

# HEALTH SCIENCE (HSC)

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## HSC 100 Health Care Ethics (3 credits)

This course will introduce students to the study of legal and ethical issues for public health and health care delivery. Ethics is a branch of philosophy which implies that the human mind is the fundamental means by which actions are judged either through principles of reason or from experience. Ethical theories and legal principles will be introduced and discussed in the context of key contemporary health care issues.

**Course Rotation:** NYC & PLV: Spring

## HSC 110 Introduction to Health Promotion and Disease Prevention (3 credits)

This course will provide a comprehensive guide to major health promotion concepts. This course will include practical guidance on diversity awareness, innovation practice, the latest research and trends in health promotion and quality and safety issues.

**Course Rotation:** Spring and Fall

## HSC 200 Health Care for Diverse Populations (3 credits)

In an increasingly interconnected world, public health is global health. Global health is the delivery of health care interventions designed to improve health outcomes among diverse populations around the world. This course provides an overview of key global health challenges facing diverse populations. The overall course objective is to introduce students to the key principles needed for understanding global health and culturally competent health care delivery. The aims of this course are to (a) explore the impact of culture on the effectiveness of global health interventions, (b) introduce the social determinants of health as a tool for understanding patterns of disease within and between diverse populations, and (c) provide an overview of approaches for delivering culturally competent healthcare. This course is organized into three sections: (i) analytical approaches; (ii) burdens of disease; and (iii) health care needs of special populations. By the end of the course, students will understand key global health topics that impact upon diverse populations while appreciating why a cross-disciplinary approach is essential for improving the health outcomes of diverse populations. Health Care for Diverse Populations (HSC 200) is a required Health Science Major Core that can be taken as an elective of non-Majors.

**Course Rotation:** PLV: Fall

## HSC 205 Health Informatics and Telehealth (3 credits)

This course will provide an introduction to information technology as it is applied to health care and health related organizations. Students will learn about systems needed for today's technology-focused health care systems, project management tools and procedures, quality, usability and standards in informatics, legal issues, federal regulations and accreditation and future directions and research in health informatics.

**Course Rotation:** NY, PLV: Spring

## HSC 210 Health Care Policy (3 credits)

Health Care Policy is a required Health Science Major Core that can be taken as an elective for non-Majors. This course offers an inter-professional approach to understanding the health policy and financing system. The social determinants of health and challenges confronting healthcare systems and practitioners in a variety of health care professions and disciplines will be discussed.

**Course Rotation:** PLV: Fall

## HSC 297A Foundation for Resilience: Biophysical Perspectives and Risk Reduction post 9/11 (3 credits)

This hybrid intensive course is designed for undergraduate students. The content will focus on major themes of human experience surrounding the events of 9/11. Theory, concepts, and principles of traumatic loss and resilience's will be discussed and be examined from the biological, psychological, and social viewpoints. Using personal experiences, narratives, scholarly evidence-based knowledge and film, students will utilize knowledge of cognitive, emotional, and physical self-care skills and coping styles, and the role of social networks, to reduce the risk of (major) psychological disorders ensuring from adversity and to promote healthy growth and integration of loss. The course will be conducted as a hybrid, web assisted course and will include mandatory in person meeting in New York and fieldtrips. Experts in disaster, trauma, and resilience will present selected topics.

**Course Rotation:** NY, summer 2 and January Intersession

## HSC 300 Genetics in Health Care (3 credits)

**Course Rotation:** Physical appearance, disease susceptibility, behavior and important traits vary from person to person and population to population. Discoveries in genetic research over the past half century have revealed that these variations are much due to gene mutations, which shape heritable diversity among both individuals and groups. Since the progress of the Human Genome Project in 2003, advancement of laboratory technology to determine genetic risk has come to mainstream healthcare. These advancements have led to discoveries in molecular genetics, which has led to advancements in determining genetic risk for families. Knowledge of genetics has become increasingly an essential part of the health care delivery system. Healthcare professionals such as public health specialists, nurses, social workers, physical and occupational therapists, provide direct care to patients and families. They are all an integral part of the health care delivery system. Healthcare professionals from various fields will be increasingly called upon to provide risk assessment, understanding and clarity regarding genetic testing, impact to various family members. Public health genetics is the application of advances in genetics and molecular biotechnology to improve public health and prevent disease. This course will provide understanding of the genetic principles and concepts such as screening, assessments, treatments and counseling and apply genetic concepts to public health. Content will include information about the mechanisms producing adult onset and pediatric genetic conditions, methods of prevention, early intervention and possible treatment modalities. Bio-ethical principles and implications will be integrated. NYC & PLV: Fall

