



2011 - 2012
Career and Technical Programs

Computer Information
Technology Department
541.463.5826

lanecc.edu

Computer Information Systems-Health Informatics

Two-Year Associate of Applied Science Degree

Career Pathway Certificate of Completion,
Database Specialist

Career Pathway Certificate of Completion,
Health Information Technology Specialist

Purpose The purpose of the program is to educate individuals to be effective developers, users and managers of health information resources. Health Informatics is the study of how health data are collected, stored and communicated; how those data are processed into health information suitable for administrative and clinical decision making; and how computer technology, communications technology, and other information management skills can be applied to support these processes. Graduates may be employed as health information professionals by clinics and offices of health care providers, hospitals, health maintenance organizations, insurance companies, government agencies, law firms, mental health programs, community health programs, researchers, consulting firms, and information systems vendors.

Learning Outcomes The graduate will:

- develop and evaluate health care system requirements
- design, implement and deploy a health care system
- evaluate, test, debug and troubleshoot a healthcare system
- apply operational health care knowledge in addressing Health Informatics system needs
- create effective databases and user interfaces
- query a database using advanced SQL concepts
- develop small programs
- select appropriate technology tools by recognizing tool capabilities and limitations
- communicate effectively in both oral and written form
- work effectively in teams
- manage time, tasks and projects
- take ownership of Health Informatics career by adapting and learning new skills
- explain concepts, components, and processes of a health care system
- plan and control total cost of ownership (TCO) for a health care system
- install, manage and troubleshoot issues in a network environment
- provide technical support to desktop clients
- identify and evaluate network requirements for a health care organization
- specify and purchase hardware and software for a local area network
- assemble hardware, install software, and configure a local area network
- operate a reliable and secure local area network
- establish and maintain connections between/among local area networks and wide area networks
- use network concepts and terminology to communicate with vendors and users
- work with users, managers and associates in helping to define systems requirements for new projects
- assist in management of small to medium-size projects using project management software and practices
- use accounting principles to increase profitability and decrease cost in a project
- use micro and macroeconomics knowledge to understand their effect on the economy
- use library resources for research and written tasks.
- perform advanced mathematical functions as necessary to prepare health data reports.

Employment Trends

- Lane County openings - 13 annually, projected through 2018
- Statewide openings - 124 annually, projected through 2018
- Annual National positions - 172,500 current; 207,600 projected through 2018

Wages

- Average hourly rate in Lane County - \$17.01
- Average annual rate in Lane County - \$35,374
- Average hourly rate Statewide - \$16.96
- Average annual rate Statewide - \$35,275

Costs in Addition to Tuition (estimate)*

Books and supplies..... \$2,500*

* Subject to change without notice.

Cooperative Education (Co-op) Co-op offers students college credit and a grade for on-the-job work experience related to their educational and career goals. Through Co-op, students connect theory and practice, develop skills, expand career knowledge, and make contacts for the future. Work schedules and work sites vary. Contact the Cooperative Education Division, Bldg. 19, Rm. 231, 541.463.5203.

Program Lead Larry Scott, Bldg. 19, Rm. 140, 541.463.5458, scottl@lanecc.edu

C.I.S. Health Informatics

Two-Year Associate of Applied Science Degree

First Year

MTH 095 Intermediate Algebra ^{*,D,G}	Fall	5
WR 121 Introduction to Academic Writing ^{*,D,G}		4
Choice of:.....		4
CIS 140 Operating Environments: Managing Windows ^{D,G}		
CIS 140U Introduction to Unix/Linux ^{D,G}		
Directed Elective		3-5
Total Credits		16-18

Winter

HO 100 Medical Terminology ^{D,G}	3
CS 179 Introduction to Computer Networks	4
Choice of:.....	4
CIS 122 Software Design ^{*,D,G,1}	
CS 133C# Beginning Programming: C# ^{*,D,G,1}	
CS 133G Beginning C++ Programming for Games	
CS 133JS Beginning Programming: JavaScript ^{*,D,G}	
CS 161 Computer Science 1 ^{*,D,G}	
Choice of:.....	4
BI 102I Human Biology (recommended) ^{D,G}	
or other Science/Computer Science requirement ^R	
Total Credits	15

Spring

CIS 125D Software Tools 1: Databases ^{D,G}	4
Choice of:.....	4
CIS 135T XML, Data Transformation and Objects ^{*,D,G,1}	
CS 162 Computer Science 2 ^{*,D,G}	
CS 233G Intermediate C++ Programming for Games ^{*,D,G}	
CS 233C# Intermediate Programming: C# ^{*,D,G,1}	
Directed Elective	3-5
Human Relations requirement ^R	4
Total Credits	15-17

Second Year

CIS 244 Systems Analysis *,D,G	4
Choice of:	4
HI 107 Working with Health IT Systems	
HIM 110 Health Information Technology *,D,G,1	
Choice of:	3-4
HIM 182 Health Care Delivery Systems *,D,G	
HI 101 Introduction to Health Care and Public Health in the US	
Choice of:	4
HI 111 Selecting, Implementing, and Customizing Electronic Health Record System	
HIM 283 Health Information Systems *,D,G,1	
Total Credits	15-16

Winter

CS 275 Database Program Development * ^{D,G}	4
Choice of:.....	3-4
HIM 285 Healthcare Financing and Compliance * ^{1,D,G}	
HI 208 Installation and Maintenance of Health IT Systems	
Choice of recommended Speech classes:	4
SP 111 Fundamentals of Public Speaking ^{D,G}	
SP 219 Small Group Discussion ^{D,G}	
SP 220 Communication, Gender, and Culture ^{D,G}	
or other Arts and Letters requirement ^R	

