SURG (SURG)

Courses

SURG 100. From Virtual to Real: The Fundamentals of Clinical Anatomy. 3 Units.
Introduction to human anatomy through a non-dissecting experience. Focus is on interpretation of normal anatomy through medical imaging such as radiographs and CT scans, the correlation of these images to real anatomy using prosections (cadaver material). Incorporates innovative resources such as virtual interactive scans via the virtual anatomy table and interactive digital applications. Students expected to use proper anatomical terminology when describing structures and relationships within the body. Emphasis placed on typical anatomy as seen in healthy individuals, with introduction to anatomical variations and clinical cases throughout the course.

SURG 101. Regional Study of Human Structure. 5 Units.
Enrollment limited to seniors and graduate students. Comprises two parts, lecture and lab, both of which are required. Lectures in regional anatomy and dissection of the human cadaver; the anatomy of the trunk and limbs through the dissection process, excluding the head and neck.

SURG 101A. Head and Neck Anatomy. 3 Units.
Introduces students to human anatomy of the head and neck through a dissection based course. Students use proper anatomical terminology to describe structures and their relationships. Emphasis on typical anatomy as seen in healthy individuals, with some examples of anatomical variation introduced through dissection and clinical cases. Ideal for senior undergraduate students who have completed SURG 101 or equivalent, are familiar with basic anatomy, and have some dissection experience. Prerequisites: Surgery 101 or equivalent.

SURG 110. Basic Cardiac Life Support for Undergraduates. 1 Unit.
Preference to undergraduates. Teaches one- and two-rescuer adult CPR and management of an obstructed airway using the American CPR model. Does not satisfy MD student BCLS requirement; MD students take Surgery 201.

SURG 111A. Emergency Medical Technician Training. 3-4 Units.
Basics of life support outside the hospital setting. Topics include emergency patient assessments for cardiac, respiratory, and neurological emergencies, as well as readiness training for emergencies on and off campus. Lectures, practicals, and applications. Students taking the class for 4 units complete additional FEMA training and additional clinical rotations. Upon completion of SURG 111A,B,C or 211A,B,C, students are eligible to sit for the National Registry EMT licensure exam. Freshmen and Sophomores are highly encouraged to apply. Prerequisites: application (see http://surg211.stanford.edu), and consent of instructor. Same as: SURG 211A

SURG 111B. Emergency Medical Technician Training. 3-4 Units.
Continuation of 111A/211A. Approach to traumatic injuries. Topics include head, neck, and trunk injuries, bleeding and shock, burn emergencies, and environmental emergencies. Lectures, practicals, and applications. Students taking the class for 4 units complete additional online FEMA training and additional clinical rotations. Upon completion of SURG 111A,B,C or 211A,B,C, students are eligible to sit for the National Registry EMT licensure exam. Prerequisites: 111A/211A, CPR-PR certification, and consent of instructor. Same as: SURG 211B

SURG 111C. Emergency Medical Technician Training. 3-4 Units.
Continuation of 111B/211B. Special topics in EMS. Topics include pediatric, obstetric, and gynecologic emergencies, EMS operations, mass casualty incidents, and assault. Lectures, practicals, and applications. Students taking the class for 4 units complete additional online FEMA training and additional clinical rotations. Upon completion of SURG 111A,B,C or 211A,B,C, students are eligible to sit for the National Registry EMT certification exam. Prerequisites: 111B/211B, CPR-PR certification, and consent of instructor. Same as: SURG 211C
SURG 112A. Advanced Training and Teaching for the EMT. 2-3 Units.
Ongoing training for current EMS providers. Students practice BLS
assessments and medical care through simulated patient encounters. Topics
include airway and stroke management, abdominal emergencies, prehospital
pharmacology, and teaching skills. Students taking the course for 3 units
also serve as teaching assistants for Surgery 111, the Stanford EMT training
course. Prerequisites: SURG 111/211 A-C (or equivalent EMT Certification
course), CPR-PR certification, and consent of instructor.
Same as: SURG 212A