## HSC 305 Introduction to Epidemiology and Evidence-Based Practice (3 credits)

This course explores the basic concepts of evidence-based practice with an inter-professional approach. Students will develop the tools needed to make informed, evidence-based decisions concerning health care delivery, health policy, and health promotion, and to communicate the decisions effectively with a variety of health professionals.

**Course Rotation:** Spring

## HSC 307 TeleHealth and TeleMedicine (3 credits)

This course serves as an introduction to TeleHealth concentration. The development of Information Technology ("IT") has led to a wider number of healthcare services available. These include TeleMedicine, which uses information technology to enable specialists to provide healthcare to patients at a distance. TeleHealth, an expansion of TeleMedicine, refers to the general use of IT to support patient monitoring, patient education, and better management of the delivery of healthcare. We will examine these TeleHealth and TeleMedicine service by first understanding how communication networks function and what a TeleMedicine system consist of. We will as examine the diverse range of IT medical services that be supported. These include drug prescription, spread of pandemic modeling, patient monitoring, remote operation and medical databases. We will examine TeleHealth and TeleMedicine in the perspective of healthcare professions, patient and regulatory agencies.

**Course Rotation:** NY and PLV; Fall

## HSC 309 Health Analytics (4 credits)

The US healthcare industry is undergoing developments in the evolution of data management and information technology utilization. The expansion of data mining tools along increased availability and use of electronic health data provides opportunities for novel large-scale analytics to improve health care. Propelled by increasing adoption of clinical information systems, 'Health Analytics' is emerging as an effective tool to help payers and integrated health delivery systems better manage risk and improve patient outcomes, This class provides an introduction to Health Analytics, covering skills needed to select, prepare, analyze, interpret, evaluate and present clinical and operational data for the purposes of improving outcomes (quality, effectiveness, efficiency, safety).

**Course Rotation:** NY and PLV; Fall

## HSC 310 History of Health Care Systems (3 credits)

History of Health Care Systems (HSC310) is a required Health Policy and Advocacy concentration course for the Health Science Major that can be taken as an elective for non-Majors. This course provides an introduction to the key trends and issues that have shaped the health system in the United States.

**Course Rotation:** NYC & PLV: Spring

## HSC 311 Mobile Health (4 credits)

Ubiquitous connectivity and computing unprecedented mobility experiences anytime and anywhere in all the aspects of our lives, from entertainment to work through socializing and shopping. This trend is also impacting health care and promises significant results in quality, convenience, reach and cost. Mobile health solutions range from prevention to diagnosis through therapy and monitoring. They are offered by payers, healthcare providers and independent health ventures.

**Course Rotation:** NY and PLV; Fall

## HSC 313 Healthcare Informatics Security and Privacy (4 credits)

The course will provide an understanding of security and privacy in healthcare informatics. The focus is on the need for guidance in regard to best practice, regulation and technology in privacy and security. There is a burgeoning and critical need to recognize the risk in the implementation of Electronic Health Record (EHR) systems, medical practices and healthcare systems as new software develop at breakneck speed. Yet privacy and security considerations are often an afterthought, putting healthcare organizations at risk of fines and damage to their reputation. Specific topics include information governance, roles and occupations, risk assessment and management, incident response, patient rights, and cybersecurity.

**Course Rotation:** NY and PLV; Fall

## HSC 315 Global Health IT and Innovations (3 credits)

This course provides students with an understanding of how information technologies (IT) and innovations shape, redefine, and expand health care system capacity and improve health outcomes, especially in low-resource countries, globally. Students will gain skill in critiquing and analyzing various management programs and technology systems currently available to the global health community. The capacity, sustainability and scalability of technologies and innovations, and their importance to improving population health outcomes, will be explored from a socially just and culturally competent perspective. Students will be introduced to the fascinating world of creative technology and innovation as a means to expand health resources. These innovations include such tools as e-Health and mHealth. Tutorials will offer didactic and experiential learning opportunities. They will serve as interactive discussion and training sessions to introduce the skills and software toolsets that will be used by the students to design an original field project, an original health care delivery system application, and a funding proposal.

