

**University of North Carolina at Charlotte
College of Health and Human Services
Department of Public Health Sciences
Spring 2023**

Course Number and Title: HCIP6380: Introduction to Health Informatics

Credits: 3 Grad Credits

Days/Time, Location: 290 CHHS or via Zoom if necessary

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Catalog Description: An introduction to fundamental terminologies, concepts, and techniques in health informatics. Exposes students to important and current topics, including electronic medical records (EMR), Electronic Health Records (EHR), health data and standards, sourcing, and analytics methods in administrative, clinical, and financial aspects of healthcare.

Pre and/or Co-requisites: None

Course Objectives: By the end of the course, you should be able to:

- Explain the key information requirements for effective health information exchange and management within and beyond a specific healthcare facility
- Summarize key inputs and outputs of electronic health record system especially clinical decision support system
- Develop conceptual health information solution for clinical purpose in relevant to the need of Charlotte/Mecklenburg County
- Develop conceptual health information solution for educational purpose in relevant to the need of Charlotte/Mecklenburg County
- Develop conceptual health information solution for research purpose in relevant to the need of Charlotte/Mecklenburg County
- Integrate current advancement of related fields to enhance health information exchange

Instructional Method: Fully online

Required Texts: Health Informatics: Practical Guide, 7th Edition by Robert Hoyt and William Hersh

You can purchase it either from University Library or online at:

<https://www.informaticseducation.org/health-informatics> (Links to an external site.)

Other required materials (e.g., journal articles, news articles, online videos) will be provided as external weblinks in corresponding modules on Canvas.

Graduate Grading Scale:

A = 90-100%

B = 80 - 89%

C = 70 - 79%

U = 69% & below

Evaluation Methods:

Quizzes	25%
Online discussion forum participation	25%
Final group project	50%

Topical/Unit Outline:

Week	Topic	Materials	Assignments
1	Introduction and DIKW hierarchy	Ch. 1&2, instructional video, additional readings and journal articles	Discussion and quiz
2	Infrastructure of informatics	Ch. 3, instructional video, additional readings and instructions	Discussion and quiz
3	Electronic health record (EHR) system	Ch. 4, instructional video, additional readings, journal article, and demo of EHR system	Quiz
4	Health information exchange and standards	Ch. 5&6, instructional video, additional readings and journal articles	Discussion and quiz
5	Health analytics	Ch. 7, instructional video, additional readings, journal articles, and demo of risk calculator	Discussion and quiz
6	Invited talk: health analytics in Charlotte	Presentation slides and video	Discussion
7	Clinical decision support system (CDSS)	Ch. 8, instructional video, additional readings, journal articles, and demo of CDSS	Quiz
8	Patient safety	Ch. 9, instructional video, additional readings and journal articles	Discussion and group project
9	Privacy, security, and ethical issues	Ch. 10&11, instructional video, additional readings and videos	Quiz

10	Consumer health informatics	Ch. 12, instructional video, additional readings and journal articles	Discussion and quiz
11	mHealth	Ch. 13, instructional video, additional readings	Group project
12	Evidence based medicine	Ch. 14, instructional video, additional readings and journal articles	Group project
13	Health information retrieval	Ch. 15, instructional video, additional readings and demo of PubMed search	Group project
14	Public health informatics	Ch. 19, instructional video, additional readings and demo of AIDSvU interactive map	Discussion
15	Final project report		Group project

MPH Population Health Analytics Competencies:

<p>1. Analyze the impact of changes in technology on health care system</p> <p>a. This competency is assessed throughout the semester in assignments (quiz and/or online discussions) corresponding to topics in week 2, week 3, week 7, week 10, and week 11.</p>
<p>2. Use data visualization tools to enhance presentations to stakeholders</p> <p>a. This competency is assessed with the group project. Students present and defend case study with health data analysis and visualization. The scoring rubric includes assessment of their use of data visualizations as part of making a clear, effective, and persuasive presentation.</p>

Evaluations:

- Discussion Assignments: evaluating students' understanding of course topics, materials, and ability to identify pros and cons of current information systems in the health care system.
- Quizzes: evaluating students' understanding of key concepts and knowledge.
- Group Project: evaluating students' ability to work independently and collaboratively, to use real-world health data and perform appropriate analyses, and to present findings and conclusions effectively.