SURG 112B. Advanced Training and Teaching for the EMT. 2-3 Units.
Ongoing training for current EMS providers. Students practice BLS
assessments and medical care through simulated patient encounters. Topics
include assessment and treatment of the undifferentiated trauma patient
(including airway management, monitoring, and evaluation) and prehospital
care in nontraditional locations. Students taking the course for 3 units also
serve as teaching assistants for Surgery 111, the Stanford EMT training
course. Prerequisites: SURG 111/211 A-C (or equivalent EMT Certification
course), CPR-PR certification, and consent of instructor.
Same as: SURG 212B

SURG 112C. Advanced Training and Teaching for the EMT. 2-3 Units.
Ongoing training for current EMS providers. Students practice BLS
assessments and medical care through simulated patient encounters. Topics
include mass casualty incidents, assaults, and pediatric emergencies. Expanded scope topics may be included - ACLS, ultrasound,
and suturing. Students taking the course for 3 units also serve as teaching assistants for Surgery 111, the Stanford EMT training
course. Prerequisites: SURG 111/211 A-C (or equivalent EMT Certification
course), CPR-PR certification, and consent of instructor.
Same as: SURG 212C

SURG 122. Biosecurity and Bioterrorism Response. 4-5 Units.
Overview of the most pressing biosecurity issues facing the world today.
Guest lecturers have included former Secretary of State Condoleezza Rice,
former Special Assistant on BioSecurity to Presidents Clinton and Bush
Jr. Dr. Ken Bernard, Chief Medical Officer of the Homeland Security
Department Dr. Alex Garza, eminent scientists, innovators and physicians
in the field, and leaders of relevant technology companies. How well the
US and global healthcare systems are prepared to withstand a pandemic
or a bioterrorism attack, how the medical/healthcare field, government,
and the technology sectors are involved in biosecurity and pandemic
or bioterrorism response and how they interface, the rise of synthetic
biology with its promises and threats, global bio-surveillance, making
the medical diagnosis, isolation, containment, hospital surge capacity,
stockpiling and distribution of countermeasures, food and agriculture
biosecurity, new promising technologies for detection of bio-threats and
countermeasures. Open to medical, graduate, and undergraduate students.
No prior background in biology necessary. This course satisfies the TiS
requirement for Engineering students; please check with your major
advisor to verify this. 4 units for twice weekly attendance (Mon. and Wed.);
additional 1 unit for writing a research paper for 5 units total maximum.
PLEASE NOTE: This class will meet for the first time on Wednesday,
April 1.
Same as: BIOE 122, PUBLPOL 122

SURG 125. Social Emergency Medicine and Community Engagement. 1 Unit.
Stanford Health Advocates and Research in the Emergency Department
(SHAR(ED)) is focused on the practical application of and research in
social emergency medicine. Emergency Departments (EDs) are the nation's
safety nets, for medical as well as social needs. EDs remain the sole
access to any medical care for those in need, 24/7, regardless of insurance
status. The ED is a unique bridge to the public, and is a compelling site for
community partnership, clinical and health services research geared towards
improving population health and policy. Through direct patient contact
and community engagement, students help to meet the social needs of ED
patients.

SURG 150. Global Humanitarian Medicine. 4 Units.
Open to undergraduate students. Focus is on understanding the theory
behind medical humanitarianism, the growing role of surgery in
international health, and the clinical skills necessary for students to
partake in global medical service. Guest speakers include world-renowned
physicians and public health workers. Students work in groups to complete
a substantial final project on surgical program development.
Same as: SURG 250

SURG 199. Undergraduate Research. 1-18 Unit.
Investigations sponsored by individual faculty members. Prerequisite: consent of instructor.

