



Degree Program

Master of Science in Gaming and Multimedia

**Department of Creative Technologies,
Faculty of Computing and Artificial Intelligence (FCAI),
Air University, Islamabad**

1. Introduction to MS(GM) Program

The Master of Science in Gaming and Multimedia (GM) degree program, offered at the Department of Creative Technologies, Air University, Islamabad, aims to provide students an opportunity to be part of a strong base in research, design, deploy, and evaluation of gaming and multimedia systems. This program is designed with courses incorporated from multiple disciplines, such as mathematics, artificial intelligence, data science, and arts to prepare students for conducting research in interdisciplinary fields. The courses are designed as a blend of theory, research, and practical work to provide students a deep understanding of the technical concepts and hand-on tools. This degree program is aligned with the latest trends and demands of the local and international markets, and the department aims to produce highly skilled researchers in this field. Air University expects its MS(GM) graduates to pursue careers as Gamification and Multimedia experts in either academia or industry.

2. Eligibility Criteria

A prospective applicant to the MS(DS) program is required to meet the following minimum eligibility criteria:

- a) Bachelor's (or Master's) degree in the relevant subject of Science or Engineering (with strong analytical and programming skills), earned from the HEC recognized university/institute, after completing 16 years of education with a CGPA of at least 2.00 (on the scale of 4.00), or first division in the annual system.
- b) GRE (General) with a minimum score of 151 in Quantitative Reasoning, 145 in Verbal Reasoning, and 3.5 out of 6 in Analytical Writing), or GAT (General) with at least 50% score. In case of non-availability of GRE/GAT (General) due to any reason, the concerned department may arrange an equivalent test under the auspices of Air University, and the applicant must score at least 60% in the test to become eligible for admission.

Students from diverse academic backgrounds, meeting the above eligibility criteria can apply for admission. However, students with irrelevant academic background, lacking the required skills for the MS(DS) degree program, may need to undertake the deficiency courses as prescribed by the department.

3. Program Structure for MS(GM) Degree

The two-year MS(GM) degree program comprises both coursework as well as a research component. There are three core courses (in addition to the "Research Methodology" course), and five electives, aimed at strengthening the understanding, skills, and competence of students in fundamental and advanced domains of Gaming and Multimedia. The distribution of total credit hours for the MS(GM) degree program is given below.

Category/Area	No. of Courses	Credit Hours (Cr. Hrs.)
Core Courses	04	10
Elective Courses	05	15
MS Thesis	-	06
Total Credit Hours		31

3.1. List of Core Courses

Below is a list of the four (04) core courses for the MS-DS program.

Sr. No.	Course Title	Credit Hours
1	Game Design and Development	03
2	Game Mechanics and Computer Graphics	03
3	Multimedia Technologies	03
4	Research Methodology	01
Total Credit Hours		13

4. Semester-Wise Study Plan for MS(GM)

The semester-wise breakdown of total credit hours for the MS(GM) program is as follows:

Sr. #.	Course Title	Cr. Hrs.	
Semester-I			
1	Multimedia Technologies	03	
2	Game Design and Development	03	
3	Research Methodology	01	
4	Elective I	03	
Semester Cr. Hrs.		10	
Semester-II			
1	Game Mechanics and Computer Graphics	03	
2	Elective-II	03	
3	Elective-III	03	
Semester Cr. Hrs.		09	
Semester-III			
1	Elective-IV	03	
2	Elective-V	03	
3	MS Thesis	06	
Semester Cr. Hrs.		12	
Semester-IV			
1	DS799	MS Thesis (Continue)	-
Semester Cr. Hrs.			
Total Cr. Hrs.		31	
* Semester-wise allocation of the courses is not fixed and may change.			

5. Thesis Registration for MS(GM)

A student is allowed to register for the thesis only if he/she has:

1. Completed at least 19 Credit Hours
2. Passed all the core courses
3. CGPA is equal to or greater than 2.5 on a scale of 4.00

6. Elective Courses for MS(GM)

The list of elective courses offered for the MS(GM) program is given below. However, this list is tentative and thus updatable as per the students or program requirement.

- Game Scripting
 - UI/UX Development
 - Haptic User Interfaces
 - Interactive Computer Graphics
 - Modeling and Simulation
 - Character Design for Game
 - Print Media Design
 - Digital Photography
 - Digital Film Making
 - 3D Modeling and Animation
 - Virtual and Augmented Reality
 - Animation and GI Animation Unity Services
 - Interactive Animation Design
 - Responsive Web Design and Development
 - Game Sensors and Media
 - Image Processing
 - Computer Vision
 - Machine Learning
 - Natural Language Processing
 - Artificial Intelligence for Games
 - Pattern Classification and Recognition
 - Deep Learning
 - Data Visualization
 - Cloud Computing
 - Special Topics in Games
 - Special Topics in Multimedia
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