

HEALTH SCIENCES

Department website (<https://www.uwp.edu/learn/departments/healthsciences/>)

College: College of Natural & Health Sciences

Programs Offered

- Applied Health Sciences Major (BS) (<https://catalog.uwp.edu/programs/health-sciences/applied-health-sciences-major/>)
- Health Information Management and Technology Major (BS) (<https://catalog.uwp.edu/programs/health-sciences/health-information-management-technology-major/>)
- Health Information Management Certificate (<https://catalog.uwp.edu/programs/health-sciences/health-information-management-certificate/>)

Applied Health Sciences Major Concentrations

- Medical Laboratory Sciences
- Pre-Athletic Training
- Pre-Chiropractic
- Pre-General Health
- Pre-Occupational Therapy
- Pre-Physician Assistant
- Pre-Physical Therapy

Health Information Management and Technology Major Concentrations

- Healthcare Management
- Healthcare Technology

Courses in Applied Health Sciences (AHS)

AHS 101 | Introduction to Applied Health Sciences | 3 cr

Provides an overview of the Applied Health Sciences major. Focuses on specific information about health career options. Covers the value and importance of service, current topics in health care, ethics in the health sciences, cultural sensitivity within health sciences. Additionally, students will gain experience in professional writing, presentation techniques, portfolio development and service learning.

Prerequisites: None.

Offered: Fall, Spring.

AHS 300 | Introduction to Medical Laboratory Sciences | 3 cr

Introduces the practice of medical laboratory science. Discusses professionalism, ethics, basic laboratory concepts and techniques. Covers microscopy and phlebotomy techniques in the teaching laboratory. Lecture/lab.

Prerequisites: AHS 101; BIOS 101 and 102, or BIOS 105 and 106, or BIOS 300 and 341; BIOS 210, 260, CHEM 115; MATH 114, or MATH 112 or 113.

Offered: Fall, Spring.

AHS 310 | Clinical Microbiology I | 2 cr

Explores the microorganisms associated with human infectious processes, including the characteristics, isolation, identification, antimicrobial techniques and clinical infections associated with pathogenic microorganisms. Lecture/lab.

Prerequisites: AHS 101; BIOS 101 and 102, or BIOS 105 and 106, or BIOS 300 and 341; BIOS 210, 260, CHEM 115; MATH 114, or MATH 112 and 113.

Offered: Spring.

AHS 311 | Clinical Microbiology II | 3 cr

Focuses on advanced topics in microbiology, including antibiotics and antimicrobial susceptibility testing, mycobacteriology, anaerobic bacteriology, fastidious microorganisms and the clinical aspects of microbiology. Three-hour lecture/one-hour lab.

Prerequisites: AHS 310.

Offered: Spring.

AHS 320 | Clinical Immunology I | 3 cr

Explores clinical immunology concentrating on immune system functions, relationships and responses to infection and disease, including vaccine strategies and basic immunology assessment techniques. 3 hour Lecture/1 hour Lab.

Prerequisites: AHS 300, AHS 310.

Offered: Fall.

AHS 321 | Clinical Immunology II | 2 cr

Delves into an advanced study of clinical immunology concentrating on diseases of the immune system such as immunodeficiencies, infectious diseases and autoimmune conditions. Examines immunodiagnostic methods and diagnostic strategies, includes donor selection, recognition of transplant related conditions. Lecture..

Prerequisites: AHS 401, AHS 405, AHS 406.

Offered: Fall.

AHS 335 | Clinical Chemistry I | 3 cr

Explores biological samples, analytes, and assays pertinent to the clinical laboratory. Includes electrolyte, carbohydrate, protein, lipid, vitamin, and mineral analytes and the techniques utilized to detect and quantify such materials. Cross-listed with: CHEM 335.

Prerequisites: AHS 300, CHEM 215.

Offered: Fall.

AHS 336 | Clinical Chemistry II | 3 cr

Investigates metabolism and diagnostic procedures for analysis of metabolism and human disease. Analyzes data for indicators of common pathophysiology and human disease markers. Lecture. Cross-listed with: CHEM 336.

