Health Care

The Bachelor of Science in Health Care provides an academic foundation for students pursuing managerial, clinical or research careers in health care. The program includes a base of core courses that examines scientific, social, political, economic, ethical and organizational issues in health care and that also addresses implications for individual practice and public policy. This required core, drawn largely from Arts & Sciences, underscores the complex interdisciplinary nature of health care today and the mandate for critical thinking, contextual understanding and ethical behavior across all related fields and careers.

Grounded in these common questions and skill sets, students then pursue more specialized professional interests by selecting a concentration in either health care management or health sciences. The program equips students with an academic foundation for graduate or professional school or for work in a variety of health care professions, including (but not limited to) hospital administration, community health, public health, biomedical research, medicine, nursing, dentistry, and physical and occupational therapy.

Website: http://ucollege.wustl.edu/programs/undergraduate/bachelors-health-care

Degree Requirements
Bachelor of Science in Health Care

All University College undergraduate students must satisfy the same general-education requirements (http://bulletin.wustl.edu/undergrad/ucollege/bachelors/#degreerequirements). Requirements specific to this major include the following:

Required core courses: 12 units

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<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Units</th>
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<tbody>
<tr>
<td>Phil 233</td>
<td>Biomedical Ethics</td>
<td>3</td>
</tr>
<tr>
<td>Psych 358</td>
<td>Health Psychology</td>
<td>3</td>
</tr>
<tr>
<td>HCARE 309</td>
<td>Health and Society</td>
<td>3</td>
</tr>
<tr>
<td>Anthro 3283</td>
<td>Introduction to Public Health</td>
<td>3</td>
</tr>
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<td>Total Units</td>
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Health Care Management Concentration

Required courses: 24 units

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<thead>
<tr>
<th>Code</th>
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<tbody>
<tr>
<td>Econ 101</td>
<td>Introduction to Microeconomics</td>
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<tr>
<td>Econ 352</td>
<td>Health Economics</td>
<td>3</td>
</tr>
<tr>
<td>Math 1011</td>
<td>Introduction to Statistics</td>
<td>3</td>
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<tr>
<td>or Math 205</td>
<td>Applied Statistics</td>
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</tr>
<tr>
<td>Bus 263</td>
<td>Financial and Managerial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>Bus 339</td>
<td>Principles of Management</td>
<td>3</td>
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<tr>
<td>HCARE 312</td>
<td>Legal Issues in Health Care Management</td>
<td>3</td>
</tr>
<tr>
<td>HCARE 314</td>
<td>Health Care Finance</td>
<td>3</td>
</tr>
<tr>
<td>HCARE 355</td>
<td>Health Care Policy</td>
<td>3</td>
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<td>Total Units</td>
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Health Sciences Concentration

Required courses: 11 units

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<tr>
<th>Code</th>
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<tbody>
<tr>
<td>Bio 101</td>
<td>General Biology I</td>
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<tr>
<td>Bio 102</td>
<td>General Biology II</td>
<td>4</td>
</tr>
<tr>
<td>Bio 342</td>
<td>Introduction to Human Disease and its Scientific Basis</td>
<td>3</td>
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<td>Total Units</td>
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Electives courses (12 units chosen from the following list; at least 6 units at the 300-400 level):

<table>
<thead>
<tr>
<th>Code</th>
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<tbody>
<tr>
<td>Chem 105</td>
<td>General Chemistry I</td>
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<tr>
<td>Chem 106</td>
<td>General Chemistry II</td>
<td>3</td>
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<tr>
<td>Chem 151</td>
<td>General Chemistry Laboratory I</td>
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<tr>
<td>Chem 152</td>
<td>General Chemistry Laboratory II</td>
<td>2</td>
</tr>
<tr>
<td>Chem 261</td>
<td>Organic Chemistry With Lab</td>
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</tr>
<tr>
<td>Chem 262</td>
<td>Organic Chemistry II with Lab</td>
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</tr>
<tr>
<td>Phys 211</td>
<td>General Physics</td>
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<tr>
<td>Phys 212</td>
<td>General Physics II</td>
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<tr>
<td>Bio 322</td>
<td>Introduction to Anatomy and Physiology I (With Lab)</td>
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<tr>
<td>Bio 323</td>
<td>Introduction to Anatomy and Physiology II (With Lab)</td>
<td>5</td>
</tr>
<tr>
<td>Bio 406</td>
<td>Introduction to Biochemistry</td>
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<tr>
<td>Bio 431</td>
<td>Biology of Aging</td>
<td>3</td>
</tr>
<tr>
<td>Psych 322</td>
<td>Developmental Psychology</td>
<td>3</td>
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<td>Psych 3200</td>
<td>Child Health Psychology</td>
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<tr>
<td>Psych 460</td>
<td>Behavioral Medicine</td>
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<tr>
<td>Anthro 387</td>
<td>Medical Anthropology</td>
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The Minor in Health Care

