

COURSES OF INSTRUCTION

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 paragraphs include (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 paragraphs describe the course content.

Abbreviations — These abbreviations are used where applicable: Su = summer quarter; SS = summer session, F = fall quarter, W = winter quarter, Sp = spring quarter, Yr = three consecutive 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 noted within the 100 series, when the units are followed by a (§), the courses so designated are open to graduate academic students. The 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.
CCP, Center for Training in Community Psychiatry, Berkeley.
CHMC, Children's Hospital Medical Center of Northern California, Oakland.
CHS, Community Hospital of Sonoma County, Santa Rosa.
CM, Cowell Memorial Hospital, Berkeley.
F, Franklin Hospital and Medical Center, San Francisco.
FR, French Hospital, San Francisco.
H, Highland General Hospital, Oakland.
HCH, Harkness Community Hospital and Medical Center, San Francisco.
K, Kaiser Foundation Hospital, San Francisco.
KP, Kaiser Permanente Medical Center, Oakland.
KSSF, Kaiser Foundation Hospital, South San Francisco.
L, Letterman General Hospital, San Francisco.
LPNI, Langley Porter Neuropsychiatric Institute, San Francisco.
MC, Maricopa County Hospital, Phoenix.
MG, Marin General Hospital, Ross.
MZ, Mt. Zion Hospital and Medical Center, San Francisco.
OC, O'Connor Hospital, San Jose.
PH, Peninsular Hospital, Burlingame.

PHS, United States Public Health Service Hospital, San Francisco.
PMC, Pacific Medical Center, San Francisco.
Q, The Queen's Hospital, Honolulu, Hawaii.
RLA, Rancho Los Amigos Hospital, Downey.
SCC, Santa Clara Valley Medical Center, San Jose.
SF, San Francisco General Hospital, San Francisco.
SJ, San Joaquin General Hospital, Stockton.
SH, Shriners Hospital for Crippled Children, Honolulu, Hawaii.
SM, Samuel Merritt Hospital, Oakland.
SSF, Shriners Hospital for Crippled Children, San Francisco.
STJ, St. Joseph's Hospital, San Francisco.
STL, St. Luke's Hospital, San Francisco.
STM, St. Mary's Hospital, San Francisco.
T, Tripler Army Medical Center, Honolulu, Hawaii.
UC, University of California Hospitals and Clinics, San Francisco.
VA, Veterans Administration Hospital, San Francisco.
VAF, Veterans Administration Hospital, Fresno.
VAP, Veterans Administration Hospital, Phoenix.
VMC, Valley Medical Center, Fresno.

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

101. Fundamentals of Epidemiology. (3) W. Prerequisite: Biochemistry 102, Microbiology 100, or their equivalent. **Petrakis**

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

110. Required Clinical Clerkship in Ambulatory and Community Medicine. (1½ per week) Su, F, W, Sp. Prerequisite: Completion of 24 weeks of clinical clerkship, including Pediatrics 110 and either Medicine 110 or Surgery 110 and 111. **Crede and Staff**

Integrated ambulatory clerkship experience of wide scope offered in a diversity of

patient 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, Sp. Prerequisite: Psychiatry 130. **Crede**

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

140.01. Clinical Community Health Program. (1½ per week) Su, F, W, Sp. Prerequisite: Determined by students' clinical experiences and elective for which they are applying. **Crede and Staff**

Elective experience in community health projects of varied nature for two weeks to three months. Students may study and participate in unique health care programs, e.g., Indian Health Service, Diabetic Summer Camp, Planned Parenthood program, Family Practice Preceptorships.

140.02. Family Practice Clerkship at S. (1½ per week) Su, F, W, Sp. Prerequisite: Must be third- or fourth-year medical student. Medicine 110 or Surgery 110, plus Pediatrics 110 or Obstetrics and Gynecology 110. **Anderson, Dervin**

Involvement in comprehensive primary medical care of families (inpatient and outpatient), 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.

140.03. Occupational Medical Practice. (1½ per week) F, W, Sp. Prerequisite: Consent of the instructor. **Hine**

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

140.04. Family Physician Elective at MZ. (1½ per week) Su, F, W, Sp. Prerequisite: Third-year status and Medicine 110. **Weinstein**

Four-week elective emphasizes the principles of rehabilitation and continuing patient care. The student is given an active role in patient care while working with a team of physicians and allied health professionals.

140.5. Social Medicine Clerkship. (1½ per week) F, W, Sp, Su. Prerequisite: Consent of the instructor. **Werdegarr**

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

140.06. Community Rehabilitation Medicine. (1½ per week) F, W, Sp. Prerequisite: Consent of the instructor. **Specht**

Students will be assigned to a variety of community medicine and other rehabilitation facilities for two to four weeks. Emphasis will be on the selection of patients who are suitable for rehabilitation and the interprofessional approach to rehabilitation.

150.01. Community Health Field Work. (1½ per week) F, W, Sp. Prerequisite: Consent of the instructor. **Crede, Howard and Staff**

Field work to explore one area or more in social medicine or community health. Faculty from Schools of Medicine, Public Health, Nursing, Dentistry, and Social Welfare may participate where needed.

160.01. Clinical Aspects of Community Medicine. (1-5) F, W, Sp. Prerequisite: Consent of the instructor. **Barbaccia, Howard**

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

160.02. Clinical Occupational Medicine. (1½ per week) F, W, Sp. Prerequisite: Consent of the instructor. **Hine**

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

160.03. Pregnancy Counselling. (1) F, W, Sp. **Vandervoort**

Students complete a course of instruction in pregnancy counselling at San Francisco Planned Parenthood and participate as pregnancy counsellors at Planned Parenthood (or satellite) under supervision of University faculty and Planned Parenthood staff and attend periodic lecture-demonstrations.

160.05. Centro Latino Elective. (1-2) F, W, Sp, Su. Prerequisite: Consent of the 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 conducted at the Centro Latino, 1292 Potrero.

160.06. Latino School Elective. (3) F, W, Sp, Su. Prerequisite: Consent of the instructor. **Sanchez, Pascoe**

This project is a continuous outreach program dealing with Spanish-speaking children, parents, teachers, and administrators in Mis-

sion District elementary schools. Students participate in teaching, dissemination, and delivery of health care.

160.07A-B. The Family: Health, Illness, and Care. (2-2) F, W. Two-quarter course. **Ransom**

Students meet weekly for two consecutive quarters in small group seminars led primarily by family physicians. Through seminars, reading, and continuing contact with families undergoing medical care, students will learn basic medical and behavioral approaches to family medicine and care.

160.08. Introduction to Family Therapy. (1) Sp. **Ransom**

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 the supervision hours of family therapy trainees as well as observe family therapy sessions.

170.01. Aspects of Social Medicine in Community Health Agencies. (1-5) F, W, Sp. Prerequisite: Consent of the instructor. **Crede, Howard**

Seminars may explore one area or more in social medicine or community health. Faculty from Schools of Medicine, Public Health, Nursing, Dentistry, and Social Welfare may participate where needed.

170.05. Rehabilitation Medicine. (1-5) F, W, Sp. Prerequisite: Consent of the instructor. **Edmundson, Geiger**

According to the student's interest (chronic or crippling disease in children, surgical specialties, or disorders of special senses) individualized programs will be arranged to investigate rehabilitation services and facilities related to the student's interest.

180. Introduction to Social and Preventive Medicine. (2) F. **Werdegarr**

Lectures and seminars introduce entering students to social, political, economic, and environmental factors influencing community health and provision of care. Topics include clinical preventive medicine, community health planning, and formulation of social health policy. Patient interviews may be arranged.

181.01. Introduction to the Economics of Human Services. (1) Sp, F. **Ingbar**

Description of factors affecting supply of resources and demand for services. Analysis of organizational, administrative, and financial differences among programs. Evaluation of systems using such economic concepts as cost, price, utility, productivity, economy, efficiency, and effectiveness in meeting patient needs.

181.02. Introduction to the Economics of Human Services: Seminar. (1) Sp, F. Prerequisite: Concurrent registration in Ambulatory and Community Medicine 181.91 or consent of the instructor. Seminar: 1 hour. **Ingbar**

Seminar discussion of factors affecting supply of resources and demand for services. Analyzes organizational, administrative, financial, and payment differences among programs. Evaluates systems using such economic concepts as cost, price, utility, productivity, economy, efficiency, and effectiveness in meeting patient needs.

181.03. Economics and the Organization and Administration of Health and Welfare Programs. (2) F, W, Sp. Prerequisite: Ambulatory and Community Medicine 181.01 or consent of the instructor. Seminar: 2 hours. **Ingbar**

Discussion of case materials concerning programs which provide care, purchase services, and plan delivery systems. Emphasizes development and application of cost-benefit, cost effectiveness, and other economic concepts for improving managerial performance and analyzing governmental policies which affect health status of populations.

182. Public Health Programs. (2) Sp. Prerequisite: Third- or fourth-year standing for Pharmacy students (required course); consent of the instructor for other students. **Barbaccia**

Survey of major health problems throughout the world, and programs and agencies concerned with their control. Relationships of pharmacy to emergency medical services, communicable diseases, nutrition, sanitation, occupational health, maternal and child hygiene, mental health, public health administration, etc.

183. Asian Health Elective. (1-2) Sp. Lecture: 1½ hours. Student project or research for two units. **Barbaccia**

A lecture series with guest speakers. The purpose of the course is to develop awareness of West Coast Asian community health problems and to assist in the development of viable alternatives to these existing problems.

183.01. Health Care For Blacks: A Candid Look at Patients and Practitioners. (2) W. **Howard, Cobbs**

Considers etiology and management of diseases having greater prevalence and mortality among blacks, e.g., hypertension, strokes, sickle-cell anemia, and cervical cancer. Stresses problems of patients in gaining access to care and appropriate treatment, discusses the situation of black health professionals.

184. Contemporary Spanish-Speaking Subcultures. (3§) F, W. Prerequisite: Consent of the instructor. **Sanchez**

Investigation of selected theories of migration, urbanization, assimilation, and conflict with emphasis on diverse Spanish-speaking populations in urban areas; relationships between this grouping and formal institutions, i.e., medical services.

185. Health Care Systems. (3§) Sp.

Barbaccia, Adamson

Lectures and discussion seminars will provide an ecological framework of political, social, and economic influence in the medical care system. Topics will include manpower, hospitals, ambulatory care, information and communication, regulation and controls, costs, government programs, and health services research.

185.01. Medical Care Evaluation. (2) W. Prerequisite: Consent of the instructor. Lecture: 2 hours.

Barbaccia, Adamson

Offers instruction in methods of appraising quality and efficiency of medical care using medical audit and utilization review. Initial emphasis will be learning problem-oriented medical recording to facilitate patient management and implementation of these review techniques.

186. Politics of Health. (1½§) F. **P. Lee**

Lecture series presents an overview of the health care industry, its economic, political, and sociological aspects relating to development and implementation of health policies at the federal, state, and local levels, particularly concerning major issues of national health insurance.

187. Politics of Health. (1½§) W. **P. Lee**

Lecture series presents an analysis of the impact of national health insurance policy alternatives on various sectors of society: health professions, consumers, medical schools, health care facilities, pharmaceutical manufacturers, and governmental entities at the federal, state, and local levels.

188. Politics of Health. (1½§) Sp. **P. Lee**

This lecture series focuses on institutional and personal values influencing formation of specific aspects of health policy. Topics include physician specialization, research and technology, genetic screening, traditional medicine, human experimentation, mental health, and care of the aging.

189. Social and Research Problems in Sexual Identity. (2) Sp. Seminar: 2 hours. Prerequisite: Consent of the instructor. **Hoffman**

An examination of the research literature in the area of sexual identity. Basic sexual

concepts, gender identity and role, clinical problems (including transvestism and transexualism), sexual object-choice, homosexuality (biological, social, and psychological aspects), issues of etiology, treatment, societal response.

190. Family Counseling and Psychotherapy. (1§) F, W, Sp. Prerequisite: Consent of the instructor. Seminar: 3 hours. **Ransom**

Students will observe family therapy sessions, both live and on videotape. They will also meet with families, under the supervision of Dr. Ransom and other faculty. Appropriate readings will be assigned and discussed in seminar.

198. Supervised Study. (1-5) F, W, Sp, Su. Prerequisite: Consent of the instructor.

Crede and Staff

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

400. Family Practice: Seminars in Medical Literature. (½) F, W, Sp, Su. **Menachof**

Monthly seminars are held on recent literature in the major clinical disciplines and subspecialties as pertains to the training and practice of the family physician.

401. Family Practice: Seminar in Diagnostic Radiology. (1) F, W, Sp, Su. **Butler**

Radiologists on attending staff present systematic review of techniques of interpretation of X rays as needed by the family physician, covering roentgen findings in selected medical, surgical, pediatric, urological, obstetric, and orthopedic problems. Normal findings and their variants are stressed.

402. Family Practice: Clinicopathological Conference. (¼) F, W, Sp, Su. **Leissring**

Residents present clinical data for selected patients in clinicopathological conferences as part of regular program monthly hospital staff meetings. Staff pathologists provide correlation of clinical manifestations of disease with clinical laboratory, histologic, and autopsy findings.

403. Family Practice: Staff Conferences. (3) F, W, Sp, Su. **Menachof**

Family Practice residents and members of attending staff prepare and present case histories of patients as well as clinical reviews of selected clinical problems in internal medicine, pediatrics, family practice, surgery, orthopaedics and obstetrics-gynecology.

404. Family Practice: Electrocardiographic Interpretations. (2) F, W, Sp, Su. **Vinson**

Under the supervision of attending internists and cardiologists, residents in family

practice interpret all electrocardiograms taken at Community Hospital of Sonoma County. First-year residents.

405. Family Practice: Visiting Professor Program. (2) F, W, Sp, Su. **Neal**

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.

450. Clinical Ambulatory and Community Medicine. (1½ per week) Su, F, W, Sp. One-year postinternship in medicine or pediatrics. **Crede and Staff**

Clinical training is predominantly in an ambulatory setting, but limited hospital assignments 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.

451. Family Practice Resident Program. (1-1½ per week) Su, F, W, Sp. **Neal**

Residents will work as members of group practice and leaders of health team. Their training as family doctors will include appropriate areas of internal medicine, pediatrics, office psychiatry, family dynamics, obstetrics-gynecology, surgery, community health resources, preventive medicine, and subspecialties.

452. Family Practice: Office Psychotherapy and Counseling. (2) F, W, Sp, Su. **Grace**

Residents develop interviewing and management techniques for patients with a variety of common emotional disorders. Psychiatric supervision is facilitated by a one-way mirror, and a conference between resident and psychiatrist follows each session.

ANATOMY

100. Systemic and Regional Anatomy. (6§) W, Sp. Prerequisite: Embryology or concurrent enrollment in Anatomy 101.

Asling, Evans, Monie 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.

101. Human Development and Genetics. (4§) F. Prerequisite: School of Medicine entrance requirements and consent of the instructor. **Monie, C. Epstein and Staff**

Aspects of normal and abnormal physical and mental development are considered and their clinical relevance discussed. Factors involved in genetic counseling and in prenatal

diagnosis of congenital defects are also presented.

102. Histology. (4§) W. Prerequisite: Biochemistry 100A-B. **Wissig and Staff**

Course deals with microscopic structure of tissues and organs. Structure is correlated with function. Neural endocrine and reproductive systems are not covered.

103. Nervous System: Form and Function. (5§) W. Prerequisite: Anatomy 100 and 101 or consent of the instructor.

Garoutte, Lawry and Staff

The structure and function of the nervous system studied in lectures, conferences, demonstrations, and laboratory exercises.

115. Histology. (3§) Sp. Lecture: 2 hours. Laboratory: 3 hours. **Armstrong 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. Laboratory: 3 hours. **Evans and Staff**

A study of the macroscopic 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. Lecture: 2 hours, F. Laboratory: 6 hours, F. Lecture: 3 hours, W. Laboratory: 9 hours, W. **Coleman**

Gross anatomy of the trunk, upper extremity, and head and neck are studied by laboratory dissection and demonstration. The course includes an introduction to neuroanatomy. Emphasis is placed on the functions of the structures and systems examined.

118. General Histology. (3) F. Lecture: 2 hours. Laboratory: 3 hours. **McDowell**

The microscopic structure of tissues and organs of the body are studied with their histophysiological considerations.

119. Neuroanatomy. (3) Sp. Lecture: 2 hours. Laboratory: 3 hours. **Lawry and Staff**

The structure and function of the nervous system studied in lectures and laboratory.

156. Survey of General and Head and Neck Anatomy. (6) F. Lecture: 3 hours. Laboratory: 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. (1-5) Sp. Prerequisite: General histology, gross anatomy of the head and neck, and oral histology. Lecture: 1 hour. Laboratory: 0-12 hours. **Coleman**

This course is designed for postprofessional certificate students enrolled in the clinical specialty training programs in the School of Dentistry. Seminar type of presentation and demonstrations of head and neck anatomy are correlated with their application to clinical dentistry.

170.01. Problem Areas in Clinical Anatomy. (1) F, W, Sp. Prerequisite: Prior or concurrent enrollment in Anatomy 100. **Lindner**

Discussions of important areas in clinical anatomy, hernia, thyroid, perineum, peritoneal cavity, etc. Correlated with Anatomy 100.

170.02. Survey of Congenital Defects. (2) W. Prerequisite: Gross anatomy course and consent of the instructor. **Monie**

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.

170.04. Applied Anatomy. (1) F, W, Sp. Prerequisite: Consent of the instructor. **Saunders**

Lectures and demonstrations on applied anatomy and embryology.

170.05. Congenital Abnormalities. (1-5§) W. Prerequisite: Anatomy 101 or equivalent and consent of the instructor. **Monie**

Individual or group projects involving library and laboratory research on the genesis of congenital abnormalities in man and other mammals. Weekly seminar. Enrollment limited.

170.06. Experimental Endocrinology. (2) Sp. To be given in alternate years. **Loströh, Papkoff**

Basic study of animal hormones, their structures, functions, and interrelationships. Concepts regarding hormonal actions are derived from chemical (structure-function) and biological (*in vivo*, *in vitro*) studies. Mechanisms are discussed wherever possible.

170.08. Regional and Topographical Anatomy. (1) Su, F, W, Sp. **Lindner**

Living clinical anatomy is stressed. The diaphragm, complete review of the neck, and abdominal contents. Clinical congenital anomalies are discussed in detail regarding their relationship to clinical medicine.

170.09. Review of Human Embryology. (1) SSI. **Armstrong, Monie**

An elective course of about fifteen one-

hour lecture-demonstrations for those wishing to review or augment their knowledge of human embryology. It cannot be substituted for Anatomy 101, Human Development and Genetics. Enrollment limited.

170.10. Neuroanatomy Clinical Correlation. (1/2) W. **Garoutte**

Individual patients will be presented, and the neuroanatomical significance of their clinical findings discussed.

170.11. Research in Electron Microscopy. (1§) F, W, Sp. Prerequisite: Anatomy 102. **Jones**

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

170.12. Advanced Research in Electron Microscopy. (1§) F, W, Sp. Prerequisite: Anatomy 170.11. **Jones**

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

198. Supervised Study in Anatomy. (1-5§) F, W, Sp. **Ralston 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 Anatomy. (1-5§) F, W, Sp. **Ralston and Staff**

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

200. Topics in Reproductive Biology. (2) Sp. Lecture: 2 hours. Prerequisite: Consent of the instructor. **Long**

A series of lectures and discussions on recent advances in the biology of reproduction. To be offered in alternate years.

201. Radiation Effects on Genes and Chromosomes. (2) W. Prerequisite: Consent of the instructor. **S. Wolff**

Concepts and mathematics of target theory relating to damage of genetic apparatus. Biophysical and biochemical studies on induction of intragenic and intergenic mutations that give insight into the structure of chromosomes and the interaction of radiation with biological material.

211. Biological Aspects of Human Development. (4) F. Prerequisite: Consent of the instructor. Enrollment limited. Lecture: 4 hours. **Monie and Staff**

Aspects of normal-abnormal human physical and mental development are considered and their clinical significance indicated. Relevant features of experimental mammalian teratogenesis are also discussed.

214. Research Methods in Anatomy. (1) F, W, Sp. **Long and Staff**

Staff members will demonstrate the application of advanced laboratory procedures to the analysis of research projects.

215. Cell Structure and Function. (2 or 4) Sp. Prerequisite: An elementary knowledge of cell ultrastructure and biochemistry and permission of the instructor to enroll for 4 units. **Long and Staff**

An advanced presentation of the relationship between structural organization and the physiological activities of cells.

216. Developmental Biology. (1-4) F, W, Sp. Prerequisite: Consent of the instructor. **Glass**

Laboratory or library research in mammalian embryology or directed reading on current developments in gametogenesis, fertilization, cleavage, implantation, organogenesis, or molecular differentiation.

217. Anatomy of the Head and Neck for Advanced Students. (2-6) Sp. Prerequisite: Anatomy 117A-B or its equivalent and consent of the instructor. Lecture: 2 hours. Laboratory: 6-12 hours. **Coleman**

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) F, W, Sp. **Staff**

Students, staff, or guests present selected topics concerned with current research in anatomy for criticism and discussion.

230. Comparative Placentology and Foetal Endocrinology. (2) W. **Contopoulos**

A series of discussions covering the comparative anatomical and physiological aspect of placentation and its relation to the development and the physiology of the foetal endocrine glands.

231. Molecular and Cellular Analysis of Development. (3) W. Prerequisite: Consent of the instructor. Lecture: 3 hours. Laboratory: 0. **Calarco**

Molecular and cellular events relating to differentiation and development. A variety of developmental phenomena will be surveyed and related to genetic and epigenetic control mechanisms.

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 students engaged in writing the thesis for the masters degree.

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

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

300. Practicum in Teaching. (1-4) F, W, Sp, SS. Prerequisite: Consent of the instructor. **Staff**

Training in teaching in a course offered by the Department of Anatomy under the supervision of instructor in charge. Includes laboratory teaching, presentation of lecture material, experience in setting up and correcting of examinations and participation in course critiques.

ANESTHESIA

110. Clinical Clerkship in Anesthesia. (1½ per week) Su, F, W, Sp. Prerequisite: Medicine 130, Psychiatry 130, Ambulatory and Community Medicine 130, Medicine 131A-B, Physiology 100, and Pharmacology 100A-B. **Hamilton**

Introduction and experience in operating room anesthesia including preoperative and postoperative evaluation and care. Cardiopulmonary resuscitation, care of the unconscious patient, and treatment of pain problems. Will be conducted at UC, SF, and VA. Teaching conferences of department included.

140.01. Clinical Anesthesia. (1½ per week) Su, F, W, Sp. Prerequisite: Medicine 131A-B, Pharmacology 100A-B, Physiology 100, and Anesthesia 110. **Hamilton and Staff**

Course consists of instruction and experience in cardiopulmonary resuscitation, care of the unconscious patient, and treatment of pain problems; rotation through UC, SF, and VA; and attendance at the teaching conferences of the department.

140.02. Clinical Clerkship. (1½ per week) Su, F, W, Sp. Prerequisite: Medicine 131A-B, Pharmacology 100, Physiology 100, Anesthesia 110, and consent of the instructor. **Hamilton**

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

140.03. Intensive Care Clerkship. (1½ per week) Su, F, W, Sp. Prerequisite: Limited to fourth-year students with consent of the instructor. **Singer**

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

178. Anesthesiology. (6) Sp. Prerequisite: Interns and residents. Clinic.

Hamilton and Staff

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

400. Anesthesia Staff Conferences. (2-2-2) F, W, Sp. **Stevens, Miller**

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

450. Anesthesia Clinical Work. (1½ per week) Su, F, W, Sp. First-year residents, 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. Pre-operative and postoperative evaluation of patients, oxygen therapy, and resuscitation are covered.

460. Anesthesia Special Assignment. (1½ per week) Su, F, W, Sp. Residents during either second or third year. **UC Eger**

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

ANIMAL SCIENCE

162. Principles of Laboratory Animal Sciences. (3) W. Lecture: 1 hour. Laboratory: 6 hours. **Spinelli**

Introduction to the selection, anatomical, and physical peculiarities, and the preoperative and postoperative care of animals. Laboratory experiments in anesthesia, surgical exercises, drug administration, perfusion techniques, and individualized experiments.

ANTHROPOLOGY

230. Culture and Personality. (2-3) F. Prerequisite: Consent of the instructor. Lecture: 2 hours (3 hours independent study). **Kiefer, Newman**

Explores the relationship between (a) culturally conditioned ways of perceiving, thinking, and communicating and (b) individual behavior and personality development.

231. Ethnopsychiatry. (2-3) W. Prerequisite: Consent of the instructor. Lecture: 2 hours for 2 units (3 hours independent study per week for 3 units). **Clark, Hartog**

Principles of healing systems in the treatment of mental disorder including folk healing, crosscultural comparisons, research meth-

ods, and implications for community psychiatry. Students will study local examples of folk healers or folk-healing institutions.

240. Urban Anthropology. (2-3) W. Prerequisite: Consent of the instructor. Lecture: 2 hours (3 hours independent study for 3 units). **Ablin, Kiefer**

The development and characteristics of urban industrial societies, and the culture of modern cities. Evaluation of theories and methods for understanding urban behavior. Ethnic and racial pluralism in modern cities. The relevance of anthropological concepts for urban planning.

241. Social Deviance. (3) F. Prerequisite: Consent of the instructor. Lecture: 3 hours. **Ablin**

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. A field research project will be required.

242A-B-C. Anthropological Considerations in the Community Mental Health Field. (2-3) F, W, Sp. Prerequisite: Consent of the instructor. Lecture: 2 hours. Independent Study: 3 hours per week for 3 units. **Ablin**

A survey of principles and practice in the community mental health field. Emphasis will be on the significance of sociocultural factors in the determination of community needs and the delivery of mental health services.

246. Comparative Medical Systems. (2-3) Sp. Prerequisite: Consent of the instructor. Lecture: 2 hours (3 hours per week independent study for 3 units). **Clark, Dunn, Newman**

Comparative examination of traditional and contemporary systems of health care delivery with special attention to theories of disease including notions regarding etiology, prophylaxis, treatment and treatment settings, and the therapeutic encounter. Seminar includes some experience in field and clinical observation.

248. Group Study. (1-5) F, W, Sp. Prerequisite: Consent of the instructor. **Staff**

Groups of two or more collaborate in special problems in anthropology under the direction of faculty. Students may select areas related to their long-term interest and future research program.

249. Directed Reading. (1-5) F, W, Sp. Prerequisite: Consent of the instructor. **Staff**
All independent study.

255A-B-C. Seminar in Medical Anthropology. (2-4) F, W, Sp. Prerequisite: Consent of the instructor. Lecture: 2 hours. Independent Study: 3 or 6 hours. **Clark, Newman**

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. Behavioral Epidemiology. (2-3) Sp. Prerequisite: Consent of the instructor. Lecture: 2 hours (3 hours per week independent study for 3 units). **Dunn**

Introduction to the study of human behavioral factors in epidemiology and medical ecology including analysis of health enhancing as well as ill-health provoking behavior. The full range of human disease and disorder is considered.

265. Genetic Anthropology and Epidemiology. (2) Sp. Prerequisite: Consent of the instructor. Lecture: 2 hours. Laboratory demonstrations will be included when possible. **Petrakis, Schanfield**

Lecture course dealing with epidemiological and anthropological aspects of selected genetic polymorphisms and their potential application to investigation of disease causation. Topics include blood group systems, hemoglobin types, serum protein systems, serum and red cell enzymes, and selected physical traits.

270. Research in Population. (2-3) Sp. Lecture: 2 hours (3 hours per week independent study for 3 units). **Newman**

A survey of research methodologies and techniques in the study of births, deaths, and migrations and social and cultural factors in population change.

297. Special Studies. (1-5) F, W, Sp. Prerequisite: Consent of the instructor. **Staff**
All independent study.

BIOCHEMISTRY

100A-B. Cellular Structure and Function. (4-4§) F, W. **Fineberg and Staff**

Lectures and conferences in biochemistry including aspects of cell physiology and cellular ultrastructure. Fundamental knowledge is presented in the context of its applicability to clinical medicine.

101A-B. Clinical Correlation Course in Cellular Structure and Function. (1-1) F, W. Prerequisite: Only students waived from Biochemistry 100A-B will be required to take this course. **Staff**

A component of Biochemistry 100A-B, comprising sessions conducted jointly by members of the clinical and basic science departments, presenting cases of metabolic disorders, and discussing the underlying biochemical disturbance.

110A-B. Cellular Structure and Function. (3-3§) F, W. Lecture: 3 hours. **Fineberg**

Lectures in biochemistry including aspects of cell physiology and cellular ultrastructure, with some emphasis in the area of connective and mineralizing tissues. Fundamental knowledge is presented in the context of its applicability to the clinical health sciences.

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

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. (3-3§) F, W. Prerequisite: Consent of the instructor. Lecture: 3 hours. **Fineberg and Staff**

Lectures and conferences in biochemistry including aspects of cell physiology and cellular ultrastructure, with some special emphasis in the area of drug metabolism. Fundamental knowledge is presented in the context of its applicability to clinical medicine.

130. Biochemistry of Metabolic Disease. (3§) W. Prerequisite: Biochemistry 120A-B or equivalent. Lecture: 3 hours. **Eiler**

A continuation of the study of metabolism with emphasis on the aberrations in metabolic pathways associated with diseases in man. Consideration will be given to clinical laboratory biochemical data.

150.01. Research in Biochemistry. (1½ per week) F, W, Sp. Prerequisite: Consent of the instructor. **Staff**

Research in biochemistry.

170.01. Human Nutrition. (2§) Sp. Prerequisite: Biochemistry 100A-B or its equivalent. **Harper**

Nutritional aspects of the metabolism of protein, lipid, carbohydrate, and vitamins. Energy requirements and mineral metabolism from the standpoint of human nutrition.

198. Supervised Study in Biochemistry. (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 Biochemistry. (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.

200A-B-C. General Biochemistry. (3-3-3) F, W, Sp. Prerequisite: Calculus, physical

chemistry, organic chemistry, introductory biochemistry, and an advanced course in biology are highly desirable. Students with adequate background may enter at any quarter with the consent of the instructor. **Staff**

A comprehensive, year-long course of lectures, problems, and group discussions consisting of general biochemistry.

201A. Physical Biochemistry I. (3) W. Prerequisite: A year course each of organic and physical chemistry or consent of the instructor. Lecture: 3 hours. **Yang**

Application of physical concepts and experimental methods to the study of the structure and function of biopolymers.

201B. Physical Biochemistry II. (2) Sp. Lecture: 2 hours. **Cooke**

Interaction of electromagnetic radiation with matter. Theory of light scattering. Spectroscopic methods useful in studying biological systems. Laser light scattering and molecular flexibility; applications of NMR, ESR and spin labels, fluorescence, X-ray diffraction, electron microscopy, and X-ray spectroscopy.

202. Computation in Biochemistry and Physiology. (3) F. Prerequisite: Consent of the instructor. Lecture: 3 hours. **Martinez**

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

203. Introduction to Biomathematics. (3) Sp. Prerequisite: Biochemistry 190, Physiology 190, or Physiology 230. Lecture: 3 hours. **Landahl**

Mathematical modeling of enzyme kinetics, metabolic and hormonal control mechanisms, cooperative interactions of macromolecules, diffusion, passive and active transport, membrane models, excitation and conduction, flow, irreversible thermodynamics. Course offers student experience in problem formulation and reading of current literature.

207. Biochemistry of Connective Tissues. (2) W. Prerequisite: Biochemistry 110A-B or equivalent and consent of the instructor. Lecture: 2 hours. **Newbrun**

Lectures and assigned reading on chemistry, structure, and metabolism of the mucopolysaccharides, collagen, and elastin. Principles of histochemical reactions of connective tissues.

210. Current Topics. (0-3) F, W, Sp. Prerequisite: Consent of the instructor. Lecture: 1-3 hours. **Staff**

Discussion of selected areas of biochemistry, biophysics, and biomathematics.

211. Biological Transport Systems. (3) Sp. Prerequisite: Biochemistry 100A-B, Physiology 100, and Physical Chemistry 110A-B, or their equivalents. **Edelman, Durbin**

Mechanisms of passive transport in biological and model membranes, kinetics of passive and active transport, the role of specific proteins and enzymes in these processes, and the biochemical pathways involved in the regulation of rates of transport.

212. Development Biology. (3) Sp. Lecture: 3 hours. **Rutter**

Biochemical and ultrastructural aspects of cell differentiation and embryologic development, with special emphasis on regulatory mechanisms.

213A-B. Bio-Organic and Enzyme Mechanisms. (2-2) F, W. **Santi**

Biochemically important chemical transformations from the physical organic point of view, emphasizing catalytic mechanisms pertinent to enzymic reactions, and to the development of enzyme model systems. Intermolecular forces and enzyme-substrate interactions. Techniques of investigating enzyme mechanisms.

214. Amino Acid and Protein Metabolism. (2) W. Prerequisite: Biochemistry 100A-B or equivalent. Lecture: 2 hours. **Tarver**

The fate of body protein, protein requirements, specific dynamic action; turnover of tissues and plasma proteins. Interpretation of isotopic tracer studies. Amino acid catabolism and formation of important biological products.

215. Preparation for Research in Biochemistry and Biophysics. (3) F, W, Sp, SS. Laboratory: 9 hours. **Goodman and Staff**

A laboratory rotation course to familiarize new departmental graduate students with various approaches to biochemical and biophysical research.

220. Seminar. (0) F, W, Sp. Lecture: 1 hour. **Kelly**

Lectures and discussion on topics of current interest in biochemistry and biophysics.

221. Student Seminar. (0-1) F, W, Sp. Lecture: 1 hour. **Spudich**

Presentations of selected topics in biochemistry by graduate students of the Department of Biochemistry.

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

297. Special Study. (1-3) F, W, Sp. **Staff**
Reading and conferences for properly qualified students under the direction of a member of the staff.

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

For students engaged in writing the thesis for the masters degree.

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

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

BIOMATERIALS

110B-C. Biomaterials Science. (1-1) W, Sp. Lecture: 1 hour. **Jendresen**

Students are introduced to the physics, chemistry, and metallurgy of materials used in dentistry; the effect upon physical and chemical properties of materials in respect to their uses. The material systems studied are gypsum, cements, resins, waxes, colloids, and metals.

120. Biomaterials Science. (1) Sp. Lecture: 1 hour. **Jendresen**

Students are presented the rationale for the use of clinical restorative materials. Each major restorative material system will be studied in respect to material manipulation and clinical application.

130. Biomaterials Science. (1) Sp. Lecture: 1 hour. **Jendresen**

Students are taught to analyze accurately clinical and laboratory problems with respect to major material systems. Emphasis will be placed on understanding why clinical failures occur with selected materials and what biological responses can be expected.

156. Dental Materials Survey. (1) Sp. Lecture: 1 hour. Laboratory: 1 hour. **Jendresen**

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

180. Biomaterials Science. (1) Sp. Lecture: 1 hour. **Jendresen**

A survey of current research in the dental materials field, including evaluations of recently introduced materials and a review of the limitations and indications for all basic materials commonly used.

199. Laboratory Project in Biomaterials. (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 division.

BIOMATHEMATICS³⁵

190A-B-C. Biomathematics. (3-3-3§) F, W, Sp. Prerequisite: Consent of the instructor. Lecture: 3 hours. **Heilbron**

Intuitive concepts of derivatives and integrals. Limits, continuity of functions. Formal differentiation and integration. Maxima and Minima. Mean value theorem. Analytic geometry in the plane. Applications to physical and biological problems.

193A-B-C. Advanced Calculus and Differential Equations. (3-3-3§) F, W, Sp. Prerequisite: Biomathematics 190C or equivalent. **Landahl and Staff**

Ordinary differential equations. Systems of algebraic and differential equations. Laplace transform, matrix algebra, vectors. Partial differential equations, boundary value problems. Applications to problems of physiology, pharmacology, biochemistry, and biophysics.

BIOPHYSICS

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

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

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

BIOSTATISTICS

120. Statistical Treatment of Clinical and Laboratory Problems. (3§) Sp. Lecture: 2 hours. Laboratory and conferences: 2 hours. **Elashoff, Zippin**

Concepts and techniques for the planning and analysis of clinical studies and scientific experiments. Introduction to statistical techniques to summarize observations and draw inferences from the data, design, and execution of the investigation.

151B. Elementary Statistics. (2) W. Lecture: 2 hours. **K. Heiner**

An introduction to the elementary concepts of descriptive and inferential statistics encountered in biomedical research literature.

151C. Review of Scientific Literature. (2) Sp. Lecture: 2 hours. Prerequisite: Biostatistics 151B. **Heiner**

Emphasis will be on critical reviews of selected scientific literature in addition to planning, writing and carrying out a small research study.

190. Introduction to Biostatistics. (3§) F. Lecture: 3 hours. **Zippin**

Principles of collection and tabulation of data; measures of morbidity, mortality, and health sciences; standardization techniques;

³⁵ See Biochemistry 202 and 203.

planning of surveys; descriptive and inferential statistics.

191B-C. Introduction to the Theory of Statistics. (2-2§) W, Sp. Prerequisite: Differential and integral calculus or consent of the instructor. Lecture: 2 hours. **Zippin, Elashoff**
Introduction to probability, distribution theory, and stochastic processes in biology and medicine.

197. Introductory Statistics. (4§) F. Lecture: 3 hours. Laboratory: 2 hours.

Elashoff, Zippin

An introduction to statistics.

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

Elashoff, Zippin

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

261C. Biometrical Data Analysis. (3) Sp. Prerequisite: Consent of the instructor. Lecture: 3 hours.

Elashoff

Alternative approaches to data analysis. Transformations, selection bias, model building. Each student will be responsible for an in-depth analysis of controversial study.

262A. Biometrical Data Analysis I. (3) W. Prerequisite: Consent of the instructor. Lecture: 3 hours.

Elashoff

Alternative approaches to data analysis. Transformations, selection bias, model building. Each student will be responsible for an in-depth analysis of a controversial study.

262B. Biometrical Data Analysis II. (3) Sp. Prerequisite: Consent of the instructor. Lecture: 3 hours.

Elashoff

Data forms and packaged program control statements. Data generation and reduction. Medical diagnosis, pattern recognition and data exploration.

263A. Practicum in Biostatistical Consultation. (3) F. Prerequisite: Consent of the instructor. Lecture: 3 hours.

Elashoff

Supervision in statistical consulting.

263B. Practicum in Biostatistical Consultation. (3) W. Prerequisite: Consent of the instructor. Lecture: 3 hours.

Elashoff

Supervision in statistical consulting.

295. Research and Reading in Statistics. (1-6) F, W, Sp.

Elashoff

Directed reading and research in statistics.

CHEMISTRY

11. Organic Chemistry. (3) F. Prerequisite: Chemistry 1A-B-C or equivalent. Lecture: 3 hours.

Ortiz de Montellano

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

12. Organic Chemistry. (3) W. Prerequisite: Chemistry II. Lecture: 3 hours.

Craig

A continuation of the study of compounds of carbon including some aromatic compounds.

16. Organic Chemistry—Laboratory. (3) W. Prerequisite: Chemistry 11. Lecture: 1 hour. Laboratory: 6 hours.

Ketcham

Laboratory techniques in organic chemistry. The preparation and study of organic compounds, with an introduction to quantitative organic analysis.

113. Organic Chemistry. (3) Sp. Prerequisite: Chemistry 12. Lecture: 3 hours.

Castagnoli

A continuation of the study of compounds of carbon including some aromatic, hydroaromatic, and heterocyclic compounds.

115. Physical Chemistry. (5) F. Prerequisite: Chemistry 5 or equivalent laboratory course in quantitative analysis and differential and integral calculus. Lecture: 4 hours. Demonstration and Conference: 3 hours.

Shetlar, Kuntz

Elementary physical chemistry with particular emphasis on thermodynamics.

116. Physical Chemistry. (2) W. Prerequisite: Chemistry 115 or equivalent. Lecture: 1½ hours. Conference and Demonstration: 1½ hours.

Shetlar, Kuntz, Kollman

Elementary physical chemistry with emphasis on chemical kinetics.

150. Survey of Physical Chemistry. (2) F. Prerequisite: Differential and integral calculus and college physics. Lecture: 2 hours.

Shetlar, Kuntz

Intended to serve as background for Chemistry 160, 161, and 162 for advanced students who lack proficiency in basic physical chemistry.

151. Physical Chemistry. (3) Sp. Prerequisite: Chemistry 116 or equivalent. Lecture: 3 hours.

Shetlar, Kuntz, Kollman

An elective continuation of Chemistry 115 and 116. Elementary physical chemistry emphasizing aspects of spectroscopy and quantum mechanics.

155. Chemical Toxicology. (2) F. Lecture: 1 hour. Laboratory: 3 hours.

K. H. Lee

The methods of chemical detection and analysis of the common poisons. Normally open to third- and fourth-year students.

156. Physical Chemistry. (4) Sp. Prerequisite: Chemistry 115. Lecture: 3 hours. Laboratory and Conference: 4 hours.

Shetlar

An elective continuation of Chemistry 115. Lecture and laboratory exercises in elementary physical chemistry emphasizing aspects of spectroscopy and quantum mechanics.

157. Organic Chemistry—Laboratory. (3§) Sp. Prerequisite: Chemistry 12 and 16. Conference: 1 hour. Laboratory: 8 hours.

Craig and Staff

A course with some flexibility depending on the student's interest in the area of qualitative organic analysis or organic synthesis, dealing in part with compounds of pharmaceutical interest.

158. Physical Chemistry—Laboratory. (1) Sp. Prerequisite: Concurrent enrollment in Chemistry 151. Laboratory: 3 hours.

Kollman, Shetlar

Laboratory exercises in conjunction with Chemistry 151.

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

Castagnoli, Wolff
Advanced experiments in organic chemistry intended to broaden students' knowledge of experimental procedures.

160. Advanced Physical Chemistry. (3§) W. Prerequisite: Two quarters of physical chemistry or consent of the instructor. Lecture: 3 hours.

Kuntz

Chemical thermodynamics.

161. Advanced Physical Chemistry. (3§) Sp. Prerequisite: Chemistry 116 or equivalent. Lecture: 3 hours.

Theory and applications of chemical kinetics.

162. Advanced Physical Chemistry. (4§) F. Prerequisite: Chemistry 151 or equivalent. Acquaintance with differential equations would be advantageous. Lecture: 4 hours.

Kollman

Quantum mechanics and applications to molecular problems.

165. Organic Chemistry — Analytical Methods. (4§) F. Prerequisite: Chemistry 110, 113, and 157. Lecture: 1 hour. Laboratory: 9 hours.

Castagnoli

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

170. Group Studies Course. (1-4) F, W, Sp. Prerequisite: Permission to enroll must be obtained from the instructor and student's adviser. No final examination. Graded on a passed-not passed basis.

Staff

Group studies of selected topics in chemistry.

198. Supervised Study in Chemistry. (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 Chemistry. (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.

202. Advanced Organic Chemistry. (4) W. Prerequisite: Chemistry 113, 116, 157, and 165 or the equivalent. Lecture: 4 hours.

Ketcham

A study of the detailed processes associated with organic reactions.