Prerequisites: AHS 335 or CHEM 335.

Offered: Fall.

AHS 340 | Hematology and Hemostasis I | 3 cr

Addresses theory of hematology and hemostasis diagnostic procedures, interpretation, and correlation of laboratory findings with disease states. Includes hematopoiesis, cell morphology, anemias, hemoglobinopathies, myelodysplastic syndromes, coagulation and platelet disorders, and bleeding abnormalities. Lecture/Lab.

Prerequisites: AHS 300, CHEM 215; BIOS 101 and 102, or BIOS 105 and 106, or BIOS 300 and 341; and BIOS 260.

Offered: Fall, Spring, Summer.

AHS 341 | Hematology and Hemostasis II | 2 cr

Covers theory of hematology and hemostasis diagnostic procedures, interpretation, and correlation of laboratory findings with disease states. Includes lymphoproliferative and myeloproliferative disorders, immunoproliferative disorders, malignant lymphomas.

Prerequisites: AHS 340.

Offered: Fall, Spring, Summer.

AHS 350 | Diagnostic Molecular Biology | 3 cr

Examines medical genetics including the structure, function, and synthesis of DNA, RNA, and involved proteins; the mechanism of inheritance; and medical genetics. Covers molecular biology techniques and their applications is included as well as the laboratory diagnosis of disease, including ethics and emerging technologies.

Prerequisites: AHS 310.

Offered: Fall.

AHS 400 | Immunohematology I | 2 cr

Provides introduction to the different human blood groups, blood components, the antibody screening and identification process, transfusion protocols, blood donor screening, and regulatory concerns of modern blood banking.

Prerequisites: AHS 310, AHS 320, AHS 340; AHS 335 or CHEM 335.

Offered: Fall, Spring, Summer.

AHS 401 | Immunohematology II | 2 cr

Provides initial laboratory experience in blood banking practices including blood typing, antibody screening, antibody identification, cross matching, and confirmatory testing. Lab.

Prerequisites: AHS 400.

Offered: Summer.

AHS 405 | Cellular Morphology Laboratory | 2 cr

Discusses blood and blood cells in abnormal or malignant states, including red blood cell and white blood cell disorders. Examines specialized hematology procedures in the teaching laboratory, emphasizing the microscopic evaluation of abnormal blood cell morphology and evaluation of complete blood count data along with cytochemical and molecular testing.

Prerequisites: AHS 400.

Offered: Summer.

AHS 406 | Clinical Fluid Analysis | 2 cr

Introduces urinalysis and reviews of the anatomy and physiology of kidney, role of the kidney in disease; physical, chemical and microscopic properties of urine; and clinical correlation of lab results. Covers the physiology, specimen collection, processing and analysis of other body fluids. Lecture/Lab.

Prerequisites: AHS 400.

Offered: Summer.

AHS 410 | Clinical Mycology, Parasitology, and Virology | 3 cr

Investigates clinically relevant fungal, parasitic, and viral pathogens emphasizing diagnostic forms. Focuses on identification of the microorganisms, interpretation of findings and clinical correlation. Lecture/Lab.

Prerequisites: AHS 321.

Offered: Spring.

AHS 420 | Laboratory Operations | 2 cr

Addresses basic principles of clinical laboratory management, including theory and practice. Includes personnel and financial management, regulation and accreditation, information management, quality assurance, quality control, clinical and continuing education. Two hour lecture.

Prerequisites: AHS 401, AHS 405, AHS 406.

Offered: Fall.

AHS 450 | Clinical Correlations and Board of Review Test Preparation | 2 cr

Employs case studies to learn to evaluate patient histories and correlate laboratory test results to specific disease diagnosis. Prepares students to take the ASCLS MLS certification exam. Two hour lecture.

Prerequisites: AHS 420.

Offered: Spring.

AHS 494 | Internship/Fieldwork | 1-6 cr

Provides students with learning experiences within professional fields that are related to their professional career goals; including, but not limited to: business operations, professional competencies and conduct, and overall work environment. Requires placement approval by AHS academic advisor or the AHS director. No more than six credits can be applied toward the AHS major and no more than twelve credits can count towards general graduation requirements.

