

# Course Bulletin

<b>126371</b>	<b>Introduction to Microbiology: A Molecular Approach</b>			
Subject:	Catalog Nbr:			
MBS	0200			
2016 FALL	Primary	Claudette Gardel		Claudette.Gardel@tufts.edu
<p>Molecular biology is a broadly based discipline that unites the elements of microbiology (e.g., bacteriology, virology, mycology) with cell biology, biochemistry, biophysics, and genetics. This course describes the study of, and the search to understand, the regulation of gene expression in relation to the growth, metabolism, and development of bacteria, viruses, and other infectious agents. The overall course objectives are to 1) teach students to confront biological problems from within a certain framework, 2) encourage students to exercise their analytical and critical faculties to the utmost, and 3) arrive at solutions to the problems presented by applying their acquired knowledge</p>				

<b>126396</b>	<b>Medical Histology</b>			
Subject:	Catalog Nbr:			
MBS	0202			
2016 FALL	Primary	Alvar Gustafson		al.gustafson@tufts.edu
<p>This course describes the study of form and function of cells, societies of cells (tissues), and organizations of tissues (organs) at the light and electron microscopic levels. As such it combines the principles of traditional cell biology and histology courses. Although lecture and laboratory sessions stress the relationships between structural composition and function, important clinical correlations are provided. The overall course objectives are to 1) develop the concept of the inseparable relationship of form and function, 2) provide adequate perspective and preparation in order to integrate the knowledge of cells, tissues, and organs into the scheme of other basic and clinical biomedical sciences, and 3) demonstrate that the study of cells and tissues is an important approach to the study of the human body in general a strategy that can assist in developing and strengthening powers of critical observation, problem solving, diagnostic reasoning, and judgment.</p>				

<b>126423</b>	<b>Cell Biology</b>			
Subject:	Catalog Nbr:			
MBS	0201			
2016 FALL	Primary	John Castellot		john.castellot@tufts.edu
<p>This course describes the study of form and function of cells, societies of cells (tissues), and organizations of tissues (organs) at the light and electron microscopic levels. As such it combines the principles of traditional cell biology and histology courses. Although lecture and laboratory sessions stress the relationships between structural composition and function, important clinical correlations are provided. The overall course objectives are to 1) develop the concept of the inseparable relationship of form and function, 2) provide adequate perspective and preparation in order to integrate the knowledge of cells, tissues, and organs into the scheme of other basic and clinical biomedical sciences, and 3) demonstrate that the study of cells and tissues is an important approach to the study of the human body in general a strategy that can assist in developing and strengthening powers of critical observation, problem solving, diagnostic reasoning, and judgment.</p>				

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<b>126482</b>	<b>Biochemistry</b>			
Subject: MBS	Catalog Nbr: 0203	2016 FALL	Primary	James Baleja
				jim.baleja@tufts.edu
<p>This course describes the study of the chemistry of cells and tissues and presents the biochemical basis for physiologic processes. While emphasis is placed on functional and regulatory aspects, a solid knowledge of the structure of major biochemical substances and of enzymatic reactions is required for understanding how biochemical reactions determine physiologic function and regulation. Although emphasis is placed on normal processes, disease states are presented to show how specific biochemical defects can lead to illnesses. The overall course objectives are to 1) understand how genetic regulation and metabolic reactions determine normal physiologic function, 2) begin to understand the biochemical basis of disease, and 3) use biochemical knowledge to interpret clinical problems.</p>				

<b>126526</b>	<b>Immunology</b>			
Subject: MBS	Catalog Nbr: 0204	2016 FALL	Primary	Peter Brodeur
				peter.brodeur@tufts.edu
<p>This course describes the study of the structure and function of the cells, tissues, organs, and molecules that are responsible for protecting the body against invading pathogens and infectious disease. Basic information is provided on host defense mechanisms, origins and functions of immune cells, innate immunity, the complement system, and specific immunity (humoral and cell mediated mechanisms). Topics also include antibody structure and function, antibody genetics and B cell development, T cell differentiation and activation, cellular cooperation and control of the immune response. Important clinical information is also presented including allergy, hypersensitivity and autoimmune disease, underlying mechanisms of transplantation immunology and tumor immunology, various forms of immunodeficiency including HIV, and methods of manipulating the immune system to treat immunologically mediated diseases. The overall course objectives are to 1) introduce students to important concepts in modern medical immunology, and 2) teach immunological mechanisms that have direct clinical application.</p>				

<b>126554</b>	<b>Intro To Clinical Medicine</b>			
Subject: MBS	Catalog Nbr: 0205	2016 FALL	Primary	Richard Glickman-Simon
				richard.glickman-simon@tufts.edu
<p>This course represents a survey of clinical medicine as practiced by physicians and other health care providers in Western countries. During the first half, students are introduced to basic human physiology; pathophysiology; and the fundamentals of clinical medicine including history taking, the physical examination, diagnostic testing, and modern therapeutics. During the second half, students apply information learned in the first half to the most prevalent diseases that plaque the developed world. Issues pertaining to population medicine and public health, health promotion and disease prevention, behavioral influences on health, and alternative medicine are also covered in the context of applicable disease states. The overall objectives of the course are to 1) identify the major the determinants of health genetic, environmental, behavioral and social and consider the extent to which physicians can influence their health effects; 2) describe the general</p>				

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processes undertaken to arrive at a diagnosis, formulate a treatment plan, counsel a patient, and assess the benefits and harms of an intervention; 3) explore the relevant professional, ethical and interpersonal parameters that define the patient-physician relationship; 4) explain the scientific rationale behind medical decision-making and identify the major non-scientific factors that influence the day-to-day practice of medicine; 5) illustrate common diagnostic, treatment and preventive interventions for selected conditions and describe the principles governing their safe and effective clinical application; and 6) gain first-hand experience in the collection, organization, interpretation, analysis and communication of clinical information.

