Health Care

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

Courses


U86 HCARE 1001 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 U23 Bio 101
Credit 4 units. UColl: OLI

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. UColl: OLI

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. UColl: OLI

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. UColl: OLI

U86 HCARE 124 Spanish for Health Care Professionals II
A continuation of Beginning Spanish for Health Care Professionals I, this class expands grammar and vocabulary knowledge while providing continuing practice in communication in medical settings. Designed for practicing or future medical professionals, including physicians, nurses, ER personnel, physical therapists, etc., who need to treat Spanish-speaking patients and wish to learn basic Spanish to do interviews, clinic history assessments, examinations, diagnosis, prescription, and basic health education. This course also covers the key cultural differences in treating an American Patient vs. a Latino Patient. Exams will emphasize vocabulary acquisition and oral ability in simulated physician-patient contacts. Prerequisite: Beginning Spanish for Health Care Professionals U27 123. Elementary Spanish 101 or equivalent. This course may not count toward the minor or major in Spanish offered through the Dept. of Romance Languages and Literatures in the day school.
Same as U27 Span 124
Credit 3 units. UColl: OLI

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 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 L07 Chem 112A, 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 152
Credit 2 units. UColl: OLI

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 not designed to train nutritionists.

Same as U29 Bio 204
Credit 3 units. UColl: OLI

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: OLI

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. UColl: OLI

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. UColl: OLI

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 Evidence-Based Decision Making: Unlocking the Power of Information**

Policies can fail because of weak foundational support. Many times, there are no detailed strategic objectives and no clear and measurable success criteria, or these may not be aligned with strategic goals. This course is an introduction to developing policy. Using information about COVID-19 in St. Louis as a case study, this course highlights the intersection of culture; government; leadership; and social determinants such as sex, gender, and poverty. To develop the skills used to evaluate and solve problems, students will learn to critically examine the following: (1) the concept of health (broadly defined); and (2) how data are used to develop policies and programs for communities.

Credit 3 units. UColl: OLI, SSC

**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 U69 Anthro 308M
Credit 3 units. UColl: OLI

**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: OLI

**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. UColl: OLI

**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 healthcare 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 relation 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**

Same as U86 314; fulfills the same program requirements. 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 3191 Planning Sustainable & Racially Equitable Urban Communities
This course explores principles, ethics and practice for planning sustainable and equitable urban communities. Learning how to manage resources for both current and future generations, students will gain greater understanding of the importance of integrating environmental, economic, social and institutional efficiency. With a focus on communities in the St. Louis region, students in this course will focus on equity and community capitalism aimed at ensuring that fairness and well-being are inclusive for all people in providing for health, safety and the built environment. You will learn to integrate and utilize a racial equity lens, trauma-informed approaches, cultural competence and Anti-Bias/Anti-Racism practices to help lead to better decision-making and creating solutions aimed at reducing adverse impacts on the environment, preventing gentrification, improving the welfare of people, and shaping urban areas and neighborhoods into healthier, robust and more equitable communities. This course will prepare the student to be a leader-advocate for sustainable urban planning and community development, whether as an elected or public official, a professional staff person, or a citizen volunteer.
Same as U19 SUST 319
Credit 3 units. UColl: ML, OLI

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 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.

U86 HCARE 324 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 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 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 cultural attitudes towards illness, suffering, and healing in his writing and medical practice, as we simultaneously explore how doctors and other health care practitioners apply such topics in their professional work today. We will supplement Chekhov readings with foundational Narrative Medicine texts and the works of such contemporary doctor-writers as Atul Gawande, Sayantani DasGupta, and Paul Kalanithi. Class will include self-reflective writing workshops with Sarah Stanage, MD. The course is discussion-based and appropriate for students of literature, culture, and medicine at all levels. This course counts towards both the IAS major and the Medical Humanities minor.
Same as U43 IS 326
Credit 3 units.