203. Advanced Organic Chemistry. (4) Sp. Prerequisite: Chemistry 113, 115, and 165 suggested. Lecture: 4 hours.

Ortiz de Montellano

Physical organic chemistry; the structure of molecules and their relationship to mechanisms of reaction.

204. Organic Chemistry: Reactions and Synthetic Methods. (2) F. Prerequisite: Chemistry 113, 157, or equivalent. Chemistry 165 is suggested. Laboratory: 6 hours.

Craig

A course of advanced laboratory work exemplifying the major reactions and newer synthetic methods used in organic chemistry.

205. Recent Advances in Synthetic Methods. (2) F. Prerequisite: Chemistry 113, 157, or equivalent. Chemistry 165 is suggested. Lecture: 2 hours.

Craig

Recent advances in synthetic methods, comprising specific oxidizing agents, specific reducing agents, and other specific reagents.

208. Advanced Organic Chemistry. (3) Sp. Prerequisite: Chemistry 113, 157, or equivalent. Chemistry 165 is suggested. Lecture: 3 hours.

Craig, Wolff

Terpenes and steroids. Occurrence, chemistry, stereochemistry and structure-function relationships of natural products, such as carotenoids, fat-soluble vitamins and steroids, and their precursors.

209. Chemistry of Heterocyclics. (3) Sp. Prerequisite: Chemistry 113, 157, or equivalent. Lecture: 3 hours.

Craig, Castagnoli

A survey of the main nitrogen, oxygen, and sulfur-containing heterocycles.

CLINICAL DENTISTRY

409. Clinical Dentistry. (10) F, W, Sp, Su. Clinic: 30 hours.

Ware and Staff

Responsibility for patient dental care in

the wards and comprehensive clinic under the direction of the attending staff. Dental consultations and treatment will be coordinated with medical care. Interns will take histories, perform oral examinations, laboratory tests, and dental treatment.

CLINICAL LABORATORY SCIENCE

102A-B. Instrumentation in the Clinical Laboratory. (2-2§) F, W. Prerequisite: Consent of the instructor. Lecture: 1 hour. Laboratory: 2 hours. **Seidlitz**

Development of student's ability to make critical evaluation of existing and proposed clinical laboratory instrumentation; principles of operation and electronic, optical, and other physical characteristics of various clinical instruments; calibration procedures, methods for determining accuracy, and procedure of test results.

103A-B. Immunohematology. (1-1§) W, Sp. Prerequisite: Clinical Laboratory Science 103A is prerequisite to 103B. Lecture: 1 hour. Laboratory: 1 hour. **Vyas**

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 anemias, isoimmunization in pregnancy, blood component therapy, and transfusion reactions.

104. Pharmacology. (1) Sp. Prerequisite: Pharmacology 126B or equivalent. Lecture: 1 hour. **Sheiner**

This course will complete the pharmacology requirements of Clinical Laboratory Science students. The course content will be similar to that of Pharmacology 126C, but will be much briefer. Emphasis will be placed on laboratory aspects of drug therapy.

201A-B-C. Clinical Chemistry. (2) F, W, Sp. Prerequisite: Degree in Chemistry or Medical Technology license. Lecture: 2 hours. **Nussenbaum**

Principles and evaluation of chemical laboratory methods used to diagnose abnormalities in metabolism and organ function.

CLINICAL PATHOLOGY AND LABORATORY MEDICINE

140.02. Hematology Clerkship. (1½) Su, F, W, Sp. Prerequisite: Second-year pathophysiology or equivalent; recommendation from one faculty member. **Shohet and Staff**
Clerkships primarily in clinical evaluation of hematologic patients. When interesting

problems are found, time will be available for distinct laboratory projects relevant to those problems. Clerks will act as primary consultants under close supervision of hematology residents and fellows.

170.01. Clinical Pathology. (2) Su, F, W, Sp. **SF Pollycove, UC Brecher**

Laboratory sessions and seminars on aspects of clinical chemistry, hematology, microbiology, blood banking, and radioisotopes are held in the Clinical Laboratories at UC and SF.

170.02A-B. Immunohematology. (2-2) W, Sp. Prerequisite: Clinical Pathology and Laboratory Medicine 170.02A is a prerequisite for 170.02B. Both quarters must be taken for credit. **Vyas**

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 anemias, isoimmunization in pregnancy, blood component therapy, and transfusion reactions.

400. Clinical Pathology Staff Seminars. (2) Su, F, W, Sp.

SF Pollycove, UC Brecher, VA Parekh

Residents prepare summaries of selected clinical cases which present problems in correlation of clinical and laboratory data. Residents and faculty discuss relevant literature with special reference to technical aspects of laboratory procedures and interpretation of results.

401. Special Clinical Pathology Seminar. (4) Su, F, W, Sp.

SF Pollycove, UC Brecher, VA Parekh

Review of current laboratory procedures and problems in hematology, microbiology, immunology, blood banking, chemistry, application of isotopes. Library research and occasional formal reports are required.

402. Research Problems in Clinical Pathology. (1-10) Su, F, W, Sp.

SF Pollycove, UC Brecher, VA Parekh

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

403. Clinical Pathology Seminars. (1-1-1) Su, F, W, Sp. **Brecher**

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.

450. Clinical Pathology. (1½ per week) Su, F, W, Sp.

SF Pollycove, UC Brecher, VA Parekh

Principles of laboratory tests in hematology, 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.

451. Clinical Pathology. (5-10) Su, F, W, Sp. **SF Pollycove, UC Brecher, VA Parekh**

Theory and methodology of clinical chemistry, serology, blood banking, hematology, microbiology, parasitology, and clinical microscopy. Emphasis on interpretation and correlation of data and study of literature.

DENTAL AUXILIARY UTILIZATION

130. Introduction to Use of Dental Auxiliaries. (½) Sp. Prerequisite: Preventive Dentistry and Community Health III. Lecture: 1 hour for one-half of quarter. **Levin and Staff**

Classroom instruction and demonstrations in the effective use of the dental assistant. High productivity practice methods will be emphasized.

149.1. Clinical Utilization of Dental Auxiliaries. (1½) F, W, Sp. Prerequisite: Dental Auxiliary Utilization 130. This course must be taken concurrently with Pedodontics 149.1. Clinical rotation: Total 60 hours.

Wycoff and Staff

Clinical training in four-handed, sit-down dentistry using full-time chairside dental assistants. The course will be conducted in two-week blocks of five students in conjunction with the Division of Pedodontics.

DENTAL HEALTH EDUCATION

150B. Introduction to Patient Education. (2) W. Lecture: 2 hours. **Walsh**

The student is acquainted with theories and methods of the basic principles of education and learning. These are further applied to patient instruction, motivation, and attitude development. Students also participate in the design, research, and construction of table clinics.

150C. Chairside Dental Health Education. (2) Sp. Prerequisite: Dental Health Education 150B. Lecture: 2 hours. **Walsh**

Students are acquainted with theories and methods of education and motivational techniques that apply to their role as a private

practitioner. Appropriate experiences are provided in utilizing this knowledge.

160A. Community Dental Health. (2) F. Prerequisite: Dental Health Education 150B-C. Lecture: 2 hours. **Walsh**

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 in utilizing this knowledge in local junior high schools.

160B. Community Dental Health. (2) W. Lecture: 2 hours. **Walsh**

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 in utilizing this knowledge in local colleges and universities.

198. Special Studies in Dental Health Education. Variable (1-3) Sp. Prerequisite: Dental Health Education 150B-C; Dental Health Education 160A-B; Biostatistics.

Walsh

Students will undertake a project of their own choice, subject to the approval of the instructor, in an area of dental health education.

199. Special Dental Health Education. (1-2) Sp. Prerequisite: Dental Health Education 150B, 150C, 160A, 160B. Lecture: 1 hour. Laboratory: 2 hours. **Walsh**

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: 3-6 hours. Prerequisite: Dental Hygiene 155A-B, 159, and enrollment subject to the approval of the chairman of the division.

Poupard

Provides additional clinical dental hygiene experience before entry into the second-year clinic.

150A-B-C. Fundamentals of Dental Hygiene. (2-2-1) Yr. Lecture: 2 hours, 2 hours, 1 hour. **F, W, Sp Ishida**

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.

150.1. Dental Morphology. (2) F. Lecture: 2 hours. Prerequisite: Must be taken concurrently with Dental Hygiene 150A. **Hartman**

The development and form of deciduous and permanent dentition and occlusion. Study of individual tooth form and arch form to interarch relationships as well as endodontic morphology.

151. Orientation to Dentistry. (1) W. Lecture: 1 hour. **Poupard**

The student is familiarized with clinical dental procedures. Subject areas covered include: orthodontics, pedodontics, oral surgery, anesthesiology, etc.

155A-B. Introduction to Clinical Prophylaxes. (2-2) F, W. Clinic: 6 hours. **Dort, Ishida Manikin** 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) Sp. Clinic: 6 hours. Prerequisite: Dental Hygiene 155A-B. **Poupard and Staff**

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. Lecture: 2 hours. **Dort**

The student will identify her personal and professional role as a member of the dental health team and will be 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. (1-2) F, W. Lecture: 1 hour, F; 2 hours, W. Prerequisite: Dental Hygiene 151. **Poupard**

Continuation of Dental Hygiene 151.

169A-B-C. Advanced Clinical Oral Prophylaxes. (3-4-4) Yr. Clinic: 11 hours. Prerequisite: Dental Hygiene 155A-B and 159. **Poupard and Staff**

Advanced oral prophylaxes techniques including work in institutional dental clinics.

189. Special Study. (1/2-4) F, W, Sp. Prerequisite: Senior-class standing and approval of the instructor. **Poupard**

Students will select an area of interest for independent study or research. Areas may include clinical, community, educational, institutional, or other.

189.1. Clinical Experience in Mobile Dental Clinics. (1/2-3) SS. Clinic: Variable. **R. Miller**

Clinical experience in mobile dental clinics.

189.2. Community Health Clinical Prac-

tice. (1/2-2 per quarter) F, W, Sp. Registration in dental hygiene curriculum. Prerequisite: At least winter quarter standing of first-year dental hygiene curriculum; fall, winter, summer second-year dental hygiene curriculum.

Poupard

One-half unit of credit for every five three-hour visits made to off-campus clinics or institutions. Object 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, Sp. **Staff**

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

DENTAL JURISPRUDENCE

140. Dental Jurisprudence. (1) W. Lecture: 1 hour. **Bradley**

Student insight into the legal problems and obligations of dental practice is broadened.

DENTAL TECHNICS

115A-C. Basic Dental Technics. (2-1) F, Sp. Laboratory: 6 hours F, 3 hours Sp. **Stark and Staff**

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

185. Introduction to Basic Dental Technics. (2) SS. Laboratory: 18 hours (3 weeks). **Brigante**

Technical orientation to the basic technics taught in the first year in dentistry (morphology, prosthodontics, biomaterials, operative dentistry).

DERMATOLOGY

Core Clerkship—Ambulatory 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 and Research Dermatology. (1/2 per week) Su, F, W, Sp. Prerequisite: Consent of the 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.

140.02. Clinical Clerkship. (1/2 per week) Su, F, W, Sp. Prerequisite: Consent of the instructor. **Epstein**

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

160.01. Clinical and Research Dermatology. (1-5) Su, F, W, Sp. Prerequisite: Consent of the 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. (2) Su, F, W, Sp. **Conant**

Rounds daily on inpatient dermatology patients. Informal discussions of diagnosis and management of the hospitalized dermatology patient.

160.03. Introduction to Dermatology. (1) W. **Cram and Staff**

This course is an introduction to the basic language, diagnostic techniques, and recognition of common skin disorders seen by the practitioner. It will consist of patient demonstrations followed by open discussions with color slides of the disease to be presented.

199. Laboratory Project in Dermatology. (1-5) F, W, Sp. **Fukuyama, Staff**

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

400. Dermatology Staff Conferences. (2-2) F, W, Sp. **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 professors from other UC departments and other universities.

401. Dermatopathology. (2-2-2-2) Su, F, W, Sp. **UC Goodman**

Residents receive two hours of didactic lecture and demonstration of histopathology of skin diseases with special emphasis on correlation with clinical findings. They take an active part in the study of microscopic sections and discussions of material presented.

402. Seminar in Dermatological Literature. (1-1-1) F, W, Sp. **Maibach and Staff**
Seminar covers recent literature in derma-

tology. It includes assigned reading with required reports which are evaluated by members of the faculty.

403. Specialty Seminars. (2-2-2) F, W, Sp. **W. L. Epstein and Staff**

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

404. Seminar in Clinical Dermatology. (1-1-1) F, W, Sp. **W. L. Epstein and Staff**

Seminar involves the evaluation of recent clinical cases of special interest. The cases are presented by the faculty and resident staff.

405. Research in Dermatology. (3-3-3-3) Su, F, W, Sp. **Fukuyama**

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

406. Basic Science Seminars. (1-1-1-1) Su, F, W, Sp. **W. L. Epstein and Staff**

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

450. Clinical Dermatology. (1/2 per week) Su, F, W, Sp. **K McGinley; PHS Fascal, Hoke; UC Conant; SF Gellin; FA Tuffanelli**

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

451. Clinical Dermatology. (1/2 per week) Su, F, W, Sp. **J. H. Epstein**

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

452. Clinical and Experimental Dermatology. (1/2 week) Su, F, W, Sp. Prerequisite: Consent of the instructor. Lecture: 20-30 hours. Clinic and Laboratory: 20-30 hours. **W. Epstein**

Assistant residents in off-campus hospitals (in the United States and abroad) approved by the department chairman and the Dean.

Course includes training in clinical and investigative dermatology.

ECONOMICS

150. Economics of the Health Services. (3) W. Prerequisite: Consent of the instructor. Lecture: 3 hours. **Staff**

Considers the health service sector of the economy. Studies its structure and the pricing, financing, and allocation of health services. Emphasizes questions of public policy.

151. Principles of Economics. (3) Sp. Lecture: 3 hours. **Staff**

An introduction to the principles of economic analysis. Investigates the forces determining the allocation of resources, the composition of output, and the level of income and employments 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. Lecture: 1 hour. **Winters**

Lectures and group discussions relating to dental practice. Subject areas covered include equipment selection, auxiliary personnel, consultation and financial procedures, recall, and accounting systems. Prepaid dental care programs and the role of professional organizations are presented by guest lecturers.

ENDOCRINOLOGY

190. Animal Hormones and Their Actions. (2§) Sp. Lecture: 2 hours. To be given in alternate years. **Loströh, Papkoff**

Basic information on animal hormones, their structures, functions, and interrelationships. Concepts regarding hormonal actions are derived from chemical (structure-function) and biological (*in vivo*, *in vitro*) studies. Where possible, mechanisms will be discussed.

191. Topics in Endocrinology. (1§) Sp. Prerequisite: Endocrinology 190 or consent of the instructor. Lecture: 1 hour. To be given in alternate years. **Papkoff, Loströh**

Selected topics of current interest.

192. Structure and Function of the Hormones. (2§) W. Prerequisite: Course in basic biochemistry. Lecture: 2 hours. **Papkoff, Ramachandran**

Course will examine the chemical nature of the endocrines; 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.

220. Seminar in Experimental Endocrinology. (1) F, W, Sp. Lecture: 2 hours. **Papkoff, Ramachandran**

Students will attend and participate in a seminar series devoted to topics of current interest in endocrinology.

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

ENDODONTICS

139. Clinical Endodontics. (2 at end of Endodontics 149) F, W, Sp. Prerequisite: Operative Dentistry 115B, 116, and 120A-B-C. Clinic: Variable. **Nguyen and Staff**

Clinical endodontics.

149. Clinical Endodontics. (2 at end of course) F, W, Sp. Prerequisite: Operative Dentistry 130A. Clinic: Variable. **Nguyen and Staff**

Continuation of Clinical Endodontics 139.

189.1. Endodontics Clinical Practice. (1-9) F, W, Sp. Prerequisite: Approval of the division chairman. Clinic: Variable. **Nguyen and Staff**

Clinical experience at the level of Endodontics 139 and 149.

189.2. Advanced Clinical Endodontics. (1-4) Sp. Prerequisite: Approval of Clinic Review Committee and the instructor. Clinic: 3-12 hours. **J. Sapone**

Advanced instruction in the field of clinical endodontics.

ENGLISH

151. Literature and Experience. (3§) F. Prerequisite: Open to all registered students on the campus. **Fixel**

The perspective of contemporary experience as reflected in contemporary literature. A close reading and study of selected European stories, plays, and poems. Works are chosen that illustrate the relation of self to the world, the search for awareness, and identity.

152. Literature and Reality. (3§) W. Prerequisite: Consent of the instructor. **Fixel**

Consideration of modern literature as the expression of an intense encounter between the self and the world, emphasizing themes of alienation and search for identity, and placing the themes within a context of historic and social relationships and of culture and consciousness.

153. Literature and Society. (3§) Sp. Prerequisite: Consent of the instructor. **Fixel**

Consideration of contemporary literature as not only reflecting our culture and society, but as shaping it. In addition to assigned readings, guest teachers and writers will dis-

cuss their problems in creating and presenting literature as an immediate and relevant reality.

EXFOLIATIVE CYTOLOGY

401A-B-C-D. Exfoliative Cytology. (14-14-14-14) F, W, Sp, Su. **King**

Lectures in cytology include normal, malignant, and abnormal nonmalignant cells. Instruction covers method 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

110. Principles of Fixed Prosthodontics. (1) Sp. Lecture: 1 hour. Prerequisite: Fixed Prosthodontics 115 to be taken concurrently. **Lum**

The basic principles of fixed prosthodontics.

115. Techniques in Fixed Prosthodontics. (2) F. **Hamaguchi and Staff**

The basic techniques of fixed prosthodontics.

120A-B. Fixed Prosthodontics Technics Theory. (1-1) F, W. Lecture: 1 hour. Prerequisite: Fixed Prosthodontics 110 and 115. **F. Lum; W. Rideout**

125A-B. Fixed Prosthodontics Technics. (2-2) F, W. Laboratory: 6 hours. Prerequisite: Fixed Prosthodontics 110 and 115; Biomaterials 110B-C; Dental Technics 115A-B-C. **Nakamura**

130A-B-C. Fixed Prosthodontics Theory. (1) Yr. Lecture: 1 hour. **SS. Meli; F. Tueller; W. Noble**

136. Porcelain Bonded to Gold. (1/2) F, W, Sp. Laboratory: 9 hours rotation plus outside assignments. **Rideout**

Discusses the preparation of teeth for the reception and fabrication of porcelain-baked-to-gold restorations including color selection and staining techniques of porcelain and porcelain-baked-to-gold restorations. Students receive credit after rotation is completed.

139. Clinical Fixed Prosthodontics. (2) F, W, Sp. Prerequisite: Third-year standing in fixed prosthodontics. **Sheets and Staff**

Clinical instruction. Third-year lectures must be taken concurrently.

149. Clinical Fixed Prosthodontics. (6) F, W, Sp. Prerequisite: Fixed Prosthodontics 139, fourth-year standing not required. Clinic: Variable. **Sheets and Staff**

Clinical instruction.

170. Seminar in Fixed Prosthodontics. (2) F, W, Sp, SS. Seminar: 2 hours. Prerequisite: Students in Fixed Prosthodontics Certificate Program must register for this course each quarter and summer session. **Lorencki**

New concepts and theories discussed and related to research and clinical practice. Students encouraged to develop new concepts in the application of basic sciences and research to fixed prosthodontics.

171.01A-B-C. Clinical Procedures in Fixed Prosthodontics. (3) Yr. Lecture: 1 hour. Clinic: 6 hours. Prerequisite: Admission to postdoctoral status and consent of the instructor. **Noble**

Instruction and practice in the diagnosis, treatment planning, and treatment of clinical patients.

171.02. Clinical Procedures in Fixed Prosthodontics. (2) SS. Clinic: 6 hours. Prerequisite: Fixed Prosthodontics 171.01A-B-C. **Noble**

Clinical procedures in fixed prosthodontics. This course provides a continuation of clinical experience received in Fixed Prosthodontics 171.01A-B-C.

172.01A-B-C. Advanced Clinical Procedures in Fixed Prosthodontics. (3-3-3) F, W, Sp. Lecture: 1 hour. Clinic: 6 hours. Prerequisite: Completion of first year and summer session of Fixed Prosthodontics Certificate Program. **Eissmann**

The advanced instruction and practice in the diagnosis, treatment planning, and treatment in fixed prosthodontics.

172.02. Advanced Clinical Procedure in Fixed Prosthodontics. (2) SS. Clinic: 6 hours. **Eissmann**

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

176A-B-C. Special Study for Postdoctoral Students. (1-5) F, W, Sp. Research: 3-15 hours. **Lorencki**

Original investigation in the field of fixed prosthodontics.

180. Oral Rehabilitation. (1) W. Seminar: 1 hour. **Lorencki**

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.

180.1. Special Study Seminar. (1) Sp. Seminar: 1 hour. Limited enrollment: 6 students per instructor. **Noble**

Individual staff members will offer

seminar type instructions on selected topics relating to fixed prosthodontics.

189.1. Fixed Prosthodontics Clinical Practice. (1-9) F, W, Sp. Prerequisite: Fixed Prosthodontics 149 and approval of the division chairman. Clinic: Variable. **Sheets**

Continues clinical experience at the level of Fixed Prosthodontics 149.

189.2. Advanced Clinical Fixed Prosthodontics. (1-2) F, W, Sp. Clinic: 3-6 hours. Prerequisite: Consent of the instructor and the Dean. **Eissman**

Advanced clinical procedures. Instruction will be given in full-mouth rehabilitation procedures, the use of precision attachment, and the use of parallel pins in splinting and fixed prosthodontics.

189.3. Fixed Prosthodontics Clinical Practice. (1-2) F, W, Sp. Clinic: 3-6 hours at Veterans Administration Hospital. Prerequisite: Fixed Prosthodontics 139 and consent of the Clinic Review Committee. **Noble**

Advanced undergraduate instruction and experience in clinical procedures in fixed prosthodontics.

199. Laboratory Project in Fixed Prosthodontics. (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 division.

FORENSIC PATHOLOGY AND MEDICINE

170.01. Forensic Pathology and Medicine. (1) Sp. Seminar: 1 hour. **Trowbridge**

The course covers basic legal principles; torts and contracts; medical records and documents; medical licensure and certification; forensic pathology; the expert witness; malpractice and professional liability.

GENERAL DENTISTRY

149. General Dentistry. (½-8) F, W, Sp. Prerequisite: Fourth-year status or approval of the instructor. Clinic: Variable. **Hall**

General Dentistry is an elective course in which the student performs patient treatment in a variety of clinical settings.

189.01. Mobile Clinics. (1-3) SS. Prerequisite: Third-year standing and satisfactory completion of all clinical and academic third-year courses. Clinic: 30-40 hours. **Stark**

Delivery of health care utilizing mobile clinics. Dental students will gain experience in clinical dentistry while treating children of migrant farm workers. Students will receive up

to fifty points a week under the general dentistry requirement.

HEALTH SCIENCES EDUCATION

220A-B. Health Sciences Education Seminar. (2-2) F, W. Prerequisite: Consent of the instructor. Lecture: 2 hours. **Rosinski**

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 will be placed on the graduate and professional school student as a learner.

HISTORY

180. History of Dentistry. (1) W. Lecture: 1 hour. **Hartman**

Projections, based upon a background of the growth and development of the profession; develop "curves of probability" of future technical and 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**

The emphasis is on the historical development of pharmacy, its relations to the other health professions, and the personalities who significantly contributed to the advancement of health care.

170.01. Methodology of Medicohistorical Research. (1-5§) F, W, Sp. **Veith**

An introduction to the methodology of medicohistorical research. It is intended to prepare participants to evaluate critically medicohistorical literature, and to introduce them to doing independent research in the field of medical history.

170.02. Medical History and Bibliography. (1-5§) F, W, Sp. **Saunders**

Lectures and informal seminars on aspects of medical history.

170.03. Evolution of American Medicine. (1-5§) F, W, Sp. **Saunders and Staff**

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. **Veith**

Changing concepts of therapeutics from earliest times to the present in relationship 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 or W. **Veith**

An introductory course intended for all students interested in the broad conceptual developments influencing the growth of medical science and the health professions from the classical to the modern period.

170.07A-B. History and Philosophy of the Health Professions. (1-2) SSI, SSII. **Leake**

Survey of the history and development of the various health professions and services, with consideration of economic and ethical factors involved. Paper required for two units.

198. Supervised Study in the History of a Health Science. (1-5§) F, W, Sp. Consent of the instructor. **Saunders 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. Lecture: 2-4 hours. **Staff**

A special reading and discussion course on historiography and historical method with bi-weekly seminars designed to teach students to do independent medicohistorical research and writing.

201. Introduction to the History of Biology. (1-2) SS I, SS II. Lecture and Seminar: 1-2 hours. **Leake**

An introductory course of broad scope on the evolution of biological thought.

202. Socioeconomic Factors in the Epidemiology of Medicine. (1-2) Sp. Lecture and Seminar: 1-2 hours. **van der Reis**

A survey of various social and economic patterns in the various cultures and their influence on disease.

203. Introduction to History of Neurology. (1-2) W. Lecture and Seminar: 1-2 hours. **Schiller**

Introduction to the history of neurologic concepts.

204. History of Non-Western Medical Systems. (1-2) Sp. Prerequisite: History of Health Sciences 170.06 or 201. Lecture and Seminar: 1-2 hours. **Veith**

Seminars and directed readings on the philosophy of Oriental, Japanese, Indian, Tibetan, and other Non-Western systems.

205. Philosophy of Clinical Thought. (1-3) F, W, Sp. Prerequisite: Consent of the instructor. Lecture and Seminar: 1-3 hours. **Guttentag**

Reading and conferences for qualified students.

206. Introduction to History of Health Sciences—Nursing. (2) Sp. **Blanc**

For nurse teachers and graduate students. History of the health sciences upon which nursing practice is based. Methods and examples for teaching history in the clinical setting.

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

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

297. Special Study. (1-3) F, W, Sp. **Staff**
Reading and conferences for properly qualified students under the direction of a member of the staff.

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

For students engaged in writing the thesis for the masters degree.

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

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

HOSPITAL DENTISTRY

170. Emergency Medical Care Seminar. (1) F, W. Seminar: 2 hours. Prerequisite: Postdoctoral or fourth-year standing. **Lim**

The course is designed to stimulate group discussion on the principles of emergency medical care. These include transportation, disaster planning, triage, cardiopulmonary resuscitation, management of shock, head and neck injuries, etc., as well as special problems related to dentistry.

171. Physical Diagnosis. (2) F. Lecture: 2 hours. Prerequisite: Registration in a post-professional specialty program. Fourth-year students may take this course as an elective. **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. Seminar: 1 hour. **Trowbridge**

Conferences include case presentations by interns and residents and seminars covering 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 the instructor. Lecture: 3 hours. **Lowenthal, Clark, Spence**

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

202A-B-C. Seminar in Qualitative Analytic Methods. (3-3-3) F, W, Sp. Prerequisite: Consent of the instructor. Lecture: 3 hours. **Chiriboga, Pierce, Kiefer**

One quarter on longitudinal methods; one quarter on qualitative data analysis using students' research materials; and one quarter on methods of organizational research.

203. Seminar in Data Analysis. (3) F, W, Sp. Prerequisite: Consent of the instructor. Lecture: 3 hours. **Rosow**

Students either provide their own or select data from ongoing Adult Development Program research. Focus is on training in data organization, analysis, and research report writing.

211. Developmental Model of Social and Political Attitudes. (3) F. Prerequisite: Consent of the instructor. Lecture: 3 hours. **Rosow**

By using poll, survey, and historical data, historical and developmental models of social change will be compared.

212. Anthropological Approaches to Personal Development. (2-4) F. Lecture: 2-4 hours. **Clark**

A review of concepts and methods appropriate for the study of cultural factors in the development of identity. Emphasis will be placed on life-cycle changes in members of ethnic and subcultural groups.

220. General Seminar. (1) F, W, Su. Lecture: 2 hours. **Staff**

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

221A-B-C. Life Stress and Adaptations.

(3) F, W, Sp. Prerequisite: Consent of the instructor. Lecture: 3 hours.

Lowenthal, Chiriboga
Qualitative and quantitative analyses of life history protocols focusing on stress and perceptions of stress in relation to a variety of indicators of adaptation (psychological, physical, social) at various life stages from adolescence to old age.

222. Aging in Different Milieux. (3) W. Prerequisite: Consent of the instructor. Lecture: 3 hours. **Kiefer, Lurie and Staff**

Aging in institutions; aging among ethnic groups; cross-class comparisons of aging; aging in noninstitutional milieux, such as retirement communities; public housing, housing characterized by various densities of aged.

223. Development in Adolescence and Young Adulthood. (3) W. Prerequisite: Consent of the instructor. Lecture: 3 hours. **Lowenthal, Spence and Staff**

Review of theories, methods and research data on ego, personality, self-concept, and moral value changes in adolescence and young adulthood.

224. Community Politics and the Aging. (3) W. Prerequisite: Consent of the instructor. Lecture: 3 hours. **Estes**

Explore theories of community politics and methodologies for studying the subject. While current theoretical and methodological issues will constitute the major framework, attention will be given at the local level to analysis of policy formation process pertaining to the aging.

231. The Adult Life-Course. (4) Sp. Prerequisite: Consent of the instructor. Lecture: 4 hours. **Spence**

Analysis of social and social-psychological variables over the adult life span. Emphasis is on stability and change in these variables throughout the life-course.

232. Developmental Study of Kinship Structure. (3) Sp. Prerequisite: Consent of the instructor. Lecture: 3 hours. **Thurnher**

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

233. Clinical Anthropology. (2) Sp. Prerequisite: Consent of the instructor. Lecture: 2 hours. **Brodsky**

Clinical data will be examined in several forms and anthropological concepts will be applied. Assigned readings and field study of a unit or section of the hospital will be used to prepare a written and oral report.

234. Social Psychology of Ego Development. (3) Sp. Prerequisite: Consent of the instructor. Lecture: 3 hours. **White**

Readings focus on historical and current concepts of the interaction of self and environment. Comparison of modern approaches to ego development with earlier conceptualizations.

235. Social Aspects of Death and Bereavement. (3) Sp. Prerequisite: Consent of the instructor. Lecture: 3 hours. **Kalish**

An analysis of the social milieux in which dying and death occur, with implications for the dying person himself, his survivors, and those professionals who attend him.

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

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

250. Research. (1-8) F, W, Sp. Lecture: 1-8 hours. **Staff**

INTERDISCIPLINARY COURSE

100A-B-C. The Dynamics of Family Health. (2-2-2) F, W, Sp. Seminar: 1 hour. Laboratory: 3 hours. Prerequisite: Course 100A is not a prerequisite of 100B, nor is 100B for 100C. **Davis**

Students from the Schools of Dentistry, Medicine, Pharmacy, and Nursing working as a team in the delivery of health care. Course includes home visits, clinic appointments, observations of labor and delivery, postpartum care, and discussions of family-related problems.

INTERNATIONAL HEALTH

100. Medical Parasitology. (2) Sp. Prerequisite: Microbiology 100 (without parasitology) or equivalent. **Heyneman and Staff**

An introduction to protozoa and helminths and human diseases they produce with emphasis on host-parasite interactions. Parasite epidemiology and life cycles, clinical and diagnostic aspects considered in lectures, films, and kodachrome showings. Laboratory demonstrations displayed throughout week.

140.01. Clinical Clerkships Abroad. (1½ per week) Su, F, W, Sp. Prerequisite: Nine months of clinical work. **Goldsmith**

Clinical clerkships in developing countries, generally in a hospital or rural health

clinic, approved by the chairman of the department and the Dean of the School of Medicine.

140.02. Nutrition Clerkship. (1½ per week) Sp. Lecture: 15 hours. Laboratory: 25 hours. **Audy and Staff**

Two-week block elective with three-hour lecture-discussions on nutritional requirements and deficiencies; clinical experience in various Bay Area clinics. Emphasis on training to do useful work in dietary and clinical evaluation and treatment in absence of trained nutritionist.

150.01. Medicine in Developing Countries. (1½ per week) Sp. Prerequisite: Medical Parasitology. Lecture: 14 hours. Laboratory: 10 hours. Clinic: 6 hours. Independent Study: 6 hours. **R. Goldsmith**

Two-week block elective on the recognition and treatment of diseases of tropical and developing countries. The course is designed to prepare students for clerkships abroad. Presentation format includes lectures, seminars, films, laboratory sessions, and supervised independent study.

150.02. Field and Laboratory Research in the UC-ICMR Overseas Program. (1½ per week) F, W, Sp, Su. **Dunn, Audy and Staff**

Research under faculty supervision utilizing UC-ICMR facilities in Malaysia and occasionally elsewhere. Research may be in clinical fields as well as in basic medical sciences, preventive medicine, and public health. May immediately follow a student research fellowship abroad.

160.01. Tropical Medicine Clinic. (1§) F, W, Sp. Prerequisite: Medical parasitology and six months of clinical experience. **R. Goldsmith, Develing, Frierson**

Examination and treatment of patients in the tropical medicine clinic under supervision of staff and assisting with consultations on hospitalized patients. Most of the patients seen in this clinic have parasitic infections.

170.04. Host-Parasite Interactions and Pathology. (1) W. Prerequisite: Medical parasitology or equivalent. **Heyneman**

Lectures and discussions to review the patterns of host-parasite interactions involving protozoan and helminth infective agents of man. Topics selected will explore current views of immune and other types of response and their disorders that may result in human disease.

170.05. Perspectives on World Health. (1) F. **Audy and Staff**

Lectures and seminars on hazards of introduced diseases, world population and

international health; anthropologic, ecologic and ethologic studies.

181. Maternal and Child Health in Developing Countries. (1-2§) Sp. **Wilson and Staff**

Problems and concepts in delivery of maternal and child health care. Topics include care of newborn babies, organization of well-baby care, family planning, genetic counseling, nutrition, infectious disease, immunization programs and control of arthropods.

182. Concepts in Human Nutrition. (2) Sp. **Audy and Staff**

Review and library research on principles of sound nutrition with special regard to maternity, maturation, and cultural factors, and embracing body composition, requirements, intake. Emphasis on clinical applications, intake surveys, diets in Bay Area. Biochemical aspects minimized to avoid prerequisite.

183. Medical and Social Sexual Problems. (1§) F, Sp. **Koch**

A lecture course concerning the sexual problems of our community and changing sexual attitudes. Medical, social, and legal factors concerned with ecology of venereal disease.

185. Recent Advances in Human Ecology. (2-3§) W. **Audy**

Lectures and seminars, selected aspects of human ecology. Includes some medical geography. Individual assignments if necessary.

186. Tropical Medicine Lectures. (1§) F. Prerequisite: Medical parasitology. **R. Goldsmith**

Presentations of case histories and films emphasizing diagnosis and treatment of tropical diseases including malaria, amebiasis, malnutrition, cholera, typhoid, schistosomiasis, and smallpox plus review of American health commitments abroad and career opportunities in international health.

198. Supervised Study in International Health and Human Ecology. (1-5§) F, W, Sp. Prerequisite: Consent of the instructor. **Audy, Dunn, R. Goldsmith**

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 International Health. (1-5§) F, W, Sp. Prerequisite: Consent of the instructor. **Heyneman**

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

MEDICAL DIAGNOSIS

445. Medical Diagnosis. (2) Su, F, W, Sp. Clinic: 6 hours. **Crede and Staff**

The dental intern will participate 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

400. Medical Illustration. (14) F. **Emery**
Fundamentals of Medical Illustration; elementary pencil sketching of bones; elementary principles of halftone and pen and ink illustration. Gross anatomy.

401. Medical Illustration. (14) W. **Emery**
Techniques of pencil sketching of specimens; halftone on Ross board, pen and ink drawing; lettering of charts and graphs using freehand, guide, and transfer letters.

402. Medical Illustration. (14) Sp. **Emery**
Sketching at experimental surgery and autopsy; illustrative techniques in microscopy.

403. Medical Illustration. (14) Su. **Emery**
Practical principles of medical photography. Use of photography, drawing, and lettering in preparation of scientific exhibits and displays.

404. Medical Illustrations. (14) F. **Emery**
Advanced techniques of pen and ink halftone drawings. Beginning color drawing (watercolor, tempera, and pastel). Pathology and histology. Design and preparation of brochures.

405. Medical Illustration. (14) W. **Emery**
Sketching in experimental surgery and operating room. Illustration of surgical procedures in color, black and white, halftone, and pen and ink.

406. Medical Illustration. (14) Sp. **Emery**
Advanced training in preparation of scientific displays and exhibits. Preparation of final portfolio.

407. Medical Illustration. (14) Su. **Emery**
Advanced techniques of medical photography and cinematography; materials and techniques of clinical moulage. Elements of drawing for television presentation. Special projects.

MEDICAL INFORMATION SCIENCE

190. Programming Concepts and Information Structures. (4) F. Prerequisite: Knowledge of one higher level programming lan-

guage. Lecture: 3 hours. Laboratory: 3 hours.

Wasserman

Representation of programs and data in the digital computer. Information structures used for data representation. Nonnumeric information-handling techniques, including list processing and string processing. Implementation of data structures in existing programming languages and computer systems.

191. Introduction to Operations Research. (3) F. Prerequisite: Elementary Statistics, Calculus. Lecture: 3 hours per week. **Barnoon**

The philosophy of operations research and its approach to problem solving. Analysis of the theoretical decision model. Probabilities, statistics, and decision theory. Information for decision making and its cost. Selected optimization and research models applied to health care.

192. The Computing Environment. (1) F. Lecture: 1 hour. **Starkweather**

Survey of present and future computing facilities available in the health care and research setting. The course involves guest speakers familiar with specific hardware and software systems available to students, faculty, and practitioners, particularly those available in the local setting.

193. Computer Systems in the Health Setting. (2) Sp. Prerequisite: 192 or consent of the instructor. **Starkweather**

An exploration of existing systems, or those under development, which use computers to assist in health care, health research, or instruction of health professionals. Invited speakers and visits to specific installations will be a part of the course.

195. Clinical Laboratory Computer Science. (2) W. Lecture: 2 hours **Henley**

A review of the fundamentals of computer science as they relate to clinical laboratory information systems and a detailed examination of the current clinical laboratory systems.

201. The Medical Environment. (2) F. Lecture: 2 hours. **Blois**

Survey settings within which medical and health care are delivered. Includes: private and group practitioners, clinics, polyclinics, neighborhood health centers, community hospital, and medical centers. Background for students without previous health care systems experience, concerning processes, functions, and constraints.

202. The Nature of Medical Information. (2) W. Prerequisite: Consent of the instructor. **Blois**

Medical information from the viewpoint of several taxonomies: general medical knowl-

edge versus specific patient data, medical information expressible in numeric, graphic, or natural language means. Particular emphasis on distinguishing algorithmic from nonalgorithmic processing of medical data.

203. Overview in Medical Information Systems. (1) W. Prerequisite: Consent of the instructor. **Blois**

Students will be working with laboratories and the hospital staff to gain experience on information and computing problems.

204. Overview in Medical Information Systems. (1) Sp. Prerequisite: Consent of the instructor. Laboratory and Conference: 3 hours. **Blois**

Students will be working with laboratories and the hospital staff to gain experience on information and computing problems.

205. Administration and Evaluation of Health Care Systems. (3) F, Sp. Lecture: 2 hours. Laboratory: 3 hours. **Staff**

This course is designed to introduce the student to the concepts, principles, definitions, and processes of management and financial accounting with particular emphasis upon hospitals and other health care systems.

210A. Computer and Communication Systems. (4) W. Prerequisite: Consent of the instructor. **Wasserman, Henley**

Introduction to computer system organization. Interface between system components. Assemblers and loaders. Methods of translating programming languages.

210B. Computer and Communication Systems. (4) Sp. Prerequisite: Course Medical Information Science 210A or equivalent or consent of the instructor. Lecture: 3 hours. Laboratory: 3 hours. **Wasserman**

Operating systems concepts. File system organization and structure. Communication system organization and structure. Integration of hardware, software, and data. Data base structure. Emphasis on design of online systems.

220. Systems Analysis of Medical Care. (3) W. Prerequisite: Medical Information Science 191 and 230A. Lecture: 2 hours. Laboratory: 3 hours. **Holloway**

Systems problems in medical facilities are analyzed for applicability of statistical methods and operations research. Emphasis on formulating problems so that quantitative techniques can be applied, and on identifying problems amenable to solution using quantitative technique. Selected techniques are introduced.

225. Design of Medical Information Systems. (4) Sp. Prerequisite: Consent of the instructor. Lecture: 4 hours. **Henley**

Design of previous medical information systems will be examined. Successful components of these systems will be studied in depth, with respect to cost performance and acceptability. Proposals for new systems will be presented and reviewed.

230A. Compumetrics: Probability Modeling and Simulation. (3) F. Prerequisite: Introductory Statistics and Calculus. Lecture: 2 hours. Laboratory: 3 hours. **Elashoff, Heilbron**

Topics: role of simulation, design and interpretation of benchmarks, analysis of outputs from hardware-software monitors, development of suitable analytic models. Problems of demand structure also will be studied as well as a qualitative analysis of systems structure.

230B. Compumetrics: Statistical Data Analysis. (3) W. Prerequisite: Introductory Statistics and Calculus. Lecture: 2 hours. Laboratory: 3 hours. **Elashoff, Heilbron**

This course is concerned with measurement problems in computer systems behavior and performance. Topics include experimental design, analysis of variance, regression, and forecasting.

250. Research in Medical Information Science. (1-8) F, W, Sp. **Staff**

290. Seminar in Medical Information Science. (1-6) F, W, Sp. Lecture: 1 hour. Laboratory: 3-15 hours. **Staff**

Selected topics in Medical Information Science. Subjects chosen will range from hardware, software, and systems studies, to entire functional information systems.

299. Dissertation. (0) F, W, Sp. Prerequisite: Advancement to candidacy. **Staff**

For students engaged in writing dissertations for the Ph.D. degree.

MEDICAL TECHNOLOGY

100. Introductory Clinical Microbiology. (2) F. Lecture: 2 hours. **Hadley, Cohen**

Brief survey of disciplines of clinical microbiology and serology. Introduction to literature of field. Fundamentals of statistics and evaluation of data as applied to microbiologic analysis and laboratory quality control.

101A-B. Clinical Bacteriology. (8) F, W, Sp, Su. Lecture: 3 hours. Laboratory: 15 hours. **Hadley**

Instruction and laboratory practice in the isolation and identification of bacteria from

clinical specimens; and the evaluation of pathogenic significance of the bacteria.

102. Environmental Microbiology. (4) W. Lecture: 2 hours. Laboratory: 6 hours. **Hadley**

Instruction and laboratory observation of the indigenous bacteria, fungi, and protozoa of the human. The microbiology of water, milk, food, and the hospital environment. The scientific basis and laboratory experience with sterilization and disinfection will be studied.

112. Clinical Parasitology. (5) F, W, Sp, Su. Lecture: 1 hour. Laboratory: 12 hours. **Heyneman, Horen**

Instruction and laboratory practice in the examination and study of clinical material for the detection and identification of animal parasites.

113. Clinical Mycology. (5) F, W, Sp, Su. Lecture: 1 hour. Laboratory: 12 hours. **Heyneman, Hadley**

Instruction and laboratory practice in the isolation and identification of fungi associated with the more important mycotic infections of man.

