Graduate Certificate in Data Science
Master of Professional Studies in Data Science and Analytics
University of Maryland Science Academy
Student Handbook

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Updated Fall 2021
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General University Information

Directory ID/Email Accounts
The Directory ID and Directory Password should be set up as soon as a student accepts admission into the Science Academy. The Directory ID and Password are used to login to most University systems. Complete instructions for setting up the Directory ID are listed on the Division of Information Technology’s website.

The Directory ID and Password also serve as a student’s UMD domain email account information. The UMD domain email account is the default account listed in a student’s record. Students choosing to use a different email address to receive UMD account messages must change their official email forwarding address.

Students who have any problems with their email account should contact the Division of Information Technology Help Desk at (301) 405-1500.

Identification Cards
The University of Maryland photo identification (ID) card is a general form of identification issued for the purpose of accessing programs and services. Authority to issue ID cards is delegated solely to the Office of the Registrar located on the first floor of the Mitchell Building on the College Park campus. To be eligible for an ID, a student must be registered for classes for the current or upcoming semester.

Students should carry their ID card at all times. Lost or stolen ID cards should be deactivated immediately to prevent use by unauthorized individuals. Note: A deactivated ID card cannot be reactivated. Lost or stolen ID cards may be replaced for a charge of $20. Complete details about University of Maryland ID cards can be found here on the Office of the Registrar’s website.

Immunization
All students who take courses on a UMD campus must show proof of immunization. Proof of immunization forms are located on the University Health Center website.

Tuition and Billing
Students in Science Academy programs pay a special tuition rate which does not differ between residents and non-residents of Maryland. Find up to date tuition and fee information here. Billing questions should be directed to the Office of Extended Studies (oes@umd.edu).
Financial Aid
The Office of Financial Aid is responsible for processing and viewing all financial aid applications and awards.

Residency Classification Office
Newly admitted graduate students seeking a review of their initial residency designation should contact Residency Reclassification Services at (301) 314-9596 or email resclass@umd.edu. For information about reclassification for in-state tuition or admission, please see the Policy on Student Classification for Admission and Tuition Purposes.

Change of Address
A change of address can be completed through Testudo. Most documents are emailed, but some documents, e.g. the diploma, are mailed, so it is essential to keep your mailing addresses up to date.

Change of Name
Change of name forms must be filed with the Office of the Registrar.

Parking
Information regarding student parking can be found on the Department of Transportation Services website. Students may register for parking online or by visiting Transportation Services at Bldg. #202 Regents Drive Garage on the College Park campus.

IT Resources for Students
The University of Maryland’s Division of Information Technology provides a wealth of IT resources and downloadable software for UMD students.

Accessibility & Disability Service
The Accessibility & Disability Service (ADS) office is located in Room 1101 of the Shoemaker Building ((301) 314-7682, voice/TTY). This office assists with arranging for interpreters for hearing-impaired students, providing readers for visually-impaired students, and providing writers for students with physical impairments. They provide wheelchair-bound students with a listing of all the access points on the College Park campus including locations of parking spaces, ramps, restrooms, etc.

To receive accommodations, students must contact ADS and set up an in-person registration interview. After this interview, ADS can then provide students with an “accommodation letter” which students must give instructors at the beginning of each semester.
Counseling Center
The Counseling Center is the primary campus provider of free and confidential therapy to help UMD students to help manage personal, social, and academic challenges. Staffed primarily by licensed psychologists, the Counseling Service also conducts campus outreach presentations, provides emergency response services, and assists with referrals to off-campus mental health providers. To schedule an initial appointment, also called an intake appointment, call (301) 314-7651 or stop by the Counseling Center reception desk on the main level of Shoemaker Building. If you are experiencing an urgent crisis, you may go to the Counseling Center front desk and request to be seen for a same-day emergency visit.

International Student Services
The University of Maryland provides international students with extensive support services upon entering a degree program. Please note the following information applies to students enrolled in the MPDA program. The Graduate Certificate program does not sponsor student visas. The International Student and Scholar Services (ISSS) assists international students as they transition to the American college experience. Their office is located at 1126 H. J. Patterson Hall.