U86 HCARE 346 Managing Healthcare Organizations: Clinical Perspectives
Credit 3 units.
U86 HCARE 349 Health Care Communications and Marketing Strategy
This course provides an integrated approach to organizational strategy, brand development and marketing communications programs within health care organizations. We will explore the fundamental steps required to shape an organization's strategic plan: environmental scan, SWOT assessment, consumer assessment, operating assessment and the development of strategic goals and objectives. Building on this foundation, we will learn to shape an organizational brand to articulate what we stand for, what we strive for, how we express our brand, and how we structure our brand.
Credit 3 units.

U86 HCARE 353 Pharmacology for Clinical Research
This course presents the basic principles of pharmacology and their application to clinical research management to help ensure safe and effective management of drug trials. We will study the foundations of pharmacology, including the principles of drug absorption, distribution, metabolism and excretion, drug binding sites and interactions, and drug development. We also will examine pharmacological problems with special populations, and the emergent area of pharmacogenetics. In the second half of the course we will review important drug classes, with an emphasis on understanding "Investigator's Brochures," including drug action and place in therapy, pharmacology, toxicity, chemical properties, and kinetics.
Same as U80 CRM 353
Credit 3 units.

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. UColl: OLI

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 medication, and the emergent area of pharmacogenetics. In the second half of the course we will review important drug classes, with a focus on understanding "Investigator's Brochures," including drug action and place in therapy, pharmacology, toxicity, chemical properties, and kinetics.
Same as U80 CRM 353
Credit 3 units. UColl: OLI

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.

U86 HCARE 364 Healthcare Entrepreneurship
Health care entrepreneurs improve the overall quality of health care delivery. This course introduces students to the particular characteristics of health care entrepreneurship, focusing on the creation, funding, and management of biotechnology and health services enterprises. Students will learn the steps involved in the conceptualization, planning, capitalization, launch, compensation, and management of an entrepreneurial health care venture. Students will use course principles and skills to develop an entrepreneurial business plan that addresses a real clinical problem.
Credit 3 units.

U86 HCARE 369 Strategic Planning and Management in Health Care
Credit 3 units.

U86 HCARE 370 Writing and Representation of Pain
This course explores a range of discourses about pain, including theoretical and technical ones.
Same as U65 ELit 370
Credit 3 units. UColl: ENL

U86 HCARE 377 Compassion Cultivation Training
Compassion Cultivation Training (CCT) is an 8-week educational program designed to help students cultivate compassion, strengthen their resilience, feel more connected to others, and improve their overall sense of well-being. CCT is a distillation from Tibetan Mahayana Buddhist practices for developing compassion, adapted to a secular setting. Initially developed by Stanford University scholars with support from the Dalai Lama, CCT combines traditional contemplative practices with contemporary psychology and scientific research. The program involves instruction in a series of meditation practices starting from Tibetan Mahayana Buddhist practices for developing compassion, adapted to a secular setting. Initially developed by Stanford University scholars with support from the Dalai Lama, CCT combines traditional contemplative practices with contemporary psychology and scientific research. The program involves instruction in a series of meditation practices starting with mindfulness-based meditation. The curriculum uses modern concepts of psychology and neuroscience to understand and enhance our ability to be compassionate.
Same as U69 Anthro 377
Credit 1 unit.
**U86 HCARE 4022 Transnational Reproductive Health Issues: Meanings, Technologies and Practices**

This course covers recent scholarship on gender and reproductive health, including such issues as reproduction and the disciplinary power of the state, contested reproductive relations within families and communities, and the implications of global flows of biotechnology, population, and information for reproductive strategies at the local level. We will also explore how transnational migration and globalization have shaped reproductive health, the diverse meanings associated with reproductive processes, and decisions concerning reproduction. Reproduction will serve as a focus to illuminate the cultural politics of gender, power, and sexuality.

Same as U69 Anthro 4022
Credit 3 units. Art: SSC BU: BA UColl: OLI

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**U86 HCARE 409 Health and Society**
Credit 3 units.

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**U86 HCARE 438 Virology**
In this overview of virology, we explore strategies used by viruses to enter host cells, transcribe genes, replicate, assemble progeny viral particles, and exit the host cell. We then look at recent advances and problems arising in the field of virology. 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. UColl: OLI

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**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. UColl: OLI

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**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.

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**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.

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**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, OLI