

HIT Curriculum Update
Montana Rural Health IT Network
Grant #: R01RH26275
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The Montana Rural Health IT Network originally worked with four colleges in our state: Montana Tech, Great Falls College, Flathead Valley Community College and Missoula College. These four colleges each offered specific Health IT certificates, and all certificates were offered online. Over the course of the grant, the curriculum has not changed for any of the programs. Unfortunately, however, Great Falls College and Flathead Valley Community College have discontinued their certificate offerings completely (although they still continue HIT in some fashion through their Associate degree programs).

The majority of our students have participated in the Montana Tech program. Tech was the Montana participant in the Community College Consortium project through the ONC from 2010 through 2013 (Region A with Bellevue College). The curriculum was already in place for the certificate program, as well as AS and BS before participation in the Consortium. The curriculum fit with the Consortium model. As the ONC efforts continued, Tech assisted Missoula College and Flathead Valley Community College to develop their course offerings. Tech also developed articulation agreements with Missoula and Flathead so that Associate degree students could transfer to Tech to complete a BS program. The Tech curriculum (at all levels) is consistent with CAHIMS and CPHIMS certifications. As noted, the overall curriculum has not changed over the course of the Rural HIT grant. Tech does have an industry review board (of which Cindra Stahl is a member) and does review/update courses as recommended. Recently (2016), Miles City Community College has begun to offer an Associate degree in HIT. All HIT specific courses are offered through Montana Tech via distance learning.

Additionally, Montana Tech offers a graduate level certificate which is geared to current healthcare professionals. Courses are intended to advance the skills required for leadership in health care informatics.

Great Falls College has aligned their courses to be consistent with the AHIMA model. Students who complete full Associate degrees can sit for RHIT/RHIA certifications. We had several participants in the Great Falls program, many of whom did specifically intend to continue with courses to achieve the RHIT/RHIA credentials.

Education Partner	Program Offerings	Credential / Exam
Montana Tech	<ul style="list-style-type: none"> Healthcare Information Technology: Computing Track (15 Credits) Healthcare Informatics Technology: Health Professions Track (17 Credits) Healthcare Informatics Graduate Certificate (15 Credits) 	<ul style="list-style-type: none"> ONC HIT Pro: Clinician/Practitioner Consultant or Implementation Manager Certified Associate in Healthcare Information and Management Systems (CAHIMS) Certified Professional in Healthcare Information Systems (CPHIMS)
Great Falls College	Healthcare Informatics Tech Professional Certificate (24 Credits)	<ul style="list-style-type: none"> Certificate ONC HIT Pro: Practice Workflow & Information Management Redesign Specialist
Missoula College	<ul style="list-style-type: none"> Health Information Technology: Computing Track (13 Credits) Health Information Technology: Health Professions Track (18 Credits) 	<ul style="list-style-type: none"> ONC HIT Pro: Implementation Support Specialist ONC HIT Pro: Technical/Software Support Staff CompTIA Healthcare IT Technician
Flathead Valley Community College	Health Information Technology: Implementation and Maintenance Specialist: <ul style="list-style-type: none"> Information Technology Option (18 Credits) Health Care Option (19 Credits) 	<ul style="list-style-type: none"> Certified Associate in Healthcare Information and Management Systems (CAHIMS) ONC HIT Pro: Implementation Support Specialist

Montana Tech—Health Information Technology Certificates

Track 1--Information Technology Professionals (15 Credits)

AHMS 144 Medical Terminology: Designed to familiarize the student with modern health care terminology and taxonomies. Concepts related to the storage and retrieval of health care information, including provisions for privacy and security are also presented. This is a web-based course delivered via Moodle.

AHMS 252 Computerized Medical Billing: This course presents computerized accounting as it applies to health care environments. Instruction includes the application of accounting software for hospitals, doctor's offices, and dentist offices. Medisoft software is used.

HIT 101 Intro to Health Care Informatics: Introduce the discipline of health care informatics. An overview of the subject including the history, basic knowledge of health care informatics and tools as applied in support of health care delivery. Students will understand an introductory level about the complexities of health care and how informatics fits within the US Health Care System.

HCI 215 Healthcare Facility Procedures: This course introduces the student to common procedures and practices found in health care settings and the information systems that support such procedures/practices. This course focuses on the major functional areas of the acute care setting, providing an overview of how individual departments operate and interact.

HIT 265 EHR in Medical Practice: Students will learn the personnel functions and associated workflows required in an ambulatory care physician clinic and how to prepare for, implement and use an electronic health record (EHR) to achieve a paperless office environment and improved quality of care. Office function, associated workflow and EHR use will include all office personnel roles from receptionist through nurse and physician. EHR use will include both in-office functions and its role in Health Information Exchange (HIE) with other health care providers and organizations including laboratories, pharmacies, consulting physicians and payers.

