HEALTHCARE ANALYTICS - GRADUATE CERTIFICATE

The business analytics healthcare certificate prepares students to turn big data into actionable insights that drive systemic improvements. Students will develop the skillset needed to retrieve, analyze and interpret a vast range of health-related data. Meanwhile, students will learn about predictive analytics including operations research, aspects of computer science and statistical methods. Gain understanding of the informatics structure, organization and functioning of healthcare systems from the lens of invested parties, regulatory frameworks and healthcare delivery models. Learn about healthcare compliance regulations (e.g., HIPAA) and privacy requirements governing the use of healthcare data and develop proficiency for compliance in analytics projects.

The MSBA Healthcare track curriculum includes specialized courses provided by the College of Nursing at the CU Anschutz Medical Campus —a world-class medical institution for transformative education, science, medicine and healthcare-in partnership with Leeds School of Business.

Designed for current students in the University of Colorado College of Nursing's Master of Science in Informatics (https://nursing.cuanschutz.edu/academics/graduate-specialties/advanced-ms-dnp-specialties/health-care-informatics/health-care-informatics-masters-degree/) program or recent graduates of the program, this program's online format allows students to continue caring for patients and making a difference, while they immediately apply what they learn on the job.

Distance Education Option

Students can take individual courses toward a master's degree or graduate certificate through distance education (online). For more information, connect with the individual graduate program directly.

Requirements

Admission Requirements

Students currently enrolled in the informatics program at the School of Nursing must apply through Continuing Education at CU Boulder as a nondegree student to take the required CU Boulder courses. They will take the required courses at Anschutz as part of their degree program. Previous graduates of the School of Nursing Informatics program who are not currently enrolled must also enroll as a non-degree student at the School of Nursing, thus applying as a nondegree student to each institution separately.

To be considered for the graduate certificate, applicants must complete the course prerequisite outlined above *and* provide the following:

1. Statement of purpose (1–2 pages) explaining how the Healthcare Analytics graduate certificate will further their professional and/or personal interests.
2. Official transcript from an accredited institution of higher education showing proof of completion of an undergraduate degree.
3. Current resume.
4. One letter of recommendation.

Required Courses and Credits

Code	Title	Credit Hours
MSBC 5180	Machine Learning in Python	3
MSBX 5425	Natural Language Processing for Healthcare Analytics	3
NURS 6286	(Foundations of Healthcare Informatics)	3
NURS 6290	(Information Systems Life Cycle)	3
Total Credit Hours		**12**

Nursing students who have completed either/both NURS courses listed above may use them toward the certificate requirements. They can also choose to substitute either MSBX 5405 Structured Data Modeling and Analysis (fall) and/or MSBC 5190 Modern Artificial Intelligence: Introduction to AI for Business (spring) to satisfy certificate requirements.

Learning Outcomes

Upon completing the program, students will:

- Gain understanding of the informatics structure, organization, and functioning of healthcare systems from the lens of invested parties, regulatory frameworks and healthcare delivery models.
- Learn about healthcare compliance regulations (e.g., HIPAA) and privacy requirements governing the use of healthcare data and develop proficiency for compliance in analytics projects.
- Apply principles of data collection, storage, cleaning and management specific to healthcare data, including electronic health records (EHRs), claims data and other healthcare-related datasets.
- Obtain hands-on experience with healthcare analytics tools and software (e.g., Python, AI) and understand their application in analyzing healthcare data.
- Explore the application of machine learning techniques and AI tools in healthcare analytics, including classification, clustering and natural language processing (NLP) for predictive analytics and risk stratification approaches in patient care.
- Develop skills in project management, teamwork and collaboration to effectively execute healthcare analytics projects, including defining project scope, setting goals and managing timelines and resources.