International students are required to confirm their biographical and academic information each semester by the end of schedule adjustment as well as each time their information changes (e.g. in case of changes of student address, new contact information details should be reported within 10 days). More information can be found on the Maintaining Status page of the ISSS website.

International students are eligible for on-campus employment. In addition to on-campus employment, international students may be eligible to participate in the Curricular Practical Training as well as Optional Practical Training. This includes off-campus work, internship, cooperative education, or any other type of required internship or practicum offered by sponsoring employers through cooperative agreements with the school. Visit the ISSS website to determine if you are eligible for the CPT and/or OPT options and to find more information on CPT/OPT application processes.
University Policies for Graduate Students

Deadline for Program Completion
The Graduate Certificate in Data Science and the MPDA program must be completed within 5 years from the first semester of initial registration. The program can be completed on a full-time or part-time basis.

The Graduate School uses a unit system to determine full-time or part-time status. More information can be found here.

Continuous Registration Policy
All graduate students must register for courses and pay associated tuition and fees each fall and spring semester until the degree is awarded.

A student who fails to register and has not requested and been granted either a waiver of registration or a leave of absence is eligible for dismissal by the Graduate School.

A student who is dismissed due to non-registration may appeal the dismissal during the period following the end of the semester of non-registration. Instructions on the appeal process will be included in the dismissal letter from the Graduate School. If the student does not appeal or if the appeal is denied, and the student wishes to continue in the Graduate School, the student must reapply for admission.

Program Completion Extensions
Degree requirements must be completed within five calendar years from initial enrollment in the program. A student who has failed to complete all requirements by the fifth year may submit a Request for a Time Extension petition to the Graduate School for a one-year extension. The Graduate School will confirm this decision in writing to the student.

In the petition to the Graduate School, the student must be specific about how and when they expect to complete the remaining courses in the program plan.

Request for Waiver of Continuous Registration
Graduate students who will be away from the University may request a waiver of continuous registration for up to one year. Waivers of registration will be granted only if the student is making satisfactory progress toward the degree at the time of the request and can complete the degree requirements within the required total time limits. A waiver of continuous registration cannot be used to justify a total time-to-completion extension.

Permission for non-registration is obtained from the Science Academy Director and academic advisor, and a waiver must be filed with the Graduate School. Students who are not registered may not use any University facilities, including the library, and should expect to consult with
members of the Graduate Faculty and Staff seldom or not at all. A request for a waiver of registration should be filed at least 30 days before the beginning of the semester for which the waiver is sought.

**Leave of Absence Policy**

In recognition of the effects that childbirth, adoption, illness, caring for incapacitated dependents (such as children, ill or injured partners, or aging parents), or military orders have on the time and energy that graduate students can devote to their educational programs, the University allows students to apply for a leave of absence up to two semesters in length. During a leave of absence, a student is not required to make academic progress toward the completion of their degree. The time taken on an approved leave of absence is not included in the total time-to-completion for a degree and advancement to candidacy.

To request a leave of absence, a student must:

- Consult their advisor and receive written approval on the Request for Leave of Absence form.

- Submit the completed form to their advisor for approval and the advisor will submit it to the Graduate School.

- NOTE: While a doctor’s note is not formally required, the Graduate School will rarely support a leave of absence in the case of illness without a doctor’s note. This note can be vague (simply stating that you are under their care), but we strongly encourage this submission.

Application for a leave of absence may be made on a one- or two-semester basis. A leave of absence will not ordinarily be granted for more than one academic year. Leaves requested for a longer period are approved only in exceptional circumstances. An approved leave for one semester may be extended to two semesters if the student requests an extension prior to the expiration of the approved one-semester leave of absence. When returning from a leave of absence, the student must submit a Return from Leave of Absence form to the Graduate School in order to register.

**What is the difference between a Waiver of Continuous Registration and a Leave of Absence?**

Both exempt a student from registering for either a semester or a year.

A Waiver of Continuous Registration does not require a reason and does not stop the student’s time-to-degree clock.

A Leave of Absence can only be granted for cases of physical/mental health illness, childbirth/adoption, dependent care, military service, and financial hardship. A Supplemental Information Form must be submitted along with the Leave of Absence form if it is for a physical/mental health condition or military orders. A Leave of Absence will add the time missed to the end of the student’s time-to-degree termination date.
Parental Accommodation Policy

The Parental Accommodation Policy is for registered students who would like to request extra time to complete up to 6 weeks’ worth of work. This enables students to maintain full-time enrollment status, rather than take a leave of absence.

