The MSISA Program

Millersville University’s Master of Science in Integrated Scientific Applications (MSISA) provides individuals with the opportunity to acquire a master’s level education that will combine a specific science specialization with the business and professional skills that are highly valued by employers. The MSISA addresses the growing need in the marketplace for a scientifically astute, technical competent workforce beyond the baccalaureate degree with a broader set of skills that are necessary for teamwork, collaboration, and decision-making in the business environment. Upon completion of the program, students will enter the workforce with advanced cross-disciplinary scientific and technical expertise coupled with strong business acumen to manage complex projects. The MSISA is designed for flexibility and agility for meeting existing and emerging challenges and opportunities of a changing workforce. The program offers specializations in Climate Science Application (CSA), Weather Intelligence and Risk Management (WIRM), Environmental Systems Management (ESM), and GeoInformatics (GI). These specializations are designed to train students in integrative disciplines that should remain at the forefront throughout their careers and build knowledge that can transfer to other practical science applications. The curriculum is designed to integrate science content, methods and tools for information analysis, and management and policy skills that are needed for careers as the go-to science person in business, industry, commerce and government.

Weather Intelligence and Risk Management

The Weather Intelligence and Risk Management specialization (WIRM) is a response to the growth in the private sector of the weather and climate enterprise and the national trends in workforce needs that demand highly skilled scientists and technically-astute professionals with good business sense, excellent communication skills, and ability to work in a team-oriented environment. With a third of the Gross Domestic Product (GDP) coming from weather-sensitive business, industry, and commerce, and greater emphasis on global markets, it is imperative that professionals be able to understand, articulate, and communicate the role of science in the boardroom. This track prepares individuals for careers in sectors where weather and climate are important factors in the decision tree. The WIRM curriculum is designed to build proficiencies in quantifying uncertainty, analyzing and managing risks, understanding weather derivatives and valuation, balancing economic exigencies, and mining information for the optimization of value within the context of the business enterprise.

Source: IPCC
WIRM Curriculum

- 36 credit hours including internship
- 6 courses in MSISA core; 4 courses in track
- non-thesis with 3-credit practicum or research project

Courses required by all MSISA:
- Statistical Methods I
- Environmental Economics and Policy
- Business Operations and Analysis (Online)
- Accounting and Finance(Online)
- Strategic Management/Leadership (Online)
- Information Analysis or GIS Applications for Emergency Management
- Practicum or research experience

WIRM Track:
- Global Markets: Sensitivity and Susceptibility to Weather and Climate
- Business Weather and Intelligence w/ Cross-sector case studies
- Environmental Risk Management w/ Case Studies
- Environmental Impacts Assessment

Admission Requirements

As an interdisciplinary program, MSISA is designed to attract students from a wide range of scientific, mathematics, and technology disciplines. Applicants must provide the following:
- A completed graduate application form and application fee
- Official transcript from all institutions of higher education attended. An applicant must verify completion of a baccalaureate degree from an accredited institution with a minimum of a 2.75/4.00 cumulative GPA
- Official GRE, GMAT, or MAT test scores taken within three years of the date of application
- Three professional letters of recommendation from academic institutions or professional settings
- Successful completion of a telephone interview with the MSISA program coordinator
- Current professional resume
- Other supplemental information that may be identified by the MSISA program coordinator to help determine an applicant’s likelihood of success in the program.

Visit us:
mville.us/msisa

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MSISA
“The Business of Science”