Prerequisites: AHS 101, sophomore or above and approval by applied health science academic advisor and the director.

Offered: Fall, Spring, Summer.

AHS 495 | Clinical Practicum I | 1-5 cr

Provides experiential learning for clinical laboratory sciences at clinical affiliate sites. Incorporates phlebotomy practice exposure with rotation through each clinical laboratory department, Hematology/Coagulation/Body Fluid Analysis, Clinical Chemistry, Microbiology, and Blood Bank.

Prerequisites: AHS 401, AHS 405, AHS 406.

Offered: Fall.

AHS 496 | Clinical Practicum II | 1-6 cr

Provides additional experiential learning course for clinical laboratory sciences at clinical affiliate sites. Incorporates phlebotomy practice exposure with rotation through each clinical laboratory department. Requires placement approval by AHS academic advisor or the AHS director. No more than six credits can be applied toward the AHS major and no more than twelve credits can count towards general graduation requirements.

Prerequisites: AHS 406, AHS 495.

Offered: Fall, Spring, Summer.

Courses in Health Information Management Technology (HIMT)

HIMT 301 | Digital Literacy in Healthcare | 3 cr

This course provides an overview of medical clinical workflow, with emphasis on inter-professional electronic documentation and functionalities of the electronic health record (EHR). Through hands-on experience, this course advances the students' understanding of the electronic health record, Health IT Policies, Data and Database Management Systems in support of the EHR. (Students admitted to the HIMT program, having completed at least 60 credits, are eligible to enroll in HIMT 301.)

Prerequisites: Admitted to Health Information Management and Technology; completion of 60 credits.

Offered: Fall, Spring, Summer.

HIMT 310 | Healthcare Systems and Organizations | 3 cr

Examines how healthcare and public health are organized and how their services are delivered in the United States (US). Topics to be covered include: public policy (including US health reform initiatives); organization of healthcare systems; components and operation of healthcare organizations including e-health delivery; professional roles and accreditation; legal and regulatory issues including licensure requirements.

Prerequisites: None.

Offered: Fall, Spring, Summer.

HIMT 320 | Survey of Information Technology in Healthcare | 3 cr

Essential healthcare information technologies (HIT) that are used for healthcare information systems (HISs) are examined. Popular HISs include electronic medical record systems (EMRS), the computerized provider order entry systems, telemedicine, telehealth and e-prescribing.

Prerequisites: None.

Offered: Fall, Spring, Summer.

HIMT 330 | Healthcare I: Terminology and Body Systems | 3 cr

Examines specific terminology and vocabulary used by workers in healthcare and public health. Topics include medical terminology that broadly relates to human anatomy and physiology, body systems and diagnosis, including prefixes, suffixes, roots and combined forms. Topics will also include healthcare taxonomies and nomenclatures (e.g. ICD-9-CM, ICD-10, etc.)

Prerequisites: UW Colleges BIO 101 or equivalent.

Offered: Fall, Spring, Summer.

HIMT 340 | Ethical Issues, Security Management and Compliance | 3 cr

Examines three broad subjects: 1) evidence-based medical ethics pertaining to healthcare information management; 2) framework of healthcare information security management including security principles, policies and procedures, security management models, risk assessment, and protection mechanisms; 3) healthcare regulations and compliance with focuses on the legislative systems, policies, and legal environment of healthcare in the U.S.

Prerequisites: None.

Offered: Fall, Spring, Summer.

HIMT 345 | Programming and Software Development | 3 cr

Introduction to: object-oriented (OO) programming paradigm, object-oriented systems analysis and design, fundamental data structures, and n-tier software design. Examination of the role of each in the software development process.

Prerequisites: HIMT 300.

Offered: Fall, Spring, Summer.

HIMT 350 | Statistics For Healthcare | 3 cr

Examines basic statistical methods for the health sciences with emphasis on the principles of statistical reasoning, underlying assumptions, hypothesis testing, and careful interpretation of results. Some topics covered: major study designs, descriptive statistics, graphical displays of data, probability, confidence intervals and tests for means, differences of means, sample size and power, differences of proportions, chi-square tests for categorical variables, regression, multiple regression, and non-parametric statistics.

