GEM

Master of Professional Studies in Game, Entertainment, and Media Analytics

at the University of Maryland College of Information Studies (UMD iSchool)

The Master of Professional Studies in Game, Entertainment, and Media Analytics (GEM Analytics) degree trains students to apply analytics and data science methods in support of video games, streaming video, Over-The-Top (OTT) media, mobile games, eSports, traditional media, professional sports, and other current internet-based entertainment products. The GEM Analytics program weaves sociotechnical facets of how analytics informs entertainment production and consumption into the curriculum, enabling students to influence consideration of data privacy, ethical design, and national security concerns in product and service design and deployment.

This fully online graduate degree addresses the unique need for highly-trained information professionals and data scientists who understand the complexities that the entertainment industries face today. Our interdisciplinary curriculum draws on skills and concepts from information management, advanced analytics techniques, information systems, information science, computer science and data visualization. We blend theory, practical skills, and hands-on learning, preparing our graduates to apply their skills directly in their careers. iSchool students work on projects with the College's 400+ top industry partners and have opportunities for hands-on learning at the college's world-renowned research centers and labs.

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ischool.umd.edu

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CAREER PATHS

The GEM Analytics degree equips students with the technical and analytical skills to lead entertainment and game organizations in data-driven decision making, technology development, and information governance and security. As a result of the program's focused curriculum, practical skills training, and hands-on learning opportunities, our graduates are prepared to apply their skills directly and immediately in their careers.

The GEM Analytics program is actively engaging information management and data science professionals in the entertainment, game, and media industries to establish a network that will guide the program and provide opportunities for capstone projects, internships, and longer term employment.

Anticipated career paths for GEM Analytics graduates:

- **Data scientist**
- **Game data analyst**
- **Game content analyst**
- **Game insights analyst**
- **Machine learning engineer**
- **Analytics engineer**
- **Data engineer**
- **Senior analyst, media analytics**
- **Manager, media analytics reporting & insights**
- **Director of business intelligence & analytics**
- **Engagement & retention analyst**
- **Director of product analytics**
- **Principal data scientist**

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CURRICULUM

The GEM Analytics degree requires you to complete 30 credit hours of academic work with at least a B average (3.0 GPA). This includes ten (10) three-credit courses. Full-time students complete the program in one year. Part-time students are able to take up to five years to complete the program.

PROGRAM STRUCTURE

Fall	Winter	Spring	Summer (Full Summer)	Summer I	Summer II
INST-737: Introduction to Data Science	INFM-605: Users & Use Context	INST-728E: Game Design	INST-731: Advanced Game, Entertainment, and Media Analytics	INST-751: IoT/Streaming Analytics	INST-760: Data Visualization
INST-661: Introduction to Game, Entertainment, and Media Analytics		INST-767: Big Data Infrastructure			
INST-730: Entertainment Environments		INST-756: Information Risk Management			

Fall Courses

INST-737: Introduction to Data Science (3 credits)

An exploration of some of the best and most general approaches to get the most information out of data through clustering, classification, and regression techniques.

INST-661: Introduction to Game, Entertainment, and Media Analytics (3 credits)

With the continuing global growth in the Game, Entertainment, and virtual/augmented reality and immersive experiences industries, entertainment providers increasingly depend on data analytics to maintain a competitive edge while continuing to improve the customer experience. This course provides an overview of the GEM industries, discuss the relationships between the entertainment providers and the entertainment consumers, and explore the analytical techniques used to maximize the overall value to both the providers and consumers. The course will focus on the uses of analytics methods such as personalization, recommendation, clustering and segmentation, behavioral analytics, etc.; will discuss core data management and data architecture concerns; and examine how big data infrastructure can support scalability as data volumes grow and as streaming speeds accelerate. In addition we review socio-technical aspects of entertainment, especially cyberpsychology, social networks, and information policy concerns such as privacy protection, fraud, equity, and national security.

INST-730: Entertainment Environments (3 credits)
Coming soon

Winter Course

INFM-605: Users & Use Context (3 credits)
Examine theories, issues, and emerging trends in the study and evaluation of users. This course will examine the nature of how users approach systems and interact within different design contexts. It will introduce students to the methods of user-centered systems design as practiced by information and user-experience professionals. It will explain and provide hands on experience to a variety of methods including Design Thinking, personas and persona development. The class will combine theoretical analyses with practical exercises in user analysis, contextual enquiry, use observation, data capture, and information design evaluation. The aim of the course is to develop critical awareness and insights into the behaviors, motivations and needs of the users with a view to using such insights to help shape improved information systems and to enable students to pursue more advanced studies in user experience.

Spring Courses

INST-728E: Game Design (3 credits)
Games are a structured form of play that are typically undertaken for recreational—but sometimes also educational and even professional—purposes. There is evidence of games dating back thousands of years, indicating that they are central to the human condition. But what constitutes a successful game? In this course, you will learn the fundamentals of game design: applying elements and principles of game design, such as goals, rules, and challenges to create games, such as board games, card games, and digital games. You will be introduced to the basic tools and methods of game design: paper and digital prototyping, design iteration, design critique, and user testing. As part of the course, you will be designing several games of different types, each which you will be able to add to your growing portfolio of game design concepts. You will also learn how to use your skills to deconstruct and critique the components of existing games, as well as gain an understanding of the role of the game designer in real-world game development teams.

