

# FOUNDATIONS OF DATA SCIENCE GRADUATE CREDIT CERTIFICATE PROGRAM

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<b>Program Code</b>	MDAFDS
<b>Campus(es)</b>	Great Valley World Campus

The Graduate Certificate in Foundations of Data Analytics is a program for students who aim to pursue a career as a Data Scientist or as a Data Analyst and be responsible for creating solutions and strategies for complex problems, applying algorithmic methods to discover patterns in data, create comprehensive analytical solutions for business problems, analyze large amounts of data, create analytics solutions for business problems, and use of data to predict future trends and events. Students develop knowledge and skills relevant to machine learning, deep learning, statistical analysis and computing, and processing large amounts of data. A certificate will be awarded upon completion of the courses.

Courses taken in the certificate program may be applied toward a master's degree in Data Analytics, subject to restrictions outlined in GCAC-309 Transfer Credit (<https://gradschool.psu.edu/graduate-education-policies/gcac/gcac-300/gcac-309-transfer-credit/>). Certificate students who wish to have certificate courses applied towards a graduate degree must apply and be admitted to that degree program. Admission to the graduate degree program is a separate step and is not guaranteed.

**Effective Semester:** Spring 2024  
**Expiration Semester:** Spring 2029

## Admission Requirements

Applicants apply for admission to the program via the Graduate School application for admission (<https://gradschool.psu.edu/graduate-admissions/how-to-apply/>). Requirements listed here are in addition to Graduate Council policies listed under GCAC-300 Admissions Policies (<https://gradschool.psu.edu/graduate-education-policies/>). International applicants may be required to satisfy an English proficiency requirement; see GCAC-305 Admission Requirements for International Students (<https://gradschool.psu.edu/graduate-education-policies/gcac/gcac-300/gcac-305-admission-requirements-international-students/>) for more information.

1. The successful applicant is generally expected to have a minimum combined junior/senior grade-point average of 3.0 (B) on a 4.0 scale.
2. Courses taken in the certificate program may be applied toward Master of Software Engineering degree, subject to restrictions outlined in GCAC-309 Transfer Credit (<https://gradschool.psu.edu/graduate-education-policies/gcac/gcac-300/gcac-309-transfer-credit/>). Certificate students who wish to have certificate courses applied towards the Master of Software Engineering must apply and be admitted to that degree program. Admission to the Master of Software Engineering graduate degree program is a separate step and is not guaranteed.

## Certificate Requirements

Requirements listed here are in addition to requirements listed in Graduate Council policy GCAC-212 Postbaccalaureate Credit Certificate Programs (<https://gradschool.psu.edu/graduate-education-policies/gcac/gcac-200/gcac-212-postbaccalaureate-credit-certificate-programs/>).

Code	Title	Credits
<b>Required Courses</b>		
DAAN 545	Data Mining	3
IE 575	Foundations of Predictive Analytics	3
STAT 500	Applied Statistics	3
<b>Total Credits</b>		<b>9</b>

All courses must be completed with a minimum grade of C or better and an overall GPA of 3.0.

## Courses

Graduate courses carry numbers from 500 to 699 and 800 to 899. Advanced undergraduate courses numbered between 400 and 499 may be used to meet some graduate degree requirements when taken by graduate students. Courses below the 400 level may not. A graduate student may register for or audit these courses in order to make up deficiencies or to fill in gaps in previous education but not to meet requirements for an advanced degree.

## Learning Outcomes

1. **KNOW** - learning techniques to formulate and build better predictive analytical systems.
2. **APPLY/CREATE** - introduce the principles of analytical thinking for addressing different aspects of the society.
3. **APPLY/CREATE** - learning techniques to formulate and build better descriptive analytical systems.