115. Clinical Virology. (3) Sp. Lecture: 2 hours. Laboratory: 3 hours. **Hadley, Drew**

Instruction, demonstrations, and laboratory practice; viral isolation and identification procedures. The rapid detection of specific viral infection.

120A-B. Clinical Immunology and Serology. (4-4) F, W, Sp, Su. Lecture: 2 hours. Laboratory: 6 hours. **Hadley**

Introduction to the mechanisms of immunity. Instruction and laboratory practice in serology methods used in diagnosis and the study of disease.

125A-B. Antimicrobial Agents. (3-3) F, W, Sp, Su. Lecture: 1 hour. Laboratory: 6 hours. **Hadley**

The mode of action and assay of antimicrobial agents. Instruction and laboratory practice in testing microorganisms for susceptibility to antimicrobial agents.

130. Epidemiology. (3) W. Lecture: 2 hours. Laboratory: 3 hours. **Hadley, Cohen**

Instruction in the epidemiology of hospital associated infections, and contagious disease. Practical experience with microbiology laboratory procedures which may be applied to the investigation of an epidemic. Compilation and analysis of clinical laboratory data useful in surveillance of hospital associated infection.

135. Clinical Laboratory Instrumentation. (3) F. Lecture: 2 hours. Laboratory: 3 hours. **Hadley, Seidlitz**

Instruction and practice in microscopy equipment for detecting the presence and measuring the growth of microorganisms. Practical experience with the data processing equipment and computers utilized in a clinical microbiology laboratory.

MEDICINE

110. Basic Clerkship in Medicine. (1½ per week) F, W, Sp, Su. Prerequisite: Medicine 131A-B. **Carbone, L. H. Smith, Williams, Slesinger**

Bedside instruction in history-taking, physical diagnosis, selected topics in general medicine with presentations and demonstrations of relevant cases. This includes instruction in dermatology.

130. Basic Clerkship-Clinical Anatomy. (1) F, Su. **Gold**

Clinical anatomy is a clerkship taught in small groups at the bedside. It is designed to provide clinical correlation, region by region, with the material covered in Anatomy 100.

131A-B. Introduction to Clinical Medicine. (9-10) F, W. Prerequisite: Anatomy 100, 101, 102, and 103; Biochemistry 100A-B; Microbiology 100; Pathology 100 may be taken concurrently; Pathology 101; Physiology 100 and 101; and Psychiatry 130 or consent of the instructor. **E. Brown**

An interdepartmental course on the pathophysiological basis of symptoms and signs and the techniques of collecting clinical data, including history-taking, examination of the patient and the use of laboratory tests. Lectures, demonstrations, bedside work, laboratories, conferences, and independent study.

140.01. Advanced Clinical Clerkship at UC, SF, and VA. (1½ per week) F, W, Sp, Su. Prerequisite: Medicine 110. **L. H. Smith, Slesinger, Williams, Carbone**

Students are assigned patients for study on the staff and private wards. They are supervised by attending and resident staff. They present patients on wards, assist with procedures, and attend specialty conferences where their patients are discussed.

140.02. Clinical Clerkship. (1½ per week) F, W, Sp, Su. Prerequisite: Medicine 110. **L. H. Smith**

Clinical clerkships in off-campus hospitals approved by the Dean and the chairman of the department.

140.03. Acting Intern in the Cancer Research Institute. (1½ per week) F, W, Sp, Su. Prerequisite: Medicine 131A-B and Medicine 110. **Wood, Jacobs, Cline and Staff**

On Clinical Cancer Chemotherapy Service, students work up patients, present them to attending staff and at conferences, do daily procedures, and write orders under supervision.

140.04. Inpatient Medicine of College-Age Patients at CM. (1½ per week) F, W, Sp. **Bruyn, M. Meyer**

Students make daily hospital rounds and participate in psychiatry, dermatology, chest diseases, and surgical diagnosis. They attend specialty clinics in radiology and cardiology. They spend six hours each week in individual instruction with a member of the faculty.

140.05. Cardiology at PMC. (1½ per week) Su, F, W, Sp. Prerequisite: Medicine 110 or consent of the instructor. **Selzer**

Students participate in the activities of the Cardiology Unit, with an emphasis on methods of cardiac diagnosis, therapeutics, and electrocardiography.

140.06. Cardiology at UC. (1½ per week) Su, F, W, Sp. Prerequisite: Medicine 110 or consent of the instructor. **Sokolow**

Students work up patients in the clinic and on the wards; attend conferences and seminars; receive instruction in specialized studies including electrocardiography and phonocardiography; and do assigned reading.

140.07. Clinical and Physiological Aspects of Pulmonary Disease. (1½ per week) Su, F, W, Sp. Prerequisite: Medicine 131A-B or consent of the instructor. **Murray, Gold and Staff**

Students examine patients in chest clinic, in the wards, and in the Intensive Care Unit, and present them at ward rounds, pulmonary function conferences, and chest radiology conferences. They participate in pulmonary function testing and do assigned reading.

140.08. Gastroenterology. (1½ per week) Su, F, W, Sp. Prerequisite: Medicine 110. **Schmid**

Students become a part of the gastroenterology group and participate in all activities including work-ups of patients in clinic and wards. They attend all conferences.

140.09. Cardiopulmonary Service at MZ. (1½ per week) Su, F, W, Sp. Prerequisite: Medicine 110 or consent of the instructor. **Paley**

Students work up patients, follow through diagnostic program, phonocardiogram, exercise electrocardiograms, cardiac catheterization, and angiographic stud-

ies. Full-time staff provides instruction in cardiac diagnosis, physiology of heart disease, and heart sounds. Students attend conferences and seminars. Reading is assigned.

140.10. Clinical Clerkship in General Medicine at MZ. (1½ per week) F, W, Sp. Prerequisite: Medicine 131A-B. **S. Levin**

Students serve as junior associates; are assigned patients under supervision of attending physicians; participate in management of patients. Additional instructors are assigned to discuss these patients. Activities include bedside rounds, conferences, and participation in discussions.

140.11. Renal-Electrolyte Service at PHS. (1½ per week) F, W, Sp. Prerequisite: Medicine 131A-B and 110. **Rowe**

Students work up and manage patients under supervision; participate in activities of the Dialysis Center including peritoneal and hemodialysis; attend Renal Clinic, presenting cases and daily rounds; attend seminars, conferences; and observe research activities of the unit.

140.12. Cardiology at PHS. (1½ per week) Su, F, W, Sp. Prerequisite: Medicine 131A-B and 110. **Hyatt**

Students are assigned cardiac admissions for work-up and management under supervision. They attend daily rounds, present patients in Cardiology Clinic, and observe Cardiopulmonary Unit procedures including cardiac catheterization and cardioversion. They are instructed in electrocardiography.

140.13. Clinical Clerkship at PHS. (1½ per week) Su, F, W, Sp. Prerequisite: Medicine 131A-B and 110. **Hyatt, Mason**

Students are assigned patients for work-up and management under supervision. They make daily rounds and present cases, attend seminars, Journal Club, CPC's, Death Conference, and Grand Rounds. Scope of responsibility is similar to that of interns.

140.14. Endocrine-Metabolic Medicine at PHS. (1½ per week) Su, F, W, Sp. Prerequisite: Medicine 110 or consent of the instructor. Completion of third-year status. **Hyatt, 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 per week) Su, F, W, Sp. Prerequisite: Third-year student. **Janin**

Students based at Kaiser Foundation Hospital serve as clinical clerks. They examine patients, participate in ward rounds and attend teaching seminars and conferences of the Department of Medicine.

140.16. Hematology at SFGH. (1½ per week) Su, F, W, Sp. Prerequisite: Medicine 110. **Wallerstein**

Students work up hematology patients; review pertinent clinical laboratory data of problems presented; attend slide rounds; help prepare material for sessions; attend hematology rounds at SF.

140.17. Clinical Pharmacology. (1½ per week) Su, F, W, Sp. Prerequisite: Medicine 131A-B and 110. **Morrelli, Melmon**

Students evaluate patients regarding problems in drug choice, action of drugs, or drug efficacy. They present cases to a staff member for review, participate in daily rounds, conduct directed literature reviews and are exposed to research efforts in the field.

140.18. Gastroenterology at VA. (1½ per week) Su, F, W, Sp. Prerequisite: Medicine 110. **Brandborg**

Students are incorporated into the Gastroenterology Unit. They are assigned consultations. They perform sigmoidoscopies under supervision, observe upper gastrointestinal endoscopy, and small bowel biopsy. They participate in all rounds and conferences.

140.19. Clinical Cardiology at VA. (1½ per week) Su, F, W, Sp. Prerequisite: Medicine 131A-B and 110. Consent of the instructor. **Hollenberg**

Student shall: work up patients on the wards and in the Coronary Care Unit; attend open heart surgery once a week; assist at D.C. electrical reversion; interpret electrocardiograms and vectorcardiograms; attend rounds and conferences of the Cardiology Service.

140.20. Clinical and Research Experience in Renal Medicine. (1½ per week) Sp, Su. Prerequisite: Medicine 110. **R. Morris**

Investigation and clinical application of renal tubular resorption mechanisms and their interrelationship with endocrine metabolism.

140.21. Private Practice. (1½ per week) Su, F, W, Sp. Prerequisite: Medicine 110. **L. H. Smith and Staff**

Working experience with an internist on the clinical faculty as he makes rounds in various private hospitals and at the University of California Hospitals, sees patients in his private office and on house call, does follow-up studies, and reads electrocardiograms.

140.22. Pathophysiology of Disease. (1½ per week) F, Sp. Prerequisite: Consent of the instructor. **Sleisenger and Staff**

A course designed to present major basic science concepts which govern the practice of medical subspecialties. Students devote four weeks to the study of a specialty area: e.g., metabolism, neurology, oncology, hematology, gastroenterology, immunology, and cardiovascular, pulmonary, and renal disease.

140.23. Endocrine-Metabolic Medicine. (1½ per week) Su, F, W, Sp. Prerequisite: Medicine 110. **Forsham and Staff**

Students based at Metabolic Research Unit and eleventh floor UC act as assistants to interns and residents in this ward; attend endocrine and metabolic clinics; attend seminars and teaching exercises of endocrinology and metabolism, including grand rounds in medicine.

140.24. Clinical Endocrinology. (1½ per week) Su, F, W, Sp. Prerequisite: Medicine 110. **Gordan, Roof**

The course is tailored to needs and interests of students and includes opportunities to examine selected patients in endocrine clinics and wards. Students participate in patient care and tutorial seminars, observe research, follow laboratory investigation, and read assigned material.

140.25. Renal and Electrolyte Service at SF. (1½ per week) F, W, Sp. Prerequisite: Medicine 110. **Humphreys**

Students work up and follow renal and electrolyte patients seen in the service, participate actively in hemodialysis and peritoneal dialysis; they attend daily ward rounds and biweekly seminars in renal and electrolyte diseases.

140.26. Cardiology Clerkship at MZ. (1½ per week) Su, F, W, Sp. Prerequisite: Medicine 110. **Uhley**

Primary emphasis is on the treatment of acutely ill patients in a Coronary Care Unit. Includes teaching in the use of monitoring and related electronic equipment, cardioversion, and related aspects of electrocardiography.

140.27. Clinical Clerkship Stressing Cardiopulmonary Problems at C. (1½ per week) F, W, Sp. Prerequisite: Medicine 110 or consent of the instructor. **Griffeath**

Will be assigned patients, attend rounds in the coronary care unit; receive instruction in cardiology, electrocardiography, phonocardiography, and echocardiography; may work in the pulmonary function laboratory, and attend all regular teaching conferences and seminars.

140.28. Demonstrations and Seminars in Infectious Disease at SF and UC. (1½ per week) F, W, Sp. Prerequisite: Medicine 131A-B and 110 and consent of the instructor. **SF Drutz, UC Cohn**

Students work up and present patients and attend seminars. Patients are assigned from the Medical and Pediatric Services.

140.29. Hematology and Immunology. (1½ per week) Su, F, W, Sp. Prerequisite: Medicine 110. **Fudenberg**

Students work up and present patients in the wards and outpatient clinics, participate in conferences and seminars, read about and learn the laboratory procedures pertinent to their patients.

140.30. Clerkship in Rheumatic Diseases. (1½ per week) F, W, Sp. Prerequisite: Medicine 110. **Engleman**

Students work up and present patients, participate in laboratory studies, attend conferences, and do assigned reading.

140.31. Gastrointestinal Clinical Clerkship at L. (1½ per week) Su, F, W, Sp. Prerequisite: Medicine 110. **Hamilton**

Students function as clinical clerks, working up patients under the supervision of interns and residents. They assist in such specialized procedures as sigmoidoscopies, endoscopies, and peritoneoscopies. They attend radiologic conferences and conferences with visiting consultants.

140.32. Coronary Care Elective at SF. (1½ per week) Su, F, W, Sp. **Scheinman**

Students will work in the Coronary Care Unit at SFGH as acting interns, under supervision of both house and attending staffs.

140.33. Infectious Diseases at PMC. (1½) Su, F, W, Sp. Prerequisite: Medicine 110. **Valentine**

Students may elect clinical clerkship in infectious diseases. Activities include working up patients, learning laboratory procedures, relating laboratory data to the clinical situation, making ward rounds, and attending seminars.

140.34. Clerkship in Renal Disease. (1½ per week) Su, F, W, Sp. Prerequisite: Core medical clerkships. **L. E. Earley and Staff**

The student will join the renal team and participate under supervision in evaluation and treatment of patients with renal disease or disorders of fluid, acid-base, or electrolyte balance. Emphasis is placed on pathophysiology, history-taking, physical examination, and treatment.

140.35. Cardiology at SFGH. (1½ per week) F, W, Sp. Su. Prerequisite: Introduction to clinical Medicine 131A-B and consent of the instructor. **Abbott**

Under close supervision, the student develops a mature approach to clinical cardiology by examining cardiac patients on the wards and in the clinics. Basics of electrocardiology and interpretations are stressed; students attend all seminars and conferences.

150.01. Research in Cardiovascular Physiology at VA. (1½ per week) Su, F, W, Sp. Prerequisite: Physiology 100, and 101; Biochemistry 100 and 102. **Hollenberg**

The elective is designed to provide experience with routine physiological measurements, the handling and monitoring of radioisotopes, techniques of tissue culture and various biochemical techniques. Presently the laboratory is engaged with problems of myocardial hypertrophy, cell growth, and protein synthesis.

150.02. Research in Medicine. (1½ per week) Su, F, W, Sp. **L. H. Smith**

Students continue previously initiated research projects under the guidance of faculty members. Programs must be approved by the instructors in charge.

160.02. Clinical Allergy. (1) W, Sp. Prerequisite: Microbiology 100 and Pharmacology 100 and 101. **Mustacchi**

Seminar course on basic aspects of allergy supplemented by discussion of assigned clinical material and demonstration of selected diagnostic and therapeutic procedures.

160.04. Basic Nutrition and Health Maintenance. (1-2) Sp. Prerequisite: Biochemistry 100A and Physiology 101 or consent of the instructor. **Havel**

Weekly seminars are based upon preassigned reading. The digestion and metabolism of major foodstuffs is reviewed systematically and related to the composition and quality of ordinary foods. The relationship of diet to prevention of chronic disease is emphasized.

170.01. The Medical Attitude. (1) F, W, Sp. Prerequisite: Consent of the instructor. **Guttentag**

Instruction deals with an exploration of the theoretical premises on which medicine rests, of medicine's relationship to other disciplines, of the structure of patient-physician relationship, and of medicine's operational concepts.

170.02. Philosophical Problems of Clinical Medicine. (1) Su, F, W, Sp. Prerequisite: Consent of the instructor. **Guttentag**

Seminars on selected writings and topics of theoretical premises underlying clinical medicine, e.g., history taking and diagnosis.

170.03. Ethical Problems in Medical Care. (2) W, Sp. Prerequisite: Consent of the instructor. **Guttentag**

Course, partly devoted to formal presentations, partly to panel discussion, deals with such problems as preprofessional and professional bedside problems of medical care, telling the truth, experimentation on human beings, and legalization of euthanasia.

170.04. Fundamentals of Electrocardiography at VA. (1) Su, F, W, Sp. Prerequisite: Completion of two years of medical school and Medicine 131A-B. **Goldman**

Instruction in basic electrophysiologic principles and interpretation of electrocardiograms.

170.05 Fundamentals of Electrocardiography Interpretation at SF. (1) F, W, Sp. Prerequisite: Medicine 131A-B. **Rapaport**

Review of physical principles of electrocardiography and clinical application of electrocardiographic interpretation.

170.06. Therapeutics. (1) Sp. Prerequisite: Basic pharmacology, physiology, biochemistry, and requirements for completion of first two years of medical school. **Melmon**

The course is designed to help the student develop a useful approach to the selection and administration of drugs to diseased man and to develop an appreciation of the methods which he can conveniently use to maximize efficacy and minimize toxicity.

170.07. Advanced Electrocardiography and Fundamentals of Vectorcardiography at SF. (1) F, W, Sp. Prerequisite: Medicine 131A-B and 170.05. **Rapaport**

An advanced course in electrocardiographic interpretation including an introduction to vectorcardiography.

197. Research in Medicine. (1½ per week) Su, F, W, Sp. **L. H. Smith**

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

198. Supervised Study in Medicine. (1-5) Su, F, W, Sp, SS. Prerequisite: Consent of the instructor. **L. H. Smith 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 Medicine. (1-5) Su, F, W, Sp. Prerequisite: Consent of the instructor. **L. H. Smith and Staff**

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

400. Medical Staff Conference. (2-2-2) F, W, Sp.

UC Smith, SF Williams, VA Sleisenger

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

401. Interdepartmental Clinical Correlation Course. (4-4-4) F, W, Sp. Interns and residents. **UC 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. (1½-1½-1½) F, W, Sp. Residents. **VA Sleisenger**

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

403. Specialty Seminars. (2-2-2) F, W, Sp. Interns and residents. **UC Smith**

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

404. Specialty Seminars. (4-4-4) F, W, Sp. **SF Williams and Staff**

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

405. Specialty Seminars. (4-4-4) F, W, Sp. **VA Sleisenger**

Seminars are conducted in cardiology, electrocardiology, hematology, gastroenter-

ology, radiology, fluid electrolyte balance, endocrinology and pathology involving 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 Fundamental Aspects of Disease. (1-10) Su, F, W, Sp. Elective. Interns and residents.

UC L. H. Smith, VA Sleisenger, SF Williams

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

407. Clinicopathological Conferences. (1-1-1) F, W, Sp. Residents. **SF Williams, VA Sleisenger**

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. Electrocardiographic Interpretation. (2-2-2-2) Su, F, W, Sp. Residents and trainees in cardiology. **Sokolow**

Seminars (individual instruction) for residents in medicine and trainees in cardiology by cardiac consultants in the interpretation of all electrocardiograms and phonocardiograms taken at University of California San Francisco.

450. Clinical Medicine. (1½ per week) Su, F, W, Sp. **SF Williams, UC L. H. Smith**

Residents are responsible for the care of patients, under the direction of the attending staff, and participate in student teaching. Third-year, senior, and chief residents render consultation service in the hospitals and out-patient clinics.

452. Clinical Medicine. (1½ per week) Su, F, W, Sp. **VAF Rosentiel**

Residents are responsible for patient care, under the direction of the attending staff, including history-taking, physical examinations, laboratory tests, and consultations. The chief resident, in addition, has certain responsibilities involving the residents. He consults for all other hospital services.

490. Clinical Medicine. (1½ per week) Su, F, W, Sp. Interns. **SF Williams**

Interns rotate through medicals wards and Emergency Hospital. Under the supervision of the attending staff, they are responsible for

the care of patients, history-taking, medical workups, laboratory tests, and consultation.

491. Clinical Medicine. (1½ per week) Su, F, W, Sp. **SF Williams**

A modified "straight" medical internship consisting of eight to nine months service in general medicine, chest, and the emergency rooms, with three to four months spent in other hospital services.

495. Clinical Medicine. (1½ per week). Su, F, W, Sp. **UC L. H. Smith**

Interns are responsible for the care of patients, under the direction of the attending staff, and participate in student teaching.

MICROBIOLOGY

100. Biologic Agents of Disease. (9§) Sp. Prerequisite: Biochemistry 100A-B. **Jawetz**

Fundamentals of infection and resistance, immunology, and pathogenesis of diseases caused by microorganisms. Pathogenic bacteria, fungi, viruses, and parasites are presented from the standpoint of biology, medicine, epidemiology, and treatment. Laboratory diagnosis, treatment, and prevention introduces infectious disease management.

101. Microbiologic Agents of Disease. (7§) Sp. Prerequisite: Biochemistry 100A-B. Only students who have had the parasitology portion of Microbiology 100 may take this course. **Jawetz**

Fundamentals of infection and resistance, immunology and pathogenesis of diseases caused by microorganisms. Pathogenic bacteria, fungi and viruses are presented from the standpoint of biology, medicine, epidemiology, and treatment. Laboratory diagnosis, treatment, and prevention introduces infectious disease management.

125. Microbiology. (6§) W. Lecture: 4 hours. Laboratory: 4 hours. **Jawetz and Staff**

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

126. Microbiology. (5) W. Lecture: 4 hours. Laboratory: 4 hours. **Jawetz and Staff**

A comprehensive presentation of microorganisms including bacteria, fungi, and viruses; fundamentals of infection and resistance, immunology, disinfection and sterilization and antimicrobial agents; and laboratory

studies on indigenous oral flora, and applications of microbiology in dentistry.

150.01. Research in Microbiology. (1½) Su, F, W, Sp. Prerequisite: Microbiology 100 and consent of the instructor. **Jawetz and Staff**

Research in microbiology-block elective for fourth-year students.

170.01. Fundamental Concepts of Microbiology. (2) Sp. **Boyer, Bishop**

Description of central experimental aspects of microbial control mechanisms, genetics, and immunology, which are leading to important advances in applied science and medicine. Lectures and discussions for students who wish to become familiar with rapidly moving basic biology.

180.01. Communicable Diseases in World Health. (1) F, W, Sp. **Speck, Goldsmith**

A study of communicable diseases less frequently seen in western urban communities, but which represent significant problems in many other areas of the world.

190. Medical Microbiology. (5§) Sp. Lecture: 5 hours. **Jawetz and Staff**

Lectures and discussions on morphology and physiology of microorganisms, including bacteria, molds, yeast, viruses, and techniques employed to study them. Fundamentals of infection and resistance, immunology, microbial genetics, chemotherapy, biologic products, and epidemiology.

198. Supervised Study in Microbiology. (1-5§) F, W, Sp. Prerequisite: Consent of the instructor. **Jawetz**

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

199. Laboratory Research in Microbiology. (1-5§) F, W, Sp. **Jawetz**

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

203. Immunochemistry. (3) F. Prerequisite: Biochemistry 100 and Microbiology 100. Lecture: 3 hours. Offered in alternate years. **Goodman**

Structural and functional aspects of antibodies and antigens, including chemical and genetic basis of immunogenicity; structural basis and thermodynamics of antigen-antibody interactions; biosynthesis, physicochemical characterization and structure of immunoglobulins; immunogenetics; immunochemistry applied to structural studies of macromolecules.

204. Immunobiology. (3) W. Prerequisite: Microbiology 100 or equivalent instruction in basic immunology. Lecture 3 hours. Offered in alternate years. **Linscott**

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

206. Pathogenic Fungi. (2) F. Prerequisite: Microbiology 100. Lecture: 2 hours. **Halde**

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

207. Molecular Biology of Selected Bacterial Viruses. (4) Sp. Prerequisite: Microbiology, biochemistry, or consent of the instructor. Lecture: 2 hours. Laboratory: 6 hours. **Boyer, Roulland-Dussoix**

Molecular biology of certain bacterial viruses will include the genetics and biochemistry of the bacteriophage lambda and related phages. The lecture presentations will be supplemented with laboratory experiments involving many of the current techniques of bacteriophage genetics, biochemistry, etc.

208. Advanced Virology. (3) W. Lecture: 3 hours. Offered in alternate years. **Levintow**

Physical and chemical characterization of animal, bacterial, and plant viruses; dynamics of viral multiplication; biochemistry of virus-cell interaction; virus-induced alteration in properties of host cells in several systems; tumor viruses inhibition of viral multiplication by specific agents; approaches to chemotherapy.

209. Research Problems in Immunochemistry. (1-7) F, W, Sp. Prerequisite: Microbiology 203 or its equivalent and consent of instructor. Offered in alternate years. **Goodman**

Training in the use and application of immunochemical methods to research problems. Methods include quantitative precipitin and hapten inhibition techniques, gel-diffusion and immunoelectrophoresis, paper and column chromatography, zone electrophoresis, isotope labeling and radioautography of proteins, and density gradients and analytical ultracentrifugation.

210. Cell Biology. (2) F. Prerequisite: College biology and consent of the instructor. Lecture: 2 hours. Offered in alternate years. **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.

211. Fundamentals of Microbial Genetics. (3) F. Prerequisite: Consent of the instructor. Lecture: 3 hours. **Boyer**

A course in the fundamental aspects of microbial genetics covering population genetics, mutations, recombinations, complementation, and control mechanisms.

220. Seminar. (1) F, W, Sp. Prerequisite: General microbiology, medical microbiology, and immunology. **Jawetz**

Presentation of the results of research by investigators from universities, including the University of California, and research laboratories, with extensive discussions.

221. Oral Microbiology. (1) F. Prerequisite: Consent of the instructor. Lecture: 1 hour. **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 masters 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. Lecture: 1 hour. Prerequisite: Morphology 115A to be taken concurrently. **Tueller**

The development and form of the primary and permanent teeth.

110B. Applied Morphology. (1) W. Lecture: 1 hour. Prerequisite: Morphology 110A and 115A. **Noble**

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

115A. Morphology of Human Dentition. (2) F. Laboratory: 6 hours. Prerequisite: Morphology 110A to be taken concurrently. **Hamaguchi**

Study of individual tooth form and relationship to adjacent anatomical structures.

115B. Applied Morphology. (2) F. Laboratory: 6 hours. Prerequisite: Morphology 110A and 115A. **Hamaguchi**

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

NEUROLOGICAL SURGERY

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

140.01. Clinical Neurological Surgery at UC. (1½ per week) F, W, Sp, Su. Prerequisite: Neurology 110 and consent of the instructor. **Wilson**

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

140.02. Clinical Neurological Surgery. (1½ per week) F, W, Sp, Su. Prerequisite: Anatomy 103, Medicine 131A–B, and Neurology 110. **Wilson**

This elective period will accommodate students above second year. Clinical responsibilities will be assigned accordingly. Students may choose to spend any period of time at one of four hospitals (*UC, SF, VA, and F*, one student per hospital).

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

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

400. Neurological Surgery Staff Conference. (2–2–2) Su, F, W, Sp. **UC Wilson**

Residents, under supervision, prepare and present case histories of ward patients including laboratory work, X-ray studies, special investigation, and reference to the literature. Discussion is led by the faculty with participation by visitors.

401. Combined Staff Conference, Neurology and Neurological Surgery. (1–1–1) F, W, Sp. **UC Wilson**

Conference includes the discussion of special problems and topics in neurology and neurological surgery relating to case presentations. Members of the house staff and graduate students participate.

402. Clinicopathological Conferences. (2–2–2–2) Su, F, W, Sp. **UC Wilson, Boldrye**

Residents discuss clinicopathological 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.

403. Seminar in Literature of Neurology and Neurological Surgery. (1–1–1–1) Su, F, W, Sp. **UC Adams**

Recent literature in neurology and neurological surgery is presented. Discussion is by members of the faculty who are in attendance and by visitors from other schools interested in this and related fields.

404. Specialty Seminars. (1–8) F, W, Sp. Second-year residents in laboratory service. **UC Adams, Wilson, Boldrye**

Seminars include studies in neuropathology, electroencephalography, neurophysiology, and investigative neurological surgery. Attendance and participation in irregularly scheduled topical seminars on subjects in neurology, neurological surgery, and related fields also is required.

450. Clinical Neurological Surgery. (1½ per week) Su, F, W, Sp. **UC Wilson**

Residents, under supervision, are responsible for patient care in the wards and outpatient clinics including history-taking, physical examinations, laboratory tests, and consultations. In addition, the senior resident has certain administrative, teaching, and clinical responsibilities.

451. Clinical Neurological Surgery. (1½ per week) Su, F, W, Sp. **SF Hoff**

Residents are responsible for the care of patients, under the direction of the attending staff, including history-taking, physical examinations, laboratory tests, and consultations. In addition, the senior resident has certain teaching and administrative responsibilities required by the attending staff.

452. Clinical Neurological Surgery. (1½ per week) Su, F, W, Sp. First-year residents. **F B. Brown**

Residents are responsible for examining and caring for patients, assisting in surgical procedures, and performing diagnostic procedures under supervision.

453. Clinical Neurological Surgery. (1½ per week) Su, F, W, Sp. **VA Connolly**

Residents are responsible for diagnosis and care of patients in wards and clinics and performance of studies and selected neuro-

surgical procedures under supervision of the attending staff. They also present patients at conferences and attend seminars and rounds at *UC*.

490. Clinical Neurological Surgery. (1½ per week) Su, F, W, Sp. **SF Hoff**

Interns rotate through neurological surgery wards. Under the supervision of the attending staff they are responsible for the care of patients, including history-taking, neurologic examinations, laboratory tests, diagnostic procedures, and consultation.

NEUROLOGY

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

110. Clinical Clerkship in Neurology and Neurosurgery. (1½ per week) F, W, Sp, Su. Prerequisite: Medicine 131A–B. **Fishman, Wilson**

Students serve as clinical clerks in the inpatient services and outpatient clinics. Attendance at departmental clinical rounds, seminars and conferences is expected.

140.01. Advanced Clinical Neurology at UC, SF, VA. (1½ per week) Su, F, W, Sp. Prerequisite: Neurology 110. **Fishman**

Students serve as clinical clerks in the inpatient services and outpatient clinics. Attendance at department clinical rounds, seminars, and conferences is required. Approval of the chairman is required.

140.02. Extramural Clinical Clerkship. (1½ per week) Su, F, W, Sp. Prerequisite: Neurology 110. **Fishman**

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

140.03. Study of Cerebrovascular Disease. (1½ per week) Su, F, W, Sp. Prerequisite: Neurology 110. **Yatsu**

The Stroke Program at *SF* offers an opportunity for a comprehensive multidisciplinary approach to the evaluation of stroke patients. Conferences, rounds, and research seminars are held weekly.

140.04 Child Neurology. (1½ per week) Su, F, W, Sp. Prerequisite: Pediatrics 110, Medicine 110, and Neurology 110. **Berg**

Participation in childhood neurology studies being carried out in the department including work in Convulsive, Neurology, Cerebral Palsy, and Developmental Clinics, and visits to special programs for children with neurological handicaps.

150.01. Research in Neurology. (1½ per week) F, W, Sp, Su. Prerequisite: Anatomy 103. **Fishman**

Opportunities for research in one of the departmental laboratories by arrangement with the chairman.

150.02. Neuropathology. (1½ per week) F, W, Sp. Prerequisite: Anatomy 103 and Pathology 100. **Asbury**

Tissue pathology of diseases of the nervous system will be explored in greater depth in the postmortem room and by gross and microscopic techniques.

150.03. Advanced Neurology (Major, Pathways). (1½ per week) F, W, Sp. Four-, eight-, or twelve-week block elective. Prerequisites: Medicine 110 and Neurology-Neurosurgery 110. **Asbury**

Special experience in both clinical neurology and neuropathology is offered by special arrangement. It will include postmortem room experience, case study by neuropathologic techniques, clinical pathologic correlations, and research opportunities.

198. Supervised Study in Neurology. (1–5) F, W, Sp, Su, SS I, SS II. Prerequisite: Consent of the 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.

199. Laboratory Research Project in Neurology. (1–5) F, W, Sp, Su, SS I, SS II. Prerequisite: Consent of the 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.

400. Neuroscience Seminars. (1½) Su, F, W, Sp. **UC Fishman**

Seminars covering selected subjects in the basic sciences relevant to neurology including neuroanatomy, neurochemistry, neurophysiology, and neuropathology.

401. Grand Rounds—Neurology. (1) Su, F, W, Sp. **UC Fishman**

Conference includes resident preparation and 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.

402. Neurological and Neurosurgical Pathology. (1) Su, F, W, Sp. Elective. **UC Malamud**

Course involves the presentation and discussion of clinical histories and pathologic

findings in selected cases of neurologic interest and histopathologic study and discussion of surgical and postmortem specimens from neurological and neurosurgical patients.

403. Research in Neuropathology. (1-10) Su, F, W, Sp. Elective. Second- and third-year residents
UC Malamud

Course involves pathologic and clinicopathologic research into various aspects of neuropathology. Specific subjects of research are chosen in conjunction with members of the staff.

404. Research in Electroencephalography. (1-10) Su, F, W, Sp. Elective.
UC Fishman

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

407. Neuroradiology. (1) F, W, Sp. *Newton*

Neuroradiologic techniques and interpretations are reviewed in detail with particular emphasis on X rays of the skull and spine, pneumoencephalography, myelography, and arteriography.

411. Research in Neurochemistry. (5-13) Su, F, W, Sp. Elective.
UC Fishman

Clinical and basic research in biochemical and metabolic aspects of neurological disorders. After consultation, assignments to one of the several departmental laboratories will be possible.

412. Research in Neuropathology. (10) Su, F, W, Sp. Elective.
VA Asbury, Baringer

Specific projects in experimental pathology of the nervous system may be undertaken by direct arrangement. Techniques include neurohistology, histologic autoradiography, and electron microscopy.

450. Clinical Neurology. (1½ per week) Su, F, W, Sp.

UC Fishman, Macrae; SF Yatsu; VA Asbury
Residents are responsible for the care of patients in the wards and outpatient clinic, under the direction of the attending staff, including history-taking, neurologic examination, laboratory tests, special diagnostic and therapeutic procedures, and consultations.

453. Instruction in Clinical Electroencephalographic Interpretation. (1½ per week) Su, F, W, Sp.
Spire

Residents learn interpretation of electroencephalograms under the supervision of experienced electroencephalographers. They interpret electroencephalograms on patients they have seen clinically and individual instruction available as required. Instruction is accredited by the Board of Qualification of American Electroencephalographic Society.

454. Clinical Training in Electromyography. (1½ per week) Su, F, W, Sp.
UC Sumner

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

455. Clinical Psychiatry. (1½ per week) Su, F, W, Sp. Second- or third-year residents.

LPNI Simon, VA Feinberg
Residents spend two supervised months in association with the Psychiatric Liaison Service at University of California Hospitals and Veterans Administration Hospital. The program emphasizes the study of psychiatric disorders in a general hospital population.

456. Clinical Neuropathology. (1½ per week) Su, F, W, Sp. Elective at *UC* and *LPNI*.

LPNI Malamud
Residents spend three months or more in the Neuropathology Laboratory at *LPNI* performing supervised autopsies and pathologic studies of brains from neurological, neurosurgical, and psychiatric patients.

457. Clinical Neurological Surgery. (1½ per week) Su, F, W, Sp.
UC Wilson

Residents are responsible for the care of patients in the wards and outpatient clinic, under the direction of the attending staff, including history-taking, neurologic examinations, laboratory tests, special diagnostic and therapeutic procedures, and consultations.

458. Clinical Pediatric Neurology. (1½ per week) Su, F, W, Sp.
UC Berg, Diamond

Course offers experience in the diagnosis and management of children with acute and chronic neurologic disorders. Outpatient clinics are held weekly for pediatric convulsive disorders and behavioral and learning problems of the school child.

459. Clinical Neuropathology. (1½ per week) Su, F, W, Sp.
VA Asbury

Residents learn the basic features of tissue pathology in the nervous system and the principles of clinicopathologic and clinicoanatomic correlation.

460. Clinical Neuroophthalmology. (4½) Su, F, W, Sp. Elective.
UC Hoyt

Residents participate in clinical evaluation of patients in preparation for rounds. Clinical teaching in neuroophthalmology.

490. Clinical Neurology. (1½ per week) Su, F, W, Sp.
Yatsu

Interns rotate through neurology wards and, under supervision of the attending staff, are responsible for the care of patients including history-taking, neurologic examinations, laboratory tests, and diagnostic procedures.

NURSING

110B. Introduction to Nursing. (1) F. Prerequisite: Consent of the instructor.
Adams

Introduces nursing students to the role of their profession in today's society and provides an orientation to a specific system of teaching and learning.

110A. Concepts of Health and Disease. (3) F. Prerequisite: Consent of the instructor.

Abbey
Broad overview of illness as it affects the individual. Functional and structural changes in disease, and diagnostic, therapeutic, palliative, and preventive methods in current use are studied. Content for each quarter is based on specific patient models.

110B. Concepts of Health and Disease. (3) F, W, Sp. Prerequisite: Consent of the instructor.

Abbey
Broad overview of illness as it affects the individual. Functional and structural changes in disease, and diagnostic, therapeutic, palliative, and preventive methods in current use are studied. Content for each quarter is based on specific patient models.

110C. Concepts of Health and Disease. (3) F, Sp. Prerequisite: Consent of the instructor.

Abbey
Broad overview of illness as it affects the individual. Functional and structural changes in disease, and diagnostic, therapeutic, palliative, and preventive methods in current use are studied. Content for each quarter is based on specific patient models.

112. Small Groups: Theories and Issues. (3§) F, W, Sp. Lecture: 2 hours. Laboratory: 3 hours.
E. White

The course is designed to provide a sound theoretical basis in the principles and issues involved in the study, establishment, and functioning of small groups. Focus on application of theory to relevant nursing experiences.

114A. Introduction to Nursing Problems. (6) F. Prerequisite: Consent of the instructor.

Staff
Orientation to an analytical process for the solution of nursing problems, to the role of the nurse, to nurse-patient and nurse-coworker relationships, to professional communication techniques. Introductory integrated content and practice in all clinical areas.

114B. Introduction to Nursing Problems. (8) F, W. Prerequisite: Consent of the instructor.

Staff
Orientation to an analytical process for the solution of nursing problems, to the role

of the nurse, to nurse-patient and nurse-coworker relationships, to professional communication techniques. Introductory integrated content and practice in all clinical areas.

114C. Introduction to Nursing Problems. (8) F, Sp. Prerequisite: Consent of the instructor.
Staff

Orientation to an analytical process for the solution of nursing problems, to the role of the nurse, to nurse-patient and nurse-coworker relationships, to professional communication techniques. Introductory integrated content and practice in all clinical areas.

116. The Communication Process. (3) F. Prerequisite: Consent of the instructor.

A. Davis
A lecture-discussion class that explores language as a symbolic system and as an instrument in describing emotional experiences. Along with general theoretical consideration of language, emphasis will be placed on disturbed communication as depicted in schizophrenic behavior.

120A. Concepts of Illness. (2) F, W, Sp. Prerequisite: Second-year standing in School of Nursing or consent of the instructor.
Abbey

Overview of interruptions in normal functions of major organ systems. The manifestations, diagnosis, therapies, and prognosis of local and systemic interruptions are considered, as they serve as basis for nursing observations, judgments, and actions.

120B. Concepts of Illness. (2) F, W, Sp. Prerequisite: Second-year standing in School of Nursing or consent of the instructor.
Abbey

Overview of interruptions in normal functions of major organ systems. The manifestations, diagnosis, therapies, and prognosis of local and systemic interruptions are considered, as they serve as basis for nursing observations, judgments, and actions.

120C. Concepts of Illness. (2) F, W, Sp. Prerequisite: Second-year standing in School of Nursing or consent of the instructor.
Abbey

Overview of interruptions in normal functions of major organ systems. The manifestations, diagnosis, therapies, and prognosis of local and systemic interruptions are considered, as they serve as basis for nursing observations, judgments, and actions.

124A. Nursing Problems in Major Health Interruptions. (8) F, W. Prerequisite: Second-year standing in the School of Nursing or consent of the instructor.
Staff

Designed to increase precision in nursing decisions and skills essential to therapeutic

nursing interventions. Students will plan, give, and evaluate care for designated patients of all age groups and differing cultures and in increasingly complex situations.

124B. Nursing Problems in Major Health Interruptions. (8) F, W. Prerequisite: Second-year standing in the School of Nursing or consent of the instructor. **Staff**

Designed to increase precision in nursing decisions and skills essential to therapeutic nursing interventions. Students will plan, give, and evaluate care for designated patients of all age groups and differing cultures and in increasingly complex situations.

124C. Nursing Problems in Major Health Interruptions. (8) W, Sp. Prerequisite: Second-year standing in the School of Nursing or consent of the instructor. **Staff**

Designed to increase precision in nursing decisions and skills essential to therapeutic nursing interventions. Students will plan, give, and evaluate care for designated patients of all age groups and differing cultures and in increasingly complex situations.

131. Advances in Health Sciences. (3) W, Sp. Prerequisite: Third-year standing in the School of Nursing or consent of the instructor. **Staff**

Consideration of advances in the various disciplines within the health sciences as a basis for predicting future nursing roles and professional responsibilities.

134A. Problems Related to Professional Roles in Nursing. (9) F. Prerequisite: Third-year standing in the School of Nursing or consent of the instructor. **Staff**

Concepts and practice essential for understanding nursing roles in complex situations; participating in nursing care of patients with complicated problems, functioning as a nurse giving comprehensive care, as a team member or leader, and sharing responsibility with auxiliary personnel.

134B. Problems Related to Professional Roles in Nursing. (9) F, W, Sp. Prerequisite: Third-year standing in the School of Nursing or consent of the instructor. **Staff**

Concepts and practice essential for understanding nursing roles in complex situations; participating in nursing care of patients with complicated problems, functioning as a nurse giving comprehensive care, as a team member or leader, and sharing responsibility with auxiliary personnel.

134C. Problems Related to Professional Roles in Nursing. (9) F, W, Sp. Prerequisite: Third-year standing in the School of Nursing or consent of the instructor. **Staff**

Concepts and practice essential for understanding nursing roles in complex situations; participating in nursing care of patients with complicated problems; functioning as a nurse giving comprehensive care, as a team member or leader, and sharing responsibility with auxiliary personnel.

153. Nursing Observations in Fluid Imbalances. (3) Sp. Prerequisite: Second-year standing in the School of Nursing or consent of the instructor. **Abbey**

An exploration of nursing observations directly related to care of patients with body fluid imbalances.

154A. Nursing in School Health Programs. (5) F. Prerequisite: Consent of the instructor. **Staff**

Concepts essential for understanding objectives, organization, administration, and legal aspects of school health programs and the role of the nurse therein. Correlated experience under supervision in public schools.

154B. Nursing in School Health Programs. (4) W. Prerequisite: Consent of the instructor. **Staff**

Concepts essential for understanding objectives, organization, administration, and legal aspects of school health programs and the role of the nurse therein. Correlated experience under supervision in public schools.

155. Clinical Uses of Drugs. (3) F, W, Sp. Prerequisite: Second-year standing in School of Nursing. **Rose**

A course dealing with commonly used drugs with emphasis on classification, use, rationale for choice, mode of action, and significant side effects.

156. Creative Uses of Play with Young Children. (3) W, Sp. Prerequisite: Consent of the instructor. **Hardgrove**

A practical introduction to play designed to increase nursing skills in promoting growth, communication, and mental health in young children. Experiences and demonstrations with play materials and techniques used.