Total units required: 15

Required courses (3 units):

<table>
<thead>
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<th>Code</th>
<th>Title</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>HCARE 355</td>
<td>Health Care Policy</td>
<td>3</td>
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</table>

Elective courses (12 units):
U86 HCARE 101 Concepts in Chemistry
A one semester survey of the major topics covered in general chemistry, organic chemistry, and biochemistry. The course is intended for students pursuing a degree or certificate in clinical research management and others seeking broad coverage of chemical concepts. Does not replace general chemistry, organic chemistry, or biochemistry requirements for premedical students or others majoring in the sciences.
Same as U05 Chem 1001
Credit 3 units.

U86 HCARE 101 General Biology I
First part of a two-semester rigorous introduction to basic biological principles and concepts. The first semester covers the molecular and cellular basis of life, bioenergetics, signal transduction, DNA and protein synthesis, and the function of whole organisms (physiology). Laboratory two evenings per week. Laboratories include traditional wet labs as well as inquiry-based, on-line labs. Restricted to University College students, post-baccalaureate premedical students, others with University College permission.
Same as U29 Bio 101
Credit 4 units.

U86 HCARE 102 General Biology II
Second semester of a two-semester sequence that provides a broad, but rigorous introduction to basic biological principles and concepts. The second semester covers DNA technology and genomics, the genetic basis of development, the mechanisms of evolution, the evolutionary history of biological diversity, plant form and function, and ecology. Laboratory two evenings per week. Laboratories include traditional wet labs as well as inquiry-based on-line labs. Prerequisite or corequisite: U05 Chem 105 (with laboratory) or instructor permission. Restricted to University College students, post-baccalaureate premedical students, others with University College permission.
Same as U29 Bio 102
Credit 4 units.

U86 HCARE 105 General Chemistry I
Systematic treatment of fundamental chemical principles and their applications. Emphasis on atomic and molecular theories, laws of chemical combination, periodic classification of the elements, and properties of gases, liquids, solids, and solutions. Prerequisite: U20 Math 141, 142 or equivalent, one year of high school chemistry, or permission of department. This course is restricted to students admitted to the Post-Baccalaureate Premedical program. Others may register with instructor permission, and on a space available basis.
Same as U05 Chem 105
Credit 3 units.

U86 HCARE 106 General Chemistry II
Continuation of General Chemistry I with consideration of oxidation-reduction, chemical equilibria, electro-chemical cells, and the chemistry of representative elements. Prerequisite: U05-105. Students desiring to satisfy lab science requirements or major in chemistry must also enroll in U05-152.
Same as U05 Chem 106
Credit 3 units.

U86 HCARE 110 Medical Imaging of the Human Body
A multimedia exploration of the human body via state-of-the-art imaging techniques, including CT, MRI, Ultrasound, and PET scans. The investigative challenge of diagnostic medical imaging is examined and common health issues including sports injuries, heart disease, stroke, cancer, arthritis, as well as early detection screening tests are discussed. Material is presented in a uniquely interactive and enjoyable manner. Prereq: one year high school or entry-level college biology.
Same as U29 Bio 110
Credit 3 units.

U86 HCARE 134 Introduction to Magnetic Resonance Imaging
An introduction to magnetic resonance imaging (MRI) and its applications in medicine. We will focus on the very basic principles of MRI and the various MR contrast mechanisms, which are needed to correctly read MRI images acquired with specific acquisition schemes. Course will cover basic image acquisition techniques, parameters optimization to improve image quality, popular pulse sequence designs, and special applications such as MR angiography (MRA), cancer imaging, and functional MRI (fMRI, if time allows).
Same as U23 Phys 134
Credit 3 units.

