

# Syllabus for HIMT435

## Data Communications and Networks in Healthcare

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**NOTE:** This syllabus document contains the basic information of this course. The most current syllabus is available in the full course.

### Course Description

This course 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 health care organizations. Major topics include fundamental concepts of data communications and applications, network communication devices, basic technologies of the local area network (LAN), backbone network, wide area network (WAN), Internet and the Web, the OSI stack, health care information systems standards, health care information exchange (HIE), and Nationwide Health Information Network (NHIN).

### Prerequisite(s)

- HIMT 301: Digital Literacy in Healthcare

### Course Outcomes

At the conclusion of this course, you will be able to:

- Understand hardware and software components of telecommunications systems and how they are organized to provide required services.
- Present architecture, topologies, and protocols of telecommunications and computer networks.
- Describe Health Level Seven (HL7) standards.
- Understand HIE and major health care network standards.
- Research and discuss issues pertinent to the emerging technologies and network applications in health care.

## Course Components/Requirements

Upon successful completion of the course, students will demonstrate an understanding of the fundamental concepts and architecture of data communications. Students will be able to describe the manner in which health organizations use data communication technologies to support daily operations and achieve organizational strategies. Students are also expected to do research on modern and emerging networking technologies applied in health care organizations.

This course covers fundamentals of networking and data communication technologies, protocols, and standards that support health care information systems. To successfully navigate the demands of this course, students are expected to possess initial microcomputer software skills. Students are also expected to undertake and learn additional software as it is introduced for network management.

Students will use free open source programs and online software (Wireshark, Lucidchart, and Google Slides) to complete some of the assignments. The software will run on any computer with Windows 10, Windows 8 or Windows 7. These applications are available for free online - either via a download or a free account. More detailed information is provided within the course.

## Grading

The following grading scale will be used to evaluate all course requirements and to determine your final grade:

Grades	Percentage Range
A	90% - 100%
B	80% - 89%
C	70% - 79%
D	60% - 69%
F	0 - 59%

Activities	Percentage of Grade
Quizzes	45%
Assignments	20%
Final Research Project	15%
Class Discussion and Participation	20%
<b>Total</b>	<b>100%</b>