157. Nursing Management of Common Pediatric Illnesses. (4§) W. Prerequisite: Consent of the instructor. **Dunbar and Staff**

Theory related to essential content areas and specific knowledge necessary for professional nurses beginning to function as pediatric nurse practitioners. Emphasis placed on most common illnesses of infancy and childhood.

158. Health Issues in Population Stabilization. (3§) W, Sp. Prerequisite: Consent of the instructor. **Abbott**

Theory and research relevant to social,

Lecture: 2 hours. Laboratory: 9 hours. **Staff**
 Concepts essential for understanding objectives, organization, administration, and legal aspects of school health programs and the role of the nurse therein. Correlated experience under supervision in public schools.

155. Clinical Uses of Drugs. (3) F, W, Sp. Prerequisite: Second-year standing in School of Nursing. **Takano**

A course dealing with commonly used drugs with emphasis on classification, use, rationale for choice, mode of action, and significant side effects.

156. Creative Uses of Play with Young Children. (3) W, Sp. Prerequisite: Consent of the instructor. Lecture: 1 hour. Laboratory: 6 hours. **Hardgrove**

A practical introduction to play designed to increase nursing skills in promoting growth, communication, and mental health in young children. Experiences and demonstrations with play materials and techniques used.

157. Nursing Management of Common Pediatric Illnesses. (4§) W. Prerequisite: Consent of the instructor. **Dunbar and Staff**

Theory related to essential content areas and specific knowledge necessary for professional nurses beginning to function as pediatric nurse practitioners. Emphasis placed on most common illnesses of infancy and childhood.

158. Health Issues in Population Stabilization. (3§) W, Sp. Prerequisite: Consent of the instructor. Lecture: 2 hours. Laboratory: 3 hours. **Abbott**

Theory and research relevant to social, ecological, and moral issues posed by scientific advances in contraception, sterilization, and abortion. Participant observation in various service settings exploring current and future nursing roles, and investigating provider and recipient attitudes and practices.

159. Health Supervision of Women During the Reproductive Years. (4§) F, Sp. Prerequisite: Consent of the instructor. **Mann**

Theories and concepts of applied obstetric and gynecologic science for maternity nurse associates. Areas included: maternal-fetal-placental unit, common gynecologic problems, hormonal and mechanical contraceptives, and sexual functioning. The health needs of women from adolescence to menopause are included.

161. Health Maintenance in Infancy and Childhood. (4§) F, Sp. Prerequisite: Consent of the instructor. **Dunbar and Staff**

Emphasis placed on broad issues of child health supervision and pediatric nurse practi-

tioner's primary care role in management, with parents, of developmental stresses common in the child-rearing years.

162. Special Problems of the Reproductive Period. (4§) W. Prerequisite: Nursing 159 and consent of the instructor. **Mann**

Content includes theory and concepts of biopsychosocial problems and complications during the reproductive period. Metabolic, infectious, traumatic, and functional disorders will be included.

166. Nursing Care of Children With Deviations in Development. (2-4§) F, W, Sp. Prerequisite: Consent of the instructor. **Staff**

Theory and practice related to prevention, case finding, and care of children with deviations in development including the mentally retarded. Focus on nurse's role as a community resource in promoting optimal development of these children living at home.

180. UCSF as a Health Care Institution. (2-4) F, W. Prerequisite: Consent of the instructor. Lecture: 2 hours. Laboratory: 0-6 hours. **Harding, Barnes**

Analysis of UCSF as a health care institution. This course will provide students from the various professional schools the opportunity to study collectively current issues in health care in order to relate those issues to their environment.

181. Law and the Practice of Nursing. (2-3) F, Sp. Lecture: 2 hours. Laboratory: 3 hours. **Tennenhouse**

Survey of fundamental and critical current issues in the law with respect to the theory and practice of nursing. Emphasis on legal contingencies encountered in the everyday practice of nursing in both hospital and community settings.

182A-B. Health Education in Practice. (3-3§) W, Sp. Prerequisite: Consent of the instructor. **Fleshman**

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 will be explored.

197. Group Independent Study. (1-5) F, W, Sp. Prerequisite: Consent of the instructor. **Staff**

Groups of two or more collaborate in clinical investigation, and studies of special problems related to nursing and health sciences, under the direction of faculty. Students may select topics for study 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. Prerequisite: Consent of the instructor. **Archer**

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

201. Curriculum Development in Nursing. (4§) W, Sp. **Dunlap**

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

202. Conceptual Models in Nursing. (3§) W. **Dunlap, Meleis**

Comparative study and critical analysis of major conceptual models in nursing. Emphasis will be placed on models that are prototypes for the following theoretical frameworks: Systems, symbolic interaction, developmental and adaptation theories.

204A-B-C. Comparative Nursing Administration. (2-3, 2-3, 2-3§) F, W, Sp. Prerequisite: Consent of the instructor. **Archer, Schatzman, Hill**

Comparative analysis of nursing with emphasis on nursing administration in the United States and other selected countries using perspectives from anthropological, educational, historical, organizational, philosophical, and sociological contexts applicable to each country. Particularly recommended for international students.

205. Processes of Supervision. (3-6§) W, Sp. Prerequisite: Nursing 201 or Nursing 300 or the consent of the instructor. Lecture: 2 hours. Laboratory: 3-12 hours. **Sprowles**

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

206. Microteaching. (4§) F, W, Sp. **Staff**

Analysis of the selected teaching components of reinforcement, stimulus variation, questioning, set induction, and closure utilized in individual and group instruction with ap-

plication and practice in a microteaching laboratory setting.

207. Research in Teaching. (2-4§) F. Prerequisite: Doctoral students only, consent of the instructor. Lecture: 2 hours. Laboratory: 0-6 hours. **Kramer**

Critical inspection and analysis of research in student, patient, and staff teaching. Opportunity provided to incorporate the findings of research in supervised practice teaching sessions.

208. Emerging Roles in Professional Nursing. (3§) Sp. Prerequisite: Consent of the instructor. Lecture: 2 hours. Laboratory: 3 hours. **Sitzman**

Examination from historical, sociological, economic, and nursing perspectives of the phenomena surrounding emerging professional nurse roles. Selected examples from student contact with people practicing in emerging roles as well as published descriptions provide bases for exploration.

210A. Family Dynamics, Pathology, and Therapy. (2-4§) W. Prerequisite: Consent of the instructor. Lecture: 2 hours. Laboratory: 0-6 hours. **J. Moore**

Seminar which focuses on selected concepts and theories of family dynamics, systems, pathology, and treatment. Students will use clinical experiences, observations of families, tapes, etc., in addition to literature on families as a base for discussion.

210B. Family Dynamics, Pathology, and Therapy. (2-4§) Sp. Prerequisite: 210A or equivalent. Lecture: 2 hours. Laboratory: 3-6 hours. **J. Moore**

This course focuses on principles and issues in family therapy, various methods for intervening into family systems, marital therapy, and research in families. Clinical practice with families is required and supervision is provided.

211A. Introduction to Research: Perspectives and Styles of Research and Researchers. (3§) F, W. Prerequisite: Elementary statistics or equivalent. Lecture: 2 hours. Laboratory: 3 hours. **Staff**

Lectures and small group sections which present an overview of the research process including the styles of researchers, the research attitude, logic, ethics, philosophy, and tools of science.

211B. The Research Critique. (3§) W, Sp. Prerequisite: Consent of the instructor. **Staff**

Sections with different substantive foci devoted to the development of the individual nurse as a consumer of research endeavors which will emphasize attitudes, insights, and abilities crucial to the appreciation, appraisal,

Pages 29 and 30 from the UCSF 1973-74 General Catalog are missing.

This page has been copied from the UCSF 1974-75 General Catalog. (10/31/2007 JH)

and utilization of research in the health sciences.

211C. Research Techniques: Data Analysis. (3-4§) Sp. Prerequisite: Nursing 211A and B. **Staff**

Data collection, analysis, and reporting of a research project.

212A. Physiological Concepts in Nursing. (2-4§) F. Prerequisite: Consent of the instructor. **Abbey**

This course is designed to promote the understanding and application of physiological principles to cross-clinical nursing. A. Basic science consideration. B. Integrative aspects. C. Selected functional modifications.

212B. Physiological Concepts in Nursing. (2-4§) W. Prerequisite: Consent of the instructor. **Abbey**

This course is designed to promote the understanding and application of physiological principles to cross-clinical nursing. A. Basic science considerations. B. Integrative aspects. C. Selected functional modifications.

212C. Physiological Concepts in Nursing. (2-4§) Sp. Prerequisite: Consent of the instructor. **Abbey**

This course is designed to promote the understanding and application of physiological principles to cross-clinical nursing. A. Basic science considerations. B. Integrative aspects. C. Selected functional modifications.

213A. Nursing Measurements and Patient Monitoring. (2-4§) W. Prerequisite: Nursing 212A and consent of the instructor. **Goldstein**

Fundamentals of electronics, transducers, and instrumentation directly applicable to the modes of obtaining physiological data from patients.

213B. Nursing Measurements and Patient Monitoring. (2-3§) W. Prerequisite: Nursing 213A and consent of the instructor. **Abbey**

Selection and use of instrumentation applicable to patient monitoring, nursing research, and teaching.

215A. Health in the Community. (3§) F, W. Prerequisite: Consent of the instructor. Seminar: 2 hours. Laboratory: 3 hours. **Staff**

Exploration of theories, concepts and principles pertaining to the practice of community health nursing with focus on positive health factors and interactions within families, groups, and communities.

215B. Health Care Planning in Communities. (3§) F, W. Prerequisite: Consent of the instructor. Seminar: 2 hours. Laboratory: 3 hours. **Archer**

Exploration of analytic planning models

applicable to community health services. Utilization of the community as a basis for planning and delivery of health care. Emphasis on the role of the community health nurse in health planning.

215C. Community Health Issues. (3§) Sp. Prerequisite: Nursing 215A or 215B and consent of the instructor. Seminar: 2 hours. Laboratory: 3 hours. **Sproles**

Exploration of community health issues previously identified in community health nursing. Opportunity to explore theories and to test their applicability to community and family health.

215D. Strategies of Community Organization. (3§) Sp. Prerequisite: Consent of the instructor. **Archer**

Exploration of strategies of institutional analysis, community assessment, and methods of community organization and development, enabling nurses to facilitate others' capacities to define, plan for, and meet their own physical, social, and mental health priorities.

216. Maternal Child Nursing. (3§) F, W. Prerequisite: Consent of the instructor. Lecture: 2 hours. Laboratory: 3 hours. **Mercer**

Survey of major phenomena utilizing concepts, theories, and laboratory experiences within child-bearing and child-rearing; pregnant couple, enlarging family, mother-child couple, progressing to evolving multiplicity of total family interactions, and life experiences in health and illness.

217. The Child and Illness. (3§) F. Prerequisite: Consent of the instructor. Lecture: 2 hours. Laboratory: 3 hours. **Tesler**

Theory and practice related to the effect of illness and hospitalization on the young child and its family. Emphasis will be on the nurse's role in minimizing trauma and fostering growth.

218. Maternal Identity: Role Transition. (2-3§) Sp. Lecture: 2 hours. Laboratory: 0-3 hours. **Highley**

Role change, as dramatized by maternal role identity, will be used to examine transition as a lifelong developmental construct. Patient data will be utilized to examine theoretical concepts and generate new theory.

219. Nursing Care of Acutely Ill Child. (3§) W. Prerequisite: Consent of the instructor. **Tesler, Ward**

Study of the nursing care of the acutely ill child. Theory and practice focus on exploration of the pathophysiological processes and their nursing management. The students will employ the problem-oriented framework to assess and manage patient problems.

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Exploration of community health issues previously identified in community health nursing. Opportunity to explore theories and to test their applicability to community and family health.

216. Maternal-Child Nursing. (3) F. Prerequisite: Consent of the instructor.

Highley

Survey of major phenomena utilizing concepts, theories, and laboratory experiences within childbearing and childrearing: pregnant couple, matrix of enlarging family starting with mother-child couple progressing to evolving multiplicity of total family interactions and life experiences in health and illness.

217. The Child and Illness. (3) F, Sp. Prerequisite: Consent of the instructor.

Tesler

Theory and practice related to the effect of illness and hospitalization on the young child and its family. Emphasis will be on the nurse's role in minimizing trauma and fostering growth.

218. Maternal Identity: Role Transition. (2-3) Sp. Lecture: 2 hours. Laboratory: 0-3 hours.

Highley

Role change, as dramatized by maternal role identity, will be used to examine transition as a lifelong developmental construct. Patient data will be utilized to examine theoretical concepts and generate new theory.

220. Advanced Seminar in Nursing Research. (3) F, W, Sp. Prerequisite: Nursing 211A and B, or equivalent and consent of the instructor.

Staff

A seminar intended for doctoral students to discuss methods and problems in current nursing research.

222A-B. A Survey of Modern Psychiatric Thought. (3-3) F, W. Prerequisite: Consent of the instructor.

Staff

Theoretical models from selected schools of psychiatric thought will be presented and applied to clinical material. Interpsychic, interpersonal, and social frameworks will be reviewed. Application of theory to practice will be emphasized around selected readings, case material, tapes, and films.

223. Introduction to Community Mental Health Theory and Practice. (3) W, Sp. Prerequisite: Consent of the instructor.

Moore

Provides comprehensive introductory information regarding evolution of the community mental health movement, provision made for community mental health programs, operation of existent centers, roles of paraprofessional as well as professional nurses, and the need for team collaboration.

224. Current Trends in Group Psychotherapy. (3) Sp. Prerequisite: Nursing 243 and 244 or consent of the instructor.

White

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 preparation in group psychotherapy.

225. Psychotherapeutic Process in Nursing. (3) F, W, Sp. Prerequisite: Consent of the instructor.

J. Moore

Advanced seminar on psychotherapeutic nursing process, emphasizing communication theory and skills, learning theory, interview structures and processes, language and thought disorders. In laboratory, students will apply theories, principles of therapy, and behavioral change with patients demonstrating a range of psychopathology.

226. Nursing in Long-Term Illness. (3) F, W, Sp. Prerequisite: Consent of the instructor.

Hallburg

Intensive study of problems related to long-term illness. Explorations of the interrelationship of various cultural, psychosocial, and pathophysiological factors involved in continuing health problems. Field experience included.

227A-B. Seminar in Psychological Approaches to Comprehensive Nursing Care. (3-3) W, Sp. Prerequisite: Nursing 225 or equivalent and consent of the instructor.

Staff

Study of psychological aspects of care which synthesizes components of the clinical specialties in nursing and concepts of biological and behavioral sciences and the humanities. Study of psychiatric nursing theory as it can be applied to practice in nonpsychiatric settings.

228. Communications - Theoretical and Philosophical. (2-4) F, W, Sp. Prerequisite: Consent of the instructor.

A. Davis

The concept of communication has become one of the overlapping areas in a number of disciplines. This course examines research studies, polemical essays, and philosophical writings that have made the concepts and problems of human communication central to their investigation.

229. Crisis Intervention. (2-4) W, Sp. Prerequisite: Consent of the instructor.

Staff

A two-hour seminar to discuss innovative uses of crisis intervention in selected nursing areas. Focus on underlying theory; i.e., Lindeman, Erickson, Harris, Lazarus, and Caplan. Special emphasis on application in the community.

230. Femininity and Sexuality. (3) W, Sp. Prerequisite: Consent of the instructor. Lecture: 2 hours. Laboratory: 3 hours.

Zalar, Murphy

Theories and concepts of femininity, masculinity, and sexuality throughout the life cycle. Explores the wide range of human sexual expressions, behaviors, and dysfunctions. Focuses on better understanding of self and others to facilitate more effective nursing interventions.

231A. Nursing Administration. (4) F. Prerequisite: Consent of the instructor. **Staff**

Advanced study in the theory and practice of nursing administration in schools of nursing or nursing services.

231B. Nursing Administration. (2) W. Prerequisite: Nursing 231A. **Staff**

Advanced study in the theory and practice of nursing administration in schools of nursing or nursing services.

232A. Dimensions of Leadership. (2-4) F. Consent of the instructor. Lecture: 2 hours. Laboratory: 0-6 hours. **Bailey**

Overview of concepts, theories, principles, and research studies relative to leadership and adjunct processes such as group dynamics and structure. Focuses on systematic analysis of decision processes 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 the instructor. Lecture: 2 hours. Laboratory: 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 ideas, theories, and research relative to leadership behaviors, styles, and strategies. Laboratory includes computer simulated problems.

232C. Problems in Leadership. (2-4) Sp. Prerequisite: Nursing 232A and B, or consent of the instructor. Lecture: 2 hours. Laboratory: 0-6 hours. **Bailey**

Seminar focuses on 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 roles, decision making, and planned change.

233. Coping Styles of Children. (3) W. Prerequisite: Consent of the instructor. **Dunbar**

Examination and assessment of individual coping styles in young children. Theoretical framework based upon Murphy, Lazarus,

Menninger, and others. Laboratory data will be used to explore nursing interventions relating to stress periods and coping patterns in children.

234. The Threat of Death in Clinical Practice. (3) F, W. Prerequisite: Consent of the instructor. **Lowenberg**

Seminar providing opportunity for discussion about multiple issues which come into play when adult patients face death. Discussion will focus on meaning of dying from perspective of persons undergoing the experience and on problems of health professionals when patients are dying.

236. Expectant Parent Group Education. (3) F, W, Sp. **Abbott**

Theoretical sessions related to methodology and techniques of conducting expectant parent discussion groups. Laboratory experience as group leaders. Seminar discussions of the application of theories and principles of groups to student experience.

237. Survey of Child Development. (3) F. Prerequisite: Consent of the instructor. **Waechter**

Survey of the major theories and research findings dealing with normal physical, intellectual, and emotional development in childhood and adolescence.

238A. Development of the Infant and Preschool Child. (3) F. Prerequisite: Consent of the instructor. **Waechter**

Exploration of the major theories and research findings dealing with the physical, intellectual, and emotional development of the child from birth to school age.

238B. Development in Middle Childhood. (3) W. Prerequisite: Consent of the instructor. **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) Sp. Prerequisite: Consent of the instructor. **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) F. Prerequisite: Consent of the instructor. **Staff**

A comprehensive study of the nursing care of patients with pulmonary problems. Examination of the physiological concepts necessary to understanding the patient and the nursing problems. Exploration of the theoretical basis for nursing decisions and nursing action.

239B. Care of Patients with Pulmonary Problems. (3) W. Prerequisite: Consent of the instructor. **Staff**

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) Sp. Prerequisite: Consent of the instructor. **Flood**

Investigation of nontherapeutic, unintended physiologic effects of selected nursing interventions commonly with patients with cardiopulmonary dysfunctions. Clinical laboratory included.

240. Physical Assessment of Cardiopulmonary Status. (3) F, W. Prerequisite: Consent of the instructor. **Flood**

Intensive study of the criteria, methodology, and principles utilized in physical assessment of cardiopulmonary status as they apply to the nursing assessment of adults in health and illness. Observation and interpretation of patient data in the clinical laboratory.

242. Psychophysiological Concepts in Action. (3) F, W. Prerequisite: Consent of the instructor. **Staff**

In-depth psychophysiological exploration of concepts of anxiety, stress, body image, and adaptation as they relate to and influence nursing practice.

244. Theories of Group Psychotherapy. (2-4) W. Prerequisite: Nursing 243 or consent of the instructor. **White**

Theories of group psychotherapy based on psychoanalytic, interpersonal and communication theories pertinent to the 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.

245A-B-C. Young Adult Health. (3-3-3) F, W, Sp. Prerequisite: Consent of the instructor. **Fleshmann**

Cross-clinical exploration into defining a new population group category, discovery of pertinent theories, and delineation of health issues.

246. Deterrents to Mothering. (3) W. Prerequisite: Consent of the instructor. **Staff**

Exploration of evolving mother-child relationships, adaptive tasks, and environmental and interpersonal situations interrupting

healthy development of mothering. Implications for nurturance and nursing role.

247A-B-C. Longitudinal Studies: Child-Bearing-Child-Rearing. (1-2, 1-2, 1-2) F, W, Sp. Prerequisite: Consent of the instructor. **Waechter**

Longitudinal study and appraisal of a developing or established family. Focuses on a developmental framework including identification of critical periods, stress, and adaptations.

248. Group Independent Study. (1-5) F, W, Sp. Prerequisite: Consent of the instructor. **Staff**

Groups of two or more collaborate in clinical investigations, and other studies of special problems in nursing and health sciences under the direction of faculty. Students may select areas related to their long-term interests and future research or clinical program.

249. Independent Study. (1-5) F, W, Sp. Prerequisite: Consent of the 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) F, W, Sp. Prerequisite: Admission to doctoral study and consent of the instructor. **Staff**

260. Research in Human Communication. (3) W, Sp. Prerequisite: 211A or equivalent. **A. Davis**

Seminar to examine selected research focusing on human communication. Such research topics as interaction, social context, and language will be explored to understand problems encountered in human communication research.

261. Introduction to Computer Instruction. (2§) Sp. Prerequisite: Open to all graduate students. **Nielsen, Bailey, Kamp**

Concepts, principles, and methods of computerized instruction. Laboratory experiences provided for students to design and write interactive teaching programs.

265A-B-C. Advanced Studies in Community Health Nursing. (4-4-4) Yr. Prerequisite: Consent of the instructor. **Staff**

Study and analysis of research implementing current theories and concepts, formulation of hypotheses for Community Health Nursing; synthesis of knowledge from behavioral and biological sciences, exploration of innovations, search for significant dimensions of nursing care.

266A. Research Conceptualization. (3-5) W. Prerequisite: 211A or consent of the instructor. **Kramer**

Discussion and practice in research problem formulation and design selection for producers of research. Core classes and small group sessions organized around students' interests.

266B. Research Implementation. (3-5) Sp. Prerequisite: 266A or consent of the instructor. **Kramer**

Data collection, analysis, and reporting of a research project, or of some aspect of a research project, such as tool construction, or validity, or reliability studies.

275A. Community Mental Health Nursing. (2-4) W. Prerequisite: Consent of the instructor. **Hitchcock**

An intensive study of theory and practice underlying primary, secondary, and tertiary prevention and its applicability to nursing care of patients in community systems dealing with emotional and psychiatric disorders.

275B. Community Mental Health Nursing. (2-4) Sp. Prerequisite: Consent of the instructor. **Hitchcock**

An intensive study of innovative approaches to intramural and extramural continuous nursing care in traditional or newly developing health care delivery systems.

275C. Advanced Community Mental Health Nursing. (2-4) F. Prerequisite: Masters degree in Psychiatric or Community Health Nursing and the consent of the instructor. **Hitchcock**

Intensive study of selected political, economic, and social issues which affect the community mental health movement.

275D. Advanced Community Mental Health Nursing. (2-4) W. Prerequisite: Masters degree in Psychiatric or Community Health Nursing and the consent of the instructor. **Hitchcock**

Intensive study of community participation and policy formation in community mental health programs and study of theory underlying indirect services.

276A. Psychiatric Nursing with Children and Youth. (2-4) F. Prerequisite: Consent of the instructor. **Pothier**

Comprehensive study of fundamental theory and concepts of psychiatric nursing with children and youth; focus on the two-person relationships. Child psychiatric majors receive supervised laboratory experience and earn three or four units. Others receive no supervised experience for two units.

276B. Group Counseling with Children and Youth. (2-4) W. Prerequisite: Consent of the instructor. Nursing 276A is not prerequisite. **Pothier**

A study of the fundamental theory and concepts of group counseling with children and youth. Child psychiatric majors receive supervised laboratory experience and earn three or four units. Others receive no supervised experience for two units.

276C. Behavior Modification with Children and Youth. (2-4) Sp. Prerequisite: Consent of the instructor. **Pothier**

A study of the theory and practice of behavior modification including positive and negative reinforcement, extinction, punishment and modeling. Child psychiatric majors receive supervised laboratory experience and earn three or four units. Others receive no supervised experience for two units.

298. Thesis or Comprehensive Examination. (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 masters degree or taking a comprehensive examination required for the masters 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 Doctor of Nursing Science (DNS) degree.

401. Teaching Residency. (4-12) F, W, Sp. Prerequisite: Consent of the instructor. Practice: 12-36 hours. **Staff**

Opportunity to apply and evaluate theories, concepts, and skills in the work setting under the supervision of a preceptor.

402. Administration Residency. (4-12) F, W, Sp. Prerequisite: Consent of the instructor. **Staff**

Opportunity to apply and evaluate theories, concepts, and skills in the work setting under the supervision of a preceptor.

403. Consultation Residency. (4-12) F, W, Sp. Prerequisite: Consent of the instructor. Practice: 12-36 hours. **Staff**

Opportunity to apply and evaluate theories, concepts, and skills in the work setting under the supervision of a preceptor.

404. Clinical Residency. (2-12) F, W, Sp. Prerequisite: Consent of the instructor. Practice: 12-36 hours. **Staff**

Opportunity to apply and evaluate theories, concepts, and skills in the work setting under the supervision of a preceptor.

405A-B-C. Family Therapy. (4-4-4) F, W, Sp. Prerequisite: Consent of the instructor. Lecture: 2 hours. Laboratory: 6 hours. **Handleman**

Theory and practice of conjoint family therapy: a study of methods, processes, and techniques of psychotherapy with a total family. Case presentation, observation of families in therapy, intensive discussion, and other media will be utilized.

406A-B-C. Advanced Psychiatric Nursing of Children and Youth. (4-6) F, W, Sp. Prerequisite: Child Psychiatric Nursing 276A-B-C or equivalent. Consent of the instructor. **Pothier, Pazdur**

In-depth application of theory of psychiatric nursing with children and youth in a variety of settings.

407A-B-C. Advanced Clinical Practice in Community Mental Health Nursing. (2-4) F, W. Prerequisite: Post-masters status and consent of the instructor. **Staff**

Opportunity to apply theory, concepts, and principles of community mental health nursing and evaluate results to further skills and extend clinical expertise.

NUTRITION³⁶

130. Food and Nutrition. (1) W. Lecture: 1 hour. **Zipkin**

A review of the essentials of human nutrition including the energy aspects, the carbohydrate, fat, protein, mineral, and vitamin requirements of the diet. Several sessions are devoted to methods for an appraisal of the dietary habits of patients.

160. Foods and Nutrition. (2) F. Prerequisite: Biochemistry 170.01. Lecture: 1 hour. Laboratory: 3 hours. **Vinson**

Emphasis on practical aspects of nutrition including diet evaluation, obtaining diet histories, nutrition education, etc. Panel discussions of pertinent topics in nutrition will be included.

180. Survey of Dietary Patterns in Contemporary Society. (2§) Sp. Prerequisite: Consent of the instructor. **Newton**

Survey of dietary patterns currently in practice with examination and evaluation of their place in cultural, social, economic, philosophical, and scientific perspectives. Attention will be directed to such issues as vegetarian regimes, weight reduction programs, etc.

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

For graduate students engaged in writing the thesis for the masters degree.

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

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

OBSTETRICS & GYNECOLOGY

110. Core Clerkship in Obstetrics, Gynecology, and Neonatology. (1½ per week) Su, F, W, Sp. **Page, Smith**

Basic principle and fundamental techniques in obstetrics and gynecology discussed in series of seminars, case discussions and teaching clinics. Students have practical experience in clinics, wards, delivery room, and operating room under direct supervision.

140.01. Clinical Clerkship. (1½ per week) Su, F, W, Sp. Prerequisite: Obstetrics and Gynecology 110. **Page**

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

140.03. Obstetrics and Gynecology Clerkship at C. (1½ per week) Su, F, W, Sp. Prerequisite: Obstetrics and Gynecology 110. **Webb**

Four-week block elective (or longer). Students may elect clerkships in obstetrics or gynecology, or both.

140.04. Specialty Clinics in Obstetrics and Gynecology. (1½ per week) Su, F, W, Sp. Prerequisite: Obstetrics and Gynecology 110. **Page**

Student participates in the following clinics: Therapeutic abortion, tumor follow-up, obstetrical medicine, infertility, anemia in pregnancy, and family planning.

140.05. Gynecologic Endocrinology. (1½ per week) F, W, Sp. Prerequisite: Obstetrics and Gynecology 110. **Goldfien**

Students will attend gynecology endocrine clinic and other endocrine clinics of choice and participate in tutorial seminars.

140.06. Obstetrics and Gynecology Clerkship at SF. (1½ per week) Su, F, W, Sp. Obstetrics and Gynecology 110. **Goldstein**

This course will be individually structured by the instructor for each student with emphasis on areas of interest and need for in-depth exposure.

140.07. Senior Clerkship in Obstetrics and Gynecology. (1½ per week) W. Prerequisite: Core clerkship in obstetrics and gynecology. **Page**

Senior clerkship (acting internship) with two weeks assigned to gynecology and two weeks assigned to obstetrics.

³⁶ Also see Biochemistry 170.01, International Health 182, and Medicine 160.04.

150.01. Research in Obstetrics and Gynecology. (1½ per week) Su, F, W, Sp, SS I, SS II. Consent of the instructor. **Page**

A research project under the direction of the faculty.

198. Supervised Study in Obstetrics and Gynecology. (1-5) Su, F, W, Sp. Prerequisite: Obstetrics and Gynecology 110. **Page 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 Obstetrics and Gynecology. (1-5) F, W, Sp, Su. Prerequisite: Consent of the instructor. **Page and Staff**

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

400. Staff Conferences. (1-1-1-1) Su, F, W, Sp. **Page**

Conferences comprise formal discussions by staff, faculty, and visiting lecturers.

401. Surgical Pathology Seminar. (1-1-1-1) Su, F, W, Sp. **UC Hill, McKay**

Seminar includes the presentation of pathologic material from the obstetric and gynecologic services with formal instruction and discussions.

402. House Staff Seminars. (1-1-1-1) Su, F, W, Sp. **Page**

Seminars include presentations of special topics, literature reviews, and discussions. Discussion of resident staff functions also are held.

450. Clinical Obstetrics and Gynecology. (1½ per week) Su, F, W, Sp.

CHS Webb, SF Smith, UC Page

Residents are responsible for the care of patients in the hospital and outpatient clinic. Formal and individual instruction is conducted.

490. Clinical Gynecology. (1½ per week) Su, F, W, Sp. **SF R. Smith**

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. Lecture: 1 hour. Prerequisite: Occlusion 125 to be taken concurrently. **Douglass**

A conjoint lecture and discussion series on the relationship of occlusion to the clinical phases of dentistry.

125. Applied Dental Morphology and Physiology of Occlusion. (2) Sp. Laboratory: 6 hours. Prerequisite: Occlusion 120 to be taken concurrently. **Douglass**

The application of the subject of occlusion to clinical diagnostic procedures.

180. Principles of Occlusion. (1) F. Lecture: 1 hour. **Pavone**

The etiology of functional disturbances, analysis of occlusal relationships of the opposing arches and a rationale of therapy will be presented. The principles of occlusion as they apply primarily to adult clinical dentistry will also be discussed.

OPERATIVE DENTISTRY

115A. Operative Technics. (1) F. Laboratory: 3 hours. **Watkins**

115B-C. Operative Technics. (1-1) W, Sp. Laboratory: 2 hours, W; 3 hours, Sp. **Watkins**

116. Clinical Operative Technics. (2) Sp. Lecture: 1 hour. Clinic and demonstration: 2 hours. Prerequisite: Operative Dentistry 115C must be taken concurrently with Operative Dentistry 116. **Griffin**

120A-B-C. Operative Technics. (1-1-½) F, W, Sp. Prerequisite: Operative Dentistry 115A-B-C and Dental Technics 115A-C. Lecture: 1 hour F, W; 1 hour 5 weeks Sp. **Watkins**

125A-B-C. Operative Technics. (2-2-1) F, W, Sp. Prerequisite: Operative Dentistry 115A, 115B-C, 116; Fixed Prosthodontics 110A-B-C, 115A-B-C; Dental Technics 115A-C. Laboratory: 6 hours F, W; 3 hours Sp. **Watkins**

130A-B-C. Operative Theory. (3-1-1) Yr. Lecture: 3 hours F; 1 hour W; 1 hour Sp. Prerequisite: All previous operative lecture, laboratory, and clinical courses. **Schuchard, Nguyen, Smith, Soelberg, Stark**

This course must be taken concurrently with Operative Dentistry 139.

139. Clinical Operative Dentistry. (4) F, W, Sp. Prerequisite: Third-year standing in operative dentistry. **Schuchard and Staff**

Clinical instruction.

149. Clinical Operative Dentistry. (7) F, W, Sp. Prerequisite: Operative Dentistry 139. **Schuchard and Staff**

Continuation of Operative Dentistry 139.

180. Advanced Operative Dentistry Theory. (1) F. Lecture: 1 hour. Prerequisite: Operative Dentistry 130A-B-C. **Schuchard and Staff**

Lectures and televised demonstrations covering quadrant dentistry, washed field technics, complex restorations, analysis of re-

lated research, and clinical applications of the various restorative procedures.

180.1. Advanced Operative Dentistry Theory. (1) W. Lecture: 1 hour. Prerequisite: Operative Dentistry 180. **Schuchard and Staff**
Continuation of Operative Dentistry 180.

180.2. Advanced Operative Dentistry Theory. (1) Sp. Lecture: 1 hour. Prerequisite: Operative Dentistry 180.1. **Schuchard and Staff**
Continuation of Operative Dentistry 180.1. Organization of the material is planned in relation to progress of students enrolling in the 180 series.

189. Direct Gold Restorative Procedures. (1) F, W, Sp. Prerequisite: Open to fourth-year students with approval of the chairman of the division. Clinic: 3-6 hours. Enrollment limited to six students. **Schuchard**

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 will learn to use various materials including fibrous gold, Goldent, and Electroloy.

189.1. Advanced Clinical Operative Dentistry. (1-9) F, W, Sp. Prerequisite: All previous operative lecture, laboratory, and clinical courses and completion of Operative Dentistry 149. Clinic: Variable. **Schuchard and Staff**
Continues clinical experience at level of Operative Dentistry 149.

189.2. Advanced Clinical Operative Dentistry. (1-4) Sp. Clinic: 3-12 hours. Prerequisite: Approval of the chairman of the division. **Schuchard and Staff**

Advanced instruction in the field of clinical operative dentistry, utilizing procedures different from those presented at the level of Operative Dentistry 149 (quadrants, plastics).

199. Laboratory Project in Operative Dentistry. (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 division.

OPHTHALMOLOGY

Core Clerkship—Surgery 110 and 111 includes lectures and clinical experience in the diagnosis and care of eye diseases.

140.01. Clinical Clerkship. (1½ per week) Su, F, W, Sp. Prerequisite: Consent of the instructor. **Hogan**

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

140.02. General Clinical Ophthalmology. (1½ per week) F, W, Sp, Su. Prerequisite: Consent of the instructor. **Kimura**

Clinical observation of patients in clinic, wards, and surgery. Seminars on ophthalmic pathology, microbiology, and optics.

150.01. Ophthalmic Pathology. (1½ per week) F, W, Sp, Su. Prerequisite: Consent of the instructor. **Crawford**

Seminars include gross and microscope ophthalmic pathology with clinical correlation by work in Eye Clinic and in the wards.

198. Supervised Study in Ophthalmology. (1-5) F, W, Sp. **Hogan 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 Ophthalmology. (1-5) F, W, Sp. **Hogan and Staff**

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

400. Ophthalmology Staff Conference. (1-1-1) F, W, Sp. **Hogan**

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 ophthalmology which are discussed by faculty members.

401. Conferences. (1-1-1) F, W, Sp. First- and third-year residents. Elective for residents at *MZ, SF, HCH, and VA*. **UC Hogan**

Conferences include grand rounds, case presentations of hospital patients, review of recent literature in ophthalmology, and assigned reading with required reports.

402. Specialty Seminars. (6-6-6) F, W, Sp. Elective for residents at *MZ, SF, HCH, and VA*. **UC Hogan**

Seminars include didactic lectures in practical work covering pathology, neuro-ophthalmology, uveitis, physiological optics, refraction, ocular motility, glaucoma, and microbiology.

403. Basic Ophthalmologic Science Course. (6) 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. (1½ 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 diseases, extraocular muscles, medical ophthalmology, ophthalmoscopy, refraction, cataract, glaucoma, neuro-ophthalmology, plastic surgery, and tumor.

451. Clinical Ophthalmology. (1½ per week) Su, F, W, Sp. **Minas**

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.

454. Clinical Ophthalmology. (1½ per week) Su, F, W, Sp. **OC Beard, MZ Fine**

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. Specialty clinics at UC cover glaucoma and external diseases. Residents consult for other hospital services.

455. Fourth-Year Residency. (1½ 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 department chairman and the Dean.

457. Clinical Ophthalmology. (1½ per week) Su, F, W, Sp. **Schwartz, Hilton**

Residents, under supervision, are responsible for patient care including diagnostic studies, treatment of medical eye care, diagnosis, surgery, and follow-up treatment of surgical eye cases. Residents consult for other hospital services.

490. Clinical Ophthalmology. (1½ per week) Su, F, W, Sp. **SF Goodner**

Interns, under supervision of the attending staff, are responsible for patient care in wards and in the follow-up clinic, including diagnostic studies and consultation. This rotation is combined with patient-care assignments in the Otolaryngology Service.

ORAL BIOLOGY

120. Oral Medicine. (3) Sp. Lecture: 3 hours. Prerequisite: Oral Biology 126 and 127.

Chinn, Beumer, Silverman

Handling of patients is introduced by emphasizing history-taking, differential diagnosis, medical implications, clinical pathology laboratory in dental practice, and fundamentals of treatment. Classification, etiology, pathogenesis, diagnosis, and treatment of some benign lesions occurring in the oral cavity are covered.

126. Oral Biology. (5) F. Lecture: 4 hours. Laboratory: 4 hours. Prerequisite: Anatomy 118B-C.

Christie and Staff

Introduction to oral biology correlating morphology, chemistry, function of dental and paradental tissues. Topics include head and neck embryology, enamel, dentin, cementum, pulp and pulpal disease, dental caries, dental anomalies, tooth eruption, periodontium and periodontal disease, oral mucous membranes.

127. Introduction to Oral Pathology. (3) W. Lecture: 2 hours. Laboratory: 3 hours. Prerequisite: Oral Biology 126.

Hansen and Staff

Correlation of clinical oral pathology with histologic changes. Emphasis is placed on the microscopic and laboratory interpretation of cellular, tissue, and chemical alterations.

130A-B. Dental Caries, Plaque, and Fluorides. (1-1) F, W. Lecture and seminar: 1 hour. Prerequisite: Biochemistry 116, Oral Biology 126, Microbiology 126, and Pharmacology 126.

Finebrun and Staff

Caries process and prevention; stressing application of knowledge to clinical practice. Concepts of caries: diet, sugar substitutes, microflora, plaque-formation, structure, composition, prevention. Dentifrices. Saliva and tooth structure. Fluorides: systemic, topical, sociological factors; metabolism; mechanism of action. Occlusal sealants.

136A-B-C. Oral Biology. (0-0-2) F, W, Sp. Lecture and clinic: 2 hours. Prerequisite: Oral Biology 120, 126, and 127.

Chinn, Caswell and Staff

Group rotation through two five-week sections: (1) clinical diagnosis—patient presentation entailing history-taking, examination, diagnosis, treatment, and follow-up; (2) medicine—introduction to internal medicine and physical diagnosis.

140A-B-C. Clinical Pathology Conference. (1) F, W, Sp. Lecture: 1 hour. Prerequisite: Fourth-year standing. **Silverman and Staff**

Clinical pathology conference; biology, diagnosis and treatment of various oral lesions and associated patient problems. Some oral conditions are critically reevaluated in the light of current research advances. Specific medical knowledge is related to patient care.

170. Temporomandibular Joint Seminar. (1) F, W, Sp, SS. Lecture: 1 hour. Prerequisite: D.D.S. degree and approval of the instructor. Fourth-year students may take this course as an elective. **Taylor**

Seminar series covering differential diagnostic techniques and treatment approach to temporomandibular joint disease.

171. Oral Biology. (2) F, W. Lecture: 2 hours. Prerequisite: Oral Biology 126 and consent of the instructor. **Christie**

Advanced study of the oral tissues, with emphasis on their histophysiological aspects.

172. Current Oral Pathology. (2) Sp. Lecture: 2 hours. **Hansen and Staff**

A seminar designed to acquaint post-doctoral dental students with current advances, techniques, trends, and developments in the field of oral pathology.

174B-C. Dental Therapeutics. (2-2) W, Sp. Seminar: 2 hours. Prerequisite: Pharmacology 126 or equivalent. Fourth-year students may take this course as an elective. **Goodson**

The course will cover current aspects of preoperative and postoperative dental medication, anesthesia, antibiotic, and steroid therapy; also the handling of adverse drug reactions and medical emergencies will be considered.

175. Oral Biology. (2) W, Sp. Prerequisite: Biochemistry, pathology, and oral histology. Lecture: 2 hours. **Trowbridge**

Seminars on the biology and pathology of the dental tissues and periodontium with emphasis on pathology of the dental pulp.

176A-B-C. Oral Pathology Seminar. (2-2-2) F, W, Sp. Lecture and Seminar: 2 hours. **Hansen**

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.

179. Oral Medicine. (1) F, W, Sp, SS. Clinic: 3 hours. Prerequisite: D.D.S. degree and approval of the instructor. Fourth-year students may take this course as an elective. Because of patient commitments in the clinic, once selected, students may not withdraw. **Taylor**

Participation in the Temporomandibular Joint Clinic applying knowledge of history-taking and differential diagnosis; utilizing such diagnostic techniques.

185. Diagnostic Oral Pathology. (1-4) F, W, Sp, SS. Laboratory: 3-6 hours. Prerequisite: Fourth-year standing and approval of the instructor. **Hansen and Staff**

The advanced dental student participates in the activities of the Oral Pathology Diagnostic Laboratory. Emphasis is placed on diagnosis of oral disease and the correlation of clinical and histopathological findings. Limited to a maximum of two students.

186. Introduction to the Biological Sciences. (1) SS. Lecture, laboratory, demonstration: 9 hours (3 weeks). **Christie**

Introduction to the biological sciences taught in the first year in dentistry (anatomy, biochemistry, physiology). This course includes one-half day per week orientation to the campus.

189.01. Oral Medicine. (1) F, W, Sp. Clinic: 3 hours. Prerequisite: Oral Biology 136A-B-C, and consent of the instructor. **Ware, Silverman and Staff**

Participation in the Oral Medicine Clinic: apply knowledge of history-taking and differential diagnosis; utilize various diagnostic techniques such as biopsy, cytology, and certain clinical pathology laboratory tests; interpret results, prescribe treatment and follow-up; hospital rounds; and weekly seminar.

199. Laboratory Project in Oral Biology. (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 division.

202. Experimental Techniques in Oral Biology. (3) W, Sp. Lecture: 1 hour. Laboratory: 5 hours. Prerequisite: Oral Biology 126. **Trowbridge**

Principles and methods employed in studying oral tissues: histochemistry, autoradiography, decalcification procedures; cryostat sectioning, enzyme histochemistry, etc.

206. Seminar. (1-4) F, W, Sp. Seminar: 1 hour. **Silverman and Staff**

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.

207. Oral Biology. (1-4) F, W, Sp. **Silverman**

Advanced considerations in the field of histopathology. Applications of newer techniques and concepts for a better understanding of the oral cavity in health and disease will be made. Etiology, diagnosis, and therapeutics will be discussed.