U86 HCARE 151 General Chemistry Laboratory I
This course provides an introduction into basic laboratory techniques and the experimental method, as well as direct experience with chemical principles and the properties and reactions of substances. The topics and experiments in this course complement the material covered in U05-105. Prerequisite: concurrent enrollment in U05-105 or permission of the instructor. This course is restricted to students admitted to the Post-Baccalaureate Premedical program. Others may register with instructor permission, and on a space available basis.
Same as U05 Chem 151
Credit 2 units.

U86 HCARE 152 General Chemistry Lab II
Continuation of Chem Lab I. Topics and experiments complement the material covered in the U05-106 lecture course. Students attend a three-hour laboratory session and a one-hour laboratory lecture. Prerequisite: concurrent enrollment in U05-106 or U05-206 or U07 Chem 112A, or permission of the instructor. First lecture meets January 18 and the first lab meets January 25. This course is restricted to students admitted to the Post-Baccalaureate Premedical program. Others may register with instructor permission, and on a space available basis.
Same as U05 Chem 152
Credit 2 units.

• Course work in Health Care, including at least 9 units of advanced-level courses (300-400 level).

Courses

U86 HCARE 101 General Biology I
First part of a two-semester rigorous introduction to basic biological principles and concepts. The first semester covers the molecular and cellular basis of life, bioenergetics, signal transduction, DNA and protein synthesis, and the function of whole organisms (physiology). Laboratory two evenings per week. Laboratories include traditional wet labs as well as inquiry-based, on-line labs. Restricted to University College students, post-baccalaureate premedical students, others with University College permission.
Same as U29 Bio 101
Credit 4 units.

U86 HCARE 102 General Biology II
Second semester of a two-semester sequence that provides a broad, but rigorous introduction to basic biological principles and concepts. The second semester covers DNA technology and genomics, the genetic basis of development, the mechanisms of evolution, the evolutionary history of biological diversity, plant form and function, and ecology. Laboratory two evenings per week. Laboratories include traditional wet labs as well as inquiry-based on-line labs. Prerequisite or corequisite: U05 Chem 105 (with laboratory) or instructor permission. Restricted to University College students, post-baccalaureate premedical students, others with University College permission.
Same as U29 Bio 102
Credit 4 units.

U86 HCARE 105 General Chemistry I
Systematic treatment of fundamental chemical principles and their applications. Emphasis on atomic and molecular theories, laws of chemical combination, periodic classification of the elements, and properties of gases, liquids, solids, and solutions. Prerequisite: U20 Math 141, 142 or equivalent, one year of high school chemistry, or permission of department. This course is restricted to students admitted to the Post-Baccalaureate Premedical program. Others may register with instructor permission, and on a space available basis.
Same as U05 Chem 105
Credit 3 units.

U86 HCARE 106 General Chemistry II
Continuation of General Chemistry I with consideration of oxidation-reduction, chemical equilibria, electro-chemical cells, and the chemistry of representative elements. Prerequisite: U05-105. Students desiring to satisfy lab science requirements or major in chemistry must also enroll in U05-152.
Same as U05 Chem 106
Credit 3 units.

U86 HCARE 110 Medical Imaging of the Human Body
A multimedia exploration of the human body via state-of-the-art imaging techniques, including CT, MRI, Ultrasound, and PET scans. The investigative challenge of diagnostic medical imaging is examined and common health issues including sports injuries, heart disease, stroke, cancer, arthritis, as well as early detection screening tests are discussed. Material is presented in a uniquely interactive and enjoyable manner. Prereq: one year high school or entry-level college biology.
Same as U29 Bio 110
Credit 3 units.

U86 HCARE 134 Introduction to Magnetic Resonance Imaging
An introduction to magnetic resonance imaging (MRI) and its applications in medicine. We will focus on the very basic principles of MRI and the various MR contrast mechanisms, which are needed to correctly read MRI images acquired with specific acquisition schemes. Course will cover basic image acquisition techniques, parameters optimization to improve image quality, popular pulse sequence designs, and special applications such as MR angiography (MRA), cancer imaging, and functional MRI (fMRI, if time allows).
Same as U23 Phys 134
Credit 3 units.