<b>126566</b>	<b>Physiology</b>			
Subject:	Catalog Nbr:			
MBS	0206			
2016 SPRG	Primary	Jerry Faust		jerry.faust@tufts.edu
<p>This course describes the study of the functions and vital processes of the human body. It is divided into four sections: cellular and neuromuscular physiology; cardiovascular and respiratory physiology; renal and gastrointestinal physiology; and endocrine and reproductive physiology.</p> <p>The overall course objectives are to 1) provide students with a thorough understanding of the basic physiologic principles of the human body, 2) integrate physiologic information with other biomedical disciplines, and 3) provide an important foundation for continuing clinical studies, especially in pathophysiology and pharmacology</p>				

<b>126605</b>	<b>Basic Human Pathology</b>			
Subject:	Catalog Nbr:			
MBS	0207			
2016 SPRG	Primary	Paul Kwan		paul.kwan@tufts.edu
<p>This course describes the study of diseases in relation to the structural and functional changes in cells, tissues, and organs during the natural histories of specific disorders. The course begins with the principles of general pathology, which focus upon the basic changes in cells and tissues in response to broad pathological processes and pathogenetic mechanisms; it concludes with topics in systemic pathology, which address certain common, important specific disease processes as they affect particular organs or systems in the context of actual patient care.</p> <p>The importance of practical techniques (e.g., morphologic, molecular, immunologic) that reveal pathologic changes in fluids, cells, tissues or organs of patients and result in specific diagnoses that lead to sound clinical care and intervention will also be presented. The overall course objectives are to 1) achieve a mastery of the basic vocabulary of medicine, which allows health care professionals to communicate effectively, 2) develop some special skills needed for pathology, including visual recognition and interpretation of pathologic lesions during examination (physical, gross or microscopic), and 3) develop a working framework for making good, rational, medically-related decisions, which involves gathering appropriate data, organizing pertinent data, interpretation, and generating probable conclusions.</p>				

<b>126646</b>	<b>Intro to Basic and Clinical Human Anatomy</b>			
Subject:	Catalog Nbr:			
MBS	0208			

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2016 SUMR

Primary

Robert Willson

rob.willson@tufts.edu

This course describes the study of the structure of the human body as seen through dissection and medical imaging, including radiography and magnetic resonance. Topics covered include the anatomy of the Extremities, Thorax, Abdomen, and Pelvis. Laboratory exercises will include computer-based dissections using 3-D reconstructions based on the Visible Human Project as well as 2-D cross sections and radiographic images. The overall course objectives are to 1) provide students with an introduction to anatomical and medical terminology and basic information on grossly dissectible structures in the human body, and 2) apply this knowledge to clinical and diagnostic problem-solving.

**126692****Nutrition**

Subject: Catalog Nbr:  
MBS 0209

2016 FALL

Primary

Grace Phelan

No Email on file.

This course describes the study of the role of specific nutrients in normal metabolism as well as the relationship of nutrition throughout states of life. Topics include the important role of nutrition in the development and treatment of major chronic diseases including heart disease, cancer and obesity; and the relationship of exercise to the maintenance of good health, chronic disease prevention, and the aging process. The overall course objective is to emphasize the value of nutrition and exercise in both health maintenance and disease.

**126823****Thesis**

Subject: Catalog Nbr:  
MBS 0210

**126870****Genetics**

Subject: Catalog Nbr:  
MBS 0212

2016 FALL

Primary

Janet Cowan

Janet.Cowan@tufts.edu

Medical genetics involves the application of genetic principles in the practice of medicine. Medical genetics encompasses diagnosis and treatment of genetic diseases, study of inheritance of diseases in families, mapping of disease genes to their chromosome locations, study of the molecular genetics and pathogenesis of inherited disorders, provision of genetic counseling for families, and recently, investigations of methods for gene therapy. Medical geneticists care for fetuses in utero, newborns, children, and adults with inherited conditions, adults with infertility or recurrent miscarriages, and adults who are genetically predisposed to cancer. Unlike any other field, genetics represents a true integration between the basic and the clinical sciences. The overall course objectives are 1) Given a clinical problem, take an appropriate family history; 2) Given a pedigree, determine the most likely mode of inheritance; 3) Given a disorder, whether Mendelian, chromosomal, or multifactorial in origin, determine the likely risk for other family members; 4) Recognize who might benefit from genetic counseling and provide it if the problem is straightforward, or know to whom to refer patients if the problem is complex; 5) Appreciate how a disease gene is localized, learn the potential benefits of understanding the molecular approach to disease, and appreciate the therapy that can derive from

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this understanding; 6) Take into account the diversity in genetic makeup as an important factor in preventive health care, diagnosis and treatment; 7) Reduce unnecessary exposure to known and potential physical and chemical mutagenic, teratogenic, and carcinogenic agents; 8) Recognize how environment can affect phenotype; 9) Identify ethical dilemmas in providing genetic services.

<b>126921</b>	<b>Pharmacology</b>			
Subject:	Catalog Nbr:			
MBS	0213			
2016 FALL	Primary	David Greenblatt		dj.greenblatt@tufts.edu
<p>This course will describe the nature and steps in the drug discovery and development processes; differentiate the interplay between basic and clinical pharmacology and the elements of pathobiology and pathophysiology that lead to drug choices in clinical practice; analyze the principles of selective toxicity and the pharmacokinetic and other mechanisms which underlie the rational use of drugs; identify the properties of drug action at specific receptors and the mechanisms of action of select drugs; determine toxic and therapeutic endpoints and drug side effects and list major indications and contraindications for relevant drugs.</p>				

<b>126961</b>	<b>Computerized Motion/Gait Analysis</b>			
Subject:	Catalog Nbr:			
MBS	0222			
2016 SPRG	Primary	Mark Pitkin		No Email on file.
<p>The course will cover the planning of clinical trials; procedure of data acquisition, and interpretation of results. It will consist of didactic lectures and computer-based sessions at the Tufts/NESH Center for Human Performance. The course includes materials on NIH funded research projects, and students will learn how to conduct biomechanical trials themselves using the Lab's equipment. Interested students will be able to participate in research projects with their results submitted for publication.</p>				

<b>127048</b>	<b>From A Cell To Cancer</b>			
Subject:	Catalog Nbr:			
MBS	0224			
2016 SPRG	Primary	Carlos Sonnenschein		carlos.sonnenschein@tufts.edu
<p>A course about an evolutionary perspective of development and cancer.</p>				

<b>138644</b>	<b>Transfer Credit</b>			
Subject:	Catalog Nbr:			
TRAN	9999			

<b>138676</b>	<b>Internal Medicine I</b>			
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Subject: PA	Catalog Nbr: 0203	2016 SPRG	Primary	Jeanine Carlson	jeanine.carlson@tufts.edu
<p>This course will emphasize the pathophysiology of human disease. Focusing upon cardiovascular, pulmonary, hematology, and immunology systems, the natural history of diseases of these systems will be covered. The diagnostic, therapeutic, and preventative measures employed in the management of these disease states will be addressed.</p>					

<b>138677</b>	<b>Internal Medicine II</b>				
Subject: PA	Catalog Nbr: 0204	2016 SUMR	Primary	Jeanine Carlson	jeanine.carlson@tufts.edu
<p>This course will focus upon diseases of the renal, endocrine, and rheumatologic systems. Infectious disease and oncology will also be discussed. Disease diagnosis, treatment and prevention will be addressed.</p>					