209. Biology of Connective Tissue. (2) Sp. Prerequisite: Biochemistry 207 or consent of the instructor. Lecture: 2 hours. **Bhatnagar**

A seminar course in connective tissue biology, concerned mainly with the development, differentiation, and pathology of connective tissues; including such topics as regulatory controls of connective tissue macromolecules, fibrosis, wound healing, inflammation, tissue destruction, and selected genetic disorders.

220. Current Topics in Research in Oral Biology. (1½) F, W, Sp. Lecture: 1½ hours. **Staff**

A seminar series covering current advances

in research in oral biology in a systematic manner. Current literature will be critically reviewed by students under faculty supervision, or by faculty or guest lecturers.

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

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 masters degree.

300. Practicum in Teaching. (1-4) F, W, Sp. Prerequisite: Consent of the instructor. **Staff**

Practice in teaching in a course in oral biology under the supervision of the instructor in charge.

406. Seminar in Oral Biology. (1) F, W, Sp. Seminar: 1 hour. **Silverman and Staff**

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.

408A-B-C. Oral Pathology. (2) F, W, Sp. Seminar: 1 hour. **Hansen**

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.

489.1. Oral Medicine. (1) F, W, Sp. Clinic: 3 hours. Prerequisite: Dental degree and consent of the instructor. **Ware, Silverman and Staff**

Participation in the Oral Medicine Clinic: apply knowledge of history-taking and differential diagnosis; utilize various diagnostic techniques such as biopsy, cytology, and certain clinical pathology laboratory tests; interpret results, prescribe treatment and follow-up; hospital rounds; and weekly seminars.

489.2. Oral Medicine. (1) F, W, Sp, SS. Clinic: 3 hours. Prerequisite: Dental degree and consent of the instructor. **Ware, Taylor and Staff**

Participation in the Temporomandibular Joint Clinic applying knowledge of history-taking and differential diagnosis; utilizing such diagnostic techniques as lamigraphic X rays, occlusal analysis, and other specific joint tests; interpret results; prescribe treatment; and follow-up with patient reviews.

ORAL DIAGNOSIS

116A-B-C. Clinical Dentistry. (2-2-3) F, W, Sp. Lecture: 1 hour. Clinic: 3½ hours F. 3 hours W. 6 hours Sp. **Douglass**

An introduction to concepts of dental health and disease and a recognition of these

through a multidisciplinary clinical orientation program.

130. Oral Diagnosis and Treatment Planning. (1) F, W, Sp. Seminar: 10 hours per year. Prerequisite: Third-year standing. **Braly and Staff**

All aspects of examination and diagnosis as they apply to the practice of dentistry will be presented and discussed. Experience in treatment planning will be provided.

139. Clinical Oral Diagnosis. (Maximum of 2 at end of Oral Diagnosis 149) F, W, Sp. Clinic: Variable. Prerequisite: Third-year standing in oral diagnosis. **Braly and Staff**

Credit will be assigned on a point basis for independent case work-ups, case presentation, and additional time spent in the emergency clinic.

139.01. Oral Diagnosis Rotation. (1) F, W, Sp. Clinic: Block Rotation: 27 hours. Prerequisite: Third-year standing in oral diagnosis. **Braly and Staff**

Clinical experience and small group instruction is provided in oral diagnosis, emergency dental care, clinical photography, and roentgenologic interpretation.

149. Clinical Oral Diagnosis. (Maximum of 2 at end of course) SS, F, W, Sp. Clinic: Variable. Prerequisite: Fourth-year standing in oral diagnosis. **Braly and Staff**

Continuation of Oral Diagnosis 139.

149.01. Oral Diagnosis Rotation. (1) F, W, Sp. Clinic: Block Rotation: 27 hours. Prerequisite: Fourth-year standing in oral diagnosis. **Braly and Staff**

Continuation of Oral Diagnosis 139.1.

ORAL ROENTGENOLOGY

121. Roentgenologic Interpretation. (1) Sp. Lecture: 1 hour. **Parks**

131. Oral Roentgenology. (1) Sp. Lecture: 1 hour. **Parks**

The lectures cover basic theoretical knowledge of the use of X ray as an important diagnostic aid in dental practice in preparation for later learning the actual skill of taking anatomically accurate dental X rays and their interpretation.

135. Oral Roentgenology. (1) F. Laboratory rotation: 24 hours. Prerequisite: Oral Roentgenology 121. **Parks**

160B-C. Oral Roentgenology for Dental Hygiene Students. (1) W, Sp. Lecture: 1 hour. **Parks**

This course covers essentially the same material as Oral Roentgenology 120, but is designed to meet the special needs of dental hygiene students.

169B-C. Oral Roentgenology. (1) W, Sp. Laboratory and Clinic: 3 hours. **Parks**

Oral roentgenology for dental hygiene students.

186.1. Advanced Oral Roentgenology. (1-3) F, W, Sp. Seminar: 1-2 hours. Clinic: Varies 0-6. **Parks**

A continuation of Oral Roentgenology 121 and 135. Enrollment is subject to the approval of the Dean or the student's faculty adviser.

199. Laboratory Project in Oral Roentgenology. (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 section.

406. Advanced Oral Roentgenology. (1-4) F, W, Sp. Seminar and clinical experience: 1½-6 hours. **Parks**

Advanced oral roentgenology.

ORAL SURGERY

130A-B-C. Oral Surgery. (1) Yr. Prerequisite: Anatomy 117A-B and Microbiology 126. Lecture: 1 hour. **Huebsch and staff**

139. Clinical Oral Surgery. (3 at end of Oral Surgery 149) SS, F, W, Sp. Clinic: Variable. Prerequisite: Third-year standing in oral surgery. **Huebsch and Staff**

140. Oral Surgery. (1) F. Lecture: 1 hour. Prerequisite: Oral Surgery 130A-B-C. **Huebsch and Staff**

141. Medical Emergencies. (½) F, W. Seminar, demonstration, and participation: 6 hours rotation. One half of the fourth-year class is registered each quarter. **Klein**

Evaluation and treatment of medical emergencies that might be encountered in the dental office. Demonstration and student participation in cardiopulmonary resuscitation. Discussion of emergency drugs and their clinical application.

149. Clinical Oral Surgery. (3 at end of course) F, W, Sp. Clinic: Variable. Prerequisite: Fourth-year standing in oral surgery. **Huebsch and Staff**

170. Surgical Orthodontics. (2) W. Seminar: 2 hours. Prerequisite: Enrollment in postdoctoral specialty program in orthodontics or oral surgery. **Ware**

The course explores the various facial and occlusal deformities that justify combination surgery and orthodontic treatment. The student will be assigned a topic, do the necessary library review, and present a seminar under direction of the instructor.

171A-B-C-D. Applied Surgical Anatomy. (1-1-1-1) Su, F, W, Sp. Prerequisite: Limited to residents in oral surgery program. Laboratory: 3 hours. **Courage**

Relationship of gross anatomical structures of the head and neck are studied during laboratory dissection. Emphasis will be placed on the correlation of cadaver dissection findings to diagnosis and operating room surgery.

175. Oral Surgery. (10) Su. Prerequisite: Limited to oral surgery interns. Hospital and Clinic: 30 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. (5-5) F, W. Seminar: 2 hours. Hospital and clinical practice: 9 hours. Prerequisite: Limited to oral surgery interns. **Huebsch and Staff**

Continuation of Oral Surgery 175.

175.02. Oral Surgery. (12) Su. Seminar: 2 hours. Hospital and clinical practice: 12 hours. Prerequisite: Limited to oral surgery residents. **Huebsch and Staff**

Continuation of Oral Surgery 175.01.

175.03. Oral Surgery. (10) F. Hospital and clinical practice: 24 hours. Prerequisite: Limited to oral surgery residents. **Huebsch and Staff**

Hospital procedure, ward rounds, and clinical practice in several hospitals; 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. (5-5) Sp. Lecture: 2 hours. Hospital and clinical practice: 9 hours. Prerequisite: Limited to oral surgery residents. **Huebsch and Staff**

Continuation of Oral Surgery 175.03 with the addition of surgery of the jaws for correlation of such facial deformities as prognathism, apertognathia, and retrognathia. Temporomandibular joint surgery is taught.

175.05A-B. Oral Surgery. (12) Su. Hospital and clinical practice: 30 hours. Prerequisite: Oral Surgery 175.04B-C. Limited to oral surgery residents. **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. (10) F, W, Sp. Hospital and clinical practice: 30 hours. Prerequisite: Oral Surgery 175.05. Limited to oral surgery residents. **Huebsch and Staff**

Continuation of Oral Surgery 175.05.

189.01. Advanced Oral Surgery Clinic. (1-9) W, Sp. Prerequisite: Oral Surgery 140 and 149. Clinic: Variable. **Huebsch and Staff**

Additional clinical experience for students who have completed all clinical requirements.

189.2. Hospital Oral Surgery. (1-3) F, W, Sp. Clinic and Seminar: *VA*. Prerequisite: Oral Surgery 149A-B and approval of the instructor and Clinic Review Committee.

Ware, Courage

Limited experience in hospital oral surgery to include assisting and performing oral surgery procedures. Aspects of premedication as related to the ambulatory patient. Orientation in hospital decorum and operating room procedures.

189.3. Hospital Oral Surgery. (1-3) F, W, Sp. Clinic and Seminar: *SF*. Prerequisite: Oral Surgery 149A-B and approval of the instructor and the Clinic Review Committee.

Heusch 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. Orientation in hospital decorum and operating room procedures.

199. Laboratory Project in Oral Biology. (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 division.

489.1. Clinical Oral Surgery. (1) F, W, Sp. Prerequisite: Enrollment in dental internship program. Clinic: 1/2 day. **Courage**

This course is designed to teach the dental intern exodontia procedures under close supervision in the oral surgery clinic. The trainee takes responsibility for care of the oral surgery patient including preoperative evaluation, surgery planning, and postoperative care.

OROFACIAL ANOMALIES

170. Orofacial Anomalies. (2) F. Lecture: 2 hours. **Lawson**

Normal development of speech, consideration of speech patterns, habits, and defects as related to dental and orofacial problems.

171. Diagnosis and Treatment of Orofacial Anomalies. (2) F. Seminar and Clinic; 3 hours. **Harvold, Chierici**

Diagnostic, preventive, and corrective methods relative to patients with congenital malformations of the orofacial region are discussed and applied.

178B-C. Abnormal Facial Growth. (2-2) W, Sp. Seminar: 2 hours. **Harvold**

Diagnosis of orofacial malformations. Emphasis on interrelationship of morphology and physiology.

180.1. Speech Habilitation. (1) W. Seminar: 1 hour. **Lawson**

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.

186.1. Habilitation of Abnormal Orofacial Development. (1) F, W. Seminar and Clinic: 3 hours. Prerequisite: Fourth-year standing or consent of the instructor. **Chierici, Harvold**

The pathogenesis of jaw deformities, dental malocclusions, and speech disorders associated with congenital malformation are discussed. Instruction in diagnosis and in preventive and corrective treatment methods is given in the clinic.

187.1. Special Study for Advanced Undergraduates. (1) F, W, Sp. Seminar and Laboratory: 3 hours. Prerequisite: Fourth-year standing and consent of the instructor and the Clinic Review Committee. **Harvold**

Instruction in biometric technique and methodology is given in connection with a selected research project.

187.2. Diagnosis and Treatment Planning in Orofacial Malformations. (1) W, Sp. Seminar and Laboratory: 3 hours. Prerequisite: Orofacial Anomalies 187.1 and consent of the instructor and the Dean. **Harvold and Staff**

A clinical survey, a clinical experiment, or an animal experiment will be designed and analyzed.

401. Orofacial Prosthetics. (1-3) F. Seminar, Laboratory, and Clinic: 3-9 hours. Prerequisite: D.D.S. degree or equivalent. **Chierici and Staff**

Prosthetic habilitation of the patient with orofacial malformations. Discussions will include principles and techniques of construction of obturators, speech appliances, and retention bridges.

406A-B-C. Orofacial Orthopaedics. (1-3) F, W, Sp. Seminar, Laboratory, and Clinic: 3-9 hours. Prerequisite: D.D.S. degree or equivalent. **Harvold and Staff**

Diagnosis of orofacial malformations and current preventive and corrective measures. Emphasis will be placed on the interrelationship of morphology and physiology and the coordination of treatment by the various disciplines involved.

407. Orofacial Prosthetics. (1-3) W. Seminar, Laboratory, and Clinic: 3-9 hours. Prerequisite: D.D.S. degree or equivalent. **Chierici and Staff**

A course designed to acquaint the student with many facets of prosthetic management of acquired oral defects. Relationship of prosthetics to speech, mastication, deglutition, oral biology, and surgery will be discussed. The interdisciplinary management of these problems will be stressed.

408A-B-C. Speech Habilitation. (1-3) F, W, Sp. Seminar, Laboratory, and Clinic: 3-9 hours. Prerequisite: D.D.S. degree or consent of the instructor. **Lawson 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. (1) Sp. Lecture: 1 hour. **Meyers**

A description of the mode of growth of the craniofacial complex. General 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. (1-1) F, W. Lecture: 1 hour. Prerequisite: Orthodontics 121. **Scholz**

Recognition and treatment of the problems most commonly seen by the general practitioner.

132. Principles of Orthodontic Treatment. (1) Sp. Lecture: 1 hour. Prerequisite: Orthodontics 121 and 131A-B. **Scholz**

Discussion of diagnostic technics used in orthodontics, limitations of orthodontic treatment, and principles of treatment with Edgewise appliance.

141. Applied Growth and Development. (1) F. Lecture: 1 hour. Prerequisite: Orthodontics 121, 131A-B, and 132. **Meyers**

Application of general principles of growth and development to specific malocclusions and facial anomalies.

160. Principles of Orthodontics. (1) W. Lecture: 1 hour. **Meyers**

This is a discussion of recognition, etiology, and principles of orthodontics for the dental hygienist.

170A-B. Fundamentals of Orthodontics. (4-2) F, W. Seminar: 4 hours, F; 2 hours, W. **West**

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. **West**
Continuation of 170A-B.

171B-C. Orthodontics in Periodontic Practice. (1-1) W, Sp. Lecture: 1 hour. Prerequisite: Approval of instructor and enrollment in a postdoctoral specialty program. **Staff**

This course includes orthodontic principles and technics that are applicable in a periodontic practice.

171.01A-B-C. Craniofacial Growth. (2-2) F, W, Sp. Lecture: 2 hours. **Mathews**

Research methods in the study of growth with findings relative to sites of growth, serial development of pattern, factors influencing facial growth.

171.02. Biology of Dentofacial Development. (2) Sp. Prerequisite: Orthodontics 171.01 A-B-C. Lecture: 2 hours. **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.

171.03A-B-C. Orthodontics in Pedodontic Practice. (1-1-1) F, W, Sp. Prerequisite: Consent of the instructor and enrollment in a postdoctoral specialty program. Lecture: 2 hours. **West and Staff**

This course includes orthodontic principles and technics that are applicable in a pedodontics practice.

171.04A-B-C. Orthodontics in Pedodontic Practice. (1-1-1) F, W, Sp. Prerequisite: Orthodontics 173.03A-B-C. Lecture: 1 hour. **West and Staff**

Continuation of 171.03A-B-C.

172A. Cephalometrics. (2) F. Seminar: 2 hours. **Poulton**

Use of lateral headfilms; reliability of landmarks, applications in dentistry. Technique of tracing, evaluation of relationships, technique of superpositioning are discussed and illustrated.

172B. Cephalometrics. (2) W. Seminar: 2 hours. **Poulton**

Evaluation of various analyses used in orthodontic diagnosis including growth changes in serial studies.

172.01B-C. Introduction to Orthodontic Research. (2-1) W, Sp. Lecture: 2 hours W, 1 hour Sp. **Baumrind**

Introduction to design and analysis of clinical investigations. Special emphasis is

placed on critical reviews of selected scientific literature in terms of appropriate design, hypothesis testing, and generalization.

172.02A-B. Supervised Orthodontic Research. (1-1) F, W. Prerequisite: 172.01B-C.

Sheldon, Baumrind

Participation in group and individual clinical investigation including experience in hypothesis generation, sampling, measurement, data acquisition, and data analysis.

173.01A-B-C. Orthodontic Diagnosis. (3-3-3) F, W, Sp. Seminar: 3 hours.

West and Staff

Evaluation and treatment planning of various types of malocclusion.

173.02. Special Study. (1) F, W, Sp. Research: 3 hours.

Baumrind

Research project and preparation of thesis.

173.03A-B-C. Treatment Planning. (3-3-3) F, W, Sp. Seminar: 3 hours.

West Staff Seminar.

173.04. Treatment Planning. (3-3) SSI, SSII. Seminar: 3 hours.

West Staff Seminar.

173.05. Special Study. (1-1) SSI, SSII. Research: 3 hours.

Baumrind

Research project and preparation of thesis.

173.06. Treatment Evaluation. (3-3) SSI, SSII. Seminar: 5 hours.

West

An evaluation of orthodontic treatment and prognosis for stability of results of treatment.

174A-B. Biomechanics. (2-1) F, W. Seminar: 2 hours, F; 1 hour, W.

Wear

Development of force systems and advanced orthodontic techniques.

175. Cleft Palate Orthodontics. (2) F. Seminar: 2 hours.

Poulton

Principles of treatment.

176B-C. 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 differing from those taught in clinical courses.

177. Practice Management. (1) F. Seminar: 1 hour.

Scholz

Practice management and office administration.

178. Functional Occlusion. (2) F. Seminar: 2 hours.

West and Staff

Discussion of occlusion from the standpoint of the orthodontist and periodontist and from the standpoint of oral rehabilitation.

179.01A-B-C. Clinical Orthodontics. (5-5-5) F, W, Sp. Laboratory and clinic: 15 hours.

West and Staff

Laboratory instruction precedes clinical experience. A minimum of 1,080 hours are included in the series of courses Orthodontics 179.01A-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 179.01A-B-C.

179.03A-B-C. Clinical Orthodontics. (5-5-5) F, W, Sp. Clinic: 15 hours.

West and Staff

Continuation of Orthodontics 179.02.

179.04A-B. Clinical Orthodontics. (5-5) SSI, SSII. Clinic: 15 hours.

West and Staff

Continuation of Orthodontics 179.03A-B-C.

180. Evaluation of Malocclusions. (1) W. Seminar: 1 hour. Prerequisite: Orthodontics 121, 131A-B, 132, and 141.

Scholz

Discussion of diagnosis, prognosis, and approach to treatment of malocclusions. Includes treatment timing, limitations, and interdisciplinary problems.

181. Occlusion. (1) Sp. Seminar: 1 hour. Prerequisite: Orthodontics 121, 131A-B, 132, and 141.

Scholz

Various concepts of occlusion will be evaluated as they affect habilitation problems and functional problems of the temporomandibular joint.

189. Clinical Orthodontics. (1/2-1) F, W, Sp. Prerequisite: Orthodontics 121 and 131A-B. Third-year students may register for the spring quarter. Fourth-year students may register for the fall, winter, and spring quarters.

Scholz

Treatment of orthodontic problems related to general dental practice.

199. Laboratory Project in Orthodontics. (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 division.

ORTHOPAEDIC SURGERY

Core Clerkship—Surgery 110 and 111 includes seven to eight orthopaedic lectures, case presentations, and outpatient clinic assignments. Students are given instruction in methods of examination of patients with musculoskeletal disorders with emphasis on diagnosis and principles of treatment.

140.01. Orthopaedic Surgery Clinical Clerkship. (1 1/2 per week) Su, F, W, Sp. Prerequisite: Surgery 110 and 111.

UC Murray

Students, assigned to inpatient and outpatient services, receive instruction 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.

140.02. Orthopaedic Surgery Clinical Clerkship. (1 1/2 per week) Su, F, W, Sp. Prerequisite: Surgery 110 and 111.

Murray

Orthopaedic surgery clinical clerkships are offered in off-campus hospitals approved by the department chairman and the Dean.

140.03. Orthopaedic Surgery Clinical Clerkship at PMC. (1 1/2 per week) F, W, Sp, Su. Prerequisite: Surgery 110 and 111.

King and Staff

Instruction involves case demonstrations, consideration of fracture and diagnosis problems, and problems in reconstruction of the extremities. Patients are examined and their X rays reviewed.

140.04. Rehabilitation Clinical Clerkship. (1 1/2 per week) Su, F, W. Prerequisite: Medicine 131A-B.

Bard

Rehabilitation clinical clerkships are offered in off-campus hospitals approved by the Dean and the chairman of the department.

170.01. Biomechanics of the Locomotor System. (1) F, W, Sp, Su, SS. Prerequisite: Consent of the instructor.

Inman

Correlation of anatomy and function with demonstrations on patients.

400. Demonstrations in Orthopaedic Pathology. (1) F, W, Sp. First- and second-year residents.

UC Smyth

A didactic course in orthopaedic pathology conducted as demonstrations and presentations by faculty and students and illustrated by gross and microscopic specimens and case studies.

401. Lectures in Orthopaedic Pathology. (1) F, W, Sp. Third- and fourth-year residents.

UC Johnston

A lecture series covering tumors and infections of the musculoskeletal system, illustrated by microscopic slides and photographs of gross specimens.

402. Seminars in Physiology of Musculoskeletal System. (1) F, W, Sp.

UC Morris

Seminars cover connective tissue metabolism; muscle, bone, and joint physiology; preoperative and postoperative management of patients; wound infections; microbiology; and surgical principles.

403. Demonstrations in Gross and Functional Anatomy. (1) F, W, Sp.

UC Morris

Course includes lectures by students and

faculty on gross and functional anatomy, laboratory dissections of cadaver material, and demonstrations of surgical approaches.

404. Seminar in Orthopaedic Literature. (1) F, W, Sp. Residents at C, F, SF, SSF, UC, and VA.

UC Morris

Seminars are student presentations of selected orthopaedic surgery subjects featuring historical review complete with bibliography. They are moderated by an assigned faculty member.

405. Orthopaedic Research. (10) Su, F, W, Sp. First-year residents.

SF Bovill, SH I. Larsen, UC Samilson

Research projects are provided in orthopaedic surgery under the direction of a faculty member. Research activities include instruction in scientific methods, statistical analysis, and manuscript preparation.

406. Conference in Rheumatoid Arthritis. (1) Su, F, W, Sp.

UC Murray

Clinical instruction in the care and management of orthopaedic problems in rheumatoid arthritis and allied diseases. Cases are presented by residents to attending staff and rheumatology consultants.

407. Orthopaedic Surgical Conference. (1) Su, F, W, Sp.

H Smith

Seminars include presentation of problem cases by residents for consideration of diagnosis and treatment and discussion by the attending staff.

408. Orthopaedic Surgical Conference. (1) Su, F, W, Sp.

SF Bovill

Selected problems are illustrated by cases treated or under treatment. Cases are presented by the resident staff and discussed by members of the attending staff.

409. Orthopaedic Surgical Conference. (1) Su, F, W, Sp.

SSF L. Larsen

Conference with emphasis on children's problems in which residents make case presentation of inpatients for review and new patients for consideration of diagnosis and therapeutic plan.

411. Orthopaedic Surgical Conference. (1) Su, F, W, Sp.

VA Maurer

Conference includes review of admissions and discharges of hospitalized patients by the attending and consultant staffs. Cases are presented by the residents.

412. Orthopaedic Clinical Seminars. (1) Su, F, W, Sp.

CHMC Rowe, H Smith, SM W. Johnston

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 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).

414. Seminar in Orthopaedic Diagnostic Radiology. (1) F, W, Sp. *UC Steinbach*

Orthopaedic residents present cases for diagnosis and discussion.

430. Conference on Rehabilitation. (1) F, W, Sp. *UC Specht*

This conference includes case presentations, lectures, and discussion on new developments in rehabilitation.

431. Conference on Rehabilitation. (1) Su, F, W, Sp. *UC Bard*

This conference includes case reviews of patients referred for rehabilitation and special studies on comprehensive management including evaluation and disposition of patients (medical, social, vocational, prosthetic, psychiatric, and other paramedical factors).

432. Seminars in Rehabilitation Literature. (2) Su, F, W, Sp. *UC Specht*

Current literature in physical medicine and rehabilitation is presented. Seminars include presentation of selected topics, literature review, and discussion. Discussion is moderated by a faculty member.

450. Clinical Adult Orthopaedics. (1½ per week) Su, F, W, Sp.

F Cox, PMC Niebauer, KP J. Johnson, MZ Colloff, Q I. Larsen, RLA Perry, T I. Larsen, FR Hartwig, UC Murray

Residents are responsible for patient care in the wards and outpatient clinics including history-taking, physical examinations, laboratory tests, elective surgery, fracture treatment, plaster techniques, and consultations.

451. Clinical Pediatric Orthopaedics. (1½ per week) Su, F, W, Sp.

C L. Larsen, CHMC Rowe, 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.

452. Clinical Traumatic and Adult Orthopaedics. (1½ per week) Su, F, W, Sp.

H Smith, SF Bovill, SM W. Johnston, VA Maurer

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.

453. Clinical Orthopaedics. (1½ per week) Su, F, W, Sp. Chief resident. *UC Murray*

Under faculty supervision, the chief resident organizes care and referral of staff patients; supervises a weekly follow-up clinic; administers the teaching-bed fund; independently performs operative procedures in selected cases; advises assistant interns, residents, and fourth-year medical students; participates in paramedical teaching.

480. Clinical Orthopaedics, Rehabilitation. (1½ per week) Su, F, W, Sp. *UC Bard*

Residents are responsible for patient care in the wards under the direction of the attending staff, including history-taking, physical examinations, laboratory tests, rounds, and consultations.

481. Clinical Orthopaedics, Rehabilitation. (1½ per week) Su, F, W, Sp. *UC Specht*

Under the direction of the attending staff, residents are responsible for patient care in the outpatient clinics. Special emphasis is placed on geriatrics and chronic disabilities.

482. Clinical Electrodiagnosis. (1½ per week) Su, F, W, Sp. *UC Hirschberg, Wong*

Residents are instructed in electrodiagnosis and in techniques of electromyography by means of clinical demonstrations.

490. Clinical Orthopaedics. (1½ per week) Su, F, W, Sp. *SF Bovill*

Interns rotate through orthopaedic wards and followup clinics. They are responsible for the care of patients, under the direction of the attending staff, including history-taking, physical examination, X-ray conferences, and consultation.

OTOLARYNGOLOGY

Core Clerkship—Surgery 110 and 111 includes lectures and case demonstrations on the examination and diagnosis of otolaryngological diseases, particularly those related to trauma and infection. Instruction is given in the examination and diagnosis of ward and clinic patients with otolaryngological surgical diseases.

140.01. Clinical Otolaryngology Clerkship. (1½ per week) Su, F, W, Sp. Prerequisite: Medicine 131A-B. *Sooy*

A practical course in general otolaryngology in the outpatient clinics, hospital wards, and operating room. Instruction is given in common ear, nose, and throat surgical procedures.

140.02. Clinical Clerkship. (1½ per week) Su, F, W, Sp. Prerequisite: Medicine 131A-B. *Schindler and Staff*

Clinical clerkships in off-campus hospitals approved by department chairman and the Dean.

198. Supervised Study in Otolaryngology. (1-5) F, W, Sp. Prerequisite: Consent of the instructor. *Schindler 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 Otolaryngology. (1-5) F, W, Sp. Prerequisite: Consent of the instructor. *Schindler and Staff*

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

400. Didactic Lectures. (2) F, W, Sp. *Sooy*

Lectures cover the anatomical, physiological, and clinical aspects of otolaryngology.

401. Gross Anatomy of the Head and Neck. (1) W. *UC Sooy*

A formal course in the anatomy of the head and neck.

402. Gross Anatomy of the Head and Neck. (1½) F, W, Sp. *VA Ross*

Cadaver dissection and demonstrations are given by members of the staff.

403. Ear, Nose, and Throat Histology and Pathology. (½) F, W. *Sooy*

A review of ear, nose, and throat pathology from currently available gross and microscopic surgical pathological material from the operating rooms and pathology laboratories.

404. Staff Rounds. (2) F, W, Sp. *Sooy*

Weekly seminars are held with discussion of current problems concerning diagnosis and management of patients with references to current literature, modern theory, and controversial aspects.

405. Seminar in Audiology and Speech Pathology. (1) F, W, Sp. *UC Sooy*

Seminar includes psychophysical backgrounds in audiology, basic and advanced tests of hearing, functional hearing loss, hearing aids, testing of children, aural rehabilitation, and speech and hearing problems of children and adults.

406. Tumor Conference in Otolaryngology. (1) Su, F, W, Sp. *UC Dedo*

Conference includes presentation of patients, study of histories, and discussion of the treatment of the patient in light of modern progress in the field.

407. Animal Bronchoscopy. (½) F, W. *UC Sooy*

A laboratory course conducted at the Laboratory of Experimental Surgery covering experimental investigation and formal discussion of surgical problems and development of technical and laboratory methods to be applied to surgery.

409. Surgical Pathology. (1) Su, F, W, Sp. *VA Ross*

A review of all gross and microscopic pathology conducted by staff members in conjunction with the Department of Pathology.

410. Temporal Bone Anatomy and Pathology. (2) F, W. *UC Sooy*

A laboratory course conducted in the ear, 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.

411. Temporal Bone Anatomy and Pathology. (2) F, W, Sp. *VA Ross*

A review of surgical anatomy and dissection of fresh temporal bones conducted by members of the staff.

412. Tumor Board. (1) Su, F, W, Sp. *VA Ross*

Tumor cases are presented for diagnosis and recommendations for treatment.

413. Audiology Conference. (1) Su, F, W, Sp. *VA Ross*

Combined Audiology and Otolaryngology Staff Conference where all patients evaluated for hearing problems are presented and diagnosis and treatment recommendations are made.

414. Journal Club. (¼) F, W, Sp. *VA Ross*

A review of all current ear, nose, and throat literature.

450. Clinical Otolaryngology. (1½ per week) Su, F, W, Sp. *C Castro, PHS Boyle*

HCH Duggan, UC Sooy, SF Tipton

Residents, under supervision, are responsible for patient care in the wards and outpatient clinics including history-taking, physical examination, laboratory tests, preoperative and postoperative care, minor surgery, audiometry, vestibular testing, and consultations. Senior resident has certain administrative, teaching, and clinical responsibilities.

451. Clinical Otolaryngology. (1½ per week) Su, F, W, Sp. *VA Ross*

Residents, under supervision, are responsible for patient care in the wards and

outpatient clinics including history-taking, physical examination, laboratory tests, pre-operative and postoperative care, minor surgery, audiometry, vestibular testing, consultations, and Officer-of-the-Day duties; resident has certain administrative, teaching, and clinical responsibilities.

452. Technique of Endoscopy. (1½ per week) F, W, Sp. All residents except at *V.A.*

UC Sooy

A study of the techniques of endoscopy and some practical laboratory study including cadaver work.

453. Surgical Otolaryngology. (1½ per week) Su, F, W, Sp.

Sooy

Resident, in off-campus hospital for surgical training to satisfy Board requirements, is responsible, under supervision, for patient care in wards and clinic, assistance at operations. Diagnosis and treatment of surgical conditions in the head and neck area is stressed.

490. Clinical Otolaryngology. (1½ per week) Su, F, W, Sp.

SF Tipton

Interns, under supervision of the attending staff, are responsible for patient care in wards and in the followup clinic, including history-taking, examination, and consultation. This rotation is combined with patient-care assignments in the Ophthalmology Service.

PARASITOLOGY

135. Medical Parasitology. (3) W. Lecture: 2 hours. Laboratory demonstration: 2 hours.

Heyneman and Staff

An introduction to the protozoa, helminths, and arthropods that parasitize man. Parasite ecology and disease epidemiology, clinical and diagnostic aspects of parasitic diseases, and their treatment are considered in lecture and laboratory. Emphasis in the laboratory is on demonstration.

PATHOLOGY

100. Systemic Pathology. (6§) F.

Margaretten

Recent advances and classical concepts of diseases as they affect each of the organ systems are presented. Emphasis is given to correlation of functional and morphologic characteristics of diseases of organ systems.

101. General Pathology. (4§) Sp. *Friend*

The basic principles of pathology are presented in lectures, laboratories, and seminars. Morphologic and functional abnormalities in disease processes will be considered from ultrastructural, cellular, and tissue levels.

126. General Pathology. (5§) F. Lecture: 3 hours. Laboratory: 6 hours. Prerequisite: Anatomy 118B-C and Physiology 110B-C.

Lee and Staff

The fundamental principles of pathophysiology and physiologic changes incident to abnormal states. Inflammation, infection, degenerations, regeneration and repair, metabolic, vitamin and endocrine disturbances, and tumors are discussed and studied with the aid of gross material and microscopic slides.

135. Pathology. (4§) F. Prerequisite: Anatomy 115 and 116; Biochemistry 120A-B; and Physiology 120 and 125. Lecture: 3 hours. Laboratory: 3 hours.

J. Lee

The fundamental principles of pathophysiology changes incident to abnormal states. Inflammation, infection, degenerations, regeneration and repair, metabolic, vitamin and endocrine disturbances, and tumors are discussed.

150.01. Surgical Pathology. (1½ per week) Su, F, W, Sp. Prerequisite: Medicine 110 and Surgery 110.

Rambo, Rosenau

In the laboratory and seminars, students observe and participate in the study and diagnosis of surgical specimens, learn the technique of frozen sections, and assist in preparation of surgical pathology conferences.

150.02. Surgical Pathology and Postmortem Examination at SF. (1½ per week) Su, F, W, Sp. Prerequisite: Pathology 100.

McKay, Howes, Margaretten

Students prepare surgical specimens and perform autopsies under supervision and participate in teaching conferences.

150.03. Clinical Clerkship. (1½ per week) Su, F, W, Sp. Prerequisite: Pathology 100 and 101.

Moon

Clinical clerkships in off-campus hospitals approved by the Dean and the chairman of the department.

150.04. Clinical Clerkship in Pathology at HCM, SF, VA. (1½ per week) Su, F, W, Sp. Prerequisite: Medicine 110 and Surgery 110. Consent of the instructor.

HCM Rambo, Rosenau; SF McKay

The students participate in the work-up of autopsies and surgical specimens. They will be actively involved, given responsibility, and work closely with the faculty and house staff. Minimum length eight weeks, maximum twelve weeks, approval of instructor only.

150.05. Research in Pathology. (1½ per week) F, W, Sp, Su, SS I, SS II. Prerequisite: Consent of the instructor and department.

Moon and Staff

A research project under the direction of a member of the faculty.

170.01. Clinical Cytology. (3) Sp. Prerequisite: Anatomy 102, Pathology 100 and 101.

King, Hill

Lectures on basic fundamentals of cytology, normal cells, malignant cells, abnormal nonmalignant cells, collection and preparation methods. Microscopic examination of specimen and correlation of cellular and tissue pathology with colposcopic and clinical findings on examination of the patient.

170.02. Renal Biopsy Conference. (½) F, W, Sp. Prerequisite: Pathology 101.

Moon and Staff

Study of clinical and pathologic aspects of current cases of renal disease. New material is to be presented each quarter during an academic year, and thus students may take this course repeatedly for credit.

170.04. Pathologic Clinical Correlation. (1) F, W, Sp.

Moon, Rosenau

Presentation of selected current cases seen in the Hospital Pathology Laboratory. Discussion of pathologic findings and correlation with history, physical findings, radiologic findings, and treatment.

170.05. Neuropathology. (2) W. Prerequisite: Pathology 100.

Nielsen

Emphasis will be placed on clinicopathological correlation of neurological diseases by means of study of gross and microscopic material and participation in conferences.

170.06. Clinicopathological Conference. (1½) Su, F, W.

McKay, Margaretten, Howes

A correlative review of clinical pathological materials, with the Department of Medicine. Open to third- and fourth-year students.

170.07. The Autopsy and Its Clinical Applications. (½) F.

Haferkamp

Course on autopsies.

170.08. Studies in Pathology. (1-5) F, W, Sp, Su. Prerequisite: Consent of the instructor and chairman of the department.

Moon

Studies in pathology at other institutions with the approval of the chairman of the department.

180.01. Pathology. (3) F. Lecture: 3 hours. Prerequisite: Anatomy 118 and Physiology 150.

Lee and Staff

Parallels the lecture portion of Pathology 126. Elective in the dental hygiene curriculum.

198. Supervised Study in Pathology. (1-5§) F, W, Sp. Prerequisite: Consent of the instructor.

Moon 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 Pathology. (1-5§) F, W, Sp. Prerequisite: Consent of the instructor.

Moon and Staff

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

203A-B. Theoretical and Applied Pathology. (5-6) F, W. Prerequisite: Consent of the instructor. Lecture: 3-4 hours. Laboratory: 6-6 hours.

Moon and Staff

Lectures in general and systemic pathology and laboratory work in the surgical pathology laboratory. Study of pathologic techniques and tissue specimens. Emphasis will be given to lesions of the oral cavity. Opportunities provided to correlate clinical observations with biopsy material.

220. Seminar. (1) F, W, Sp. Prerequisite: Permission of the chairman of the department.

Moon and Staff

Faculty members and visiting professors discuss recent developments in diagnosis and research in pathology.

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

Moon and 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 masters 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.

400. Pathology Staff Seminars. (1-1-1) F, W, Sp. Interns and residents.

Moon and Staff

Faculty members and visiting professors discuss recent developments in diagnosis and research in pathology.

401. Special Pathology Seminars. (Arranged) Su, F, W, Sp. Interns and residents.

UC Moon

Seminars focusing upon the pathology of special areas of the body are conducted by specialists in the area under discussion. Correlation between the clinical manifestations of the disease and the gross and microscopic findings is emphasized.

402. Pathology Research. (1-8) Su, F, W, Sp. Elective. Interns and residents.

UC Moon, SF McKay, Margaretten

Students, under supervision, pursue original investigation in pathology and allied subjects. Investigators review the literature, make observations, and collect data correlating physiological-pathological concepts. They are encouraged to make original contributions.

404. Clinicopathological Conference. (1-1-1) F, W, Sp. **SF McKay, Margaretten**

Conference includes the collection of data and materials, summary of histories, and citation of pertinent literature by faculty. Residents participate in clinicopathological conferences where emphasis is placed on correlation of clinical manifestations of disease with clinical laboratory and autopsy findings.

450. Pathologic Anatomy. (5-10, 5-10, 5-10, 5-10) Su, F, W, Sp. Required for residents.

SF, UC, VA Moon

Theory and methodology of pathologic anatomy, interpretation and correlation of data, and study of literature.

495. Pathologic Anatomy. (1½ per week) Su, F, W, Sp. Required for interns.

SF, UC, VA Moon

Theory and methodology of pathologic anatomy, interpretation and correlation of data, and study of literature.

PEDIATRICS

110. Required Clerkship in Pediatrics. (1½ per week) F, W, Sp. Prerequisite: Medicine 131A-B. **Grumbach, Grossman**

Practical work including teaching in the ward, Newborn Nursery, and outpatient clinics with emphasis on case assignments. Seminars covering major aspects of pediatrics and infectious diseases and procedure demonstrations at UC and SF.

140.01. Advanced Clerkship. (1½ per week) Su, F, W, Sp. Prerequisite: Pediatrics 110 and Medicine 110. **Grumbach**

Advanced clerkship at UC, SF, L, K, CHMC. Includes an intensive care nursery, outpatient department acute care unit at UC; outpatient department at SF; inpatient and outpatient at CHMC; inpatient and outpatient at K, L.

140.02. Childhood Neurology. (1½ per week) Su, F, W, Sp. Prerequisite: Pediatrics 110 and Medicine 110. **Cohen, Berg**

Participation in childhood neurology studies being carried out in the department including work in Convulsive, Neurology, Cerebral Palsy, and Developmental Clinics and visits to special programs for children with neurological handicaps.

140.03. Community Pediatrics. (1½ per week) Su, F, W, Sp. Prerequisite: Pediatrics 110 and Medicine 110. **Malloy and Staff**

Individual programs will be arranged for students interested in gaining experience in community pediatrics. Placement programs

will include comprehensive care, public health, school health, private practice, and social agencies settings.

140.04. Pediatric Cardiology. (1½ per week) Su, F, W, Sp. Prerequisite: Pediatrics 110 and Medicine 110. **Rudolph**

Experience in cardiac evaluation and treatment including clinical work-up in the ward and clinic, cardiac catheterization, angiography, children's electrocardiographs, surgical management, and postoperative care.

140.05. Pediatric Private Practice. (1½ per week) F, W, Sp. Prerequisite: Pediatrics 110 and Medicine 110. **L. Smith**

Working experience with a pediatrician on the clinical faculty as he sees patients in his office and in the hospital.

140.06. Infectious Diseases at C. (1½ per week) F, W, Sp. Prerequisite: Pediatrics 110 and Medicine 110. **Leonards**

Participation in the care of patients in the infectious disease ward and in the work of the microbiology laboratory. Small investigative projects may be undertaken.

140.07. Introduction to Adolescent Medicine at C. (1½ per week) F, W, Sp. Prerequisite: Pediatrics 110 and Medicine 110. **R. C. Brown**

Supervised participation in care of hospitalized and ambulatory adolescent patients. The processes of normal physical and psychological growth at this particular stage of life are discussed in seminars with pediatricians, internists, psychiatrists, social workers, psychologists, nutritionists, and other allied health personnel.

140.08. Mental Retardation in Children at SS. (1½ per week) Su, F, W, Sp. Prerequisite: Pediatrics 110 and Medicine 110. **Coffin**

Course includes participation in the daily work and care of the retarded children at SS and attendance at teaching conferences.

140.09. Clinical Clerkship. (1½ per week) Su, F, W, Sp. Prerequisite: Pediatrics 110 and Medicine 110. **Grumbach**

Clinical clerkship in off-campus hospitals approved by the department chairman and the Dean.

140.10. Pediatric Outpatient at CHMC. (1½ per week) Su, F, W, Sp. Prerequisite: Pediatrics 110 and Medicine 110. **Gerden and Staff**

Students are assigned to the general diagnostic clinic for work with selected patients, experience in pediatric emergency clinic, and in selected specialty clinics and "team" conferences. Selected clinical research problems may be undertaken.

140.11. Pediatric Cardiology at CHMC. (1½ per week) Su, F, W, Sp. Prerequisite: Pediatrics 110 and Medicine 110. **Higashino**

Students participate in clinical experience including outpatient clinic, care of ward patients, cardiopulmonary laboratory, cardiovascular conferences, preoperative and postoperative care of surgical patients, and instruction in pediatric electrocardiography and vectorcardiography.

140.12. Inpatient Clinical Clerkships. (1½ per week) Su, F, W, Sp. Prerequisite: Pediatrics 110 and Medicine 110. **Grumbach**

All time to be spent on the inpatient service at UC and SF where student has clinical responsibility for selected pediatric patients.

140.13. Outpatient Clinical Clerkships. (1½ per week) F, W, Sp, Su. Prerequisite: Pediatrics 110 and Medicine 110. **Dower**

All time to be spent on the outpatient service at UC and SF where student has clinical responsibility towards pediatric patients.