Prerequisites: UW Colleges MAT 105 or equivalent.

Offered: Fall, Spring, Summer.

HIMT 355 | Principles of Management For HIMT Professionals | 3 cr

Provides an overview of basic principles involved in management and communication. Topics include basic management principles, communication skills, interpersonal communication competence, negotiation technique, team/consensus building, professional development, and problem solving/decision-making processes.

Prerequisites: None.

Offered: Fall, Spring, Summer.

HIMT 360 | Healthcare II: Survey of Disease & Treatments | 3 cr

Further investigates the topics covered in HIMT 330. Topics include human disease, human health issues and classification of disease/health issues. Diagnostics, treatments and clinical procedures that are currently in practice will be discussed. Other topics will include how the drugs and biologicals work, their limitations, and the current diversity of available drugs and biologicals.

Prerequisites: HIMT 330.

Offered: Fall, Spring, Summer.

HIMT 365 | Healthcare Economics | 3 cr

Applications of microeconomic theory to analyze the behavior of health and health care markets. Topics will include: supply and demand of health care services, private health insurance markets, government provision of health care services and health insurance, and health care policy.

Prerequisites: None.

Offered: Fall, Spring, Summer.

HIMT 370 | Healthcare Systems: Analysis and Design | 3 cr

The first course in a two-course sequence that addresses methods and techniques of healthcare information system (IS) analysis and design as performed within the system development life cycle. Included will be techniques for problem definition, requirements gathering, analysis, logical design, selection and evaluation of alternative healthcare information systems solutions from the point of view of the health provider and user. An emphasis is placed on analysis, selection, and evaluation of information systems as they relate to healthcare.

Prerequisites: HIMT 300.

Offered: Fall, Spring, Summer.

HIMT 375 | Database Structures and Management Systems | 3 cr

Analyze and design databases to support computer-based information systems. Develop and implement relational database management systems using SQL. Topics include: data modeling techniques such as entity-relationship modeling, extended entity-relationship modeling, database constraints, database normalization techniques, and basic and advanced features of database query language SQL, etc.

Prerequisites: None.

Offered: Fall, Spring, Summer.

HIMT 380 | Healthcare Billing, Coding, and Reimbursement | 3 cr

This course examines the coding and reimbursement connection; topics include managed care plans, prospective payment systems, Medicare-Medicaid reimbursement, resource-based Relative Value Scale, case mix management, and revenue cycle management.

Prerequisites: None.

Offered: Fall, Spring, Summer.

HIMT 399 | Special Topics in Health Information Management and Technology | 3 cr

Examines a specific topic within Health Information Technology for seminar or independent study.

Prerequisites: None.

Offered: Fall, Spring, Summer.

HIMT 400 | Healthcare Information and Technology - Data | 3 cr

Explores the sources and data contents of healthcare information as well as the proper presentation of it for different usage levels. Topics addressed include: 1) data structure and use of health information (individual, comparative and aggregate), 2) type and content of health record, 3) data quality assessment, 4) secondary data sources, 5) healthcare data sets, 6) Health information archival systems, and 7) National Health care Information Infrastructure (NHII). This course will also cover topics in bioinformatics.

Prerequisites: HIMT 360.

Offered: Fall, Spring, Summer.

HIMT 410 | Healthcare Systems: Implementation and Integration | 3 cr

Examines the back-end stages of healthcare systems development lifecycle through the development of technical design specifications, procurement procedures (RFP, RFQ, vendor evaluation and selection, and contracting), systems configuration and integration, installation, conversion, operation, and maintenance. Pre-installation testing and post-conversion auditing and monitoring will be emphasized to address the upcoming requirements of federal certification of EHR systems.

Prerequisites: HIMT 300 and HIMT 370.

Offered: Fall, Spring, Summer.

HIMT 415 | Human Resource Management in Healthcare | 3 cr

Examines the role of Health Information Management staff in managing human resources to facilitate staff recruitment, training, retention and supervision. Emphasis includes ensuring compliance with employment laws and evaluating staff performances.