Track 2--Allied Health and Medical Professionals (17 Credits)

HIT 101 Intro to Health Care Informatics: Introduce the discipline of health care informatics. An overview of the subject including the history, basic knowledge of health care informatics and tools as applied in support of health care delivery. Students will understand an introductory level about the complexities of health care and how informatics fits within the US Health Care System.

HIT 260 Data, Information, & Knowledge: Provides students with the opportunity to examine three concepts that are fundamental to the field of informatics - data, information and knowledge. The course focuses in database principles, health care classification systems and concepts of data set.

HIT230 Overview of HCI Systems: Course introduces the student to health information systems concepts, components, processes, and design. Topics include implementation of health information systems and the use of information systems technologies in a health care setting, including clinical applications systems, electronic medical records, and administrative and management applications. Opportunities for hands-on experiences with software products are provided.

HIT 265 EHR in Medical Practice: Students will learn the personnel functions and associated workflows required in an ambulatory care physician clinic and how to prepare for, implement and use an electronic health record (EHR) to achieve a paperless office environment and improved quality of care. Office function, associated workflow and EHR use will include all office personnel roles from receptionist through nurse and physician. EHR use will include both in-office functions and its role in Health Information Exchange (HIE) with other health care providers and organizations including laboratories, pharmacies, consulting physicians and payers.

HCI 410 Project & System Management: Students learn to design health care informatics applications from “the ground up.” Methodologies for analyzing information needs and

determining information requirements will be examined. A systematic evaluation process will be introduced which includes economics and technology assessments.

Healthcare Informatics, Graduate Certificate (15 Credits)

HCI 5100 Health Care Informatics: The course is designed to provide future managers with the knowledge, skills, and competencies necessary to effectively manage healthcare information systems. Topics include an overview of strategic planning, including the importance of system integration and IM/IT governance; project management, including information on establishing a centralized IM/IT portfolio management office (PMO) to improve project success rates; the government's role in IM/IT, including the impact of HIPAA and other legislation; how IM/IT investments are evaluated and provides a framework for conducting these analyses; the electronic health record and other clinical and administrative applications used in healthcare enterprises; and a comprehensive profile of hospital IM/IT leadership, including the role of the Chief Information Officer (CIO).

HCI 5220 Health Care Systems Administration (elective): The course is designed to provide professionals with the knowledge, skills, and competencies necessary to understand the broad scope of health care operations that are essential to become an effective health care systems manager. Topics include operations management and financial health, process engineering and optimization, and logistics and supply chain management.

HCI 5350 Health Care Decision Support: Explore the principles of evidence-based medicine and the role of decision support tools in bringing informatics to the bedside. Learn about clinical decision support systems, common data sources and medical algorithms, and the applications and limitations of decision support as a supplement to clinical judgment. Gain hands-on practice with a variety of proprietary and open source systems, and evaluate their strengths and weaknesses.

HCI 5370 Health Information Analysis and Design: With an emphasis on the role of the informaticist, apply systems analysis and design theory to the development of health information systems. Learn basic principles of object-oriented programming and relational databases; the processes for assessing and modeling user requirements and data structures; the role of data standards in systems designs; and basic data warehousing strategies. Explore a variety of applications in clinical and public health, learn to identify system strengths and weaknesses and gain hands-on practice in data modeling approaches to translate user requirements to system specifications.

HCI 5150 EHR in Clinical and Public Health Practice: Learners will understand and be able to apply the fundamental concepts used to create and maintain Electronic Medical Records in the ambulatory/public health setting. The course will provide a "how to" for the conduct of a workflow analysis within a medical practice. Learners will also create electronic records and progress notes for a variety of patient types. The course will emphasize features common to virtually all EMR software applications including electronic telephone notes and management of patient appointments, development of

electronic templates, the creation electronic patient history forms, Clinical Provider Order Entry (CPOE) and e-prescribing.

HCI 5230 Health Care I.T. Management (elective): Examines the environment and activities necessary to plan, develop system requirements, select systems, contract for services, and implement HIT applications and systems from Health Information Technology industry suppliers. The course also examines the impact of information systems on the health care organization and applies theory using case study analysis.

Great Falls College—Healthcare Informatics Tech Certificate (24 credits) (Program no longer offered)

AHMS 105 HEALTHCARE DELIVERY - Credits: 2

This introductory course acquaints students with an overall view of the healthcare system. Topics include organization, financing, and delivery of healthcare through various types of facilities, agencies, health organizations, and hospitals. Medical ethics, professional behavior, and patient rights are also covered.