Resigning from the University

Students who wish to resign from the University must notify both their department and the Graduate School. A written letter of resignation must include the student’s UID.

If a student is registered for a single class at the time of resignation they must send a written request to the Office of Extended Studies to drop the course. If a student is registered for more than one course at the time of resignation, they may drop all but one course.

Readmission

After an absence of one year or more, students must reapply to the University. If readmitted, students must follow any new curriculum requirements.
Academic Advising

Academic advising is offered through the Science Academy. The advisor is the best resource for navigating Science Academy degree programs and all University and Graduate School. The advisor can help with course planning, filling out forms and paperwork, and navigating other University offices/services such as the Graduate School, the Office of the Registrar, etc. The advisor should be the first point of contact and they will refer students to a staff or faculty member as appropriate.

A discussion with an advisor is encouraged for new students. Additional meetings are recommended before registering and at the beginning of the academic year in which graduation is expected. Students experiencing academic difficulty are expected to meet with an advisor to discuss the details of their plans for academic improvement.

Students are expected to actively participate in planning their academic program of study. While it is the responsibility of the Science Academy and the advisor to provide accurate and timely assistance in choosing courses, it is ultimately the responsibility of each student to understand and monitor their academic progress and check the academic calendars for deadlines.

U.achieve

U.achieve is a degree auditing system that allows students to track their progress towards degree completion. Instructions for using U.achieve can be viewed here.
Graduate Certificate Requirements

The Graduate Certificate in Data Science provides a broad introduction to the data science field— including how to extract and clean data, store and manage large volumes of data, and analyze such data and extract insights from it. The program involves interdisciplinary activities that create data-centered products, applications or programs that help to answer scientific, socio-political or business questions. It requires the ability to integrate data, operate on data at scale, and analyze data to make predictions, find patterns and form and test hypotheses. Practices from a variety of fields are incorporated, including in computer science disciplines such as Machine Learning, Statistics, Databases, and Visualization.

This is a 12-credit graduate program consisting of four courses. The plans of study for Fall 2021 and Spring 2022 are below.

Sample Plan of Study (Fall 2021)

**DATA601: Probability and Statistics, 3 credits.** The course aims to provide a solid understanding of the fundamental concepts of probability theory and statistics. The course covers the basic probabilistic concepts such as probability space, random variables and vectors, expectation, covariance, correlation, probability distribution functions, etc. Important classes of discrete and continuous random variables, their inter-relation, and relevance to applications are discussed. Conditional probabilities, the Bayes formula, and properties of jointly distributed random variables are covered. Limit theorems, which investigate the behavior of a sum of a large number of random variables, are discussed. The main concepts of random processes are then introduced. The latter part of the course concerns the basic problems of mathematical statistics, in particular, point and interval estimation and hypothesis testing.

**DATA602: Principles of Data Science, 3 credits.** An introduction to the data science pipeline, i.e., the end-to-end process of going from unstructured, messy data to knowledge and actionable insights. Provides a broad overview of what data science means and systems and tools commonly used for data science and illustrates the principles of data science through several case studies.

**DATA604: Data Representation and Modeling, 3 credits.** An introductory course connecting students to the most recent developments in the field of data science. It covers several fundamental mathematical concepts which form the foundations of Big Data theory. Among the topics included are Principal Component Analysis, metric learning and nearest neighbor search, elementary spectral graph theory, minimum and maximum graph cuts, graph partitions, Laplacian Eigenmaps, manifold learning and dimension reduction concepts, clustering and classification techniques such as k-means, kernel methods, Mercer’s theorem, and Support Vector Machines. Some relevant concepts from geometry and topology will also be covered. Expected learning outcomes include that students should be able to recognize, articulate,
describe, differentiate, compare and apply core concepts of mathematical data science, and they should be able to use these concepts to interpret and analyze the provided curated data sets, while generating analytical results with justifiable logical conclusions. Moreover, they should be able to select, justify, design, revise and apply the learned algorithms to obtain the desired analytics outcomes. They also should be able to review, evaluate and assess other similar algorithms in a critical and constructive manner. Prerequisite: DATA601.