SURG 201. Basic Cardiac Life Support for Healthcare Professionals. 1 Unit.
All medical students must be certified in Basic Cardiac Life Support before
the end of the first (fall) quarter. Students who provide documentation of
certification received within six months prior to the date of matriculation
will be exempted from the requirement. The course teaches one- and two-
rescuer CPR, management of an obstructed airway, and CPR for infants
and children. Upon completion of the course, students receive an American
Heart Association certificate in BLS. nIn addition to CPR training, we will
also teach Question, Persuade, Refer (QPR) which is the CPR equivalent to
psychological emergencies. This portion of the course will allow students
to master techniques on how to recognize and respond to an individual in
psychological distress and to help in suicide prevention. Our faculty are
certified QPR instructors and students will become QPR certified during
this course through the QPR Institute certification process.

SURG 203A. Clinical Anatomy. 11 Units.
Introduction to human structure and function presented from a clinical
perspective. Includes clinical scenarios, frequently used medical imaging
techniques, and interventional procedures to illustrate the underlying
anatomy. Students are required to attend lectures and engage in dissection
of the human body in the anatomy laboratory. Surgery 203A presents
structures of the thorax, abdomen, pelvis, back, upper and lower limbs.

SURG 203B. Clinical Anatomy. 4 Units.
Continues the introduction to human structure and function from a clinical
perspective. Includes clinical scenarios, frequently used medical imaging
techniques, and interventional procedures to illustrate the underlying
anatomy. Students are required to attend lectures and engage in dissection
of the human body in the anatomy laboratory. Surgery 203B presents
structures of the head and neck.

SURG 204. Introduction to Surgery. 1 Unit.
Designed to give pre-clinical MD students a broad overview of all the
surgical specialties. Lectures by leading surgeons from General Surgery,
Plastic Surgery, Neurosurgery. Orthopedic Surgery, Head and Neck
Surgery, Transplantation Surgery and Cardiovascular Surgery highlight the array of
diseases and operations performed in their disciplines. In addition, each
lecture gives students a "roadmap" as to how to enter that discipline.

SURG 204SI. Medical Etyymology. 1 Unit.
A survey of medical etymology and terminology that parallels preclinical
medical education. Topics focus on Greek and Latin roots and their
appearances in the medical lexicon.

SURG 205. Advanced Suturing Techniques. 1 Unit.
Designed for preclinical medical students interested in exploring technical
skills and surgical techniques. Topics include knot tying, suturing, hand-
sewn and stapled bowel anastomosis, and laparoscopic techniques. Students
will complete a laparoscopic cholecystectomy on an animal model, and
work with surgical attendings to complete general surgical operations
(including pancreatectomy, colon resection, and others) on a cadaver.
Preference is given to second year students.

SURG 208. Plastic Surgery Tutorial. 2 Units.
Diagnosis, theory, and practice of plastic and reconstructive surgery.
Limited to two students per faculty member.
SURG 209. Plastic Surgery. 1-18 Unit.
Students participate in plastic and reconstructive surgery as functioning members of the clinical team. Students are exposed to operative surgery, emergency and trauma care, evaluation of operative candidates in the outpatient setting, and also attend teaching conferences. Limited to four students. Prerequisite: completion of first year or clinical experience.

SURG 210A. Managing Emergencies: What Every Doctor Should Know, 2 Units.
Reviews basic but critical concepts in evaluating and managing patients with possible life-threatening emergencies with a special focus on avoiding common errors. Topics include cardiovascular collapse, basic airway management, triage and shock. Teaches skills such as reading an ECG or a chest x-ray to aid students in developing a rapid response to patients with potentially fatal complaints. Class meets online.
Same as: Clinical Fundamentals

SURG 210B. Managing Emergencies: What Every Doctor Should Know, 2 Units.
Students learn management of various emergent and traumatic patient presentations. Some topics include advanced airway, trauma, burns, poisoning, and stroke. Key skills and common pitfalls in practice discussed. Providers completing Surg 210A and B will be better prepared to respond effectively with a challenging and urgent case. Class meets online.
Same as: High Risk Chief Complaints

