APPLIED DATA ANALYSIS USING SAS, GRADUATE CERTIFICATE

The Graduate Certificate in Applied Data Analysis Using SAS® is a multidisciplinary program that fosters knowledge and programmatic skills in data management and statistical analysis using SAS software. The certificate's curriculum is designed for students with diverse career goals, but at its core, it focuses on the job roles of SAS Programmer, Data Analyst, and Data Scientist. A person in one of these roles typically accesses and manages data, performs complex queries, and conducts and interprets statistical data analyses. Upon completion of the certificate program, students will not only earn the SAS-sponsored joint certificate from UWM, but they will also be prepared to take two globally recognized Programming Certification exams either through the SAS Institute or on-site at UWM:

- Base SAS Programming Certificate
- Advanced SAS Programming Certificate

Students are required to take a total of 18 credits toward the completion of the certificate. The mandatory core courses in programming and regression analysis make up 12 credits (6 credits fixed, 6 credits flexible) and an additional 6 credits are to be taken as electives. The program's curriculum stimulates interdisciplinary skill acquisition and research by requiring students to enroll in courses from at least two academic units. Students can choose courses from Business Administration, Business Management, Economics, Educational Psychology, Political Science, Public Health, Social Work, and Sociology to satisfy the certificate's credit requirements.

Post-baccalaureate students will be interested in this certificate program because it provides a valuable skill set without pursuing a full graduate degree. Graduate and post-graduate students will find this certificate program appealing as it complements many existing degree programs at UWM and should give graduates a competitive edge on the job market.

Admission Requirements

Application Deadlines
Application deadlines vary by program, please review the application deadline chart (http://uwm.edu/graduateschool/program-deadlines/) for specific programs. Other important dates and deadlines can be found by using the One Stop calendars (https://uwm.edu/onestop/dates-and-deadlines/).

Admission
Students must have earned a bachelor's degree with a minimum cumulative grade point average (GPA) of 2.75 to be able to apply for the certificate program. Students who already hold a graduate degree must have earned that degree with a minimum cumulative GPA of 3.00 when applying for the certificate program.

Application
- Students wishing to obtain this certificate must declare their intention by applying to the program office or director.
- All graduate certificate applicants—even those already enrolled in a UWM graduate program—must apply to the Graduate School through the Panthera Admission Application (https://graduateschool-apply.uwm.edu/).

- Graduate degree and previously admitted graduate non-degree students who decide to pursue a certificate program must submit the Panthera application before completing 6 credits in the certificate sequence.
- Applicants must possess a baccalaureate degree and have a minimum 2.75 cumulative undergraduate grade point average to be admitted in to a certificate program.

Credits and Courses

Code	Title	Credits
Required Core		
SOC WRK 718	Introduction to SAS Programming	3
SOC WRK 719	Advanced SAS Programming	3
Flexible Core		
Select two of the following:		6
BUS ADM 714	Multivariate Techniques in Management Research	
BUSMGMT 709	Predictive Analytics for Managers	
ECON 703	Econometrics	
ECON 710	Applied Econometrics	
ED PSY 724	Educational Statistical Methods II	
ED PSY 820	Multiple Regression	
PH 702	Introduction to Biostatistics	
PH 711	Intermediate Biostatistics	
POL SCI 701	Techniques of Political Science Research	
POL SCI 702	Advanced Techniques of Political Science Research	
SOC WRK 961	Introduction to Statistical Methods	
SOC WRK 962	Applied Multiple Regression Analysis	
Electives		
Select two of the following: [1]		6
BUS ADM 713	Business Forecasting Methods	
BUS ADM 762	Marketing Research	
ECON 709	Industrial Organization II	
ED PSY 825	Multivariate Methods	
ED PSY 826	Analysis of Cross-Classified Categorical Data	
ED PSY 832	Theory of Hierarchical Linear Modeling	
POL SCI 935	Seminar in Advanced Political Science Methodology	
SOCIOL 752	Fundamentals of Survey Methodology	
SOC WRK 791	Current Topics in Social Work:	
Total Credits		**18**

[1] Additional elective courses can be chosen with prior consent of the program committee.

Additional Requirements

Transfer Credit
No more than 20% of the required credits may be taken at an institution other than UWM. Transfer courses must have been completed within the last three years with grades of B or higher. Students must provide evidence that the transfer courses are substantially the same as the

core or elective courses. These courses are subject to Graduate School transfer policy and must be approved by the director of the certificate program.

Grade Point Average Requirement

A minimum cumulative 3.00 grade point average in certificate courses taken at UWM is required.

Articulation with Degree Programs

1. Credits and courses required for a certificate may double count toward meeting UWM graduate degree requirements subject to the following restrictions:
   - Degree programs must approve the courses from certificates that can double count toward the degree.
   - All credits taken in completion of certificate requirements may count towards a UWM graduate degree as long as they do not contribute more than 90% of the total credits needed to obtain the degree. (Note: Students in PhD programs must still complete the minimum residency requirements)
   - Certificate courses used toward meeting degree requirements must be completed within the time limit for transfer credit.
2. Courses completed for a degree may be counted toward a subsequent certificate, subject to all certificate policy requirements.
3. A course may count toward no more than one certificate and one degree.
4. Students may not earn a certificate subsequent to a concentration in the same area.

Time Limit

Certificate program time limits shall be established as follows:

- 18 or fewer credits/Three years from initial enrollment in the certificate sequence.
- 19 or more credits/Four years from initial enrollment in the certificate sequence.

For certificates that are designed as add-ons to degree programs and are awarded concurrent with the degree, the time limit shall be the same as that of the degree program.