**DATA605: Big Data Systems, 3 credits.** An overview of data management systems for performing data science on large volumes of data, including relational databases, and NoSQL systems. The topics covered include different types of data management systems, their pros and cons, how and when to use those systems, and best practices for data modeling. Prerequisite: DATA602.

**Sample plan of study (effective Spring 2022)**

**DATA601: Probability and Statistics, 3 credits.** The course aims to provide a solid understanding of the fundamental concepts of probability theory and statistics. The course covers the basic probabilistic concepts such as probability space, random variables and vectors, expectation, covariance, correlation, probability distribution functions, etc. Important classes of discrete and continuous random variables, their inter-relation, and relevance to applications are discussed. Conditional probabilities, the Bayes formula, and properties of jointly distributed random variables are covered. Limit theorems, which investigate the behavior of a sum of a large number of random variables, are discussed. The main concepts of random processes are then introduced. The latter part of the course concerns the basic problems of mathematical statistics, in particular, point and interval estimation and hypothesis testing.

**DATA602: Principles of Data Science, 3 credits.** An introduction to the data science pipeline, i.e., the end-to-end process of going from unstructured, messy data to knowledge and actionable insights. Provides a broad overview of what data science means and systems and tools commonly used for data science and illustrates the principles of data science through several case studies.

**DATA604: Data Representation and Modeling, 3 credits.** An introductory course connecting students to the most recent developments in the field of data science. It covers several fundamental mathematical concepts which form the foundations of Big Data theory. Among the topics included are Principal Component Analysis, metric learning and nearest neighbor search, elementary spectral graph theory, minimum and maximum graph cuts, graph partitions, Laplacian Eigenmaps, manifold learning and dimension reduction concepts, clustering and classification techniques such as k-means, kernel methods, Mercer’s theorem, and Support Vector Machines. Some relevant concepts from geometry and topology will also be covered. Expected learning outcomes include that students should be able to recognize, articulate, describe, differentiate, compare and apply core concepts of mathematical data science, and they should be able to use these concepts to interpret and analyze the provided curated data sets, while generating analytical results with justifiable logical conclusions. Moreover, they should be able to select, justify, design, revise and apply the learned algorithms to obtain the
desired analytics outcomes. They also should be able to review, evaluate and assess other similar algorithms in a critical and constructive manner. Prerequisite: DATA601.

Elective courses (Choose 1 course)

**DATA603: Principles of Machine Learning, 3 credits.** A broad introduction to machine learning and statistical pattern recognition. Topics include: Supervised learning: Bayes decision theory, discriminant functions, maximum likelihood estimation, nearest neighbor rule, linear discriminant analysis, support vector machines, neural networks, deep learning networks. Unsupervised learning: clustering, dimensionality reduction, PCA, auto-encoders. The course will also discuss recent applications of machine learning, such as computer vision, data mining, autonomous navigation, and speech recognition.

**DATA605: Big Data Systems, 3 credits.** An overview of data management systems for performing data science on large volumes of data, including relational databases, and NoSQL systems. The topics covered include different types of data management systems, their pros and cons, how and when to use those systems, and best practices for data modeling. Prerequisite: DATA602.

**DATA606: Algorithms for Data Science, 3 credits.** Provides an in-depth understanding of some of the key data structures and algorithms essential for advanced data science. Topics include random sampling, graph algorithms, network science, data streams, and optimization. Prerequisite: DATA602.

**Degree Specific Requirements**

The MPS in Data Science and Analytics is a 30-credit, 10-course, non-thesis graduate program which culminates with research methods and study design. The program’s curriculum focuses on five thematic competencies as follows:

Statistics - Standard statistics subsumed by general linear models (e.g., linear regression, ANOVA, t-tests, f-tests, and multivariate extensions); discrimination, classification, ordination (e.g., PCA, MDS), linear discriminant analysis, factor analysis, and related methods; permutation and randomization methods; Bayesian estimation.

Machine learning - Methods that are not subsumed by general linear models or other traditional distributional model-based statistics. Includes such things as: support vector machines; artificial neural networks and their derivatives and extensions; decision tree induction; random forests; other ensemble methods; affinity analysis; association rule learning.