140.14. Management of Juvenile Diabetes. (1½ per week) Su. Prerequisite: Pediatrics 110 and Medicine 110. Given at Diabetic Camp. **Olney**

Work under the direction of Dr. Olney in Diabetic Camp, clinical and management aspects of childhood diabetes. Students have an opportunity to participate in the operation of the camp program and treatment of many aspects of diabetes.

140.15. Outpatient Pediatrics at UC. (1½ per week) Su, F, W, Sp. Prerequisite: Pediatrics 110 and Medicine 110. **Dower and Staff**

Experience in direct patient care in the following clinics: General Pediatrics (including acute cases), Well Baby, Family Clinic, subspecialty clinics in medical and surgical pediatrics, and Child Study Unit. Individual programs arranged by Clinic Director and Chiefs of special areas.

140.16. Pediatric Nephrology. (1½ per week) Su, F, W, Sp. Prerequisite: Pediatrics 110 and Medicine 110. **Holliday, Piel, Potter**

Clinical experience in pediatric nephrology encompassing Pediatric Service at UC and SF. Experience with electrolyte problems, dialysis, and transplantation. Joint conferences with Medicine. Selected cases are subjects for in-depth study. Research projects may be arranged with instructors.

140.17. Clinical Genetics (1½ per week) F, W, Sp, Su. Prerequisite: Pediatrics 110 and Medicine 110. **C. Epstein, Hall**

The evaluation and management of children and adults with hereditary (including

cytogenetic) diseases, with particular emphasis on the biochemical and genetic mechanisms involved in the pathogenesis and transmission of these conditions.

140.18. Neonatology. (1½ per week) Su, F, W, Sp. Prerequisite: Pediatrics 110 and Medicine 110. **Phibbs**

Clinical experience in newborn nursery and newborn intensive care unit with emphasis upon physiological adaptations to extrauterine life.

140.19. Externship in Inpatient Pediatrics at C. (1½ per week) F, W, Sp. Prerequisite: Pediatrics 110 and Medicine 110. **Giammona**

Students participate in patient care in close association with the House Staff and clinical fellows both in wards caring for sick children and in Newborn Intensive Care Unit, and in rounds and conferences conducted by senior staff.

140.20. Externship in Ambulatory Pediatrics at C. (1½ per week) F, W, Sp. Prerequisite: Pediatrics 110 and Medicine 110. **Giammona**

Students participate in the comprehensive care of children. Experience with various illnesses is provided in appropriate specialty clinics. A wide variety of child care problems will be seen during visits to offices of senior pediatricians participating in the program.

140.21. Pediatric Allergy. (1½ per week) Su, F, W, Sp. Prerequisite: Pediatrics 110 and Medicine 110. **Deamer**

Diagnosis and treatment of asthma, allergic rhinitis, eczema, and pollenosis. Participation in activities of allergy trainees. Skin testing and preparation of treatment antigens.

140.22. Acute Care Pediatrics Clerkship. (1½ per week) Su, F, W, Sp. Prerequisite: Pediatrics 110 and Medicine 110. **Malloy**

Experience in direct patient care in the Pediatric Screening Clinic.

150.01. Pediatric Endocrinology and Metabolism. (1½ per week) Su, F, W, Sp. Prerequisite: Medicine 110 and Pediatrics 110. **Grumbach, Kaplan, Conte**

Participation in the clinical and investigative aspects of endocrine and metabolic problems in children. Students spend time in the laboratory, wards, and clinics.

150.02. Human Cytogenetics. (1½ per week) Su, F, W, Sp. Prerequisite: Medicine 110 and Pediatrics 110. **Grumbach, Conte**

Participation in human cytogenetic studies in children. Emphasis is on laboratory work with exposure to clinical problems and patients.

150.03. Experimental Cardiovascular Physiology. (1½ per week) F, W, Sp. Prerequisite: Pediatrics 110 and Medicine 110.

Rudolph, Hoffman

Project by arrangement with instructors.

150.04. Research in Pediatrics. (1½ per week) Su, F, W, Sp. **Grumbach and Staff**

Student research projects under guidance of faculty members. Programs must be approved by instructors. Students may initiate or continue research programs under guidance of faculty members.

160.01. Neonatology Seminars. (1) F, W, Sp, Su. Prerequisite: Students rotating in the nursery. **Kitterman**

Seminars in neonatology including fetal and newborn respiratory and cardiovascular physiology and selected aspects of the clinical care of newborn babies.

198. Supervised Study in Pediatrics. (1-5) F, W, Sp. Prerequisite: Consent of the instructor. **Grumbach 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 Pediatrics. (1-5) F, W, Sp. Prerequisite: Consent of the instructor. **Grumbach and Staff**

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

400. Pediatric Staff Conference. (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.

401. Pediatric-Roentgenology Conferences. (1½) Su, F, W, Sp. Interns and residents. **UC Gooding**

Conferences include review and discussion of recent X-ray studies of pediatric cases in the wards and outpatient service.

402. Pediatric Clinical Seminar. (1½) Su, F, W, Sp. Interns and residents. **UC Grumbach**

Seminar includes review and discussion of selected cases of unusual interest, reports on special topics with review of recent literature, and clinicopathological conference on pediatric cases.

450. Clinical Pediatrics. (1½ per week) Su, F, W, Sp. 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 has certain administrative, teaching, and clinical responsibilities.

451. Clinical Pediatrics. (1½ per week) Su, F, W, Sp. Residents. **SF Grossman**

Residents, under supervision, are responsible for patient care in the wards, communicable disease section, and outpatient clinic including history-taking, physical examination, laboratory tests, diagnosis, and treatment. Emphasis is on diagnosis and management of infection, trauma, and pediatric emergencies.

490. Clinical Pediatrics. (1½ per week) Su, F, W, Sp. Interns. **SF 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.

495. Clinical Pediatrics. (1½ per week) Su, F, W, Sp. Interns **UC Gumbach**

Interns, under supervision, are responsible for patient care in the wards and outpatient clinic including history-taking, physical examination, laboratory tests, diagnosis, and treatment.

PEDODONTICS

125. Pedodontic and Orthodontic Techniques. (1) Sp. Laboratory: 30 hours. **Morris, West and Staff**

Procedures include preparations for restoration of primary teeth with amalgam and stainless steel crowns; adaptation of bands and wires for active and passive appliances to intercept or treat malocclusions; practice in bracket welding and appliance fabrication.

130A-B-C. Pedodontics. (1) Yr. Prerequisite: Operative Dentistry 120A-B-C and 125A-B-C and Pedodontics 125. Lecture: 1 hour. **Morris and Staff**

139. Clinical Pedodontics. (1 at end of Pedodontics 149) F, W, Sp. Clinic: Variable. Prerequisite: Third-year standing in pedodontics. **Morris and Staff**

Clinical diagnosis, plan of treatment, dietary analysis and counseling, fabrication of appliances and treatment of children requiring tooth guidance, space management, and preventive orthodontics.

149. Clinical Pedodontics. (1 at end of course) F, W, Sp. Prerequisite: Pedodontics 139. Clinic: Variable. **Morris and Staff**
Continuation of Pedodontics 139.

149.01. Clinical Pedodontics Rotation. (2 total) F, W, Sp. Clinical rotation: 60 hours. Prerequisite: This course must be taken concurrently with Dental Auxiliary Utilization 149.01. **Morris and Staff**

Pedodontic restorative procedures will be performed during a two-week block rotation. The present concepts of four-handed dentistry will be applied while rendering comprehensive care for children. Units are assigned upon completion of clinic requirements.

170.01A-B-C. Clinical Pedodontics. (3-3-3) F, W, Sp. Clinic: 9 hours. **Morris and Staff**

Clinical experience in comprehensive care for children with congenital or hereditary anomalies. Management of rampant caries and techniques of instruction in home care and caries control. Current techniques in patient management and pain alleviation. Recognition and treatment of developing malocclusion.

170.02A-B-C. Clinical Pedodontics. (3-4, 3-4, 3-4) F, W, Sp. Clinic: 9-12 hours. **Morris and Staff**

Continuation of Pedodontics 170.01A-B-C.

171.01A-B-C. Pedodontics Seminar. (1-5, 1-5, 1-5) F, W, Sp. Seminar: 1-5 hours. **Morris**

Assigned readings of current and classical literature in pedodontics and allied specialty areas with review and discussion of each reading assignment to prepare student to evaluate critically dental literature.

171.02A-B-C. Pedodontics Seminar. (2-3, 2-3, 2-3) F, W, Sp. Seminar 2-3 hours. Prerequisite: Pedodontics 171.01A-B-C. **Morris and Staff**

Continuation of Pedodontics 171.01A-B-C.

172A-B-C. Clinic and Seminar. (2-2-2) F, W, Sp. Clinic and seminar: Totals 60 hours each quarter. **Morris and Staff**

Hospital procedures: admitting, orders, 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 chronically ill hospitalized patients.

173. Clinical Pedodontics. (3) SS. Prerequisite: 170.02. Clinic: 18 hours. **Morris and Staff**
Providing dental care for a non-English

speaking migrant population utilizing facilities of mobile clinic.

174. Pedodontic Seminar. (2) SS. Prerequisite: Pedodontics 171.01A-B-C. Seminar: 4 hours. **Morris and Staff**

Seminar on problems attending the care and treatment of non-English speaking children. Modifications of treatment plans to ensure dental care which requires a minimum of professional supervision for maintenance.

175A-B-C-D. Treatment Planning and Surgery Seminars. (1-1-1-1) F, W, Sp, SS. Seminar: 1 hour. **Shibata and Staff**

Students present and discuss management of their cases which 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.

176. Pediatric General Anesthesia. (3) SS. Children's Medical Center, East Bay. 90 hours. **Schroeder and Staff**

An introductory course in general anesthesia to familiarize the student with the problems and risks attendant upon general anesthesia, the agents used, and methods of delivery. Clinical experience under close supervision will be provided to each student.

177. Pediatric Hospital Dentistry. (2) F, W, Sp. Hospital Dentistry: 6 hours. **Morris and Staff**

Students will be assigned to an interdisciplinary health care team, and will be responsible for delivery of dental care for all in-house patients. Definitive dental care will be provided on the ward as well as in the operating room.

180.01B-C. Pedodontic Seminar. (1) W, Sp. Lecture: 1 hour. Prerequisite: Completion of third-year pedodontic lecture series and approval of the Dean. **B. Smith**

Documented discussions on occlusion, mixed dentition analysis, malocclusions, missing incisors and premolars, hypoplasias, anomalies, injuries, and oral manifestations of systemic disease. Designed for students considering pedodontics as a specialty. Counseling is provided for postdoctoral education.

189.01. Clinical Practice in Pedodontics. (½-9) F, W, Sp. Prerequisite: Pedodontics 130A-B-C and completion of clinical pedodontics and all third-year clinical and didactic courses in operative dentistry. Clinic: Variable. Enrollment is subject to the approval of the Clinic Review Committee. **Morris and Staff**

This course provides credit for additional clinical experience in pedodontics.

PERIODONTOLOGY

120. Periodontics Introduction. (1) Sp. Lecture and demonstration: 1 hour. **Parr**

The students' introduction to oral hygiene problems of the periodontal patient and the means and methods available to the dentist to motivate the patient to care for himself.

130. Periodontics. (1) F. Lecture: 1 hour. Prerequisite: Periodontology 120.

Parr and Staff

Clinical manifestations are correlated with histopathologic findings. Emphasis is given to diagnosis and etiology of inflammatory periodontal disease.

131. Periodontics. (1) W. Lecture and demonstration: 1 hour. Prerequisite: Periodontology 120 and 130.

Parr

The demonstration and rationale of surgical treatment of periodontal lesions.

139. Clinical Periodontics. (3½) SS, F, W, Sp. Prerequisite: Periodontology 120. Clinic: 3 hours SS; Variable, F, W, Sp.

Parr

Introduction to clinical techniques in oral prophylaxis in periodontal therapy in SSL. Treatment of periodontal diseases fall, winter, spring.

140. Periodontics. (1) W. Lecture: 1 hour. Prerequisite: Periodontology 130 and 131.

Parr

Rationale and technique in periodontal therapy.

149. Clinical Periodontics. (3) F, W, Sp. Clinic: Variable.

Parr and Staff

Continuation of Periodontology 139.

150. Periodontics. (2) Sp. Lecture and demonstration: 2 hours.

Parr, Lipson

The students' 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.

160. Periodontics. (1) F. Lecture: 1 hour. Prerequisite: Periodontology 150.

Armitage

Classification of periodontal diseases and methods of their prevention. Principles of pathology are correlated to therapeutic procedures. A faculty panel discusses the role of the hygienist in dental practice.

161. Periodontics. (2) W. Lecture and demonstration: 2 hours. Prerequisite: Periodontology 160.

Ross

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. Laboratory: 3 hours.

Dienstein

Dynamics of inflammation and its role in the periodontal tissues.

171A-B-C. Clinical Periodontics. (F-0, W-4, Sp-8) Laboratory Clinic: 12 hours W; 24 hours Sp.

Shibata, Green and Staff

Clinical procedures in periodontal therapy.

173.01. Periodontal Therapy. (2) SS. Clinic: 60 hours. Prerequisite: Periodontology 171A-B-C.

Shibata and Staff

Clinical 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. Clinic: 12 hours. Prerequisite: Periodontology 171A-B-C.

Shibata, Green and Staff

Advanced clinical procedures in periodontal therapy.

173.03. Periodontal Therapy. (2) SS. Clinic and seminar: 60 hours. Prerequisite: Periodontology 173.02C.

Shibata, Green and Staff

Advanced surgical techniques in management of periodontal lesions.

174. Periodontics. (1) Sp. Lecture: 1 hour. 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 Seminar. (Sp-2, SS-1, W-1, F-0.) F, W, Sp, SS. Lecture: 1-2 hours.

Shibata and Staff

Students present and discuss management of their 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.

176. Original Investigation in the Field of Periodontology. (1-5) F, W, Sp. Research: 3-15 hours.

Zipkin and Staff

177. Seminar on Periodontal Surgery. (2) F. Seminar: 2 hours.

Raust

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. Lecture: 1 hour.

Noble

Objective of this course is to provide a broad concept of the principles of occlusion, upon which definitive therapeutic procedures can be based.

180.02A-B-C. Advanced Periodontics. (1-1-1) F, W, Sp. Prerequisite: Periodontology 130 and 131 and consent of the instructor. Limited enrollment.

Green and Staff

Study in depth, with literature review and seminar discussions of areas of periodontology having major clinical significance.

180.03A-C. Periodontal Surgical Techniques. (1-1) F, Sp. Lecture: 1 hour. Prerequisite: Periodontology 130 and 131. Periodontology 140 is taken between the two quarters of Periodontology 180.03A-C. Limited enrollment.

Shibata, McGirl

Surgical techniques are presented which may be used to treat lesions occurring in the hard and soft tissues of the periodontium.

189.01. Clinical Periodontics. (½-9) F, W, Sp. Prerequisite: Periodontology 149. Clinic: Variable.

Green and Staff

Continues clinical experience beyond the level of Periodontology 149.

199. Laboratory Project in Periodontology. (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 division.

200. Introduction to Research Methodology. (2) Sp. Prerequisite: Biochemistry 116 or equivalent. Research: 2 hours.

Zipkin, Bhatnagar

An introductory course directed to implement and refresh the research needs of the professional postdoctoral students and candidates for the M.S. in Oral Biology. Lectures and demonstrations in tissue culture, chromatography, radioisotopes, spectrophotometry, enzymes, electron microscopy, histochemistry, and autoradiography.

209. Periodontology. (2) F, W, Sp. **Shibata**

Seminar designed to correlate basic sciences with problems in periodontology and evaluate concepts in the direction of research, clinical application, and teaching. Selected papers in the literature will be reviewed and evaluated. Other instructors will be invited to participate.

PHARMACEUTICAL CHEMISTRY

120. Principles of Pharmaceutical Chemistry. (3§) F. Prerequisite: Chemistry 113. Lecture: 3 hours.

Jorgensen, Castagnoli

A study of physicochemical and biological factors which contribute to drug action; *in vivo* and *in vitro* biotransformations of drugs, and related organic compounds.

121. Principles of Pharmaceutical Chemistry. (2) W. Prerequisite: Pharmaceutical Chemistry 120 and concurrent enrollment in Pharmacology 121. Lecture: 2 hours.

Jorgensen, Wolf

A systematic survey of the chemical features of synthetic drugs, including correlations between chemical structure and biological activity. Emphasis on steroids, hormones, and drugs for metabolic disorders.

122. Principles of Pharmaceutical Chemistry. (3) Sp. Prerequisite: Pharmaceutical Chemistry 120. Lecture: 3 hours.

Brochmann-Hanssen, McDonagh

A systematic survey of the chemical features of synthetic drugs, including correlations between chemical structure and biological activity. Emphasis on drugs affecting the autonomic nervous and cardiovascular systems as well as renal function.

132. Principles of Pharmaceutical Chemistry. (3) F. Prerequisite: Pharmaceutical Chemistry 120. Lecture: 3 hours.

Brochmann-Hanssen, Jorgensen

A systematic survey of the chemical features of synthetic drugs, including correlations between chemical structure and biological activity. Emphasis on drugs affecting the central nervous system.

134. Principles of Pharmaceutical Chemistry. (2) Sp. Prerequisite: Pharmaceutical Chemistry 120 and concurrent enrollment in Pharmacology and Toxicology 134. Lecture: 2 hours.

Pratt

A systematic survey of the chemical features of synthetic drugs, including correlations between chemical structure and biological activity. Emphasis on anti-infective and anti-neoplastic drugs.

151. Pharmaceutical Analysis. (3) W. Prerequisite: Chemistry 113 and 115. Lecture: 3 hours.

Brochmann-Hanssen

Principles of pharmaceutical analysis used for evaluation of drugs and dosage forms, with special emphasis on modern separation techniques and in instrumental methods of analysis.

152. Radionuclides in Biology and Medicine. (1§) F. Lecture: 1 hour.

Peng, Powell

Discussion will be on radionuclides in frequent use in biology and medicine. The course will be oriented towards topics of broad interest.

153. Radiopharmaceutics. (1§) W. Prerequisite: Pharmaceutical Chemistry 152 or 160. Lecture: 1 hour. **Peng, Price**

A study of radionuclides used in nuclear medicine as pharmaceuticals. Dosage form design and related aspects will be discussed.

154. Pharmaceutical Quality Control. (2) W. Prerequisite: Pharmacy 455; Pharmacy 456 completed or in progress. Lecture: 2 hours. **Brochmann-Hanssen**

General principles of total quality control applied to the manufacture of pharmaceuticals, introduction to statistical quality control, its application to process studies, and evaluation of dosage forms. Consideration given to simplified quality control systems for small-scale manufacturing and hospital pharmacy.

155. Physical Measurements. (4§) Sp. Prerequisite: Physics 6A-B-C and Mathematics 16A-B, or equivalent. Lecture: 3 hours. Laboratory: 3 hours. **F. Goyan**

The fundamentals of physical measurement applied to the selection and use of common scientific instruments.

156. Pharmaceutical Analysis. (2) Sp. Prerequisite: Pharmaceutical Chemistry 151. Laboratory: 6 hours. **Brochmann-Hanssen**

Experiments in pharmaceutical analysis applied to drug entities, dosage forms, and samples of biological origin.

157. Bioanalytical Theory and Techniques. (3) Sp. Lecture: 1 hour. Laboratory: 6 hours. **Martin, Rowland, Brochman-Hanssen**

Analytical theory and techniques for determining drugs and metabolites in biological fluids.

158. Radioisotope Measurements. (1) Sp. Prerequisite: Pharmaceutical Chemistry 153 or consent of the instructor. Laboratory: 3 hours. **Peng**

Detection and measurement of radionuclides commonly used in biology and medicine.

160. Fundamentals in Radioactivity. (2§) F, W, Sp. Lecture: 2 hours. **Perez-Mendez, Kaufman**

This course will treat the principles in physical decay of radionuclides, characteristic of nuclear emissions, interaction with matter, and related aspects in radioactivity.

161. Basic Techniques in Nuclear Radiation Detection. (1§) Sp. Prerequisite: Pharmaceutical Chemistry 160 or consent of the instructor. Lecture: 1 hour. **Perez-Mendez, Kaufman**

Emphasis of the course will be on the use

of instruments and various methods in detection and measurement of nuclear emissions.

162. Radioisotope Imaging. (1§) Sp. Prerequisite: Pharmaceutical Chemistry 153 or 161, or consent of the instructor. Lecture: 1 hour. **Powell, Price**

This course will treat the theory and methodology in the application of radionuclides to organ imaging in nuclear medicine.

170. Group Studies Course. (1-4) F, W, Sp. Prerequisite: Permission to enroll must be obtained from the instructor and student's adviser. No final examination. Graded on a passed-not passed basis. **Staff**

Group studies of selected topics in pharmaceutical chemistry.

198. Supervised Study in Pharmaceutical Chemistry. (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 Pharmaceutical Chemistry. (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. Physical Chemical Properties and Biological Activity. (1) W. Prerequisite: Consent of the instructor. Lecture: 1 hour. **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 the instructor. Lecture: 2 hours. **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 the instructor. Lecture: 1 hour. **Kuntz**

A review of protein and nucleic acid structures. Emphasis will be on 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. Prerequisite: Consent of the instructor. Lecture: 1-2 hours. **Castagnoli, Matin**

Study of the in-vitro and in-vivo biotransformation of foreign compounds with particular emphasis on drugs. When possible,

detailed chemical and biochemical mechanisms will be considered.

204. Hormones. (3) W. Prerequisite: Consent of the instructor. Lecture: 3 hours. **Wolff, Jorgensen**

Lectures and conferences dealing with structure-function relationships and action of hormones at the molecular level. Special emphasis will be given to steroids and peptide hormones.

206. Modern Techniques in Pharmaceutical Chemistry. (2) W. Prerequisite: Chemistry 113, 157, or equivalent. Chemistry 165 is suggested. Lecture: 2 hours. **Craig**

Principles and methods of some of the modern techniques used in pharmaceutical chemistry: liquid-solid, liquid-liquid, and gas-liquid chromatography, ion exchange, counter-current separation, vacuum techniques, etc.

207. Experiments in Modern Pharmaceutical Chemical Techniques. (2) W. Prerequisite: Chemistry 113, 157, or equivalent. Chemistry 165 is suggested. Pharmaceutical Chemistry 206 should be taken concurrently. Laboratory: 6 hours. **Craig**

Laboratory work illustrating some of the modern techniques used in pharmaceutical chemistry, including chromatography, ion exchange, counter-current separation, and vacuum techniques.

211. Selected Topics in Pharmaceutical Chemistry. (2) Sp. Prerequisite: Pharmaceutical Chemistry 120. **Jorgensen**

Reports and discussion of topics of current interest in pharmaceutical chemistry, with emphasis on relationships between chemical structure, physical properties, and biological response.

213. Basic Considerations in the Kinetics of Drug Absorption and Disposition. (3) F. Prerequisite: Chemistry 115. Calculus background is suggested. Lecture: 2 hours. Laboratory: 3 hours. **Rowland, Tozer and Staff**

A basic study of the concentration-time course of drugs and their metabolites, methods of pharmacokinetic analysis, and the design of dosage regimen. Laboratory emphasizes the application of electronic calculators and analog computers.

214. Advanced Aspects of the Kinetics of Drug Absorption and Disposition. (3) Sp. Prerequisite: Pharmaceutical Chemistry 213 and Biochemistry 202 or its equivalent. Lecture: 2 hours. Laboratory: 3 hours. **Riegelman, Benet and Staff**

Advanced consideration of pharmacokinetics including multicompartment 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 computational methods.

215. Aspects of the Mechanism of Drug Action. (2) Sp. Prerequisite: Biochemistry 120B. Graduate or equivalent standing in Pharmaceutical Chemistry. **Eiler**

Nature of receptors at the biochemical level, action of drugs at the level of feedback mechanisms, the physical chemical aspects of drug activity, and allosterism vs. isosterism as bases for hypothesis building.

216. Biochemistry and Drug Action. (2) Sp. Prerequisite: Pharmaceutical Chemistry 215. Lecture: 2 hours. **Eiler**

Genetic mechanism and drug action, cell division and antimetabolites, adaptive phenomena in relation to control mechanisms, and the uncoupling agents.

220. Graduate Seminar Program. (1) F, W, Sp. **Staff**

A program involving the presentation of core material in pharmaceutical chemistry in the medicinal chemistry and pharmacetics pathways. The presentations are made by graduate students and examination is 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. Graded on a pass or fail (not pass) basis.

230A. Spectroscopy. (4) Sp. Prerequisite: Chemistry 162 or equivalent. Lecture: 3 hours. Laboratory: 3 hours. **Shetlar**

The theory and application of molecular electronic and vibrational spectroscopy; optical rotatory dispersion and circular dichroism. Given in alternate years.

230B. Spectroscopy. (4) Sp. Prerequisite: Chemistry 162 or equivalent. Lecture: 3 hours. Laboratory: 3 hours. **Kollman, Weinkam**

The theory and application of nuclear magnetic resonance and electron-spin resonance; mass spectrometry. Given in alternate years.

231. Spectroscopy. (2) Sp. Prerequisite: Pharmaceutical Chemistry 230A. Lecture: 2 hours. **Shetlar**

Selected topics in spectroscopy and related areas. The content of this course

changes, as in the case of seminars. Hence, it may be repeated for credit.

240. Radiochemical Synthesis. (1-2) F, W, Sp. Prerequisite: Consent of the instructor. Laboratory: 3-6 hours. **Peng**

Theory and techniques related to the synthesis of isotopically labeled organic compounds. May be repeated for credit with consent of the instructor and graduate adviser.

241. Radiobiochemical Analysis. (1) W. Prerequisite: Consent of the instructor. Laboratory: 3 hours. **Peng**

Experimental techniques related to various aspects of radioassay 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 the instructor. Lecture: 1 hour. **Licko, Benet, Peng**

Discussions on the theory and principles in the use of radionuclides as tracers in biological systems. Emphasis will be placed 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 the instructor. Lecture: 1 hour. **Harris, Painter, Peng**

This course will discuss the effects of ionizing radiation on chemical and biological systems.

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

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

For graduate students engaged in writing the thesis for the masters degree.

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

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

PHARMACOGNOSY

150. Advanced Antibiotics. (3) W. Prerequisite: Permission to enroll in this course must be obtained from the instructor. No final examination. Lecture and conference: 3 hours. **Pratt**

Selected topics from the current literature are discussed. Class limited to ten students.

151. Pharmacognosy. (3) Sp. Lecture and conference: 3 hours. **Pratt**

Drugs from plants and animals, empha-

sizing the cell and the physicochemical and physiologic properties of its products as the basis of their medicinal and pharmaceutical uses.

155. Powdered Vegetable Drugs and Spices. (3) W. Prerequisite: Permission to enroll in this course must be obtained from the instructor. Lecture and conference: 1 hour. Laboratory: 6 hours. **Pratt**

Microscopy of the more important powdered vegetable drugs and spices; detection of impurities and adulterants.

170. Group Studies Course. (1-4) F, W, Sp. Prerequisite: Permission to enroll must be obtained from the instructor and the student's adviser. No final examination. Graded on a passed-not passed basis. **Pratt**

Group studies of selected topics in pharmacognosy.

198. Supervised Study in Pharmacognosy. (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 Pharmacognosy. (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.

PHARMACOLOGY

100A-B. Medical Pharmacology. (3§) F, (5§) W. Prerequisite: Biochemistry 100 and Physiology 100 or equivalent. Lecture: 3 hours, F; 5 hours, W. **Katzung and Staff**

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. Lecture: 1 hour. **Sutherland and Staff**

Systematic survey of action and uses of drugs with emphasis on steroids, hormones, and drugs for metabolic disorders.

125. Pharmacology and Toxicology. (4§) Sp. Prerequisite: Biochemistry 120A-B and Physiology 120 and 125. Lecture: 3 hours. Laboratory: 3 hours. **Burkhalter, Hondeghem**

Systematic survey of action and uses of drugs acting on autonomic nervous and cardiovascular systems and the kidneys

126B-C. Dental Pharmacology. (2§) W, (4§) Sp. Prerequisite: Physiology 110B-C and Biochemistry 116. Lecture: 2 hours, W; 3 hours, Sp. **Jensen, Goodson**

The object of this course is to acquaint the dental and dental hygiene students with the fundamentals of pharmacology. Various classes of drugs are examined in regard to actions, absorption, fate, excretion, and toxicity. Agents useful in dentistry are emphasized.

130. Toxicology. (2) W. Prerequisite: Pharmacology 125 and 136. Lecture: 2 hours. **Hodge, Hine**

The occurrence, mode of action, recognition, and treatment of poisoning by environmental chemicals and therapeutic agents.

134. Pharmacology and Toxicology. (1§) Sp. Prerequisite: Concurrent enrollment in Pharmaceutical Chemistry 134. Lecture: 1 hour. **Apple and Staff**

Systematic survey of action and uses of anti-infective and antineoplastic drugs.

136. Pharmacology and Toxicology. (4§) F. Prerequisite: Pharmacology and Toxicology 125. Lecture: 3 hours. Laboratory: 3 hours. **E. Way and Staff**

Systematic survey of action and uses of drugs acting on the central nervous system.

150.01. Pharmacology Research. (1½ per week) F, W, Sp, Su. Prerequisite: Consent of the instructor. **Featherstone and Staff**

Students perform individual research in a field of their choice with the guidance and supervision of a faculty member.

170. Group Studies Course. (1-4) F, W, Sp. Prerequisite: Consent of the instructor and adviser. No final examination. Graded on a passed-not passed basis. **Staff**

Group studies of selected topics in pharmacology.

170.01. Experimental Techniques in Pharmacology. (1-5) SS I. Prerequisite: Consent of the instructor and completion of biochemistry, physiology, and pharmacology courses. **Loh, Trevor**

An elective course in practical laboratory experience to acquaint the student with biochemical and physiological techniques and in the study of drug action in systems from the subcellular level to the intact animal.

192. Physiological Techniques in Pharmacology. (3) F, W, or Sp. Prerequisite: Consent of the instructor. Laboratory: 9 hours. **Katzung**

Principles and applications of physiological techniques used in the study of drugs.

Emphasis placed on the study of cardiovascular and autonomic agents.

193. Special Topics in Pharmacology and Toxicology. (1-3§) F, W, Sp. Prerequisite: Consent of the instructor. Lecture: 1-3 hours. **Staff**

A seminar type course covering various aspects of pharmacology and toxicology.

194. Biochemical Techniques in Pharmacology. (1-3§) F, W, Sp. Prerequisite: Consent of the instructor. Laboratory: 3-9 hours. **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. **Featherstone, Katzung**

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 Pharmacology. (1-5§) F, W, Sp. **Katzung and Staff**

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

206A-B-C. General Pharmacology. (3-3-3) F, W, Sp. Prerequisite: Consent of the instructor and Biochemistry 206A; also Physiology 206B and C. **E. Way, Burkhalter, Sutherland and Staff**

Lecture-conference course 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) F, W or Sp. Prerequisite: Pharmacology 194 or consent of the instructor. Lecture: 3 hours. **Kun**

Advanced biochemical 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 experiments in novel subjects.

210A-B-C. Advanced Toxicology. (1-2, 1-2, 1-2) F, W, Sp. Prerequisite: Consent of the instructor. Lecture: 1-2 hours. **Hine, Meyers, Hodge, Pasi**

A detailed examination of the field of toxicology as it relates to agricultural, environmental, forensic, industrial, military, regulatory, and therapeutic problems. Emphasis

placed on mechanism of action of toxic substances. Current advances and classical concepts of toxicology are presented.

220. Seminar. (0-1) F, W, Sp. **Staff**

Seminars to discuss present methods and problems in current teaching and research in pharmacology and toxicology.

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

292. Physiological Techniques in Pharmacology. (3) W. Prerequisite: Pharmacology 206A or equivalent and consent of the instructor. Laboratory: 9 hours. **Katzung**

Principles and applications of physiological techniques used in the study of drugs. Emphasis is placed on the study of cardiovascular and autonomic agents.

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 masters 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.

300A-B-C. Practicum in Teaching. (1-3, 1-3, 1-3) F, W, Sp. Prerequisite: Advancement to candidacy for the Ph.D. degree. **Sutherland and Staff**

Opportunity is provided to participate in a formalized way in the teaching of pharmacology under the direction of the faculty.

PHARMACY

110. Orientation in Pharmacy. (2) F. Conference and field observation; 3-4 hours. **Orr and Staff**

An introduction to the scope of pharmaceutical practice involving field trips to and participating in the various settings where the pharmacist and the patient interact.

115. Pharmaceutics and Physical Pharmacy. (4) W. Prerequisite: Chemistry 115 and concurrent enrollment in Chemistry 114. Lecture: 3 hours. Laboratory and conference: 3 hours. **Orr, Lem**

Study of how various dosage forms have utility as drug delivery systems in particular clinical situations, including a discussion of physical and biological factors which interact and dominate the design of delivery systems. Laboratory preparation of basic drug delivery systems.

116. Pharmaceutics and Physical Pharmacy. (4) Sp. Prerequisite: Pharmacy 115 and Chemistry 116. Lecture: 3 hours. Laboratory and conference: 3 hours. **Orr, Lem**

A continuation of Pharmacy 115, plus a consideration of the importance and use of drug standards.

127. Prescription Study and Practice. (4) F. Prerequisite: Pharmacy Administration 112. Lecture: 2 hours. Laboratory and conference: 6 hours. **Lem, Day**

Application of philosophical, ethical, and legal principles to the practice of the profession of pharmacy. Due consideration is given to the dispensing of prescriptions.

128. Biopharmaceutics: General Aspects of Physiological Availability of Drugs. (3) W. Prerequisite: Pharmacy 116. Lecture: 3 hours. Conference: 1-2 hours. **Rowland, Tozer**

The interrelationships among the properties and pharmaceuticals, their dosage forms, and their pharmacodynamic effects.

129. Biopharmaceutics: Special Aspects of Physiological Availability of Drugs. (4) Sp. Prerequisite: Pharmacy 128. Lecture: 3 hours. Laboratory and conference: 3-4 hours. **Tozer, Rowland**

A continuation of Pharmacy 128.

130. Clinical Pharmacy. (5) F. Prerequisite: Pharmacology 125. Lecture: 4 hours. Conference: 2 hours. **Kimble, Riegelman and Staff**

Orientation to selected areas of medical practice, the clinical evaluation and comparison of drugs used in these areas, and the biopharmaceutics of the drug combinations and products.

131. Clinical Pharmacy. (6) W. Prerequisite: Pharmacy 130. Lecture: 5 hours. Conference: 2 hours. **Kimble, Benet, Riegelman and Staff**

A continuation of Pharmacy 130.

132. Clinical Pharmacy. (7) Sp. Prerequisite: Pharmacy 131. Lecture: 6 hours. Conference: 2 hours. **Kimble, Benet, Riegelman and Staff**

A continuation of Pharmacy 131.

136. Preclerkship Orientation. (1½) F, W. Prerequisite: Third-year standing. Conference: 3 hours. **Tong, Shimomura**

An orientation to clinical services, including patient interview techniques, monitoring, charting; training in literature retrieval and analysis; limited patient exposure.

137. Drug Information Analysis Services (DIAS) Rotation. (1½) F, W, Sp. Prerequisite: Pharmacy 136. **Shimomura, Tong**

Actual experience in systematic retrieval analysis and dissemination of drug information in response to requests by DIAS.

140. Biologic Products. (3) F. Prerequisite: Third-year standing. Lecture: 3 hours. **K-H. Lee**

A survey of the chemical, physical, and biochemical properties of hormones and vitamins and other nutritional products as they relate to pharmaceutical practice. Diet therapy is discussed.

141. Biologic Products. (2) W. Prerequisite: Third-year standing. Lecture: 2 hours. **K-H. Lee**

A discussion of the pharmaceutical aspects and evaluations of the therapeutic values of biologic preparations in current clinical use, including enzymes, blood and its derivatives, plasma substitutes, hemotologic preparations, and biologic products.

145. Clinical Pharmacy. (4) F. Prerequisite: Fourth-year standing. Lecture: 3 hours. Conference: 2 hours. **Riegelman and Staff**

Orientation to selected areas of medical practice, the clinical evaluation and comparison of drugs used in these areas, and the biopharmaceutics of the drug combinations and products.

146. Clinical Pharmacy. (5) W. Prerequisite: Pharmacy 145. Lecture: 4 hours. Conference: 2 hours. **Benet and Staff**

A continuation of Pharmacy 145.

147. Clinical Pharmacy. (3) Sp. Prerequisite: Pharmacy 146. Lecture: 2 hours. Conference: 2 hours. **Benet and Staff**

A continuation of Pharmacy 146.

148. Inpatient Clinical Clerkship. (13) F, W, Sp. Prerequisite: Pharmacy 132. **Tong, Adler, Kimble and Staff**

Supervised experience in the patient care area pharmacy service. This course may not be repeated.

149. Outpatient Clinical Clerkship. (8) F, W, Sp. Prerequisite: Pharmacy 129. **Riddiough, Katcher, Levin and Staff**

Supervised experience in the Ambulatory and Community Medicine Outpatient Clinics, including Comprehensive Care Clinic, Pediatrics Clinic, and Primary Care Clinic. This course may not be repeated.

151. Community Health Education. (2) Sp. Lecture and Discussion: 2 hours; participation in at least 4 community health education programs. **Benet**

To train students for participation in community health programs dealing with drug abuse education and other drug-health related

areas, such as poison prevention, venereal disease, and birth control. This course is to be graded pass or no pass, and may be repeated for credit.

155. External Drug Products. (4) F. Prerequisite: Consent of the instructor. Lecture: 2 hours. Laboratory: 6 hours. **Schwarz**

Discussion and laboratory exercises on the formulation of products for external use, including both drugs and cosmetics. The course deals with the properties of such products and their ingredients.

161. Biologic Products. (2) W. Prerequisite: Third-year standing. Lecture: 2 hours. **Lee**

A discussion of the pharmaceutical aspects and evaluations of the therapeutic values of biologic preparations in current clinical use, including enzymes, blood and its derivatives, plasma substitutes, hemotologic preparations, and biologic products.

165. Hospital Pharmacy. (1-5) F, W, Sp. Conference and special projects. **Owyang, Riddiough**

Recommended for students who plan to apply for the resident program in hospital pharmacy. Other students admitted only with the consent of the instructor.

170. Group Studies Course. (1-4) F, W, Sp. Prerequisite: Consent of the instructor and adviser. No final examination. Graded on a passed-not passed basis. **Staff**

Group studies of selected topics in pharmacy.

180. Drugs and Society. (3) W. Lecture: 3 hours. Prerequisite: Basic course sequence in pharmacology and consent of the instructor. Limited to 16 students. Term paper required. Library research, field surveys, guest lecturers and interviews. **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, safety, efficacy, quality, advertising, prescribing, and pricing of selected drugs.

198. Supervised Study in Pharmacy. (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 Pharmacy. (1-5) 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.

450. Pharmacy Clinical Work. (8-12) Su, F, W, Sp. Prerequisite: Resident standing.

Riddiough and Staff

Residents are responsible for providing pharmacy service to patients in the wards and outpatient clinics including taking drug-use histories, preparing and monitoring medication profiles, providing drug-use information and consultation, and related activities. Residents also have certain administrative and teaching responsibilities.

451. Drug Information Analysis Work. (5) Su, F, W, Sp. Prerequisite: Resident standing and approval of program director.

Shimomura

Residents are responsible for providing drug information and consultative services on request. Activities include literature searches, preparing reports and other communications, and teaching and administrative responsibilities involving the Drug Information Analysis Service.

452. Hospital Pharmacy Administrative Work. (5) Su, F, W, Sp. Prerequisite: Resident standing and approval of program director.

Owyang, Riddiough

Residents are responsible for carrying out assignments related to the administration of a modern hospital pharmacy service. Activities include preparation of budgets, supervision and development of staff, program planning, and related administrative assignments.

453. Pharmacy Clinical Research. (1-5) Su, F, W, Sp. Prerequisite: Resident standing and approval of program director.

Riddiough and Staff

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

454. Veterinary Products. (3) Sp. Prerequisite: Microbiology 125, Pathology 135, Pharmacology 136, and Pharmacy 116. Lecture: 3 hours.

Spinelli

A course designed to familiarize the student with the common ailments of domestic animals and livestock, products used for the prevention and treatment of such diseases, the interrelationship of pharmacist, veterinarian, and animal owner, and legal limitations on veterinary product dispensing.

455. Pharmaceutical Technology. (3) F. Prerequisite: Pharmacy 116. Lecture: 1 hour. Laboratory: 6 hours.

Gibson and Staff

An introduction to the technology of liquid and semisolid pharmaceuticals. Special attention is given to the problems encoun-

tered and the materials used in pharmaceutical manufacturing.

456. Pharmaceutical Technology. (3) W. Prerequisite: Pharmacy 455. Lecture: 1 hour. Laboratory: 6 hours.

Gibson and Staff

An introduction to the technology of solid dosage forms, especially tablets and capsules. Emphasis is placed on the problems encountered in preparing this type of medication.

457. Pharmaceutical Technology. (3) Sp. Prerequisite: Pharmacy 456. Lecture: 1 hour. Laboratory: 6 hours.

Gibson and Staff

An advanced study of the relation of the art and science of pharmaceutical technology to solid dosage forms.

469. Seminar in Hospital Pharmacy. (0) F, W, Sp. Prerequisite: Admission to the resident program in Hospital Pharmacy.

Riddiough and Staff

475. Parenteral Products. (3) W. Lecture: 2 hours. Laboratory: 3 hours.

An introduction to the formulation and the technology of parenteral preparations. The laboratory includes participation in hospital activities in which parenterals are made and administered.

PHARMACY ADMINISTRATION

111. Pharmacy Laws. (2) F. Lecture: 2 hours.

Nielsen

Introduction to court systems and administration boards and their relation to the health professions. Discussion of basic principles of criminal law, negligence, and business law with particular emphasis on the legal relationship and responsibility of the practitioner to the patient.

112. Pharmacy Laws. (2) W. Lecture: 2 hours.

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. (4) W. Prerequisite: Economics 1A-B or 150. Lecture: 4 hours.

Staff

An analysis of the marketing functions performed to facilitate the flow of pharmaceutical products from production to consumption and of the decision-making processes of marketing institutions. Attention is given to the environmental factors affecting marketing decisions.

154. Community Pharmacy Management. (4) Sp. Prerequisite: Pharmacy Administration 150 and 155. Lecture: 4 hours.

Staff

Principles of management, specially directed towards developing familiarity with current problems peculiar to community pharmacy operation. Attention is paid 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 special emphasis upon the accounting requirements of the community pharmacy. Problem cases and demonstrations are presented.

170. Group Studies Course. (1-4) F, W, Sp.

Prerequisite: Consent of the instructor and adviser. No final examination. Graded on a passed-not passed basis.

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. *A* is prerequisite to *B*, and *B* to *C*, but completion of entire sequence is not required. No final examination.

Nielsen

Conducted in cooperation with law students who are teamed with students from professional schools on this campus to investigate assigned problems of their respective disciplines, with particular emphasis upon the legal implications arising therefrom.

198. Supervised Study in Pharmacy Administration. (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.

PHYSICAL THERAPY

100A. Anatomy. (4) F. Prerequisite: Anatomy 102 or equivalent.

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. Dissection of the upper limb, neck, and trunk are emphasized.

