personal teaching style. Open to advanced graduates, residents, teaching assistants and new faculty.

220A-B. Health Sciences Education Seminar. (2-2) F, W. Pr. Consent of instructor.
K. Jacoby
Considers principles of learning, including individual student differences, techniques of instruction, and approaches to evaluation of student progress. Individual teaching plans are developed and critiqued. Emphasis is placed on the graduate and professional school student as a learner.

221. Allied Health Sciences Seminar. (2-2) F, W. Pr. Consent of instructor.
K. Jacoby
Graduate seminar integrating clinical experiences and academic course work of students enrolled in Kellogg Education Project.

Students enrolled are evaluated in Kellogg Education Project.

K. Jacoby
A seminar to review and develop objective techniques in assessing the clinical performance and competence of students and practitioners. Techniques will be developed and validated for a number of critical disciplines.

History
180. History of Dentistry. (1) W. Hartman

A seminar to review and develop objective techniques in assessing the clinical performance and competence of students and practitioners. Techniques will be developed and validated for a number of critical disciplines.

A seminar to review and develop objective techniques in assessing the clinical performance and competence of students and practitioners. Techniques will be developed and validated for a number of critical disciplines.
Projections, based on a background of the growth and development of the profession, develop ‘curves of probability’ of future technical and scientific biological developments. Growing social impacts upon the present and future practice of dentistry are stressed.

**History of Health Sciences**

150. History of Pharmacy, (3) Sp. Prerequisite: Upper division standing. *Schwarz, Leake*  
Emphasis is on the historical development of pharmacy, its relationship to the other health professions and the personalities who significantly contributed to the advancement of health care.

170.03. Medical History and Bibliography, (1-5) F, W, or Sp. *Saunders*  
Lectures and informal seminars on aspects of medical history.

170.03. Evolution of American Medicine, (1-5) F, W, or Sp. *Brieger*  
Lectures and informal seminars on the growth of American medicine from Colonial times to the present, with an examination of the sociopolitical and socioeconomic factors influencing that growth.

170.04. History of Psychiatry, (1-5) F, W, Sp. Prerequisite: Consent of instructor. *Veith*  
Changing concepts of therapeutics from earliest times to the present, in relation to the changing climate of thought on the nature of the psychic process and psychic disorders.

170.06. Introduction to the History of Medicine, (1-5) F, W, Sp. *Veith*  
An introductory course intended for all students in the health professions and graduate students interested in the broad conceptual developments influencing the growth of medical science and the health professions from the end of the medieval period to the modern period.

170.07A-B. History and Philosophy of the Health Professions, (1-2, 1-2) SS, Lecture 1 hour, Paper 2 units. *Leake*  
Survey of the history and development of the various health professions and services, with consideration of economic and ethical factors involved.

198. Supervised Study in History of Health Sciences, (1-5) F, W, Sp. Prerequisite: Consent of instructor. *Brieger and Staff*  
Library research and directed reading under supervision of a member of the faculty with the approval of the chairman of the department.

200. History of Historical Method and Methodology of Medical History, (2-4) F, W, Sp. *Staff*  
Special reading and discussion on historiography and historical method with bi-weekly seminars designed to teach students to do independent medical historical research and writing.

201. Introduction to the History of Biology, (1-2) F, W, Sp. *Leake*  
An introductory course of broad scope on the evolution of biological thought.

202. Socioeconomic Factors in the Epidemiology of Medicine, (1-2) F, W, Sp. *van der Reis*  
A survey of various social and economic patterns in various cultures and their influence on disease.

203. Introduction to History of Neurology, (1-2) F, W, or Sp. *Schiller*  
Introduction to the history of neurological concepts.

204. History of Non-Western Medical Systems, (1-2) F, W, or Sp. *Prerequisite: History of Health Sciences 170.06 or 201.  
Veith*  
Seminars and directed readings on the philosophy of Asian, Indian, and other Non-Western systems.

205.01. Philosophical Foundations of Clinical Thought, (1-3) F, W, Sp. Prerequisite: Consent of instructor. *Guttenag*  
Reading and conferences.

205.02. Philosophical Foundations of Clinical Thought, (1-3) F, W, Sp. Prerequisite: Consent of instructor. *Guttenag*  
Extended reading and conferences.

209. Introduction to the History of Health Sciences—Nursing, (2) F, Sp. *Blanc*  
For nursing instructors and graduate students. History of the nursing profession, which nursing practice is based. Methods and examples for teaching history in the clinical setting.

207. Introduction to the History and Bibliography of the Literature of the Health Sciences, (1-2) F, W, Sp. *Zinn*  
Historical survey of health sciences literature, illustrated by works from the special collections in the library. Includes an introduction to historical and modern reference works and bibliographic methods useful in research in the history of the health sciences.

209. Medicine in the Victorian Age, (2) F, W, Sp. Prerequisite: Graduate standing. *Blanc*  
The course investigates medical facilities in London in 1830-1870 along with modes of practice, social setting, and levels of scientific knowledge in the mid-century.

210. The History of Medical Education, (1-3) F, W, Sp. Lecture 1-2 hours, plus paper or research for 3 units. *Brieger*  
Discussion of trends, and readings on the development of medical theory and practice as taught from ancient times to the present. Emphasis is on American medical education in the nineteenth and twentieth centuries.

211. Theories of Human Nature, (3) F, W, Sp. Prerequisite: Graduate standing. *Jonsen*  
Course examines how several classical and modern authors in the Western philosophical tradition define human nature. Various basic theories and their implications for contemporary science and medicine are developed.

220. Seminar, (1-3) F, W, Sp. Staff  
Students, staff, or guest lecturers present selected topics concerned with current research.

Reading and conferences for qualified students under the direction of a member of the staff.

298. Thesis, (0) F, W, Sp. Prerequisite: Admission to candidacy and permission of graduate adviser. Staff  
For students engaged in writing the thesis for the master’s degree.

299. Dissertation, (0) F, W, Sp. Prerequisite: Admission to candidacy and permission of the graduate adviser. Staff  
For students engaged in writing the dissertation for the Ph.D. degree.

**Human Biology**

200A. Cell Biology, (3) F, W, Sp. Prerequisite: Biochemistry 100A or equivalent, or consent of instructor. *Stoeckenius*  
An introductory course in the structure, biochemistry, and function of the eukaryotic cell.

200B. Cell Biology, (3) F, W, Sp. Prerequisite: Biochemistry 100A or equivalent, or consent of instructor. *Stoeckenius*  
An introductory course in the structure, biochemistry, and function of the eukaryotic cell.

201. Seminar in Neurobiology, (1) F, W, Sp. Prerequisite: Consent of instructor. *Dennis*  
Topic in neurobiology is selected such as development and physiology of the visual system, biochemistry of membranes, and pertinent papers from the recent literature are read and discussed. Each student must participate regularly and present one seminar per quarter.

202A-C. Basic Concepts of Neurosciences, (6-8) F, W, Sp. Prerequisite: Admission to Neuroscience program or consent of instructor. *Dennis and Staff*  
An in-depth interdisciplinary introduction to fundamental aspects of nervous system function, membrane structure, biophysics, ion transport mechanism, cellular naunorhoenology, synaptic transmission, integration, and development of synaptic connections, invertebrate and vertebrate sensory and motor systems, autonomic and neuroendocrine regulatory mechanisms, higher functions.

**Hospital Dentistry**

170. Emergency Medical Care Seminar, (1) W, Seminar 2 hours. Prerequisite: Post-doctoral or fourth year standing. *Lim*  
The course is designed to stimulate group discussion on the principles of emergency medical care. These include transport, disaster planning, triage, cardopulmonary resuscitation, management of shock, head and neck injuries, as well as special problems related to dentistry.

171. Physical Diagnosis, (2) Su. Prerequisite: Enrollment in a postgraduate specialty program or consent of instructor. *Klein*  
Designed to prepare the oral surgeon to conduct a physical examination as a preliminary evaluation before performing oral surgical procedures. Techniques of examination are demonstrated and practiced in the classroom; examination of pathologic conditions conducted at bedside.

172. Oral Biology Conferences, (1) W. Prerequisite: Postdoctoral standing. *Silverman, Ware, and Staff*  
Conferences include case presentations by interns and residents, and discussions focusing selected subjects in oral biology relevant to clinical and preventive dentistry.
Human Development

201A-B-C, Interdisciplinary Seminar in Human Development. (3-3-3) F, W, Sp. Prerequisite: Consent of instructor.

Kiefer, Lowenthal, Rosow

Theory and research covering capabilities to age old age from sociological, psychological, psychoanalytic, and anthropological perspectives. Topics include stress, personality and cognitive change, time perspective, values, identification processes and adaptation. Reading and paper required. Students enroll for all three quarters.

202A-B-C, Seminar in Analytic Methods. (3-3-3) F, W, Sp. Prerequisite: Consent of instructor.

Chiriboga, Pierce, Kiefer, Suzman

One quarter on quantitative methods, including longitudinal; one quarter on the quantitative and qualitative manipulation of open-ended data, and one quarter on methods of survey research. Student research materials will be used where appropriate.

203, Seminar in Problem Formulation and Research Design. (3) F, W, Sp. Prerequisite: Consent of instructor.

Rosow

Students work on their own research interests in the field of survey research, problem formulation, research design, and/or operationalization. Emphasis dependent upon individual student needs.

204, Scientific and Literary Approaches to Personal Development. (2) F. Prerequisite: Consent of instructor.

Kiefer

Exploration of important new developments in the philosophies of science and society; emphasis is on works of Jürgen Habermas and Anthony Wilden.

220, General Seminar. (1) F, W, Sp. Prerequisite: Consent of instructor. Lecture 2 hours evening in alternate weeks.

Kiefer

Staff

Students, staff, or guest lecturers present selected topics based on their current research.

221A-B-C, Life Stress and Adaptation. (3-3-3) F, W, Sp. Prerequisite: Consent of instructor.

Chiriboga, Lowenthal

Qualitative and quantitative analyses of life history protocols focusing on stress and perceptions of stress in relation to the life history of the dying person. Emphasis on indicators of adaptation such as psychological, physical, social at various life stages and adaptation to old age.

225, Introduction to Computer Processing. (1 or 2) W. Prerequisite: One course in statistics recommended. Consent of instructor. Lecture 1 hour, Lab 0.5-4 hours.

Pierce

Introduction to the use of the computer in the analysis of social science research data with emphasis on facilities and programs available at the UCSF Information Systems and Computer Center.

227, Biological Aspects of Aging and Old Age. (2-3) F. Prerequisite: Consent of instructor. Lecture 2 hours. Independent study 3-4 hours.

Eilman

Physiological, biochemical, neurological, and anatomical changes occurring with aging are discussed. Important questions include the possible relationships to functional behavior of these changes in humans and the relevance of internal changes to psychological states.

222, Developmental Study of Kinship Structure. (3) F, W, Sp. Prerequisite: Consent of instructor. Tucker

Kinship structure in Western and non-Western societies with emphasis on the life cycle perspective of family roles and relations. Consideration is given to relevant empirical studies and case material.

233, Clinical Anthropology. (2) F. Prerequisite: Consent of instructor.

Brody

Clinical data is available in several forms, and attempts are being made to focus on detailed and medical interactions. Assigned readings and field study of a hospital unit or section are used to prepare written and oral reports.

234, Ego Development. (2-4) F, W, Sp. Prerequisite: Consent of instructor. Pierce

Whitehead's work is often described as the master trait of adult development. An in-depth look at the theories in research in this area, such as that of Erikson and Lewinberg.

235, Social Aspects of Death and Bereavement. (3) F, W, Sp. Prerequisite: Consent of instructor. Kalish

An analysis of the social milieu in which dying persons live, with implications for the dying person himself, his survivors, and those professionals who attend him.

236, Developmental Statistics. (3) W. Prerequisite: Consent of instructor. Pierce

A statistics course structured to the needs of students of the Human Development Program. Statistical emphasis is given to methods appropriate to analysis of development and change, with more attention to understanding of statistical ideas than to computation.

249, Special Studies. (2-8) F, W, Sp. Prerequisite: Consent of instructor. Staff

Students select special problems to investigate on an individual or collaborative basis. These studies may be conducted through library, collection and analysis of empirical data, or the development of conceptual analyses or methodologies.

250, Research. (1-8) F, W, Sp. Staff

Human Sexuality

159, Human Sexuality. (2) Sp. Creasey, Heymann

Social, behavioral, and clinical aspects of human sexuality are covered in a series of lectures and seminars. Lectures present didactic material and seminars focus on problems related to sex.

Interdepartmental Studies

135, Reproduction, Growth and Development. (Obstetrics-Gynecology and Pediatrics) (3-4) F.

Creasey, Heymann

Course is designed to trace the biological mechanisms concerned with conception, development of the fertilized ovum, and the embryonic and fetal life, and postnataally to the mature individual.

International Health

102, Medical Parasitology. (2) W. Prerequisite: Microbiology 100 (without parasitology) or equivalent, or consent of instructor.

Heymann

An introduction to protozoa and helminths and the human diseases they produce, with emphasis on protozoan infections. Parasite epidemiology and life cycles, clinical and diagnostic aspects are covered in lecture, films, and kodachrome showings. Laboratory demonstrations displayed throughout.

140.01, Clinical Clerkships Abroad. (1) per week. S, F, W, Sp. Prerequisite: Six months of clinical work.

Goldsmith

Clinical clerkships in developing countries, generally in a hospital or rural health clinic, approved by the Dean and the chairman of the department.

140.02, Nutrition Clerkship. (1) per week.

C. S. Wilson

Four-week block elective with three-hour lecture-discussions daily and participation in medical care and visiting patients in various Bay Area clinics. Emphasis on training to do useful work in dietary and clinical evaluation and treatment in absence of trained nutritionists.

140.03, Leprosy and Other Communicable Diseases. (1) per week. S, F, W, Sp. Prerequisite: Medicine 110. Gelber, Faisal

As part of the consultative team, students work up and follow communicable disease problems on the medical and surgical services. Participation on the inpatient and outpatient service attendance regularly at PHS conferences.
150.1. Medicine in Developing Coun-
tries, (1½ per week) \( \frac{1}{2} \) Sp. Prerequisite: Inter-
national Health 100 or consent of instructor.
R. Goldsmith

Four-week block elective on the rec-
ognition and treatment of disease of tropical and
developing countries. The course is de-
signed to prepare students for clerkships
abroad. Presentation format includes lec-
tures, case studies, field trips, and labora-
tory sessions, and supervised independent study.

150.  Field and Laboratory Research
in UC-ICHM Overseas Program, (1½ per
week) Su, F, W, Sp. Prerequisite: Consent of
instructor.
Dunn and Staff

Research under faculty supervision extending
UCHRM facilities in Malaysia and
occasionally elsewhere. Research may be in
clinical fields as well as in basic medical sci-
cence, preventive medicine, and public
health. May immediately follow a student re-
search fellowship abroad.

160. 1. Tropical Medicine Staff Confer-
R. Goldsmith, Frierson

Conferences include presentation of re-
cent clinical and research papers of special interest, and
discussions by staff members, consultants
from other departments, or visiting experts,
of new developments in tropical medicine.

170.04. Host-Parasite Interactions
and Pathology, (1) W. Prerequisite: Interna-
tional Health 100 or equivalent.
Heyneman, R. Goldsmith

Lectures and discussions to review the pa-
tterns of host-parasite interactions involv-
ing protozoan and helminth infective agents
of man. Topics included will explore current
views of immune and other types of response
and disorders that may result in human
disease.

170.05. Introduction to International
Health. (2-3) \( \frac{3}{2} \) Lecture. 2 hours, plus 3
hours independent study for 3 units.
Dunn and Staff

Lecture and discussions introducing the
field of international health from an ecologi-
cal and biocultural perspective. The course
surveys world health and demographic prob-
lems, issues in the delivery of medical care
and career opportunities in international health.

170.06. Geography of Human Health
and Disease. (3) Sp.
R. Goldsmith and Staff

Course covers principles of medical
geography and landscape epidemiology in-
cluding climate, patterns of human health
and disease in the context of physical, biotic,
and sociocultural environments, and in re-
lation to human settlements. Analysis of
selected specific diseases of global impor-
tance.

170.07. Laboratory Project in Leprosy.
(1-5) Su, F, W, Sp. Prerequisite: Consent of
instructor.
D. Gerber

A laboratory research problem on lep-
rosy under the guidance of a member of
the staff of the Leprosy Research Unit at PVS.
The unit’s major research areas are the par-
tomycology, immunology, and chemotherapy of
leprosy in animals and man.

180. World Population Pressures
and Family Planning Perspectives, (1-2) W.
Lecture 1 hour, plus project for 2 units.
R. Goldsmith

Implications of population growth and
family planning programs in developing and
developed countries. Contraceptive and
abortion methods and their sociocultural
acceptability are emphasized as well as demo-
ographic methods, population research is-
sues, and the role of health professionals in
population control.

180.01. Tropical Medicine Clinic.
(1-2) Su, F, W, Sp. Prerequisite: International
Health 100 and six months of clinical experi-
ence. Clinic 3-6 hours.
R. Goldsmith, Develing, Frierson

Examination and treatment of patients in the
Tropical Medicine Clinic under staff
supervision. Students 10 hours plus consul-
tations on hospitalized patients. Most of the
patients seen in this clinic have parasitic infec-
tions.

180.02. Pharmacology of Antiparasitic
Drugs. (1) F, W, Sp. Prerequisite: Interna-
tional Health 100 or equivalent.
R. Goldsmith

Lecture is followed by seminars in phar-
macy and use of antiparasitic drugs.

180.03. Introductory Statistical Treat-
ment of Clinical and Laboratory Problems.
(2) Lecture 2 hours, Lab optional 3-6 hours.
Zippin

Basic concepts and techniques for the
planning of clinical and laboratory studies
in scientific experiments. Introduction to sta-
tistical techniques to summarize qualitative
and quantitative data and to draw inferences.
Taking into account the design and execution of
the investigation.

182. Concepts in Human Nutrition. (2)
Sp.
Anthony

An introduction to the metabolic basis of
nutritional requirements, dietary recom-
endations, evaluation of food intakes and
dietary habits, and assessment of nutritional
status. Emphasis on nutritional needs during
pregnancy and lactation, growth and matura-
tion, and disease, in both developing coun-
tries and the United States.

186. Tropical Medicine Lectures. (1)
Sp.

Presentation of case histories and films
emphasizing diagnosis and treatment of tro-
pical diseases. Emphasis on malaria, schis-
osome, malnutrition, cholera, typhoid, schistosomi-
asis, and smallpox; opportunities for clinical
clerkships abroad.

188. Supervised Study in International
Health, (1-5) F, W, Sp. Prerequisite: Consent of
instructor.
Dunn, Heyneman, R. Goldsmith

Library research and directed reading under
supervision of a member of the faculty with
approval of the chairman of the depart-
ment.

190. Laboratory Project in International
Health, (1-6) F, W, Sp. Prerequisite: Consent of
instructor.
Heyneman, R. Goldsmith, Petrakis, Schachter

A laboratory research project undertaken under
supervision of a member of the faculty with
the approval of the chairman of the depart-
ment.

Laboratory Medicine

140.01. Diagnostic Use of Radioiso-
topes. (1½ per week) Su, F, W, Sp. Prerequi-
tite: One year of medical school.
Pollycove

Basic laboratory course in radioisotopes.
Clinical participation in the diagnosis of pa-
tients receiving radioisotopes in the outpa-
tient clinics and in the wards.

140.02. Hematology Clerkships.
(1½ per week) Su, F, W, Sp. Prerequisite: Second year
pathophysiology or equivalent; recommenda-
tion from one faculty member.
Pollycove

Clerkships primarily in clinical evaluation of
hematologic patients. When interesting pro-
blems arise, student will be available for
specific laboratory projects relevant to those
problems. Clerks will act as primary consul-
tants under close supervision of hematology
residents and fellows.

140.03. Clinical Pathology. (1½ per
week) Su, F, W, Sp. Prerequisite: One year of
medical school and consent of instructor.
Thrasher, Pollycove

Laboratory sessions and seminars on as-
pacts of clinical chemistry, hematology, mi-
crobioology, blood banking, and radioiso-
topes are held in the clinical laboratories at
UC and SGFM.

150. Laboratory Medicine. (6) Su, F, W.
Sp. Prerequisite: Medicine 110. Townsend

An intensive four week seminar series
using patient data, designed to increase the
student’s ability to choose and interpret
laboratory tests in a variety of clinical situa-
tions. The scope of tests discussed includes
hematology, blood banking, clinical chemis-
try, and microbiology.

160.01. Diagnostic Use of Radioiso-
topes. (2) Su, F, W, Sp. Prerequisite: One year of
medical school. Lecture 1 hour. Clinic 4 hours.
Pollycove

Basic laboratory course in radioisotopes.
Clinical participation in the diagnosis of pa-
tients receiving radioisotopes in the outpa-
tient clinics and in the wards.

170.01. Clinical Pathology. (2) Su, F, W,
Sp.
UB, UC, USC, SFGH Pollycove

Laboratory sessions and seminars on as-
pacts of clinical chemistry, hematology, mi-
crobioology, blood banking, and radioiso-
topes are held in the clinical laboratories at
UC and SGFM.

170.02A. Immunohematology, (1-1)
W, Sp. Prerequisite: Laboratory Medicine
170.02A is prerequisite to 170.02B. Two quar-
ter hour course.
Pollycove

Blood banking and related topics of
immunohematology will be covered by formal
lectures, demonstrations, case discussions,
and seminars on blood groups, compatibility
test, tissue typing, hemolytic anemia, isocom-
munization in pregancy, and their impor-
tant role in transfusion therapy.

400. Clinical Pathology Staff Seminars.
UB, UC, Personnel

Discussion of selected clinical cases which present problems in correlation of clinical and laboratory
data. Reviewing case studies will be adapted to
suit special reference to technical as-
psects of laboratory procedures and interpre-
tation of results.

405. Special Clinical Pathology Sem-
UB, UC, Personnel

Review of current laboratory procedures
and problems in hematology, medical
microbiology, immunology, blood banking,
chemistry, and application of isotopes. Library
research and occasional formal reports are
required.
SFHG Polyclinic, UC Brecher, VA Parekh 
Research programs are arranged with appropriate faculty members on an individual basis.

SFHG Polyclinic, UC Brecher, VA Parekh 
Seminars in clinical pathology including clinical chemistry, hematology, immunohematology, microbiology, parasitology, and serology are conducted by faculty whose major interest is that under discussion. Residents do collateral reading for discussion of problems of interpretation, diagnosis, techniques, and research approaches.

SFHG Polyclinic, UC Brecher, VA Parekh 
Principles of laboratory tests in hematology, clinical chemistry, microbiology, and blood banking as well as interpretation of results and correlation of clinical and laboratory data. Residents participate in performance of tests and certain administrative duties related to operation of clinical laboratories.

SFHG Polyclinic, UC Brecher, VA Parekh 
Theory and methodology of clinical chemistry, hematology, clinical microbiology, and clinical mycology. Emphasis on interpretation and correlation of data and study of literature.

Medical Diagnosis

445. Medical Diagnosis (2) Su, F. W., Sp. 
Clinic 6 hours. 
Crede and Staff 
The dental intern participates in medical history-taking, physical examinations, ordering laboratory tests, and developing differential diagnoses on medical clinic patients under the supervision of the medical staff. Comprehensive care of patients is emphasized.

Medical Illustration

201. Principles of Anatomic Illustration I, (4) F. W. Prerequisite: Medical Illustration 201 and Anatomy 100A. Concurrent enrollment in Anatomy 100B, Lecture 1 hour, Lab 9 hours. 
Wakelin, Schaubert, Johnstone, deLorimer 
Anatomic illustration: continuous tone techniques and photography from sections, dissections, and clinical observation in laboratory; theory of information selection and simplification; perspective; color theory; representation of structure in living tissue; dental morphology and illustration.

202. Principles of Anatomic Illustration II, (4) F. W. Prerequisite: Medical Illustration 201 and Anatomy 100A. Concurrent enrollment in Anatomy 100B, Lecture 1 hour, Lab 9 hours. 
Wakelin, Stoelting, Johnstone, Richardson 
Practical aspects of anatomic illustration; pen and ink and other line techniques; illustration and photography from cadaver dissection and clinical observation; darkroom and photomechanical techniques; photographing and printing for medical manuscript and textbook illustrations; dental illustration of morphology and occlusion.

203. Graphics for Print Media, (3) F. Sp. Prerequisite: Medical Illustration 201 and 202. Lecture 1 hour, Lab 6 hours. 
Stoelting, Muller, Stull 
Principles underlying visual representation of statistical data; construction of charts, graphs, diagrams from research data; data storage systems; special graphic techniques utilizing photographic, diazo, 3-M and other processes; air brush for scientific illustration.

204. Sketching and Illustration of Pathology and Animal Surgery. (3) F. W. Prerequisite: Medical Illustration 201, 202, 203, Anatomy 100A, 100B, 115 and 119. Concurrent enrollment in Pathology 198. 
Wakelin, Stoelting, Quan, Forberg, Feduska 
Sketching, illustration and photography of pathologic tissue; regular Autopsy Observer. Anatomical oddities, Anglo-Saxon. Sketching and illustration of procedures in animal surgery; study of normal colors and textures of tissue; illustration of instrument and tools and their interaction with various tissues.

205. Introduction to Surgical Illustration, (5) W. L. W. Prerequisite: Medical Illustration 201, 202, 203 and 204. Lecture 2 hours, Lab 9 hours. 
Wakelin, Stoelting, Schaubert, Johnstone, deLorimer 
Organization in the operating room; procedures and roles; regular observation of surgical procedures. Emphasis upon developing skills of sketching from direct observation; photography; consultation with physicians and planning and development of illustrations.

206. Advanced Surgical Illustration. (5) F. Sp. Prerequisite: Medical Illustration 201, 202, 203, 204 and 205. Lecture 2 hours, Lab 9 hours. 
Wakelin, Stoelting, Schaubert, Johnstone, deLorimer 
Study of surgical laboratory procedures, continuing regular observation and sketching in the operating room and consultation with surgical staff. Production of illustrations will be of increasing complexity and difficulty, in- cluding cardiovascular, neurologic, orthopaedic, urologic, and surgical topics.

207. Specialty Surgical Illustration: Otologic and Ophthalmologic. (3) F. W. Prerequisite: Medical Illustration 201, 202, 203, 204 and 205. Lecture 1 hour, Lab 6 hours. 
Wakelin, Stoelting, Johnstone, Koellinger, Kimura 
Illustration and photography of specialty sections of the ear and eye through otoscope, ophthalmoscope and slit lamp.

220. Seminar in Instructional Design, (0) F. W. Prerequisite: Medical Illustration 201 and 202. Lecture 1 hour. 
Pascue, Merril, Wakelin and Staff 
Readings and seminars in aspects of instructional design, including communication theory, psychology of learning, behavior modification, media production and instruction, systems design and methods for evaluation. Participation by guest lecturers.

411. Introduction to Instructional Design and Communications Theory, (1) F. W. 
Pascue, Merril, Wakelin, Pa
cOverview of theory basic to the development of instructional media.

417. Introduction to Media. (2) F. W. Prerequisite: Concurrent enrollment in Medical Illustration 411. Lecture 1 hour, Lab 3 hours. 
Wakelin, Stokes, Banks, Wakerlin 
Theories of media: perception, light, composition, color, contrast, emphasis, impact, similarity and differences among media, instructional effectiveness for different tasks; study of examples; camera use and darkroom work; still photography, laboratory photography as illustration tool.

418. Media Design, (4) W. Prerequisite: Medical Illustration 411 and 417. Lecture 2 hours, Lab 8 hours. 
Wakelin, Pascue, Stoelting, Cole 
Script design and storyboarding for slide tapes. Bases for media selection in instructional design and sound recording; color photography on location and for copying artwork, graphic techniques for media: titling, cel art, background, cut-outs and airbrush. Still photography lab work included.

419. Media — Slide-Tape Production. (5) W. 
Pascue, Merril, Wakelin, Pa
cProduction of instructional slide-tape in including design, sound, timing, graphics, photography, sound recording, assembly, interlock, completion on schedule. Students act as producers, learning first hand com- plexities of coordinating and producing media for instruction.

421. Introduction to Motion in Film and TV Design. (4) F. W. Prerequisite: Medical Illustration 411, 417, 418 and 419. Lecture 2 hours, Lab 6 hours. 
Beindorf, Banks, Kaye, Wakerlin 
Theories of motion, dynamics of balance; subjective and camera motion; body costs; sound; special effects; graphic production of fifteen minute video tape including film insert, and sharing of production costs.

423. Graphics for Print Media. (4) F. W. Prerequisite: Medical Illustration 203. Lecture 2 hours, Lab 6 hours. 
Giovanniole, Wakelin, Stoelting 
Calligraphy; brochure design; photography in graphic design; layout; copy fitting; camera-ready artwork; filmstock printing; photography; pressure-sensitive printing; paper stocks, inks, etc. Production of a brochure for use on campus.

425. Three Dimensional Illustration and Maxillofacial Prosthetic Reconstructions, (1-4) F. W. or Sp. 
Crede and Staff 
Consent of instructor and approval of director.

Wakelin, Koelling, Humelbaugh 
Basic three dimensional techniques in making and casting techniques. Preparation of cosmetic maxillofacial prosthetic restoration, design, fabrication and clinical course. Students assist in preparation of prostheses for clinic patients.

426. Introduction to Film Animation I. (5) W. Prerequisite: Medical Illustration 411, 417, 418, 419 and 421. Lecture 2 hours, Lab 9 hours. 
Beindorf, Wakelin, Stoelting, Humelbaugh 
Course introduces medical technician in motion picture animation. Illustration for animation in various technical disciplines. Introduction to film animation, production and development of film loops, utilizing various animation techniques. Films, trips and guest lectures will be arranged.