Syllabus Subject to Change: The standards and requirements set forth in this syllabus may be modified at any time by the course instructor. Notice of such changes will be by announcement in class, written or email notice, or by changes to this syllabus posted on the course website at (URL).

UNIVERSITY AND COLLEGE POLICIES

University Policies:

Code of Student Responsibility:

“The *UNC Charlotte Code of Student Responsibility* (the Code) sets forth certain rights and responsibilities in matters of student discipline. The Code defines these responsibilities and guarantees you certain rights that ensure your protection from unjust imposition of disciplinary penalties. You should familiarize yourself with the provisions and procedures of the Code” (Introductory statement from the UNC Charlotte brochure about the Code of Student Responsibility). The entire document may be found at this Internet address:

<https://legal.uncc.edu/policies/up-406>

Academic Integrity:

All students are required to read and abide by the Code of Student Academic Integrity. Violations of the Code of Student Academic Integrity, including plagiarism, will result in disciplinary action as provided in the Code. Students are expected to submit their own work, either as individuals or contributors to a group assignment. Definitions and examples of plagiarism and other violations are set forth in the Code. The Code is available from the Dean of Students Office or online at: <https://legal.uncc.edu/policies/up-407>

Faculty may ask students to produce identification at examinations and may require students to demonstrate that graded assignments completed outside of class are their own work.

VeriCite (or Turn it in):

[If you plan to submit ALL papers – use this section] As a condition of taking this course, all required papers may be subjected to submissions for textual similarity review to (VeriCite) for detection of plagiarism. All submitted papers will be included as source documents in the VeriCite reference database solely for the purpose of detecting plagiarism of such papers. No student papers will be submitted to VeriCite without the student’s written consent and permission. If a student does not provide such written consent and permission, the instructor may: 1. Require a short reflection paper on research methodology; 2. Require a draft bibliography prior to submission of the final paper, or 3. Require the cover page and the first cited page of each reference source to be photocopied and submitted with the final paper.

[If you plan to submit only papers that you suspect contain plagiarized works – include this section] As a condition of taking this course, papers that the instructor in good faith suspects are in whole or in part plagiarized may be subject to submission for textual similarity review to VeriCite (or your choice of software) for the detection of plagiarism. Such works will be included as source documents in the VeriCite reference database solely for the purpose of detecting plagiarism of such papers. No student papers will be submitted to VeriCite without the student’s written consent and permission. If a student does not provide such written consent and permission, the instructor may: 1. Require a short reflection paper on research methodology; 2. Require a draft bibliography prior to submission of the final paper, or 3.

Require the cover page and the first cited page of each reference source to be photocopied and submitted with the final paper.

Title IX Reporting Obligations Regarding Incidents of Sexual Harassment, sexual assault, dating violence, domestic violence, or stalking:

UNC Charlotte is committed to providing an environment free of all forms of discrimination and sexual harassment, including sexual assault, domestic violence, dating violence, and stalking. If you (or someone you know) has experienced or experiences any of these incidents, know that you are not alone. UNC Charlotte has staff members trained to support you in navigating campus life, accessing health and counseling services, providing academic and housing accommodations, helping with legal protective orders, and more.

Please be aware that many UNC Charlotte employees, including all faculty members, are considered [responsible employees](#) who are required to relay any information or reports of sexual misconduct they receive to the Title IX Coordinator. **This means that if you tell me about a situation involving sexual harassment, sexual assault, dating violence, domestic violence, or stalking, I must report the information to the Title IX Coordinator.**

Although I have to report the situation, you will still have options about how your case will be handled, including whether or not you wish to pursue a formal complaint. Our goal is to make sure you are aware of the range of options available to you and have access to the resources you need.

If you wish to speak to someone confidentially, you can contact any of the following on-campus resources, who are not required to report the incident to the Title IX Coordinator: (1) University Counseling Center (counselingcenter.uncc.edu, 7-0311); (2) Student Health Center (studenthealth.uncc.edu, 7-7400); or (3) Center for Wellness Promotion (wellness.uncc.edu, 7-7407). Additional information about your options is also available at titleix.uncc.edu under the “Students” tab.

Last Date of Attendance:

If regular attendance IS taken:

The United States Department of Education requires UNC Charlotte’s Office of Financial Aid to determine if a student who receives financial aid and fails to earn a passing grade in a course has actually attended and/or completed the course. If you earn an F or U grade, your last date of attendance will be reported to the United States Department of Education. *This may require you to pay back any financial aid funds received for this course.*

(For additional information, see [Last Date of Attendance FAQs](#) on the Registrar’s website.)