Computing - Topics include those core elements most necessary for professional practice in data science and analytics: databases; programming using scripting/interpretative languages (e.g., shell, Python, Perl).
Communication - Methods and practice of communicating data science and analytics concepts, methods and results in written, verbal, and electronic media.

Research/professional practice - Actual design, execution, and communication of a data science and analytics project.

Students in the program must complete 30 credit hours of coursework (eight core classes and two electives) within five calendar years from their first registered semester. All students must maintain a minimum cumulative 3.0 GPA and must earn a C- or better in all required and elective courses.

Curriculum Core Requirements

The MPS in Data Science and Analytics degree consists of eight required courses.

**DATA601: Probability and Statistics, 3 credits.** The course aims to provide a solid understanding of the fundamental concepts of probability theory and statistics. The course covers the basic probabilistic concepts such as probability space, random variables and vectors, expectation, covariance, correlation, probability distribution functions, etc. Important classes of discrete and continuous random variables, their inter-relation, and relevance to applications are discussed. Conditional probabilities, the Bayes formula, and properties of jointly distributed random variables are covered. Limit theorems, which investigate the behavior of a sum of a large number of random variables, are discussed. The main concepts of random processes are then introduced. The latter part of the course concerns the basic problems of mathematical statistics, in particular, point and interval estimation and hypothesis testing.

**DATA602: Principles of Data Science, 3 credits.** An introduction to the data science pipeline, i.e., the end-to-end process of going from unstructured, messy data to knowledge and actionable insights. Provides a broad overview of what data science means and systems and tools commonly used for data science and illustrates the principles of data science through several case studies.

**DATA603: Principles of Machine Learning, 3 credits.** A broad introduction to machine learning and statistical pattern recognition. Topics include: Supervised learning: Bayes decision theory, discriminant functions, maximum likelihood estimation, nearest neighbor rule, linear discriminant analysis, support vector machines, neural networks, deep learning networks. Unsupervised learning: clustering, dimensionality reduction, PCA, auto-encoders. The course will also discuss recent applications of machine learning, such as computer vision, data mining, autonomous navigation, and speech recognition.

**DATA604: Data Representation and Modeling, 3 credits.** An introductory course connecting students to the most recent developments in the field of data science. It covers several fundamental mathematical concepts which form the foundations of Big Data theory. Among the topics included are Principal Component Analysis, metric learning and nearest neighbor search, elementary spectral graph theory, minimum and maximum graph cuts, graph partitions,
Laplacian Eigenmaps, manifold learning and dimension reduction concepts, clustering and classification techniques such as k-means, kernel methods, Mercer’s theorem, and Support Vector Machines. Some relevant concepts from geometry and topology will be also covered. Expected learning outcomes include that students should be able to recognize, articulate, describe, differentiate, compare and apply core concepts of mathematical data science, and they should be able to use these concepts to interpret and analyze the provided curated data sets, while generating analytical results with justifiable logical conclusions. Moreover, they should be able to select, justify, design, revise and apply the learned algorithms to obtain the desired analytics outcomes. They also should be able to review, evaluate and assess other similar algorithms in a critical and constructive manner. Prerequisite: DATA601.

DATA605: Big Data Systems, 3 credits. An overview of data management systems for performing data science on large volumes of data, including relational databases, and NoSQL systems. The topics covered include different types of data management systems, their pros and cons, how and when to use those systems, and best practices for data modeling. Prerequisite: DATA602.

DATA606: Algorithms for Data Science, 3 credits. Provides an in-depth understanding of some of the key data structures and algorithms essential for advanced data science. Topics include random sampling, graph algorithms, network science, data streams, and optimization. Prerequisite: DATA602.

DATA607: Communication in Data Science and Analytics, 3 credits. Expected learning outcomes include that, in the context of data science and analytics, students should be able to: summarize, report, organize prose, statistics, graphics, and presentations; explain uncertainty, sensitivity/robustness, limitations; describe model generation and representation; discuss interpretations and implications; communicate effectively to diverse audiences within a business organization, and possibly other outcomes. Prerequisite: DATA602.