428. Display Design and Production. (1-4) F. W. or Sp. Prerequisite: Consent of instructor and approval of director.

Wakelin, Giovanniole, Glouce and Staff 
Analysis of advantages and disadvantages of displays as teaching instruments. Aspects of design and construction: planning, design, materials, scale, color, movement, construction, logistics, cost effectiveness and handling. Field trips to display companies. Production of a display for CORT client.
Final presentation of work in curriculum and portfolio.

Biological illustration. (2) F, W, or Sp. Prerequisite: Consent of instructor. Lab 6 hours.

Christman, Stoeling
Taxonomic illustration of botanic, anatomical, parasitological, microbiological, and other life science subjects for publication or projection. Various techniques are utilized, but mainly pen and ink.

Forensic illustration. (1-3) F, W, or Sp. Prerequisite: Consent of instructors and approval of director. Wright, Wakerlin, Stoeling
Blending illustration and photography of various wounds to provide demonstrative materials for courtroom use. Considerations of adequacy and appropriateness of visual materials as evidence in criminal investigations. Guest lecturers and special presentations are included.

Museum Methods. (3) F, W, or Sp. Prerequisite: Consent of instructor. Lecture 1 hour, Lab 6 hours. Wright, Humblebaugh, Wakerlin, Stoeling
Techniques for preparation and presentation of scientific information such as specimens and models in museum settings. Course includes practical lab experience in mounting and preservation of specimens, labelling.

Medical Information Science

190. Programming Concepts and Information Structures. (4) F. Prerequisite: Knowledge of one higher level programming language. Lecture 3 hours, Lab 3 hours.

Wasserman
Course involves program structuring and higher level programming style; information structures used for data representation; non-numerical handling techniques including list and string processing; techniques for data abstraction in existing programming languages and computer systems.

Clinical Laboratory Computer Science. (3) W. Prerequisite: Bachelor's degree in physical or biological science.

Henley
A review of the fundamentals of computer science as they relate to clinical laboratory information systems and a detailed examination of current clinical laboratory systems. Practical experience will be given in programming sample clinical laboratory problems in high level languages.

Laboratory Project in Medical Information Science. (1-5) F, W, Sp.
Staff
A laboratory research project under direction of a member of the faculty with the approval of the chairman of the department.

The Medical Environment. (2) W.

Blows
A survey of the professions, institutions, organizations and populations involved in the health care process. Included are the aims, expectations, and patient experiences involved in the medical environment. Course provides a background for students without previous medical experience in the health care fields. Laboratory experience and observation of medical technology, research techniques in hospitals and other health care facilities are studied within a systems framework.

Design of Medical Information Systems. (3) F

Stimson
Introduction to use of operations research and systems analysis as aids to design, management, or evaluation of medical computer systems. Application of research techniques to design and operation of medical computer systems.

Medical Information Science. (2) F. Prerequisite: Consent of instructor. Lecture 1 hour, Lab 3 hours.

Hendley
The design of previous medical information systems is examined. Successful components of the systems will be studied in depth, with respect to cost, performance, and acceptability. Field trips to existing systems will be made.

Design of Medical Information Systems. (3) W. Prerequisite: Consent of instructor. Lecture 3 hours, Lab 3 hours.

Hendley
The design of medical information systems is examined. The systems will be studied with respect to cost, performance and acceptability. Analysis and proposals for new systems will be done through laboratory sessions in medical settings.

Design of Medical Information Systems. (3) W. Prerequisite: Consent of instructor. Lecture 2 hours, Lab 6 hours.

Hendley
The design of medical information systems is examined. The systems will be studied with respect to cost, performance and acceptability. Laboratory sessions involving analysis and interactive program implementation as a continuation of the studies in Medical Information Science 225B.

Linear Models and Experimental Design. (4) W. Prerequisite: Introductory statistics and one year of calculus.

Heilbron
Techniques for modelling, designing and analyzing data from experiments in clinical and observational studies using the methodology of regressions and the analysis of variance.

Discrete Analysis and Statistical Classification. (2) Sp. Prerequisite: Introductory statistics and one year of calculus.
100. Introductory Clinical Microbiology. (2) F. Lecture 2 hrs. Lab 3 hrs.
Hadley, S. Cohen, Steyn

Hadley, Seman

Hadley, Seman


Drew, Hadley

120A-B. Clinical Serology. (2-4) Su, F, W, Sp. Lecture A: 2 hours, Lab B: 12 hours.
Suy, Seky

120A-B. Antimicrobial Agents. (2-4) Su, F, W, Sp. Lecture A: 2 hours, Lab B: 12 hours.
Hadley, S. Cohen


135. Clinical Laboratory Instrumenta-
Hadley, S. Cohen

140.01 Advanced Clinical Clerkship at UC, UC, and SF. (11/15 per week) Su, F, W, Sp. Prerequisite: All core clerkships (with the exception of Ambulatory & Community Medicine 110 and Anesthesiology 110 or by special permission).
L. H. Smith, Siehsenger, H. Williams, Cartonbe, Woeber

140.02 Clinical Clerkship Off-Campus. (11/15 per week) Su, F, W, Sp. Prerequisite: Medicine 110 and approval of third and fourth year coordinator. Clinical clerkships in off-campus hospitals approved by the department chairman, third and fourth year coordinator and the Dean.

140.03 Acting Intern in the Cancer Research Institute. (11 per week) Su, F, W, Sp. Prerequisite: Medicine 110 and 11A-B-C. Friedman and Staff

On Clinical Cancer Chemotherapy Service, students work up patients, present them to attending staff and participate in daily conferences, write orders and proceed in supervision.

140.04. Senior Internal Medicine Clinical Clerkship at NRMC. (11 per week) Su, F, W, Sp. Prerequisite: Medicine 110. Karney

Clinical clerkships are based on the student’s function as intern in ward medicine under supervision of residents and attending staff. No acts as consultant in selective service under supervision of board certified staff.

140.05. Cardiology at PMC. (11 per week) Su, F, W, Sp. Prerequisite: Medicine 110 or consent of instructor. Selzer

Students participate actively in medical conferences, and informal teaching sessions, with emphasis on reading electrocardiograms.

140.06. Cardiology at UC. (11 per week) Su, F, W, Sp. Prerequisite: Medicine 110. Parimley

Students work up cardiac patients in the clinic and on wards; they attend conferences and seminars; receive instruction in specialized studies and do casework.

140.07 Clinical and Physiological As-
pects of Pulmonary Disease at SFHN. (11 per week) Su, F, W, Sp. Prerequisite: Medicine 110. Hopewell, J. Murray, Costello

Students serve as acting interns in care of patients admitted to chest ward and respiratory care unit at SFHN. They participate fully in teaching activities of the service in-
including daily radiology conferences, teaching rounds, pulmonary function testing, and service conferences.

140.08. Gastroenterology at UC. (1½ hour per week) Su, F, W, Sp. Prerequisite: Medicine 110. Schmid Students become a part of the gastroenterology service and participate in all activities including work-up of patients in clinics and wards. They attend all conferences.

140.09 Cardiology Service at MZ. (1½ hour per week) Su, F, W, Sp. Prerequisite: Medicine 110. Malhoff Students work up patients, follow through patient program phonocardiograms, echocardiograms, stress electrocardiograms, cardiac catheterization, angiographic procedures, and inpatient provided in cardiovascular diagnosis, physiology of heart disease, heart sounds. Attendance at conferences and reading assignments are required.

140.11. Renal-Electrolyte Service at PHS. (1½ hour per week) F, W, Sp. Prerequisite: Medicine 110 and 131A-B-C. Huttler Students work up and manage patients under supervision; they participate in activities of the Dialysis Center including peritoneal and hemodialysis, attend Renal-Clinic, review cases and daily rounds, attend seminars and conferences; and observe research activities of the unit.

140.13. Clinical Clerkship at PHS. (1½ hour per week) Su, F, W, Sp. Prerequisite: Medicine 110 and 131A-B-C. Mason Students are assigned patients for work-up and management under supervision. They make daily rounds and present cases, attend Renal Clinic, Critical Club, JDC, Grand Rounds, and Grand Conference. Scope of responsibility is similar to that of interns.

140.14. Endocrine-Metabolic Medicine at PHS. (1½ hour per week) Su, F, W, Sp. Prerequisite: Medicine 110 or consent of instructor. Donaldson Students work up patients and participate in activities of the Metabolic Service under supervision; attend Metabolic Clinic; present patients there and on endocrine rounds; attend seminars and conferences. Program tailored for participation in research activities if student desires and qualifies.

140.15. Inpatient Medicine at K. (1½ hour per week) Su, F, W, Sp. Prerequisite: Medicine 110. Limited to fourth year students. Jain Students based at K serve as clinical clerks. They examine patients, participate in ward rounds and attend teaching seminars.

140.22. Pathophysiology of Disease. (1½ hour per week) F, Sp. Prerequisite: Medicine 110 or Pediatrics 110 or Surgery 110. Siperstein A course designed to present major basic science concepts which govern the practice of medical specialties. Students devote four weeks to the study of a specialty area such as cardiovascular, hematology, renal, immunology, endocrinology, disease, oncology, neurology, endocrine-metabolic, pulmonary, gastroenterology.

140.23. Gastrointestinal-Metabolic Medicine at UC. (1½ hour per week) Su, F, W, Sp. Prerequisite: Medicine 110. Forsham Students based at Metabolic Research Unit and Moffitt Memorial Hospital as specialists in internal medicine and gastroenterology.

140.24. Clinical Immunology-Rheumatoid Diseases at UC. (1½ hour per week) F, W, Sp. Prerequisite: Medicine 110 and consent of instructor. Engelman, W. M. Epstein Combination of outpatient clinics, inpatient care, and laboratory experiences will be used to teach interpretation of clinical findings and laboratory observations in immunologically mediated rheumatic disorders. Practical experience together with selected readings will develop familiarity with this group of disorders.

140.25. Renal and Electrolyte Service at SF. (1½ hour per week) F, W, Sp. Prerequisite: Medicine 110. Humphreys Students work up and follow all renal and electrolyte patients seen in the service, participate actively in hemodialysis and peritoneal dialysis, attend thrice weekly ward rounds and biweekly seminars in renal and electrolyte diseases.

140.26. Cardiology Clerkship at MZ. (1½ hour per week) F, W, Sp. Prerequisite: Medicine 110. Uhley Primary emphasis is on the treatment of acute cardiac patients in a teaching unit. Includes teaching in the use of monitoring and related equipment, cardiovascular and related aspects of electrocardiography.

140.27. Clinical Clerkship Stressing Cardiopulmonary Problems at C. (1½ hour per week) F, W, Sp. Prerequisite: Medicine 110. Griffith Students attend rounds in the Coronary Care Unit; receive instruction in cardiology, stressing electrocardiography; may work in the pulmonary function laboratory, and attend all regular teaching conferences and seminars.

140.28. Infectious Disease Clerkship at SF. (1½ hour per week) Su, F, W, Sp. Prerequisite: Medicine 110. Courses include active consultation service averaging three new cases per day; daily patient rounds; ward rounds; introduction to clinical microbiology laboratory; two infectious disease clinics per week; and parasitology clinic. Reading and library research.

140.29. Hematology at UC. (1½ hour per week) Su, F, W, Sp. Prerequisite: Medicine 110. Students work up and present patients in the wards and outpatient clinics, participate in conferences and seminars, and learn the laboratory procedures pertinent to their patients.

140.30. Clerkship in Endocrinology-Metabolism at SF. (1½ hour per week) F, W, Sp. Prerequisite: Medicine 110. Biglieri, Scanhewski, H. Williams The Clinical Endocrine Center (CSC) based Endocrine-Metabolic Service provides daily outpatient staff and fellow supervised consultations. Weekly Endocrine-Consultative biweekly consultative rounds with senior staff, and conferences in the unit. Current and recent investigative studies are included.

140.31. Gastrointestinal Clinical Clerkship at L. (1½ hour per week) Su, F, W, Sp. Prerequisite: Medicine 110. Burdick Students function as clinical clerks, working up patients under supervision of interns and residents. They assist in such specialized procedures as sigmoidoscopies for oral endoscopy. They attend radiology and pathology conferences and seminars with resident consultants.

140.32. Coronary Care Unit at SF. (1½ hour per week) Su, F, W, Sp. Prerequisite: Medicine 110 and four weeks clinical cardiology elective. Students work as interns in the Coronary Care Unit and attend all regular teaching conferences and seminars.

140.33. Infectious Diseases at PMC. (1½ hour per week) Su, Sp. Prerequisite: Medicine 110. Valentine Students may elect clinical clerkship in infectious diseases. Activities include working up patients, relating laboratory data to
Techniques and role of echocardiography, stress electrocardiography, Holter monitoring, phonocardiography, systolic time intervals, vectorcardiography, aephotocardiography and other areas will be discussed.

170.08. Introduction to Cancer Medicine. (2) F. W. Sp. L. H. Smith

Course provides a humanistic orientation to cancer that will form a framework for better understanding and integration of the information on cancer presented in other health science courses. Biomedical, clinical, and psychosocial aspects will be explored.


A one-year research project approved by the Dean and the chairman of the department.


L. H. Smith

Library research and directed reading under supervision of a member of the faculty with the approval of the chairman of the department.

199. Laboratory Project in Medicine. (1-5) F. W. Sp. Pre-requisite: Instructor preceptor and approval of third and fourth year coordinator.

L. H. Smith

A laboratory research project under direction of a member of the faculty with the approval of the chairman of the department.

400. Medical Staff Colloquia. (2) F. W. Sp.

UC L. H. Smith, SF Rapaport, VA Siegelson

Interns and residents prepare and present case histories of patients at medical staff conferences including references to the literature, laboratory work, and special studies. Attendees and visiting professors discuss the cases and present new developments in their respective fields.

401. Interdepartmental Clinical Correlation Course. (4) F. W. Sp.

UC L. H. Smith

A series of discussions are conducted in the various subspecialties of internal medicine. Students take an active part in the presentation and discussion of the problems involved, including reference to the literature, clinical demonstrations, and directed student participation.

402. Seminars in Medical Literature. (11 per week) F. W. Sp.

VA Siegelson

Seminars on recent literature in internal medicine, with assigned reading, required reports, and evaluation of presented material by interns, residents, and faculty.

403. Specialty Seminars. (2) F. W. Sp.

UC L. H. Smith

Seminars are conducted in the fields of gastroenterology, hematology, cardiology, electrocardiology, endocrinology, chest diseases and pulmonary pathology, thyroid diseases, psychosomatic medicine, arthritic and rheumatic diseases, infectious diseases and radiology. Library research, occasional reports and patient presentations are required.


SFGH H. Williams and Staff

Seminars are conducted in cardiology, hematology, gastroenterology, infectious diseases, metabolic diseases, and pathology involving discussions, required reading, and reports.


VA Siegelson

Seminars are conducted in cardiology, electrocardiology, hematology, gastroenterology, radiology, fluid and electrolyte balance, endocrinology and pathology. Students attending discussions, required reading, and reports. Elective seminars include a chest disease conference, joint medical and surgical conference, tumor board, dermatology conference, and neuropsychiatry conference.

406. Research Problems in Fundamen

UC L. H. Smith, SFGH H. Williams, VA Siegelson

Research programs are arranged with appropriate faculty members on an individual basis.


SFGH H. Williams, VA Siegelson

Residents take an active part in the presentation and discussion of problems connected with the correlation of clinical manifestations of disease with postmortem studies. Conferences include reference to the literature, clinical demonstrations, and laboratory work.

408. Electrophysiographic Interpretation. (2) F. W. Sp.

Sokolow Seminar (individual instruction) for residents in medicine and trainees in cardiology by cardiac consultants in the interpretation of all electrocardiograms and phonocardiograms at UC.
patients, under the direction of the attending staff, and participate in student teaching.

Microbiology

100A-B. Biologic Agents of Disease. (3-5) S, F. Prerequisite: Biochemistry 100A-B. Lecture 3 hours, Lab 3 hours. F. Lab 3 hours. 

Levinson

Pathogenesis of infection and resistance to microorganisms, particularly bacteria and fungi. Natural history, essentials of diagnosis, treatment and epidemiology of infectious diseases. Laboratory demonstrations and exercises of essential medical skills.

125. Microbiology. (6) S. Lecture 4 hours, Lab and Conference 6 hours. Halde and Staff

Morphology and physiology of microorganisms including bacteria, molds, yeasts, and viruses. Techniques to study them. Fundamentals of infection and resistance, immunology, microbial genetics, disfigurement, chemotherapy, biologic products, and epidemiology. Problems in laboratory diagnosis, treatment and prevention of infectious diseases.

126. Microbiology. (6) W. Lecture 4 hours, Lab and Conference 6 hours. Jawetz, Speck

A comprehensive presentation of microorganisms including bacteria, fungi, and viruses; fundamentals of infection and resistance, immunology, disfigurement and sterilization and antimicrobial agents. Laboratory studies of the interacts of periodontal flora, and applications of microbiology in dentistry.

150.01. Research in Microbiology. (11) S, F, W, Sp. Prerequisite: Microbiology 100A-B and consent of instructor. Staff

Research in microbiology; block elective for fourth year students.

190A. Medical Microbiology for Graduate Students. 3 hours. S, F, W, Sp. Prerequisite: Biochemistry 100A-B or equivalent. Jawetz and Staff

Same as Microbiology 100A. Lectures, conferences in the fundamentals of immunology and virology. Small group seminars on patient-related problems in these fields.

190B. Medical Microbiology for Graduate Students. (4-5) S, F, W, Sp. Prerequisite: Biochemistry 100A-B or equivalent. Lecture and Conference 4 hours. Lab 3 hours (may be obtained with consent of instructor). Jawetz and Staff

Processes of infection and resistance, microbial and fungal infections, epidemiology, treatment and control with emphasis on human disease.

198. Supervised Study in Microbiology. (1-5) S, F, W, Sp. Prerequisite: Consent of instructor. Staff

Library research and directed reading under supervision of a member of the faculty with approval of the chairman of the department.

199. Laboratory Research Project in Microbiology. (1-6) F, W, Sp. Staff

A laboratory research project under direction of a member of the faculty with the approval of the chairman of the department.

203. Molecular and Cellular Immunology. (3) S, F, W. Prerequisite: Biochemistry 100A-B and Microbiology 100A-B or equivalents. Offered in alternate years. Not offered 1976-1977. 

Levinson

Structural and functional aspects of antigens and antibodies, including chemical and genetic basis of immunogenity, structure and biosynthesis of immunoglobulins, antigen-antibody interactions, immunogenetics, properties of immunocompetent cells, cell cooperation, lymphocyte receptors for antigens.

204. Immunobiology. (3) S, W. Prerequisite: Microbiology 100A-B or equivalent instruction in basic immunology. Offered in alternate years. Not offered 1976-1977. Linscott

An advanced course covering antigen-antibody interactions, proteins, lymphocytes, on their biological importance: experimental hypersensitivity, transplantation immunology, immunological unresponsiveness, cytotoxic reactions, and the role of the complement system.

206. Pathogenic Fungi. (2) S, F. Prerequisite: Microbiology 100A-B. Halde

A systematic review of the fungi responsible for human disease, emphasizing pathogenesis, epidemiology, and diagnostic laboratory procedures.

208. Molecular Biology of Animal Viruses. (3) W. Prerequisite: General knowledge of nucleic acid structure and chemistry and multiplication of viruses. Offered in alternate years. Offered 1976-77. Bishop, Levinson, Levintov, Varmus

The nature of viruses: dynamics of virus-cell interaction with emphasis on animal virus systems, control of expression of virus-specific information in lytic and temperature-sensitive mutants, and role of viruses in malignant transformation of cells.

209. Research Problems in Immunobiology. (1-7) S, F, W. Prerequisite: Microbiology 203 or equivalent and consent of instructor. Offered in alternate years. Offered 1976-1977. 

Goodman

Training in the use and application of immunological methods to research problems. Methods include quantitative and hapten inhibition techniques, gel diffusion in agarose, electrophoresis, paper and column chromatography, indirect and direct complement fixation, isotope labeling and radioautography of proteins, and density gradients and analytical ultracentrifugation.


Levinson

A discussion of recent research on the DNA, RNA, proteins, membranes, and control of avian and mammalian cells. In addition, differentiation, contact behavior, communication, virus infection and carcinogenesis in these cells will be covered.

220. Seminar (0) F, W, Sp. Lecture 1 hour. General microbiology: individual research of advanced graduate students, invited speakers and staff members. Reviews of special topics and journal articles by advanced students.

221. Oral Microbiology. (1) F, W. Prerequisite: Consent of instructor. Hurst

A seminar course concerned with the role of microorganisms in oral health and disease, with emphasis on the ecology of the oral flora.

250. Research (1-8) F, W, Sp. Staff

298. Thesis. (0) F, W, Sp. Prerequisite: Advancement to candidacy and permission of the graduate adviser. Staff

For graduate students engaged in writing the thesis for the master's degree.

299. Dissertation. (0) F, W, Sp. Prerequisite: Advancement to candidacy and permission of the graduate adviser. Staff

For graduate students engaged in writing the dissertation for the Ph.D. degree.

Morphology

110A. Morphology of Human Dentition. (1) F. Prerequisite: Concurrent enrollment in Morphology 110B. Course includes the student to tooth morphology and includes discussion of the development and form of the primary and permanent dentition.

110B. Applied Morphology. (1) W. Prerequisite: Morphology 110A and 115A; concurrent enrollment in Morphology 115B.

Meli

The application of individual tooth and arch form to interarch relationships.

115A-B. Morphology of Human Dentition. (0-4, 0-4) F, W. Prerequisite: Concurrent enrollment in Morphology 110A and 110B. Staff

Lab 6 hours. Study of individual tooth form and relationship to adjacent and opposing anatomical structures.

Neurological Surgery

Core Clerkship—Neurology 110. Students serve as clinical clerks in the inpatient and outpatient clinics.

140.01. Clinical Neurological Surgery Clerkship at UC. (1½ per week) S, F, W, Sp. Prerequisite: Neurology 110 and consent of instructor. Staff

The student will become a member of the house staff, attending ward rounds, working up patients, assisting unconfident cases, and taking night call on rotation with a resident.

140.02. Clinical Neurological Surgery Clerkship at SFGH or VA. (1½ per week) S, F, W, Sp. Prerequisite: Neurology 110.

Hoff, Weinstein

Student becomes a member of the house staff, attending ward rounds, working up patients, assisting at operations, and taking night call on rotation with a resident. One student per hospital.

140.03. Clinical Neurological Surgery Clerkship at Reno. (1½ per week) W. Prerequisite: Neurology 110. Fourth year standing.

Olson

Clinical program in neurology and neurosurgery designed to provide clinical background, care of patients, and basic science (neuroscience) associations. Research in patient management and teaching responsibility available.

198. Supervised Study in Neurosurgery. (1-5) F, W, Sp. Prerequisite: Consent of instructor. Staff

Library research and directed reading under supervision of a member of the faculty with the approval of the chairman of the department.

199. Laboratory Project in Neurosurgery. (1-5) S, F, W. Prerequisite: Consent of instructor. Staff

A laboratory research project under di-
Residents are responsible for diagnosis and care of patients in inpatient and outpatient settings. They are supervised by a staff attending physician. Residents also attend conferences and present cases in the department's clinical rounds. Additionally, residents are encouraged to participate in research activities. The program emphasizes training in both general and subspecialty areas of neurology.

UC Bolder, C.B. Wilson
Residents discuss pathological aspects of cases, and their correlation with the literature and special studies. Faculty and visitors discuss developments in related fields. Second year residents organize conferences and participate in gross autopsies on patients from the Neurological Surgery Service.

G. Clark
Recent literature in neurology and neurosurgical service is presented. Discussion by members of the faculty in attendance and by visitors from other departments interested in this field will be welcomed.

UC C. B. Wilson
Residents, under supervision, are responsible for patient care in the wards and outpatient clinic. Residents may attend conferences, laboratory rounds, and conferences and discuss cases. In addition, the resident has an active teaching, administrative, and clinical responsibility.

VA Bolder, C.B. Wilson
Residents are responsible for the care of patients in the neurosurgical inpatient service, including history-taking, physical examination, laboratory tests, and consultation. In addition, the senior resident has certain teaching and administrative responsibilities required by the attending staff.

VA Weinstein
Residents are responsible for diagnosis and care of patients in inpatient and outpatient settings. They are supervised by a staff attending physician. Residents also attend conferences and present cases in the department's clinical rounds. Additionally, residents are encouraged to participate in research activities. The program emphasizes training in both general and subspecialty areas of neurology.

Student: Medicine 131 A-B-C.
Fishman, C. B. Wilson
Students are assigned patients for study under supervision of attending and resident staffs at UC, FGH, and VA hospitals. They work on wards, attending rounds, and conferences and lectures. Emphasis is on diagnosis and management of common neurological problems.

140.01 Advanced Clinical Neurology at UC, FGH, VA. (1½ per week) Su, F, W, Sp.
Prerequisite: Neurology 110.
Fishman
Students study neurology and related clinical aspects of the inpatient and outpatient clinical care. Attending at departmental clinical rounds, conferences and seminars is required. Approval of the chair of the department also is required.

140.02. Extramural Clinical Clerkship. (1½ per week) Su, F, W, Sp.
Prerequisite: Neurology 110.
Fishman
Clinical clerkship in approved hospitals is selected. Approval by the Dean and the chairman of the department is required.

Prerequisites: Pediatrics 110, Medicine 110, and Neurology 110.
Berg
Participation in child neurology studies and conferences is included in the attending staff. This rotation includes a participating in the child neurology clinic.

Prerequisite: Neurology 103.
Fishman
Opportunities for research in one of the departments varies by arrangement with the chairman of the department.

Prerequisite: Anatomy 103 and Pathology 102.
Baringer
Tissue pathology of diseases of the nervous system will be explored in greater depth in the lab and by gross and microscopic techniques.

Prerequisite: Consent of instructor.
Fishman and Staff
Library research and directed reading under supervision of a member of the faculty with the approval of the chairman of the department.

Prerequisite: Consent of instructor.
Fishman and Staff
A laboratory research project under direction of a member of the faculty with the approval of the chairman of the department.

Seminars covering selected topics in the basic science relevant to neurology including neuroanatomy, neurochemistry, neuropathology, and neurology.

UC Fishman
Conference includes resident presentation of patient case histories including reference to the literature, laboratory work, and special studies. Faculty members and visiting professors from other universities discuss new developments in their respective fields.

UC Malamud
Course involves the presentation and discussion of gross and microscopic pathological findings in selected cases of neurologic interest and histopathologic study, and discussion of surgical and postmortem specimens from neurological and neurosurgical patients.

Second and third year residents.
UC Malamud
Course involves pathologic and clinical-pathological research into various aspects of neuropathology. Specific subjects of research are chosen in conjunction with members of the staff.

UC Fishman
Clinical or basic research in various aspects of electroencephalography undertaken under supervision. Specific subjects of research are chosen in conjunction with members of the staff.

Newton, Norman, Winestock, Mani
Neurological techniques and interpretation are reviewed in detail with particular emphasis on X-rays of the skull and spine, pneumoencephalography, myography, and arteriography.

UC Fishman
Clinical and basic research in biochemical and metabolic aspects of neurological disorders. After consultation, assignments to one of the several laboratory departments will be possible.

VA Baringer
Specific projects in experimental pathophysiology of the nervous system will be undertaken by direct arrangement. Techniques include microphysiology, imaging, histologic autoradiography, and electron microscopy.

Simpson
Residents learn interpretation of electroencephalograms under the supervision of experienced electroencephalographers. They interpret electroencephalograms on patients they have seen clinically and individually instruct patients who are referred. Instruction is accredited by the Board of Qualification of the American Electroencephalographic Society.

Fishman
Students learn the application of electroencephalography in the diagnosis of patients seen in the wards and the outpatient clinic with individual instruction as required.

LPMI Malamud
Residents spend three months or more in the Neurosurgical Pathology laboratory at LPMI performing supervised autopsies and pathological studies of brains from neurological, neurosurgical, and psychiatric patients.
114A. Introduction to Family Health Care Nursing (3). F, W. Prerequisite: Nursing 110A or concurrent enrollment. Lecture 2 hours, Lab 3 hours.

This course is designed primarily for the development of the nurse in an independent nursing practice or clinical setting. Topics will include the family unit, the family life cycle, and the family as a health care system. The student will learn to identify the family's health care needs, including the development of health care plans and the implementation of these plans.

115A. Health Assessment in Nursing. (4) F, W, Sp. Prerequisite: Nursing 111A or concurrent enrollment. Lecture 2 hours, Lab 15 hours.

This course is designed to provide the student with the knowledge and skills necessary for performing comprehensive health assessments. The course will cover the physical, psychosocial, and environmental aspects of assessment. The student will learn to perform assessments on various age groups, including infants, children, adults, and elderly persons.

115B. Health Assessment in Nursing. (7) F, W, Sp. Prerequisite: Nursing 110 and 111A. Lecture 2 hours, Lab 15 hours.

This course is designed to provide the student with the knowledge and skills necessary for performing comprehensive health assessments. The course will cover the physical, psychosocial, and environmental aspects of assessment. The student will learn to perform assessments on various age groups, including infants, children, adults, and elderly persons.

116. The Communication Process. (3) F, W. Prerequisite: Nursing 114A. Lecture 1 hour, Seminar 1 hour.

This course is designed to provide the student with the knowledge and skills necessary for understanding and implementing the principles of effective communication. The course will cover the principles of effective communication, including listening, speaking, and nonverbal communication.