If regular attendance is NOT taken:

The United States Department of Education requires UNC Charlotte’s Office of Financial Aid to determine if a student who receives financial aid and fails to earn a passing grade in a course has actually attended and/or completed the course. Because I do not take regular attendance for this course, the date I will report as your last date of attendance will be the latest of the following:

- The date you last participated in an online discussion or activity;
- The date you last submitted an assignment/project/test/tutorial/quiz; or

- The date you last initiated contact with me to ask a question about the course or course content.

If you earn U grade, your last date of attendance will be reported to the United States Department of Education. *This may require you to pay back any financial aid funds received for this course.* (For additional information, see [Last Date of Attendance FAQs](#) on the Registrar's website.)

Disability Accommodations: UNC Charlotte is committed to access to education. If you have a disability and need academic accommodations, please provide a letter of accommodation from Disability Services early in the semester. For more information on accommodations, contact the Office of Disability Services at [704-687-0040](tel:704-687-0040) or visit their office in Fretwell 230.

Diversity Statement:

UNC Charlotte strives to create an academic climate in which the dignity of all individuals is respected and maintained. Therefore, we celebrate diversity that includes, but is not limited to ability/disability, age, culture, ethnicity, gender, language, race, religion, sexual orientation, and socio-economic status.

All students are required to abide by the [UNC Charlotte Sexual Harassment Policy](#) and the policy on [Standard for Responsible Use](#) of University Computing and Electronic Communication Resources. Sexual harassment, as defined in the UNC Charlotte Sexual Harassment Policy, is prohibited, even when carried out through computers or other electronic communications systems, including course-based chat rooms or message boards.

Religious Accommodation:

It is the obligation of students to provide faculty with reasonable notice of the dates of religious observances on which they will be absent by submitting a Request for Religious Accommodation Form (<https://legal.uncc.edu/sites/legal.uncc.edu/files/media/UP409-ReligiousAccommodationForStudents.pdf>) to their instructor prior to the census date for enrollment for a given semester <https://legal.uncc.edu/policies/up-409>. The census date for each semester (typically the tenth day of instruction) can be found in UNC Charlotte's Academic Calendar (<https://registrar.uncc.edu/printable-calendar>).

Other Policies

Teaching Strategies: Teaching methods may include a combination of lecture recordings and audiovisual presentations by faculty. Student participation in online discussion forums,

critical thinking exercises, analysis of case studies, group projects, and peer-teaching. All students are expected to contribute in a meaningful way to group efforts.

Assignments: Instructions for assignments are provided (in this section/on Canvas web page/will be distributed at least two weeks before the due date).

Preferred Gender Pronoun: This course affirms people of all gender expressions and gender identities. If you prefer to be called a different name than what is indicated on the class roster, please let me know. Feel free to correct me on your preferred gender pronoun. If you have any questions or concerns, please do not hesitate to contact me.

Course Policies: (describe the policies related specifically to the course in terms of assignments, attendance, grading, and anything else tied to the nature of the course)

Class Attendance Policy: Students are expected to attend every class and remain in class for the duration of the session. Failure to attend class or arriving late may impact your ability to achieve course objectives which could affect your course grade. An absence, excused or unexcused, does not relieve a student of any course requirement. Regular class attendance is a student's obligation, as is a responsibility for all the work of class meetings, including tests and written tasks. Any unexcused absence or excessive tardiness may result in a loss of participation points.

Class Absence(s): The authority to excuse a student's class absence(s) and to grant a student an academic accommodation (turn in a late assignment(s), provide extra time on an assignment, reschedule an exam(s) etc.) sits with the individual instructor. Students are encouraged to work directly with their instructors regarding their absence(s). Note: The Office of Student Support and Assistance (SASS) can assist faculty members in the verification a student's class absence(s) for documented situation related to medical, psychological, personal crisis, or military absences.

Withdrawal Policy: Students are expected to complete all courses for which they are registered at the close of the add/drop period. If you are concerned about your ability to succeed in this course, it is important to make an appointment to speak with me as soon as possible. The University policy on withdrawal allows students only 16 credit hours to withdraw from courses. It is important for you to understand the financial and academic consequences that may result from [course withdrawal](#).