<b>138678</b>	<b>Behavioral Medicine</b>				
Subject: PA	Catalog Nbr: 0210	2016 SPRG	Primary	M. Annette Hanson	M__Annette.Hanson@tufts.edu
<p>This course offers students an introduction to psychiatric disease, its classification of disease states, an in depth look at common psychiatric illnesses seen in general medical practice and emergency practice settings. Topics such as psychotherapy, psychoanalysis, pharmacological intervention, substance abuse and addiction, domestic and child abuse will be discussed also.</p>					

<b>138679</b>	<b>Women's Health</b>				
Subject: PA	Catalog Nbr: 0212	2016 SUMR	Primary	Henry Klapholz	Henry.Klapholz@tufts.edu
<p>The spectrum of female reproduction, conception, fetal growth and development, prenatal and antenatal care, and reproductive endocrinology will be covered. Students will be given an introduction to the anatomy of the female genitourinary tract as well as gynecologic oncology, its natural course, diagnosis, and treatment. Cardiovascular disease in women will be addressed as will gynecologic infections and sexual assault diagnosis and management. Emphasis will be placed upon history taking, gynecologic examination, counseling, testing, and disease prevention.</p>					

<b>138681</b>	<b>Physical Diagnosis II</b>				
Subject: PA	Catalog Nbr: 0216	2016 SUMR	Primary	Mark Freedman	Mark.Freedman@tufts.edu
<p>Students will continue to learn interview and examination techniques and build upon Physical Diagnosis I.</p>					

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Instructors will assist students in honing their interviewing and examination skills through focused examinations and varying interviewing techniques. Compilation of patient data in written form and oral presentation of patients' medical history and examination results will be emphasized. Some instruction may take place in external clinical sites.

<b>138682</b>	<b>Surgery</b>			
Subject:	Catalog Nbr:			
PA	0217			
2015 SUMR	Primary	Richard Murphy		Richard.Murphy@tufts.edu
2016 SUMR	Primary	Jeffrey Cooper		No Email on file.
<p>The course focuses on the basic surgical concepts needed for the PA to function in primary care settings as well as major surgical areas. The course emphasizes surgical concepts, topics and surgical technique as well as attention to examination of the acute abdomen, surgical diagnosis and treatment of common surgical conditions including obstructive, ineffective, and neoplastic diseases of the gastrointestinal tract, cardiothoracic diseases, trauma, and the vascular system. Risk assessment, wound healing, pre and postoperative care will also be addressed.</p>				

<b>138683</b>	<b>Nutrition</b>			
Subject:	Catalog Nbr:			
PA	0218			
2016 SPRG	Primary	Kelly Kane		Kelly.Kane@tufts.edu
<p>Students will be taught the basics of human nutritional needs as well as alterations of these demands during various clinical scenarios and disease states.</p>				

<b>138684</b>	<b>Research Methods</b>			
Subject:	Catalog Nbr:			
PA	0219			
2015 SUMR	Primary	David Tybor		david.tybor@tufts.edu
<p>This is an overview of research and reviews important statistical principles and methods and their application to problems in medicine including hypothesis development, variables, statistical significance, data collection, study methodologies, scientific findings and conclusions.</p>				

<b>138685</b>	<b>Evidence-based Medicine</b>			
Subject:	Catalog Nbr:			
PA	0220			
2016 FALL	Primary	Allen Shaughnessy		Allen.Shaughnessy@tufts.edu
<p>Using lectures and small group discussions this course provides a practical approach to making sound medical decisions on the basis of current evidence in the medical literature. Through a series of didactic presentations, group exercises, and reading, students will learn the basic principles of evidence-based medicine. Basic skills in using MEDLINE and other medical databases will be emphasized and practiced.</p>				

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Research principles, research ethics, and basic statistical review will be discussed.

<b>138686</b>	<b>Orthopedics</b>			
Subject:	Catalog Nbr:			
PA	0223			
2016 FALL	Primary	Joyce Dandreo	Joyce.Dandreo@tufts.edu	
2016 FALL	Primary	Kathleen Goreham	Kathleen.Goreham@tufts.edu	
<p>This course explores all aspects of diseases and conditions of bones and joints. Emphasis will be placed on the orthopedic examination in conditions such as fracture, dislocation, ligament, tendon, and muscular conditions. Joint aspiration, immobilization, splinting, and casting will be addressed in supplementary workshops.</p>				

<b>138687</b>	<b>Critical Care Medicine</b>			
Subject:	Catalog Nbr:			
PA	0227			
2016 FALL	Primary	Richard Murphy	Richard.Murphy@tufts.edu	
<p>Students will be introduced to hemodynamic derangements in multiorgan system failure patients, including shock, trauma, cardiac arrest, acid-base and electrolyte management, and nutritional support. Other topics covered include ventilator management, invasive procedures, and diagnostic methods used in ICU care.</p>				

<b>138688</b>	<b>Procedural Workshops</b>			
Subject:	Catalog Nbr:			
PA	0240			
2016 FALL	Primary	Richard Murphy	Richard.Murphy@tufts.edu	
2016 FALL	Primary	Joseph Sansone	Joseph.Sansone@tufts.edu	
<p>This course for physician assistants focuses upon common bedside procedure performed in clinical situations. Procedures taught range from vital sign taking and phlebotomy to invasive procedures such as thoracentesis and central line placement. Using peer practicums (phlebotomy and venipuncture) and simulation models for more invasive procedures, key concepts and techniques will be taught.</p>				

<b>138689</b>	<b>Primary Care II</b>			
Subject:	Catalog Nbr:			
PA	0236			
2015 SUMR	Primary	Richard Murphy	Richard.Murphy@tufts.edu	
2016 SUMR	Primary	Beth Buyea	Beth.Buyea@tufts.edu	
<p>This course is a continuation of Primary Care I and offers first year physician assistant students in-depth training in a wide variety of clinically related subjects, including continuing ECG interpretation, Laboratory Medicine, and Public Health Issues. Topics frequently addressed in other courses will be re-introduced in more depth and scope by experienced clinicians and experts.</p>				

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<b>138690</b>	<b>Primary Care III</b>			
Subject: PA	Catalog Nbr: 0237			
2016 FALL	Primary	Richard Dupee	richard.dupee@tufts.edu	
2016 FALL	Primary	Beth Buyea	Beth.Buyea@tufts.edu	
<p>Using a learner-centered approach, this course will incorporate student-led, symptom-based cases to illustrate clinical presentation, diagnostic skills, and management issues with common disease states. Focusing on a varied population, this course will cover a wide range of scenarios encountered within primary care through case creation through evidence-based research, oral presentations and audience participation.</p>				