SURG 211A. Emergency Medical Technician Training, 3-4 Units.
Basics of life support outside the hospital setting. Topics include emergency patient assessments for cardiac, respiratory, and neurological emergencies, as well as readiness training for emergencies on and off campus. Lectures, practices, and applications. Students taking the class for 4 units complete additional FEMA training and additional clinical rotations. Upon completion of SURG 111A,B,C or 211A,B,C, students are eligible to sit for the National Registry EMT licensure exam. Freshmen and Sophomores are highly encouraged to apply. Prerequisites: application (see http://surg211.stanford.edu), and consent of instructor.
Same as: SURG 111A

SURG 211B. Emergency Medical Technician Training, 3-4 Units.
Continuation of 111A/211A. Approach to traumatic injuries. Topics include head, neck, and trunk injuries, bleeding and shock, burn emergencies, and environmental emergencies. Lectures, practicals, and applications. Students taking the class for 4 units complete additional online FEMA training and additional clinical rotations. Upon completion of SURG 111A,B,C or 211A,B,C, students are eligible to sit for the National Registry EMT licensure exam. Prerequisites: 111A/211A, CPR-PR certification, and consent of instructor.
Same as: SURG 111B

SURG 211C. Emergency Medical Technician Training, 3-4 Units.
Continuation of 111B/211B. Special topics in EMS. Topics include pediatric, obstetric, and gynecologic emergencies, EMS operations, mass casualty incidents, and assault. Lectures, practicals, and applications. Students taking the class for 4 units complete additional online FEMA training and additional clinical rotations. Upon completion of SURG 111A,B,C or 211A,B,C, students are eligible to sit for the National Registry EMT certification exam. Prerequisites: 111B/211B, CPR-PR certification, and consent of instructor.
Same as: SURG 111C

SURG 212A. Advanced Training and Teaching for the EMT, 2-3 Units.
Ongoing training for current EMS providers. Students practice BLS assessments and medical care through simulated patient encounters. Topics include airway and stroke management, abdominal emergencies, prehospital pharmacology, and teaching skills. Students taking the course for 3 units also serve as teaching assistants for Surgery 111, the Stanford EMT training course. Prerequisites: SURG 111/211 A-C (or equivalent EMT Certification course), CPR-PR certification, and consent of instructor.
Same as: SURG 112A

SURG 212B. Advanced Training and Teaching for the EMT, 2-3 Units.
Ongoing training for current EMS providers. Students practice BLS assessments and medical care through simulated patient encounters. Topics include assessment and treatment of the undifferentiated trauma patient (including airway management, monitoring, and evaluation) andprehospital care in nontraditional locations. Students taking the course for 3 units also serve as teaching assistants for Surgery 111, the Stanford EMT training course. Prerequisites: SURG 111/211 A-C (or equivalent EMT Certification course), CPR-PR certification, and consent of instructor.
Same as: SURG 112B

SURG 212C. Advanced Training and Teaching for the EMT, 2-3 Units.
Ongoing training for current EMS providers. Students practice BLS assessments and medical care through simulated patient encounters. Topics include mass casualty incidents, assaults, and pediatric emergencies. Expanded scope topics may be included - ACLS, ultrasound, and suturing. Students taking the course for 3 units also serve as teaching assistants for Surgery 111, the Stanford EMT training course. Prerequisites: SURG 111/211 A-C (or equivalent EMT Certification course), CPR-PR certification, and consent of instructor.
Same as: SURG 112C

SURG 214SI. Medical Etymology, 1 Unit.
A survey of medical etymology and terminology that parallels preclinical medical education. Topics focus on Greek and Latin roots and their appearances in the medical lexicon.