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121. Physiological Basis of Nursing Practice. (3) F, W, Sp. Prerequisite: Nursing 110, 111A and 111B. This course examines structural and functional alterations and related adaptive mechanisms in disease of selected major organ systems, and discusses disease processes in relation to nursing assessment and action.

123A. Social Systems Theory and Application to Nursing Practice. (2) F, W, Sp. Prerequisite: Concurrent enrollment in Nursing 130A.

This course presents a theoretical framework from which patient care and health delivery systems can be analyzed, evaluated, and influenced by the professional nurse.

123B. Seminar in Advanced Social Systems Theory and Application to Nursing Practice. (2) F, W, Sp. Prerequisite: Concurrent enrollment in Nursing 130A.

This course presents a theoretical framework from which patient care and health delivery systems can be analyzed, evaluated, and influenced by the professional nurse.

125. Issues in Nursing and Health Care. (3) W. Prerequisite: Second year standing.

This course surveys the development of nursing and health care from a historical perspective. The course covers the evolution of the nursing profession, the development of the health care system, and the impact of social and economic forces on health care delivery.

130A. Nursing in Selected Areas of Clinical Practice. (5) F, W, Sp. Prerequisite: Nursing 110, 111A and 113A, 113B and 114A-B. Lecture 2 hours, Lab 18 hours.

This course provides the student with an opportunity to apply the knowledge and skills obtained in previous courses to specific areas of clinical practice. The course covers topics such as geriatric nursing, pediatrics, women's health, and mental health.

130B. Nursing in Selected Areas of Clinical Practice. (5) F, W, Sp. Prerequisite: Nursing 123A and 123B, Lecture 2 hours, Lab 18 hours.

This course provides the student with an opportunity to apply the knowledge and skills obtained in previous courses to specific areas of clinical practice. The course covers topics such as geriatric nursing, pediatrics, women's health, and mental health.

154A. Nursing in School Health Programs. (4) F. Prerequisite: Consent of instructor. Lecture 2 hours, Lab 2 hours.

This course is designed to provide the student with an understanding of the role of the school nurse in providing health care to students. The course covers topics such as health education, health promotion, and disease prevention.
161. Health Maintenance in Infancy and Childhood. (4) | W. Pre requisite: Consent of instructor. Dunbar and Staff

Emphasis is on broad issues of child health supervision and the pediatric nurse practitioner's primary care role in management, with parents, of common developmental stresses in the child. Problems in interpersonal process are explored. Laboratory required.

171. Physiological Concepts in Health. (3) | W. Pre requisite: Nursing 170. Lecture 2 hours, Lab 3 hours. Carrieri

Current physiological concepts are presented and implemented by the RN student within the problem-solving process. The course is designed to allow the RN student to apply knowledge of theory and conceptual frameworks in clinical practice.

172. Physiological Concepts in Illness. (4) | W. Pre requisite: Nursing 170 and 171. Lecture 3 hours, Lab 3 hours. Carrieri

Current physiological concepts in illness are discussed and related to common field case studies presented by the RN student. Within the problem-solving process, laboratory and clinical concepts are tested and applied in the RN's clinical work situation.

176. Health Assessment of the Adult. (4) | W. Pre requisite: Consent of instructor. Thurston

Course presents the essential elements of the health history and physical examination and includes a laboratory for demonstration and practice of skills.

177. Theory and Process of Human Interaction. (3) | W. Pre requisite: Consent of instructor. Lecture 2 hours, Lab 3 hours. Rosemar and Staff

Relevant principles of psychiatric theory, including communication and interpersonal, are related to interactional patterns of adult health nurse practitioners as they relate to individuals in their health maintenance role. Problems in interpersonal process are explored. Laboratory required.

178. Clinical Management in Primary Care. (5) | W. Pre requisite: Nursing 176. Rosemar

Introduces basic concepts and general approaches in clinical management of health conditions commonly encountered in primary care of adults. Interdependent responsibilities of nurses and physicians are examined.

181. Law and the Practice of Nursing. (2) | W. Pre requisite: Nursing 170, Tennohenou, Takano and Staff

An overview of fundamental and current critical issues in law as they pertain to the theory and practice of nursing. Emphasis is placed on legal concerns encountered in the everyday practice of nursing in hospital and community settings.

182-B. Health Education in Practice. (3-3) | W. Pre requisite: Consent of instructor. Lecture 2 hours, Lab 3 hours. Terry

Processes and means of incorporating health education into professional practice. Identification of audience, delineation of specific pertinent health concern, and exploration of modes of transmitting health information. Evaluation methods are explored.

184A. Contemporary Issues and Trends in Health Care Services. (2) | W. Pre requisite: Consent of instructor. Resnik

For nurses in primary care training. Examines current issues, controversies, and trends in health care that are included or are organization, financing, and significant legislative threats as they affect emerging patterns in primary care delivery.

184B. Contemporary Issues and Trends in Health Care Services. (2) | F. Pre requisite: Consent of instructor. Nursing 170 and 171. Resnik

For nurses in adult primary care training. Examines those issues and trends which have direct implications for nurses practicing in adult health care. Included are questions of legislative, legal, ethical, and professional concerns, organized nursing and medical positions, certification, and changes in health institutions.

186. Literature and Science: Self, Word and World. (3) | W. Pre requisite: Consent of instructor. E. Clarke, Fixel

An interdisciplinary seminar focused upon the relationship between literature and science and the ways in which modern science and science has modified and expanded upon the traditional raw materials of literature.

197. Group Independent Study. (1-3) | F. Pre requisite: Consent of instructor. Staff

Groups of two or more collaborate in clinical investigation and studies of special problems of interest to the group, under the direction of faculty. Students may select study topics related to their area of interest.

198. Supervised Study in Nursing. (1-5) | F. W. Sp.

Staff

Library research and directed reading under supervision of a member of the faculty with the approval of the chairman of the department.

199. Laboratory Project in Nursing. (1-5) | F. W. Sp.

Staff

A laboratory research project under direction of a member of the faculty with the approval of the chairman of the department.

200. Problems of Administration in Nursing. (2) | F. Pre requisite: Consent of instructor. Archer

Theories of administration applied to the administration of nursing services or schools of nursing.

201. Curriculum Development in Nursing. (2) | W. Sp. Dunnup, Meisel

Principles of curriculum development. Utilization of these principles as a frame of reference for planning educational programs in schools of nursing and nursing services.


Dunlap, Meisel

Comparative study and critical analysis of major conceptual models in nursing. Emphasis is placed on identifying trends, both positive and negative, for the future of nursing, particularly in the developmental and adaptation process. Course may be repeated for credit.

204A-B. Comparative Nursing Administration. (2-3, 2-3) | W. Sp. Pre requisite: Consent of instructor. Archer, Schatzman, Hill

Comparative analysis of nursing administration of the United States and other selected countries, using perspectives as safety, efficiency, educational, historical, organizational, philosophical, and sociological contexts applicable to each country. Particularly recommended for international students.

205. Processes of Supervision. (3) | F. Pre requisite: Consent of instructor. Lecture 2 hours, Lab 3 hours. Archer

A study of the supervisory process, role of the supervisor, development of staff, and the principles and practice of supervision in nursing. Observation and laboratory experience in supervision is required and guided by the faculty.

206. Microteaching. (4) | F. W. Sp. Davis

Analysis of the microteaching process.
210A. Family Dynamics, Concepts and Assessment. (3) 1 W. P. Prerequisite: Consent of instructor. Lecture 2 hours, Lab 3 hours.

210B. Family Dynamics, Pathology and Therapy. (3) 1 W. P. Prerequisite: Nursing 210A or equivalent and consent of instructor. Lecture 2 hours, Lab 3 hours.

210C. Critique of Studies in Patient-Family Teaching with the intent to develop research consumerism. Emphasis on attitudes, insights, and abilities crucial to the appreciation, appraisal, and utilization of research in the health sciences. 1 W. P. Prerequisite: Consent of instructor. Lecture 2 hours, Lab 3 hours.

210D. Critique of Studies in Maternal-Child Nursing. (3) 1 W. P. Prerequisite: Consent of instructor. Lecture 2 hours, Lab 3 hours.

210E. Critique of Research in Loss and Grief. (3) 1 W. P. Prerequisite: Consent of instructor. Lecture 2 hours, Lab 3 hours.

210F. Physiological Concepts in Nursing. (2-4) 1 F. P. Prerequisite: Consent of instructor. Lecture 2 hours, Lab 3 hours.

211A. Research Techniques: Data Analysis. (3-4) 1 W. P. Prerequisite: Nursing 211A and 211B.

211B. Critical Analysis of Clinical Interventions with Young Retarded Children. (3) 1 W. P. Prerequisite: Consent of instructor. Lecture 2 hours, Lab 3 hours.

211C. Critical Analysis of Clinical Research Studies in Nonverbal Behavior. (3) 1 W. P. Prerequisite: Consent of instructor. Lecture 2 hours, Lab 3 hours.

211D. Critique of Studies in Patient-Family Teaching. (3) 1 W. P. Prerequisite: Consent of instructor. Lecture 2 hours, Lab 3 hours.

211E. Critical Study of Emphasis on attitudes, insights, and abilities crucial to the appreciation, appraisal, appraisal, and utilization of research in the health sciences. 1 W. P. Prerequisite: Consent of instructor. Lecture 2 hours, Lab 3 hours.

211F. Physiological Concepts in Nursing. (2-4) 1 F. P. Prerequisite: Consent of instructor. Lecture 2 hours, Lab 3 hours.
test their applicability to community and family health and theoretical patient problems. Practicum optional.

219B. Nursing Care of the Acutely Ill Child. (2) | Sp. Prerequisite: consent of instructor. Ward Focus is on exploration of immediate physiologic and pathophysiologic processes and their implications for planning nursing management of the acutely ill child. Students employ the problem-oriented framework to assess and manage theoretical patient problems. Practicum optional.

221A. Survey of Modern Psychiatric Thought. (3) | F, W. Prerequisite: Consent of instructor. Underwood Theoretical models from selected schools of psychiatric thought are presented and applied to clinical material. Intrapsychic, interpersonal, and social frameworks are reviewed. Research related to selected theoretical models is explored.

222A. Survey of Modern Psychiatric Thought. (3) | W. Prerequisite: Consent of instructor. Underwood Theoretical models from selected schools of psychiatric thought are presented and applied to clinical material. Intrapsychic, interpersonal, and social frameworks are reviewed. Research related to selected theoretical models is explored.

223. Advanced Seminar in Nursing Research. (3) | F, W, Sp. Prerequisite: Nursing 211A and 211B or equivalent and consent of instructor. Archer A seminar intended for doctoral students to discuss methods and problems in current nursing research. Course may be repeated for credit.

224. Current Trends in Group Psychotherapy. (3) | F. Prerequisite: Nursing 224 or consent of instructor. Dye Seminar focusing in depth on the theoretical bases and implementation of role playing, psychodrama, and Gestalt psychotherapy in the group setting by the psychiatric nurse. Designed for nurses desiring advanced training in group psychotherapy.

225. Psychosomatic Process in Nursing. (3) | F, W. Prerequisite: Consent of instructor. J. Moore Lecture/seminar on the psychosomatic process in nursing. Material drawn from recent research in social science, psychiatry, and psychiatric nursing.

226. Nursing in Long-Term Illness. (3) | F, W. Prerequisite: Consent of instructor. Oda Lecture/seminar focusing on the critical analysis of specialized nursing role developments. Role research approach and methodology are emphasized. Includes traditional, existing, expanded, and emerging roles relating to specialization. Optional laboratory experience in theory testing and systematic observation is required for research credit.

227. Caring for the Mentally Ill. (4) | W. Prerequisite: Consent of instructor. Dye Lecture/seminar on the psychosomatic process in nursing. Material drawn from recent research in social science, psychiatry, and psychiatric nursing.

228. Communications — Theoretical and Philosophical. (2-4) | F, W, Sp. Prerequisite: Consent of instructor. A. Davis The concept of communication has become one of the overlapping areas in a number of major research studies. This course explores the theoretical underpinnings of research studies, polemic essays, and philosophical writings which have made the concepts and problems of human communication central to their investigation.

229. Crisis Intervention. (2-4) | F, Sp. Seminar 2 hours, Lab 0-6 hours. Mitchell Seminar to discuss innovative uses of crisis intervention in selected nursing areas.

Focus is on underlying theory drawn from Lindeman, Erickson, Harris, Lazarus, and Caplan. Special emphasis is on application in the community.

231A. Nursing Administration. (4) | W. Prerequisite: Consent of instructor. Bailey An advanced course designed to apply major concepts from organizational theory and management to nursing administrative practice. Emphasis on systems approach and relevant analytical techniques that will enable students to conceptualize and analyze problems in health care settings.

231B. Nursing Administration. (4) | Sp. Prerequisite: Nursing 231A and consent of instructor. Bailey An advanced course designed to apply major concepts in organizational theory and management to nursing administration practice. Emphasis on systems approach and relevant analytical techniques that will enable students to conceptualize and analyze problems in health care settings.

232A. Dimensions of Leadership. (2-4) | F. Consent of instructor. Lecture 2 hours, Lab 0-6 hours. Bailey Overview of concepts, theories, principles, and research studies related to leadership characteristics of the leader, follower, and health-care environmental situations. Focuses on systematic analysis of decisions related to planned change in health care services. Laboratory includes computer simulation.

232B. Dynamics of Leadership. (2-4) | W. Prerequisite: Nursing 232A or consent of instructor. Lecture 2 hours, Lab 0-6 hours. Bailey Analysis of interactive variables and functional relationships of leadership characteristics of the leader, follower, and health-care environmental situations. Focuses on the development of a climate of understanding relative to leadership behaviors, styles, and strategies. Laboratory includes computer simulated problems.

232C. Problems in Leadership. (2-4) | F. Prerequisite: Nursing 232A and 232B or consent of instructor. Lecture 2 hours, Lab 0-6 hours. Bailey Seminar focuses on the analysis of selected problems and case studies and on creative management of human resources in health services. Application and testing of ideas, principles, models, and theories related to leadership, decision making, and planned change.
233. Coping Styles of Children. (3) 1 Sp. Prerequisite: Consent of instructor. Lecture 2 hours, Lab 3 hours. Dunbar
Examination and assessment of individual coping styles in young children. Theoretical framework based upon Murphy, Lacass, Menninger, and others. Laboratory data is used to explore coping behaviors among children.

234. The Threat of Death in Clinical Practice. (3) 1 F, S. Staff
Seminar providing opportunity for discussion about multiple issues which come into play when adult patients face death. Discussion focuses on meaning of dying from the perspective of persons undergoing the experience and/or problems of health professionals when patients are dying.

235. Process of Aging: Implications for Nursing Care. (2-4) 1 F, W, Lecture 2 hours, Lab 0-6 hours. Takano
Study of the physiological, psychological, and sociological aspects of aging. Focus is on selected theories and research relevant to nursing care of the aged. Laboratory utilizes a variety of settings serving the aged.

236. Expectant Parent Group Education. (2) 1 F, W, S. Prerequisite: Consent of instructor. Lecture 2 hours, Lab 0-6 hours. F. Abbott
Theoretical sessions related to methodology and techniques of conducting expectant parent discussion groups. Exploration of content relevant to concerns of expectant parents, encompassing childbearing and early child-rearing experiences. Concurrent practicum required.

238A. Development of the Infant and Preschool Child. (3) 1 F, W, S. Prerequisite: Consent of instructor. Lecture 2 hours, Lab to be arranged. Enrollment limited. Waechter
Exploration of the major theories and research findings relating to the physical, intellectual, and emotional development of the child from birth to school age.

238B. Development in Middle Childhood. (3) 1 W, S. Prerequisite: Consent of instructor. Lecture 2 hours, Lab 3 hours. Enrollment limited. Waechter
Exploration of the relevant theories, literature, and research findings dealing with normal cognitive, emotional, and social development during the elementary school years.

238C. Adolescent Development. (3) 1 S. Prerequisite: Consent of instructor. Lecture 2 hours, Lab 3 hours. Enrollment limited. Waechter
Exploration of relevant theory, literature and research findings dealing with normal development during the adolescent period.

239A. Care of Patients with Pulmonary Problems. (3) 1 F, S. Prerequisite: Consent of instructor. E. Clarke, Flood
A comprehensive study of the nursing care of patients with pulmonary problems. Examination of the physiological concepts necessary to understanding the patient and nursing problems. Exploration of the theoretical bases for nursing decisions and nursing action.

239B. Care of Patients with Pulmonary Problems. (3) 1 W, S. Prerequisite: Consent of instructor. Lecture 2 hours, Lab 3 hours. E. Clarke, Flood
A comprehensive study of the nursing care of patients with pulmonary problems. Examination of selected theories and research from the behavioral sciences relevant to the care of these patients. Identification of legislative, ecological, and socioeconomic issues influencing health care delivery.

239C. Care of Patients with Pulmonary Problems. (3) 1 Sp. Prerequisite: Consent of instructor. Lecture 2 hours, Lab 3 hours. E. Clarke, Flood
Investigation of nontherapeutic, unattended physiologic effects of selected common nursing interventions with patients with cardiopulmonary dysfunctions. Clinical laboratory included.

239D. Clinical Decision Making. (3) 1 F, S. Prerequisite: Consent of instructor. Lecture 2 hours, Lab 3 hours. Barstow
The theoretical basis for decision making in the management and teaching of adults, with emphasis on obstructive lung disease in acute and chronic settings. Examination of coping mechanisms, teaching-learning theories and related research as applied to individual level styles.

241. Cardiovascular Nursing: A Theoretical Basis. (3) 1 W, S. Prerequisite: Consent of instructor. C. A. Pike, Hutchings Staff
A study of cardiovascular theories applicable to nursing practice. Focus will be on selected pathophysiology and interventions. Optional practicum available through Nursing 407 for 2 units.

241.02. Renal Nursing: A Physiological Basis. (2) 1 Sp. Markowitz, E. Clarke
Exploration of physiological concepts and principles pertinent to selected renal pathology. Application of these principles to nursing assessment and the care of patients with renal problems.

241.03. Pharmacology for the Cardiovascular Patient. (3) 1 W. Prerequisite: Consent of instructor. Lecture 2 hours, Lab 3 hours. E. Clarke
Study of cardiopulmonary nursing problems and their amelioration by drugs affecting the autonomic nervous system and cardio-respiratory-renal core systems. Review of pharmacology, pathophysiology, drug and drug action included.

242. Psychophysiological Concepts in Action. (3) 1 F, W, S. Prerequisite: Consent of instructor. Lecture 2 hours, Lab 3 hours. E. Clarke, Flood
In-depth psychophysiological exploration of concepts of anxiety, stress, body image, and adaptation as they relate to influence nursing practice.

244. Theories of Group Psychotherapy. (2) 1 W, S. Prerequisite: Nursing 112 or consent of instructor. Lecture 1 1/2 hours, Lab 1 1/2 hours. Dye
Theories of group psychotherapy based on psychoanalytic, interpersonal, and communication theories pertinent to practice of group psychotherapy by nurses. Exploration of differing models of therapy, basic principles and techniques of group therapy, and role of psychiatric nurse as leader.

245. Dilemmas in Parenting. (3) 1 F, S. Prerequisite: Consent of instructor. Lecture 2 hours, Lab 3 hours. Tesler
Exploration of evolving mother-child relationship, adaptive strategies and environmental and interpersonal situations interfering healthy development of mothering, implications for nurturing and nursing roles.

247. Legislative Issues and Political Aspects of Aging in Long Term Health Care. (3) 1 W, S. Prerequisite: Consent of instructor. Lecture 2 hours, Lab 3 hours. Francis
Investigation of legislative and political issues affecting health care and the implications for nursing practice.

248. Group Independent Study. (1-6) 1 F, W, S. Prerequisite: Consent of instructor. Staff
Groups of two or more collaborate in clinical investigations and other studies of special problems in nursing and health sciences under the supervision of faculty. Students may select areas related to their long-term interests and future research or clinical program.

249. Independent Study. (1-5) 1 F, W, S. Prerequisite: Consent of instructor. Staff
Individual study with emphasis on special problems in nursing. Students may select areas for study which are related to their area of interest or future goals.

250. Research. (1-8) 1 F, W, S. Prerequisite: Admission to doctoral study and consent of instructor. Staff

251. Professional Nurses in Bureaucracies. (3-4) 1 W. Prerequisite: Work experience as RN or consent of instructor. Lecture 3 hours, Lab 0-3 hours. M. Kramer
Exploration and analysis of research and issues of professionalism and bureaucracy: evolution, process and relationship to goal achievement. Course focuses on problems and conflicts encountered by professional nurses in bureaucracies and research related to identification and amelioration of these conflicts.

252. Reality Shock in Nurses. (3-4) 1 Sp. Prerequisite: Three months experience as RN or consent of instructor. Lecture 3 hours, Lab 0-3 hours. M. Kramer
Discussion and research into the postgraduate socialization process of nurses. Phases of reality shock and conflict resolution are explored. Focus is on professional development of biculturalism and making reality shock work for the nurse.

253. Research in Small Group Behavior. (3) 1 Sp. Prerequisite: Nursing 211A and consent of instructor. Dye
A comprehensive analysis of research design, theory, concepts, and methodology applied to the group process. Variables such as group interaction, performance characteristics, and group structure will be examined with particular emphasis on research and educational design.

254.01. Maternal Physiology and Clinical Assessment. (2-4) 1 W. Prerequisite: Consent of instructor. Lecture 2-3 hours, Lab 0-3 hours. Rie
Exploration of normal physiological changes occurring during pregnancy and childbirth. Emphasis will be on reproductive systems, endocrine and neuroendocrine systems, and cardiopulmonary systems. Clinical experience to relate physiologic theory with clinical observation.

254.02. Fetal-Newborn Development. (2-4) 1 Sp. Prerequisite: Consent of instructor. Lecture 2-3 hours, Lab 0-3 hours. Docek, Ree
Exploration of the critical phases and processes of fetal growth, development and function as a basis for understanding the
261. Introduction to Computer Instruction. (2) S. Lecture 2 hours, Lab 3 hours. J. Nielsen, Bailey, Kemp

Concepts, principles, and methods of computerized instruction. Laboratory experiences provide opportunity to design and write interactive teaching programs.

265A. Nursing Evaluation of the Aged Hospitilized Client. (3-5) S. Prerequisite: Nursing 264A, 361 or consent of instructor. Lecture 2 hours, Lab 3 hours.

Selected frameworks for assessment, data analysis, and presentation of diagnostic data as related to the ages hospitalized client. Data bases and methodologies for collecting client information are studied. Concurrent practicum required.

265B. Restorative Nursing with Aged Hospitilized Clients. (2) S. Prerequisite: Consent of instructor. 

Examination of restorative nursing strategies appropriate to major nursing diagnoses seen in care of aged hospitalized clients. Exploration of methods of implementation of prescribed nursing care and evaluation of outcomes of applied strategies toward clients' goal achievement. Concurrent practicum required.

263C. Quality Assurance in Health Care. (3) S. Lecture 2 hours, Lab 3 hours.

Davidow

Focuses upon dimensions of quality assurance in professional and community impact of value judgments and components of quality assurance such as peer and utilization to childhood are studied concurrently with clinical data. Practicum available through Nursing 407.

259. Sex Education and Counseling. (3) S. Prerequisite: Nursing 200 or Psychology 180 or equivalent. Consent of instructor. Lecture 2 hours, Lab 3 hours. G. Adams

Theories and principles of sexual counseling and intervention for common problems are analyzed to facilitate health professionals' work with individuals and families relative to human sexuality in personal and societal attitudes and values are explored. Nursing 406 required practicum.

260. Research in Human Communication. (3) S. Prerequisite: Nursing 211A or equivalent. A. Davis

Seminar examines selected research focusing on human communication. Research topics vary to include, social context, and language are explored to understand problems such as nonverbal and human communication.

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Theories and principles of sexual counseling and intervention for common problems are analyzed to facilitate health professionals' work with individuals and families relative to human sexuality in personal and societal attitudes and values are explored. Nursing 406 required practicum.

260. Research in Human Communication. (3) S. Prerequisite: Nursing 211A or equivalent. A. Davis

Seminar examines selected research focusing on human communication. Research topics vary to include, social context, and language are explored to understand problems such as nonverbal and human communication.
Course offers opportunity to apply and evaluate theories, concepts, and skills in the work setting under supervision of a preceptor. Focus is on development of the pediatric clinical specialist role in ambulatory health care.

404.06B. Clinical Residency-Pediatric Nurse Practitioner. (4) Sp. Prerequisite: Nursing 404A and consent of instructor. Lab 12 hours. Durand
Course offers opportunity to apply and evaluate theories, concepts, and skills in the work setting under supervision of a preceptor. Focus is on development of the pediatric clinical specialist role in ambulatory health care.

405. Practicum in Mental Health and Community Nursing. (1-8) F, W, Sp. Prerequisite: Consent of instructor. Lab 3-24 hours. Staff
Opportunity to apply theory in clinical practice to further develop skills and to extend clinical expertise in selected aspects of mental health and community nursing. Guided clinical laboratory experience is designed to develop mastery of advanced skills.

406. Practicum in Family Health Care Nursing. (1-8) F, W, Sp. Prerequisite: Consent of instructor. Lab 3-24 hours. Staff
Opportunity to apply theory in clinical practice to further develop skills and to extend clinical expertise in selected aspects of family health care nursing. Guided clinical laboratory experience is designed to develop mastery of advanced skills.

407. Practicum in Physiological Nursing. (1-8) F, W, Sp. Prerequisite: Consent of instructor. Lab 3-24 hours. Staff
Opportunity to apply theory in clinical practice to further develop skills and to extend clinical expertise in selected aspects of physiological nursing. Guided clinical laboratory experience is designed to develop mastery of advanced skills.

408A. Nursing Internship Seminar. (2) F. Prerequisite: Admission to Biodysfunction Veterans Administration Internship Program. Friesen
Seminar designed to develop ability of participant to use sociopsychological theory in dealing with the setting of the UC-VA internship. To be taken concurrently with internship which includes individual and small group instruction in clinical management skills.

408B. Nursing Internship Seminar. (2) F. Prerequisite: Admission to Biodysfunction Veterans Administration Internship Program. Friesen
Seminar designed to develop ability of participant to use sociopsychological theory in dealing with the setting of the UC-VA internship. To be taken concurrently with internship which includes individual and small group instruction in clinical management skills.

Nutrition

132. Principles of Diet as Therapy in Nursing Interventions. (2) W. Sp. Prerequisite: Nutrition 110 or consent of instructor. Gutierrez
Concepts of dietary modification as required in the prevention and treatment of major disease entities. Emphasis is on clinical approaches useful in nursing practice.

160. Foods and Nutrition. (2) F, Lecture 1 hour, Lab 3 hours. Vinson
Practical aspects of nutrition including diet evaluation, obtaining diet histories, and nutrition education. Panel discussions of pertinent topics in nutrition are included.

181. Nutrition Counseling for Families. (2) F. Prerequisite: Consent of instructor. Gutierrez
Course provides theory and practice in the interpretation of current concepts and principles of nutrition for family counseling with an emphasis on cultural dietary patterns.

Obstetrics & Gynecology

110. Core Clerkship in Obstetrics, Gynecology, and Neonatology. (11/7 per week) Su, F, W. Jaffe and Staff
Basic principles and fundamental techniques in obstetrics, gynecology are discussed in a series of seminars, case discussions, and teaching clinics. Students gain practical experience in clinics, wards, delivery room, and operating room under direct supervision.

Advanced clinical clerkships. Senior clerkships are available at various hospitals by arrangement: MZ, L, KP and others in the United States or abroad.

140.04. Ambulatory Obstetrics and Gynecology (11/7 per week) Su, F, W. Sp. Prerequisite: Obstetrics and Gynecology 110. Margolis
Daily participation in the general and sub-specialty clinics of obstetrics and gynecology.

The clerk function in the role of an acting intern on the gynecology service. Responsibilities are predominantly in the inpatient service and will include both surgical and non-surgical aspects of gynecologic disease, gynecologic pathology, gynecologic oncology, infertility, and general gynecology.

150.01. Research in Obstetrics and Gynecology. (11/7 per week) Su, F, W. Sp. Prerequisite: Consent of instructor and chairman of the department. Jaffe and Staff
A research project under the direction of a member of the faculty.

158. Supervised Study in Obstetrics and Gynecology. (1-5) Su, F, W. Sp. Prerequisite: Obstetrics and Gynecology 110. Jaffe and Staff
Library research and directed reading under the supervision of a member of the faculty, with the approval of the chairman of the department.

159. Laboratory Project in Obstetrics and Gynecology. (1-5) Su, F, W. Sp. Prerequisite: Consent of instructor. Jaffe and Staff
A laboratory research project under direction of a member of the faculty with the approval of the chairman of the department.

Conferences comprised of formal discussions by staff, faculty, and visiting lecturers.

Seminar includes the presentation of pathology material from the obstetrical and gynecological services with formal instruction and discussions.

Seminars include presentations of special topics, literature reviews, and discussions. Discussion of resident staff functions also held.

Residents are responsible for care of patients in the hospital and outpatient clinic. Formal and individual instruction is conducted.

Interns rotate through gynecology wards and clinics. They are responsible for the care of patients under the direction of the attending staff, including history-taking, physical examination, laboratory tests, and consultation.

Occlusion

120. Applied Dental Morphology and Physiology of Occlusion. (1) Sp. Prerequisite: Concurrent enrollment in Oral Diagnosis 129. Tueller and Staff
A joint lecture and discussion series on the emphasis on occlusion to the clinical phases of dentistry.