<b>138705</b>	<b>Clinical &amp; Funct. Anatomy I</b>			
Subject: PA	Catalog Nbr: 0201			
2016 SPRG	Primary	Rebecca Lufler	Rebecca.Lufler@tufts.edu	
<p>This course teaches the structure and physiologic function of the human body. Utilizing lectures, simulation, and cadavers, students will have a clinically-focused introduction to the organ systems of the head, neck, chest, abdomen, and pelvis. The cellular, cardiovascular, pulmonary, endocrine, gastrointestinal, and neurophysiological components will be presented in sequence to complement other courses given in this and following semesters.</p>				

<b>138706</b>	<b>Clinical &amp; Funct. Anatomy II</b>			
Subject: PA	Catalog Nbr: 0202			
2016 SUMR	Primary	Rebecca Lufler	Rebecca.Lufler@tufts.edu	
<p>Continuing Part 1, this course will focus upon the musculoskeletal structure and physiological function of the human body utilizing lectures, simulation, and cadavers. Clinical correlation through case studies will be emphasized.</p>				

<b>138707</b>	<b>Internal Medicine III</b>			
Subject: PA	Catalog Nbr: 0205			
2016 FALL	Primary	Jeanine Carlson	jeanine.carlson@tufts.edu	
<p>Focusing upon the management of disorders of the gastrointestinal tract, this course will also use clinical cases to highlight the natural history of common disease states, their diagnosis, treatment and prevention.</p>				

<b>138708</b>	<b>Pharmacology I</b>			
Subject: PA	Catalog Nbr: 0206			
2016 SPRG	Primary	Paul Abourjaily	Paul.Abourjaily@tufts.edu	
<p>Focusing upon the principles of pharmacologic action, classification, and drug uses, this will be an introduction</p>				

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into clinical use of medications for various disease states. Emphasis will be placed upon indications, contraindications, bioavailability, drug interactions, dose response, side effects and adverse reactions.

<b>138709</b>	<b>Pharmacology II</b>			
Subject:	Catalog Nbr:			
PA	0207			
2016 SUMR	Primary	Paul Abourjaily	Paul.Abourjaily@tufts.edu	
Continuation of Pharmacology I. Focusing upon the principles of pharmacologic action, classification, and drug uses, this will be an introduction into clinical use of medications for various disease states. Emphasis will be placed upon indications, contraindications, bioavailability, drug interactions, dose response, side effects and adverse reactions.				

<b>138710</b>	<b>Professional Practice</b>			
Subject:	Catalog Nbr:			
PA	0213			
2016 SPRG	Primary	Richard Murphy	Richard.Murphy@tufts.edu	
The history of the Physician Assistant profession will be discussed. Topics such as the role of the PA in the US health care system, scope of practice, professional and legal restrictions, national board certification, and state licensure will be addressed. Interdisciplinary dynamics, PA-supervisor relationships, practice management and ownership, billing, federal and private insurers, billing, public policy trends, medical ethics, hospital credentialing, continuing medical education, and medical malpractice will be covered.				

<b>138711</b>	<b>Physical Diagnosis I</b>			
Subject:	Catalog Nbr:			
PA	0215			
2016 SPRG	Primary	Mark Freedman	Mark.Freedman@tufts.edu	
Using traditional lectures, simulated and standardized patients, and small student group interactions, students will be introduced to the basics of history taking and complete physical examination. Development of interviewing techniques and examination skills will be emphasized.				

<b>138712</b>	<b>Neuroscience I</b>			
Subject:	Catalog Nbr:			
PA	0221			
2016 SUMR	Primary	Megan Lee	Megan.Lee@tufts.edu	
2016 SUMR	Primary	Jennifer Patoulidis	Jennifer.Patoulidis@tufts.edu	
This course will present neuroanatomy and neurophysiology as they relate to clinical assessment and management of various disease states. History taking, physical examination and diagnostic imaging techniques will be discussed as they apply to neurological disease and trauma.				
This course will continue with PA 0224 - Neurology II				

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<b>138713</b>	<b>Pediatrics</b>			
Subject:	Catalog Nbr:			
PA	0222			
2016 FALL	Primary	MaryAnn Volpe	maryann.volpe@tufts.edu	
<p>Normal child growth and development will be emphasized as well as diagnosis and management of common childhood diseases and infections. Also discussed will be immunizations and medications used in pediatric practice, their indications, contraindications, and dosage in relation to specific disorders. Pediatric respiratory emergencies, injuries, cancer and hematologic disorders, and child abuse will be covered.</p>				

<b>138714</b>	<b>Diagnostic Imaging</b>			
Subject:	Catalog Nbr:			
PA	0229			
2015 FALL	Primary	Hana Dubsy	Hana.Dubsy@tufts.edu	
2015 FALL	Primary	Beth Buyea	Beth.Buyea@tufts.edu	
2016 SUMR	Primary	Robert French	No Email on file.	
2016 SUMR	Primary	Joseph Sansone	Joseph.Sansone@tufts.edu	
2016 SUMR	Primary	Jalil Afnan	No Email on file.	
<p>Radiologic safety, imaging modalities, indications, contraindications, benefits and risks of use of X-ray diagnosis will be covered. Assessment of common X-rays used in primary care and emergency medicine will be addressed. Students will be taught to recognize common radiologic abnormalities. Other diagnostic tools such as ultrasonography, MRI, CT scanning, and nuclear medicine scans will be introduced.</p>				

<b>138715</b>	<b>Emergency Medicine</b>			
Subject:	Catalog Nbr:			
PA	0225			
2016 FALL	Primary	Joseph Sansone	Joseph.Sansone@tufts.edu	
<p>This course provides fundamental instruction in the diagnosis and management of both common and life-threatening patient presentations to the emergency department.</p>				

<b>138716</b>	<b>Geriatrics</b>			
Subject:	Catalog Nbr:			
PA	0230			
2016 FALL	Primary	Richard Dupee	richard.dupee@tufts.edu	
<p>Students will be introduced to the process of aging as it affects the human body and mind. Atypical presentations of common acute and chronic diseases as they are seen in older populations will be addressed as will the challenges of managing various and concomitant disease states. Pharmacologic therapy in older patients, Alzheimer's disease, dementia, patient compliance issues, and end-of-life care will be discussed as well.</p>				

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<b>138717</b>	<b>Physical and Occupational Medicine</b>			
Subject:	Catalog Nbr:			
PA	0231			
2016 FALL	Primary	Mark Freedman		Mark.Freedman@tufts.edu
2016 FALL	Primary	David Blaustein		David.Blaustein@tufts.edu
Acute and chronic recovery from disease and injury will be covered as it applies to physician assistant practice. Implications of and indications for rehabilitative services, levels of care required, specific interventions and therapies will be discussed.				