Prerequisites: None.

Offered: Fall, Spring, Summer.

HIMT 420 | Healthcare Systems: Project Management | 3 cr

This course addresses the phenomenal impact information system (IS) projects have had on healthcare delivery. Students learn how healthcare IS projects affect organizations, doctors, patients, and chronic-illness treatments, as well as individuals interested in managing their own healthcare. Concepts and tools for effective healthcare IS project management, process re-engineering and work redesign are introduced. The purpose of this course is to expose students to IS project management activities in healthcare settings. Topics covered include recent healthcare IS project trends, budgeting, scheduling, resource management, scope, risk analysis, and deployment controls. The genesis of healthcare project management is covered using specific cases and examples.

Prerequisites: None.

Offered: Fall, Spring, Summer.

HIMT 425 | Data Warehousing and Mining | 3 cr

Examines the concept of data warehouse and its effectiveness in supporting strategic decision making. Address the process of creating data warehouse/data-mart solutions from the identification of the enterprise informational and analytical needs to producing business intelligence by extraction information from the data warehouse by using data mining methods and models.

Prerequisites: HIMT 375.

Offered: Fall, Spring, Summer.

HIMT 430 | Quality Assessment and Improvement | 3 cr

Examines the Quality Assessment and Quality Improvement cycle (Plan, Do, Act, Check) and the role of the Health Information Technology and Health Information Management in the process. Tools used in quality and risk management processes will be examined.

Prerequisites: HIMT 350.

Offered: Fall, Spring, Summer.

HIMT 435 | Data Communications and Computer Networks in Healthcare | 3 cr

Provides fundamentals of data communications and networking techniques, and examines the linkage of information technology strategies and technological solutions enabling effective communication within and between healthcare organizations. Major topics include fundamental concepts of data communications and applications, network communication devices, basic technologies of the Local Area Network, Wireless Local Area Network, Wide Area Network, Internet and the Web, the OSI stack, healthcare information systems standards, and the HIE, RHIN, and the NHIN.

Prerequisites: HIMT 300.

Offered: Fall, Spring, Summer.

HIMT 440 | Group Processes, Team Building and Leadership | 3 cr

Examine the necessary group/team processes that are at the root of building, developing, and maintaining medical/healthcare work teams and the effective functioning of such teams. The course also provides an overview of leadership development techniques and explores the uses of various communication technologies in the team building and functioning process.

Prerequisites: HIMT 355.

Offered: Fall, Spring, Summer.

HIMT 445 | Application of Leadership and Management in Healthcare Technology | 3 cr

This course assimilates and integrates concepts and applications of management and leadership in the healthcare advancing on the topics covered in HIMT 355, 365 and 415. Topics will include strategic leadership concepts, exploring key factors that impact management and planning, change management, critical organizational behaviors for leadership and management focusing on best practices and organizational accountability and assessment models.

Prerequisites: HIMT 355, HIMT 365, HIMT 415.

Offered: Fall, Spring, Summer.

HIMT 450 | Healthcare Information and Technology- Standards | 3 cr

Introduces healthcare information technology standards including standards and regulations for documentation, and will cover health information standards. Investigates soft-ware applications and enterprise architecture in healthcare and public organizations.

Prerequisites: HIMT 400.

Offered: Fall, Spring, Summer.

HIMT 489 | Pre-Capstone: Health Information Management and Technology | 1 cr

This is a one-credit course that is intended to serve as an orientation for the HIMT 490 Capstone course and includes content related to the national accrediting exams for Health Information Management and Health Information Technology certifications, resume development, and professional development to assist students in their upcoming capstone experience.

Prerequisites: None.

Offered: Fall, Spring, Summer.

HIMT 490 | Capstone Project | 3 cr

Explores the theory and dynamics of interprofessional and team practice in health information management and technology with the context of projects undertaken in healthcare settings. Work may involve all phases of project development. Project set-up will be jointly done by the student, site sponsor, and the course faculty.

Prerequisites: HIMT 400.

Offered: Fall, Spring, Summer.