180. Principles of Occlusion. (1) F. Enrollment limited. F. Pavone
The etiology of functional disturbances, analysis of occlusal relationships of the opposing arches, and a rationale of therapy are presented. The principles of occlusion as they apply primarily to adult clinical dentistry are also discussed.

Operative Dentistry

Clinical instruction.

Beginning techniques in operative dentistry. Five hours are lecture, and principles of cavity design and preparation are included in the spring quarter.

Continuing techniques in operative den-
tistry. One hour of lecture each week accompanies the laboratory work. The lecture reinforces principles taught in the laboratory. Clinic rotation is included.

130A-B. Operative Theory, (3-1-1) F, W, Sp. Prerequisite: Operative Dentistry 119A-B and 123A-B.

Schuchardt and Staff

This course must be taken concurrently with Operative Dentistry 109.

180. Advanced Operative Dentistry Theory, (1) F. Prerequisite: Operative Dentistry 130A-B-C. Schuchardt and Staff

Lectures and televised demonstrations covering quadrant dentistry, washed field techniques, complex restorations, analysis of relationships, and clinical applications of the various restorative procedures.

180.01. Advanced Operative Dentistry Theory, (1) W. Prerequisite: Operative Dentistry 130A-B-C. Schuchardt and Staff

Continuation of Operative Dentistry 180.

180.02. Advanced Operative Dentistry Theory, (1) Sp. Prerequisite: Operative Dentistry 160.01.

Schuchardt and Staff

Continuation of Operative Dentistry 180.01. Organization of the material is planned in relation to progress of students entering in the 180 series.

189. Direct Gold Restorative Procedures. (F, W, Sp. Prerequisite: Open to fourth year students with approval of the chairman of the division. Clinic 3-6 hours. Enrollmelt limited. Schuchardt

Techniques and procedures for Class III restorations using the conservative approach, as well as wedge and matrix. Work also will be done on Class V direct gold restorations. Students learn to use various materials including fibrous gold, goldt, and electrolyt.

189.01. Advanced Operative Dentistry, (0-25) F, W, Sp. Prerequisite: All previous courses in operative dentistry curriculum sequence. Clinic: Variable. Schuchardt and Staff

Continuation of clinical experience at level of Operative Dentistry 109.

189.02. Advanced Operative Dentistry, (0-4) Sp. Prerequisite: Approval of the chairman of the division. Clinic: 0-12 hours. Schuchardt and Staff

Advanced instruction in the field of clinical operative dentistry, utilizing procedures different from those presented at the level of Operative Dentistry 109 such as quadrants and plastics.

199. Laboratory Project in Operative Dentistry, (1-5) F, W, Sp. Prerequisite: Approval of the chairman of the department. Schuchardt and Staff

A laboratory research project under direction of a member of the faculty with the approval of the chairman of the department.


Residents prepare and present diagnostic and therapeutic problem cases. Discussion by faculty and visitors follows. Residents also present papers on various aspects of medicine and opthalmology which are discussed by faculty members.

401. Conferences at SGF and VA, (1) F, W, Sp. Prerequisite: First and third year residents.

Hogan

Conferences include grand rounds and case presentations of hospital patients, review of recent literature in ophthalmology, and assigned reading with required reports.


Seminars include didactic lectures in practical work covering pathology, neuro-ophthalmology, uveitis, physiological optics, refraction, ocular motility, glaucoma, and micro- ophthalmology.

403. Basic Ophthalmologic Science Course, (8) Su. Required for first year residents.

UC Hogan

Didactic lectures and demonstrations cover the basic sciences as applied to ophthalmology. These include anatomy, histology, biochemistry, physiology, and pharmacology.

450. Clinical Ophthalmology at UC, (1) per week. Su, F, W, Sp. UC Kimura

Residents, under supervision, are responsible for patients in the Eye Clinic. First year residents assist in eye surgery and the Eye Bank program. Specialty clinics include external disease, extracellular muscle, medical ophthalmology, ophthMascopy, refraction, cataract, glaucoma, neuro-ophthalmology, surgery, and uveitis.


Residents, under supervision, are responsible for patient care including diagnostic studies and treatment of medical eye care, diagnosis, surgery, and follow-up treatment of surgical eye cases.


Residents, under supervision, are responsible for patient care including diagnostic studies and treatment of medical eye care, diagnosis, surgery, and follow-up treatment of surgical eye cases. Residents consult for other hospital services.

455. Fourth Year Residency, (1) per week. Su, F, W, Sp. UC Hogan

Fourth year residency taken at UC or at any approved institution subject to the approval of the chairman of the department and the Dean.


PH A. Schwartz, P. Hilton, STM Shaffer, CHS, SRM Ratham

Residents or fellows, under supervision, are responsible for patient care, including diagnostic studies and treatment of medical eye care, diagnosis, and surgery-eye care. Residents and fellows consult for other hospital services.


Residents, under supervision of the attending staff, are responsible for patient care on wards and in the follow-up clinic, including diagnostic studies. Medical eye care, diagnosis, and treatment is combined with patient-care assignments in the Otolaryngology Service.

Oral Biology


Hogan

Handling of patients is introduced by emphasizing history-taking, differential diagnosis, and treatment of oral diseases. Pathology laboratory in dental practice, and fundamentals of treatment. Classification, etiology, pathology, diagnosis, and treatment of some benign lesions occurring in the oral cavity are covered.

126. Oral Biology, (5) F. Prerequisite: Anatomy 118. Lecture 4 hours. Christie and Staff

Introduction to oral biology correlating morphology, chemistry, physiology, and function of dentin and parodontal tissues. Topics include head and neck anatomy, enamel, dentin, cementum, pulp and dental diseases, dental caries, dental anamolies, tooth eruption, periodontum and periodontal disease, and oral mucous membranes.


Course correlates clinical oral pathology with histologic changes. Staphylococcus is placed on the microscopic and microscopic interpretation of cellular, tissue, and chemical alterations.

128. Dental Caries, Plaque and Fluorides. (3) Pr. Prerequisite: Biochemistry 110A-B, Oral Biology 126, Microbiology 126 and Pharmacology 126B. Lecture 4 hours. Rotating seminar 8 hours. Newbun
Chinn
Clinical oral pathology for the dental hygienist. Diagnosis and management of some common oral lesions are covered. Use of diagnostic aids and methods of treatment are emphasized.

181. Forensic Odontology. (1) W. Prerequisite: Dental Techniques or Oral Instructor.
Savostin-Asling
Advanced study of the oral tissues, with emphasis on their histophysiologic aspects.

182. Current Oral Pathology. (2) Sp. Hansen and Staff
A seminar designed to acquaint post-doctoral students with current advances, techniques, trends, and developments in the field of oral pathology.

183. Dental Therapeutics. (2) W. Seminar; 2 hours. Prerequisite: Pharmacology 126B-C or equivalent. Fourth year students may take this course as an elective.

184. Introduction to the Biological Sciences. (1) SS. Lecture, Laboratory. Demonstration 9 hours for 3 weeks. Christie
Introduction to the biological sciences taught in the first year of dentistry: anatomy, biochemistry, and physiology. Course includes one half day per week orientation to the campus community.

185. Oral Medicine. (1) F, W, Sp. Pre-
A wide spectrum of selected topics related to oral biology are presented with emphasis on basic and applied research methodology, pertinence of problems, significance of findings, and critical evaluation of data.

Lectures and seminars on diseases of the oral regions. Disease entities are studied from a clinical and histomorphological standpoint with emphasis on etiology and pathogenesis.

187. Oral Medicine. (2) F, W, Sp. Pre-
A seminar course in connective tissue biology, concerned mainly with the development, differentiation, and pathology of connective tissues; includes such topics as regulation of controls of connective tissue, macromolecules, fibrosis, wound healing, inflammation, tissue destruction, and selected genetic disorders.

188. Students provide comprehensive dental care to patients assigned to them under supervision of staff in the medical and hospital environment. Students attend seminars and conferences.

Review of oral diseases most relevant to physicians. Etiology, diagnosis, management and prevention are covered. Subjects include introduction to disease, causation, fluoride, periodontal disease, precancerous lesions, oral cancer, salivary gland disease, oral anaphylaxis, herpes, smoking, diseases of the tongue.

A laboratory research project under direction of a member of the faculty with the approval of the chairman of the department. Staff
Principles and methods employed in studying oral tissues such as histochemistry, autoradiography, desiccation, procedures, crystallographic sectioning, and enzyme histochemistry will be presented.

191. Forensic Odontology. (1) W. Prerequisite: Forensic Dentistry or Oral Instructor.
Savostin-Asling
Identification by means of dental evidence, known as forensic odontology. Course includes discussions of identification procedures in single and multiple digits, including homicides and mass disasters, forensic dental radiography, bite injury and bite marks, the medicolegal investigation, fire search, and forensic anthropology.

S. Silverman and Staff
The advanced dental student participates in lecture-seminars, in which emphasis is placed on the diagnosis of common oral diseases correlating the history, clinical, operative, radiographic, laboratory, and histopathological findings.


109.01. Oral Diagnosis and Roentgenology (0:10) F. W. Sp. Prerequisite: Third year standing. Clinical and Seminar Block rotation 60 hours. 

109.02. Dental Emergency Clinic (0:10) F. W. Sp. Prerequisite: Oral Diagnosis 109.01. Clinical 6 hours. 

H. Hall

The provision of dental emergency care in the UC clinics by students in their fourth year. Instruction will be provided on a one to one basis with credit assigned according to hours spent.

116A-B. Clinical Dentistry (0:4-0:4, 10) F. W. Sp. Lecture 1 hour F. W. Clinic 3 hours F. W. 4 hours Sp. Brady

An introduction to concepts of dental health and disease, and a recognition of these through multidisciplinary clinical orientation program.

129. Diagnosis and Treatment Planning. (2) Sp. Prerequisite: Oral Diagnosis 116A-B. Clinical and Seminar 6 hours.

Maxwell

Small group instruction is provided in comprehensive case work-up of dental patients. Student completes a case history, clinical examination, studies case analysis, and diagnosis and treatment plan, meeting the patient's total dental needs.

189. Oral Diagnosis and Treatment Planning (1) F. W. Prerequisite: Oral Diagnosis 129 and fourth year standing. Clinical-Seminar 3 hours.

J. Schmidt

Students receive experience in advanced treatment planning of a multidisciplinary nature, through examination, case work-up, and treatment planning of patients presenting complex oral problems. Students work with the oral diagnosis staff and the faculty consultation panel.

Oral Radiology

121. Radiographic Interpretation. (1) Sp. Parks

An introduction to the fundamentals of radiographic interpretation, some of the basic physics of X ray generation, and radiobiology.

131. Oral Radiology (1) Sp. Prerequisite: Oral Radiology 121. Parks

Course is a continuation of Oral Radiology 121 and is intended to broaden the scope of radiographic interpretation. Additional aspects concerning radiation biology are also included.

135. Oral Radiology. (0-1) SS. F. W. Prerequisite: Oral Radiology 121. Lab rotation 24 hours. Parks

A course in introral X ray technique including instruction in the long cone paralleling method, and practice on skulls and mannequins. Objective is to prepare the student for clinical experience during the oral diagnosis course rotation.

160B-C. Oral Radiology for Dental Hygienist. (1-1) W. Sp. Parks

Course covers essentially the same material as Oral Radiology 121, but is modified to meet the special needs of the dental hygienist.

169B-C. Oral Radiology. (1-1W) Sp. Lab and Clinic 3 hours. Parks

A course in introral X ray technique including instruction in the long cone paralleling method and practice on skulls and mannequins. After basic instruction, clinical experience is gained.

186. Advanced Oral Radiology. (0-3) F. W. Sp. Prerequisite: Oral Radiology 121 and 130. Approval of Clinic Review Committee. Seminar 1-2 hours, Clinic 6 hours. Parks

Continuation of Oral Radiology 121 and 131 in a seminar teaching format.

199. Laboratory Project in Oral Radiology. (1-5) F. W. Sp. Staff

A research project under direction of a member of the faculty with the approval of the chairman of the department.

Oral Surgery

109. Clinical Oral Surgery. (0:3) F. W. Prerequisite: Third year standing. Clinic Variable. 

Huebsch Clinic

120. Local Anesthesia. (1) Sp. Khosla

Course covers local anesthesia technique as it pertains to the dentition and oral cavity.

130A-B. Oral Surgery. (1-1) SS. F. W. Prerequisite: Anatomy 117A-B and Microbiology 126. Lecture 1 hour F. W. 2 hours SS. Gordon, R. A. Smith


Procedural skills and academic knowledge of the student should be familiar with: includes the treatment of cysts, infection, developmental deformities of the jaws and salivary glands, duct diseases, and procedures.

132. Medical Evaluation, Medical Emergencies, and Parenteral Administration of Drugs. (1-2) W. Smith


170. Surgical Orthodontics. (2) W. Prerequisite: Enrollment in postdoctoral special program in orthodontics or oral surgery. Seminar 2 hours. Ware

The course explores the various facial and maxillofacial deformities that justify a combination of surgical and orthodontic treatment. The student is assigned a topic, the necessary library review, and presents a seminar under direction of the instructor.

171. Applied Surgical Anatomy. (1) F. W. Sp. Prerequisite: Limited to interns and residents. Lab 3 hours. Courage

Under oral surgery office conditions and under immediate supervision of the staff, the student examines the relationships of gross anatomical structures of the head and neck are studied during laboratory dissection. Emphasis is placed on the correlation of cadaver dissection findings to diagnosis and operating room surgery.

175. Oral Surgery. (13) Su. Prerequisite: Limited to oral surgery residents. Clinic and Hospital 40 hours. 

Huebsch and Staff

Principles of surgery and local anesthesia as related to the mouth and clinical operations on patients.

175.01A-B. Oral Surgery. (2-7) F. W. Prerequisite: Limited to interns and residents. Lecture-seminar 2 hours, Clinic 15 hours. 

Huebsch and Staff

Continuation of Oral Surgery 175.

175.02. Oral Surgery. (15) Su. Prerequisite: Limited to oral surgery residents. Seminar 2 hours, Hospital and Clinic 40 hours. 

Huebsch and Staff

Continuation of Oral Surgery 175 175.01-A-B.

175.03. Oral Surgery. (13) F. W. Prerequisite: Limited to oral surgery residents. Hospital Clinic and Clinic 40 hours. 

Huebsch and Staff

Hospital procedures, ward rounds, and clinical practice in several hospitals, including treatment of jaw fractures, osteomyelitis, cellulitis, and other complicated conditions. Attendance is required at the tumor clinic and in the experimental surgery training program.

175.04B-C. Oral Surgery. (10-10) W. Sp. Prerequisite: Limited to oral surgery residents. Lecture 2 hours, Hospital and Clinic 24 hours. 

Huebsch and Staff

A continuation of Oral Surgery 175.03 with the addition of the surgical specialties of the University. Description of such facial deformities as prognathism, micrognathia, apertognathia, as well as in the temporomandibular joint surgery is taught.

175.05. Oral Surgery. (13) Su. Prerequisite: Oral Surgery 175.04B-C. Limited to oral surgery residents. Hospital and Clinic 40 hours. 

Huebsch and Staff

Continuation of clinical oral surgery. Certain periods each week devoted to supervised instruction of undergraduate students.

175.06A-B-C. Oral Surgery. (13-13) F. W. Sp. Prerequisite: Oral Surgery 175.05. Limited to oral surgery residents. Hospital Clinic and Clinic 40 hours. 

Huebsch and Staff

Continuation of Oral Surgery 175.05.
142 / Orofacial Anomalies

residents will be responsible for care and management of the ambulatory patient who is to undergo an oral surgery procedure under ambulatory anesthesia.

       R. A. Smith
An elective didactic and demonstration course with practice sessions to insure the student's knowledge and capability of managing the psychomotor skills of cardiopulmonary resuscitation.

189.01. Advanced Oral Surgery Clinic. (0-9) Su. Prerequisite: Fourth year standing and consent of instructor. Clinic Variable. 
       Huebkes and Staff
Additional clinical experience in oral surgery.

189.03. Hospital Oral Surgery. (0-3) F. Wp. Prerequisite: Oral Surgery 109 and consent of instructor and Clinic Review Committee. Clinic and Seminar at SFGH. 
       Huebkes and Staff
Limited experience in hospital oral surgery to include assisting and performing oral surgery procedures. Aspects of premedication as related to the ambulatory patient's orientation in hospital decorum and operating room procedure.

       Huebkes, Courage, Khosla
Students participate in oral surgery care of hospital patients and outpatients. They also attend seminars and lectures.

199. Laboratory Project in Oral Biology. (1-5) F, Wp. Prerequisite: Consent of instructor. 
       Staff
A laboratory research project under direction of a member of the faculty with the approval of the chairman of the department.

       Courage
This course is designed to teach the dental intern the oral surgical procedures under close supervision in the oral surgery clinic. The trainee takes responsibility for care of the oral surgery patient including presurgical evaluation, surgery planning, and postoperative care.

Orofacial Anomalies

       Lawton
Normal development of speech, consideration of speech patterns, habits, and deficiencies as related to dental and orofacial problems.

       Harvold, Chierici
Diagnostic, preventive, and corrective methods relative to patients with congenital malformations of the orofacial region are discussed.

178B-C. Abnormal Facial Growth. (2-2) W. Sp. Seminar 2 hours. 
       Harvold
Diagnosis of orofacial malformations. Emphasis on interrelationship of morphology and physiology.

180.01. Speech Habilitation. (1) W. Seminar 1 hour. 
       Lawton
Normal development of speech. Introduction to the acoustic and linguistic elements. Consideration of the speech patterns, habits, and defects related to dental and orofacial problems.

180.01. Habilitation of Abnormal Orofacial Development. (1) F, Wp. Prerequisite: Fourth year standing or consent of instructor. Seminar and Clinic 3 hours. 
       Chierici, Harvold
The pathogenesis of jaw deformities, dental malocclusions, and speech disorders associated with congenital malformation are discussed. Instructions in diagnosis and preventive and corrective treatment methods is given in the clinic.

       Harvold
Instruction in biomechanic technique and methodology is given in connection with a selected research project.

187.02. Diagnosis and Treatment Planning in Orofacial Malformations. (1) W. Sp. Prerequisite: Orofacial Anomalies 187.01. Seminar and Clinic 3 hours. 
       Soholow
A clinical survey, a clinical experiment, or an animal experiment is designed and analyzed.

401. Orofacial Prosthetics. (1-3) F. Prerequisite: D.D.S. degree or equivalent. Seminar and Lab 3-4 hours. 
       Chierici and Staff
Prosthetic habilitation of the patient with orofacial malformations. Discussions include principles and techniques of construction of obturators, speech appliances, and retention bridges.

       West and Staff
Diagnosis of orofacial malformations and current preventive and corrective measures. Emphasis is placed on the interrelationship of morphology and physiology and the coordination of treatment by the various disciplines involved.

407. Orofacial Prosthetics. (1-3) W. Prerequisite: D.D.S. degree or equivalent. Seminar, Lab, and Clinic 3-9 hours. 
       Chierici and Staff
A course designed to acquaint the student with the many facets of prosthetic management of required oral defects. Relations of prosthetics to speech, mastication, deglutition, oral biology, and surgery are discussed. The interdisciplinary management of these problems is stressed.

       Lawton and Staff
Normal development of speech, etiology, and diagnosis of speech defects; principles and methods of remedial procedures, with special emphasis on patients with orofacial malformations or defects.

Orthodontics

121. Introduction to Growth and Development. (2) F. Wp. 
       Myers
Course describes the mode of growth of the craniofacial complex, and the various aspects of growth with clinical implications for the growing child are discussed, including the eruption of teeth and their correlation with facial growth.

131A-B. Orthodontics in General Practice. (0-2, 0-2) F. Wp. Prerequisite: Orthodontics 121. 
       Schulz
Recognition and treatment of the problems most commonly seen by the general practitioner.

132. Principles of Orthodontic Treatment. (1) Sp. Prerequisite: Orthodontics 121 and 131A-B. 
       Schulz
Discussion of diagnostic techniques used in orthodontics, limitations of orthodontic treatment, and principles of treatment with orthodontic appliances.

       West and Staff
This is a discussion of recognition, etiology, and principles of orthodontics for the dental hygienist.

170A-B. Fundamentals of Orthodontics. (4-2) F, W. Sp. Seminar 4 hours; F: 2 hours W. 
       Classification, etiology, and diagnosis of malocclusion. Study of the dentition and the relationships of dental and cranial structures.

170C. Fundamentals of Orthodontics. (2) Sp. Prerequisite: Orthodontics 170A-B.

171B-C. Orthodontics in Periodic Practice. (1-1) W. Sp. Prerequisite: Consent of instructor and enrollment in a postdoctoral specialty program.
       Staff
This course includes orthodontic principles and techniques that are applicable in a periodic practice.

171.01A-B-C. Craniofacial Growth. (2-2) F, W. Sp. 
       Mathews
Research methods in the study of growth with findings relative to sites of growth, serial development of pattern, and factors influencing facial growth.

171.02. Biology of Dentalfacial Development. (2) Sp. Prerequisite: General Pathology 171.01 A-B-C. 
       Mathews
Embryology of the face and palate, biology of cartilage and bone as applied to dentofacial development of newborn babies, and physiology of tooth movement.

       Consent of instructor and enrollment in a postdoctoral specialty program.
       Staff
This course includes orthodontic principles and techniques that are applicable in a pedodontics practice.

       West and Staff
Continuation of Orthodontics 171.03A-B-C.

172A. Cephalometrics. (2) F, Seminar 2 hours. 
       Switchen
Use of lateral headfilms; realiability of landmarks, applications in dentistry. Techniques of tracing, evaluation of record forms, and techniques of superpositioning are discussed and illustrated.

172B. Cephalometrics. (2) W. Poulton
Evaluation of various analyses used in orthodontic diagnosis including growth changes in serial studies.
177. Practice Management. (1) F. Sem- inar 1 hour. Baumbard Practice management and office administration.

178. Functional Occlusion. (1) F. Roth Discussion of occlusion from the viewpoint of the orthodontist and periodontist from the viewpoint of oral rehabilitation.

179. AIA-B-C. Clinical Orthodontics. (5-5-5) F, W, Sp. Lab and Clinic 15 hours. West and Staff Laboratory instruction precedes clinical experience. A minimum of 150 hours are included in the series of Orthodontics 179. AIA-B-C, 179.02, 179.03A-B-C, and 179.04.

179.02. Clinical Orthodontics. (5) SS. Clinic 15 hours. West and Staff Continuation of Orthodontics 179.01 A-C.

179.03A-B-C. Treatment Planning. (3-3-3) F, W, Sp. Seminar 3 hours. West Staff Seminar.

179.04. Treatment Planning. (3) SS. West Staff Seminar.

179.05. Special Study. (1) SS. Research 3 hours. Baumbard Research project and preparation of thesis.

179.06. Treatment Evaluation. (3) SS. Seminar 5 hours. West An evaluation of orthodontic treatment and prognosis for stability of results of treatment.

177-B. Biomechanics. (2-1) F, W, Sem- inar 2 hours, F, 1 hour. W. Righielli Development of force systems and advanced orthodontic techniques.


176B. Comparative Orthodontic Concepts. (2-2) W, Sp. Seminar 2 hours. Poulton Critical evaluation of orthodontic treatment procedures to provide orthodontic students with a knowledge of techniques from those taught in clinical courses.


199. Laboratory Project in Orthodontics. (1-5) F, W, Sp. Staff A laboratory research project undertaken by a member of the faculty with the approval of the chairman of the department.

Orthopaedic Surgery

First-Year Coordinated Instruction—Medicine 131A-B-C. Lecture-demonstrators 179.01-B-C, 179.02, 179.03A-B-C, and 179.04.


Murray Students, assigned to inpatient and out- patient services, receive instruction in and experience in examination and treatment of patients. Assistance in surgery and in use of treatment modalities is required. Clinical demonstrations, seminars, and conferences form the basis for didactic instruction.

145.02. Orthopaedic Surgery Clinical Clerkship. (15 per week) Su, F, W, Sp. Pre- requisite: Surgery 110 and 111. M. Murray Orthopaedic surgery clinical clerkships are offered in off-campus hospitals approved by the chairman of the department and the Dean.


CHMC Barer, H, T, Smith, SW, W, Jackson
Seminars are held in rotation at each of these hospitals with residents from all three hospitals attending. They include literature review and demonstrations related to surgical approaches, anatomical dissections, diagnosis and treatment.

413. Medical Staff Conference. (1) Su, F, W, Sp.
UC W, Murray
Residents prepare and present case histories of inpatients and selected outpatients. Course includes discussions on diagnostic procedures, indications for surgery, immediate postoperative follow-up, and problem cases (consultations).

Residents are responsible for patient care in wards and outpatient clinics including history-taking, physical examinations, laboratory tests, elective surgery, fracture treatment, plaster techniques, and consultations.

C L Larsen, CHMC Barer, SSF, L Larsen, SH, I Larsen
Residents are responsible for patient care in the wards and outpatient clinic including history-taking, physical examinations, laboratory tests, elective surgery, fracture treatment, plaster techniques, and consultations.

SFHG Bovill, SM, W, Jackson, VA Maurer, H, T, Smith
Residents are responsible for patient care in the wards and outpatient clinic including history-taking, physical examinations, laboratory tests, elective surgery, fracture treatment, plaster techniques, and consultations.

UC W, Murray
Under faculty supervision, the chief resident organizes care and referral of staff patients. He reviews a weekly follow-up clinic; administers the teaching-bed fund; independently performs operative procedures in selected cases; advises interns, residents, and fourth year medical students; participates in preclinical teaching. Participates in activities of the American Academy of Orthopaedic Surgeons.

Glick and Staff
Clinical instruction in the care and management of orthopaedic problems in athletic injuries. Course consists of clinical practice under supervision as well as didactic lectures every third week.

SFHG Bovill
Intensifies operative experience and follow-up clinic. They are responsible for patient care under the direction of the attending staff, including history-taking, physical examinations, X-ray conferences, and consultations.

Otolaryngology
First-Year Coordinated Instruction—Medicine 131A-B-C. Lecture-demonstrations and section work devoted to the supervised examination of patients.

Pre-requisite: Medicine 131A-B-C and Surgery 110.

B-Boles
A practical course in general otolaryngology, including diagnosis and treatment of common ear, nose, and throat problems. Both inpatient and outpatient experiences will be offered at the following hospitals: UC, SFHG, VA and USN.

Pre-requisite: Medicine 131A-B-C and Surgery 110.

B-Boles
Clinical clerkships in off-campus hospitals approved by the chairman of the department and the Dean.

Pre-requisite: Consent of Instructor.

R-Boles
Library research and directed reading under supervision of a member of the faculty with the approval of the chairman of the department.

Pre-requisite: Consent of instructor.

R-Schindler
A laboratory research project under direction of a member of the faculty with the approval of the chairman of the department. Lecture cover the anatomical, physiological, and clinical aspects of otolaryngology.

Crumley
A formal course in the anatomy of the head and neck.

VA J Ross
Cadaver dissection and demonstrations given by members of the staff.

Dekeloum
A review of ear, nose, and throat pathology from currently available and microscopic surgical pathological material from the operating room and pathology laboratories.

Boles
Weekly seminars are held with discussion of current problems concerning diagnosis and management of patients with reference to current literature, modern theory, and conventional teaching.

UC Owens
Seminar includes psychophysical background in audiology, basic and advanced tests of hearing, functioned hearing loss, hearing aids, testing of children, aural rehabilitation, and speech and hearing problems of children and adults.

UC Dedo
Conference includes presentation of the cases, history of cases, and discussion of the patient in light of modern medicine and surgery.

VA J Ross
A review of all gross and microscopic pathology conducted by staff members in conjunction with the Department of Pathology.

Schindler
A laboratory course conducted in the temporal bone, nose, and throat pathology laboratory. All resident staff members are required to familiarize themselves thoroughly with the microscopic anatomy of the temporal bone under formal staff instruction.

Schindler
A review of surgical anatomy and demonstration of fresh temporal bones conducted by members of the staff.

VA J Ross
Tumor cases are presented for diagnosis and recommendations for treatment.

Combined Audiology and Otolaryngology Staff Conference where all patients evaluated for hearing problems are presented, and diagnosis and treatment recommendations are made.

VA J Ross
A review of all current ear, nose, and throat literature.

CMC McGee, D, Crumley, UC Boles, VAF Bell, VMC Bell
Residents, under supervision, are responsible for patient care in the wards and outpatient clinics including history-taking, physical examination, laboratory tests, pre-operative and post-operative care, minor surgery, audiometry, vestibular testing, and speech and hearing tests. Each resident has certain administrative, teaching, and clinical responsibilities.

VA J Ross
Residents, under supervision, are responsible for patient care in wards and outpatient clinics including history-taking, physical examination, laboratory tests, pre-operative and post-operative care, minor surgery, audiometry, vestibular testing, and speech and hearing tests. Each resident has certain administrative, teaching, and clinical responsibilities.

All residents except at VA.
Crumley
A study of the techniques of endoscopy and some practical laboratory study including cadaver work.

Crumley
Residents in off-campus hospital for surgical training to satisfy Board requirements, is responsible, under supervision, for patient care in wards and clinic and assistance at.
Mechanisms and language of disease are discussed, with emphasis on the dynamic nature of fundamental disease processes: cell injury, immunopathology, inflammation, responses to infectious agents, repair, regeneration, hemodynamic derangements, genetic disorders, disturbances of cell growth, and neoplasia.

General Pathology. (4) 3 S. Prerequisite: Substantive courses in biochemistry, physiology, histology, microbiology (first quarter, concurrent), or an introduction to immunology. If in doubt as to adequacy of preparation, see instructor. Lecture 2 hours, Lab/Seminar 4 hours.