DATA698: Research Methods and Study Design, 3 credits. Expected learning outcomes include that students should be able to: compose problem specifications relevant to work environment, create project descriptions, determine data and resource requirements, propose appropriate methods analytical methods, construct research plans; determine reporting requirements appropriate to various employment situations, identify intended audiences and uses, propose supporting documentation, and possibly other outcomes. Includes ethical and legal considerations in data science. Intended to be the penultimate course, though the course may be taken concurrently with other courses. Prerequisite: minimum of 12 credits completed in MPS program.

Electives
Students must take two electives within the MPDA program. Electives are offered each semester and give students the opportunity to learn about a subject in more detail. Examples of electives can be found here.
Course Grading

Passing Grades
Students must receive a grade of C- or better in all core and elective courses. If a student earns a C- or lower in a core course, they must repeat the course. If a course is repeated, the higher grade will replace lower grade in the cumulative GPA.

Failing Grades
Students receive a grade of F for failing work. F grades are used in calculating grade point averages. If a course is repeated, the higher grade will replace the lower grade in the cumulative GPA.

Incomplete Grades
An Incomplete (“I”) is a mark that an instructor may award to a student whose work in a course has been qualitatively satisfactory, but who is unable to complete some portion of the work required due to illness or other circumstance beyond the student’s control. Assigning an I is at the instructor's discretion, taking into account the work remaining to be completed.

The student must initiate the request for an I before the end of the semester. If the instructor agrees that an I is appropriate under the circumstances, the student and instructor will fill out an Incomplete Contract. The Incomplete Contract will identify the work that the student must complete and the date by which all work must be submitted (which should be no more than twelve months after the end of the semester).

The student must submit a signed Incomplete Contract to their advisor. Upon the student’s successful completion of the agreed upon work, the instructor will submit the letter grade to the Science Academy and the Office of the Registrar. If a student fails to complete the coursework within the specified time frame, the “default” grade (as indicated on the Incomplete Contract) will be posted to the transcript.

Probation and Dismissal
All students must maintain an overall grade point average of 3.0. A student with a GPA lower than 3.0 is put on academic probation by the Graduate School. The student has one semester to raise the GPA or face dismissal.
Course Schedules & Registration

Schedule of Course Offerings
Courses may be offered during only one semester (e.g. fall, spring, or summer) per year. Students should consult with the University’s Schedule of Classes, and/or their advisor for additional information.

Registration Dates
Advising will notify students of registration dates when they are released from the Office of the Registrar each semester. Students are strongly encouraged to register on or close to the first available date/time of registration for best schedule planning.

How to Register
Students register for courses each semester using Testudo, UMD’s online information and registration system. For more help with how to register students should consult the The Registration Guide.

Registration in Semester of Graduation
The University requires that students be registered during the semester they plan to graduate.

Dropping Courses and Course Refunds
If a student no longer wishes to be registered for a course, they can drop the class via Testudo within the deadlines set by the Office of the Registrar’s Academic Deadlines. Students are responsible for adding/dropping classes by the posted deadline. Students who do not drop a course by the posted deadlines will be financially responsible for all or a portion of the course. Students may add and drop courses before the first day of classes without penalty and receive a full refund. Penalties begin on the first day of classes and the refund amount is reduced as time passes. Not attending class or notifying an advisor is not an official drop or withdrawal from a course. Students must officially drop through Testudo. Advisors and professors are not permitted to drop students from classes. All schedule adjustment policies can be found on the Office of the Registrar’s website. Appeals should be directed to the Office of Extended Studies.

Adding Courses after the Deadline
Students may add a course to their schedule via Testudo, however this can only be done within the first two weeks of class. Under no circumstances will students be allowed to add courses after the published deadline. Please check the Academic Deadline Calendar for deadlines.
Transfer Credits & Courses Outside the Science Academy

Transfer Credits Earned Prior to Enrollment

Please note this information applies only to the MPS in Data Science and Analytics. The Graduate Certificate in Data Science does not accept transfer credits. All 12 credits must be earned at UMD.

- Students can transfer up to 6 credits earned at an accredited institution prior to enrollment at the Science Academy with faculty director approval.
- Students can transfer up to 9 credits earned as a Non-Degree Seeking Student (formerly known as “Advanced Special Student”) at the University of Maryland with faculty director approval. Students who complete the graduate certificate in Data Science and then begin the MPS in Data Science and Analytics can apply all of the credits earned in the certificate to the MPS.