INST-767: Big Data Infrastructure (3 credits)
Principles and techniques of data science and business intelligence. Technologies and architectures for large-scale data warehousing and scale-out data analytics platforms. Supervised and unsupervised data mining.

INST-756: Information Risk Management (3 credits)
Over the past two decades there has been a plethora of government legislation and regulation

impacting organizational information management. At the same time, the risks of exposure of protected information has intensified due to a widening array of cyber threats and attacks originating from both outside and within the organization. This course looks at information management from a risk perspective, including an examination of system threat and vulnerabilities. The course will also explore how statutes and regulations provide a framework for defining what is considered to be protected information in varying sectors of the commercial world, as well as in government. The course considers how data assets are assessed and classified in terms of their levels of sensitivity. In addition, the course discusses information governance and data protection policies applicable to mitigating information risk and enforcing compliance within organizations.

Summer Courses

INST-731: Advanced Game, Entertainment, and Media Analytics (3 credits)
Coming soon

INST-751: IoT/Streaming Analytics (3 credits)
This course reviews various methods, technologies, and architectures encompassed within the world of IoT (compute platforms, communications, data management, and analytics). We will review the building-block technologies and how they have evolved to support the IoT world's strengths and simplicity. We will discuss a variety of uses cases where IoT and the associated technologies are implemented in the real world across various industries.

INST-760: Data Visualization (3 credits)
This course explores the application of data science techniques to unstructured, real-world datasets including social media and geo-referenced sources. The course will focus on techniques and approaches to extract information relevant for experts and non-experts in areas that include smart cities, public health and disaster management. The course will examine state-of-the-art research in the field and will put an emphasis on mastering current literature and trends. Students will be required to read and present papers in class as well as to participate in technical discussions. The course will also have an important practical component with students working on a variety of research problems through a data lens.

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ADMISSIONS

UMD - Admission Requirements & Steps

- Complete the UMD Graduate School application. The Graduate School's Step-by-Step guide is a helpful resource for prospective applicants.
- Pay the application fee to the UMD Graduate School.
- Upload transcripts for all undergraduate and graduate courses at each institution you have attended.
- Provide a Statement of Purpose describing your experiences and interests that will help you succeed in UMD's GEM Analytics program.
- Submit the names and e-mail addresses of three academic or professional references.
- Upload a current resume or CV.
- Send TOEFL/IELTS scores to the University of Maryland (international applicants only).
- If you are a resident of the State of Maryland or believe you qualify as one, be sure to fill out the Maryland Residency section of the Graduate Application. If you have questions about Residency Classification, email resclass@umd.edu.

GEM - Additional Admission Requirements & Next Steps

- Submit your GEM Analytics Supplemental Application responses.

FREQUENTLY ASKED QUESTIONS

What is the fastest way to complete this degree?
We have streamlined the course material and scheduling to enable students to complete the program in one year. Full-time students would begin courses in the fall and finish the following summer.

Is it possible to work while completing the program?
Certainly. Many of our students hold part-time and even full-time positions during their studies. While we cannot guarantee when courses will be offered, we do our best to schedule classes at times that can accommodate professional students' schedules.

Do I need to take the GRE?
No, the GRE is not required for admission to the GEM Analytics program.

Do you prefer that applicants have work experience somewhere before applying?

While we prefer students to have some professional work experience prior to starting the GEM Analytics program, we also welcome applicants who apply directly from their undergraduate programs. Our student body is a mix of folks of different life experiences, contributing to the richness of our course discussions. Some students join us directly from their undergraduate degrees and others apply after working in their field for several years.

This is an online degree, but I live near UMD's College Park campus. Can I take some courses in person if I want to?

Yes, students who opt to take courses on campus are allowed to enroll in the face-to-face course sections. Note that because this program is available fully online, visas will not be issued for enrollment.

Is it possible to complete the GEM Analytics degree on a part-time basis?

Yes. Some of our students choose to attend part-time, completing one or two courses per semester. These students graduate from the program in three or more years. All students have up to five years to complete the degree.

How much does it cost to get a master's degree?

UMD's Student Financial Services and Cashiering's website posts the latest tuition and fees. Please note that there are different costs for students classified as Maryland residents and students from out of state or other countries. You can learn more about the cost of courses in the iSchool here.

How can I find out more about the GEM Analytics program?

Prospective students are encouraged to attend one of our periodic virtual information sessions. Applicants who live in the DC Metro area are also welcome to attend the iSchool's annual Open House in October.

Do I need to take the TOEFL/IETLS/PTE exam?

You will be required to submit TOEFL, IELTS or PTE scores if you do not hold a degree from a U.S. institution or from one of the English speaking countries (the list of countries can be found here). If you are a U.S. citizen or permanent resident with international credentials, you will still be required to submit English test scores if you do not hold a degree from one of the countries on this list. Applicants need to meet the requirements for Full Enrollment, as detailed on the link above.

I'm an international student but want to take these courses on UMD's campus. How can I do that?

Because this is an online degree, visas will not be issued for this program. If you are interested in a campus-based graduate program, you are encouraged to consider other programs offered by the iSchool where you may be able to take similar courses as electives.

CONTACT US

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