U86 HCARE 151 General Chemistry Laboratory I
This course provides an introduction into basic laboratory techniques and the experimental method, as well as direct experience with chemical principles and the properties and reactions of substances. The topics and experiments in this course complement the material covered in U05-105. Prerequisite: concurrent enrollment in U05-105 or permission of the instructor. This course is restricted to students admitted to the Post-Baccalaureate Premedical program. Others may register with instructor permission, and on a space available basis.
Same as U05 Chem 151
Credit 2 units.

U86 HCARE 152 General Chemistry Lab II
Continuation of Chem Lab I. Topics and experiments complement the material covered in the U05-106 lecture course. Students attend a three-hour laboratory session and a one-hour laboratory lecture. Prerequisite: concurrent enrollment in U05-106 or U05-206 or U07 Chem 112A, or permission of the instructor. First lecture meets January 18 and the first lab meets January 25. This course is restricted to students admitted to the Post-Baccalaureate Premedical program. Others may register with instructor permission, and on a space available basis.
Same as U05 Chem 152
Credit 2 units.

• Course work in Health Care, including at least 9 units of advanced-level courses (300-400 level).
U86 HCARE 204 Nutrition
This course examines nutrition as an interdisciplinary science including the chemistry, function, and metabolism of nutrients; regulations of food intake; food habits; digestion and absorption of nutrients; methods of determining nutrient content of foods and nutrient requirements for humans and animals; comparative nutrition; problems of human malnutrition; relation of nutrition to disease; toxic materials in foodstuffs; economic, nutritional, and social problems involved in feeding the world population and future possibilities for meeting nutritional needs of the world's population. This is a basic course in nutrition that is not designed for prospective health care professionals.
Same as U29 Bio 204
Credit 3 units.

U86 HCARE 204H Nutrition
Online hybrid version of the course U29 204. This introductory course examines nutrition as an interdisciplinary science. Topics will include the chemistry, function, and metabolism of nutrients; the regulation of food intake; food habits; the digestion and absorption of nutrients; methods of determining the nutrient content of foods and nutrient requirements for humans and animals; comparative nutrition; problems of human malnutrition; the relationship of nutrition to disease; toxic materials in foodstuffs; and the economic, nutritional, and social problems involved in feeding the world's population today as well as possibilities for meeting those nutritional needs in the future.
Same as U29 Bio 204H
Credit 3 units. UColl: OLT

U86 HCARE 211 General Physics
Designed for prospective majors in science and engineering and students planning to enter professional schools. Topics include kinematics, Newton's laws, energy, momentum, rotation, gravity, harmonic motion, wave motion, sound, and fluids. Weekly laboratory sessions; no labs meet the first week of class. This course is restricted to students admitted to the Post-Baccalaureate Premedical program. Others may register with instructor permission, and on a space available basis. Prerequisite: U20 Math 156 or equivalent or concurrent enrollment. There is a materials fee of $65 for this course.
Same as U23 Phys 211
Credit 4 units.

U86 HCARE 212 General Physics II
Continuation of General Physics I. Designed for prospective majors in science and engineering and for students planning to enter professional schools. Electricity and magnetism, electromagnetic waves, light and optics, quantization. Weekly laboratory sessions. Prerequisites: U23 Phys 211 and working knowledge of calculus. Concurrent enrollment in U20 Math 255 is acceptable.
Same as U23 Phys 212
Credit 4 units.

U86 HCARE 225 Introduction to Medicinal Chemistry
This is an introductory course covering the basic concepts of drug structure, interactions and metabolism relevant to medicinal chemistry. The course will provide an understanding of the structure and physicochemical properties of drugs and their targets and how these determine the drug's mechanism of action and the body's response. In addition, basic concepts of drug design and development will be covered. Prerequisites:

A background in general chemistry is required. Knowledge of organic or biochemistry is not required. Organic and biochemistry concepts needed for an understanding of the material will be taught as part of the course.
Same as U05 Chem 225
Credit 3 units.