100B. Anatomy. (2) W.

Nordschow

This course is designed to present the foundation of the structure and function of the human body, with emphasis in lecture and the laboratory on topographical, skeletal, vascular, and neuromuscular aspects. Dissection of the lower limb and review is stressed.

101A. Pathology. (3) F.

J. Lee

A general summary of the fundamentals

of pathology with special emphasis on the correlation between pathological processes and the clinical signs, symptoms, and course of diseases. During the quarter, gross pathology is demonstrated and autopsy material is available.

102A. Physiology. (3) F.

Lukin

A review of certain aspects of human physiology, with special attention to the cardiovascular system and metabolism. Specific aspects of pathologic physiology are considered, especially in relation to stroke and heart disease. Applications of physical principles to physiology are discussed.

103A. Neuroanatomy. (2) F.

Garoutte

The development of the human nervous system with special reference to structure and functional relationships.

104A. Physical Therapy Procedures I. (6) F.

Nordschow, Ahrens

Lectures and laboratory practice in electrotherapy, kinesiology, and tests and measurements. Emphasized are therapeutic use of electricity in certain pathologic 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.

Nordschow, Ahrens

Lectures, demonstrations, and laboratory practice in hydrotherapy, massage, and therapeutic exercise. Emphasized are therapeutic uses of water and of massage techniques applied to various pathologic problems and techniques of administration of exercises commonly used in orthopaedic, medical, and neurological conditions.

104C. Physical Therapy Procedures III. (6) Sp.

Gilbert and Staff

Lectures and laboratory practice in therapeutic exercise. Emphasized are methods of evaluating the patient and planning his program; use and care of assistive devices in rehabilitation of the handicapped; use and evaluation of changing concepts and special techniques of exercise.

105B. Physical Medicine and Rehabilitation. (3) W.

Specht

Lectures and clinical demonstrations concerning peripheral vascular problems, geriatric patients, various types of arthritis, muscular dystrophy, spinal cord injury, cerebrovascular accidents, the brain-damaged child, neck pain, and back pain.

106B. Clinical Medicine I. (5) W.**Schiller, Wilson**

Lectures and clinical presentations of medical and neurologic patients and 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.**Specht, Kaufman**

Lectures in orthopaedic surgery, pediatrics, psychiatry, surgery, obstetrics, gynecology, geriatrics, and dermatology are presented by physicians in these specialties.

107B. Neuromuscular Physiology. (2) W.**Ralston**

A study of the physiology of striated muscle and peripheral nerve in relation to controlling mechanisms within the central nervous system. Special attention is paid to the physiological disturbances which occur in various types of human motor disability.

108C. Basic Medical Procedures. (2) Sp.**Gilbert and Specialty Staff**

The study of procedures necessary for the total care of patients.

109C. Principles of Professional Practice and Administration. (5) Sp.**Gilbert**

A study of professional attitudes and obligations and the organization and administration of a department of physical therapy. Laboratory work includes observation in outpatient clinics and a clerkship in an approved hospital by special arrangement of the Clinical Supervisor.

410D. Clinical Clerkship. (14) Su.**Gilbert and Staff**

Clinical clerkships consist 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 scheduled.

PHYSIOLOGY**100. Organ System Physiology.** (6§) Sp.

Prerequisite: Anatomy 100, 102, and 103; Biochemistry 100A-B; Physiology 101; or consent of the instructor. Lecture and conference: 6 hours. Laboratory: 4 hours. **Staub and Staff**

Normal function of the respiratory, cardiovascular, renal, and gastrointestinal systems and the metabolic functions of the body as a whole are studied in lectures, conferences, laboratory exercises, demonstrations, and clinical illustration.

101. Endocrinology. (4§) W. Prerequisite: Anatomy 100, Biochemistry 100A-B, or consent of the instructor. Biochemistry 100B may be taken concurrently. Lecture: 3 hours. Laboratory: 3 hours. **Ganong and Staff**

The structure and function of the endocrine glands and selected aspects of endocrine pharmacology and pathology will be studied in lectures, demonstrations, and clinical conferences.

110. Integrative and Nutritive Systems. (6§) Sp. Prerequisite: College-level biology, physics, and chemistry, or consent of the 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 will be the focus. Fundamental cell processes will also be discussed, emphasizing differentiated function.

120. Mammalian Physiology. (3§) W. Prerequisite: Physiology 125 required for students in School of Pharmacy; may be taken separately by graduate students only with consent of the instructor. Lecture: 3 hours. **Mines**

Study of the integrative systems of the mammalian organism, particularly the nervous and endocrine systems.

125. Mammalian Physiology. (7§) F. Prerequisite: Consent of the instructor. Lecture: 5 hours. Laboratory: 4 hours. Conference: 2 hours. **Staub, Gordon**

Introduction to mechanisms by which mammals, especially man, function. The interaction of internal and external environments and their relation to the functions of cells and muscular, circulatory, respiratory, gastrointestinal, and excretory systems.

150.01. Research in Physiology. (1½ per week) Su, F, W, Sp. Prerequisite: Consent of the instructor. **Kellogg and Staff**

Individual research in endocrinology, neuroendocrinology, respiratory physiology, neurophysiology, cardiovascular physiology, cell physiology, or other areas offered by individual staff members.

150.02. Research in Endocrinology. (1½ per week) F, W, Sp, Su. Prerequisite: Consent of the instructor. **Ganong**

Research in endocrinology carried out in the Department of Physiology.

170.02. Electronic Instrumentation. (3§) W. 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.

198. Supervised Study in Physiology. (1-5§) F, W, Sp. Prerequisite: Consent of the 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. (1-5§) F, W, Sp. Prerequisite: Consent of the 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) F, W, Sp. Prerequisite: Consent of the instructor. **Ganong**

Directed reading organized in seminar or tutorial fashion to review aspects of physiology under supervision of a member of the faculty.

201. Physiology of Vision. (2) Sp. Prerequisite: Physiology 110 or equivalent or consent of the instructor. Lecture: 2 hours. **Brown**

Study of the mechanisms underlying vision. Consideration is given to chemistry and anatomy of the visual system, but the emphasis is upon neurophysiology, with coverage of the visual system from the photoreceptors to the visual cortex.

202. Cardiovascular Research Seminar. (1) F, W, Sp. Prerequisite: Consent of the instructor. Lecture: 1½ hour. **Comroe and Staff**

Seminars embrace research in cardiopulmonary field and in related basic sciences. They acquaint students with biological investigation, research methods, and ways of evaluating research. Students taking this course for credit present a critical evaluation of one of the seminars.

203. Cardiopulmonary Research Seminar. (1) F, W, Sp. Prerequisite: Consent of the instructor. Lecture: 1¼ hour. **Comroe, Staub and Staff**

Seminars on cardiovascular and pulmonary systems. Several sessions on experimental methods and cardiopulmonary problems. Work presented is discussed and evaluated by the faculty and fellows. For credit, students present a critical evaluation of one of the seminars.

204. Seminar: Topics in Physiology. (1) W. Prerequisite: A minimum of six course units of introductory physiology. **Rothman**

This seminar will discuss selected topics in cellular and integrative physiology. Readings will be drawn from primary and secondary sources.

206. Advanced Neurophysiology. (4) W. Prerequisite: Anatomy 103 or equivalent or consent of the instructor. Lecture: 4 hours. **Libet**

Consideration of problems in the functioning of the nervous system. The emphasis will be on dynamic and electrophysiological processes rather than on the topographical or neuroanatomical aspects of neural function.

207. Neuroendocrinology. (1-3) Sp. Prerequisite: Endocrinology and neural sciences or consent of the instructor. Lecture: 1-3 hours. **M. Dallman**

Mechanism for regulation of endocrine function by central nervous system and the influence of hormones on the nervous system will be considered in view of anatomical, biochemical, physiological, and behavioral data in the literature. May be taken repeatedly.

208. Topics in Neurophysiology. (2) W. Prerequisite: Previously or concurrently Anatomy 103. **Staff**

Concepts in neurophysiology and their experimental basis. This course is an elective supplement to the material presented in the core course, Anatomy 103.

209. Physiology of the Auditory, Vestibular, and Other Sensory Systems. (2) Sp. Prerequisite: Anatomy 103 or equivalent. Lecture: 2 hours. **Merzenich**

Lectures and demonstrations providing basic information about the physiology of the auditory system, vestibular system, chemical senses, and somatosensory system. Material will include historical and current concepts derived from relevant psychophysics, neuroanatomy, and neurophysiology.

220. Seminar. (1) F, W, Sp. Prerequisite: Consent of the instructor. **Ganong**

Seminar presentations by guest speakers, alternating with discussion by physiology staff members of their current research. Each quarter a different topic of physiological interest is the subject of guest presentations. Students may enroll for any number of quarters.

221. Advanced Cardiovascular, Renal, and Pulmonary Physiology. (2) F, W, Sp. Prerequisite: Physiology 100 or equivalent. **Comroe, Coleridge and Staff**

This course includes critical reviews of topics of current importance, presentation of unsolved problems by staff, and critical evaluation of published articles by the group. The

total program is presented over six successive quarters.

222. Endocrinology Seminar. (1) F, W. Prerequisite: Consent of the instructor. Lecture: 1 hour. **Ganong**

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. Students may enroll for any number of quarters.

223. Graduate Student Seminar. (1-2) F, W, Sp. Prerequisite: Consent of the instructor. Lecture: 1½ hours. **Kellogg**

Supervised experience in studying selected topics in the physiological literature, writing abstracts, delivering lectures, and discussing them. Topics are varied so that registration may be repeated (recommended for at least 3 terms). Students should arrange assignments with instructor in advance.

230. General Physiology: A Molecular Approach. (4) Sp. Prerequisite: Consent of the instructor. A working knowledge of elementary physics, calculus, physical chemistry, and biology is expected. Lecture: 4 hours. **Botts, Durbin**

This course introduces a physicochemical approach to the mechanisms of fundamental cellular processes—transport, excitation and conduction, contraction, and regulation.

250. Research. (1-8) F, W, Sp. Prerequisite: Consent of the instructor. **Ganong and Staff**

251. Research in Endocrinology. (1-8) F, W, Sp. Prerequisite: Consent of the instructor. **Ganong and Staff**

Research in endocrinology carried out in the Department of Physiology.

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 masters 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.

300. Practicum in Teaching Physiology. (0) F, W, Sp. Prerequisite: Previous training in physiology and consent of the instructor. Lecture: Variable. Laboratory: Variable. **Staub, Comroe**

Practice in teaching physiology under faculty supervision. In various quarters, students

will supervise laboratory work, conduct conferences, deliver lectures, and assist in preparing and grading examinations, according to their stage of development.

301. Scientific Writing. (0) F, Sp. Prerequisite: Consent of the instructor. Enrollment limited. Lecture: 3 hours. **Morrow, Comroe**

Seminar-workshop program designed to show students how they can best put into words, tables, and figures what they have done in the laboratory—and how to do so in a concise, precise, and logical form.

302. Group Practice in the Art of Lecturing. (0) Sp. Prerequisite: Consent of the instructor. Enrollment limited. Lecture: 1½ hour. **Staub, Comroe, Coleridge**

A course in teaching techniques. Students 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 Practice. (1) F. Lecture: 1 hour. **Wycoff**

A survey course to acquaint the student with current social and professional problems in dentistry. Includes identifying the patient community, national and professional needs, and how they are met.

120. Behavioral Science. (1) W. Lecture: 1 hour. **Wycoff**

This course is an introduction to the basic concepts, theories and findings of the social sciences. The application of these concepts and modes of reasoning to pressing social problems and the delivery of health services is the dominant theme.

121. Research Design. (1) F. Lecture: 1 hour. **Wycoff**

A course which presents basic principles of biostatistics. Introduces the concept of experimental reliability, fundamental principles of sampling techniques, selection of data, and variability. The student plans, develops, and writes a research protocol.

148. Community Health Problems and Practice. (1) F, W, Sp. Clinic-seminar: 24 hour rotation. **Wycoff and Staff**

Dental students will work in community clinics which serve deprived areas. Both seminars and supervised clinical experience will be designed to provide the student with the opportunity to relate economic, social, and cultural theory to the people they will be treating.

168. Community Health Methods. (2) F. Field trip: 4 hours weekly. **Silverstein and Staff**

Dental hygiene students will work in the North Oakland community with the Children and Youth Project staff. Students will be assigned to area schools where an oral screening will be done. Students will also make home visits.

180. Applied Preventive Dentistry. (2) Sp. Lecture: 2 hours. Laboratory: 2 hours. **Gold**

Applied preventive dentistry will examine the principles, philosophy, and methodology of preventive dental practices. Literature reviews, discussions, nutrition analyses, special projects, visits to dental practices will be employed to understand the workings of a successful preventive dental practice.

186. Clinical Nutrition and Preventive Dentistry. (1) Sp. Lecture: 1 hour. **Goodson, Silverstein**

Instruction in the use of nutritional counseling and the phase microscope as an adjunct to preventive dentistry. Students will learn how to perform a computerized nutritional analysis on clinic patients.

188.01A-B-C. Community Health Methods. (2-2-2) F, W, Sp. Lecture: 1 hour. Laboratory: 3 hours. **Wycoff and Staff**

Four students will assist the staff of the Hunter's Point-Bayview Community Health Service. Each will be assigned with a medical student to a family health team. Students work with team members in the neighborhood identifying health problems and arranging care.

199. Laboratory Project in Preventive Dentistry and Community Health. (1-5) F, W, Sp. Prerequisite: Consent of the instructor. **Staff**

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 Medicine 130. **Boatman**

Four-week assignment to an outpatient or inpatient psychiatric service. Students, under supervision, are responsible for patient evaluation and participate in treatment planning and implementation, attend seminars related to clinical work and field visits to other types of psychiatric facilities.

130. Basic Clerkship: Communication Skills. (2) F. **Brodsky**

Provides students with examples of differ-

ent interviewing techniques and history-taking procedures as utilized with patients of different ages, illnesses, and sociocultural backgrounds. Students interview patients directly and through the medium of television tapes, engage in supervisory and self-evaluative sessions.

131A-B. Introduction to Clinical Psychiatry. (2-2) F, W. Lecture: 1 hour. Clinical Seminars: 2 hours. **Feinberg, Weinstein and Staff**

Introduces psychiatry as a clinical discipline. Basic science data relevant to behavioral disorders are briefly presented. The main focus is on interviewing techniques and description of psychopathological syndromes. Lectures, interviews of patients, videotape demonstrations, seminars and independent study are covered.

140.01. Clinical Psychiatry. (1½ per week) Su, F, W, Sp. Prerequisite: Consent of the instructor. **L. Epstein**

Participation under close supervision in keeping with students' level of experience and special interests in clinical psychiatric treatment of adult or child inpatients or outpatients.

140.02. Clinical Clerkship. (1½ per week) F, W, Sp. Prerequisite: Consent of the instructor. **L. Epstein**

Clinical clerkship in off-campus hospitals approved by the Dean and the chairman of the department.

150.01. Psychiatric Research. (1½ per week) F, W, Sp, Su. Prerequisite: Consent of the instructor. **Callaway**

Participation according to students' level of experience in experimental work in the department in such areas as neurophysiology, operant conditioning, psychophysiology, immunochemistry, and nonlexical communication. All work is under the close supervision of faculty members.

150.02. Block Elective in Human Development. (1½ per week) F, W, Sp, Su. **Clark, Lowenthal and Staff**

Guided reading and research in human development. Work may be focused upon culture and personality studies; the social psychology of human development; socialization including the role of values; adaptive processes at various stages of the life cycle.

160.01. Psychopathology of Speech and Language. (2) F, W, Sp. Prerequisite: Consent of the instructor. **Ostwald**

A clinical course focusing on speech and language pathology. Students' eligibility depends on previous experience with psy-

chiatric patients and interest in specific problems of communication. Patients with characteristic syndromes will be interviewed and suitable treatment procedures performed under supervision.

160.02. Clinical Psychiatric Rounds. (2) F, W, Sp. Prerequisite: Consent of the instructor. **Berblinger**

Students participate in diagnostic rounds and conferences of the Psychiatric Liaison Service. Selected ambulatory patients of the Psychiatric Outpatient Clinics are seen under supervision for the purpose of developing psychotherapeutic skills for the practice of comprehensive medicine.

160.03. Psychotherapy Under Supervision. (2) F, W, Sp. Prerequisite: Consent of the instructor. **Berblinger**

Students participate in psychotherapy of a psychiatric outpatient under supervision of individual instructor.

160.04. Personality Assessment in Clinical Psychiatry: Theory and Practice. (1) W. Prerequisite: Psychiatry 130. **Brodsky**

Tutorial participation with a senior psychiatrist in studies of outpatients in the Adult Psychiatry Clinic. Participation in weekly group sessions designed to increase awareness of interpersonal dynamics. Directed reading, seminar discussions, and demonstrations.

160.05. Clinical Problems. (1) W. Prerequisite: Psychiatry 130 and consent of the instructor. **Brodsky**

Patients referred for consultation and treatment are presented at seminars. Patients are evaluated by examination, testing, and medical and social documents. Students prepare presentations by discussion with the resident psychologist, and examining the patient. Reports are prepared discussing experience and conclusions.

160.06. Introduction to Interviewing and Evaluation. (1/2) F, W, Sp. Prerequisite: Psychiatry 130. Seminar: 1 1/2 hours. **Brodsky**

An opportunity to observe and audit diagnostic and psychiatric interviews conducted by a faculty member and one patient to continue for an academic quarter. Discussions will follow the interviews. Limited to three students per instructor.

160.07. Psychotherapy for Outpatients. (2) Su, F, W, Sp. Prerequisite: Psychiatry 130. **Brodsky**

Practical experience in psychotherapeutic work with outpatients to increase the students' understanding of psychopathology, psychodynamics, and psychotherapeutics. Students

are assigned one patient a week under supervision of a faculty member. Assigned reading, seminars, and chart writing.

160.08. Psychosomatic Case Conference. (1 1/2) F, W, Sp. Prerequisite: Consent of the instructor. **Murphey**

Cases will be presented in rotation by social work students. Emphasis will be placed on the interrelationship between psychological, social, and somatic factors. Although primarily intended for social work students, psychiatric residents and other mental health professionals are welcome.

160.09. Psychiatric Diagnosis. (1) F, W. Lecture: 1 hour. **Berblinger**

Langley Porter inpatients are interviewed and their characteristics and case histories used as the basis for discussions of psychiatric diagnosis. A seminar format allows for free discussion between students and instructors.

170.01. Introduction to Suicidology. (2) F, W, Sp. Prerequisite: Consent of the instructor. **E. Cohen**

Suicide is surveyed from a multidisciplinary approach in weekly seminars led by persons actively working in this field. Students will investigate an aspect of the problem which particularly interests them, and will present their findings to the group.

170.02. Seminar: Views of the Meaning of Psychosis. (1 1/2) F. Prerequisite: Consent of the instructor. **Feinberg and Rutter**

This is an elective seminar designed for students who have an interest in exploring in depth the phenomenon of psychosis, from biological, Freudian, communications theory and Jungian-Laingian points of view, with readings and clinical experience in each area.

170.03. Group Interaction Process. (1) F, W, Sp. Prerequisite: Consent of the instructor. **Colman, Duncan**

A weekly session designed to increase psychological perception and self-awareness in interaction with others. Both group and individual dynamics will receive attention. This course may be taken repeatedly for credit.

170.04. Pediatric Psychiatry. (1) F. Prerequisite: Consent of the instructor. **Bradman**

Seminars sketch normal development from infancy through adolescence to point out potential psychopathogenesis in the various phases of development.

170.07. Mental Health Aspects of Social, Physical, and Sensory Deprivation. (2), F. Prerequisite: Psychiatry 130. **Schlesinger, Meadow**
Compares and contrasts influences of cul-

tural, 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.

170.08. Social Psychiatry Seminar. (1) F, W, Sp. Prerequisite: Psychiatry 130. **Ruesch**

Areas of social psychiatry—the family, small groups, organizations, institutions, social stratification—are presented. Assigned reading prepares the student for discussion. Participants from other fields promote an interdisciplinary approach. Time for individual discussion with the seminar leader can be arranged.

170.10. Information Processing in the Human Infant. (2) F, W, Sp. Prerequisite: Consent of the instructor. **Peltzman, Ostwald**

Computer analysis of CNS responses to auditory and visual output. Quantification of vocal output is achieved by the use of advanced acoustic techniques. Understanding of perceptive-expressive behavior of the maturing child is the goal.

170.11. Normal and Pathologic Development of the Ego. (1) Sp. **Solomon**

Study of growth stages in human psyche, birth, old age; familiarization with basic concepts of critical learning periods, regression, fixation, ego mastery. Principles of symptom imprinting, character formation with knowledge of emotional conflicts, ego defenses, primary and secondary ego autonomy.

170.12. Interdisciplinary Seminar on Analysis of Intensive Interviews. (1 1/2) F, W, Sp. **Lowenthal and Staff**

Life histories are evaluated from the standpoint of the relationship between the individual's perceptions of his social world and adaptation, the quality of interpersonal relationships, and the relationship between various dimensions of self-concept and other indicators of adaptation.

170.13. Design of Treatment Systems. (1) Sp. Prerequisite: Graduate degree in mental health. **Colman**

Investigate current concepts useful in implementing behavior change systems (psychotherapy, hospital wards, community mental health centers, etc.). Theoretical contributions from organizational models, operant conditioning, operations research, ethological theories, etc., will be applied to specific design situations.

170.14. Group Relations. (1) F, W, Sp. **Colman, Duncan**

An intense, personal experience in funda-

mental group phenomena through a study of "here and now" group behavior, followed by application of principles thus derived to group settings in the medical school environment.

170.15. Substrates of Behavior. (2) Sp. **Herz**

This elective course is designed primarily for students electing the behavioral sciences pathway and is concerned with the biological determinants of behavior. Relationships between behavior and neurophysiology, neuroanatomy, biochemistry, genetics, and endocrinology will be examined.

170.16. Further Studies of Self-Assaultive Phenomena. (1) F, W, Sp. Prerequisite: 170.01. **Cohen**

Purpose of this course is to enable medical students to continue the study of the problems of morbidity and mortality resulting from self-assault. Subjects to be covered and the modus operandi will be determined by the interests of the students.

180. Sexual Problems in Medical Practice. (1) W. **Vandervoort**

Social, behavioral, and clinical aspects of human sexuality will be covered in a series of lectures and seminar periods. Lectures will present didactic material and seminars will focus on clinical, moral, and ethical problems related to sex and medical practice.

181. The Black Experience. (2) Sp. Prerequisite: Consent of the instructor. **Cobbs**

Seminar discussions concerning the varieties of interpersonal experiences of black people which are relevant to understanding their personality development. This is of importance in the initiation and maintenance of an effective doctor-patient relationship in any medical specialty.

182. Transcultural Psychiatry. (1) F, Sp. **Hartog**

A series of seminars discussing transcultural psychiatry from entering the alien community and epidemiology to folk healing. The relevance to American urban and ethnic issues will be emphasized. Examples, problems, methodology, and possibilities for research will also be presented.

198. Supervised Study in Psychiatry. (1-5) F, W, Sp. Prerequisite: Consent of the instructor. **L. Epstein 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 Psychiatry. (1-5) F, W, Sp. Prerequisite: Consent of the instructor. **L. Epstein and Staff**

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

207. Models for Changing Behavior. (2) F. Prerequisite: Consent of the instructor. **Stone**

Consideration of situational and interactional approaches to changing human behavior. Conditioning, behavior modification, cognitive restructuring, group process, and other models will be compared. Therapeutic, educational, organizational, and social settings for change will be examined.

400. Psychiatric Staff Conference. (1) F, W, Sp. **LPNI Simon**

Faculty members and visiting professional persons present new developments in psychiatry and related fields.

401. Clinicopathological Conference. (3) Su, F, W, Sp. Elective **LPNI Malamud**

Cases are presented by faculty. Clinical aspects are discussed and the neuropathological findings are demonstrated. Students take an active part in the discussions of correlation between clinical and pathological findings with emphasis on their neuropsychiatric significance. Parallel reading is required.

402. Orientation to Psychiatric Research. (3/4) Su. **LPNI Callaway**

Guided tours through the research facilities of Langley Porter Neuropsychiatric Institute and introductory presentations of research projects by individual investigators.

404. Personality Assessment. (1) F, W. **LPNI Fisher**

Seminar presents techniques of assessing personality and intellectual functions 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.

405. Theories of Personality. (1) W, Sp. Elective. Prerequisite: Psychiatry 404. **LPNI Fisher**

Focus is on personality theories other than Freudian; e.g., Lewin, Allport, Sheldon, and Rogers. 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.

407. Research in Behavioral Sciences. (1-10) Su, F, W, Sp. Elective. **LPNI Callaway**

Course consists of supervised clinical and basic research in behavioral abnormalities, psychopathology, and experimental psychiatry. Specific subjects for research are chosen in conjunction with members of the staff.

408. Electroencephalography. (3) Su, F, W, Sp. Elective. **LPNI Yeager**

Seminar includes techniques of clinical electroencephalography and the interpretation of electroencephalograms.

409. Neuropathology. (1 1/2) Su, F, W, Sp. Elective. **LPNI Malamud**

Discussion of the neuropathology of neurological and psychiatric disorders with illustrations from gross and microscopic material.

410. Review of Social Psychiatry. (1) Su, F, W, Sp. **LPNI Ruesch**

Brief review of the various fields of contemporary behavioral science and social psychiatry. Parallel reading is required.

411. Research in Social Psychiatry. (1-10) Su, F, W, Sp. Required of second-, third-, fourth-, and fifth-year residents in training for research. **LPNI Ruesch**

Residents pursue original investigations in the fields of social psychiatry and allied subjects. They are expected to set up a research project, make observations, record and analyze data, engage in relevant reading, and discuss findings and conclusions with the senior staff.

412. Jungian Psychology. (1) F, W, Sp. Elective. **LPNI Wheelwright**

Seminar includes discussions of C. G. Jung's Analytic Psychology, systematic consideration of the historical developments, theory, and clinical applications. Illustrative case material is presented; residents participate in presentation and discussion of clinical material. Parallel reading is required.

413. Introduction to the Computer. (2-3) F, W, Sp. **Starkweather**

Seminar presents a review of digital computing and its applications in psychiatry. Residents explore these concepts through their own programming efforts.

415. Literature in Child Psychiatry. (1) Su, F, W, Sp. **LPNI Philips**

Survey of the literature in child development and child psychiatry. Parallel reading is required.

416. Colloquium. (1) Su, F, W, Sp. Elective. **LPNI Callaway**

Discussion of readings on major problems in contemporary psychiatric research. Advance registration is required.

418. Research in Computer Simulation and Analysis of Behavior. (1-10) F, W, Sp. Elective. **LPNI Starkweather**

Supervised research with computer methods for the simulation of behavior in clinical interactions. Applications of computers to the analysis of human communication.

419. Child Development and Personality. (1/2) F. Required of child psychiatry first-year residents. Elective for all other residents. **LPNI Gorman**

Seminar focuses on the psychological study of the child, clinical and experimental methods of investigation, and research in clinical child psychology. Content includes learning theory and assessment of intelligence and personality. Parallel reading is required.

450. Clinical Psychiatry. (1 1/2 per week) Su, F, W, Sp. For residents at LPNI, SF, and UC. Elective for all others. **C. Ryan, CM Powelson, LPNI Simon, SF Motto, UC Brodsky**

Residents are responsible for the study and treatment of psychiatric patients under the supervision of senior staff and members of the faculty. Parallel reading is required.

451. Advanced Clinical Psychiatry. (1 1/2 per week) Su, F, W, Sp. Required for all fourth- and fifth-year residents at LPNI. **LPNI Simon**

Training in administration, supervision, teaching, research, consultation, and treatment.

452. Child Psychiatry. (1 1/2 per week) Su, F, W, Sp. Required for residents in child psychiatry in their second year in child psychiatry. **LPNI Szurek, C Ryan**

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 senior staff.

453. Advanced Child Psychiatry. (1 1/2 per week) Su, F, W, Sp. Prerequisite: Psychiatry 452. Required for second-year residents in child psychiatry. **LPNI Szurek**

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.

454. Clinical Research. (1 1/2 per week) Su, F, W, Sp. Required of second-, third-, fourth-, and fifth-year residents in training for research. **LPNI Ruesch**

Residents are responsible for the diagnosis and treatment of hospitalized and ambulatory cases under supervision. The selec-

tion of patients, the particular treatment program, and the follow-up are all part of a research design previously planned with the senior staff.

455. Psychiatric Liaison. (1 1/2 per week) Su, F, W, Sp. Elective. Psychiatry 450 and 455 may not be taken concurrently. **UC Berblinger**

Supervised psychiatric consultations to other departments, supervised psychotherapy with hospitalized and ambulatory patients with psychosomatic disorders, and clinical research in psychosomatic medicine.

456. Community Psychiatry. (1 1/2 per week) Su, F, W, Sp. Elective. Third-, fourth-, and fifth-year residents. **O. Brown**

Seminars and field work deal with the theory and practice of community psychiatry under the supervision of the senior staff. Seminars and field work cover appropriate major seminars of community psychiatry. Parallel reading is required.

457. Community Mental Health. (1 1/2 per week) Su, F, W, Sp. **LPNI Harris**

Course provides orientation to the community mental health field and its practice through field work, seminars, reading, and reports under a multidisciplinary teaching staff. Advanced specialty training also is available.

459. Outpatient Staff Conference and Case Presentation. (1 1/2 per week) F, W, Sp. Elective. **LPNI Murphy**

Residents present selected cases to members of the clinical faculty and invited consultants. All students participate in the discussion of cases. Parallel reading is required.

460. Intake Seminar. (1) F, W, Sp. Elective. **LPNI Cress**

Residents present selected cases to the seminar leader. Usually each patient is interviewed briefly before the group. All students participate in the discussion of cases with emphasis on diagnosis and planning of treatment.

463. General Orientation. (3) Su. **LPNI Simon**

Orientation for newly appointed residents in psychiatry with emphasis on their duties, responsibilities, and relationship with other clinical disciplines.

464. Basic Psychiatry. (1 1/2) F, W, Sp. **LPNI Simon**

Seminars focus on the understanding of clinical psychiatric syndromes, treatment approaches, and techniques; and the fundamental concepts of social psychiatry.

465. Basic Psychoanalytic Concepts. (1) F, W, Sp. **LPNI Amini**

Seminar offers instruction in the theoretical bases of psychoanalysis.

466. Conditioning and Behavior Modification. (2) F. Elective. **LPNI Stone**

Systematic application of the principles of operant and respondent conditioning to the analysis of behavior. Emphasis will be placed on probabilities of occurrence of various response classes as a function of reinforcement, discrimination, generalization and motivational states of the organism.

467. Intensive Psychotherapy in Psychosomatic Disorders. (2) Su, F, W, Sp. Elective. **Berblinger**

Continuous case seminar for residents assigned to the psychiatric liaison service. Emphasis is placed on the role of intensive psychotherapy within the framework of comprehensive medicine.

468. Seminar in Gerontology. (1½) F, W, Sp. Elective. **LPNI Lowenthal**

Theory and research in the social and psychological study of aging. Research findings based on hospital and community samples are presented by the Adult Development Program. For upper division and graduate students whose research or clinical work includes the elderly. Parallel reading required.

469. Speech, Hearing, and Psychiatry. (1) Su, F, W, Sp. Elective. **Ostwald**

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.

472. Problems in Psychotherapy. (1½) F. Prerequisite: For second- and third-year residents in psychiatry. **Wallerstein**

Seminars on problems in psychotherapy within a psychodynamic framework—differential treatment, beginning phase, special problems of specific patient groups (geriatrics, adolescent, alcoholic, sexual-deviant), indications for hospitalization, and problems of transfer and termination, including issues related to psychotherapy research.

473. Issues in Supervision. (1½) W, Sp. **Wallerstein**

Seminar on supervision as a helping process, exploration of differences from other interpersonal helping processes, especially therapy and education. Limited to trainees who are assuming supervisory roles.

490. Clinical Psychiatry. (1½ per week) Su, F, W, Sp. **SF Decker**

Interns rotate through inpatient wards and outpatient clinics where they are responsible for the initial medical and psychiatric evaluation and management of new patients, under the direction of the attending staff, including history-taking, physical examination, laboratory tests, and consultation.

PSYCHOLOGY

113. Human Growth and Behavior. (3) F. Prerequisite: First-year standing or consent of the instructor. **Attkisson**

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.

130A-B. Psychology for Dental Students. (1-1) F, W. Lecture: 1 hour. **Plainfield**

Introduction to personality theory as a basis for understanding and dealing with the psychological problems encountered in dental practice.

150. Psychology for Dental Hygienists. (1) Sp. Lecture: 1 hour. **Plainfield**

Introduction to personality theory as a basis for understanding and dealing with the psychological problems encountered in dental practice.

160. Psychology for Dental Hygienists. (1) F. Lecture: 1 hour. **Plainfield**

Understanding of the dynamics of human behavior, the psychological factors which enter into and influence dental treatment. Students' clinical cases are discussed and analyzed by dynamic application of behavioral theory.

180.01. Seminar in Psychology. (1) W. Prerequisite: Psychology 130A-B. Seminar: 1 hour. **Plainfield, Sosnow**

Weekly discussions in which students' clinical cases are analyzed by dynamic application of behavioral theory.

180.02. Psychological Aspects of Treatment Planning. (1) Sp. Lecture: 1 hour. **Plainfield, Sosnow**

This course integrates students' basic training from the specialty 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.

180.03. Advanced Psychology for Dental Hygienists. (1) Sp. Prerequisite: Psychology 160. Seminar: 1 hour. **Plainfield**

Seminar discussions on the emotional aspects of interpersonal transactions among office personnel, therapists, and patients.

181. Group Dynamics. (2-4§) F, W. **Adelson**

Theories of group process and leadership; methods for studying group behavior; principles for understanding group functioning; overview of research; dynamics of planned change. Laboratory provides opportunity for increasing insight and skill as a participant-observer in a small group.

198. 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.

200. Self and Society: Theoretical Bases for Social Psychiatric Inquiry. (2-4) F, Sp. Prerequisite: Consent of the instructor. Lecture: 2-4 hours. **Adelson**

Review of major theories of self and society, how these relate to social psychiatric research, and development of a conceptual framework for understanding diverse social problems and manifestations of deviant behavior.

201A-B-C. Seminar in Medical Psychology. (2-2-2) Yr. Prerequisite: Consent of the instructor. **Morrison, Harris**

Seminar discussions of clinical work in medical psychology and psychiatry, reports of research and current literature by students and staff, and lectures by faculty. Parallel reading required.

202. Basic Physiological Psychology. (2-3) W. Prerequisite: Consent of the instructor. Lecture: 2 hours. Laboratory: 0-3 hours. **Peeke**

Designed for the student with minimal 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.

203A-B-C. Community Psychology. (2-3) Yr. Prerequisite: Consent of the instructor. Lecture: 2-3 hours. **Kalis, Adelson**

A survey of basic and current literature in community psychology and community mental health. Optional involvement in community laboratory or special student projects.

204A. Introduction to the Computer. (3) F. Prerequisite: Consent of the instructor. Lecture: 1 hour. Laboratory: 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. (3-3) W, Sp. Prerequisite: Consent of the instructor, and Psychology 204A or equivalent background. Lecture: 1 hour. Laboratory: 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. Lecture 2 hours. Laboratory: 0-6 hours. **Claus**

Lectures and laboratory studies on psychological aspects of decision-making. Describes the concepts of mathematical and Bayesian models, objective and subjective probability, utility, games theory, decision structure, and levels of decisions. Applicability to health care systems will be stressed.

206. Aggression and Violence. (2) F, W, or Sp. Prerequisite: Consent of the instructor. Lecture: 2 hours. **Peeke, O'Sullivan**

Biological, psychological and social studies of violence and aggression will be reviewed in a seminar format.

207. Conditioning and Behavior Modification. (2) F. Prerequisite: Consent of the instructor. Lecture: 2 hours. **Stone**

Introduction to basic principles and concepts of respondent and operant conditioning. Examination of complex human behavior, such as intellectual function and psychopathology within this framework. Consideration of behavior modification techniques, such as psychotherapy and education.

208A-B. Psychology of Thinking and Information Processing. (3-3). W, Sp. Prerequisite: Consent of the instructor. Lecture: 2 hours. Laboratory: 3 hours. **Stone**

Major approaches to the fields 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) W, Sp. Prerequisite: Psychology 204A or equivalent and consent of the instructor. Lecture: 2 hours. **Starkweather**

Seminar presents a review of digital computing and its applications in psychology. Students explore these concepts through their own programming efforts.

210A-B-C. Interdisciplinary Seminar. (2-2) Yr. Prerequisite: Consent of the instructor. Lecture: 2 hours. **Callaway, Peeke**

Visiting scientists present current research in anatomy, biochemistry, pharmacology, physiology, and psychology which contribute to the understanding of the neurobiological basis of human behavior. Students prepare for each visiting lecturer by reading and discussing pertinent publications.

213A-B-C. Seminar on Communication Through Nonverbal Behavior. (3-3-3) Yr. Prerequisite: Consent of the instructor. Lecture: 3 hours. **Ekman**

Research and theories on facial expression and body movement in relation to emotion, personality, social interaction, and culture.

214A-B-C. Psychophysiology. (2-2-2) Yr. Prerequisite: Consent of the instructor. Lecture: 2 hours. **Kamiya**

Psychophysiology: Analysis of the relationships between physiological and behavioral processes, primarily in the human. Special consideration is given the physiological aspects of feelings and emotions and their modifiability.

215. Personality. (2) F, W, or Sp. Prerequisite: Consent of the instructor. Lecture: 2 hours. **Fisher, Gould, Attkisson**

Survey of major theories of personality, structure, development of personality, and research in personality.

216. Readings in Culture and Personality. (3) F, W, or Sp. Prerequisite: Consent of the instructor. Lecture: 3 hours. **Gould**

Social structure, culture and personality and the utilization of projective methods and personality assessment techniques in studying culture and society.

217. Major Variants of Behavior: Abnormal Psychology. (2) F, W, or Sp. Prerequisite: Consent of the instructor. Lecture: 2 hours. **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.

218. Memory Processes. (2) F, W, or Sp. Prerequisite: Consent of the instructor. Lecture: 2 hours. **Herz**

Theories of memory storage processes. Consideration of human and animal experimental data about agents which facilitate or disrupt memory functions.

219. Tests and Measurement. (2) F, W, or Sp. Prerequisite: Consent of the instructor. Lecture: 2 hours. **O'Sullivan**

Psychological test construction, including sampling, item analysis, standardization, reliability, and validity.

220. Seminar in Growth and Behavior. (4) F, Sp. Prerequisite: Consent of the instructor. Lecture: 4 hours. **Schaw**

An interdisciplinary working graduate seminar to cover the relevant literature from infancy to old age with a theoretical focus on psychoanalytic ego psychology in the light of related fields (anthropology, sociology, history, physiology, and genetics).

221A-B. Community Psychology: Basic Concepts, Major Processes and Core Systems. (2-4, 2-4) W, Sp. Prerequisite: Consent of the instructor. Lecture: 2 hours. Laboratory: 0-6 hours. **Adelson**

Introduction to community psychology and to the basic concepts, major processes, and core systems with which specialists in community psychology, community health, and community mental health are concerned. Intensive study of particular processes and systems.

223. The Special Biography. (4) F. Prerequisite: Consent of the instructor. **Schaw**

Seminar in historical change as seen in the lives of charismatic leaders. Lives of Gandhi, Luther, Malcolm X, Newton, Bolivar and Freud will be examined. Students are expected to present short studies.

224. Clinical Inference and Research Strategies. (4) Sp. Prerequisite: Consent of the instructor. **Schaw**

Research proseminar on the use of clinical procedures in research. The staff's exploration of Projective Techniques (TAT) in cultural, historical, and clinical research to serve as focus for participants' presentation of related clinical procedures or techniques.

225. Tutorial in Psychological Statistics. (2-4) F, W, or Sp. Prerequisite: Consent of the instructor. Lecture: 1-3 hours. Laboratory: 0-3 hours. **Ornstein, Galin**

Reading and practice in methods of data analysis, tailored to the background and needs of the particular student.

228. Research on Drug Abuse. (2) F, W, or Sp. Prerequisite: Consent of the instructor. Lecture: 1 hour. Laboratory: 3 hours. **Hargreaves**

Directed research on various topics related to drug abuse, its treatment, and its prevention.

229. Attention and Perception in Schizophrenia. (2) F, W, or Sp. Prerequisite: Consent of the instructor. Lecture: 2 hours. **Attkisson**

This seminar will review the literature related to attention and perception in the schizophrenic process, with emphasis on implications for methodology and future research directions.

230. Attention and Selective Perception: Neuropsychological Aspects. (2) F, W, or Sp. Prerequisite: Consent of the instructor. Lecture: 2 hours. **Galín**

Brain mechanisms relating to attention. Information from animal and human studies with brain stimulation, single neuron recording, electroencephalography, measurement of cortical evoked potentials, and the effects of brain lesions.

231. Brain Hemisphere Specialization. (2) F, W, or Sp. Prerequisite: Consent of the instructor. Lecture: 2 hours. **Galín**

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 disunity in consciousness.

232. Clinical Prediction. (3) W or Sp. Prerequisite: Consent of the instructor. Lecture: 3 hours. **Young**

Problems in the validation of clinical psychological procedures; specification of the measurement characteristics of psychological data; contrast of methods of information processing; analysis of criterion behavior; efficacy of clinical judgment.

233. Prenatal Determinants of Learning Ability. (2) F, W, or Sp. Prerequisite: Consent of the instructor. Lecture: 2 hours. **Herz**

Seminar discussions of various experimental treatments which can result in enhanced or disrupted adult learning abilities when administered prenatally.

234. Advanced Study of Human Information Processing. (1-3) F, W, or Sp. Prerequisite: Consent of the instructor. Lecture: 1-3 hours. **Stone**

Selected topics in the areas of perception, memory, problem solving, and other cognitive processes. The student will be expected to produce a critical and synthetic review of some aspect of literature.

235. Psychotherapy Research. (2) F, W, or Sp. Prerequisite: Consent of the instructor. Lecture: 2 hours. **O'Sullivan**

Review of research studies of the processes and effectiveness of psychotherapy; consideration of methodological issues.

238. Biochemical Research in Neural Tissue. (1-3) F, W, or Sp. Prerequisite: Consent of the instructor. Laboratory: 3-9 hours. **Ellman**

Supervised research experience including an introduction to biochemical and histological techniques for the study of neural tissue.

239. Investigation into Human Consciousness. (3) F, W, or Sp. Prerequisite: Consent of the instructor. Lecture: 3 hours. **Ornstein**

Readings in the psychology and physiology of conscious experience.

240. Readings in Psychopathology. (2) F, W, or Sp. Prerequisite: Consent of the instructor. Lecture: 2 hours. **Hargreaves**

Special topics related to research on the etiology, diagnosis, and treatment of severe psychopathology.

243. Research in Community Psychology. (2-4) F, W, or Sp. Prerequisite: Psychology 203C or equivalent and consent of the instructor. Lecture: 1 hour. Laboratory: 3-9 hours. **Adelson, Kalis**

Research methods in community psychology and community mental health, including epidemiology, biostatistics, demography, systems analysis, and program evaluation. The student must be involved in an ongoing project.