SURG 215. Wilderness Medicine. 2-3 Units.
An introduction to the specialty of emergency medicine, including the emergency stabilization of patients in both the pre-hospital phase and in the emergency department. The course will include both lectures and hands on practical sessions. Topics consist of management of trauma patients and common medical emergencies, with hands on sessions including how to manage airway emergencies and suturing. 2 units includes two four-hour emergency department shadow shifts.

SURG 216. Biosecurity and Bioterrorism Response, 2-5 Units.
Overview of the most pressing biosecurity issues facing the world today. Guest lecturers have included former Secretary of State Condoleezza Rice, former Special Assistant on BioSecurity to Presidents Clinton and Bush Jr. Dr. Ken Bernard, Chief Medical Officer of the Homeland Security Department Dr. Alex Garza, eminent scientists, innovators and physicians in the field, and leaders of relevant technology companies. How well the US and global healthcare systems are prepared to withstand a pandemic or a bioterrorism attack, how the medical/healthcare field, government, and the technology sectors are involved in biosecurity and pandemic or bioterrorism response and how they interface, the rise of synthetic biology with its promises and threats, global bio-surveillance, making the medical diagnosis, isolation, containment, hospital surge capacity, stockpiling and distribution of countermeasures, food and agriculture biosecurity, new promising technologies for detection of bio-threats and countermeasures. Open to medical, graduate, and undergraduate students. No prior background in biology necessary. 2 unit option for once weekly attendance (Wed only); 4 unit option for twice weekly attendance (Mon and Wed); 1 additional units (for a maximum of 5 units total) for a research paper.
Same as: PUBLPOL 222

An introduction to the specialty of emergency medicine, including the emergency stabilization of patients in both the pre-hospital phase and in the emergency department. The course will include both lectures and hands on practical sessions. Topics consist of management of trauma patients and common medical emergencies, with hands on sessions including how to manage airway emergencies and suturing. 2 units includes two four-hour emergency department shadow shifts.

SURG 218. Biosecurity and Bioterrorism Response, 1-2 Unit.
Overview of the most pressing biosecurity issues facing the world today. Guest lecturers have included former Secretary of State Condoleezza Rice, former Special Assistant on BioSecurity to Presidents Clinton and Bush Jr. Dr. Ken Bernard, Chief Medical Officer of the Homeland Security Department Dr. Alex Garza, eminent scientists, innovators and physicians in the field, and leaders of relevant technology companies. How well the US and global healthcare systems are prepared to withstand a pandemic or a bioterrorism attack, how the medical/healthcare field, government, and the technology sectors are involved in biosecurity and pandemic or bioterrorism response and how they interface, the rise of synthetic biology with its promises and threats, global bio-surveillance, making the medical diagnosis, isolation, containment, hospital surge capacity, stockpiling and distribution of countermeasures, food and agriculture biosecurity, new promising technologies for detection of bio-threats and countermeasures. Open to medical, graduate, and undergraduate students. No prior background in biology necessary. 2 unit option for once weekly attendance (Wed only); 4 unit option for twice weekly attendance (Mon and Wed); 1 additional units (for a maximum of 5 units total) for a research paper.
Same as: PUBLPOL 222

An introduction to the specialty of emergency medicine, including the emergency stabilization of patients in both the pre-hospital phase and in the emergency department. The course will include both lectures and hands on practical sessions. Topics consist of management of trauma patients and common medical emergencies, with hands on sessions including how to manage airway emergencies and suturing. 2 units includes two four-hour emergency department shadow shifts.

SURG 232. Wilderness Medicine. 2-3 Units.
Open to all students. Wilderness-related illnesses and injuries; a framework for evaluation and treatment of emergencies in the backcountry. Hands-on clinical skills. Topics include high altitude medicine, hypothermia, envenomations, search and rescue, improvisation, and a day long field trip for hands-on field work. 3 units includes participation in an Emergency Department observation shift.

