MASTER OF SCIENCE IN APPLIED DATA ANALYTICS

The 🌐 icon appears in the title of traditional courses that are also available as a set of module courses.

Description and Outcomes

The Master of Science in Applied Data Analytics program was designed to provide analytics and other domain professionals with advanced-level knowledge in data analytics skills. In this program, you will apply current statistical theories, tools, and processes to curate, manipulate, and present various forms of data. You will master the ability to effectively process data that supports data-informed decisions. You will gain skills across the analytics life cycle, which include data discovery, data aggregation, planning of the data models, data model execution, communication of the results, and operationalization. Whether you intend to apply analytics skills to your current role, undertake a new specialized analytics position, or improve your decision-making by becoming a more analytics-informed leader, this program will help prepare you for those goals.

Concentrations

The program provides you with the option of selecting a concentration, in addition to the core curriculum requirements. You must have sufficient elective credits remaining to be eligible to add a concentration. The concentrations include AWS cloud technologies, blockchain technologies and apps, critical infrastructure security, cybersecurity, enterprise architecture systems, project management, and secure software development and quality assurance.

Program Length

The Master of Science in Applied Data Analytics program consists of a minimum of 52 quarter credit hours. Upon successful completion of the program, you will be awarded a master of science degree.

Program Outcomes

Discipline-Specific Outcomes

1. Methods and Tools: Evaluate appropriate methods and tools to be applied to analytics-based challenges and opportunities in a given setting.
2. Data Transformation Skills: Transform data sets to provide actionable insights using AI, Machine Learning, statistical and analytics software, e.g., Python, R, SQL, and Tableau.
3. Data Analytics Life Cycle: Master the steps in the analytics life cycle from data curation and manipulation through presentation of findings and operationalization.
4. Data Infrastructure Skills: Devise infrastructure systems to ensure the quality, security, and privacy of data.

Professional Competencies

In addition to the discipline-specific outcomes, professional competencies are integrated throughout your academic program. You can review the professional competencies associated with your academic program in the Professional Competencies (https://catalog.purdueglobal.edu/graduate/professional-competencies/) section of this Catalog.

Program Availability

For program availability, please refer to the U.S. State and Other Approvals (https://catalog.purdueglobal.edu/policy-information/university-information/accreditation-approvals-memberships/) section and Program Availability Information (https://www.purdueglobal.edu/catalog-program-availability-info.pdf).

Policies

Admissions Requirements

You must meet the below admissions requirements in addition to Purdue Global's general requirements (https://catalog.purdueglobal.edu/policy-information/admissions/).

Your prior bachelor's or master's degree must be in the field of computer science, data analytics, information technology, or a related field from an accredited institution. If not, you will be required to complete IN500 Survey of Modern Data Analytics and IN502 Python Statistical Tools to fulfill open elective requirements and will not be eligible to pursue a concentration as part of your program.

Secure Software Development and Quality Assurance Concentration

To enroll in the secure software development and quality assurance concentration, you must have a minimum of 2 years of programming or software development experience.

Certification, State Board, and National Board Exams

Certification and licensure boards have state-specific educational requirements for programs that lead to a license or certification that is a precondition for employment. Prospective and current students must review Purdue Global's State Licensure and Certifications (https://www.purdueglobal.edu/about/accreditation/licensure-state-authorizations/) site to view program and state-specific licensure information.

Licensure-track programs may limit enrollment to students in certain states; please see Purdue Global's Program Availability Information (https://www.purdueglobal.edu/catalog-program-availability-info.pdf) to determine enrollment eligibility.

You are responsible for understanding the requirements of optional certification exams. Such requirements may change during the course of your program. You are not automatically certified in any way upon program completion. Although certain programs are designed to prepare you to take various optional certification exams, Purdue Global cannot guarantee you will be eligible to take these exams or become certified. Your eligibility may depend on your work experience, completion of education and/or degree requirements, not having a criminal record, and meeting other certification requirements.

Degree Plan

The 🌐 icon appears in the title of traditional courses that are also available as a set of module courses. Module course availability may be limited to certain academic calendars. See Course Types (https://catalog.purdueglobal.edu/policy-information/university-information/approach-to-learning/) for information about module courses.

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Program Requirements

Code	Title	Credits
Core Requirements		
IN501	Fundamentals of Computer Programming	4
IN503	Introduction to Machine Learning	4
IN504	Advanced Applications of Python	4
IN506	Data Visualization and Knowledge Representation	4
IN507	Data Curation	4
IT527	🌐 Foundations in Data Analytics	4
MM555	Applied Statistics	4
IN599	Master's Capstone in Data Analytics	4
Total Core Requirements		32
Elective Requirements		
IT Electives (see below) [1]		20
Total IT Elective Requirements		20
TOTAL CREDITS		**52**

[1] If your prior degree is not in one of the fields required for the program, you must take IN500 Survey of Modern Data Analytics and IN502 Python Statistical Tools in your open elective requirements.

Concentration Requirements

Concentration courses are completed within the IT electives requirement of the degree plan.

Students in this program are not required to select a concentration.

AWS Cloud Technologies

Code	Title	Credits
IN515	AWS Academy Cloud Foundations	4
IN516	AWS Academy Cloud Architecting	4
IN517	AWS Academy Cloud Developing	4
IN518	AWS Academy Data Analytics Lab	4
IN519	AWS Academy Cloud Operations	4
TOTAL CREDITS		**20**

Blockchain Technologies and Apps

Code	Title	Credits
IN530	Introduction to Blockchain	4
IT530	🌐 Computer Networks	4
IN531	Blockchain Technologies and Applications	4
IN532	Blockchain Application Development (dApps)	4
IT543	🌐 Cryptography Concepts and Techniques	4
TOTAL CREDITS		**20**

Critical Infrastructure Security

Code	Title	Credits
IN554	Introduction to Critical Infrastructure Security	4
IN562	Cyber Threat Intelligence	4
IN563	Secure Supply Chain	4
IN564	Critical Infrastructure Sector Security	4
IN565	Critical Urban Infrastructure Security	4
TOTAL CREDITS		**20**

Cybersecurity

Code	Title	Credits
IT537	🌐 Introduction to Cybersecurity	4
IT542	🌐 Ethical Hacking and Network Defense	4
IT543	🌐 Cryptography Concepts and Techniques	4
IT550	🌐 Computer Forensics and Investigations	4
IT591	🌐 IT Security Auditing and Assessments	4
TOTAL CREDITS		**20**

Enterprise Architecture Systems

Code	Title	Credits
IT525	🌐 Database Design and Data Modeling	4
IT530	🌐 Computer Networks	4
IT537	🌐 Introduction to Cybersecurity	4
IN560	Open Source Operating System Administration	4
IN561	Cloud Computing	4
TOTAL CREDITS		**20**

Project Management

Code	Title	Credits
GM591	Strategic Project Selection and Initiation	4
GM592	Project Planning and the Project Plan	4
GM593	Project Execution With Monitoring and Control	4
GM594	Project Closing, Ethics, and Professional Responsibilities	4
TOTAL CREDITS		**16**

Secure Software Development and Quality Assurance

Code	Title	Credits
IN510	Secure Software Design	4
IN511	Secure Coding	4
IN512	Advanced Secure Coding	4
IN513	System and Security Testing	4
IN514	Secure Development and Operations - SecDevOps	4
TOTAL CREDITS		**20**