U86 HCARE 230 Human Growth and Development
This course provides an overview of emotional, psychological, physical, and social development through the life span. We will emphasize the developmental tasks, characteristics, and typical behaviors of each developmental era (infancy, childhood, adolescence, adulthood, later life). We will study major developmental theorists including Freud, Erickson, Piaget, Millet, Gilligan, and Kohlberg. Prerequisite: U09-100. Open only to University College students.
Same as U09 Psych 230
Credit 3 units.

U86 HCARE 235 Introductory Statistics for the Health Sciences
This course covers material commonly presented in introductory statistics classes from a health science perspective, with some additional techniques from medical research. Topics include exploratory data analysis, hypothesis testing, probability, t-tests and ANOVA, correlation and regression, chi-square, diagnostic performance, and survival analysis. In-class examples cover medical issues, and there are supplementary readings from professional journals. There will be a computer lab in which students use a statistics package to analyze research data. In addition to mastery of statistical concepts, considerable emphasis will be placed on understanding how to interpret information in journal articles and how to carry out research.
Credit 3 units.

U86 HCARE 250 Fundamentals of Clinical Research Management I
This introductory course provides the basic foundation for clinical research. We examine the historical evolution of research, linking it to the current regulations and guidelines for good clinical practice. Course material includes research roles and responsibilities, institutional review boards, phases of drug development, the informed consent process, human subject protections, and an overview of study conduct.
Same as U80 CRM 250
Credit 3 units.

U86 HCARE 251 Fundamentals of Clinical Research Management II
This course focuses on the application of principles and theories covered in Fundamentals of Clinical Research Management I. Students will develop and complete documents for a specific assigned protocol. This will include completing institutional review board paperwork, writing an informed consent, developing source documents, and critiquing research articles. Prerequisite: Fundamentals of Clinical Research Management I or instructor permission.
Same as U80 CRM 251
Credit 3 units.
U86 HCARE 261 Organic Chemistry with Lab
The first part of a two-semester survey of organic chemistry. The course will include an introduction to organic structures, reactions, and reaction mechanisms. The laboratory portion of the course will have eight experiments and include an introduction to laboratory methods in organic chemistry, including separation and methods of purification of organic compounds. Prerequisite: Chem 112A or 106, plus Chem 152. This course is restricted to students admitted to the Post-Baccalaureate Premedical program. Others may register with instructor permission, and on a space available basis. Same as U05 Chem 261
Credit 4 units.

U86 HCARE 301 Doctoring in the 21st Century
Medicine is a humane and caring art based on the application of facts and principles discovered by biological and social scientists to maintain health as well as to diagnose and treat symptoms or recognizable disease entities. It requires the constant re-evaluation of evidence obtained from patients, hypothesis formation and testing, the repeated weighing of probabilities, and openness to being challenged and appearing wrong. This course is designed to introduce students to the following: (1) how doctors think and diagnose disease, how this process evolved over the past 3000 years, and how doctors take a medical history and perform a medical exam; (2) major disease processes such as infection, neoplasia, and metabolic and developmental disease; (3) therapeutic modalities (e.g., pharmacology, surgical repair, organ replacement); and (4) medical ethics, including informed consent and end-of-life issues. As a prelude to this course, the student should be familiar with basic concepts of cell structure and function, genetics, and evolution. The basics of anatomy, physiology, and biochemistry will be provided early in the course. Same as U29 Bio 308
Credit 3 units. UColl: ML

U86 HCARE 306 Evidenced Based Decision Making
This course is an interdisciplinary, practice-based project, providing evidence and recommendations for the development of policies and advocacy. It seeks to critically examine how the intersection of disciplines shapes both (1) the understanding of health (broadly defined) and (2) how data are used to develop policies and programs for communities. Although the focus of the project is on a particular issue, it highlights the intersection with other axes of culture, government, leadership, and social determinants such as sex, gender, and poverty, thus bridging the gap of theory and practice and achieving a better understanding of their complexity and intersectoral nature. Even though the outcome of this project is writing a policy brief along with providing policy and program recommendations, it also emphasizes the following competencies: (1) demonstrating effective written and oral skills for communicating with different audiences in the context of professional public health activities; (2) applying core functions of assessment, policy development, and assurance in the analysis of public health problems and their solutions; and (3) embracing a definition of public health that captures the unique characteristics of the field and how these contribute to professional practice. Particular emphasis will be placed on the process for developing policy recommendations by developing a topic from a secondary dataset, writing a detailed background section, identifying appropriate variables, and analyzing the data. Students will be placed in groups of three to complete each assignment. The topic this term will be obesity in St. Louis.
Credit 3 units.