SURG 234. Wilderness First Aid. 2 Units.
Provides basic introductory back country and emergency medicine skill development. Topics covered include patient assessment, addressing life threats, shock, spine safety, musculoskeletal injuries, medical emergencies, and environmental emergencies.
SURG 226. Wilderness First Responder. 4 Units.
A more advanced and intensive class building on wilderness first aid that teaches first responder skills using improvised resources in varying environmental conditions and extended-care situations. This is used as a framework for learning to respond to medical emergencies in remote wilderness settings. Examines necessary tools to make critical medical and evacuation decisions.

SURG 227. Health Care Leadership. 1-2 Units.
Health Care Leadership brings well-respected healthcare leaders from a variety of sectors within healthcare to share their personal reflections and insights on effective leadership. Speakers will discuss their personal core values, share their lessons learned and their recipe for effective leadership in the healthcare field, including reflection on career and life choices. Speakers will include CEOs of healthcare technology, pharmaceutical and other companies, leaders in public health, eminent leaders of hospitals, academia and other health care organizations. Students enrolling for 1 unit attend one lecture per week; students enrolling for 2 units attend two lectures per week.

SURG 230. Obesity in America. 1 Unit.
Prevalence and effects of the obesity epidemic in America and the growing prevalence of associated comorbidities such as diabetes, hypertension, hyperlipidemia, sleep apnea, and joint problems. Risk factors, multidisciplinary treatment options, the role of food in society, patients' perspectives, and current research in the field.

SURG 231. Healthcare in Haiti and other Resource Poor Countries. 1 Unit.
Originally developed to highlight healthcare in extreme poverty in Haiti, related lectures have been added covering healthcare in resource poor environments with the objective to introduce students to the complexity and unique problems of working in the Third World's healthcare morass.

SURG 232. Social Emergency Medicine and Service Learning. 2-3 Units.
Focus on understanding the social determinants of health and exploring the relationship between emergency medicine and public health affecting the Emergency Department patient population by: 1) Discussion and critique of relevant literature; 2) Learning about community resources for patient's social needs; 3) Shadowing ED physicians. Topics include how public health initiatives can improve access to hospital and community resources, and how patients receive care in a busy, fast-paced environment. 2 Units. Service learning component (Additional 1 Unit of Credit): Requires prerequisite of Med 157 Community Health Course, a 3-quarter commitment, personal statement and faculty approval. Students conduct screening and intervention for ED patients; Service Learning option requires prerequisite of Med 157 Community Health course, and enrolling for 3 units.

SURG 242. Art and Anatomy Studio. 1 Unit.
Discusses the intersection of art and anatomy and provides the opportunity to explore one art medium in depth. Students select a medium from drawing, painting, sculpture, digital art and art appreciation, and work in small groups with a mentor artist. Class time includes art instruction, creation and feedback. May be repeated for credit. May be taken for 1-3 units; units awarded commensurate with project time. Prerequisites: SURG 203A, SURG 203B, or SURG 101.

SURG 243. Anatomy for Artists. 3 Units.
Blends human anatomy and artwork, and is aimed at artists who aspire to study human structure, shape, and form. Weekly lectures will highlight intersections and influences of human anatomy on art, and explore the role it has played in various forms of artwork. Students encouraged to use proper anatomical terminology to describe structures and their relationships. Weekly studio sessions provide an opportunity for students to immerse in anatomically inspired drawings. Plastic models, dry bones, cadaveric specimens, and live models will be used for the studio sessions.

SURG 248. Medical Scribe Training. 3 Units.
Focuses on developing knowledge of clinical documentation in order to accompany a physician in patient encounters, including documentation of patient histories, findings, procedures, results, and clinical course. Serves as prerequisite for Surgery 248A, Advanced Medical Scribe Training.

