

Miami University Certificate Program



Certificate Requires Six Courses:

Once course in Computer Programming: CSA 163 or MIS 281

Introduction to Computer Concepts and Programming (CSA 163, 3 Credits, Offered Oxford, MUM, MUH Fall & Spring)

This course offers an introduction to computers in data processing, survey of various hardware and software concepts, and analysis and solution of problems by computer programming. Lecture/laboratory, project-oriented course. *No prior knowledge of computer concepts or programming assumed.*

Information Technology Hardware and Software (MIS 281, 3 Credits, Offered Oxford only Fall & Spring)

This course focuses on the use of software development environments to develop object-oriented, data-driven software applications. Special emphasis will be on the advantages and disadvantages of using development toolkits to integrate data retrieval, information presentation, and logic.

Two Courses in Geographic Information Systems (GIS): GEO 441 and GEO 442

Geographic Information Systems (GEO 441, 3 Credits, Offered Oxford Fall & Spring, MUH Spring, MUM Fall; Offered Oxford some summers)

This course provides an introduction to the theory and practice of Geographic Information Systems technology with an emphasis on ESRI's ArcGIS software.

Advanced Geographic Information Systems (GEO 442, 3 Credits, Offered Oxford Fall & Spring, MUH Fall)

This course focuses on advanced-level application of GIS technology to geographic problem-solving. The course follows on from topics introduced in GEO 441. Prerequisite: GEO 441.

One course in Database Management: CIT 214 or MIS 245

Database Design and Development (CIT 214, 3 Credits, Offered MUM, MUH only Fall & Spring)

This course offers an introduction to database planning, design and management, data modeling and representation, and fundamental concepts of database access. Prerequisites: CIT 101 D or CIT 154, or CSA 141, or BTE 181 (*Prerequisite waived for students who have taken GEO 441*)

Database Systems and Data Warehousing (MIS 245, 3 Credits, Offered Oxford only Fall & Spring)

This course provides an understanding of database structures and concepts, design methodologies, database management systems (DBMS), structured query language (SQL) and the implementation of database systems. Prerequisite: MIS 235. (*Prerequisite waived for students who have taken GEO 441*)

One Course in Remote Sensing: GEO 448

Techniques and Applications of Remote Sensing (GEO 448, 3 Credits, Offered Oxford Fall & Spring, MUM Spring)

This course offers a description of nonphotographic remote sensing such as radar, thermal infrared, and multispectral scanning. Students will gain experience with machine-based interpretation of multispectral imagery.

One additional GIS-related course or GIS-related Internship: GEO 340, GEO 444, or GEO 447

GIS Internship (GEO 340, 3 Credits, Available to all Miami students on any campus any semester/summer session)

Students are expected to work a total 120 hours per semester or 8 hours per week. Students are required to write a paper related to their internship experience and have a written evaluation from their job supervisor. Students must present their internship option to the GIS Coordinator before it can be authorized as a course option for the Certificate.

GISci Techniques in Landscape Ecology (GEO 444, 3 Credits, Offered Oxford only Fall)

This course covers the major topics in landscape ecology, while emphasizing the way that geographic techniques can be applied.

Aerial Photo Interpretation (GEO 447, 4 Credits, Offered Oxford only Summer)

This course focuses on interpretation and analysis of aerial photographic images for the purpose of identifying objects and characterizing their significance. Examples are drawn from both human and physical environment.

If you have any questions, please contact Robbyn Abbitt, GIS Coordinator, abbitt@muohio.edu, 513-529-5016. <http://www.muohio.edu/geography/gis>