Friend and Staff
Mechanisms and language of disease are discussed, with emphasis on the dynamic nature of fundamental disease processes: cell injury, immunopathology, inflammation, responses to infectious agents, repair, regeneration, hemodynamic derangements, genetic disorders, disturbances of cell growth, and neoplasia.

Systemic Pathology. (6) S. F. Prerequisite: Anatomy 103, Medicine 130A, Microbiology 10A, Pathology 101 and Physiology 101 or concurrent enrolment. Lecture 3 hours, Lab/Seminar 6 hours.

Margaretten and Staff
Recent advances and classical concepts of diseases as they affect each of the organ systems are presented. Emphasis on correlation of functional and morphologic characteristics of diseases of organ systems.

General Pathology. (5) S. F. Prerequisite: Substantive courses in biochemistry, physiology, histology, microbiology (first quarter, concurrent), or an introduction to immunology. If in doubt as to adequacy of preparation, see instructor. Lecture 3 hours, Lab 6 hours.

Lectures on basic fundamentals of cytology, normal cells, malignant cells, abnormal pathology of cell collection and preparation methods. Microscopic examination of specimen and correlation of cellular and tissue pathology with colposcopy and clinical findings on examination of the patient.

General Pathology. (4) 3 S. F. Prerequisite: Substantive courses in biochemistry, physiology, histology, microbiology (first quarter, concurrent) or an introduction to immunology. If in doubt as to adequacy of preparation, see instructor.

M. L. Goldberg and Staff
This course is identical to the lecture portion of Pathology 102.
404. Clinicalopathological Conference. (1) F. W. Sp. Residents. SFGH McKay, Margaretten
Conference includes the collection of data and materials, summary of pertinent literature by faculty. Residents participate in clinicalopathological conference at which specific cases are presented. Equipment is placed in correlation of clinical manifestations of disease with clinical laboratory and autopsy findings.

Theoretical and methodologic pathology of anatomic classification and correlation of disease, and study of literature.

Theory and methodologic pathology, interpretation and correlation of data, and study of literature.

Pediatrics

100. Medical Genetics. (2) W. C. Epstein
Basic aspects of human genetics are presented in a context relevant to the diagnosis, treatment, and counseling of genetic disorders and congenital malformations. Emphasis is placed on the application of genetic knowledge to actual counseling problems.

110. Required Clerkship in Pediatrics. (1½ per week) Su, W. Sp. Prerequisite: Medicine 131 A-B-C.
Grombach, M. Grossman
Practical work including teaching in the ward, newborn nursery, and outpatient clinics with emphasis on case assignments. Seminar covering major aspects of pediatrics and infectious diseases and procedure demonstrations at UC and SFGH.

140.1 Advanced Clerkship. (1½ per week) Su, W. Sp. Prerequisite: Medicine 110 and Pediatrics 110. Grombach
Students are assigned patients under supervision of house staff and resident staff. Students present patients on wards, assist with procedures, and attend special conferences concerning hospital patients. Advanced clinical clerkships are offered at various hospitals.

140.2 Off-Campus Clinical Clerkships. (1½ per week) Su, W. Sp. Prerequisite: Medicine 110 and Pediatrics 110. Grombach
Clinical clerkship in off-campus hospital approved by the chairman of the department and the Dean.

140.3. Ambulatory Pediatrics at VMC. (6) Su, F. W. Sp. Prerequisite: Medicine 110 and Pediatrics 110. Ballard
Working with a pediatric house staff and pediatric nurse practitioner team and under the supervision of the staff physician, the clerk will have direct primary care and health supervision responsibilities for selected well and acutely ill children. Schedules 7 a.m. to 7 p.m., Monday through Friday.

140.4. Pediatric Cardiology. (1½ per week) Su, F. W. Sp. Prerequisite: Medicine 110 and Pediatrics 110. Rudolph
Experience in cardiovascular evaluation and treatment including clinical work-up in the ward and clinic, cardiac catheterization, angiocardiography, children’s electrocardiograms, surgical management, and postoperative care.

140.4A. Cardiology Private Practice. (1½ per week) Su, F. W. Sp. Prerequisite: Medicine 110 and Pediatrics 110. S. Robinson
Experience in clinical evaluation of children with cardiac abnormalities in a private office. Setting includes history, physical examination, EKG, electrocardiography, and any other procedures necessary for diagnosis.

140.5. Pediatric Private Practice. (1½ per week) Su, F. W. Sp. Prerequisite: Medicine 110 and Pediatrics 110. L. P. Smith
Working experience with a pediatrician on the clinical faculty as he sees patients in his office and in the hospital. Student may select time in small group, group, or sub-specialty practice, or a combination of these.

Clinical clerkship in adolescent medicine with emphasis on outpatient clinical experience in a wide range of health problems of the adolescent.

140.7. Infectious Disease at VMC. (6) Su, F. W. Sp. Prerequisite: Medicine 110 and Pediatrics 110. Granoff
Combined experience in pediatrics and internal medicine with exposure to management of usual and unusual infections occurring in a high-risk rural population. Daily conferences and rounds are held with hospital-based infectious disease consultants. Work in the clinical microbiology laboratory may also be arranged.

140.8. Ambulatory Pediatric Clerkship at MZ. (1½ per week) Su, F. W. Sp. Prerequisite: Medicine 110 and Pediatrics 110. R. Ballard
Experience in ambulatory pediatrics in outpatient pediatric department where multidisciplinary Comprehensive Care Program for children is based. Student works with a team of physicians and follows patients admitted to the inpatient service.

Supervised participation in clinical activities, both inpatient and outpatient, and all regularly scheduled conferences of the Child Neurology Division. Study of the developing nervous system, the consequences of the nervous system affecting infants, children, and adolescence.

140.11. Pediatric Radiology at CHMC. (1½ per week) Su, F. W. Sp. Prerequisite: Medicine 110 and Pediatrics 110. Higashino
Students participate in clinical experiences including outpatient evaluation, instruction in radiographic and ultrasound methods, casting, and treatment. Milestone examination is given.

Work under the direction of the instructor in diabetic camp. Clinical and management aspects of diabetes. Students have an opportunity to participate in the operation of the camp program and treatment of many aspects of diabetes in children, adolescents, and young adults.

140.15. Pediatric Hematology and Oncology. (1½ per week) Su, F. W. Sp. Prerequisite: Medicine 110 and Pediatrics 110. Deamer
Diagnosis and treatment of anemia, aherosis, infection, and leukemia. Attends Pediatric Consultation Service and Pediatric Disease Group.

140.23 Neonatal Pediatrics at C. (1½ per week) Su, F. W. Sp. Prerequisite: Medicine 110 and Pediatrics 110. Brady
Students participate in the care of infants in the intensive care nursery in close consultation with the house staff, fellows, and senior staff and in conferences conducted by senior staff.

Experience in normal newborn and intensive care nurseries. Experience in applying the principles of pediatrics in intensive care units to the care of children in intensive care nurseries, assisting attending physician.


150.04. Research in Pediatrics. (1½ per week) Su, F, W, Sp. Prerequisite: Medicine 110 and Pediatrics 110. Grumbach and Staff Student research projects under guidance of faculty members. Projects must be approved by instructors. Students may initiate or continue research programs under supervision of faculty members.

150.10. Clinical Correlation in Pediatrics. (2) Su, F, W. Grumbach Students prepare case presentations weekly from patients on the pediatrics wards. Course correlates patients' problems with work in the required curriculum. Experience on the wards is in a clinical setting.

158. Supervised Study in Pediatrics. (1-5) F, W, Sp. Prerequisite: Consent of instructor. Grumbach and Staff Supervised study and directed reading under supervision of a member of the faculty with the approval of the chairman of the department.

199. Laboratory Project in Pediatrics. (1-5) F, W, Sp. Prerequisite: Consent of instructor. Laboratory project under direction of a member of the faculty with the approval of the chairman of the department.

401. Pediatric Roentgenology Conferences. (1½) Su, F, W, Sp. Interns and residents. UC Grumbach Conferences include house staff preparation and presentation of patient case histories with reference to the literature, laboratory work, and special studies. Faculty members and consultants from other departments as well as other universities discuss recent developments in their respective fields.


Conferences include review and discussion of recent X-ray studies of radiographic cases in the wards and outpatient service.

402. Pediatric Clinical Seminar. (1½) Su, F, W, Sp. UC Grumbach Seminar includes review of history-taking, physical examination, laboratory tests, diagnosis, and treatment. In addition, the chief resident provides teaching and clinical responsibilities.

450. Clinical Pediatrics. (1½ per week) Su, F, W, Sp. Interns and residents. UC Grumbach Residents, under supervision, are responsible for patient care in the wards and outpatient clinic including history-taking, physical examination, laboratory tests, diagnosis, and treatment. In addition, the chief resident provides teaching and clinical responsibilities.


452. Clinical Primary Care. (1½ per week) Su, F, W, Sp. Prerequisite: Refer to Ambulatory and Community Medicine 462. Grumbach, Dower Interns in the Primary Care Track of Pediatrics are responsible for patient care in a multispecialty primary care clinic. Other rotations include referrals to the regular Pediatrics Residency Program as well as related clinical services such as Dermatology, Otolaryngology.

463. Clinical Primary Care. (1½ per week) Su, F, W, Sp. Prerequisite: Refer to Ambulatory and Community Medicine 463. Grumbach, Dower Residents in the Primary Care Track of Pediatrics are responsible for patient care in a multispecialty primary care clinic. Other rotations include those common to the regular Pediatrics Residency Program as well as related clinical services such as Dermatology, Otolaryngology.

490. Clinical Pediatrics at SGFH. (1½ per week) Su, F, W, Sp. SGFH M. Grossman Interns rotate through newborn nursery, pediatric wards and clinic, communicable diseases ward, and emergency room. They are responsible for the care of patients, under the direction of the attending staff, including history-taking, physical examination, laboratory tests, and consultation.


Pedodontics


109.01. Clinical Pedodontics Rotation. (0-3) F, W, Sp. Prerequisite: Concurrent enrollment in Dental Auxiliary Utilization 109.01. Clinic Rotation. M. Morris and Staff Clinical diagnosis, planning of treatment, dietary counseling, fabrication of appliances for and treatment of dental caries, and management of children requiring tooth guidance, space management, and orthodontic treatment. Programs must be signed upon completion of clinic requirements.

150-A-B-C. Pedodontics. (1-1-1) F, W, Sp. Prerequisite: Operative and Restorative Dentistry 150-A-B. M. Morris and Staff Lecture course presenting dental procedures to dental students. Modules of0 include the needs of children. Examination, diagnosis, treatment planning, pain control and management, restorative procedures, preventive orthodontics, diet analysis, and caries control are stressed.


170.02-A-B-C. Clinical Pedodontics. (3-4, 3-4, 3-4) F, W, Sp. Clinic 9-12 hours. M. Morris and Staff

Continuation of Pedodontics 170.01A-B-C.

171.01A-B-C. Pedodontic Seminar. (1-5, 1-5, 1-5) F, W, Sp. Seminar 1-5 hours. M. Morris Assigned readings of current and classical literature in pedodontics and allied specialty areas with review and discussion of each reading assignment to be presented to the resident by a student to critically evaluate dental literature.

171.02A-B-C. Pediatric Seminars. (2, 2, 2-3, 2-3, 2-3) F, W, Sp. Prerequisite: Pedodontics 171.01A-B-C. Seminar 2-3 hours. M. Morris and Staff Continuation of Pedodontics 171.01A-B-C.

172A-B-C. Clinical and Seminar. (2-2, 2) F, W, Sp. Clinical and Seminar 60 hours. M. Morris and Staff Hospital procedures: admitting, ordering, histories, charts and records, laboratory tests, reports, and administrative considerations. Organizing and equipping the hospital operating room for comprehensive dental care of patients under general anesthesia. Clinical experience in treating critically ill hospitalized patients.

173. Clinical Pedodontics, (0-5) SS. Prerequisite: Medicine 173.01. Clinic Variable. M. Morris and Staff Students provide dental care for non-English speaking patients, including utilization of facilities of the mobile clinic.


175. Pediatric Oral Surgery. (3) F. SGFH: 90 hours. Khosla, Devlin Hospital procedures, management of trauma and emergencies involving the primary and young subsequent care. Extraction, re-implantation, pulpal protection, stabilization of luxated teeth, management of infection, and supportive therapy are emphasized.

176. Pediatric General Anesthesia. (0-3) F. CHMC: 90 hours. K. Schroeder and Staff An introductory course in current general anesthesia to familiarize the student with pediatric anesthetic; the attendant problems and risks, the agents used and methods of delivery. Clinical experience under close supervision.
177. Pediatric Hospital Dentistry. (2) F, W, Sp. Hospital dentistry 6 hours. M. Morris, Weis

Students are assigned to an interdisciplinary health care team and are responsible for delivery of dental care for all in-house patients. Definitive dental care is provided on the ward as well as in the operating room.

180.01B-C. Pediatric Seminar. (1) W, Sp. Prerequisite: Completion of third year pediatric lecture series and approval of the Dean.

B. Smith

Documented discussions on occlusion, mixed dentition analysis, malocclusions, missing teeth and anomalies, timing, and oral manifestations of systemic diseases. Designed for students considering pedodontics as a specialty. Counseling is provided for postdoctoral education.


M. Morris and Staff

Course provides additional clinical experience in pedodontics.

180.02. Community Pedodontics. (0-4) F, W. Prerequisite: Completion of clinical requirements for graduation or approval of Clinic Review Committee.

M. Morris, Stark and Staff

Elective clinic course in pedodontics. Students provide care for children at selected community clinics or camps. Course includes preventive education, comprehensive operative procedures including pulp therapy and necessary prophy and dental care, taking and processing needed radiographs.

Periodontology


Treatment of periodontal diseases.


Introduction to the recognition and diagnosis of inflammatory periodontal disease. The pathogenesis of periodontal disease. The pathogenesis of periodontal disease is discussed from clinical, histopathological, and biochemical points of view.

119. Periodontal Therapy (Introduction). (1) Sp. Clinic five 4-hour periods. Madsen

Introduction to the techniques of supragingival scaling and root planing.

121. Peridontal Therapy (Introduction). (1) F. Prerequisite: Periodontology 110. Parr

Introduction to the rationale and objectives of periodontal therapeutic procedures. Also considered are the recognition and treatment of periodontal disease in children, acute periodontal emergencies, and periodontal considerations in restorative dentistry.


Introduction to clinical techniques in oral prophylaxis including plaque control, scaling, root planning. During fall and winter quarters, students provide dental hygiene therapy for senior patients. The spring quarter is utilized for treatment of their own patients.

131. Periodontics. (1) F. Prerequisite: Periodontology 121. Parr

The demonstration and rationale of surgical treatment of periodontal lesions.

150. Periodontics. (2) Sp. Lecture and Demonstration 2 hours. K. Horowitz

Introduction to the oral hygiene problems of the periodontal patient and the means and methods available to the dentist and auxiliaries to motivate the patient to self-care.

151. Periodontology. (1) F. Prerequisite: Periodontology 150. Madsen

Classification of periodontal diseases and methods of their treatment. The principles of periodontal therapy are correlated with therapeutic procedures. A faculty panel discusses the role of the hygienist in dental practice.

161. Periodontics. (1) W. Prerequisite: Periodontology 160. K. Horowitz

The demonstration and rationale of surgical treatment of periodontal lesions. The role of the dental hygienist in dental practice, especially related to prevention, recognition, and aid in treatment of periodontal diseases.

170A-B-C. Histopathology of the Periodontium (2-2-2) F, W, Sp. Lecture 1 hour, Lab 3 hours. Dienes

Dynamics of inflammation and its role in the periodontium.

171A-B-C. Clinical Periodontics. (0-8-4) F, W, Sp. Prerequisite: Enrollment in periodontology program. Clinic 12 hours.

Shibata, Green and Staff

Clinical procedures in periodontal therapy.

172. Examination and Treatment Planning. (1) F. Prerequisite: Enrollment in postgraduate specialty program or consent of instructor. Parr

Lectures on examination and treatment planning.

172.01. Hospital Anesthesiology. (6) SS. Prerequisite: Consent of instructor. Conference 24 hours, Seminar 10 hours. Chang

Practical course in operating room anesthesia. Instruction in hospital administration, physical and preanesthesia evaluation of the patient, monitoring of vital signs, administration of intravenous psychosurgery, general anesthesia, and handling of resultant medical emergencies. Clinical instruction is supplemented by seminars.

172.02. Hospital Periodontics. (2) F, W, Sp. Prerequisite: Periodontology 171A-B-C. Shibata

Clinical periodontics integrated into the regular medical and rehabilitative activities of the hospital. Course provides patients with quality dental care, appreciation for preventive dentistry and, concept of total health care. Students are exposed to various medical conditions.

173.01. Periodontal Therapy. (2) SS. Prerequisite: Periodontology 171A-B-C. Clinic 60 hours. Shibata and Staff

Teach procedures in periodontal therapy. This course is an enlargement on earlier clinical experience.

173.02A-B-C. Periodontal Therapy. (4-4-4) F, W, Sp. Prerequisite: Periodontology 171A-B-C. Clinic 12 hours.

Shibata, Green and Staff

Advanced clinical procedures in periodontal therapy.

173.03. Periodontal Therapy. (2) SS. Prerequisite: Periodontology 173D-C. Clinic and Seminar 60 hours. Shibata, Green and Staff

Advanced surgical techniques in management of periodontal lesions.

174. Periodontics. (1) SS. Prerequisite: D.D.S. degree, Parr

A seminar to discuss and evaluate the problems common to the specialties of orthodontics and periodontics.

175A-B-C-D. Treatment Planning and Surgery. (2-3-3-3) D, O, 0, 1) F, W, Sp. SS. Seminar 1 hour. Shibata and Staff

Students present and discuss management of cases that are either planned for treatment or currently under treatment. They are expected to defend their treatment plan and therapeutic procedure based on relevant literature and clinical experience.

175.01A-B-C-D. Advanced Treatment Planning and Surgery Seminar. (1-1-1-1) F, W, Sp. SS. Seminar 1 hour. Shibata and Staff

Students present and discuss management of their cases that are either planned for treatment or currently under treatment. They will be responsible for defending their treatment plan and therapeutic procedures based on relevant literature and clinical experience.

176. Original Investigation in the Field of Periodontology. (1) W, Sp. Prerequisite: Enrollment in postgraduate specialty program or consent of instructor. Lab 3-15 hours. Goodson

Research.


Study in depth with literature review and seminar discussions on surgical techniques used to treat lesions involving the hard and soft tissue of the periodontium.

178. Occlusion. (1) F, W, H. Noble

Course provides a broad concept of the principles of occlusion, upon which definitive therapeutic procedures can be based.

180. Periodontics. (1) W. Parr

Implementation of the skills and knowledge of periodontology in the private practice environment.

180.02A-B-C. Advanced Periodontics. (1-1-1) F, W, Sp. Prerequisite: Periodontology 171A, 171B and consent of instructor. McCormick

McGill

Study in depth, with literature review and seminar discussions of areas of periodontology having major clinical significance.

180.03. Periodontal Surgical Techniques. (1) F. Prerequisite: Periodontology 131.

Surgical techniques are presented which may be used to treat lesions occurring in the hard and soft tissues of the periodontium.

181. Seminar on Connective Tissue. (1) W. Prerequisite: Biochemistry 110A-B and 111 or concurrent enrollment. Bhatnagar

Surgically accessed extracellular tissue in relation to the basis of connective tissue growth, development, and disorders. Topics discussed include: cell proliferation, tissue remodelling, wound healing, periodontal disease, arthritis.
A review of protein and nucleic acid structures. Emphasizes the general principles which govern secondary and tertiary structure, with an introduction to the current approaches to this problem for proteins and transfer RNA.

203. Drug Metabolism, (1-2) Sp. Pre- requisites: Consent of instructor.
Study of the intracellular and in vitro biotransformation of foreign compounds with particular emphasis on drug metabolism. Detailed and biochemical mechan-isms are considered.

204. Hormones, (3) W. Prerequisite: Consent of instructor.
M. Wolff, Jorgensen
Lectures and conferences dealing with structure-function relationships of steroid and polypeptide hormones at the molecular level. Special emphasis is given to steroids and peptide hor- mones.

205. Modern Techniques in Pharmaceutical Chemistry, (2) W. Prerequisite: Chemistry 115 and 157 or equivalents. Chemistry 165 recommended. 

Elements of experimental design, statistical inference, and methods of laboratory and clinical research.

Seminar designed to correlate basic sci-ences with problems in periodontology and evaluate research in the direction of re- search, clinical application, and teaching. Selected papers in the literature are reviewed and evaluated. Other instructors are invited to participate.

120. Principles of Pharmacological Chemistry. (3) F. Prerequisite: Chemistry 115.
Jorgensen, Castagnoli
A study of physical, chemical, and pharmacological factors which contribute to drug action. Topics will include the metabolism of drugs; and the action of drugs on receptors.

121. Principles of Pharmacological Chemistry, (3) W. Prerequisite: Pharmacological Chemistry 120 and concurrent enrollment in Pharmacology 121.
Jorgensen, Wolff
A systematic survey of the chemical features of synthetic drugs, including correla-tions between chemical structure and biological activity. Emphasis on drugs affecting the autonomic nervous and cardiovascular systems as well as renal function.

122. Principles of Pharmacological Chemistry, (3) Sp. Prerequisite: Pharmacological Chemistry 120.
Brochmann-Hanssen, McDonagh
A systematic survey of the chemical features of synthetic drugs, including correla-tions between chemical structure and biological activity. Emphasis on drugs affecting the autonomic nervous and cardiovascular systems as well as renal function.

123. Principles of Pharmaceutical Chemistry, (3) F. Prerequisite: Pharmaceutical Chemistry 120.
Brochmann-Hanssen, Jorgensen
A systematic survey of the chemical features of synthetic drugs, including correla-tions between chemical structure and biological activity. Emphasis on drugs affecting the autonomic nervous and cardiovascular systems as well as renal function.

R. B. Meyer
A systematic survey of the chemical features of synthetic drugs, including correla-tions between chemical structure and biological activity. Emphasis on agents effective in autoinhibitory and antineoplastic diseases.

151. Pharmaceutical Analysis, (3) W. Prerequisite: Chemistry 113 and 132.
Brochmann-Hanssen
Principles of pharmaceutical analysis used for evaluation of drugs and dosage forms, with special emphasis on modern separation techniques and instrumental meth-ods of analysis.

152. Radiocarbon in Biological and Medic-ine, (1) F. Peng, Hoffer
A discussion on radiocarbon in recent use in biology and medicine. The course is oriented toward topics of broad interest.

153. Radiopharmaceuticals, (1) W. Prerequisite: Pharmaceutical Chemistry 152 or 156.
Price
A study of the techniques used in nuclear medicine as pharmacocastic, Dosage form design and related aspects are discussed.

154. Pharmaceutical Quality Control, (2) W. Prerequisite: Pharmacy 165, Pharmacy 166 or concurrent enrollment.
Brochmann-Hanssen
General principles of total quality control applied to the manufacture of pharmaceuti-cal products, introduction to statistical quality control, its application to process studies, and evaluation of dosage forms. Consideration of regulatory considerations and applicable standards to small-scale manufacturing and hospital pharmacy.

Brochmann-Hanssen
Experiments in pharmaceutical analysis applied to drug entities, dosage forms, and samples of biological origin.

157. Bioanalytical Theory and Tech-niques, (3) W. Lecture 2 hours, Lab 2 hours.
Sadee
Analytical theory and techniques for de-termining drugs and metabolites in biological fluids.

158. Radiosotope Measurements, (1) W. Sp. Prerequisite: Pharmaceutical Chemis-try 153 or consent of instructor. Lab 3 hours.
Peng
Detection and measurement of radionuclides commonly used in biological and medici-ne.

160. Fundamentals in Radioactivity, (2) F. Perez-Mendez
This course will treat the principles in physical decay of radionuclides, characteristics of nuclear emissions, interaction with mat-ter, and related aspects in radioactivity.

162. Radiosotope Imaging, (1) Sp. Prerequisite: Pharmaceutical Chemistry 153 or consent of instructor.
Price
This course will treat the theory and methods in application of radiotracers to organs in nuclear medic-ine.

170. Group Studies Course, (1-4) F. W. Sp. Consent of instructor. Staff
Group studies of selected topics in pharmacology.

Library research and directed reading under supervision of a member of the faculty with the approval of the chairman of the department.

199. Laboratory Project in Pharmaceutical Chemistry, (1-3) F, W, Sp. Staff
A laboratory research project under di-rection of a member of the faculty with the approval of the chairman of the department.

200. Physical Chemical Properties and Biological Activity, (1) W. Prerequisite: Consent of instructor.
Kollman
Lectures and conferences dealing with the relationship between physical properties and biological activity, with special emphasis on the uses of molecular orbital calculations in this connection.

201. Advanced Survey of Medicinal Chemistry, (2) F. Prerequisite: Consent of instructor.
Jorgensen
Basic principles of medicinal chemistry and a survey of the relationships between structure and biological action for major drug classes.

202. Macromolecular Structure, (1) W. Prerequisite: Consent of instructor.
Kuntz, Shafer
A basic study of the concentration-time course of drugs and their metabolites, meth-ods of pharmacokinetic analysis, and the de-
214. Advanced Aspects of the Kinetics of Drug Distribution and Disposition, (3) Sp. Prerequisite: Pharmaceutical Chemistry 213 and Biochemistry 202 or equivalents. Lecture 2 hours, Lab 3 hours.

Riegelman, Benet and Staff

Advanced consideration of pharmacokinetics including multicomponent models, assessment of intrinsic absorption and disposition parameters, and correlation of pharmacological response with the concentration-time course of a drug. Laboratory will include analog and digital computer methods.


Genetic mechanism and drug action, cell division and antimetabolites, adaptive phenomena in relation to control mechanisms, and the uncoupling agents.

217. Physical Pharmacy of Solid Dosage Forms, (3) W. Prerequisite: Pharmaceutical Chemistry 160 or consent of instructor.

Properties of solids, solid-solid interactions, solid dosage forms, and stability of solid dosage forms are discussed.

218. Physical Pharmacy of Liquid Systems, (3) W. Prerequisite: Pharmaceutical Chemistry 217.

Staff

Solubility, solution, diffusion, properties of solids in solution, and drug stability.


Selected topics on enzyme mechanisms. General theory of enzyme catalysis, general acid-base catalysis, propinquity effects, strain and conformational change. Covalent intermediates in enzyme catalysis. The role of cofactors in enzyme catalysis. Estimation of free energy reactions. Enzyme inhibitors.

220. Graduate Seminar Program, (1) F, W. Sp. Staff

A program involving the presentation of core material in pharmaceutical chemistry in the medical chemistry and pharmaceutical pathways. The presentations are made by graduate students, and examination by a series of cumulative examinations.

221. Research Conference in Pharmaceutical Chemistry, (1) F, W, Sp. Prerequisite: Graduate standing in the Department of Pharmaceutical Chemistry. Staff

A series of weekly research conferences given by visiting lecturers, faculty, and advanced graduate students.


Topics of current research interest in physical and biophysical chemistry.

230A. Spectroscopy, (4) W. Prerequisite: Chemistry 162 or equivalent. Lecture 3 hours, Lab 3 hours. Offered in alternate years.

Kuntz

The theory and application of molecular electronic and vibrational spectroscopy, optical rotatory dispersion and circular dichroism.

230B. Spectroscopy, (3) Sp. Prerequisite: Chemistry 162 recommended. James

Theory and application of nuclear magnetic resonance and electron-spin resonance; mass spectrometry.

230C. Spectroscopy, (1) W. Lab 3 hours. James

Laboratory work in nuclear magnetic resonance and electron-spin resonance; mass spectrometry.

231. Spectroscopy, (1-4) W. Prerequisite: Pharmaceutical Chemistry 230B.

Shafer

Selected topics in spectroscopy and related areas. Content of the course changes, as in the case of seminars. Course may be repeated for credit.

240. Radiopharmaceutical Synthesis, (1-2) W. Prerequisite: Consent of instructor. Lab 3-6 hours. Peng

Theory and techniques related to the synthesis of isotopically labeled organic compounds. Course may be repeated for credit.

241. Radiobiological Analysis, (1) W. Prerequisite: Consent of instructor. Lab 3 hours. Peng

Experimental techniques related to various aspects of radiolabeling of biological specimens, biochemical compounds, and drugs isotopically labeled with tritium and/or radio-carbon.

242. Radiotracer Methodology, (1) W. Prerequisite: Pharmaceutical Chemistry 152 or 160, or consent of instructor. Peng, Benet, Licko

Discussions on the theory and principles in the use of radionuclides as tracers in biological systems. Emphasis is on the design of experiments and data evaluation.

243. Chemical and Biological Effects of Ionizing Radiation, (1) Sp. Prerequisite: Pharmaceutical Chemistry 152 or 160, or consent of instructor.

J. W. Harris, Painter, Peng

Effects of ionizing radiation on chemical and biological systems will be discussed.

250. Research (1-8) F, W. Staff

266. Conferences in Research Planning, (1) F, W, Sp. Prerequisite: Consent of instructor.

Staff

Discussion and practice in research problem formulation and design selection. Core classes and small group sessions are organized around students' interest by faculty within the area of specialization.


For graduate students engaged in writing the thesis for the master's degree.

299. Dissertation, (0) F, W, Sp. Prerequisite: Advancement to candidacy and permission of graduate adviser.

For graduate students engaged in writing the dissertation for the Ph.D. degree.