<b>138718</b>	<b>Primary Care I</b>			
Subject:	Catalog Nbr:			
PA	0235			
2016 SPRG	Primary	Beth Buyea		Beth.Buyea@tufts.edu
This course offers first year physician assistant students in-depth training in a wide variety of clinically related subjects, including Medical Genetics, Dermatology, Otolaryngology, and Ophthalmology. Topics frequently addressed in other courses will be re-introduced in more depth and scope by experienced clinicians and experts.				

<b>138719</b>	<b>Capstone Project</b>			
Subject:	Catalog Nbr:			
PA	0250			
2016 SPRG	Primary	Richard Murphy		Richard.Murphy@tufts.edu

<b>138720</b>	<b>Senior Seminars</b>			
Subject:	Catalog Nbr:			
PA	0238			
2016 FALL	Primary	Richard Murphy		Richard.Murphy@tufts.edu
This course offers second year PA students information on a wide variety of clinical and practice-related subjects. These seminars are offered on "call-back" days during their clinical training in an effort to prepare them for future clinical practice. A special in Pain Management is being introduced and will include an innovative curriculum on dealing with acute and chronic pain in clinical practice. Students will also receive instruction in preparing for entering the "business" of medicine and preparing for initial NCCPA certification and ongoing recertification.				

<b>138759</b>	<b>Bioethics for the Physician-Scientist</b>			
Subject:	Catalog Nbr:			
MBS	0225			
2016 SPRG	Primary	John Castellot		john.castellot@tufts.edu

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This course will review the principles of bioethics and discuss approaches to ethical decision making.

<b>138760</b>	<b>Bioethics for the Budding Clinician</b>		
Subject:	Catalog Nbr:		
MBS	0226		
2016 SPRG	Primary	John Castellot	john.castellot@tufts.edu
This course will review the principles of bioethics and discuss approaches to ethical decision making.			

<b>139075</b>	<b>SCPE in Emergency Medicine</b>		
Subject:	Catalog Nbr:		
PA	0301		
<p>Familiarizes students with problems encountered in an emergency room. Students are responsible for taking medical histories and performing physical examinations on acute as well as non-emergent patients and presenting these to the medical preceptor. When appropriate, students perform necessary diagnostic and therapeutic measures. Through clinical training and didactic sessions at the clinical site, students may also be exposed to the emergency management and treatment of such conditions as trauma, shock, burns, asthma, poisoning, allergic reactions, seizures, and respiratory failure.</p>			

<b>139076</b>	<b>SCPE in Ambulatory Medicine</b>		
Subject:	Catalog Nbr:		
PA	0302		
<p>Exposes students to a broad range of experiences that emphasize the patient as an individual and family member. Students are involved in the initial and ongoing assessment of patients in all age groups as well as management of individuals with established diagnoses. In addition to routine health maintenance, students become familiar with common primary care and family medicine problems such as upper respiratory illness, orthopedic injuries, musculoskeletal complaints, hypertension, diabetes, and heart disease. Patient education, counseling, and integration with community services are other components of this rotation. Students may see patients in venues that include hospital ambulatory care clinics, private offices, family medicine practices, clinics and urgent care settings. This experience exposes students to broad aspects of ambulatory medical practice, emphasizing the patient as an individual and family member. Students will have exposure to caring for patients across a broad spectrum of ages. Students typically encounter such common medical problems as community acquired infections, musculoskeletal complaints, hypertension, diabetes, minor trauma, and heart disease. In addition to medical diagnosis and management, patient education, counseling, and integration of community services and arrangement of follow up care are major parts of this rotation. This part of the outpatient experience may be provided in a walk-in clinic or urgent care venue.</p>			

<b>139077</b>	<b>SCPE in In-Patient Medicine</b>		
Subject:	Catalog Nbr:		
PA	0303		
During this inpatient hospital rotation, students take and record medical histories and perform physical			

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examinations. It offers students an opportunity to become familiar with the assessment and management of varied medical problems by attending medical rounds and conferences, performing diagnostic procedures, presenting case write-ups, recording progress notes, and working under the supervision of a physician. It emphasizes the skills of collecting, assessing, and presenting patient data for physician review; ordering appropriate laboratory and diagnostic studies; counseling patients about therapeutic procedures; and helping to coordinate the contributions of other health professionals involved in management of the patient.

<b>139078</b>	<b>SCPE in Surgery</b>
Subject: PA	Catalog Nbr: 0304
<p>Students in this rotation participate in varied surgical patient care responsibilities, under the supervision of a surgical resident or staff surgeon. Emphasizes general surgery, though students may have some exposure to other surgical specialties and subspecialties. Students assist in surgical patients' initial assessment, which includes obtaining accurate medical histories and performing physical examinations. As members of the surgical team, students participate in preoperative management, including patient education and procedures necessary to prepare patients for surgery. Students assist surgeons in the operating room and have an opportunity to become familiar with operating room procedures and equipment. Students are also involved in patients' postoperative evaluation and management. When possible, students attend surgical grand rounds and other surgically-oriented educational meetings.</p>	

<b>139079</b>	<b>SCPE in Behavioral Medicine</b>
Subject: PA	Catalog Nbr: 0305
<p>Exposes students to varied mental health problems, in such settings as wards, clinics, and multiservice centers. Students are expected to perform mental status examinations and cognitive testing. Emphasizes recognizing various types of mental health problems that require referral to a specialist and managing problems that can be handled by the non-specialist. Assists students in furthering their understanding of effective patient interactions and the mental health components of health, disease, and disability.</p>	

<b>139080</b>	<b>SCPE in Pediatrics</b>
Subject: PA	Catalog Nbr: 0306
<p>Develops students' familiarity with outpatient pediatric problems, in training clinics and private pediatric offices. Emphasizes caring for a child from birth through adolescence. Provides opportunities to take medical histories and perform pediatric physical examinations. Stresses diagnosing and managing common childhood illnesses and evaluating growth and development. Assists students in developing skills to counsel parents about immunizations, child visits, growth and development parameters, common psychosocial problems, nutrition, and accident and poisoning prevention. Students may also have the chance to learn how to administer immunizations and perform audio and visual screening.</p>	

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<b>139081</b>	<b>SCPE in Women's Health</b>			
Subject: PA	Catalog Nbr: 0307			
<p>Enables students to become involved with obstetrical and gynecological services provided by teaching hospitals. Emphasizes pre- and postnatal care, monitoring labor, assisting in deliveries, and developing the necessary skills to deliver a child in an emergency situation. Provides opportunities to take obstetrical histories and perform obstetrical examinations. During this rotation, students are expected to learn how to assess and manage a variety of common gynecological problems and to counsel patients on family planning.</p>				

