ARTIFICIAL INTELLIGENCE IN HEALTHCARE (AIHC) – CERTIFICATE

- David Holmes III, Ph.D, *Program Director*

The Certificate track in Artificial Intelligence in Health Care is open only to Mayo Clinic employees who have a doctoral degree in a discipline applicable to research. Doctoral candidates may be considered. Potential candidates for the degree must hold Mayo Clinic appointments of sufficient duration to complete the program requirements.

Pre-Requisite Course Work

1. Introduction to statistics: Data summarization and statistical testing (like CTSC 5600)
2. Linear Algebra: Matrix Math
3. Calculus: Single variable ("Calc 1")
4. Introduction to Scientific Programming (Python and/or R preferred)

Course Work

The curriculum for the Certificate consists of **12 credits**. The student must complete all of the required courses listed below:

Code	Title	Hours
Course Requirements		
AIHC 5020	Introduction to Data	3
AIHC 5030	Introduction to Deployment, Adoption & Maintenance of Artificial Intelligence Models/Algorithms	2
CTSC 5300	Foundations of Epidemiology	1
CTSC 5350	Ethical Issues in Artificial Intelligence and Information Technologies	1
AIHC 6000	Independent Study in Artificial Intelligence in Healthcare	1
Total Hours		**8**

Code	Title	Hours
Electives		**4**
Select one of the following:		
AIHC 5010	Introduction to Machine Learning	
MPET 6450	Applied Data Science and Artificial Intelligence in Pharmacology	
BME 6720	Deep Learning for Medical Imaging	
Select one of the following:		
AIHC 5615	Fundamentals of Statistics for Artificial Intelligence	
CTSC 5610	Statistics in CTR: Linear Regression Concepts, Interpretation, and Statistical Software	
Total Hours		**4**

Independent Study

The independent study is an opportunity to demonstrate the integration of knowledge from the concentration courses. Through the independent study with one of the faculty of the AIHC track, the learning will complete a project or writeup related to the use of AI in their scientific domain. The faculty and learner will meet at the beginning of the term to define the specific learning objectives and academic output from the Independent Study.

Suggested Sequence

This is a suggested sequence based on a summer term start. Individual course plans may vary depending on true start date, program, employment/personal commitments, and research interests. Note that Certificate learners will choose between groups of courses to complete the certificate requirements. Be sure to confirm you have met your requirements using your degree planning tool. Course offerings may vary slightly. Current course offerings are posted in the course catalog.

Code	Title	Hours
First Year - Summer Term		
AIHC 5020	Introduction to Data	3

Code	Title	Hours
First Year - Fall Term		
AIHC 5615	Fundamentals of Statistics for Artificial Intelligence	2
CTSC 5300	Foundations of Epidemiology	1
CTSC 5610	Statistics in CTR: Linear Regression Concepts, Interpretation, and Statistical Software	3
MPET 6450	Applied Data Science and Artificial Intelligence in Pharmacology	2

Code	Title	Hours
First Year - Winter Term		
AIHC 5010	Introduction to Machine Learning	3
CTSC 5350	Ethical Issues in Artificial Intelligence and Information Technologies	1

Code	Title	Hours
First Year - Spring Term		
AIHC 6000	Independent Study in Artificial Intelligence in Healthcare	1-3
AIHC 5030	Introduction to Deployment, Adoption & Maintenance of Artificial Intelligence Models/Algorithms	2
BME 6720	Deep Learning for Medical Imaging	3