300. Techniques in Teaching, (1) F, W. Prerequisite: Graduate standing in the Department of Pharmaceutical Chemistry and participation in the ongoing teaching program.

Staff

Conferences and discussion dealing with the teaching of courses in the School of Pharmacy under the direction of the faculty.

Pharmacognosy


Labs arranged individually. Under supervision of a member of the faculty with the approval of the chairman of the department.


A laboratory research project under direction of a member of the faculty with the approval of the chairman of the department.

Pharmacology

100-A. Medical Pharmacology, (3-5) F, W, Sp. Prerequisite: Biochemistry 100A and Physiology 120 and 125 or equivalents. Katzung, Trevor

A systematic presentation of pharmacologic agents based on drug group classification. Major emphasis is on clinically significant aspects of therapeutic effects, toxic effects, and evaluation of drugs.

121. Pharmacology and Toxicology, (1) W. Prerequisite: Concurrent enrollment in Pharmaceutical Chemistry 121.

V. Sutherland

Systematic survey of action and uses of drugs with emphasis on steroids, hormones, and drugs for metabolic disorders.

125. Pharmacology and Toxicology, (4) F. Prerequisite: Biochemistry 120A and Physiology 120 and 125. Lecture 3 hours, Lab 3 hours.

Brownberg, Burkhalter

Systematic survey of action and uses of drugs acting on autonomic nervous and cardiovascular systems and the kidneys.

128-C. Dental Pharmacology, (2-4) F, W, Sp. Prerequisite: Pharmacology 10. Staff

Dental course. Students will study the relation of drugs to oral function. Staff

Objective of the course is to acquaint dental and dental hygiene students with the fundamentals of pharmacology. Various classes of drugs are examined with regard to actions, absorption, fate, excretion, and toxicity. Agents useful in dentistry are emphasized.

139. Toxicology, (2) W. Prerequisite: Pharmacology 125 and 136.

Mange, Hodge, Meyes, Piper, Vore

The occurrence, mode of action, recognition, and treatment of poisoning by environment chemicals and therapeutic agents.

134. Pharmacology and Toxicology, (1) Sp. Prerequisite: Concurrent enrollment in Pharmaceutical Chemistry 134.

Trevor, Apple

Systematic survey of action and uses of anti-infective and antineoplastic drugs.

138. Pharmacology and Toxicology, (4) F. Prerequisite: Pharmacology 125. Lecture 3 hours, Lab 3 hours. Burkhalter and Staff

Systematic survey of action and uses of drugs acting on the central nervous system.

150.01. Pharmacology Research, (1/2) per week. Su, F, W, Sp. Prerequisite: Consent of instructor.

Students perform individual research in a field of their choice under the guidance and supervision of a member of the faculty.


Staff

Group studies of selected topics in pharmacology.
170.01. Experimental Techniques in Pharmacology. (1-5) SS. Prerequisite: Consent of instructor and completion of biochemistry, physiology, and pharmacology courses.

Loh, Trevor

Practical laboratory experience to acquire a student's understanding of biochemical and physiological techniques used in the study of drug action in systems from the subcellular level to intact animal and human. Consent of instructor.

220. Seminar. (0-0-1) F, W, Sp. Staff

Discusses seminars on present methods and problems in current teaching and research in pharmacology and toxicology.

250. Research. (1-6) F, W, Sp. Staff

Loh, Burkhalter

A laboratory course in biochemical techniques as commonly applied to investigations of drug action.

198. Supervised Study in Pharmacology. (1-5) F, W, Sp. Staff

Library research and directed reading under supervision of a member of the faculty with approval of the chairman of the department.

199. Laboratory Project in Pharmacology. (1-3-3) F, W, Sp. Prerequisite: Consent of instructor.

Stout, Trevor; Katzung, Loh

A laboratory research project under direction of member of faculty with approval of chairman of the department.

205A-B-C. General Pharmacology. (3-3-3) F, W, Sp. Prerequisite: Consent of instructor.

Trevor, Katzung, Loh

A lecture-conference dealing with fundamental aspects of interactions between chemical compounds and the components of biological systems. Mechanisms of drug action at molecular, biochemical, membrane, tissue, and organ levels of the cardiovascular, muscular, and central nervous systems are considered.

209. Molecular Mechanisms of Action of Biologically Active Substances. (3-3) F, W, Sp. Prerequisite: Pharmacology 194 or consent of instructor.

Kun

A course in molecular biological experimentation and theories concerning the mechanism of action of biologically active substances on a macromolecular level. The content of the course, beyond certain theoretical material, varies with each participant and consists of guided experimentation in novel subjects.

210-A-B-C. Advanced Toxicology. (1-2, 1-2, 1-2) F, W, Sp. Prerequisite: Consent of instructor.

Hine, Hodge, Meyers, Piper, Vore

A detailed examination of the field of toxicology as it relates to agricultural, environmental, forensic, industrial, military, regulatory, and therapeutic problems. Emphasis is placed on mechanism of action of toxic substances. Current advances and classical concepts of toxicology are discussed, and the effects on the body are indicated. Several laboratories are offered.

220. Seminar. (0-0-1) F, W, Sp. Staff

Seminars to discuss present methods and problems in current teaching and research in pharmacology and toxicology.

250. Research. (1-6) F, W, Sp. Staff

Loh, Burkhalter

Principles and applications of physiological techniques used in the study of drugs. Emphasis is on the study of cardiovascular and autonomic agents.

256. Laboratory Techniques in Toxicology. (2) 5 Sp. Lab 6 hours.

Hodge and Staff

Principles and applications of experimental techniques in the evaluation of the toxicologic hazards of drugs and environmental chemicals: techniques for testing acute and chronic toxicity, skin irritation and sensitization, mutagenesis and carcinogenesis will be covered.

288. Thesis. (0) F, W, Sp. Prerequisite: Advancement to candidacy and permission of the graduate adviser.

For graduate students engaged in writing the thesis for the master's degree.

299. Dissertation. (0) F, W, Sp. Prerequisite: Advancement to candidacy and permission of the graduate adviser.

For graduate students engaged in writing the dissertation for the Ph.D. degree.


Opportunity is provided to participate in a formalized way in the teaching of pharmacology under the direction of the faculty.

Pharmacy

114. Introduction to the Analysis of Clinical Data. (3) F. Lecture 2 hours, Lab and Conference 3 hours.

An applied statistics course where basic data analysis techniques and research designs are considered. Topics include: problem design, sample size, choice of estates, and probability densities, including normal, t, x², F.


A study of the physical, chemical and biophysical properties and interrelationships of drugs and their derivatives, plasma substituents, hematologic and biologic preparations, and biologic preparations.

116. Veterinary Products. (3) Sp. Prerequisite: Microbiology 125, Pathology 135, Pharmacology 136 and Pharmacy 116.

Spinnell

Course is designed to familiarize the student with the common ailments of domestic animals and livestock, products used for the prevention and treatment of disease, and the interrelationship of pharmacist, veterinarian, and animal owner, and legal limitations on veterinary dispensing.

156. Pharmaceutical Technology. (3) F. Prerequisite: Pharmacy 116, Lecture 1 hour, Lab 6 hours.

Cooper, Cooper

An introduction to the technology of liquid and semisolid pharmaceuticals. Special emphasis is given to the problems encountered and the materials used in pharmaceutical manufacturing.

166. Pharmaceutical Technology. (3) W. Prerequisite: Pharmacy 165, Lecture 0 hours, Lab 6 hours.

Cooper, Cooper and Staff

An introduction to the technology of solid dosage forms, especially tablets and capsules. Emphasis is placed on problems encountered in preparation of this type of medication.

176. Pharmaceutical Technology. (3) Sp. Prerequisite: Pharmacy 166, Lecture 1 hour, Lab 6 hours.

Cooper, Cooper and Staff

An advanced study of the relationship of the art and science of pharmaceutical technology to solid dosage forms.

166. Seminar in Clinical Pharmacokinetics. (2) F, W, Sp. Prerequisite: Fourth year standing or consent of instructor. Reports and Conferences 6 hours. Enrollment limited.

Tozer, Riegelman

A discussion of the clinical application of pharmacokinetic principles in drug therapy.

170. Group Studies Course. (1-4) F, W. Prerequisite: Consent of instructor.

Staff

Group studies of selected topics in pharmacy.
170.01. Listening and Talking to Patients. (6) Sp. Prerequisite: Consent of instructor. Lecture 1 hour, Lab 3 hours.
K. Jacoby, Stone

An introductory course emphasizing patient interviewing. Small group techniques are used to develop and test communication skills. Observation of numerous patient communication and social problems with opportunities to tape student interactions and interpret responses.

180. Drugs and Society. (3) W. Prerequisite: Basic course sequence in pharmacology and consent of instructor. Enrollment limited.
M. Silverman
An analysis of the roles of the drug industry, pharmacy and medical professions, trade associations, governmental agencies, the Congress, consumer groups, and the press in the development, advertising, efficacy, quality, advertising, prescribing, and pricing of selected drugs.

196.57. Pediatric Specialty Clerkship at SFGM. (8) F, W, Sp. Prerequisite: Clinical Pharmacy 130, 131, 132, and 148 or 149. Consent of instructor. Enrollment limited. Tong
Students participate with the pediatric staff and work with problems frequently encountered in general pediatric medicine and those characteristic of low income, overcrowded and substandard conditions. Activities include rounds, conferences, and participation in special projects.

196.55. Medical Specialties Clerkship at SFGM. (8) F, W, Sp. Prerequisite: Clinical Pharmacy 148 and consent of instructor.

Students rotate through the Coronary Care, Chronic Dialysis and Communicable Disease sections, where they participate in conferences, ward rounds and seminars, monitor drug therapy, provide therapeutic consultations and drug histories, prepare and interpret laboratory data.

Staff
Library research and directed reading under supervision of a member of the faculty with approval of the chairman of the department.

Staff
A laboratory research project under direction of a member of the faculty with approval of the chairman of the department.

475. Parenteral Products. (3) W. Prerequisite: Third year standing. Lecture 2 hours, Lab 3 hours.
J. Schwartz, O. Jackson

Introduction to the formulation and technology of parenteral preparations. Laboratory includes participation in hospital activities in which parents are made and administered.

Pharmacy Administration

111. Pharmacy Laws. (2) F.
J. R. Nielsen
Introduction to court systems and administrative boards and their enforcement as they relate to the health professions. Discussion of basic principles of criminal law, negligence, and business law with particular emphasis on the legal relationships and responsibilities of the practitioner to the patient.

112. Pharmacy Laws. (2) W.
J. R. Nielsen
A detailed examination of Federal and State drug, cosmetic, and narcotic laws; their promulgation, enforcement, and effect upon the practice of pharmacy. Some administrative work.

150. Marketing. (6) W.
Students participate with the marketing staff to analyze the flow of pharmaceutical products from production to consumption and the decision-making process of marketing institutions. Emphasis is given to the environmental factors affecting marketing decisions.

Staff
Principles of management, specially directed toward developing familiarity with current problems peculiar to community pharmacy. Material is given to elements in locating, organizing, operating, and adapting a pharmacy.

155. Accounting. (3) F. Lecture 1 hour, Discussion 2 hours.
Staff
Consideration of the fundamental concepts of accounting and its applied uses, with emphasis on the accounting requirements of the community pharmacy. Problem cases and demonstrations are presented.

Staff
Group studies of selected topics in pharmacy administration.

180A-B-C. Legal Problems Related to Health Care. (2-2-2) F, W, Sp. Prerequisite: Third year standing. Pharmacy Administration 180A is prerequisite to 180B, and 180B to

180C, but completion of entire sequence is not required.

Conducted in cooperation with law students who are teamed with students from professions schools on this campus to analyze assigned problems of their respective disciplines, with particular emphasis upon the legal implications and responsibilities of the pharmacist.

Library research and directed reading under supervision of a member of the faculty with approval of the chairman of the department.

Physical Therapy

100A. Anatomy. (4) F. Prerequisite: Anatomy 102 or equivalent. Lecture 2 hours, Lab 3 hours. Nordschow

The course is designed to present the foundation of the structure and function of the human body with emphasis in lecture and laboratory on topographical, skeletal, vascular, and neuromuscular aspects. Dissection of the upper limb, neck, and trunk are emphasized.

100B. Anatomy. (2) W. Prerequisite: Physical Therapy 100A. Lecture 1 hour, Lab 3 hours. Nordschow

This course is designed to present the foundation of the structure and function of the human body, with emphasis in lecture and laboratory on topographical, skeletal, vascular, and neuromuscular aspects. Review plus dissection of the lower limb is stressed.

101A. Pathology. (3) F.
M. L. Goldberg
A general survey of the fundamentals of pathology with special emphasis on the correlation between pathological processes and the clinical signs, symptoms, and course of their diseases. Gross pathology is demonstrated and autopsy material is available.

102A. Physiology. (3) F. Prerequisite: General human biology or equivalent.
L. Lukin
A review of certain aspects of human physiology, with special emphasis on the cardiovascular and respiratory systems. Specific aspects of pathological physiology are considered, especially in relation to disease of the heart and cardiovascular system.

103A. Neuroanatomy. (2) F. Lecture 1 hour, Lab 3 hours. Garrouste

The development of the human nervous system with special reference to structure and functional relationship. J. Reiner

104A. Physical Therapy Procedures I. (6) F. Prerequisite: Introductory physics. Lec
ture 3 hours, Lab 9 hours. Ahrens

Lectures and laboratory practice in electrotherapy, kinesiology, and tests and measurements. Emphasis is therapeutic use of electricity in certain pathological conditions, analysis of musculoskeletal function in normal and abnormal states, methods of performing, recording and interpreting testing and measuring procedures.

104B. Physical Therapy Procedures II. (6) W. Prerequisite: Physical Therapy 104A. Lecture 3 hours, Lab 9 hours. Ahrens

Lectures, demonstrations, and laboratory practice in hydrotherapy, manipulation, and therapeutic exercise. Emphasized are therapeutic uses of water and massage techniques applied to various pathological conditions and tests of administration of exercises commonly used in orthopaedic, medical, and neurological conditions.

104C. Physical Therapy Procedures III. (6) Sp. Prerequisite: Physical Therapy 104A and 104B. Lecture 3 hours, Lab 9 hours. Ahrens

Lectures and laboratory practice in therapeutic exercise, inclusion of methods of evaluating the patient and planning his program, use and care of assistive devices in rehabilitation of the handicapped, the evaluation of changing concepts, and special techniques of exercise.

105B. Physical Medicine and Rehabilitation. (3) W.
Ranallo

Lectures and clinical demonstrations concerning peripheral vascular problems, geriatric operation. Emphasis on peripheral vascular disease, muscular dystrophy, spinal cord injury, cerebrovascular accidents, the brain-damaged child, neck pain, and back pain.

106B. Clinical Medicine I. (5) W.
F. Schiller, T. Rodgers
Lectures and clinical presentations of medical and neurological patients are designed to increase the student's understanding of the basic interrelationship of structure and function of the various body systems. Conditions requiring physical therapy treatment are fully discussed.

106C. Clinical Medicine II. (5) Sp. Prerequisite: Abnormal psychology or equivalent.
E. Andrews
Lectures in orthopaedic surgery, pediatrics, psychiatry, surgery, obstetrics, gynecology, geriatrics, and dermatology are presented by physicians in these specialties.
107B. Neuromuscular Physiology. (2) W.
Raiston
A study of the physiology of striated muscle and peripheral nerve in relationship to controlling mechanisms within the central nervous system. Special emphasis is given to the interaction of electrical and electromechanical activities. Prerequisite: Ch. 3:1, 4, 5, 6, 7, 8, 9.

108C. Basic Medical Procedures. (2)
Sp. Lecture 1 hour, lab 3 hours.
Nordschow
The study of procedures necessary for the total care of patients.

Gilbert
A study of professional attitudes and obligations and the organization and administration of a department of physical therapy. Laboratory work includes observation in outpatients, inpatients, and in a clerkship in an approved hospital, by special arrangement of the clinical supervisor.

170.2 Survey of Congenital Defects. (2) W. Brown
Anatomical gross anatomy course and consent of instructor.
Mone
This elective course is designed to provide physical therapists with information on the more common human congenital defects. Environmental and genetic factors that produce malformations are considered and possible mechanisms discussed.

410D. Clinical Clerkship. (14) Su.
Prerequisite: Completion of all physical therapy courses in curriculum sequence.
Gibert and Staff
Clinical clerkships consisting of one-month assignments in three different institutions or agencies. Under supervision, students participate actively in clinical evaluation and care of patients. Clinical clerkship lectures are also included.

Physiology

100. Organ System Physiology. (6) W.
Prerequisite: Anatomy 100 and 102; and concurrent enrollment in Biochemistry 100A-B; or consent of instructor. Lecture 4 hours, Conference 2 hours, Lab 4 hours.
Kellogg and Staff
Normal function of the cardiovascular, respiratory, renal, and gastrointestinal systems and the functions of the various cells and systems of the body as a whole are studied in lectures, conferences, laboratory exercises, demonstrations, and clinical experiences.

101. Endocrinology. (4) Sp. Prerequisite: Anatomy 100 and Biochemistry 100A-B; or consent of instructor. Lecture 3 hours, Lab 3 hours.
Ganong
The structure and function of the endocrine glands and selected aspects of endocrine physiology are studied in lectures, demonstrations, and clinical conferences.

110. Integrative and Nutritive Systems. (6) 1 Sp. Prerequisite: College-level biology, physics, and chemistry, or consent of instructor. Lecture 5 hours, Conference 3 hours.
Rothman and Staff
Introduction to organ systems with emphasis on nervous, endocrine, circulatory, respiratory, and alimentary function in vertebrates. Importance of organ systems for the success of multicellular forms serves as focus. Fundamental cell processes are also discussed, emphasizing differentiated functions.

120. Mammalian Physiology. (3) 1 W.
Prerequisite: Physiology 125 required for students in School of Pharmacy. May be taken separately by graduate students with consent of instructor.
Mines
Study of the integrated systems of the mammalian organism, particularly the nervous and endocrine systems.

125. Mammalian Physiology. (7) 1 F.
Lecture 5 hours, Conference 2 hours, Lab 3 hours.
Mines
Introduction to mechanisms by which mammals, especially man, function. The interaction of internal and external environments and their relationship to the functions of cells and tissues, circulatory, respiratory, alimentary, gastrointestinal, and excretory systems.

150. Research in Physiology. (1 1/2 per week) Su, W, F, 149. Prerequisite: Consent of instructor.
Individual research in endocrinology, respiratory physiology, neurophysiology, cardiovascular physiology, cell physiology of major or other areas offered by individual staff members.

155. Research in Endocrinology. (1 1/2 per week) Su, W, F, 149. Prerequisite: Consent of instructor.
Ganong and Staff
Research in endocrinology carried out in the Department of Physiology.

175. Electronic Instrumentation. (3) F. Prerequisite: College physics.
Winston
Basic information on electricity and electronics. Circuitry and operating principles of a wide range of electronic instruments used in physiological and biochemical investigations.

189. Supervised Study in Physiology. (1-6) F. W, 149. Prerequisite: Consent of instructor.
Ganong and Staff
Library research and directed reading under supervision of a member of the faculty with the approval of the chairman of the department.

199. Laboratory Project in Physiology. (1-3) 1 F, W, Sp. Prerequisite: Consent of instructor.
Ganong and Staff
A laboratory research project under direction of a member of the faculty with the approval of the chairman of the department.

200. Tutorial in Physiology. (0) 1 F, W, Sp. Prerequisite: Consent of instructor.
Ganong and Staff
Directed reading organized in seminar or tutorial with emphasis on specific aspects of physiology under supervision of a member of the faculty.

201. Physiology of Vision. (2) 1 W.
Prerequisite: Anatomy 103 or Physiology 110 or equivalent, or consent of instructor.
K. Brown
Study of mechanisms underlying vision. Consideration is given to chemistry and anatomy of the visual system, but the emphasis is on neurophysiology, with coverage of the visual system from the photoreceptors to the visual cortex.

Prerequisite: Consent of instructor. Lecture 1 1/2 hours.
Corder, Comroe
Seminars on cardiovascular and pulmonary systems. Sessions on experimental methods and ways of solving cardiopulmonary problems. Work presented is discussed and evaluated by the faculty and students. The seminar is a critical evaluation of one of the seminars.

204. Seminar in Topics in Physiology. (1) 1 W. Prerequisite: A minimum of six units of introductory physiology.
Rothman
This seminar discusses selected topics in cellular and molecular physiology. Readings are drawn from primary and secondary sources.

205. Functional Neuroanatomy Projects. (4) 1 F. Sp. Prerequisite: Consent of instructor. Lecture 3 hours, Lab 3 hours.
Heuser
Each year a different neuroanatomical project is undertaken in order for students to learn a variety of techniques used in electron microscopy, including freeze-fracture. Students will be able to prepare a three-hour seminar on a basic aspect of electron microscopic neuroanatomy.

207. Neuroendocrinology. (1-3) 1 F, W, Sp. Prerequisite: Endocrinology and neuro sciences or consent of instructor.
M. Dalman
Mechanisms for regulation of endocrine function by the central nervous system and the influence of hormones on the nervous system are considered in view of anatomical, biochemical, physiological and behavioral data in the literature. Course may be repeated for credit.

209. Physiology of the Auditory, Vestibular, and Other Sensory Systems. (2) 1 F. Sp.
Prerequisite: Anatomy 103 or equivalent.
Merzenich
Lectures and demonstrations provide basic information on the physiology of the auditory system, vestibular system, and other sensory systems, and somatosensory system. Material includes historical and current concepts derived from relevant psychophysical, neuroanatomy, and neurophysiology.

210. Cellular Mechanisms of Hormone Secretion. (2) 1 F.
Prerequisite: Physiology 101 or consent of instructor.
J. A. Williams
Discussion of current literature pertaining to the mechanism of hormone synthesis, packaging, and release.

206. Seminar. (1) 1 F, W, Sp. Prerequisite: Consent of instructor.
Ganong
Seminar presentations by guest speakers, alternating with discussion by physical therapy staff members of their current research. Each quarter a different topic in respiratory, cardiovascular, or neurosensory interest is the subject of guest presentations. Course may be repeated for credit.

211. Advanced Cardiovascular, Renal, and Pulmonary Physiology. (2) 1 F, W, Sp.
Prerequisite: Physiology 100 or equivalent.
Corder and Staff
Corder and Staff
This course includes all students who present topics of current importance, presentation of unsolved problems by staff, and credit evaluation of published articles by members of the class. The total program is presented over six successive quarters.

206. Endocrinology Seminar. (1) 1 F, W.
Guest lectures alternating with reports of research in progress by members of the campus graduate group in endocrinology. A different topic of endocrinological interest is the subject of guest presentations each quarter. Course may be repeated for credit.

Prerequisite: Consent of instructor.
Ganong and Staff
Ganong and Staff 
Research in endocrinology carried out in the 
Department of Physiology.

258. Thesis. 0 (6) F, W, Sp. Prerequisite: Advancement to candidacy and permission of the 
graduate adviser. 
Ganong 
For graduate students engaged in writing the 
thesis for the master’s degree.

299. Dissertation. 0 F, W, Sp. Prerequisite: Advancement to candidacy and permission of the 
graduate adviser. 
Ganong and Staff 
For graduate students engaged in writing the dissertation for the Ph.D. degree.

300. Scientific Teaching in Teaching Physiology. 0 F, W, Sp. Prerequisite: Previous training in 
physiology and consent of instructor. 
Ganong and Staff 
Practice in teaching physiology under 
faculty supervision. Students supervise 
laboratory work, conduct conferences, deliv-
er lectures, and assist in preparing and 
grading examinations. Responsibilities are 
assigned according to the individual’s stage 
of development.

301. Scientific Writing. 0 F, W, Sp. Prerequisite: Consent of instructor. Lecture 3 hours. 
Common 
A seminar workshop designed to show 
the pre or postdoctoral fellow how to best put 
to work tables and figures done in 
the laboratory, and how to do so in 
a concise, precise, and logical form.

302. Group Practice in the Art of Lectur-
ing. 0 F, W, Sp. Prerequisite: Consent of instruc-
tor. Lecture 1½ hours. Enrollment limited. 
Saab, Crome 
A course in teaching techniques. stud-
ents present short lectures, and video tapes of 
these presentations are analyzed by self-
and group-criticism.

Preventive Dentistry and Community Health

111. Changing Aspects of Dental Prac-
tice. (1) F. Wycoff 
A survey course to acquaint the student 
with current social and professional prob-
lems in dentistry. Includes identifying the pa-
tient community, national and professional 
needs, and how they are met.

120. Behavioral Sciences. 1 W. S. Gold 
This course is an introduction to the 
psychological factors that influence behav-
ior.

121. Research Design. (1) F. Wycoff 
A course which presents basic principles of 
research design. Includes the conceptualiza-
tion of the research problem, development of 
sampling techniques, selection of data, and 
alternative analysis techniques. 

138. Community Health Problems and 
Practice. (0-1) W, Sp. Clinic-Seminar rotation, 1 
hour. 
Dental students work in community clinics 
whic serve deprived areas. Both semi-
aries and supervised clinic, experience will be 
designed to provide the student with the 
opportunity to relate economic, social, and 
cultural factors to the people they will be treat-
ing.

168. Community Health Methods. (2) F. Silverstein and Staff 
Dental hygiene students work in the 
North Oakland community with the Children 
and Youth Project staff. Students are as-
signed to areas where oral health care 
is needed. Students also make home visits.

180.1. Practice Management of Doctor 
and Patient Relationships. (1) F, W. S. Gold 
Participatory seminars utilizing role 
playing, open discussions, and exercises to 
study interpersonal relationships in 
dentistry. Topics covered include active 
listening, effective ways of communicating, 
and conflict-resolution techniques.

180.2. Community Health Methods. 
(0-2) F, W, Sp. Seminars and Clinic Variable. 
Students work in the Guadalupe Health Center, 
providing dental care in a community 
setting of comprehensive health care.

199. Laboratory Project in Preventive 
Prerequisite: Consent of instructor. 
Wycoff, Silverstein 
A laboratory research project under 
direction of a member of the faculty with the 
approval of the chairman of the department.

Psychiatry

110. Core Clerkship in Psychiatry. (1½ 
per week) F, W, Sp. Prerequisite: Psychiatry 
130 and 131-A and Medicine 131-B. 
Boatman 
Four-week assignment to an outpatient or 
ipolnaptic psychiatric service. Students, 
under supervision, are responsible for patient 
evaluation, participate in treatment planning 
and implementation, attend seminars related to 
clinical work, and make field visits to other 
types of psychiatric facilities.

130. Basic Clerkship—Communication 
Skills. (2) F, W, Lecture 1 hour, Seminar ½ hours, 
Independent study 2 hours. 
C. Brodsky 
Course provides students examples of 
different interviewing techniques and history 
taking. Students will interview patients with 
different ages, illnesses, and sociocultural 
backgrounds. Students interview patients di-
rectly and record their interviews in medium of video tapes, 
engage in supervisory and self-evaluative sessions.

131A-B. Introduction to Clinical Psychia-
try. (2-2) W, Lecuture 1 hour, Seminar 2-3 
hours. 
I. Glick and Staff 
Introduction to psychiatry as a clinical 
discipline. Basic behavioral science data 
is presented. Focus is on interviewing 
techiques, normal psychological development, 
description and treatment of psychopatho-
logical syndromes, and discussion of the 
interface between psychiatry and medicine. 
Videotaped cases, patient interview, small group discussions.

140.01. Clinical Psychiatry. (1½ 
per week) F, W, Sp. Prerequisite: Consent of 
instruc-
tor. 
Boatman 
Participation under close supervision in 
clinics with students’ level of experience 
and special interests, in clinical psychiatric 
treatment of adult or child patients or 
outpatients. 

140.02. Clinical Clerkship. (1½ 
per week) F, W, Sp. Prerequisite: Consent of 
Instructor. 
Boatman 
Clinical clerkship in off-campus hospi-
tals, approved by the chairman of the 
department and the Dean.

140.03. Clerkship in Sex Counseling. (6) 
F, W, Sp. Prerequisite: Psychiatry 160.15 
and 180, or consent of instructor. 
Vandervoort 
Emphasis is on the development of skills 
in evaluating the differential need and treat-
ment requirements of patients presented with 
complaints of sexual dysfunction. Instruction 
given in methods of counseling common problems.

150.01. Psychoanalytic Research. (1½ 
per week) F, W, Sp. Prerequisite: Consent of 
Instructor. 
Carayaw 
Participation according to students’ level 
of experience in experimental work in such 
as neurophysiology, operant conditioning, 
personal reliability, functional principles of 
and nonverbal communication. All work is 
under the close supervision of members of the 
faculty.

150.02. Block Elective in Human Devel-
Lowenthal and Staff 
Guided reading and research in human 
development. Work may focus on culture 
and personality studies; social psychology of 
human development; socialization and the 
role of values; adaptive processes across the 
adult life course. Refer to Human De-
velopment and Aging courses.

160.01. Psychopathology of Speech 
and Language. (2) F, W, Sp. Prerequisite: Consent 
of instructor. Lecture 1 hour, Lab 2-3 
hours. 
Ostwald 
A clinical course focusing on speech and 
language pathology. Students learn how 
and when an abnormality occurs based on 
previous experience with psychiatric 
patients and interest in specific problems of 
communication. Patients will have psychiatric 
syndromes will be interviewed and suit-
able treatment procedures performed under 
supervision.

160.02. Clinical Psychiatric Rounds. 
(2) F, W, Sp. Prerequisite: Consent of 
Instructor. 
Berlinger 
Psychiatric patients are examined and 
their characteristics and case histories 
used as the basis for discussions of psychiatric 
diagnosis. Seminar format allows for free discussion between students and instructors.