U86 HCARE 308M Race Matters! How Race and Racism Affect Health and Medicine
This course grapples with the relationships among race, racism, health, and medicine, both in the United States and abroad. It examines the historical roots of medical racism, the role of medical and genetic research in constructing and deconstructing race as a biological concept, and the ways that systemic racism harms health. This course will also consider how race operates with other intersecting social and political identities (e.g., ethnicity, age, sex, gender, sexual orientation, class, disability) to influence health outcomes. Although anthropological and critical race theories will frame our learning, we will read broadly across other disciplines, including (but not limited to) sociology, the history of medicine, law, public health, and science and technology studies. Same as U69 Anthro 308M
Credit 3 units. UColl: OLI

U86 HCARE 309 Health and Society
This course examines how personal health and well-being are affected by institutional and societal forces. We use an historical perspective in studying, for example, how sleep, leisure, and other aspects of personal health have been changed by industrial, economic, political, and cultural developments such as urban planning, food processing, animal husbandry, and the role of the family doctor. We also take a close look at environmental factors (e.g., global warming) and related political and economic forces that produce and exacerbate chronic diseases. Finally, we critique how personal health and the health care industry have been influenced by major institutional forces such as the insurance and pharmaceutical industries, professional licensure, government-sponsored research, and the media. We read case studies and medical journals to understand and discuss related ethical and policy questions. Same as U80 CRM 509
Credit 3 units.

U86 HCARE 312 Legal Issues in Health Care Management
This course offers an overview of the most important legal issues currently facing hospitals, physicians, and other health care organizations. We will study the Affordable Care Act, liability for data breaches under HIPAA /HITECH (the health privacy laws), False Claims Act and whistleblower suits (for Medicaid and Medicare fraud), laws governing physician-hospital relationships (the Stark Law and Anti-Kickback laws), labor and employment issues, mergers and antitrust law, medical malpractice and tort reform, and scope of practice laws. Credit 3 units. UColl: OL

U86 HCARE 313 Introduction to Public Health
This introduction to the field of public health examines the philosophy, history, organization, functions, activities, and results of public health research and practice. Case studies include infectious and chronic diseases, mental health, maternal and reproductive health, food safety and nutrition, environmental health, and global public health. Students are encouraged to look at health issues from a systemic and population-level perspective, and to think critically about health systems and problems, especially health disparities and health care delivery to diverse populations. Credit 3 units.
U86 HCARE 314 Health Care Finance

The magnitude of healthcare expenditures is a growing problem for providers and patients. This course, for current or future health care managers, covers fundamental tools, concepts, and applications of finance in healthcare organizations that produce cost-effective, efficient operations. We examine how expenditure control is influenced by individuals, governmental institutions, and newly formed insurance exchanges. We also study how healthcare organizations maximize revenue sources. The course explores the relationship between market behavior, financial efficiency, and quality in healthcare organizations, and how these factors affect an organization's survival and growth in the changing healthcare environment.

Credit 3 units.

U86 HCARE 314M Health Care Finance

Online version of U86 314; fulfills the same program requirements. The magnitude of health care expenditures is a growing problem for providers and patients. This course for current or future health care managers covers fundamental tools, concepts, and applications of finance in health care organizations that produce cost-effective, efficient operations. We examine how expenditure control is influenced by individuals, governmental institutions, and newly formed insurance exchanges. We also study how health care organizations maximize revenue sources. The course explores the relationship between market behavior, financial efficiency, and quality in health care organizations as well as how these factors affect an organization’s survival and growth in the changing health care environment.

Credit 3 units. UColl: OLI

U86 HCARE 318 Statistics in Clinical Research

This course presents the basic principles for understanding the design, conduct, analysis, and endpoints of clinical trials. We will review statistical terminology and explain trial design from a clinician's point of view, including theoretical and practical aspects of randomization, stratification, blinding, and single center versus multi-center trials. Additional topics include hypothesis formulation, commonly used research designs, statistical significance, confidence intervals, and statistical tests. Same as U80 CRM 318

Credit 3 units.