## HSC 320 Global Primary Health Care: An Introduction (3 credits)

This course empowers students with foundational knowledge of primary health care. The course will focus on developing a historical, culturally competent understanding to inform current perspectives of primary health care, including a world-view of primary health care models and themes, the role of epidemiology, process of coalition building, impact of health care policy and advocacy and components of emergency preparedness. Students will gain an appreciation of the multiple determinants and system influences that impact deliver-y and outcomes of primary health care, and will learn how to view health outcome disparities from a multidimensional, and ecological perspective. The course is restricted to Health Science majors. Course

Rotation: NYC & PLV: Fall

**HSC 324 Government, Politics and Policy (3 credits)**

This course will build upon prior coursework in the health science core. The course will provide students with an in-depth understanding of the policy making process including the structure and function of local, state, and federal systems impacting health care policy. The policymaking process, government structure, roles, and legal language will be considered in depth. Students will follow the policymaking process using healthcare related policy topics.

**Course Rotation:** NYC & PLV: Spring

**HSC 325 Patient Education and Advocacy (3 credits)**

This course will focus on the various strategies in and the roles of health professionals in patient education and advocacy. Health professionals from various disciplines have and will continue to have expanded roles as advocates, educators, and coordinators of care. This course will build upon prior knowledge of multiple communication strategies, and methodologies to facilitate your role as a public health educator and advocate.

**Course Rotation:** NYC & PLV: Fall

**HSC 330 Global Environmental Health (3 credits)**

This course is designed to give students a broad overview of global environmental health as a public health discipline. The purpose of this course is to learn about key areas of environmental health and their role in global health. This course will consider the health dimensions of environmental problems that manifest on a global scale, such as climate change and biodiversity loss. This multidisciplinary framework examines the complex relationships between economic development, environmental degradation, and global health. Students will be introduced to The World Health Organization's broad view of the environment. This course also refers to the theory and practice of assessing, correcting, controlling, and preventing those factors in the environment that can potentially affect adversely the health of present and future generations. We will explore solutions to these problems and the challenges inherent in realizing those solutions.

**Course Rotation:** NYC & PLV: Spring

**HSC 335 Health Policy: The Current State of Affairs (3 credits)**

This course provides students with an understanding of how global health policy is designed, implemented and evaluated. Using case studies, students will learn to apply theories and principles of policymaking to the formulation of health policy in response to current global health problems.

**Course Rotation:** NYC & PLV: Fall

**HSC 340 Quality Improvements in Healthcare (3 credits)**

The overarching objective of this course is to familiarize students with the concepts of Quality and the process of Quality Improvement across the healthcare continuum. Students will learn about the history and evolution of quality, its terms, principles, theories, and practices. For example, student will explore the work of Edward Codman, Florence Nightingale, James Reason, Peter Senge, as well as many others. The students will be introduced to a diverse collection of methods of improving quality, including, but not limited to, Continuous Quality Improvement and Total Quality management, as well as to the guidelines for implementing quality management and the continuous quality improvement processes.

**Course Rotation:** NY and PLV; Fall

**HSC 345 Patient Safety (3 credits)**

Patient safety remains of grave concern in today's healthcare setting, with errors costing patients quality of life and the system millions of dollars. Students will be exposed to the myriad of errors and adverse events plaguing the healthcare system. Students will explore patient safety from the individual patient perspective as well as from the system level, using comprehensive assessment tools such as Root Cause Analysis to investigate the complex nature of error. Students will be exposed to the work of Edward Codman, James T. Reason and many other who have contributed to finding solutions to this magnanimous problem of patient safety.

**Course Rotation:** NY and PLV; Spring

**HSC 350 Evaluation and Measurement (3 credits)**

Evaluation and measurement are critical to the performance and improvement of the healthcare system; continual measurement and evaluation of access, care delivery, and outcomes are essential to ensuring that the patients receive quality and safe care. In this course students will learn and engage in data collection, as well as how to use data to generate performance measures. Student will work with actual data acquiring analytic skills transforming data into information. The final project is this course will involve presenting the evaluation and assessment for a quality improvement initiative to stakeholders in a clinical setting. Students will also be required to produce dashboard and recommendations based on their findings.