160.03. Demonstration of Psychother-
apy with Outpatients. (2) F, W, Sp. Pre-
requisite: Psychiatry 131 A-B or consent of instructor. 
Berlinger 
Students observe psychotherapeutic 
sessions with outpatients who are undergoing an 
tensive treatment. The observation session is 
followed by a seminar discussion. The pur-
pose of the course is to expose students to 
valuation and in viewing of models of intensive psychiatric treatment.

160.04. Personality Assessment in Clin-
ical Psychiatry: Theory and Practice. (1) W. 
Prerequisite: Psychiatry 130. 
C. Brodsky 
Tutorial participation with a senior 
psychiatrist in studies of outpatients in the
160.05. Clinical Problems. (1) W. C. Brodsky
Tutorial with a senior psychiatrist in studying Child and Adolescent Psychiatric Service. Participation in weekly group sessions is designed to increase awareness of interpersonal dynamics. Directed reading, seminar discussions, and demonstrations are included.

160.06. Introduction to Interviewing and Evaluation. (2-4) W. F. W. Sp. Prerequisite: Psychiatry 130. Seminar 1 1/2 hours. Enrollment limited.
C. Brodsky
Opportunity to observe and audit diagnostic and psychiatric interviews conducted between a member of the faculty and one patient. Discussions follow the interviews.

160.07. Psychotherapy for Outpatients. (3-7) F. W. Sp. Prerequisite: Psychiatry 130 and consent of instructor. Lecture 3 hours. Lab 0-15 hours. W. F. W. Sp. C. Brodsky
Practical experience in psychotherapeutic work with outpatients to increase students' understanding of psychopathology, psychodynamics, and psychotherapies. Students are assigned patients under supervision of a member of the faculty. Assigned reading, seminars, and chart writing.

160.08. Psychosomatic Case Conference. (F. W. Sp. Prerequisite: Consent of instructor. Murphy)
Cases are presented in rotation by social work students. Emphasis is placed on the interrelationship between psychological, social, and somatic factors. Although primarily oriented to social work students, courses may be taken by psychiatric residents and other mental health professionals.

160.09. Advanced Psychotherapy. (2-4) Su. F. Sp. Prerequisite: One year of full time experience in the conduct of out-patient psychotherapy or equivalent. Lecture 2 hours. Lab 0-15 hours. W. M. Horowitz
The course covers psychotherapy of selected cases with recordings of the process, supervision during the treatment, and group seminars in which the therapy is reviewed in retrospect using microanalytic and microdynamics of abreaction.

Medical practice is concerned with patients who suffer from chronic diseases; such patients face the problem of living with disability. Their diseases require profound changes in their lives. This course focuses on the personal and social experience of chronic patients.

160.11. Psychotherapeutic Interview Techniques. (4-5) F. W. Sp. Oswald
Individual and group supervision of clinical work with patients. Discussion of developing rapport, obtaining relevant information, and establishing a satisfactory therapist-patient relationship. Supervisor and patient reading assignments may be assigned.

Members of the faculty and visiting professionals present clinical discussions and new developments related to the field of child and adolescent psychiatry.

160.13. Hysteria. (2) F. W. Sp. Prerequisite: Consent of instructor. Berlinger
Seminar course designed for students who wish to go into private practice in psychoanalytic clinics. Specific group therapy begun.


160.15. Introduction to Sex Counseling Principles. (4) Su. F. W. Sp. Prerequisite: Psychiatry 160.14 or 160.15. Consent of instructor. Vandervoort, J. A. Romm
A didactic seminar in the psychology and therapy of human sexuality, including the administration of group therapy. Lectures, discussions, demonstrations, and group process are included.

160.16A. Practicum in Sex Counseling. (8) Su. W. F. W. Sp. Prerequisite: Psychiatry 160.14 and 160.15, or 160.14, or consent of instructor. Psychiatry 160.16A must be taken in order and consecutively with 160.16.
Vandervoort
Six-month rotation in the Sex Counseling Unit involving presentations, case conferences, and supervised counseling experience with couples and individuals presenting sexual dysfunctions.

160.16B. Practicum in Sex Counseling. (8) F. W. Sp. Prerequisite: Psychiatry 160.14 and 160.15, or 180, or consent of instructor. Psychiatry 160.16B must be taken in order and consecutively with 160.16.
Vandervoort
Six-month rotation in the Sex Counseling Unit involving presentations, case conferences, and supervised counseling experience with individuals presenting sexual dysfunctions.

160.17. Sexuality and Disability. (1) Su. F. W. Sp. Prerequisite: Psychiatry 160.14 or 180, or consent of instructor. Vandervoort
Course covers the role of sexuality in rehabilitation of physically and mentally handicapped, and principles of sexual counseling of the handicapped. Lectures, films, seminars, and community resource people involved.

160.18. Videotape Demonstration of Psychotherapy. (1) F. W. Sp. Prerequisite: Consent of instructor. Neisen
Seminar
Videotapes of psychotherapy are shown after each therapy session. The therapist is critical of his method and the tapes are used for constructive criticism.

170.01. Introduction to the Study of Suicide. (2) F. W. Sp. Prerequisite: Consent of instructor. Mott
Suicide is surveyed from a multidisciplinary approach in seminars led by persons working in the field.

170.02. Basic Science Aspects of Psychiatry. (2) F. W. Sp. Prerequisite: Consent of instructor. Feinberg
This elective seminar explores in depth the scientific aspects of mental disorders. Students have an opportunity to learn laboratory techniques as well as theoretical issues in EEG, sleep research and biofeedback.

170.03. Behavioral Specialist Pathway Elective. (2-6) F. W. Sp. Prerequisite: Psychiatry 160.14 or 160.15. Oswald
Students in the Behavioral Specialist Pathway elect individual or group study of a topic not included in other formal courses. Supervised reading, research, field-work, and clinical assignments are given in accordance to the student's level of interest and experience.

170.04. Pediatric Psychiatry. (1) F. W. Sp. Prerequisite: Consent of instructor. Bradman
Study of the normal development from infancy through adolescence, to point out potential psychopathogenesis in the various states of development.

170.05. Psychology of Consciousness. (1) Sp. Ornstein
Course considers the new interest in consciousness in psychology and psychiatry and the relationship of mental and physical events. The objective study of hypnosis, sleep, dreams, and the rational and intuitive modes of thought are included.

170.06. Research in Human Sexuality. (2) F. W. Sp. Prerequisite: Psychiatry 160.14 or 180, and consent of instructor. Lecture 1 hour, Lab 3 hours. Wallace
Collaboration or directed research in various topics related to human sexuality, with participation of community.

170.07. Mental Health Aspects of Social, Physical, and Sensory Deprivation. (2) W. Sp. Prerequisite: Consent of instructor. Schliesing, Meadow
Compares and contrasts influences of cultural, physical, social, and sensory deprivation on cognitive and emotional development. Emphasis on social stigma and family response to handicapped child; nature of problems and treatment of handicapped groups, development and utilization of community resources.

An introduction to psychodynamics which is based on cognitive schemata of self and others and the cognitive processes involved in conscious experience, psychological defenses, and unconscious processes.

170.16. Studies in Self-Destructive Behavior. (1) F. W. Sp. Prerequisite: Psychiatry 170.01 and consent of instructor. Mott
Continuation of the study of suicide and self-mutilation. Students are to be convinced of the method of study are determined by the interests of the students.

180. Human Sexuality and Medical Practice. (2) Sp. Vandervoort
Social, behavioral, and clinical aspects of human sexuality are covered in a series of lectures and seminar periods. Lectures present an introduction to material and issues in clinical and ethical problems related to sex and medical practice.

181. The Black Experience. (2) W. W. Sp. Prerequisite: Consent of instructor. Cobb
Seminar discussions concerning the varieties of interpersonal experiences of black people which are relevant to understanding their personality development. 

Psychiatry / 169
Course will focus on history, classification, concepts and theory as well as practice considerations relating to mental health consultation. In addition to seminar participation, clinical students may, where appropriate, arrange a supervised field experience in mental health consultation.

213. Advanced Mental Health Consultation. (1-3) F, W, Sp. Prerequisite: Psychiatry 212 and consent of instructor. F. R. Harris

Participants in this seminar have current or recent responsibility for a mental health consultation. Focus is on the theory and practice technique of mental health consultation. Consultation experiences provide the major content for discussion.


Members of the Department of Psychiatry make clinically centered presentations reflecting all areas of the department’s work. Each topic involves a two-session sequence, with the second week consisting of formal discussion of the previously presented work from various viewpoints.


Guided tours through the research facilities of Langley Porter Neuropsychiatric Institute and introductions to the current state of research projects by individual investigators.


Individual consultation with psychiatric residents and other advanced trainees concerning treatment and management problems. Diagnostic questions, evaluation of symptoms and psychological interventions, the course of therapy, and research issues are emphasized.

404. Theories of Personality. (1, 5) F, W, Sp. L. J. Epstein, Burke

Focus is on personality theories other than Freudian, e.g., Piagetian and the existential psychology. Course includes an examination, study and discussion of contemporary personality theories, their concepts, systematic application to the behavioral sciences, and research potentials. Parallel reading is required.


Seminar presents techniques of assessing personality and intellectual functioning in relation to psychodiagnostic evaluations and study of prognosis with psychotherapy. Discussion of development, design, and theory of clinical psychological methods and clinical applications and demonstrations with appropriate case material.


Ostwald

Individual group instruction is given for psychiatric residents working with medical students in Psychiatry 110. Technical and theoretical issues in supervision and learning are analyzed, together with selected reading assignments.


Course consists of supervised clinical and basic research in behavioral abnormalities, normal and abnormal, and experimental psychiatry. Specific subjects for research are chosen in conjunction with members of the staff.


Discussion of the neuropathology of neurological and psychiatric disorders with illustrations from gross and microscopic material.


Review brief review of the various fields of contemporary behavioral science and their relevance for the health sciences and mental health.


On-going review of major principles of Jungian Psychoanalytic theory with special reference to their application to practice of psychotherapy. Designed to elaborate dynamic hypotheses, for utilizing psychotherapists from widely differing theoretical backgrounds in simultaneous dialogue and sharing of ideas.


Seminar presents a review of digital computing as it relates to contemporary psychiatric care. Residents explore these concepts through their own programming efforts.


Binger

Survey of the literature in child development and child psychiatry. Parallel reading is required.


Discussion of readings on major problems in contemporary psychiatric research. Activation registration is required.


Seminar is focused on the most common and presumably prevalent methods of assessing intelligence, perceptual-motor integration and personality in children. Actual testing materials as well as those supporting research are used. Participation is required.

424. Research on Human Response to Stress. (4) Su, F, W, Sp. Prerequisite: Graduate or advanced resident standing. One year of advanced psychological and psychiatric work.

M. Horowitz

Guided research using experimental, field, and clinical models of investigation into the typical and idiosyncratic human responses to external stressors. The focus is on conscious and unconscious emotional, emotional, and defensive processes.


Course will focus on history, classification, concepts and theory as well as practice considerations relating to mental health consultation. In addition to seminar participation, clinical students may, where appropriate, arrange a supervised field experience in mental health consultation.


M. Horowitz

Participants in this seminar have current or recent responsibility for a mental health consultation. Focus is on the theory and practice technique of mental health consultation. Consultation experiences provide the major content for discussion.

450. Clinical Psychiatry. (1, 5) Su, F, W, Sp. Required for residents at LPNI, SFGR, and UC. Elective for all others. L. J. Epstein, Motto, C. Brody

Residents are responsible for the study and treatment of psychiatric patients and consultation of non-psychiatric patients under the supervision of senior staff members of the faculty. Parallel reading is required.

M. R. Harris, L. J. Epstein.

Program planning and consultation concerning administrative, teaching and research roles of chief residents.


LPNI: L. Phillips

Residents in child psychiatry are responsible for the diagnosis and treatment of children with psychiatric problems and for therapeutic work with their parents under the supervision of the service staff.


LPNI: L. Phillips

In addition to clinical work, the residents in child psychiatry are required to supervise the work of others and to preside over treatment reviews and interagency conferences.


LPNI: L. Ruech

Case presentations of hospitalized and ambulatory cases. The selection of patients, the particular treatment program, and the follow-up may be part of a previously planned research project.

455. Community Mental Health. (3) Su, F, W, Sp. Prerequisite: Open to third, fourth, and fifth-year residents.

D. Brown

Lecture on the theory and practice of mental health consultation, program evaluation and administration, and preventive services. Emphasis on related field experiences by senior faculty in seminar setting. Interdisciplinary interaction emphasized. Review of relevant literature.


M. Horowitz

Introduction to the basic psychiatric syndromes, required for first-year psychiatric residents.


Prerequisite: Psychiatry 483. I. Glick, Braff

Introduction to the theory and practice of family, group, and behavior therapy; required for second-year psychiatric residents.


Prerequisite: Introduction to the theoretical bases of psychoanalysis.


Seminar offers instruction in the technique of psychoanalytic psychotherapy and its theoretical basis.

486. Interdisciplinary Seminar in Human Development. (3) F, W, Sp. Prerequisite: Consent of instructor. Lecture and seminar 6 hours.

Lowenthal and Staff

Theory and research covering adolescence to old age from a cross-cultural, psychological, psychoanalytic, and anthropological perspective. Topics include stress, personality and cognitive changes, time perspective values, socialization processes and adaptation. Reading and paper required.


Oswald

Diagnosis and treatment of psychiatric problems associated with speech, hearing, or language difficulty. Supervised clinical work with selected patients according to resident's level of experience. Instruction with such alternative audiovisual communication systems as manual signing and voice printing.


R. S. Wallerstein

Problems in psychotherapy conducted within a psychodynamic framework. Topics include: treatment indications, goals, motivation and treatability, resistance and defense, transference and countertransference, dreams in psychotherapy, party influences, emergency and hospitalization, and issues of psychiatric interviewing and recording, transfer and termination.


Neiken

Instructor's psychotherapeutic sessions with the patient are videotaped and immediately played back and discussed with the residents. The material is objective and repeatable; the therapist is frank and self-critical; various theoretical views are taken.

Psychology

113A-B. Human Growth and Behavior. (3) F, W, Sp. Prerequisite: First year standing or consent of instructor.

Schaw

Examination of patterns and sequences of human development. Exploration of human behavior and maturation with a view to the influences affecting the human condition through the life span. Various theoretical bases are explored in conjunction with biological and psychosocial concepts.

170. Patient Compliance. (2) F, W.

G. Stone

Patient cooperation with health regimen contributes significantly to outcomes of health care. This course reviews factors that affect degree of compliance achieved and current attempts to improve compliance. Stress is placed on tailoring methods to specific clinical circumstances.

206. Psychoanalytic Aspects of Typical Patient Care. (2) F.

Garfield

Course examines approaches to understanding the psychosexual issues in terminal illness. Focus is on the sequence of events encountered by the professional and patient from diagnosis through death.

180. Seminar in Psychology. (1) W. Plainfield

Weekly discussions in which students' clinical cases are analyzed by dynamic application of behavioral theory.


Plainfield

This course integrates students' basic training in psychotherapy with its courses in dentistry with knowledge of the psychological considerations necessary to individualize treatment. Appropriate treatment may then be planned to the practitioners' awareness of the unique needs of patients.

180.3. Advanced Psychology for Dental Hygienists. (1) Sp. Seminar 1 hour.

Plainfield

Seminar discussions on the emotional aspects of professional transactions among office personnel, therapists, and patients.

183. Emotional Expression. (2-3) F, W. Prerequisite: Consent of instructor. Psychology 124; 180.3.

Lecture 2 hours, Lab 0-3 hours.

Ekman

Videotape is used to aid professional awareness of the nature of emotional expression and patients' faces, and their own facial expression may reveal to patients.

185. Nonverbal Communication. (1) F.

Ekman

Reading messages from the face and body, what patients reveal without words about their feelings and personality, and what you are revealing to them.

189. Supervised Study in Psychology. (1-5) F, W, Sp. Staff

Library research and directed reading under supervision of a member of the faculty with the approval of the chairman of the department.

210A-12C. Seminar in Clinical Psychology. (2-2) F. Prerequisite: Consent of instructor.

Steinhebel and Staff

Seminar discussions of clinical work in clinical psychology and psychiatry, reports of recent literature. Themes are selected and staff, and lectures by faculty. Generally limited to advanced clinical psychology students.

202. Basic Physiological Psychology. (2-3) F. Prerequisite: Consent of instructor. Lecture 2 hours, Lab 0-3 hours.

Peeky

Designed for the student with preparation in physiology, anatomy, or physiological psychology. This course emphasizes the role of brain processes in emotion, motivation, attention, learning, and species-typical behavior patterns.

204. Introduction to the Computer. (3) F. Prerequisite: Consent of instructor. Lecture 1 hour, Lab 6 hours.

Starkweather

The computer is described as a useful tool for analysis and controlled experiment. Students learn to read and write programs of moderate difficulty.

204B-C. Computer Simulation of Personality and Human Interaction. (3) F. W. Sp. Prerequisite: Psychology 204 or equivalent and consent of instructor. Lecture 2 hours, Lab 6 hours.

Starkweather

The development and testing of theoretical models of personality explored by means of computer programs. The use of computers for simulation and symbol manipulation.

205. Advanced Seminar on Decision Theory. (2-4) Sp. Seminar 2 hours, Lab 0-6 hours.

Clay

Lectures and laboratory studies on psychological aspects of decision making. Describes the concept of mathematical and Bayesian models, objective and subjective probability and utility, games theory, and decision making in an interactive, structured, and levels of decisions. Applicability to health care systems is stressed.

207. Techniques of Behavior Change. (2) F. Prerequisite: Consent of instructor.

G. Stone

Consideration of situational and interactive approaches to changing human behavior and of the change agent's role. Conditioning, behavior modification, cognitive restructuring, group nudging, and group coaching are discussed. Therapeutic educational, organizational, and social settings are examined.
208A-B. Psychology of Thinking and Information Processing (3-3-1) W, Sp. Prerequisite: Consent of instructor. Lecture 2 hours. Lab 3 hours. Not offered 1976-1977. S. Major Focus: Theories of human perception and cognition, viewed as processes by which humans obtain and use information. Emphasis will be placed on individual differences. Students will prepare and participate in demonstration experiments.

209A-B. Uses of the Computer in Psychology (2-2-2) E, W, Sp. Prerequisite: Psychology 204A or equivalent and consent of instructor. Starksweather

Seminar presents a review of digital computing and its applications in psychology. Students explore these concepts through their own computer programming efforts.

210A-B-C. Interdisciplinary Seminar. (2-2-2) Yr. Prerequisite: Consent of instructor. Callaway, Peake

Visiting scientists present current research in anatomy, biochemistry, pharmacology, physiology, and psychology which contribute to the understanding of the neurological basis of human behavior. Students prepare for each visiting lecturer by reading and discussing pertinent publications.

210A-B-C. Seminar on Communication Through Body Language. (3-3-3) Yr. Prerequisite: Consent of instructor. Eknian

Research and theories on facial expression and body movement in relationship to emotion, personality, social interaction, and culture.

210A-B-C. Psychophysiology. (2-2-2) Yr. Prerequisite: Consent of instructor. Kamiya

Psychophysiology: analysis of the relationships between physiological and behavioral processes, primarily in humans. Special consideration is given the physiological aspects of feelings and emotions and their modifiability.

211A-B-C. Theories of Personality. (2) F, W, or Sp. Prerequisite: Consent of instructor. J. Fisher, Atkinson

Survey of major theories of personality, structure, development of personality and research in personality.

217. Major VDants of Behavior: Abnormal Psychology. (2) F, W, or Sp. Prerequisite: Consent of instructor. J. Fisher

Nature, development, and treatment of major behavior disorders (brain syndromes, functional psychoses, drug addiction) which result in disabling disturbance of interpersonal relations. Contemporary theories of personality development and clinical study of the major disorders.

219. Tests and Measurement. (2) I W. Prerequisite: Consent of instructor. O'Sullivan

Psychological test construction, including item analysis, standardization, reliability, and validity.

220. Seminar in Growth and Behavior. (4) W. Prerequisite: Consent of instructor. Schaw

An interdisciplinary working seminar to cover the relevant literature from infancy to old age with a theoretical focus on psychosocial ego psychology in the light of related fields such as anthropology, sociology, history, physiology, and genetics.

223. The Special Biography. (2-3) I Sp. Prerequisite: Consent of instructor. Schaw

Seminars in historical change as seen in the lives of charismatic leaders. Lives of Gandhi, Luther, Malcolm X, Newton, Bolivar and Freud are examined. Students are expected to present short studies.

224. Seminar in Research and Research Strategies. (2-3) I Sp. Prerequisite: Consent of instructor. Schaw

Research seminar on the use of clinical procedures in research. The staff will consider the evaluation of projective techniques (TAT) in cultural, historical, and clinical research to serve as focus for participants' presentation of related clinical procedures or techniques.

228. Research on Drug Abuse. (2) I, F, W, or Sp. Prerequisite: Consent of instructor. Lecture 1 hour. Lab 1 hour.

Directed research on various topics related to drug abuse, its treatment, and prevention.

229. Program Evaluation. (2) I W. Prerequisite: Consent of instructor. Hargreaves, Atkinson

Introduction to human service system program evaluation. Intended for program administrators, program evaluators, and professionals in health and other human service disciplines. Topics include integrating evaluation into management decision making; needs assessment; management information systems; evaluating results.

231. Brain Hemisphere Specialization. (2) I F, W, or Sp. Prerequisite: Consent of instructor. J. Fisher

Review of evidence from studies of human brain injuries and "split brain" surgery. Localization of cognitive style; analytic vs. synthetic modes of experiencing the world; unity and diversity in consciousness; implications for psychiatry.

232. Clinical Prediction. (3) I W or Sp. Prerequisite: Consent of instructor. R. Young

The utilization of certain psychological procedures: specification of the measurement characteristics of psychological traits; contrast of methods of information processing; analysis of criterion behavior; and efficacy of clinical judgment.

238. Biochemical Research in Neural Tissue. (1-3) F, W, or Sp. Prerequisite: Consent of instructor. Lab 3 hours. Ellman

Supervised research experience including an introduction to basic biochemical techniques for the study of neural tissue.

239. Investigation into Human Consciousness. (3) I F, W, or Sp. Prerequisite: Consent of instructor. Ornstein

Readings in the psychology and physiology of conscious experience.

245. Readings in Behavioral Neurochemistry. (2) F, W. Prerequisite: Consent of instructor. Ellman

Readings in chemistry related to psychological phenomena; the biochemical bases of the effects of drugs, hormones, and disease states, and how they reveal the functions of the nervous system.

246. Special Studies in Psychology. (1-8) F, W, or Sp. Prerequisite: Consent of instructor. Staff

Students select special problems to investigate on an individual or collaborative basis. These studies may be conducted through reading, experimental design and collection of empirical data, or the development of conceptual analyses or methodologies.

250. Supervised Field Therapy. (1-8) F, W, Sp. Staff

256. Seminar in Clinical Neuropsychology. (2) F, W, or Sp. Prerequisite: Consent of instructor. Seminar 1 hour, Lab 3 hours.

Davison, Steinheber

Clinical investigations of human brain-behavior functions, emphasizing relationships between cognitive components of behavior and brain disorders. The laboratory consists of supervised neuropsychological evaluation, including battery of tests for impaired patients. Usually limited to advanced students in clinical specialties.

270. Behavior Change Methods in Public Health Practice. (2) I, F, W, Sp. Prerequisite: Bachelor's degree in nursing, psychology, or consent of instructor. S. Hall

Discussion and reading in behavior change topics related to public health problems.

299. Dissertation. (0) F, W, Sp. Prerequisite: Advancement to candidacy and approval of the graduate adviser. Staff

For graduate students engaged in writing the dissertation for the Ph.D. degree.

300. Practicum in Teaching Psychology. (1) F, W, or Sp. Prerequisite: Consent of instructor.

Supervised classroom or tutorial teaching experience.

Radiation Oncology

140.02 Clinical Clerkship in Radiation Oncology. (1.5 per week) Su, F, W. Prerequisite: Medicine 131A-B-C. T. Phillips

Participation in examination of cancer patients under treatment in radiation oncology, and in rounds, conferences, and clinics.

140.06 Clinical Clerkship in Radiation Oncology at MZ. (1.5 per week) Su, F, W. Prerequisite: Medicine 131A-B-C. J. Castro

Participation in examination of cancer patients under treatment in the Claire Zeller-Back Saroni Tumor Institute at MZ. Students participate in rounds, conferences, and clinics, and see demonstrations of the use of newer radioactive therapeutic techniques.

140.07 Diagnostic and Therapeutic Radiology. (1.5 per week) Su, F, W. Prerequisite: Medicine 131A-B-C. T. Phillips

Clinical clerkship in roentgen diagnosis and therapeutic radiology. Two weeks are spent in roentgen diagnosis and two weeks in therapeutic radiology. Some of the material in roentgen diagnosis and clinical clerkship in radiation therapy is included.


Rounds include presentation of problem cases with discussion of diagnosis and treatment as well as biological implications of cases. Frequent guest lectures are used to cover important aspects of oncology.


Seminars include discussions of the diagnosis, treatment and results of specialty oncology problems, including head and neck, gastroenteric, colonic and appendiceal, genitourinary, lymphomatous and general malignancies.
Clinical clerkship in approved hospital by special arrangement and approval of the chairman of the department and the Dean.

145.04. Clinical Clerkship in Nuclear Medicine. (1½ per week) Su, F, W. Prerequisite: Medicine 131A-B-C. Hoffer
Observation of basic nuclear medicine procedures and participation in diagnostic tests employing radios isotopic tracers. Com pliation of Radiology 140.04, 140.12, 170.08, and 170.09 meet the State board requirements for licensure to use radioactive isotopes in clinical medicine.

145.05. Roentgen Diagnosis at MZ. (1½ per week) Su, F, W. Prerequisite: Medicine 131A-B-C. A. Davidson
Students serve a clerkship in the Diagnostic Division of the Department of Radiology. They observe performance of radiologic procedures and interpretation of films, attend conferences, and learn basic concepts of conducting radiologic examinations and the rules of interpretation.

145.07. Diagnostic and Therapeutic Radiology. (1½ per week) Su, F, W. Prerequisite: Medicine 131A-B-C. Marquis
Clinical clerkship in roentgen diagnosis and therapeutic radiology. Two weeks are spent in roentgen diagnosis and two weeks in therapeutic radiology. Some of the material in roentgen diagnosis and clinical clerkship in radiation therapy is included.

145.08. Clinical Clerkship in Cardiovacular Radiology. (1½ per week) Su, F, W. Prerequisite: Medicine 131A-B-C. Carlson
Cardiovascular radiology provides an opportunity to become acquainted with the radiologic studies of the cardiovascular system through active participation in examinations and their interpretation.

145.09. Clinical Clerkship in Diagnostic Radiology at SFHM. (1½ per week) Su, F, W. Prerequisite: Medicine 131A-B-C. Minagi
Students serve a clerkship in the Diagnostic Section of the Department of Radiology. They observe performance of radiologic procedures and interpretation of films, attend conferences, and learn basic philosophy of conducting radiologic examinations and the rules of interpretation.

146.11. Radiology Clerkship at C. (1½ per week) Su, F, W. Prerequisite: Medicine 131A-B-C.Burhenn
Course includes all types of radiologic procedures, pediatric radiology, and radiation therapy with emphasis on the radiologist as a consultant to other specialties as related to use and indications for all radiologic techniques.

145.12. Radioactivity Laboratory. (1½ per week) Su, F, W. Prerequisite: Medicine 131A-B-C. Consent of instructor. Perez-Mendez
Course is designed to teach accurate measurement, identification, and techniques for biomedical purposes.

145.13. Radiology and Medical Diagnosis. (1½ per week) Su, F, W. Prerequisite: Medicine 131A-B-C. R. Ross
For second year medical students, immediately following Medicine 131A-B-C. To help acquire knowledge and attitudes that ease transition from preclinical studies to clinical radiography. Radiographs with case presentations will help learn mechanisms of disease and clinical judgment.

170.01A-B-C. Introduction to Research on Learning. (2-2-2) F, W. Prerequisite: Consent of instructor. S. Ross
Designed to acquaint students with domain of educational research, specifically that on learning. Students learn vocabulary, recognize valid problems and valid results, and gain insight into the problem of method.

170.06. Pathology of Internal Organs. (4-3-3) Su, F, W. Prerequisite: Anatomy 100 or concurrent enrollment. S. Ross
A lecture course limited to small groups, with opportunity for self-instruction in the learning laboratory, on selected aspects of anatomy and its clinical applications. Objective is to show the usefulness of knowing normal anatomy and its variants.

170.07. Clinical Applications of Anatomy. (1-2) Su, F, W. Prerequisite: Enrollment in Radiology 170.06. Perez-Mendez, Kaufman
Introduction to the physics of radiocactivity, nuclear instrumentation and gamma ray imaging techniques.

170.09. Introduction to Nuclear Medicine. (3½) Su, F, W. Prerequisite: Concurrent enrollment in Radiology 170.06 and 170.09. Hoffner and Staff
Introduction to basic nuclear medicine diagnostic procedures, both in vivo and vitro, and therapy with radiopharmaceuticals.

170.10. Radiologic Aspects of Surgery at SFHM. (1½) Su, F, W. Prerequisite: Surgical year surgery. Magini, R. Lim, Laing
Weekly seminar covering the radiologic studies of surgical cases emphasizing indications, risks, and information derived from procedures. Active participation in X-ray interpretation is included.

198. Supervised Study in Radiology. (1-3) F, W. Pr. Magini and Staff
Library research and directed reading under supervision of a member of the faculty with the approval of the chairman of the department.