Choice of:	4
BA 211 Financial Accounting ^{*,D,G}	
BA 205 Solving Communication Problems with Technology ^{*,1,D}	

Total Credits 15-16

Spring

CS 276 Database SQL Programming ^{*,D,G,1}	4
Choice of:.....	3-4
CS 280H Coop Ed: Health Informatics ^{*,D,G}	
CIS 277H Introduction to Health Informatics ^{1,D,G}	
HI 209 Networking and Health Information Exchange	
CIS 245 Project Management ^{*,D,G}	4
Directed Elective	3-5

Total Credits 14-17

Directed Electives - consider prerequisites when choosing:

BA 224 Human Resource Management.....	3
BI 112 Cell Biology for Health Occupations.....	3
BI 121 Intro to Human Anatomy and Physiology 1 ¹	4
BI 122 Intro to Human Anatomy and Physiology 2 ¹	4
BI 231 Human Anatomy and Physiology 1	4
BI 232 Human Anatomy and Physiology 2	4
BI 233 Human Anatomy and Physiology 3	4
CIS 140 Operating Environments: Managing Windows (if not taken as an alternative to CIS 140U)	4
CIS 189 Wireless Security ¹	4
CIS 225 Computer End User Support	4
CIS 277D DB Security ¹	4
CIS 277O Advanced Database Concepts in Oracle ¹	4
CIS 277T Web Business Intelligence Development ¹	4
CIS 278 Data Communications Concepts 2 ¹	4
CIS 279L Linux Network Administration ¹	4
CIS 284 Network Security ¹	4
CIS 288M Microsoft Network Administration ¹	4
CIS 289M Microsoft Active Directory Administration ¹	4
CS 140U Introduction to Unix/Linux (if not taken an alternative to CIS 140)	4
CS 188 Wireless Networking	4
CS 240U Advanced Unix/Linux: Server Management.....	4
CS 279W Windows Server Administration	4
ET 287 Microcomputer Hardware	4
HI 208 Installation and Maintenance of Health IT Systems.....	4
HI 114 Comparative Electronic Health Record Systems	3
HIM 271 Quality Improvement in Healthcare (Co-requisite with HIM 274) ¹	3
HIM 274 Quality Improvement in Healthcare – lab ¹	1
HIM 281 Data management and Analysis 1 ¹ (Co-requisite with HIM 286)	3
HIM 286 Data management and Analysis 1 – Lab ¹	2
MP 110 Medical Terminology ¹	2
MP 111 Medical Terminology ¹	4
OS 220 Business Editing Skills ¹	4
WR 122 Composition: Argument, Style and Research.....	4
WR 227 Technical Writing	4

1 This course available online through other Health Informatics Education Consortium Institutions

C.I.S. Health Informatics

Database Specialist

Career Pathway Certificate of Completion

Purpose To prepare technicians for entry-level positions as database specialists.

Learning Outcomes The certificate recipient will:

- design, implement, test, debug and document relational database systems using a variety of current tools and technologies.
- understand the use of database to support organizational processes.
- interpret the mathematical concepts of relational algebra and translate a database related problem into SQL logic and expressions.
- use appropriate library and information resources to research database technologies and support lifelong technical learning.

Prerequisites Students are expected to be comfortable working on a computer, including the ability to create files with a text editor and manage file folders. The courses in this Certificate of Completion are designed to be taken along with the Computer Programming, the Health Informatics, or the Computer Network Operations Associates of Applied Science degree programs offered by the CIT department. For details see the course description of each of the four required courses. Prerequisites can be waived for current IT technicians with the appropriate background.

Certificate Lead Ron Little, Bldg. 19, Room 156, 541.463.5464, little@lanec.edu

Courses Required	Credits
CIS 125D Software Tools 1: Databases ^{D,G}	4
CIS 244 Systems Analysis ^{*,D,G}	4
CS 275 Database Systems and Modeling ^{*,D,G}	4
CS 276 Database SQL Programming ^{*,D,G}	4
Total Credits	16

Health Information Technology Specialist

Career Pathway Certificate of Completion

Purpose Designed for, but not limited to, workers who are currently employed in healthcare or information technology and hold a college degree or have equivalent experience, this program trains graduates qualified to implement and support Electronic Health Records (EHRs), information exchange across health care providers and public health authorities, and to redesign workflows within the health care settings to gain the quality and efficiency benefits of EHRs. The classes provide a basic knowledge of the skills required to implement and support electronic health records (EHRs) in the healthcare environment.

Learning Outcomes The certificate recipient will:

- design electronic health records workflows within health care settings
- implement and support electronic health records
- implement and support information exchange across health care providers and public health authorities
- use appropriate library and information resources to research database technologies and support lifelong technical learning.

Prerequisites Students are expected to be comfortable working on a computer, including the ability to create files with a text editor and manage file folders. The courses in this Certificate of Completion are designed to be taken along with the Health Informatics Associates of Applied Science degree offered by the CIT department. For details see the course description of each of the required courses. Prerequisites can be waived for current IT technicians with the appropriate background.

Certificate Lead Larry Scott, Bldg. 19, Rm. 140, 541.463.5458, scottl@lanec.edu

Courses Required	Credits
HI 101 Intro to Health Care in the US ^{D,G}	4
HI 107 Working with Health IT Systems ^{D,G}	4
HI 111 Selecting, Implementing, and Customizing Electronic Health Records Systems ^{D,G}	4
HI 114 Comparative Electronic Health Records ^{*,D,G}	3
HI 208 Installation and Maintenance of Health IT Systems ^{*,D,G}	4
HI 209 Networking and Health Information Exchange ^{*,D,G}	3
Total Credits	22