SURG 248A. Advanced Medical Scribe Training. 3 Units.
Preparation to become a medical scribe. Focus is on further honing skills of a clinical scribe through ongoing training and education. Lectures, practical application, simulation, interactive skills, and hands-on training. Demonstrating and maintaining an understanding of the team approach to patient care and enhancing skills and knowledge in the promotion of quality documentation. Prerequisite: successful completion of SURG 248 and consent of instructor.

SURG 248X. Introduction to Medical Scripting. 3 Units.
Accelerated, three-day intensive focusing on developing knowledge of clinical documentation, medical terminology, electronic medical records and medical record coding in order to accompany a physician during a patient encounter. Topics include documentation of a chief complaint, history of current illness/injuries, past medical, social and family history, review of physical systems, clinical course, procedures, lab results and other pertinent information for a patient visit. Serves as prerequisite for Surgery 248A, Advanced Medical Scribe Training. Same as: Accelerated Course

SURG 250. Global Humanitarian Medicine. 4 Units.
Open to undergraduate students. Focus is on understanding the theory behind medical humanitarianism, the growing role of surgery in international health, and the clinical skills necessary for students to partake in global medical service. Guest speakers include world-renowned physicians and public health workers. Students work in groups to complete a substantial final project on surgical program development. Same as: SURG 150

SURG 251A. Imaging Anatomy. 1 Unit.
Accompanies existing clinical anatomy course for first year medical students (SURG 203A). Sessions focus on the anatomical region being taught and dissected during the same week in SURG 203A. Students revisit anatomy using a variety of basic and advanced imaging modalities. Emphasis on correlating imaging to dissection, studying anatomical variations, discussing clinical vignettes. Enrollment limited to MD students.

SURG 251B. Imaging Anatomy (Head & Neck) II. 1 Unit.
Accompanies existing clinical anatomy course for first year medical students (SURG 203B) concentrating on the head and neck region. Sessions focus on the anatomical region being taught and dissected during the same week in SURG 203B. Students revisit anatomy using a variety of basic and advanced imaging modalities. Emphasis on correlating imaging to dissection, studying anatomical variations, discussing clinical vignettes. Enrollment limited to MD students.

SURG 252. Bedside Anatomy. 1 Unit.
Provides an opportunity to revisit anatomy in a clinical context. Using case discussions, clinical vignettes, radiological imaging, and hands-on exercises, students are challenged to apply their knowledge of anatomy to explain common diagnostic maneuvers and interventional procedures performed at the bedside or in the outpatient setting. Emphasis will be on anatomical considerations in successfully performing these procedures and avoiding errors that may arise due to anatomical changes, oddities, or variations.
SURG 235. Topics in Simulation of Human Physiology & Anatomical Systems. 1 Unit.
Biweekly interdisciplinary lecture series on the development of computational tools for modeling and simulation of human physiological and anatomical systems. Lectures by instructors and guest speakers on topics such as surgical simulation, anatomical & surgical Modeling, neurological Systems, and biomedical models of human movement. Group discussions, team based assignments, and project work. Prerequisite: Medical students, residents or fellows from school of medicine, and computationally oriented students with a strong interest to explore computational and mathematical methods related to the health sciences. Same as: CME 520

SURG 254. Operative Anatomy and Techniques. 1 Unit.
For preclinical students; provides a background in and integrates knowledge of surgical anatomy and therapy. Surgical or operative anatomy differs from gross anatomy in that the area exposed during surgery may be limited, the dissection may require exposing other seemingly unrelated anatomic structures with unique landmarks, and the procedure may require unusual technical facility. Provides an opportunity for students to understand the goals of representative surgical procedures (translating pathophysiology to surgical decision making to actual incision). Students learn surgical skills and perform the dissection of a number of commonly performed operations in the bio-skills laboratory. Emphasizes hands-on participation in surgical procedures in the laboratory and is taught by attending physicians in general, cardiothoracic, vascular, plastic, head and neck, urologic, and orthopedic surgery.