<b>139082</b>	<b>SCPE in Orthopedics</b>			
Subject: PA	Catalog Nbr: 0308			
<p>Offers students an opportunity to care for older and infirm patients in a variety of settings including nursing homes, rehabilitation centers, and convalescent facilities, and exposes the student to issues of caring for patients with sub-acute but in many cases, multiple problems complicated by advanced age, post-acute event recovery issues, and complex social and economic problems commonly seen in this population.</p>				

<b>139403</b>	<b>Medical Physiology</b>			
Subject: PA	Catalog Nbr: 0208			
2016 SPRG	Primary	David Damassa	david.damassa@tufts.edu	
2016 SPRG	Primary	Bruce Berlanstein	Bruce.Berlanstein@tufts.edu	
<p>This course will review basic principles of normal physiology including central nervous, cardiovascular, pulmonary, gastrointestinal, endocrines, renal, and reproductive systems of the human body. Tracking anatomy, pharmacologic, and internal medicine topics in other courses, these lectures are meant to serve as a foundation of information.</p>				

<b>139475</b>	<b>Critical Evaluation of the Clinical Literature</b>			
Subject: MBS	Catalog Nbr: 0228			
2016 SPRG	Primary	William Strohsnitter	William.Strohsnitter@tufts.edu	
<p>Sophisticated yet expensive treatments for uncommon but serious diseases are themselves becoming more common options for patients and their health care providers. These choices, however pose daunting challenges to numerous parties including effected patients, health care providers, health care policy makers, and health plan administrators. These stakeholders need to weigh the safety, efficacy, and cost effectiveness of these novel therapeutics against those already in use. Furthermore, preventive measures against serious diseases need to be established in order to reduce their burden on health care systems. These measures can only be implemented if risk factors for these diseases can be determined. Whether the objective is to identify effective and safe disease treatment regimens or risk factors to prevent disease occurrence, critical review of published evidence is essential in making judgments regarding how well these measures will work. Knowledge of basic</p>				

# Course Bulletin

epidemiologic and biostatistical tenets is necessary to effect this assimilation of evidence. Students in this course will become familiar with evaluating the strengths and limitations of published studies by reviewing and discussing selected publications. In addition, they will conduct an independent review of a selected paper that will be evaluated as part of their course grade. They will also become familiar with epidemiologic and biostatistical principles that will form the basis of these analyses.

<b>139719</b>	<b>Neuroscience II</b>				
Subject:	Catalog Nbr:				
PA	0224				
	2016 FALL	Primary	Megan Lee	Megan.Lee@tufts.edu	
	2016 FALL	Primary	Jennifer Patoulidis	Jennifer.Patoulidis@tufts.edu	
<p>This course will present neuroanatomy and neurophysiology as they relate to clinical assessment and management of various disease states. History taking, physical examination and diagnostic imaging techniques will be discussed as they apply to neurological disease and trauma.</p> <p>This course is a continuation of PA 0221 - Neurology I</p>					

<b>139725</b>	<b>Clinical Elective in Pediatric Cardiology</b>				
Subject:	Catalog Nbr:				
PA	0401				

<b>139726</b>	<b>Clinical Elective in Neonatology</b>				
Subject:	Catalog Nbr:				
PA	0402				

<b>139727</b>	<b>Clinical Elective in Pediatrics</b>				
Subject:	Catalog Nbr:				
PA	0403				

<b>139728</b>	<b>Clinical Elective in Pediatric Critical Care Medicine</b>				
Subject:	Catalog Nbr:				
PA	0404				

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<b>139729</b>	<b>Clinical Elective in Emergency Medicine</b>	
	Subject:	Catalog Nbr:
	PA	0405

<b>139730</b>	<b>Clinical Elective in Obstetrics &amp; Gynecology</b>	
	Subject:	Catalog Nbr:
	PA	0406

<b>139731</b>	<b>Clinical Elective in Gynecological Oncology</b>	
	Subject:	Catalog Nbr:
	PA	0407

<b>139732</b>	<b>Clinical Elective in Hematology &amp; Oncology</b>	
	Subject:	Catalog Nbr:
	PA	0408

<b>139733</b>	<b>Clinical Elective in Adult Cardiology</b>	
	Subject:	Catalog Nbr:
	PA	0409

<b>139734</b>	<b>Clinical Elective in Cardiac Surgery</b>	
	Subject:	Catalog Nbr:
	PA	0410

<b>139735</b>	<b>Clinical Elective in Thoracic Surgery</b>	
	Subject:	Catalog Nbr:
	PA	0411

<b>139736</b>	<b>Clinical Elective in Critical Care Medicine</b>	
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Subject:	Catalog Nbr:
PA	0412

<b>139737</b>	<b>Clinical Elective in Rehabilitation Medicine</b>
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Subject:	Catalog Nbr:
PA	0413

<b>139738</b>	<b>Clinical Elective in Surgical Oncology</b>
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Subject:	Catalog Nbr:
PA	0414

<b>139739</b>	<b>Clinical Elective in Plastic Surgery</b>
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Subject:	Catalog Nbr:
PA	0415

<b>139740</b>	<b>Clinical Elective in Bariatric Surgery</b>
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Subject:	Catalog Nbr:
PA	0416

<b>139741</b>	<b>Clinical Elective in Behavioral Medicine</b>
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Subject:	Catalog Nbr:
PA	0417

<b>139742</b>	<b>Clinical Elective in Child Psychiatry</b>
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Subject:	Catalog Nbr:
PA	0418

<b>139743</b>	<b>Clinical Elective in Family Medicine</b>
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Subject:	Catalog Nbr:
PA	0419

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<b>139744</b>	<b>Clinical Elective in Orthopedics</b>
Subject:	Catalog Nbr:
PA	0420

<b>139745</b>	<b>Clinical Elective in Geriatrics</b>
Subject:	Catalog Nbr:
PA	0421

<b>139746</b>	<b>Clinical Elective in Palliative Care</b>
Subject:	Catalog Nbr:
PA	0422

<b>139747</b>	<b>Clinical Elective in Experimental Surgery</b>
Subject:	Catalog Nbr:
PA	0423

<b>139748</b>	<b>Clinical Elective in Rural Medicine</b>
Subject:	Catalog Nbr:
PA	0424

<b>139749</b>	<b>Clinical Elective in Trauma Surgery</b>
Subject:	Catalog Nbr:
PA	0425

<b>139750</b>	<b>Clinical Elective in Primary Care</b>
Subject:	Catalog Nbr:
PA	0426

