Master in Applied Mathematics - Minor in Faith-Based Data Analysis and Research

HBI University
Course Duration: 2 years
Credit Hours: 69 (including 15 credit hours for minor)

Program Description

The Master in Applied Mathematics at HBI University is designed for students who seek to develop advanced mathematical modeling, data analysis, and computational problem-solving skills. This program provides theoretical and practical training in statistics, optimization, machine learning, and mathematical physics, preparing graduates for careers in data science, finance, engineering, and research.

The Minor in Faith-Based Data Analysis and Research offers a specialized focus on using mathematical principles and statistical research for ethical decision-making and social impact within faith-based organizations and nonprofits. Students will explore data-driven approaches to community development, ethical AI applications, and research methods that align with faith and moral reasoning.

This 69-credit hour program includes 30 credit hours of foundational applied mathematics courses, 24 credit hours of core computational and statistical training, 15 credit hours in Faith-Based Data Analysis and Research, elective coursework, a supervised practicum, and a research-based master's thesis or capstone project.

Admissions Requirements

- Bachelor's degree in mathematics, statistics, engineering, computer science, or a related field
- Minimum GPA of 3.0
- Two letters of recommendation from faculty or professionals in mathematics or data analysis
- Statement of purpose outlining career goals in applied mathematics and faith-based research
- Portfolio submission (optional) demonstrating research or mathematical modeling experience
- Interview with faculty committee (if required)

Practicum Requirement

Students must complete a 300-hour supervised practicum in research institutions, nonprofit data analysis centers, government analytics departments, or faith-based organizations using statistical modeling and data science. Practicum placements include social justice data research groups, ethical AI policy organizations, and faith-driven analytics teams.

Master's Thesis / Capstone Project

Students must complete either a research-based master's thesis on mathematical modeling, data science ethics, or quantitative faith-based policy evaluation, or develop a capstone project implementing a faith-driven data analytics solution for community engagement or social impact initiatives.

Program Outcomes

Graduates of this program will be able to:

- Develop mathematical models for solving real-world challenges in business, technology, and social sciences.
- Utilize statistical and computational methods for faith-driven research and ethical AI applications.
- Analyze large-scale datasets to inform faith-based community development and policy-making.
- Apply mathematical reasoning to complex ethical and philosophical problems in faith and society.
- Lead interdisciplinary research teams using mathematical and statistical analysis for social impact.

Career Outcomes & Potential Salary

- Data Scientist (Faith-Based & Ethical AI Research) – $80,000 - $160,000
- Quantitative Analyst & Financial Risk Manager – $75,000 - $170,000
- Faith-Based Policy Researcher & Statistician – $65,000 - $145,000
- Ethical AI & Algorithmic Fairness Consultant – $90,000 - $180,000
- Director of Data Science for Nonprofits & Social Good Initiatives – $95,000 - $200,000

Advocacy and Professional Development

Students are encouraged to join organizations such as:

- American Mathematical Society (AMS)
- Society for Industrial and Applied Mathematics (SIAM)
- Christian Data Science & AI Ethics Network
- International Association for Faith-Based Research

Participation in data science conferences, ethical AI summits, and faith-driven analytics research initiatives is highly recommended.

Course Breakdown (Total: 69 Credit Hours)

A. Foundational Applied Mathematics Courses (30 Credit Hours)

Course Code	Course Name	Credit Hours
MATH-101	Advanced Calculus & Differential Equations	3
MATH-102	Linear Algebra & Matrix Theory	3
MATH-103	Probability & Stochastic Processes	3
MATH-104	Mathematical Optimization & Operations Research	3
MATH-105	Computational Methods & Scientific Computing	3
MATH-106	Mathematical Modeling in Social Sciences	3
MATH-107	Applied Statistics & Data Analysis	3
MATH-108	Research Methods in Mathematical Sciences	3
MATH-109	Theoretical & Applied Machine Learning	3
MATH-110	Ethics & Applications of Mathematics in Society	3

B. Core Computational and Statistical Training (24 Credit Hours)

Course Code	Course Name	Credit Hours
MATH-201	Data Science & Statistical Learning	3
MATH-202	Faith-Based Policy Modeling & Analytics	3
MATH-203	Numerical Analysis & Algorithmic Efficiency	3
MATH-204	Bayesian Statistics & Predictive Modeling	3
MATH-205	Big Data Analytics & Social Impact	3
MATH-206	Mathematical Theology & The Role of Numbers in Faith	3
MATH-207	Network Theory & Systems Analysis	3
MATH-208	Supervised Applied Mathematics Practicum	3

C. Faith-Based Data Analysis and Research Minor (15 Credit Hours)

Course Code	Course Name	Credit Hours
FBDR-301	Theological Perspectives on Data & Decision Science	3
FBDR-302	Ethics in AI, Machine Learning & Faith	3
FBDR-303	Community Analytics & Data-Driven Ministry	3
FBDR-304	Quantitative Approaches to Biblical Research	3
FBDR-305	Social Justice & Data Analysis in Faith-Based Organizations	3

D. Electives (9 Credit Hours)

Course Code	Course Name	Credit Hours
ELEC-2101	Deep Learning & Faith-Based Predictive Analytics	3
ELEC-2102	Computational Theology: Algorithms in Religious Studies	3
ELEC-2103	Data Visualization for Nonprofit Impact & Faith-Based Reports	3