U86 HCARE 3200 Child Health Psychology

This course examines the field of child health psychology, which focuses on the impact of health and illness on the physical and psychological development of children and adolescents. We will explore the relations among psychological and physical health and the welfare of children within a developmental perspective, considered within the contexts of families, health care systems, schools, peers, and community. Topics such as chronic illness (e.g., Cystic Fibrosis, sickle cell disease, organ transplant, asthma), adherence to medically prescribed regimens, and neuropsychological aspects of chronic illness will be addressed. Previous course work in Developmental Psychology (e.g., U09 230, U09 322) would be helpful but not required.

Same as U09 Psych 3200

Credit 3 units.

U86 HCARE 322 Introduction to Anatomy and Physiology I

This is the first of a two-semester sequence that examines all major organ systems in the human/mammalian body. The lab is an integral part of the course. The emphasis is on understanding normal function and processes at the gross, cellular, and molecular levels as well as some discussion of pathology and disease. The first semester covers basic principles of cellular physiology, histology, digestion, bone, muscle, and nervous systems. Optional weekly discussion and review sections are also offered during which case studies are discussed as a means of applying and reviewing lecture material.

Same as U29 Bio 322

Credit 5 units.

U86 HCARE 3231 Introduction to Anatomy and Physiology II (With Lab)

The second of a two-semester sequence that examines the structure and function of all the major organ systems. Emphasis on understanding normal function and processes at the gross, cellular, and molecular levels, but also addresses pathology and disease. This semester covers endocrine, respiratory, circulatory, lymphatic, and urinary, reproductive systems, development, pregnancy and birth. The lab is an integral part of the course, and it is recommended that students take both.

Same as U29 Bio 323

Credit 5 units.

U86 HCARE 324 Health Care Reform and Policy

This course examines the complexities of health care policy, using the Patient Protection and Affordable Care Act (PPACA) as a reference point. In analyzing this most recent (2010) health care legislation, we begin with an historical perspective on health care reform — how and why we got here — and then look at the social, political, and economic realities going forward. We will study and apply policy analysis tools for measuring cost and overall effectiveness of new proposals. Additional course topics include special interests, federal and state government roles, unintended consequences of health care policies, influence of regulatory agencies, and ethical issues.

Credit 3 units.

U86 HCARE 325 Research Ethics and Regulatory Affairs

This course will provide an understanding of the ethical guidelines, issues, and challenges of conducting research on human subjects. We will explore issues such as conflict of interest, genetic testing, limits of confidentiality, risk, and the distinction between compliance and ethics. As we learn about protecting research groups and interests and explaining rights and liabilities, we will study health care legislation and regulations, guidelines, contractual matters, and the complex regulatory framework that governs human subject research. Finally, we will learn to use an ethical problem-solving model in clinical research.

Same as U80 CRM 325

Credit 3 units. UColl: ML, OLI

U86 HCARE 326 The Doctor Is In: Anton Chekhov and Narrative Medicine

This course bridges the world of literature and the world of medicine by focusing on both Anton Chekhov, a practicing doctor and one of the greatest Russian writers of the 19th century, and the newly emerging field of Narrative Medicine. In this course we will explore how Chekhov was able to integrate and express
Drug absorption, distribution, metabolism and excretion, drug safe and effective management of drug trials. We will study their application to clinical research management to help ensure that. This course presents the basic principles of pharmacology and toxicology, chemical properties, and kinetics.}

**U86 HCARE 355 Health Care Policy**  
This course examines important and complex developments in contemporary health care policy. We begin with an historical overview, then look at the structure of current health care delivery, and identify political and economic challenges moving forward. In particular, we will critically examine methods and principles for evaluating health care costs and measuring policy effectiveness. The course also addresses unintended consequences of health care policies, special interests and political agendas, and the influence of major institutional forces on clinical and translational research. Case studies and guest speakers will help illustrate current ethical dilemmas and other real challenges to contemporary health care and reform.  
Same as U80 CRM 555  
Credit 3 units.

**U86 HCARE 358 Health Psychology**  
This course examines the history of health psychology and its place in general health care. We will examine relevant theory as applied to specific topics including stress, coping, weight loss, chronic illness in general (diabetes in particular), adherence to medically prescribed regimens, Type A personality and cardiac risk factors. Prerequisite: U09-100.  
Credit 3 units.