SURG 256. Clinical Anatomy and Surgical Education Series. 2 Units.
Intended for first-year MD students. Builds on prior experience in the first-year medical curriculum consisting of the required Clinical Anatomy and the elective Operative Anatomy courses. Focuses on case-based didactic sessions for teaching the approach to a variety of surgical cases and their management. Students perform simulated cadaveric surgical procedures using standard operative instruments and techniques based on clinical case presentations and analysis. Covers hand surgery, vascular surgery, minimally invasive surgery, ear surgery and eye surgery specialties. Same as: CASES

SURG 271. Anatomy of Medical Mysteries. 1 Unit.
This elective course for medical students explores areas of health and disease that are poorly understood presently. A variety of topics are covered such as placebo effect, techniques of meditation, presence of extra-sensory perception, and near death experiences. Scientific evidence for and against these topics presented and discussed. Current literature is evaluated and reading assignments are included. Pre-requisites: SURG 203A and SURG 203B.

SURG 280. Early Clinical Experience in Surgery. 1-2 Unit.
Provides an observational experience in a surgery specialty. Prerequisite: consent of instructor.

SURG 281A. Musculoskeletal Disorders. 1 Unit.
Focuses on in-depth understanding of human musculoskeletal anatomy, biomechanics, and disease processes. Emphasis will be on the dynamic nature of musculoskeletal tissue with its complex biochemistry and cellular activity. Topics include fundamentals of musculoskeletal development, growth, repair and vascularization. In addition, students receive an introduction to musculoskeletal imaging, forensics, pathology, and the clinical principals of fixation and treatment protocols.

SURG 281B. Musculoskeletal Disorders II. 1 Unit.
Continuation of in-depth understanding of human musculoskeletal anatomy, biomechanics, and disease processes. Emphasis will be on the dynamic nature of musculoskeletal tissue with its complex biochemistry and cellular activity. Topics include fundamentals of musculoskeletal development, growth, repair and vascularization. In addition, students receive an introduction to musculoskeletal imaging, forensics, pathology, and the clinical principals of fixation and treatment protocols.

SURG 290. 3D Biomedical Visualization: Techniques, Methods, and Applications. 1 Unit.
Explores the power of digital anatomy. How 3D anatomical data sets like CT and MRI scans are created from human specimens; how they are processed, analyzed, and rendered. Focus on how digital content is best used for learning anatomy, patient education, and clinical practice.

Carried out under the supervision of one or more members of the staff. Prerequisite: consent of instructor.

SURG 298. Procedure-Based Specialty Capstone Course. 1 Unit.
Designed for graduating medical students entering a procedure-based internship or residency (e.g. general surgery, surgical sub-specialties, obstetrics-gynecology, anesthesia, and emergency medicine). Prepares students with practical, high-yield clinical and procedural skills. Clinical skills include fielding common calls regarding surgical patients, obtaining informed consent, completing operative dictations, discharging patients, writing prescriptions, running trauma surveys, and interpreting surgically relevant radiology studies. The hands-on portion of the course covers basic open and laparoscopic surgical skills utilizing bench models, laparoscopic box trainers, and full cadaveric simulations. Prerequisite: graduating medical student.

SURG 299. Directed Reading in Surgery. 1-18 Unit.
Consists of studies in progress, including cardiovascular and circulatory problems; gastric physiology; hemostatic disorders; homotransplantation; liver disorders; orthopedic pathology; bone growth; radiation injury; immunology, bacteriology, pathology, and physiology of the eye; physiological optics; comparative ophthalmology; neurophysiology of hearing; spatial orientation and disorientation; nasal function; and psychophysics of sensation. Prerequisite: consent of instructor.

SURG 370. Medical Scholars Research. 4-18 Units.
Provides an opportunity for student and faculty interaction, as well as academic credit and financial support, to medical students who undertake original research. Enrollment is limited to students with approved projects.

SURG 399. Graduate Research. 1-18 Unit.
Students undertake investigations sponsored by individual faculty members.