244. Environmental Psychology. (2) F, W, or Sp. Prerequisite: Consent of the instructor. Lecture: 2 hours. **Malmstrom**

Introductory survey of human physiological and emotional response to the physical environment; effects of climate, pollution, noise, crowding, and other urban physical features; research strategies for studying human psychophysiology in natural and artificial environments.

245. Readings in Behavioral Neurochemistry. (2) F, W, or Sp. Prerequisite: Consent of the instructor. Lecture: 2 hours. **Ellman**

Readings in chemistry related to psychological phenomena; the biochemical bases of the effects of drugs, hormones, and disease states on cerebral function.

249. Special Studies in Psychology. (1-8) F, W, or Sp. Prerequisite: Consent of the instructor. **Staff**

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

250. Research. (1-8) F, W, Sp. Prerequisite: Consent of the instructor. Staff Collaborative or independent research in consultation with a member of the faculty.

255A-B-C. Research in Community Mental Health. (2-4, 2-4, 2-4) F, W, Sp. Prerequisite: Consent of the instructor. Lecture: 2 hours. Laboratory: 0-6 hours. Adelson

Lecture-seminar preceptor sessions on theory, methodology, problems, and issues in research in community mental health; students will carry out own research study.

256. Introduction to Clinical Neuropsychology. (3) F, W, or Sp. Prerequisite: Consent of the instructor. Lecture: 2 hours. Laboratory: 3 hours. Davison, Steinhelber

Clinical research investigations of human brain-behavior functions, emphasizing the relationships between the higher cognitive components of behavior and the brain's anatomy and disorders. The laboratory consists of supervised neuropsychological evaluations of brain damaged patients.

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.

300. Practicum in Teaching Psychology. (0) F, W, or Sp. Prerequisite: Consent of the instructor. Lecture: Variable. Laboratory: Variable. Staff

Supervised classroom or tutorial teaching experience.

RADIOLOGY

100. Introduction to Clinical Radiology. (2) F, W, Sp. Prerequisite: Psychiatry 130, Medicine 130, Pathology 100, Anatomy 100 and 103; Medicine 131A-B concurrently. Margulis

Course provides instruction in basic aspects of therapeutic and diagnostic radiology and nuclear medicine. Illustration of diagnostic and therapeutic modalities in specific disease states provides instruction in use of radiologic resources.

140.01. Roentgen Diagnosis. (1½ per week) Su, F, W, Sp. Prerequisite: Medicine 131A-B. Margulis

A student clerkship in radiology. Observation of radiological procedures, interpretation of films, attendance at conferences, and study of the basic philosophy of radiological examinations and rules for interpretation.

140.02. Clinical Clerkship in Radiation Therapy. (1½ per week) Su, F, W, Sp. Prerequisite: Medicine 131A-B. Phillips

Participation in examination of cancer patients under treatment in radiation therapy and in rounds, conferences, and clinics.

140.03. Clinical Clerkship. (1½ per week) Su, F, W, Sp. Prerequisite: Medicine 131A-B. Margulis

Clinical clerkship in approved hospital by special arrangement and approval of the Dean's Office and the Chairman of the Department of Radiology.

140.04. Clinical Clerkship in Nuclear Medicine. (1½ per week) Su, F, W, Sp. Prerequisite: Medicine 131A-B. Consent of the instructor. Staff

Observation of basic nuclear medicine procedures and participation in diagnostic tests employing radioisotopic tracers. Completion of Radiology 140.04, 140.12, 170.08, 170.09, meet the State of California requirements for licensure to use radioactive isotopes in clinical medicine.

140.05. Roentgen Diagnosis at MZ. (1½ per week) Su, F, W, Sp. Prerequisite: Medicine 131A-B. Davidson

Students serve a clerkship in the Diagnostic Division of the Department of Radiology. They observe performance of radiologic procedures, interpretation of films, attend conferences and learn basic philosophy of conducting radiologic examinations and the rules of interpretation.

140.06. Clinical Clerkship in Radiation Therapy at MZ. (1½ per week) Su, F, W, Sp. Prerequisite: Medicine 131A-B. Castro

Participation in examination of cancer patients under treatment in the Claire Zellerbach Saroni Tumor Institute at Mount Zion Hospital. Students participate in rounds, conferences, and clinics, and see demonstrations of the use of newer radiotherapeutic techniques.

140.07. Diagnostic and Therapeutic Radiology. (1½ per week) Su, F, W, Sp. Prerequisite: Medicine 131A-B. Margulis

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.

140.08. Clinical Clerkship in Cardiovascular Radiology. (1½ per week) Su, F, W, Sp. Prerequisite: Medicine 131A-B. Carlsson

Cardiovascular radiology provides an opportunity to become acquainted with the radiologic studies of the cardiovascular system through active participation in the examinations and their interpretation.

140.09. Clinical Clerkship in Diagnostic Radiology at SF. (1½ per week) Su, F, W, Sp. Prerequisite: Medicine 131A-B. Minagi

Students serve a clerkship in the Diagnostic Section of the Department of Radiology. They observe performance of radiologic procedures, interpretation of films, attend conferences, and learn basic philosophy of conducting radiologic examinations and the rules of interpretation.

140.10. Roentgen Diagnosis at F. (1½ per week) Su, F, W, Sp. Prerequisite: Medicine 131A-B. Russell

Clinical clerkship in diagnostic radiology including daily seminars in radiology of the chest, bones, genitourinary tract, and neuroradiology. Students will observe in fluoroscopy and special procedures including catheterization, arteriograms. Modification of the course material will be arranged to suit individual needs.

140.11. Radiology Clerkship at C. (1½ per week) Su, F, W, Sp. Prerequisite: Medicine 131A-B. Burhenne

Includes all types of radiologic procedures, pediatric radiology, and radiation therapy with emphasis on the radiologist as a consultant to other specialists as related to use and indications for all radiologic techniques.

140.12. Radioactivity Laboratory. (1½ per week) Su, F, W, Sp. Prerequisite: Medicine 131A-B. Consent of the instructor. Kaufman, Lamel

Course is designed to teach accurate measurement radioactivity techniques for biomedical purposes.

140.13. Radiology and Medical Diagnosis. (1½ per week) Sp, Su. Prerequisite: Medicine 131A-B. Ross

For second-year medical students, immediately following Medicine 131A-B, to help acquire knowledge and attitudes that ease transition from preclinical studies to clinical medicine. Radiographs with case presentations are used to help learn mechanisms of disease and clinical judgment.

160.01. Diagnostic Radiology Seminar. (1) F, W, Sp. M. D. Jones

Informal review and introduction to basic radiologic techniques and anatomy with emphasis on comparison between normal organ systems and pathologic systems. This course may be taken repeatedly for credit.

170.01A-B-C. Introduction to Research on Learning. (2-2-2) F, W, Sp. Prerequisite: Consent of the instructor. Ross

Designed to acquaint students with domain of educational research, specifically

research on learning. Learn vocabulary, recognize valid problems, and valid results, get insight into the problem of method.

170.02. Radiobiology: Radiation Effects on Genes and Chromosomes. (2) W. Prerequisite: Consent of the instructor. Wolff

Concepts and mathematics of target theory related to 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.

170.03. Radiobiology: Cell Population Dynamics. (2) Sp. Prerequisite: Consent of the instructor. Cleaver, Patt

An analysis of steady state and expanding cell populations in relation to cell cycle kinetics, cell-cell interactions, organizational, and regulatory factors.

170.05. The Anatomy of Anatomy. (1-2) Su, F, W, Sp. Prerequisite: Anatomy 100 must be taken before or concurrently with this elective. 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, aiming to show the usefulness and delights of knowing normal anatomy and its variants.

170.06. Pathology of Internal Organs. (1-2) Su, F, W, Sp. Prerequisite: Consent of the instructor. Ross

A lecture course limited to small groups, with opportunity for self-instruction in the learning laboratory, on selected aspects of gross morbid anatomy of internal organs and the natural history of their ailments. A study of disease as a process in time.

170.07A-B-C. Clinical Applications of Anatomy. (1-1-1) F, W, Sp, Su. Ross

Limited to eight students. Using radiographs, this course will demonstrate anatomy in the living. With numerous examples, it will illustrate the concept of individual variations and will show the usefulness to physicians of precise knowledge of anatomy.

170.08. Nuclear Medicine Physics. (3½) Su, F, W, Sp. Prerequisite: Given concurrently with Radiology 170.09. Perez-Mendez, Kaufman

Introduction to the physics of radioactivity, nuclear instrumentation, and gamma ray imaging techniques.

170.09. Introduction to Nuclear Medicine. (3½) Su, F, W, Sp. Prerequisite: Given concurrently with Radiology 170.08. Price and Staff

Introduction to basic nuclear medicine diagnostic procedures, both *in vivo* and *in vitro*, and therapy with radiopharmaceuticals.

198. Supervised Study in Radiology. (1-5) F, W, Sp. **Margulis 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. (1-5) F, W, Sp. **Margulis and Staff**

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

400. Seminar in Diagnostic Radiology. (1) Su, F, W, Sp. **Goldberg**

Faculty from radiology and other departments lecture and discuss various diseases of all systems of the body. Residents prepare case histories stressing roentgen findings and correlative surgical and laboratory work, special studies, library, and film research.

401. Diagnostic Case Rounds. (2) Su, F, W, Sp. **Amberg**

Films of interesting cases from the daily work are presented and reviewed. Roentgenograms of surgically and pathologically proved cases are correlated with the gross and microscopic pathologic findings.

402. Specialty Seminars Concerned with Diagnosis. (3) F, W, Sp. **UC Margulis**

Seminars require preparation and presentation of roentgen findings on patients under discussion at medical, surgical, pediatric, obstetric, and gynecologic departmental conferences and clinicopathological conferences and seminars on congenital heart disease, disease of the gastrointestinal tract, and orthopaedics.

403. Seminar in Therapeutic Radiology. (1) Su, F, W, Sp. **Phillips**

Seminars include dry clinics on problems of radiation therapy of cancer including diagnosis, indications for and technique of therapy, tumor pathology, and radiobiology. Occasionally special lectures related to radiation therapy are given by visiting lecturers.

404. Specialty Seminars Concerning Cancer. (3) Su, F, W, Sp. **UC Phillips**

Seminars include discussion of diagnosis, type of therapy, statistics, and results obtained in cancer of the head and neck, tumors of vascular origin, advanced breast tumors, visible tumors, tumor board, gynecological radiation seminar, and hematological seminar.

405. Radiological Research. (1-8) Su, F, W, Sp. Elective. **Margulis**

Numerous research projects are being conducted in the department and facilities are available for new ones. Residents are encouraged to take advantage of these opportunities.

406. Elements and Clinical Applications of Radiation Physics. (2) Su, F, W, Sp. **Perez-Mendez**

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 illustrated. The course is designed to give residents in radiology the necessary background to practice radiology.

407. Introduction to Radiobiology. (1) Sp. **Patt**

A survey of basic concepts of radiation actions at various levels of biological organization. Lectures will be oriented to the radiology resident and will include somatic and genetic effects of radiation and tumor response.

408. Radiology in Specialty Seminars. (3) Su, F, W, Sp. **SF Coulson**

Interdepartmental seminars in which the radiological picture of problem cases either of diagnostic or therapeutic nature are presented. This course includes surgical- and medical-radiological rounds, consultative tumor board, clinicopathological conferences, and other departmental grand rounds.

409. Radiology in Specialty Seminars. (3) Su, F, W, Sp. **VA Ovenfors**

Interdepartmental seminars in which the radiological picture of problem cases either of diagnostic or therapeutic nature are presented. These include medical-surgical, clinicopathological, chest, medical X ray, rheumatology, neurology, and neurological surgery conferences; consultative tumor board; and surgical and orthopaedic grand rounds.

411. Introduction to Nuclear Medicine. (2) Su, F, W, Sp. Prerequisite: Given concurrently with Radiology 421. **Price and Staff**

Introduction to basic nuclear medicine diagnostic procedures, both *in vivo* and *in vitro*, and therapy with radiopharmaceuticals.

412. Pathology. (1) Su, F, W, Sp. **VA Ovenfors**

Course includes review of the surgical pathology material and attendance at autopsy rounds.

413. Pathology. (1) Su, F, W, Sp. **SF Minagi**

Course includes presentation of pathological 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.

414. Physics of Diagnostic Radiology. (2) W, Sp. Prerequisite: Radiology 406. **Perez-Mendez**

A seminar course with laboratory experiments designed to acquaint the student with current knowledge of physics applicable to diagnostic radiology. Topics to be covered include generation and extraction of radiologic information, image conversion, recording methods, and special purpose equipment.

415. Seminars in Radiobiology. (1) F, W, Sp. **Phillips**

Study of principles of radiobiology and their application to radiotherapy. Seminars deal in depth with textbooks, selected readings and prepared seminars leading to understanding of mechanisms of action of radiation in clinical radiotherapy. Oriented to radiotherapy fellows and residents.

419. Growth Kinetics of Cells, Tissues, and Tumors. (2) Sp. **Cleaver, Patt**

An analysis of cell population growth in tissues, tumors, and cultures. Detailed emphasis given to radioactive tracers (thymidine and its biochemistry) and experimental methods for studying cell proliferation *in vivo* and *in vitro* (e.g., autoradiography).

420. Nuclear Medicine Seminars. (1) F, W, Sp. **Price**

Rotating assignments of topics for discussion by residents in nuclear medicine training programs in all affiliated hospitals. Critical reviews of available information in limited areas are used to provide a broad review of nuclear medicine for all trainees.

421. Nuclear Medicine Physics. (2) Su, F, W, Sp. Prerequisite: Residents assigned to nuclear medicine section. **Kaufman, Perez-Mendez**

Introduction to physics of radioactivity, nuclear instrumentation, and gamma ray imaging techniques.

422. Basic Radiological Sciences. (3) Su. **Perez-Mendez**

Course intended for all first-year residents in radiology and provides an introductory survey of radiobiology, diagnostic X-ray physics, radioactivity, and radiation instrumentation.

423. Concepts of Treatment Planning and Dosimetry in Therapeutic Radiology. (3) Su. Prerequisite: Residents assigned to therapeutic radiology. **V. Smith**

A workshop course to provide residents in therapeutic radiology with the elements of treatment planning dose calculations.

424. Physics of Therapeutic Radiology. (1) F, W, Sp. Prerequisite: Residents assigned to therapeutic radiology. **V. Smith**

A lecture-seminar course, with some practical sessions to provide the resident with a basic knowledge of radiological physics with special reference to those aspects relating to therapeutic radiology.

450. Clinical Nuclear Medicine. (1½ per week) Su, F, W, Sp. Prerequisite: Radiology 422. **Price and Staff**

Clinical experience in diagnostic and therapeutic nuclear medicine to satisfy requirements of American Board of Radiology for certification in diagnostic radiology and radiation therapy.

451. Clinical Diagnostic Radiology. (1½ per week) Su, F, W, Sp. **Margulis**

Residents, under supervision, carry out radiological examination and interpretation of X rays of patients referred from wards and outpatient clinics. The chief resident has certain administrative duties relative to the resident training program.

452. Clinical Diagnostic Radiology. (1½ per week) Su, F, W, Sp. **VA Ovenfors**

Residents, under supervision, are responsible for the diagnostic activities of the department including diagnostic consultations and reports, history-taking, and physical examinations. In addition, the chief resident has certain administrative duties relative to the resident training program.

453. Clinical Radiology. (1½ per week) Su, F, W, Sp. **SF Coulson**

Residents are responsible for the diagnostic and therapeutic activities of the department under the direction of staff radiologists including diagnostic consultations and reports, history-taking, physical examinations, radiation therapy, and follow-up of patients referred for therapeutic consultations.

454. Clinical Therapeutic Radiology. (1½ per week) Su, F, W, Sp. **UC Phillips**

Residents, under supervision, are responsible for diagnosis, treatment, and follow-up of patients referred to radiation therapy from the wards and outpatient clinics. Radiation therapy rounds include discussion of newly referred patients; chart rounds include the discussion of patients under treatment.

455. Radioactivity Laboratory. (1½ per week) Su, F, W, Sp. Prerequisite: Residents assigned to nuclear medicine section and consent of the instructor. **Kaufman**

Course is designed to teach accurate measurement radioactivity techniques for biomedical purposes.

REMOVABLE PROSTHODONTICS

116B-C. Elementary Complete Denture Prosthodontics. (3-3) W, Sp. Lecture, seminar, and laboratory: Variable. Total: 7 hours per week. **Kelly**

A combined lecture, seminar, and laboratory course on the elementary principles of complete denture prosthodontics with laboratory exercises representing the technical and clinical procedures and lectures and seminars emphasizing the biological background and clinical application of the technical steps.

126.01. Partial Dentures. (3) F, W. Lecture, seminar, and laboratory: Variable. Totals 7 hours per week. Prerequisite: Removable Prosthodontics 116B-C. **Augsburger**

The parts of a removable partial denture and their functions are presented in seminar sessions. In the laboratory, instruction and experience is provided in fabricating a removable partial denture.

126.02. Intermediate Dentures. (3) W, Sp. Lecture: 1 hour. Laboratory: 6 hours. Prerequisite: Removable Prosthodontics 116B-C. **Fairchild**

126.03. Clinic. (3) F, W, Sp. Seminar and clinic: Variable. Totals 7 hours per week. **Parker**

Demonstration-participation in constructing complete dentures for a patient.

130C. Orofacial Prosthodontics. (1) Sp. Lecture: 1 hour. **Chierici and Staff**

Biologic principles underlying prosthodontic treatment of patients with congenital and acquired malformations, defects, and dysfunctions. This will include the development of normal and abnormal speech related to prosthodontics. The basis for prosthodontic therapy in temporomandibular joint disorders is also presented.

139. Clinical Removable Prosthodontics. (1½) F, W, Sp. Prerequisite: Third-year standing in removable prosthodontics. **Regli and Staff**

Clinical instruction. Third-year lectures and seminars must be taken concurrently.

139.01. Treatment Planning and Partial Denture Design. (1) F, W, Sp. Prerequisite: Third-year standing. **Hemphill**

Treatment planning and design of removable partial dentures.

149. Clinical Removable Prosthodontics. (6½) F, W, Sp. Prerequisite: Removable Prosthodontics 139. **Regli and Staff**

171A-B-C. Complete Prosthodontics. (4-4-4) F, W, Sp. Lecture: 1 hour. Laboratory and clinic: 9 hours. **Regli, Parker and Staff**

Instruction in clinical and laboratory procedures related to complete prosthodontics.

172.01A-B-C. Partial Prosthodontics. (4-4-4) F, W, Sp. Lecture: 1 hour. Laboratory and clinic: 9 hours. **Regli, Parker and Staff**

Instruction in clinical and laboratory procedures related to partial prosthodontics.

172.02. Partial Prosthodontics. (5) SS. Lecture: 1 hour. Laboratory and clinic: 12 hours. **Regli, Parker and Staff**

Instruction in clinical and laboratory procedures related to partial prosthodontics.

173. Clinical Practice. (4) SS. Laboratory and clinic: 12 hours. Prerequisite: Removable Prosthodontics 171A-B-C, 172.01A-B-C, and 172.02. **Regli, Parker and Staff**

Clinical practice on patients for partial and complete prosthodontics.

174A-B-C. Complete Prosthodontics. (3-3-4) F, W, Sp. Lecture: 1 hour. Laboratory and clinic: 6 hours, F, W; 9 hours, Sp. Prerequisite: Removable Prosthodontics 171A-B-C. **Regli, Parker, McCormick, Wilde**

Instruction in clinical and laboratory procedures related to complete prosthodontics. Course will include in-service hospital treatment at Veterans Hospital, San Francisco.

175A-B-C. Partial Dentures. (3, F, W; 4, Sp.) F, W, Sp. Lecture: 1 hour. Laboratory and clinic: 6 hours, F, W; 9 hours, Sp; 12 hours. **Regli, Parker and Staff**

176. Special Study for Postdoctoral Students. (1-5) F, W, Sp. Research: 3-15 hours. **Regli**

Original investigation in the field of removable prosthodontics.

177. Prosthodontics Seminar. (4) F, W, Sp. Seminar: 4 hours. Prerequisite: Students in Removable Prosthodontics Certificate Program must register for this course each quarter and summer session for entire program. **Regli, Parker and Staff**

Review of the literature related to prosthodontics.

180. Prosthodontics. (1) W. Lecture: 1 hour. Prerequisite: Removable Prosthodontics 130C. **Brigante and Staff**

Content varies to accommodate areas of current interest to fourth-year students in the field of removable prosthodontics. Information revolves around clinical judgment, evaluation of patients, immediate denture sequence, dental laboratory relations, treatment of the aged, aberrant cases, discussion of literature.

189.01. Prosthodontics: Complete and Removable Partial. (1-9) F, W, Sp. Prerequisite: Completion of Removable Prosthodontics 149. Clinic: Variable. **Regli**

Continues clinical experience at the same level.

189.02. Removable Prosthodontics: Treatment Planning. (1) F, W, Sp. Clinic: 3 hours. Prerequisite: Consent of the instructor and the Dean. Limited enrollment. **Regli**

189.03. Clinical Practice. (1½-3) F, W, Sp. Clinic: 4½-9 hours at VA Hospital. Prerequisite: Removable Prosthodontics 139 and approval of Clinic Review Committee. Limited enrollment. **Wilde, McCormick**

Advanced undergraduate instruction in clinical procedures in complete denture prosthodontics.

189.04. Maxillofacial Prosthodontic Rehabilitation. (1-2) F, W, Sp. Clinic: 3-6 hours. Prerequisite: Consent of the instructor and Student Status Committee. **Curtis**

Maxillofacial prosthodontic rehabilitation. Treatment planning and construction of prosthodontic devices and correction of intra-oral and extraoral defects.

199. Laboratory Project in Prosthodontics. (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 division.

489.04. Maxillofacial Prosthodontic Rehabilitation. (1-2) F, W, Sp. Clinic: 3-6 hours. Prerequisite: Consent of the instructor and Student Status Committee. **Curtis**

Maxillofacial prosthodontic rehabilitation. Treatment planning and construction of prosthodontic devices and correction of intra-oral and extraoral defects.

RESTORATIVE DENTISTRY

171A-B-C. Advanced Restorative Dentistry. (3) Yr. Lecture: 1 hour. Clinic: 6 hours. **Schuchard, Stark**

Seminars and current literature review correlating basic and preclinical science with the practice of restorative dentistry. Selected cases requiring medical and dental diagnostic procedures and treatment plan will be presented.

173. Postdoctoral Clinical Practice. (2) SS. Clinic: 60 hours. Prerequisite: Restorative Dentistry 171A-B-C. **Schuchard, Stark**

Clinical practice applying advanced restorative procedures.

174A-B-C. Advanced Restorative Dentistry. (3-3-3) F, W, Sp. Lecture: 1 hour. Clinic: 6

hours. Prerequisite: Restorative Dentistry 171A-B-C. **Schuchard, Stark**

Advanced restorative dentistry. Seminars will be directed towards the psychology of patient management in relation to treatment planning. The clinical phase will provide experience in contact instruction.

175. Postdoctoral Clinical Practice. (2) SS. Clinic: 60 hours. Prerequisite: Restorative Dentistry 174A-B-C. **Schuchard, Stark**

Clinical practice applying advanced restorative procedures. Continuation of Restorative Dentistry 173 at advanced level.

176B-C. Clinical Research. (1-5, 1-5) W, Sp. Research: 3-15 hours. Prerequisite: Restorative Dentistry 171A-B-C, 173, 174A, 177-21A-B-C, and 177.22. **Schuchard, Stark**

A research project in the field of restorative dentistry. Findings must be prepared for publication.

177.01A-B-C. Seminar. (2-2-2) F, W, Sp. Seminar: 2 hours. **Schuchard, Stark**

Study and interpretation of current literature contributing to the advance of dental science. Discussion will be directed towards defining areas of further study, considerations of modifying scope of dental education to include advances. Research protocols will be developed and implemented.

177.02. Seminar. (2) SS. Seminar: 2 hours. Prerequisite: Restorative Dentistry 177.01. **Schuchard, Stark**

This is a continuation of Restorative Dentistry 177.01.

177.03A-B-C. Seminar. (2-2-2) F, W, Sp. Seminar: 2 hours. Prerequisite: Restorative Dentistry 177.02. **Schuchard, Stark**

This is a continuation of Restorative Dentistry 177.02.

177.04. Seminar. (2) SS. Seminar: 2 hours. Prerequisite: Restorative Dentistry 177.03A-B-C. **Schuchard, Stark**

This is a continuation of Restorative Dentistry 177.03A-B-C.

SOCIOLOGY

112. American Society and Its Problems. (3) Sp. Prerequisite: Consent of the instructor. **Staff**

Presentation of prominent sociocultural features of dominant systems in American society. Integration and dissonance between and among these systems with attention to major social problems which result; e.g., racism, inequality, youth, disjunction between technology and humanistic values.

120A. Philosophy and Logic of Scientific Methods. (2) W. Prerequisite: Second-year standing in the School of Nursing or consent of the instructor. **Davis**

Focuses on impact of different philosophical schools on development of science, logic or scientific method, statistical concepts, use of theories and models in defining problems, of hypotheses verification, description of empirical methods, their advantages and limitations.

120B. Statistical Concepts. (2) Sp. Prerequisite: Second-year standing in the School of Nursing or consent of the instructor. Sociology 120A is not prerequisite to Sociology 120B. **Staff**

An introduction to concepts underlying statistical techniques; criteria for selection; how, where, and when used; logic of statistical inference; discussion of probability; discussion of biostatistics included.

122. Health and Illness in American Society. (3) F. Prerequisite: Consent of the instructor. **Staff**

Broad survey of features of American society that produce either health or morbidity or both. A variety of significant factors will be explored in conjunction with ideological implications for the quantity and quality of health care services.

125. Issues in Black-White Relations. (3§) Sp. Prerequisite: Consent of the instructor. **Johnson**

A survey of historical, sociological, and political analysis of the origin of Caucasian attitudes towards the black community; and analysis of the origin of contemporary attitudes towards the black minority and the effects in black-white relationships.

132. The Individual and Society. (3§) F. Prerequisite: Third-year standing or consent of the instructor. **Olesen**

The relationship of social structures to individuals and their behaviors. The 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. Lecture: 3 hours. **Olsen, Newman**

Analysis of sex roles in general and women's roles in particular in health care receipt and delivery with particular emphasis on recruitment problems to health professions, images of women in therapeutic situations, and crosscultural features of health care.

135. The Community: Its Social Institutions. (4) W. Prerequisite: Third-year standing or consent of the instructor. **Strauss**

The structure and influences in development and operation of health services organization. An introduction to field observation and interviewing techniques used in studying social institutions. Relationship of philosophical commitment to planning for social change and on continuity.

136. Pain: Social, Organizational, and Interactional Aspects. (3§) Sp. Lecture: 2 hours. Laboratory: 3 hours. **Strauss**

Pain as experienced, expressed, and managed in a variety of settings by patients, staff, and family. Sociological and organizational perspectives on assessing, legitimizing, and controlling pain.

167. Social Organization of Health Care (with Primary Emphasis on Hospitals). (2) F. Prerequisite: Consent of the instructor. **Barney**

An inquiry into the nature of the organizational forms by which health care is distributed with particular emphasis on hospital organization and the interaction between health care personnel.

168. Contemporary Social Problems. (3§) F. **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.

198. Supervised Study in Sociology. (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.

204. Sociology of Psychiatry. (3) Sp. Lecture: 3 hours. **Schatzman**

Psychiatric practices, professional careers, and institutions conceptualized sociologically, as historic, symbolic systems and interactional processes.

205. The Sociology of Health Professions and Occupations. (4) F. Lecture: 4 hours. **Strauss and Staff**

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 relationships, careers.

206. Sociology of Devalued Occupations. (2-4) W. Prerequisite: Consent of the instructor. Lecture: 2-4 hours. **Olesen**

Review and analysis of occupational theory with special reference to the trends, both social and psychological, involved in work customarily considered "dirty" or devalued. Analysis of the organization of such work, the life styles of the persons who pursue it.

207. Microsociology. (2-4) W. Prerequisite: Consent of the instructor. Lecture: 2-4 hours. **Olesen**

Analysis of social behavior utilizing concepts of territoriality, proxemics, 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. (4) Sp. Prerequisite: Consent of the instructor. **Davis**

The relationship of social class, ethnic identification, group membership, family structure, occupation and life style to health and illness, and therapeutic interaction of laymen and health professionals.

209. Sociological Analysis I. (4) F. Prerequisite: Consent of the instructor. **Strauss**

Introduction to methods of sociological analysis, including the analyst's assumptions, the procedural phases, presentation of results, stylistic features, weaknesses and strengths, relevance and application, responses of audiences, and exemplifications in the work of specific scholars.

210A-B. Sociological Analysis II and III. (2-2) W, Sp. Prerequisite: Sociology 209 and consent of the instructor. **Glaser**

Techniques, methodology, and logic of analysis of data to generate a sociological perspective and substantive theory.

211A-B. Sociological Analysis IV and V. (2-2) F, W. Prerequisite: Sociology 209 and 210A-B and consent of the instructor. **Glaser**

Techniques, methodology, and logic of generating formal sociological theory.

212A-B. Sociological Theory. (2-2) W, Sp. Prerequisite: Sociology 212A is prerequisite to 212B. Consent of the instructor. **Staff**

An examination and evaluation of classical and recent contributions to sociological theory. The central aim 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. Prerequisite: Consent of the instructor. **Schatzman**

A basic course in the logic and operations of social research in the field. Lectures, readings, and discussion on research strategies: entree, watching, listening, data recording, and analyzing.

214A-B. Discovery of Social Reality. (4-4) F, W. Prerequisite: Consent of the instructor. **Schatzman**

Practicum in sociological field observation; course designed to sensitize students to the behavior of people in public places and in organized groups. Instruction in observation, interviewing, the organization of data, descriptive analysis, and research writing.

215. Problems in Microsociology: Urban Life. (2-4) Sp. Prerequisite: Consent of the instructor. Sociology 207 advised. **Olesen**

A graduate research seminar on selected problems in microsociology especially related to urban life, the urban environment and its bearing on health care settings; e.g., clinics. Application of and critique of research and concepts in this area.

216. Comparative Organization. (3) W. Prerequisite: Consent of the instructor. **Staff**

A critical review of classical and recent contributions to the sociology of formal organizations. A variety of types of organizations will be considered, with special emphasis on service organizations.

220. Seminar in Sociology. (3) F, W, Sp. Prerequisite: Consent of the instructor. **Staff**

Doctoral student seminar to discuss methods and problems in current research. Can be repeated for credit.

224. Epistemological Problems in the Social Sciences. (4) Sp. Prerequisite: Consent of the instructor. **F. Davis**

Central epistemological problems in the social sciences and their bearing on issues of the research role, modes of conceptualization, scientific communication, and public information.

230. Analysis of Symbolic Systems. (2-4) Sp. Prerequisite: Consent of the instructor. **Olesen**

Critical inspection and analysis of American symbolic systems, e.g., educational institutions, mass media of communication, etc., with respect to the diffusion and alteration of values in specific sections of the society; e.g., health professions.

232. Advanced Problems in Social Psychology. (2-4) F, W, Sp. Prerequisite: Consent of the instructor. Lecture: 4 hours. **Staff**

An advanced seminar dealing with theoretical and conceptual problems in various

areas of social psychology. Recent developments in theory and concept will be reviewed in the light of advancing knowledge in the field.

233. Seminar in Urban Social Relations. (3) W. Prerequisite: Consent of the instructor. **Strauss**

A graduate 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 the instructor. **Glaser**

The sociological problems and processes involved when people deal with banks, lawyers, accountants, savings and loans, brokers, finance companies, investment counselors—as they surely must do to store money, use money, obtain credit and loans, invest money, etc.

249. Studies in Sociology. (1-8) F, W, Sp. Prerequisite: Consent of the instructor. **Staff**

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

250. Research. (1-8) F, W, Sp. Prerequisite: Admission to doctoral study and consent of the instructor. **Staff**

255A-B-C. Field Research in Social Psychiatry. (6-6-6) Yr. Prerequisite: Masters degree in psychiatric nursing and consent of the instructor. Lecture: 6 hours. **Glaser**

Field research seminar and practicum. The logic and techniques of the field method of inquiry. Emphasis upon research design, participant observation, and data gathering. Guided experiences in a variety of research interests and locales.

256A-B-C. Field Research in Social Psychiatry. (6-6-6) Yr. Prerequisite: Sociology 255A-B-C and consent of the instructor. Lecture: 6 hours. **Glaser**

Field research seminar and practicum. Collaborative research with staff. Training in data organization and analysis.

257A-B-C. Field Research in Social Psychiatry. (6-6-6) Yr. Prerequisite: Sociology 256A-B-C and consent of the instructor. Lecture: 6 hours. **Glaser**

Field research seminar and practicum. Concept development and research composition. All stages of advanced field research from design to publication.

298. Thesis or Comprehensive Examination. (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 masters degree or taking a comprehensive examination required for the masters 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.

SURGERY

110. Required Core Clinical Clerkship in General Surgery. (1½ per week) Su, F, W, Sp. Prerequisite: Core curriculum in basic sciences. **Dunphy, Blaisdell, Hall**

Core general clerkship in surgery. Students assigned to wards and clinics at *UC, SF, 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. (1½ per week) Su, F, W, Sp. Prerequisite: Surgery 110 and Medicine 110. **Dunphy, Blaisdell, Schrock**

Students serve as senior clerks on the wards and in the operating rooms at *UC, SF, and VA*. Rounds and seminars focus on physiological approach to surgery.

140.01. Advanced General Surgery Clerkship. (1½ per week) Su, F, W, Sp. Prerequisite: Surgery 110 and 111. **Dunphy and Staff**

Elective advanced clerkship: senior clinical clerks participate in clinic, ward, and operating room with direct involvement in postoperative and preoperative care at *UC, SF, VA, C, and F*.

140.02. Vascular Surgery Clerkship at VA and UC. (1½ per week) Su, F, W, Sp. Prerequisite: Basic science curriculum and clinical clerkship in either Medicine 110 or Surgery 110 and 111. **Wylie, Moore, Ehrenfeld, Stoney**

Students serve as clinical clerks in the surgery service and participate in clinics, rounds, conferences, and surgery on patients.

140.03. Tissue Transplantation. (1½ per week) Su, F, W, Sp. Prerequisite: Medicine 131A-B and consent of the instructor. **Belzer**

Participation in renal homotransplantation operations, ward rounds, transplantation, and research conferences. Additional time is spent in the Surgical Research Laboratories participating in experimental organ transplantation studies.

140.04. Clinical Clerkship. (1½ per week) Su, F, W, Sp. Prerequisite: Completion of basic sciences core curriculum and either Medicine 110 or Surgery 110. **Dunphy**

Clinical clerkship in approved hospitals in other universities by special arrangement and approval of the Dean and the Chairman of the Department of Surgery.

140.05. Operable Heart Disease. (1½ per week) Su, F, W, Sp. Prerequisite: Completion of basic sciences core curriculum and Medicine 110 or Surgery 110 and 111. **Gerbode**

Ward rounds and conferences on patients with operable, congenital, and acquired heart disease. Details of selection, differential diagnosis, and results of surgery are discussed. Participation at *UC, PMC, VA*.

140.06. Mission Emergency Clerkship. (1½ per week) Su, F, W, Sp. Prerequisite: Completion of basic sciences core curriculum and Medicine 110 or Surgery 110. **Lim**

Two-weeks participation on the *SF* Emergency Ward. 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) Su, F, W, Sp. Prerequisite: Completion of basic sciences core curriculum and Medicine 110 or Surgery 110 and 111. **Sheldon**

This will involve 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) Su, F, W, Sp. Prerequisite: Surgery 110 and 111 and consent of the instructor. **Sheldon**

A clinical clerkship in the trauma service of the Department of Surgery at *SF*. The student will work at intern-clerk level as an integral part of the service.

140.10. Clinical Experience in Cardiothoracic Surgery. (1½ per week) Su, F, W, Sp. Prerequisite: Surgery 110 and 111 or Medicine 110. **Sanderson**

As an integral member of the cardiothoracic team, the student will directly and actively share in preoperative evaluation, operative procedures, and postoperative care. Cardiac and thoracic conferences and daily ward rounds provide the didactic teaching.

160.03. Clinical Cardiopulmonary Surgery. (2) F, W, Sp, Su. Prerequisite: Third or fourth year. **Roe**

Seminars are conducted on a series of subjects relating to cardiopulmonary surgery,

which may be attended separately or in conjunction with weekly (Wednesday at 5:00 p.m.) rounds on the cardiopulmonary patients.

160.04. Fundamentals of Surgical Management of Malignant Diseases. (1) Su, F, W, Sp. Prerequisite: Medicine 110 or Surgery 110 and 111 and consent of the instructor. **Dunphy, Galente**

Correlation of pathologic physiology of certain malignant diseases with surgical principles utilized in management of the disease to elucidate causes of success or failure and limitations imposed by peculiarities of the malignant process on surgical techniques presently available.

160.05. Advanced Surgery Reading Course. (2) F, Sp. **Trunkley**

A weekly seminar for three hours where previously assigned papers will be discussed and critiqued. Over a period of eight weeks, approximately 200 papers representing the classical and current concepts in general surgery will be covered.

170.01. Basic Surgical Techniques. (1) F, W. Laboratory: 4 hours. **Schrock**

Students will learn the principles of operative technique including surgical asepsis by performing specific operations on anesthetized dogs. The students will function as surgeon, assistant surgeon, and anesthetist, and will be responsible for examination of the animals during convalescence.

170.02. Emergency Medical Care at SF. (1) F. **Lim and Staff**

Subjects will include first aid care with an introduction to suturing, splinting, resuscitation, psychiatric emergency, and civil disaster. Format will include lectures, discussions, films, practice, and tour of Mission Emergency. Course is offered primarily for first- and second-year medical students.

198. Supervised Study in Surgery. (1-5) F, W, Sp. Prerequisite: Consent of the instructor. **Dunphy 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 Surgery. (1-5) F, W, Sp. Prerequisite: Consent of the instructor. **Dunphy and Staff**

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

400. General Surgical Staff Conferences. (1½) F, W, Sp. Interns and residents. **SF Blaisdell, UC Dunphy, VA Hall**

Conferences include presentation of case studies with reference to the literature, case records, laboratory tests, and special studies. Faculty, and occasionally visitors, discuss surgical problems. Death and complications are reviewed weekly.

402. General Surgical Pathology Seminar. (1) F, W, Sp. Interns and residents.

UC Rambo

Seminars include case reports and demonstrations of the currently available gross and microscopic surgical pathological material from the operating rooms and pathology laboratories.

403. General Surgical Seminar. (2) Su, F, W, Sp. Interns and residents.

F Heer, SF Blaisdell, UC Dunphy, VA Hall

Seminar is held in the surgical wards with discussion of current problems concerning the diagnosis and management of general surgical patients.

404. Seminar in Surgical Research. (2) Su, F, W, Sp. Elective. Assistant residents.

UC Edmunds

Seminar includes discussion of current experimental surgical problems with reports on literature and work currently in progress in the surgical laboratories.

450. Clinical Surgery. (1½ per week) Su, F, W, Sp. Residents. *UC Dunphy, SF Blaisdell, VA Hall, F Heer, C Richards*

Residents, under supervision, are responsible for the preparation of case records, laboratory work, preoperative patient preparation, assistance at operations, postoperative care, and attendance at follow-up clinic. Senior residents have certain additional administrative, teaching, and clinical responsibilities.

452. Experimental Surgical Laboratory. (1½ per week) Su, F, W, Sp. Elective. Assistant residents. Surgery 450 and 452 cannot be taken concurrently. *UC Dunphy, SF Blaisdell, VA Hall*

Course includes experimental investigations of general surgical problems and the development of technical and laboratory methods to be applied in general surgery.

453. Clinical and Experimental Surgery. (10) Su, F, W, Sp. *Dunphy*

Assistant residents in off-campus hospitals approved by the department chairman 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.

490. Clinical Surgery. (1½ per week) Su, F, W, Sp. *SF Blaisdell*

Interns rotate through the general surgical service, including intensive care unit. Under the direction of the attending staff, this rotation provides experience also in vascular, chest, hand and plastic surgery, and surgery of maxillofacial injuries.

495. Clinical Surgery. (1½ per week) Su, F, W, Sp. Interns. *UC Dunphy*

Interns, under supervision, are responsible for the preparation of case records, laboratory work, preoperative patient preparation, assistance at operations, postoperative care, and attendance at follow-up clinic.

TEACHING METHODOLOGY

176A-B-C. Practice Teaching. (1) F, W, Sp. Prerequisite: D.D.S. degree. Laboratory: 3 hours. *Wycoff and Staff*

Practical teaching experience in selected courses under the supervision of members of the staff.

180.02A-B-C. Teaching Methods. (1-1-1) F, W, Sp. Prerequisite: Fourth-year standing or consent of the instructor. Lecture: 1 hour. *Fischer, Pavone*

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-C. Students will teach in selected courses under supervision.

186.01A-B-C. Practice Teaching. (1-1-1) F, W, Sp. Laboratory: 3 hours. *Fischer, Pavone*

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. (1½ per week) Su, F, W, Sp. Prerequisite: Surgery 110. *D. R. Smith*

Act as intern in the Urology Service at UC. Attend rounds and scheduled seminars with residents and visitings staffs.

140.02. Urology Clinical Clerkship at VA. (1½ per week) Su, F, W, Sp. Prerequisite: Surgery 110. *Howard*

Act as intern in the Urology Service at VA. Attend rounds and scheduled seminars with residents and visiting staffs.

140.03. Urology Clinical Clerkship. (1½ per week) Su, F, W, Sp. Prerequisite: Surgery 110. *D. R. Smith*

Clinical clerkship in off-campus hospitals approved by the Dean and the chairman of the department.

170.01. Fundamentals of Urology. (2) F, W, Sp. Prerequisite: Consent of the instructor. *D. R. Smith*

Seminar and library research.

198. Supervised Study in Urology. (1-5) F, W, Sp. *D. R. Smith 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. *D. R. Smith and Staff*

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

400. Seminar. (1½) Su, F, W, Sp. *D. R. Smith*

Seminar includes study of the basic sciences and urologic roentgenology with members of the attending staff.

401. Experimental Laboratory. (2) Su, F, W, Sp. Elective. *Tanagho*

Course includes experimental investigation in urologic problems.

402. Urologic Clinical Seminar. (2) Su, F, W, Sp. *D. R. Smith*

Seminar includes discussion of diagnosis and treatment of urologic patients in the urology wards with the attending staff.

403. General Urologic Staff Conference. (½) Su, F, W, Sp. *D. R. Smith*

Conference includes presentation and discussion of urologic problems by the house staff and faculty.

450. Clinical Urology. (1½ per week) Su, F, W, Sp. *SF Hinman, HCH Harrod, UC D. R. Smith, VA Howard*

First-year residents care for patients in the wards and outpatient clinics. Second- and third-year residents, under supervision, perform instrumental examinations on clinic patients. Senior residents, under supervision, perform the instrumental and surgical procedures and have administrative, clinical, and teaching responsibilities.

490. Clinical Urology. (1½ per week) Su, F, W, Sp. *SF 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.