Course credits must meet the following requirements in order to be considered for transfer:

- Have been awarded a grade of B- or better.
- Have been graduate-level.
- Have been taken at a regionally accredited U.S. institution.
- Have NOT been applied to a previous degree.
- CANNOT duplicate the content of an Science Academy course in which the student is currently enrolled or has completed.
- CANNOT be more than five years old at the time of the request (e.g., Fall 2018 would be the last semester in which a course from Fall 2013 would be considered eligible).

Grades from transfer courses taken outside of the University of Maryland are not included in the student's grade point average. It is recommended that students request the acceptance of transfer credits during their first semester. Students should consult the Forms for Graduate Students webpage for transfer documentation and instructions.

Credits Earned as a Non-Degree Seeking Student

If you started your academic career as a Non-Degree Seeking Student (formerly known as Advanced Special Student) and have since been formally admitted to the Science Academy, the credits do not automatically roll over to count toward your graduate degree. Students must complete the Inclusion of Credit form. A signed Inclusion of Credit form must be submitted to the Student Services Office for processing and submission to the Graduate School. Students may transfer up to 9 credits.
Transfer Credits from other UMD Departments

Students may take graduate level courses relevant to their degree from other departments at the University of Maryland, College Park. Graduate credit is given for 400, 600, 700, and 800 level courses. Graduate credit is not given for 500 level courses. In order to take a course in another UMD Department, the student must:

- Consult advisor and receive written approval.
- Contact host department and obtain their approval to take the course. If approval is given, a student may register for the course.

Transfer Credits from other University System of Maryland (USM) Institutions

Students may take courses on any other campus of the University System of Maryland as part of the Inter-Institutional Enrollment Program. Such credits are considered resident credits (not transfer credits). Students must complete the Application for Inter-Institutional Enrollment, prior to registration.

Transfer Credits from the Consortium of Universities of the Washington Metropolitan Area

The University of Maryland is a member of the Consortium of Universities of the Washington Metropolitan Area. Students enrolled in these institutions are able to attend certain classes at other member institutions and have the credits considered "residence" credits at their home institutions. A student may not take a course through the Consortium if that course is part of the curriculum of the student's home institution (this is a policy of the Consortium), i.e. the course cannot be something that has been taught, will be taught, or a similar course listed in the Graduate Catalog even if it may not be offered for an extended period of time. This opportunity applies to degree-seeking Science Academy students only. Non-Degree Seeking Students are NOT eligible. Students should consult the Office of the Registrar’s website for complete information on taking courses through the Consortium. NOTE: Other Consortium schools often have varying semester schedules that do not necessarily coincide with the UMD schedule.

Transferring Programs within the Science Academy

Students have five years to complete a master’s degree. Transferring programs will potentially increase the time to complete the degree requirements. Students enrolled in one of the Science Academy programs (known as the Host Program) may decide to transfer to another academic program (known as the Receiving program) within the Science Academy. It is recommended that students initiate their program transfer process by the end of the first academic semester in the program (for international students) or after they complete the first 9 credits in the program (for domestic students). If students initiate the process after the aforementioned timeline, this may extend their stay in the Science Academy. Students wishing to transfer to another program within the Science Academy must consult with their academic advisor to initiate the process.
Graduation

Applying for Graduation
All candidates for graduation must submit a Graduation Application. The absolute deadline for submission is the 10th class day of the final semester, and students are encouraged to apply during the first week of class in their final semester. The deadline date is posted on the Graduate School website and is widely publicized by the Science Academy. The form must be submitted through Testudo, where students can also view their application status. Failure to complete the above step will result in a student not being cleared to graduate. Students who miss the application deadline must file a petition with the Graduate School and their academic advisor. If the petition is not approved, the student must apply for graduation during the next semester, register for a minimum of one-credit course in the following semester, and pay all appropriate tuition and fees for that course in the subsequent term.

Approved Program Forms & u.achieve Audits
An Approved Program Form is a graduation clearance form sent to the Office of the Registrar for any student who applied for graduation. Beyond submitting their application for graduation in Testudo (see above section), students in their final semester do not need to complete any additional paperwork. The university requires both an Approved Program Form and a u.achieve degree audit form, both of which are completed and submitted by your academic advisor in the Office of Graduate Student Services.