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<b>139751</b>	<b>Clinical Elective in Radiology</b>	
	Subject:	Catalog Nbr:
	PA	0427

<b>139752</b>	<b>Clinical Elective in Interventional Radiology</b>	
	Subject:	Catalog Nbr:
	PA	0428

<b>139753</b>	<b>Clinical Elective in Gastroenterology</b>	
	Subject:	Catalog Nbr:
	PA	0429

<b>139754</b>	<b>Clinical Elective in Infectious Disease</b>	
	Subject:	Catalog Nbr:
	PA	0430

<b>139755</b>	<b>Clinical Elective in Dermatology</b>	
	Subject:	Catalog Nbr:
	PA	0431

<b>139756</b>	<b>Clinical Elective in Allergy</b>	
	Subject:	Catalog Nbr:
	PA	0432

<b>139757</b>	<b>Clinical Elective in Neurology</b>	
	Subject:	Catalog Nbr:
	PA	0433

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<b>139758</b>	<b>Clinical Elective in Neurosurgery</b>	
	Subject:	Catalog Nbr:
	PA	0434

<b>139759</b>	<b>Clinical Elective in Rheumatology</b>	
	Subject:	Catalog Nbr:
	PA	0435

<b>139760</b>	<b>Clinical Elective in Nephrology</b>	
	Subject:	Catalog Nbr:
	PA	0436

<b>139761</b>	<b>Clinical Elective in Urology</b>	
	Subject:	Catalog Nbr:
	PA	0437

<b>139762</b>	<b>Clinical Elective in Nutrition</b>	
	Subject:	Catalog Nbr:
	PA	0438

<b>139763</b>	<b>Clinical Elective in Vascular Surgery</b>	
	Subject:	Catalog Nbr:
	PA	0439

<b>139764</b>	<b>Clinical Elective in Transplantation</b>	
	Subject:	Catalog Nbr:
	PA	0440

# Course Bulletin

<b>139910</b>	<b>Clinical Elective in Pulmonology</b>			
Subject:	Catalog Nbr:			
PA	0441			

<b>139932</b>	<b>Pharmaceutical Products: Survey of Development Principles and Concepts</b>			
Subject:	Catalog Nbr:			
DRMD	0201			
An introduction to the principles and activities that underlie the development of new medical products, including drugs, biologics, vaccines, medical devices and in-vitro diagnostics.				

<b>139933</b>	<b>Clinical Trials Overview</b>			
Subject:	Catalog Nbr:			
DRMD	0202			
2015 FALL	Primary	Orest Hurko	Orest.Hurko@tufts.edu	
An introduction to the concepts, strategies, and activities of clinical studies, from Phase 1 through Phase 4.				

<b>139934</b>	<b>Quantitative Methods Applies to Early Development Processes</b>			
Subject:	Catalog Nbr:			
DRMD	0203			
2015 FALL	Primary	Olaf Dammann	Olaf.Dammann@tufts.edu	
2015 FALL	Primary	Misha Eliasziw	Misha.Eliasziw@tufts.edu	
The fundamentals of epidemiology and biostatistics that are needed to develop and analyze clinical data obtained from early development activities, including characterization of the target population, adaptive design, and description of results from early testing.				

<b>139935</b>	<b>Quantitative Methods Applied to Late Development Processes</b>			
Subject:	Catalog Nbr:			
DRMD	0204			
2016 SPRG	Primary	Olaf Dammann	Olaf.Dammann@tufts.edu	
2016 SPRG	Primary	Misha Eliasziw	Misha.Eliasziw@tufts.edu	
The fundamentals of epidemiology and biostatistics that are needed to conduct randomized controlled trials, including interim analyses, and to conduct post-marketing studies, including cohort studies and registries.				
Special topics: Baysean statistics for medical devices and testing in-vitro test kits.				

<b>139936</b>	<b>Translational Medicine: From Drug Discovery to Clinical Development</b>			
Subject:	Catalog Nbr:			
DRMD	0205			

# Course Bulletin

The principles and activities that build an understanding of the pharmacokinetics and pharmacodynamics of new molecular entities, and the special issues posed by biologicals.

<b>139937</b>	<b>Regulatory Affairs and Compliance</b>			
Subject:	Catalog Nbr:			
DRMD	0207			
2015 SUMR	Primary	Daniel Bollag	No Email on file.	
The principles and practices of regulatory strategy and logistics in representing a company to regulatory agencies; the processes needed to be internally compliant with SOPs and externally consistent with Good Regulatory Practices.				

<b>140061</b>	<b>Clinical Elective in Outpatient Psychiatry</b>			
Subject:	Catalog Nbr:			
PA	0442			

<b>140095</b>	<b>Mental Illness and its Pharmacologic Management</b>			
Subject:	Catalog Nbr:			
MBS	0229			
2016 SPRG	Primary	David Greenblatt	dj.greenblatt@tufts.edu	
<p>Emotional disorders and mental illness are commonly encountered in medical practice by primary care physicians, internists, and most of the medical subspecialties. These disorders can present as the principal reason for seeking health care, or as components or consequences of other underlying medical disorders. The majority of such individuals are not referred for specialty treatment by psychiatrists, but rather are managed by their primary physicians. The principal objective of this course is to introduce MBS candidates -- the majority of whom will go on to become physicians involved in primary health care delivery -- to the fundamental features of emotional disorders and mental illnesses encountered in clinical medicine, and pharmacologic approaches to management of these disorders. The instructional strategy will involve integrated teaching by Tufts-affiliated physicians having extensive experience in clinical psychopharmacology, together with basic/clinical pharmacology instruction by the course director and other faculty with a focus on mechanisms of psychotropic drug action, principles of appropriate clinical use, and recognition of hazards and adverse reactions.</p> <p>The course will meet once each week for 12 weeks in the Spring semester for 90 minutes per session, for a total of 20 contact hours. The core topics will be:</p> <ul style="list-style-type: none"> <li>- The epidemiology of mental illness, and the relation to primary care medicine.</li> <li>- Anxiety and panic disorders</li> <li>- Anxiolytic and anti-panic drugs</li> <li>- Sleep disorders</li> <li>- Sedative-hypnotic medications</li> </ul>				

# Course Bulletin

- The clinical spectrum of depression and mood disorders
- Antidepressant agents
- Bipolar disorder and its treatment
- Schizophrenia and other thought disorders
- Medications used to treat schizophrenia
- Substance abuse and its pharmacologic treatment
- Complementary and alternative medicines
- Genetics of mental illness and its pharmacologic treatment
- Drug interactions in psychopharmacology
- Topical review