**Course Rotation:** NY and PLV; Spring

**HSC 355 Today's Healthcare Environment (3 credits)**

This course focuses on existing healthcare organizations and clinical care environments to determine what the current patient safety and quality improvements needs are. The student will develop a comprehensive understanding of the current clinical work environments, the challenges and demands, as well as the external resources and demands. Students will work with an individual healthcare organization learning about accreditation processes (e.g. JCAHO, Magnet, etc.). The student will become familiar with how the accreditation process plays out from start to finish. Lastly, students will discuss and analyze current patient safety issues and solutions learning what is working and why.

**Course Rotation:** NY and PLV; Fall

HSC 360 Implementation (3 credits)

This course is an amalgamation of all the content taught within the Quality Improvement and Patient Safety Concentration. Students will have the opportunity to use and apply all of the knowledge and training they have acquired to design, implement, and evaluate a quality improvement initiative within a clinical setting. Students will begin by evaluating the clinical environment and identifying patient safety issues and quality improvement needs. Each student will partner with a healthcare organization to work on a project from measurement and evaluation, through design right through implementation. The students will lead the project and will evaluate whether the project was a success or not reflecting on their entire process. .

**Course Rotation:** NY and PLV; Spring

HSC 395 Independent Study (3 credits)

With the approval of the appropriate faculty member, the department chair, and the academic dean, students select a topic of guided study or field studies that is not included in the regular course offerings. The student meets regularly with the faculty member to review progress. A mutually agreed deliverable must be submitted.

**Course Rotation:** Fall, Spring, Summer

HSC 400 Leadership and Management in Health Care (3 credits)

Leadership and Management in Health Care. This course combines theory of leadership and management with the practice of the art of leading. It will address the full scope of leadership and followership, with its many challenges and its significance in health care. The student will gain the knowledge and skills to evaluate and improve one's leadership abilities and effectiveness, and appraise work related effectiveness within organizations.

**Course Rotation:** NYC & PLV: Fall

HSC 405 Global Health: A Field Experience (Capstone) (3 credits)

Using various lenses of primary health care and global health, and with reference to the Sustainable Development Goals, social determinants of health and socio-ecological model of health behaviors and outcomes, and epidemiologic methods, students will examine field approaches to diverse major global health issues. Students will accomplish virtual visits to key field operations of global public health programs as well as in supervised research and case studies, evaluate challenges facing varied levels of health professionals, community based organizations, and policy makers in making sustained progress to reduce, control or eliminate key global health problems facing diverse populations.

**Course Rotation:** NYC & PLV: Spring

HSC 410 Global Health Care Systems (3 credits)

Global Health Care Systems (HSC410) is a required Global Health concentration course for the Health Science Major that can be taken as an elective for non-Majors. This course provides an introduction to the characteristics and contributions of health systems to improving health outcomes around the world.

**Course Rotation:** NYC & PLV: Spring

HSC 420 Current Issues in Healthcare Delivery (Capstone) (3 credits)

This course provides an introduction to current issues and policies in health care and how these impact the direct delivery of care in the United States. Students will examine the challenges of historical and future reforms to the health care sector, including examining the current payment structures, shifting to value over volume, and utilizing modern technologies in a heavily regulated industry. To guide and build the course, the weekly topics are divided into three sections: structures, innovation, and future impact. The importance of quality of care and outcomes measurement to improve the health of individuals and populations will be emphasized. Students are expected to engage fully with the online course.

**Course Rotation:** NYC & PLV: Spring

HSC 480 Capstone Project 1 (3 credits)

This course will provide the student with an opportunity to integrate the knowledge they have acquired during this program. The student will choose a topic of interest and complete the first phase of the capstone project. The student will apply an evidence-based systematic review of the literature to an identified research question or problem and will answer a research question or problem statement by retrieving, reading and synthesizing published research materials.

**Course Rotation:** NY and PLV: Fall

HSC 481 Capstone Project II (3 credits)

This course is Part 2 of the final capstone project. The course will provide the student with an opportunity to integrate the knowledge they have acquired during this program. The course will culminate in a written project and oral presentation.

**Course Rotation:** NY and PLV: Spring

HSC 498 Capstone Project 1 (3 credits)

HSC 499 Capstone Project 2 (3 credits)