199. Laboratory Project in Radiology. (1-4) F, W. Pr. Magini and Staff
A laboratory research project under direction of a member of the faculty with the approval of the chairman of the department.

220. Seminars in Radiology for Physicians. (2) F, W. Pr. Sponsor: Bachelor's or higher degree in the physical sciences.
Seminars provide physiciants with an in depth knowledge of radiologic procedures.

500. Seminar in Diagnostic Radiology. (1) Su, F, W. Pr. Magini
Faculty from radiology and other departments lecture and discuss various diseases of all systems of the body. Resident prepare case histories stressing roentgen findings and constructive surgical and laboratory work, special studies, library, and film research.

401. Diagnostic Case Rounds. (2) Su, F, W. Pr. Magini, Gooding
Films of interesting cases from the daily work are presented and reviewed. Roentgenograms of surgically and pathologically proved cases are correlated with gross and microscopic pathologic findings.

402. Specialty Seminars Concerned with Diagnosis. (3) F, W. Pr. Magini
Seminars require preparation and presentation of roentgen findings on patients under discussion at medical, surgical, pediatric, obstetric and gynecologic departments.
Numerous research projects are conducted in the department and facilities are available for new ones. Residents are encouraged to take advantage of these opportunities.

The elements of radiological physics are studied in a series of lectures and problem assignments. The basic phenomena experienced in producing, measuring, and absorbing radiation are described. Course is designed to give residents in radiology the necessary background to practice radiology.

Interdepartmental seminars in which the radiological picture of problem cases either of diagnostic or therapeutic nature is presented. This course includes surgical and medical radiological rounds, consultative tumor board, and clinicopathological conferences, and other departmental grand rounds.

Interdepartmental seminars in which the radiological picture of problem cases either of diagnostic or therapeutic nature is presented. This course includes surgical and medical radiological rounds, consultative tumor board, and clinicopathological conferences, and other departmental grand rounds.

410. Radiobiology: Radiation Effects on Genes and Proteins. (2) W. Prequisites: Consent of instructor. S. Wolff
Concepts and mathematics of target theory relate to the damage of genetic apparatus. Biophysical and biochemical studies on induction of intragenic and intergenic mutations that give insight into the structure of chromosomes and interaction of radiation with biological material.

Introduction to basic nuclear medicine diagnostic procedures, both in vivo and in vitro, and therapy with radiopharmaceuticals.

412. Pathology. (1) Su, F, W, Sp. EA Voreifors
Course includes review of surgical pathology material and attendance at autopsy rounds.

413. Pathology. (1) Su, F, W, Sp. SFDH Mangi
Course includes presentations on patho-
logical material of special interest to radiologists with emphasis on the correlation of diagnostic X-rays and pathological findings and a study of the pathology of patients under radiation treatment.

A seminar course with laboratory experiments designed to acquaint the student with current knowledge of physics applicable to diagnostic radiology. Topics include generation and extraction of radiologic information, image conversion, recording methods, and special purpose equipment.

An analysis of cell population growth in tissues, tumors, and cultures. Emphasis is given to radioactive tracers (thymidine and its biochemical) and experimental methods for studying cell proliferation in vivo and in vitro.

Rotating assignments of topics for discussion by residents in nuclear medicine from training programs in nuclear medicine. Critical reviews of available information in limited areas are used to provide a broad review of nuclear medicine for all trainees.

Introduction to physics of radioactivity, nuclear instrumentation, and gamma ray imaging techniques.

Course intended for all first year residents in radiology: provides an introductory survey of radiology, diagnostic X ray physics, radiocytology, and radiation instrumentation.

Clinical experience in diagnostic and therapeutic nuclear medicine to satisfy requirements of American Board of Radiology for certification in diagnostic radiology and radiation therapy.

Residents, under supervision, carry out radiological examination of and pathological findings of X-rays of patients referred from wards and outpatient clinics. The chief resident has certain administrative duties relative to the resident training program.

Residents, under supervision, participate in radiographic work of the department. Includes dictation of reports, history-taking, and physical examinations. In addition, the chief resident has certain administrative duties relative to the resident training program.

Residents are responsible for the diagnostic and therapeutic activities of the department. Participates in diagnostic conferences and reports, history-taking, physical examinations, radiation therapy, and follow-up of patients referred for therapeutic consultations.

455. Radioactivity Laboratory. (1½ per week) Su, F, W, Sp. Prequisite: Residents assigned to nuclear medicine course and consent of instructor. Perez-Mendez, Kaufman
Course is designed to teach accurate measurement radioactivity techniques for biomedical purposes.

Removable Prosthodontics

Third year standing.

110B. Complete Complex Denture Prosthodontics. (1½) W. Sp. Prequisite: Concurrent enrollment in Removable Prosthodontics 110B-C. M. L. Parker


Removable Prosthodontics / 179

A laboratory course on the elementary principles of complete denture prosthodontics. Laboratory exercises demonstrate technical and clinical procedures.


Course provides experiences in fabrication of immediate dentures.

Course provides experiences in fabrication of immediate dentures.

130A. Clinical Procedures. (0-1) F. Prequisite: Removable Prosthodontics 126.01, 126.02 and 03. E. Kelly, Regli

The course bridges the preclinical courses and clinical courses in removable prosthodontics. It includes treatment planning, surgical, medical, or prosthetic treatment of edentulous and partially edentulous patients. Special clinical procedures not covered in other preclinical courses.

Biologic principles underlying prosthetic treatment of patients with congenital and acquired malformations, defects and dysfunctions. Includes the development of normal and abnormal speech as it relates to prosthodontics. The basis for prosthodontic
therapy in temporomandibular joint disorders is also presented.

171A-B. Complete Prosthodontics. (4-4-4) F, W, Sp. Lecture 1 hour, Lab and Clinic 9 hours. M.L. Parker and Staff
In instruction in clinical and laboratory procedures related to complete prosthodontics.

172A-B. Partial Prosthodontics. (4-4-4) F, W, Sp. Lecture 1 hour, Lab and Clinic 9 hours. Regli, M. L. Parker and Staff
Instruction in clinical and laboratory procedures related to partial prosthodontics.

172.02. Partial Prosthodontics. (5) SS. Lecture 1 hour, Lab and Clinic 12 hours. Regli, M. L. Parker and Staff
Instruction in clinical and laboratory procedures related to partial prosthodontics. Continuation of Removable Prosthodontics 172.01A-B-C.

173. Clinical Practice. (4) SS. Prerequisite: Removable Prosthodontics, 171A-B-C. 172A-B-C and 172.02 Lab. 12 hours. Regli, M. L. Parker and Staff
Clinical practice on patients for partial and complete prosthodontics.

174B-A. Complete Prosthodontics. (3-3-4) F, W, Sp. Prerequisite: Removable Prosthodontics 171A-B-C. Lecture 1 hour, Lab 6 hours, F, W, 9 hours Sp. Regli, M. L. Parker, McCormick. Wilde Instruction in clinical and laboratory procedures related to complete prosthodontics. Course will include in-service hospital treatment at V.A.

175A-B. Partial Dentures. (3-3-4) F, W, Sp. Lecture 1 hour. Lab and Clinic 6 hours, F, W, 9 hours Sp. Regli, M. L. Parker and Staff

176-B. Special Study for Postdoc-
toral Students. (1-5) F, W, Sp. Research 3-15 hours. Regli, M. L. Parker and Staff
Original investigations in the field of removable prosthodontics.

177. Prosthodontics Seminar. (4) F, W, Sp. Prerequisite: Removable prosthodontics. Each student in removable prosthodontics certificate program must enroll in this course each quarter and summer session for entire program. Seminar 4 hours. Regli, M. L. Parker and Staff
Review of the literature related to prosthodontics.

Course offers instruction in procedures and materials other than those normally used in the clinic.

181. Fixed and Removable Methods. (1) F, W. Prerequisite: Fourth year standing. Augsburger, Lum, Plainfield
Course is concerned with saving the patient's few remaining teeth. Methods for strengthening the abutments and attaching the removable partial denture encompass implantology, crown preparation, systemic, psychological, technical and clinical design problems.

185. Multidisciplinary Approach to Maxillo-
facial Prosthetics. (1) F, W. Sp. Prerequisite: Consent of instructor. Course designed to acquaint postdoc-
toral and senior dental students with the multidisciplinary aspects of maxillofacial prostheses. Lectures will be given on maxillofacial prosthetic techniques, oncology, head and neck surgery, plastic surgery, oral surgery, therapeutic radiology, psychology and related oral biology.

489.- Clinical Maxillofacial Prosthet-
ics. (1-6) F, W. Sp. Prerequisite: T. Curtis
490. Lecture emphasizing the abutments and attaching the removable partial denture encompasses implantology, crown preparation, systemic, psychological, technical and clinical design problems. Selected cases requiring medical and dental diagnostic procedures, treatment planning, and treatment planning will be presented.

171A-B. Advanced Restorative Dentistry. (3-3-3) Yr. Lecture 1 hour, Clinic 6 hours. Schuchard, Stark
Seminars and clinical literature review concerning diagnostic and preclinical procedures with the practice of restorative dentistry. Selected cases requiring medical and dental diagnostic procedures and treatment planning will be presented.

172.02. Postdoctoral Clinical Practice. (2) SS. Prerequisite: Restorative Dentistry 171A-B-C. Clinic 60 hours. Schuchard, Stark
Clinical practice applying advanced restorative dentistry.

174B-C. Advanced Restorative Den-
tistry. (3-3-3) F, W, Sp. Prerequisite: Restorative Dentistry 171A-B-C. Lecture 1 hour, Clinic 6 hours. Schuchard, Stark
Clinical practice applying advanced restorative dentistry. Seminars will be directed toward the psychology of patient motivation in relation to treatment planning. The clinical phase will provide experience in contact instruction.

173. Postdoctoral Clinical Practice. (2) SS. Prerequisite: Restorative Dentistry 174B-C. Clinic 60 hours. Schuchard, Stark
Clinical practice applying advanced restorative procedures. Continuation of Restorative Dentistry 173 at advanced level.

178B-C. Clinical Research. (1-5, 1-5) W. Prerequisite: Restorative Dentistry 171A-B-C. Research 3-15 hours. Schuchard, Stark
A research project in the field of restorative dentistry. Findings must be prepared for publication.

Sociology

112. American Society and Its Prob-
lems. (3) Sp. Staples
Presentation of prominent sociocultural features and their interrelationships. Integration and dissonance between and among these systems with emphasis on major social problems with special emphasis on issues regarding racism, inequality, youth, disjunction between technology and humanistic values.

120B. Statistical Concepts. (2) Sp. Pre-
quisite: Second semester statistics. Staff
An introduction to concepts underlying statistical techniques in the social sciences. Students will learn how, where, and when used; logic of statistical inference; discussion of probability; discussion of biostatistics.

122. Health and Illness in American
Society. (3) F. Staff
Broad survey of themes of American society that produce either health or illness. Both of a variable significant factors are explored in conjunction with ideological implications for the quality and quantity of health care services.

124. Marriage and the Family. (3) F. Staples
Examination of family life styles in the United States and other societies. Changes in dating and marital practice are explored and the viability of the extended nuclear family is examined. An area of interest is Black family patterns.
126. Families of the Third World. (3) § W. Lecture 2 hours, Lab 3 hours. {Staples} 
Examination of family structures and dynamics among Third World peoples. Families to be discussed include African and Afro-American, Native Americans and Latinos. Emphasis on continuities in the family life of these groups in their native land and the United States.

127. Race and Racism in the Modern World. (3) § F. Lecture 2 hours, Lab 3 hours. {A. Strauss} 
An exploration of factors that create and maintain subordinate-subordinate relations ordered along racial lines. A cross-cultural analysis with special emphasis on race relations in the United States.

128. Individual and Change. (3) § F. Pre-requisite: Consent of instructor. {Olesen} 
Involves the relationship of social structures to individuals and their behavior. Emphasis will be on individuals as members of society rather than on individuals or society as such.

134. Perspectives on Women’s Roles in Health Care Delivery. (3) § Sp. {Olesen, L. Brown} 
Analysis of sex roles in general and women’s roles in particular in health care receipt and delivery, with particular emphasis on recruitment and training of health professions, images of women in therapeutic situations, and crosscultural features of health care.

136. Social Psychology of Organizational and Interpersonal Aspects. (3) § Sp. Lecture 2 hours, Lab 3 hours. {A. Strauss} 
Situations experienced, expressed, and managed in a variety of settings by patients, staff, and family. Sociological and organizational perspectives. Assessing, legitimizing, and controlling pain.

137. Sociology of Sexual Behavior. (3) § F. Lecture 2 hours, Lab 3 hours. {Staples} 
A sociological perspective of human sexuality as expressed in various forms, varied among different segments of the population and influenced by diverse social forces, with emphasis on sexual relations as an element of social relations.

186. Contemporary Social Problems. (3) § F. {A. Davis} 
The genesis and natural history of social problems and a substantive survey of such leading contemporary problems as race relations, juvenile delinquency, the role of women in American society, and the distribution of health services in the United States.

188. Supervised Study in Sociology. (1-5) § F. Lecture 2 hours, Lab 3 hours. {Staff} 
Library research and directed reading under supervision of a member of the faculty with the approval of the chairman of the department.

203. Social and Psychological Aspects of Chronic Illness. (3) § W. Pre-requisite: Consent of instructor. Lecture 2 hours, Lab 3 hours. {Staff} 
Problems faced by chronically ill persons and their families including crisis management, handling symptoms, medical regimens, social isolation, phases of the disease, temporal difficulties, normalization, dying. Some policy issues, including human resources, health personnel as well as the general public.

204. Sociology of Psychiatry. (3) § Sp. {Schatzman} 
Psychiatric practices, problems, and institutions conceptualized sociologically, as historic, symbolic systems and interactional processes.

205. The Sociology of Health Professions and Occupations. (4) § F. {A. Strauss} 
The nature of occupations and professions; their constellation in hospitals and clinics, the medical division of labor, specialties and specialization, professional and occupational ideologies, the sociology of work relations.

206. Sociology of Devalued Occupations. (2-4) § W. Pre-requisite: Consent of instructor. {Olesen} 
Review and analysis of occupational theory with special reference to the trends, both social and psychological, involved in occupations customarily considered "dirty" or "devalued. Analysis of the organization of such work and the life styles of the persons who pursue it.

207. Microsociology. (2-4) § W. Pre-requisite: Consent of instructor. {Olesen} 
Analysis of social behavior utilizing concepts of territoriality, proverbs, social schema; review of relevant animal studies, as well as such concepts as privacy, consideration of cross-cultural uses of space.

208. Social Psychology of Health and Illness. (3) § W. Pre-requisite: Required for graduate students in sociology. {F. Davis} 
Factors influencing the process of illness identification, group membership, family structure, occupation and life style and health and illness, and the interaction of laymen and health professionals.

212A-B. Sociological Theory. (2-2) § F, W. Pre-requisite: Sociology 212A is prerequisite to 212B. Required for graduate students in sociology. {A. Strauss and Staff} 
An examination and evaluation of classical and recent contributions to sociological theory. The main objective is the generation of a critical capacity with respect to received theory in both its formal and substantive varieties.

213. Studies in Participant Observation. (3) § W. Pre-requisite: Consent of instructor. {Schatzman} 
A basic course in the logic and operation of participant field studies. Lectures, readings and discussion on research strategies: entry, watching, listening, data recording, and analyzing.

214A. Discovery of Social Reality. (3) § W. Pre-requisite: Required for graduate students in sociology. Lecture 1 hour, Lab 1-5 hours. {Schatzman} 
Practicum in sociological field observation; course is designed to sensitize students to demographic and behavioral components of social life in public places. Observation of social aggregates in various neighborhoods of a metropolis. Instruction in observational techniques and data organization.

214B. Discovery of Social Reality, II. (3) § W. Lecture 2 hours, Lab 3 hours. {A. Strauss, Glaser} 
Sociological field observation. Instruction in observation, in the collection and organization of data, descriptive analysis, and research writing. Continuation of Sociology 214A.

214C. Qualitative Analysis. (3) § F. Pre-requisite: Sociology 214A and 214B. Lecture 2 hours, Lab 3 hours. {A. Strauss} 
Examination of methods of analysis applicable to qualitative data, emphasis on dimensions and properties exhibited in student field data.

214D. Qualitative Analysis. (3) § W. Pre-requisite: Sociology 214A, 214B and 214C. Lecture 2 hours, Lab 3 hours. {A. Strauss} 
Qualitative analysis; the development of substantive and formal sociological theory. Emphasis on student presented data and their conceptualization.

215. Problems in Microsociology: Urban Life. (2-4) § Sp. Pre-requisite: Consent of instructor. Sociology 207 recommended. {Olesen} 
A graduate research seminar on selected problems in microsociology. Emphasis related to urban life, environment, and its bearing on health care settings such as clinics. Analysis and critique of research and concepts and search for conceptual frames.

216. Comparative Organisations. (3) § W. Pre-requisite: Consent of instructor. {Staff} 
A critical review of classical and recent contributions to the sociology of formal organizations. A variety of national organizations will be considered, with special emphasis on service organizations.

217. Seminar on the Future of the Family. (3) § Sp. Lecture 2 hours, Lab 3 hours. {Staples} 
Exploration of changing dating, sexual, sex-role, marital and familial patterns in the United States. Discussion of futuristic models of family life as affected by socio-cultural forces. Special emphasis given to changing sex-role behavior as affecting male-female relationships.

219. Political Sociology of Aging. (3) § W. Pre-requisite: Consent of instructor. Lecture 2 hours, Lab 3 hours. {Exton}
Major paradigms in the study of commu- nication and networking structures examined in terms of theoretical, methodological, empirical, ideological content. Issues of actual and potential power of the aging considered in light of available data and the major paradigms discussed.

220. Seminar in Sociology. (3) F, W, Sp. Prerequisite: Consent of instructor. Staff
   Doctoral student seminar to discuss methodological problems in current research. Course may be repeated for credit.

222. Politics of Planning in the Human Services. (3) § F, W. Prerequisite: Consent of instructor. Lecture 2 hours, Lab 3 hours.
   Examinations of trends in planning for the human services, including the role of government organizations, professionals and consumers in generating and benefiting from major human services planning reforms. Planning in the fields of health and aging are emphasized.

224. Epistemological Problems in the Social Sciences. (3) W. Prerequisite: Consent of instructor. F. Davis
   Central epistemological problems in the social sciences, with emphasis on issues of the research role, modes of conceptualization, scientific communication, and public information.

230. Analysis of Symbolic Systems. (2-4) § F, W. Prerequisite: Consent of instructor. Graves
   Critical inspection and analysis of American symbolic systems, such as educational institutions and mass media of communication with an emphasis on the diffusion and alteration of values in specific sections of the society, such as health professions.

232. Advanced Problems in Social Psychology. (2-4) F, W. Prerequisite: Consent of instructor. Staff
   An advanced seminar dealing with theoretical and practical problems in various areas of social psychology. Recent developments in theory and concept will be reviewed.

233. Seminar in Urban Social Relations. (3) § F. Lecture 2 hours, Lab 3 hours.
   A. Strauss
   Research seminar on selected topics bearing on the social psychology of urban living and the sociology of cities.

234. Urban Financial Systems. (4) § F. Prerequisite: Consent of instructor. Glaser
   The sociological problems and processes involved when people deal with banks, lawyers, accountants, savings and loans, brokers, finance companies and investment counselors in order to store and use money, obtain credit and loans, and invest money.

   Students select special problems to investigate on an individual or collaborative basis. These studies may be conducted through readings, the collection of data, an analysis of empirical data, or the development of conceptual analysis or of methodologies.

250. Research. (1-8) F, W. Prerequisite: Admission to doctoral study and consent of instructor.

258. Thesis or Comprehensive Examination. (0) F, W, Sp. Prerequisite: Advancement to candidacy and permission of the graduate adviser.
   For graduate students engaged in writing the thesis for the master's degree or taking a comprehensive examination required for the master's degree.

299. Dissertation. (0) F, W, Sp. Prerequisite: Advancement to candidacy and permission of the graduate adviser.
   Staff
   For graduate students engaged in writing the dissertation for the Ph.D. degree.

Speech and Hearing Science

   Owens
   Directed reading and laboratory work in the auditory process and instruments. Focus the diffusion and alteration of values in specific sections of the society, such as health professions.

249. Independent Study. (1-5) F, W, Sp. Prerequisite: Consent of instructor. Flower, Owens and Staff
   Students and instructor develop jointly a study plan involving tutorials, reading, and laboratory work. Students engage in intensive exploration of specific topics and in analysis, the anatomic, physiological, psychophysical, and behavioral aspects of the speech and hearing sciences.

Surgery

110. Required Core Clinical Clerkship in General Surgery. (110 per week) F, W, Sp. Prerequisite: Core curriculum in basic sciences. Ebert, Blaisdell, L. Way
   Core general clerkship in surgery. Students assigned to wards and clinics at UC, SFGH, VA, and C. The application of basic sciences to surgery is emphasized in ward rounds and seminars.

111. Required Core Clinical Clerkship in Advanced Surgery Ward at SFGH. Students will work up selected cases, perform minor procedures under supervision, and follow all surgical emergencies as time permits.

140.07. Shock and Trauma Research. (1½ per week) F, W, Sp. Prerequisite: Core curriculum in basic sciences and Medicine 110 or Surgery 110.
   Course involves clinical and laboratory investigation and a detailed study of specific patients with trauma and shock.

140.09. Clinical Clerkship in Trauma Surgery. (1½ per week) F, W, Sp. Prerequisite: Surgery 110 and 111 and consent of instructor. Sheldon
   Clinical clerkship in the trauma service of the Department of Surgery at SFGH. The student will work a 72-hour week as an integral part of the service.

140.10. Clinical Experience in Cardiopulmonary Surgery. (1½ per week) F, W, Sp. Prerequisite: Medicine 110 or Surgery 110 or 111.
   As an integral member of the cardiothoracic team, the student directly and actively shares in preoperative evaluation, operative procedures, and postoperative care. Cardiac and thoracic conferences and daily ward rounds provide the didactic teaching.

140.11. Burn Care Elective. (1½ per week) F, W, Sp. Prerequisite: Surgery 110 and 111.
   Trunkey
   Clinical rotation on a large Burn Unit Service. Pathophysiology of thermal injury including pulmonary aspects will be stressed. Students will act as integral members of the team and participate directly in patient care.

160.03. Clinical Cardiopulmonary Surgery. (2) F. Prerequisite: Third or fourth year standing.
   Ebert, B. Roe, Hutchinson, N. Fishman
   Seminars are conducted on a series of subjects relating to cardiopulmonary surgery, which may be attended separately or in conjunction with weekly rounds on the cardipulmonary patients.

160.05. Advanced Surgery Reading Course. (0) F, Sp.
   Surgery 185
   A weekly seminar where previously assigned papers are discussed and critiqued. Papers representing the latest and current concepts in general surgery are covered.
160.06. Total Parenteral Nutrition
Course emphasizes nutritional and metabolic requirements of injured, ill, and malnourished patients. Clinical rotation in-
volves methods of preparation, administration, and assessment of patients receiving calories protein and amino acid substitution as part of specific therapy.

170.01. Basic Surgical Techniques. (1) F, W, Sp. Prerequisite: Anatomy 100. Lab: 4 hours.
Fudicka
Course emphasizes the basic principles of operative surgery including aseptic and operative techniques. Students function as surgeon, assistant surgeon, and anes-
thesiologist role in the performance of specific operations on anesthetized pets. Post-
operative evaluation, management, and cardi-
opulmonary resuscitation are also em-
phasized.

170.02. Emergency Medical Care at SFGH (1) F. Lecture 2 hours given in alternate weeks.

Topics include first aid care with an in-
troduction to suturing, splinting, resuscita-
tion, psychiatric emergencies, and diseases. Formatted includes lectures, discussions, films, practice, and tour of Mission Emergency. Course is offered primarily for first and second year medical students.

158. Supervised Study in Surgery. (1-5) F, W, Sp. Prerequisite: Consent of instructor.

Library research and directed reading under supervision of a member of the faculty with the approval of the chairperson of the depart-
ment.

199. Laboratory Project in Surgery. (1-5) F, W, Sp. Prerequisite: Consent of in-

structor.

A laboratory research project under di-
rection of a member of the faculty with the approval of the chairperson of the department.

400. General Surgical Staff Con-

UC Ebert, VA L. Way

Conferences include presentation of case studies with reference to the literature, case records, laboratory tests, and special studies. Faculty and occasional guest lecturers discuss surgical problems. Death and complication case conferences are scheduled weekly.

150. General Surgical Pathology Sem-

UC Rambo

Seminars include case reports and dis-
stributions of the currently available gross and microscopic surgical pathologic mate-
rial from the operating rooms and pathology.


UC Ebert, VA L. Way

Seminar is held in the surgical wards with discussion of current problems concerning the diagnosis and management of general surgical patients.


UC Ebert, VF GH, Blaisdell, VA L. Way.

Residents, under supervision, are re-

sponsible for the preparation of case records, laboratory work, preoperative patient prep-

aration, assistance at operations, postopera-
tive care, and attendance at follow-up clinic. Senior residents have certain additional ad-

ministrative, teaching, and clinical respon-
sibilities.

452. Experimental Surgical Laboratory. (1 1/2 per week) Su, F, W, Sp. Prerequisite: Surgery 450 and 452 may not be taken con-

continuously.

UC Ebert,VF GH, Blaisdell, VA L. Way.

Course includes experimental investiga-
tions of general surgical problems and the development of technical and laboratory methods to be applied in general surgery.


UC Ebert.

Assistant residents in off-campus hospi-
tals approved by the chairman of the depart-
ment and the Dean. Course includes clinical and experimental investigations of general surgical problems and the development of technical and laboratory methods to be applied in surgery.


VF GH Blaisdell

Interns rotate through the general surgi-
cal service, including the intensive care unit. Under the direction of the attending staff, ex-
perience is provided in vascular, chest, hand, and plastic surgery, and surgery of maxillofa-

cial injuries.


VF GH Blaisdell.

Interns, under supervision, are responsi-

ble for the preparation of case records, lab-

oratory work, preoperative patient prepara-
tion, assistance at operations, postoperative care, and attendance at follow-up clinic.

Teaching Methodology


Staff

Course provides resource information in the form of a systematic overview of educa-
tional technology. This information is intro-
duced in conjunction with the development by the individual student of an actual micro-
course, teaching a single skill.


Practical teaching experience in selected courses under the supervision of members of the staff.

180.02A-B-C. Teaching Methods. (0.3-0.3-0.3) F, W, Sp. Prerequisite: Fourth year standing or consent of instructor.

R. J. Miller

Predominantly group discussion based on selected readings in educational methodology. Specialists in education are invited to participate. Practical experience in teaching is included in Teaching Methodology 186.01A-B. Students teach in selected courses under supervision.

186.01A-B-C. Practice Teaching. (0.3-0.3-0.3) F, W, Sp. Lab 3 hours.

R. J. Miller

Practical teaching experience in selected courses under the supervision of senior members of the staff.

Urology

Core Clerkship—Surgery 110 includes clinical clerkships in the outpatient clinics and hospitals, assistance at operations, and participation in residents' seminars.

140.01. Urology Clinical Clerkship at UC (1/10) F, W, Sp. Prerequisite: Surgery 110.

Tanagho

Students work as interns on the Urology Service at UC. They also attend rounds and scheduled seminars with residents and visiting staff.

140.02. Urology Clinical Clerkship. (1 1/2 per week) Su, F, W, Sp. Prerequisite: Surgery 110.

Tanagho

Clinical clerkship in off-campus hospi-
tals approved by the chairman of the depart-
ment and the Dean.

140.03. Urology Clinical Clerkship at VA (1 1/2 per week) Su, F, W, Sp. Prerequisite: Surgery 110.

Students work as interns on the Urology Service at VA. They also attend rounds and scheduled seminars with residents and visiting staff.

140.04. Urology Clinical Clerkship at SFGH (1/10 per week) Su, F, W, Sp. Prerequisite: Surgery 110.

Tanagho

Students work as interns on the Urology service at SFGH. They also attend rounds and scheduled seminars with residents and visiting staff.

170.01. Fundamentals of Urology. (2) F, W, Sp. Prerequisite: Consent of instructor.

Tanagho and Staff

Seminar and library research.


Tanagho and Staff

Library research and directed reading under supervision of a member of the faculty with the approval of the chairman of the department.

199. Laboratory Project in Urology. (1-5) F, W, Sp. Prerequisite: Consent of instructor.

Tanagho and Staff

A laboratory research project under di-
rection of a member of the faculty with the approval of the chairperson of the department.


UC Rambo

Seminar includes study of the basic sci-
cences and urologic roentgenology with members of the attending staff.


Tanagho

Course includes experimental investiga-
tion in urologic problems.


Tanagho

Seminar includes discussion of diagno-
sis and treatment of patients in the urology work with the attending staff and scheduled seminars with residents and visiting staff.

403. General Urologic Staff Con-

R. D. Smith

Conference includes presentation and discussion of urologic problems by the house staff and faculty.


UC R. D. Smith, SFGH, F. Himan, VA Howard

First year resident care for patients in the wards and outpatient clinics and second and third year residents, under supervision, per-
form instrumental examinations on clinical pa-
tients. Senior residents, under supervision, perform instrumental and surgical proce-
duties and have administrative, clinical, and teaching responsibilities.

490. Clinical Urology (1½ per week) Su.

SFGH F. Hinman

Interns rotate through urological wards. Under the direction of the attending staff they are responsible for the care of patients, including history-taking, physical examination, laboratory tests, and consultation.