AHMS 144 MEDICAL TERMINOLOGY - Credits: 3

The goals of this course are to promote knowledge of the elements of medical terminology for professional and personal development, the ability to spell and pronounce medical terms, an understanding of medical abbreviations, and an appreciation of the logical method found in medical terminology. This includes word analysis and word building. Knowledge of terms relating to body structures, positions, directions, divisions and planes will be required. An awareness of current health events is encouraged, as is knowledge of basic scientific and specialty areas in healthcare practice.

CAPP 120 INTRODUCTION TO COMPUTERS - Credits: 3

Using both lecture and lab experience, this course introduces the technology and terminology of computer systems and demonstrates how computers have impacted individuals and society. The course also provides instruction in the basics of the operating system and word processing, spreadsheet, database, and presentation software.

HIT 101 Introduction to Health Care Information - Credits: 3

This introduction to the discipline of health care informatics provides an overview of the subject including the history, basic knowledge of health care informatics and tools as applied in support of health care delivery. Students will understand an introductory level about the complexities of health care and how informatics fits within the US Health Care System. This course covers the different sectors of health care delivery in the United States today. The student will learn about the various aspects of the US delivery system and how the system functions on different levels from an industry and economic perspective.

AHMS 108 HEALTH DATA CONTENT AND STRUCTURE - Credits: 3

This course provides orientation to the health information department and its organization interrelationships in healthcare facilities. This course also covers the content and format of the health record (both conventional and alternative formats), quantitative and qualitative analysis of the record according to regulatory and accreditation standards, numbering, filing, retention, storage, and destruction of records. Application will be provided using extensive discussion and assignments designed to approximate real life situations.

AHMS 280 OVERVIEW OF HEALTH INFORMATICS SYSTEMS - Credits: 4

This course will cover the principles of analysis, design, evaluation, selection, acquisition, and utilization of information systems in healthcare. Also included in this course are the technical specifications of computer hardware, software, networks, and telecommunications. Furthermore, this course will provide an understanding of technology's role in healthcare. The course will emphasize the intellectual use of information strategic planning, decision support, program management, high quality patient care, and continuous quality improvement. Application will be provided using extensive discussion and assignments designed to approximate real life situations.

AH 260 Workflow Analysis & Redesign - Credits: 3

This course covers fundamentals of health workflow process analysis and redesign as a necessary component of complete practice automation. Process validation and change management are also covered to include workflow analysis and process mapping to support an EHR that will lead to quality and performance improvement.

AH 265 Electronic Health Record in Medical Practice - Credits: 3

Students will learn the personnel functions and associated workflows required in an ambulatory care physician clinic and how to prepare for, implement and use an electronic health record (EHR) to achieve a paperless office environment and improved quality of care. Office function, associated workflow and EHR use will include all office personnel roles from receptionist through nurse and physician. EHR use will include both in-office functions and its role in Health Information Exchange (HIE) with other health care providers and organizations including laboratories, pharmacies, consulting physicians and payers.

Missoula College

Health Information Technology: Computing Track (13 Credits)

AHMS 156 Medical Billing Fundamentals – 3 Credits

An introduction to insurance claim processing for the major medical insurance programs. Students will be provided with a basic knowledge of CPT and ICD-9 procedural and diagnostic coding. Emphasis on completing universal insurance forms to maximize reimbursement as well as trouble shoot denied or underpaid claims.

NRGS 101 Introduction to Nursing – 1 Credit

Student will be presented with an introductory level of the core concepts of nursing practice and other issues such as the legal concerns and ethical/cultural issues that face professional nurses on a consistent basis.

AHMS 144 Medical Terminology - 3 Credits

Introduction to a medical word building system using Greek and Latin word roots, combining forms, suffixes, and prefixes.

HIT 101 Introduction to Health IT – 3 Credits

An overview of the subject including history, basic knowledge of health care informatics and tools as applied in support of health care delivery. Students will gain an introductory level about the complexities of health care and how informatics fits within the US Health Care System.

HIT 265 Electronic Health Records in Medical Practice – 3 Credits

Students will study the use of the EHR in improving healthcare quality, accessibility, and cost-effectiveness. EHR implementation and its use within the internal clinical office will be examined. The EHR will be studied in the context of a comprehensive Health Information System (HIS) supporting our society's interdisciplinary clinical healthcare system.

Health Information Technology: Health Professions Track (18 Credits)

CSCI 172 Computer Modeling – 3 Credits

Problem solving and data modeling using computer productivity software. Emphasis using spreadsheets and database for data analysis.