Ceremonies
The University of Maryland hosts University-wide commencement ceremonies in December and May. All students who are graduating are invited to participate in the University-wide ceremony during their graduating semester. A limited number of tickets are given for the University-wide ceremonies. The College of Computer Science, Mathematical, and Natural Sciences hosts its own formal graduation ceremony each December and May. Students are only eligible to participate in the commencement ceremony at the end of the semester in which they complete their degree requirements. Students who complete their degree requirements in a Summer term are not eligible to participate in the Spring commencement ceremony prior, and are instead invited to participate in the Fall commencement ceremony immediately after the Summer in which they complete their degree requirements.

Diplomas
Diplomas are mailed to students approximately 2 months after graduation. Graduates can review their diploma status by visiting Testudo. Diploma Services should be contacted for all diploma related questions.
LinkedIn

Students are encouraged to join the Science Academy LinkedIn page which can be found here. Students are also encouraged to list their education on their LinkedIn profiles. The certificate can be listed as Graduate Certificate in Data Science and the degree can be listed as Master of Professional Studies in Data Science and Analytics.
Academic Integrity

The University of Maryland is an academic community. Its fundamental purpose is the pursuit of knowledge. Like all other communities, the University can only function properly if its members adhere to clearly established goals and values. Essential to the fundamental purpose of the University is the commitment to the principles of truth and academic honesty. Accordingly, the Code of Academic Integrity is designed to ensure that the principle of academic honesty is upheld. While all members of the University share this responsibility, the Code of Academic Integrity is designed so that special responsibility for upholding the principle of academic honesty lies with the students.

Academic dishonesty is a corrosive force in the academic life of any university. It jeopardizes the quality of education and depreciates the genuine achievements of others. Academic dishonesty committed by a student includes any of the following acts.

CHEATING - intentionally using or attempting to use unauthorized materials, information, or study aids in any academic exercise. 1. The use of books, notes, calculators, conversations with others, etc., is prohibited unless specifically authorized by the instructor. 2. Students must not allow others to conduct research or prepare any work for them without advance authorization from the instructor. This includes the services of commercial term paper companies. 3. Substantial portions of the same academic work may not be submitted for credit or honors more than once without authorization.

FABRICATION - intentional and unauthorized falsification or invention of any information or citation in an academic exercise. ● Invented information may not be used in any laboratory experiment or other academic exercise without notice to and authorization from the instructor. ● A student should acknowledge reliance upon the actual source from which cited information was obtained. ● Students are prohibited from attempting to alter and resubmit returned academic work without notice to the instructor.

FACILITATING ACADEMIC DISHONESTY - intentionally or knowingly helping or attempting to help another to violate any provision of this Code.

PLAGIARISM - intentionally or knowingly representing the words or ideas of another as one's own in any academic exercise. ● Direct Quotation: Every direct quotation must be identified by quotation marks or appropriate indentation and must be promptly cited. ● Paraphrase: Prompt acknowledgment is required when material from another source is paraphrased or summarized, in whole or in part, in your own words. ● Borrowed Facts or Information: Information obtained in one's reading or research that is not common knowledge among students in the course must be acknowledged. Materials that contribute only to one's general understanding of the subject may be acknowledged in the bibliography and need not be immediately cited.
Academic dishonesty is a serious offense that may result in suspension or expulsion from the University. The normal sanction for academic dishonesty is a grade of "XF," denoting "failure due to academic dishonesty." The XF grade will normally be recorded on the transcripts of students found responsible for acts of academic dishonesty, in addition to any other action taken (e.g., suspension or expulsion). A 40-student Honor Council has the responsibility to investigate allegations of academic dishonesty and to convene Honor Boards to adjudicate charges. In specified circumstances, the Student Honor Council will accept petitions to remove the XF grade from a transcript and replace it with the grade of "F."

The Code of Academic Integrity is reprinted in full on the Office of Student Conduct's site. For further information, contact the Office of Student Conduct.

**Alleged Arbitrary and Capricious Grading Procedures**

To view the complete university policy on Review of Alleged Arbitrary and Capricious Grading, please visit the Office of the President’s website.