**U86 HCARE 360 Strategic Planning and Management in Health Care**  
Healthcare Strategic Planning and Management provides students with a framework to assess, develop, implement, and monitor strategic plans for health care organizations. Goals include understanding the relationship between mission, vision, values and strategic objectives; developing a plan based on organizational and environmental constraints and opportunities; creating action plans that support achievement of the plan; and measuring, monitoring, and modifying the strategic plan.  
Credit 3 units.

**U86 HCARE 363 Healthcare Negotiations**  
Health care spending in the United States is the highest in the world, and the industry requires leaders who can understand and negotiate opportunities while managing conflict and change. This course covers major challenges in health care negotiations, including managing competing constituencies, negotiating financial conflicts, drawing together providers and patients, and leading negotiations about access and quality of care. We also study negotiation pre-planning and competitive assessment, shifting from competition to cooperation, irrational actors in negotiations, and when to end negotiations. The course provides a theoretical framework for negotiation along with simulations with local health industry executives.  
Credit 3 units.
We discuss the host response to viruses, the use of viruses as vectors for vaccines and gene therapy, the role of viruses in eliciting cancer, as well as the evolution of viruses and emerging viral diseases.
Same as U29 Bio 438
Credit 3 units.

U86 HCARE 4391 Modern Genetics
This course focuses on the concepts of Mendelian genetics, linkage analysis, gene mutation, genomics, cancer genetics, genetics of model organisms, and population genetics. We will focus on gaining experience in data analysis and experimental design and on developing problem-solving skills. Analytical thinking and the ability to integrate mathematical analysis with a firm understanding of biological events are essential to this course. Prerequisite: General Biology I.
Same as U29 Bio 4391
Credit 3 units.

U86 HCARE 458 Readings and Research in Biomedical Sciences
Each day, more than 5000 new biomedical research articles are published. As future physicians and scientists, students will need to be able to identify and stay current on medical advancements. Medicine is interdisciplinary, and a successful scientific career means being able to make connections between diverse research fields. The goal of this journal club is to help students develop skills for locating, analyzing, and understanding scientific research articles. Students will learn how to locate primary journal articles using a variety of search engines such as PubMed and Ovid, and practice reading articles outside of their comfort zone without being intimidated by scientific jargon and formal writing styles. Students will be expected to discuss current research articles and develop effective scientific writing skills by analyzing the main sections of a scientific manuscript (Abstract, Background, Methods, Results, Discussion, Conclusion, Implications).
Same as U29 Bio 458
Credit 2 units.

U86 HCARE 460 Behavioral Medicine
The role of behavior in the prevention and treatment of significant medical problems will be studied. The history of the field of behavioral medicine will be reviewed, with applications to medical problems and its complementary role in preventative medicine in the context of a number of medical disorders and risky behaviors, including obesity, chronic pain, cancer, and smoking. Effective stress management practices to help ameliorate common results of stress such as tension headache and high blood pressure also will be studied. Prerequisite: Psych 100.
Same as U09 Psych 460
Credit 3 units.

U86 HCARE 471 Topics in Cancer Biology
Cancer has a significant impact on society in the United States and across the world. This course aims at providing students with a more extensive understanding of what cancer is and how it affects the human body. This course will teach you to be conversant on issues related to cancer, including its etiology, development, genetics, treatments, and prevention. We will be using a combination of lectures and discussions, so each student is expected and encouraged to participate in class discussions and contribute relevant thoughts and ideas. The material will
cover the basics of cancer biology using a traditional lecture including a review of relevant primary literature. The online portion of the course will include discussions of current topics and research articles and videos that will be assigned. The major topics covered in the course include causes of cancer, Oncogenes, p53 its role in cell cycle and cell death, Mutagens and carcinogenesis, Cancer Genetics, Cancer metastasis, Hypoxia, Angiogenesis, Epithelial-Mesenchymal Transition (EMT), Cancer screening, diagnosis, Cancer therapy including immunotherapy, Cancer biomarkers, Cancer staging, Cancer Imaging and Personalized medicine. Prerequisite: General Biology I.
Same as U29 Bio 471
Credit 3 units. UColl: OLH