ITS 150 CCNA I : Exploration – 3 Credits

Introduction to networking field including terminology; protocols; local-area and wide-area networks; the OSI model; topologies; IP addressing; cabling and cabling tools; routers and router programming. Ethernet and network standards; and wireless technologies

CSCI 240 Databases & SQL – 3 Credits

Relational database design including: requirements analysis, data structure, entity relationships, normalization, relational algebra and integrity. Physical implementation focusing on data storage; retrieval and modification; concurrency; optimization; security; SQL; and XML.

HIT 101 Introduction to Health IT – 3 Credits

An overview of the subject including history, basic knowledge of health care informatics and tools as applied in support of health care delivery. Students will gain an introductory level about the complexities of health care and how informatics fits within the US Health Care System.

ITS 210 Network Operating Systems: Desktop – 3 Credits

In-depth study of a secure, multi-user, client-based network operating system. Topics include installation, administration of resources, performance, network services, and security.

HIT 265 Electronic Health Records in Medical Practice – 3 Credits

Students will study the use of the EHR in improving healthcare quality, accessibility, and cost-effectiveness. EHR implementation and its use within the internal clinical office will be examined. The EHR will be studied in the context of a comprehensive Health Information System (HIS) supporting our society's interdisciplinary clinical healthcare system.

Flathead Valley Community College
Health Information Technology: Implementation and Maintenance Specialist
(Program no longer offered)

Technology Option (18 credits)

AH 120 Configuring Electronic Health Records - 3 credits

A practical experience with a laboratory component, addressing approaches to assessing, selecting and configuring EHRs to meet the specific needs of customers and end users.

AH 140 Installation and Maintenance of Health IT Systems - 3 credits

This course focuses on the installation and maintenance of health IT systems, including testing prior to implementation including introduction to principles underlying system configuration with hands on experiences in computer labs and on site in health organizations.

AHMS 108 Health Data Content and Structure - 3 credits

This course offers an in depth analysis of data mobility including the hardware infrastructure (wires, wireless, and devices supporting them), the ISO stack, standards, Internet protocols, federations and grids, the NHIN and other nationwide approaches.

AHMS 280 Overview of Health Informatics Systems - 4 credits

This course provides an overview of the most popular EHR vendor systems highlighting the features of each, as they would relate to practical deployments and noting the differences between the systems. Students will work with simulated systems or real systems with simulated data. As they play the role of practitioners using these systems, they will learn what is happening under the hood. They will experience threats to security and appreciate the need for standards, high levels of usability and how errors can occur. Materials must support hands-on experience in computer labs and on-site in health organizations.

CAPP 116 MS Access short course - 1 credit

This course is intended to help develop the skills necessary to work with spreadsheets. Topics include entering and manipulating different types of data, formatting basics, using functions to analyze information, making decisions with IF functions and formulas, sorting and filtering information and creating charts.

CAPP 118 MS Access short course – 1 credit

This course is intended to help develop the skills necessary to work with databases. Topics include creating tables, queries, forms and reports.

CS 140 Introduction to Information and Computer Science - 3 credits

For students without an IT background, this course provides a basic overview of computer architecture; data organization, representation and structure; structure of programming languages; networking and data communication. Includes basic terminology of computing.

Health Care Option (19 Credits)

AH 120 Configuring Electronic Health Records - 3 credits

A practical experience with a laboratory component, addressing approaches to assessing, selecting and configuring EHRs to meet the specific needs of customers and end users.

AH 140 Installation and Maintenance of Health IT Systems - 3 credits

This course focuses on the installation and maintenance of health IT systems, including testing prior to implementation including introduction to principles underlying system configuration with hands on experiences in computer labs and on site in health organizations.

AH 260 Practice and Information Management and Redesign - 3 credits

Fundamentals of health workflow process analysis and redesign as a necessary component of complete practice automation; includes topics of process validation and change management.

AHMS 108 Health Data Content and Structure - 3 credits

This course offers an in depth analysis of data mobility including the hardware infrastructure (wires, wireless, and devices supporting them), the ISO stack, standards, Internet protocols, federations and grids, the NHIN and other nationwide approaches

AHMS 144 Medical Terminology - 3 credits

A systematic approach to scientific terminology in order to prepare students to function properly in fields related to the medical profession. Familiarity with word elements and competent use of a medical dictionary are emphasized.

AHMS 280 Overview of Health Informatics Systems - 4 credits

This course provides an overview of the most popular EHR vendor systems highlighting the features of each, as they would relate to practical deployments and noting the differences between the systems. Students will work with simulated systems or real systems with simulated data. As they play the role of practitioners using these systems, they will learn what is happening under the hood. They will experience threats to security and appreciate the need for standards, high levels of usability and how errors can occur. Materials must support hands-on experience in computer labs and on-site in health organizations.