<b>140138</b>	<b>Clinical Elective in Pediatric Neurology</b>
Subject:	Catalog Nbr:
PA	0443

<b>140321</b>	<b>Clinical Elective in Otolaryngology</b>
Subject:	Catalog Nbr:
PA	0444

<b>140322</b>	<b>Clinical Elective in Cardiothoracic Surgery</b>
Subject:	Catalog Nbr:
PA	0445

<b>140323</b>	<b>Clinical Elective in Pediatric Gastroenterology</b>
Subject:	Catalog Nbr:
PA	0446

<b>140449</b>	<b>Clinical Elective in Neurological Intensive Care Medicine</b>
Subject:	Catalog Nbr:
PA	0447

<b>140450</b>	<b>Clinical Elective in Ambulatory Medicine</b>
Subject:	Catalog Nbr:

# Course Bulletin

PA	0448
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<b>140451</b>	<b>Clinical Elective in Interventional Medicine</b>
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Subject:	Catalog Nbr:
PA	0449

<b>140452</b>	<b>Clinical Elective in Surgical Intensive Care Medicine</b>
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Subject:	Catalog Nbr:
PA	0450

<b>140453</b>	<b>Clinical Elective in Neonatal Intensive Care Medicine</b>
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Subject:	Catalog Nbr:
PA	0451

<b>140454</b>	<b>Clinical Elective in Urgent Care</b>
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Subject:	Catalog Nbr:
PA	0452

<b>140499</b>	<b>Clinical Elective in Pain Management</b>
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Subject:	Catalog Nbr:
PA	0453

<b>140581</b>	<b>Pharmacovigilance Management</b>
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Subject:	Catalog Nbr:
DRMD	0206

2015 SUMR	Primary	Paul Beninger	Paul.Beninger@tufts.edu
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The principles and practices of individual case report management, signal detection management, and benefit-risk management.

<b>140582</b>	<b>Marketing Principles</b>
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Subject:	Catalog Nbr:
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DRMD      0263
The process of planning and executing on the concept, price, and services used in marketing pharmaceuticals in a way that is consistent with the product label.

<b>140584</b>	<b>Clinical, Regulatory, and Pharmacovigilance Operations</b>			
Subject:	Catalog Nbr:			
DRMD	0208			
2015 FALL	Primary	Kenneth Getz		Kenneth.Getz@tufts.edu
The basic operational activities that translate strategies into processes and procedures in conducting clinical trials, preparing documents for regulatory agencies, and conducting safety evaluations that are consistent with Good Operational Practices.				

<b>140585</b>	<b>Capstone Preparation</b>			
Subject:	Catalog Nbr:			
DRMD	0298			
2016 SUMR	Primary	Kenneth Kaitin		Kenneth.Kaitin@tufts.edu
2016 SUMR	Primary	Paul Beninger		Paul.Beninger@tufts.edu

<b>140586</b>	<b>Marketing Principles &amp; Pricing</b>			
Subject:	Catalog Nbr:			
DRMD	0268			
2015 SUMR	Primary	Joshua Cohen		joshua.cohen@tufts.edu
2015 SUMR	Primary	Laura Housman		Laura.Housman@tufts.edu
Bringing together 2 related, important areas, this course covers 1) the process of planning and executing on the concept, price, and services used in marketing pharmaceuticals in a way that is consistent with the product label, and 2) pricing and reimbursement of FDA-approved pharmaceuticals.				

<b>140903</b>	<b>Clinical Elective in Surgery</b>			
Subject:	Catalog Nbr:			
PA	0454			

<b>141021</b>	<b>Capstone Implementation</b>			
Subject:	Catalog Nbr:			
DRMD	0299			
2016 FALL	Primary	Kenneth Kaitin		Kenneth.Kaitin@tufts.edu
2016 FALL	Primary	Paul Beninger		Paul.Beninger@tufts.edu

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<b>141022</b>	<b>Project Management</b>			
Subject:	Catalog Nbr:			
DRMD	0211			
2016 SPRG	Primary	Edward Yost		Edward.Yost@tufts.edu

<b>141023</b>	<b>Principles in Manufacturing &amp; Quality</b>			
Subject:	Catalog Nbr:			
DRMD	0241			
2016 SUMR	Primary	Paul Jansen		No Email on file.

<b>141024</b>	<b>Medical Devices</b>			
Subject:	Catalog Nbr:			
DRMD	0242			
2016 SPRG	Primary	John Schalago		John.Schalago@tufts.edu

<b>141030</b>	<b>Introduction to Clinical Neuroscience</b>			
Subject:	Catalog Nbr:			
MBS	0230			
2016 SPRG	Primary	Karina Meiri		karina.meiri@tufts.edu
<p>Many undergraduates, particularly pre-meds, will have had some background in neuroscience, but few undergraduate courses focus on functional neuroanatomy, which is how neuroscience is taught in medical school. The goal of this course is to give MBS students who have had no prior exposure to anatomy-based neuroscience the background in functional neuroanatomy that will ease them into medical school neuroscience courses. The course integrates neuroanatomy with the underlying function, which makes the material more interesting and allows the student to put together the 'big picture' in a way that may be less possible when learning the material for the first time in the high pressure medical school environment. For example, the spinal cord is taught in the context of its functional units rather than simply as a series of anatomical slices with different components. Each functional unit is accompanied by clinical cases that give insight into how disruptions to function anatomy can give rise to dysfunction. For example, the basal ganglia circuit regulates intention to move and when various elements of this circuit degenerate, disorders of decreased movement (e.g. Parkinson's disease) and uncontrolled movement (e.g. Huntington's disease) become evident. We will explore how the symptoms of the disease reflect the underlying anatomy of the basal ganglia circuit and how the disorders come about - for example, genetic susceptibilities - and we will finish up by talking about the strengths and weaknesses of current treatment. Throughout the course, students will practice using deductive reasoning to solve clinical cases, thereby shoring up their understanding of how functionality relates to structure.</p>				

# Course Bulletin

<b>141123</b>	<b>Clinical Elective in In-Patient Medicine</b>		
	Subject:	Catalog Nbr:	
	PA	0455	

<b>141312</b>	<b>Principles of Electrocardiography</b>		
	Subject:	Catalog Nbr:	
	PA	0239	
	2016 SUMR	Primary	Richard Murphy
			Richard.Murphy@tufts.edu
<p>This course is an elementary introduction into electrocardiography. Students will learn the basics of electrical impulses generated by the heart's electrical conduction system and the manifestation of these impulses on paper charts and ECG monitors. Students will learn to identify conduction abnormalities, heart blocks, ischemic and infarction changes as generated on ECGs. They will learn to calculate heart rates, axis deviations, and chamber hypertrophy.</p>			