

**MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY, WB**  
**Syllabus of B. Sc. Gaming & Mobile Application Development**  
**(Effective for 2020-2021 Admission Session)**  
**Choice Based Credit System**  
**140 Credit (3-Year UG) MAKAUT Framework**  
**w.e.f 2020-21**

**CBCS – MAKAUT UG degree (Hons) 140 Credit FRAMEWORK (Revised)**

Subject Type	Semester I	Semester II	Semester III	Semester IV	Semester V	Semester VI
CC	CC1, CC2	CC3, CC4	CC5,CC6,CC7	CC8,CC9,CC10	CC11,CC12	CC13, CC14
DSE					DSE1, DSE2	DSE3, DSE4
GE	GE1	GE2	GE3	GE4		
AECC	AECC 1	AECC 2				
SEC			SEC 1	SEC 2		
	4 (20)	5 (20)	4 (26)	5(26)	4 (24)	4 (24)

**B.Sc. in Gaming and Mobile Application Development**

Program Outcomes or Graduate Attributes of BSc Gaming and Mobile Application Development under MAKAUT:

*Graduates will be able to demonstrate the following program outcomes:*

**PO1- Gaming and Mobile Application Knowledge:** Apply the knowledge of computer systems, data systems, graphic design and gaming specializations to the development of interactive gaming solution.

**PO2- Design/Development of Solutions:** Identify, formulate, review and design advanced gamingsolutions and game components or processes to build engaging and interactive games for diverse cultural user groups, for societal, academic and business innovations.

**PO3- Gaming Professional and Society:** Create,select and apply techniques, resources and modern gaming tools and techniques to contribute to societal,health,safety,legal and cultural issues and the consequent responsibilities relevant to the professional ethics

**PO4- Individual and team work:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the gaming and mobile application practice as an individual, and as a member or leader in diverse teams and in multidisciplinary settings.

**PO5- Communication:** Communicate effectively on gaming activities with the gaming& IT community and with society at large, such as being

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able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

**PO6- Lifelong Learning:** Recognize the need for and have the preparation and ability to engage in independent and life-long learning in the context of technological change.

### Program Outcomes (PO) Mapping

PO #	Program Outcome	Mapped courses
1	Gaming and Mobile Application Knowledge	GAM 101, GAM 102, GAM 201, GAM 202, GAM 301, GAM 302, GAM 303, GAM 402, GAM 403, GAM 501, GAM 502, GAM 543, GAM 544, GAM 601, GAM 643, GAM 644
2	Design/Development of Solutions	GAM 101, GAM 102, GAM 201, GAM 202, GAM 301, GAM 302, GAM 303, GAM 354, GAM 401, GAM 402, GAM 403, GAM 455, GAM 501, GAM 502, GAM 543, GAM 544, GAM 643, GAM 644
3	Gaming Professional and Society	GAM 101, GAM 201, GAM 202, GAM 301, GAM 302, GAM 303, GAM 354, GAM 401, GAM 402, GAM 403, GAM 501, GAM 502, GAM 543, GAM 544, GAM 601, GAM 643, GAM 644.
4	Individual and team work	GAM 102, GAM 164, GAM 202, GAM 301, GAM 401, GAM 543, GAM 544, GAM 643, GAM 644
5	Communication	GAM 164, GAM 301, GAM 543, GAM 544, GAM 643, GAM 644
6	Life-Long Learning	GAM 102, GAM 164, GAM 201, GAM 202, GAM 301, GAM 265, GAM 302, GAM 303, GAM 401, GAM 643

\*GE Courses are not in the above mapped list. Based on the choice of the learner that would necessarily be part of PO6 and the relevant PO's

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## Curriculum Structure

### 1st Semester

Subject Type	Course Name	Course Code	Credit Distribution			Credit Points	Mode of Delivery			Proposed Moocs
			Theory	Practical	Tutorial		Offline	Online	Blended	
CC 1	Engineering Math	GAM 101	5	0	1	6	✓			As per MAKAUT Notification
CC 2	Programming using C	GAM (T) 102	4	0	0	6	✓			
		GAM 192	0	2	0					
GE 1	Students will have to select from the GE Basket					6			✓	
AECC 1	English Communication	GAM 164	2	0	0	2	✓			
<b>Semester Credits</b>						<b>20</b>				

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**2nd Semester**

Subject Type	Course Name	Course Code	Credit Distribution			Credit Points	Mode of Delivery			Proposed Moocs
			Theory	Practical	Tutorial		Offline	Online	Blended	
CC 3	Digital Visualisation	GAM 201	5	0	1	6	✓			As per MAKAUT Notification
CC 4	Object Oriented Programming	GAM (T) 202	4	0	0	6	✓			
		GAM 292	0	2	0					
GE 2	Students will have to select from the GE Basket					6			✓	
AECC 2	Environmental Science	GAM 265	2	0	0	2	✓			
<b>Semester Credits</b>						<b>20</b>				

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**3<sup>rd</sup> Semester**

Subject Type	Course Name	Course Code	Credit Points	Credit Distribution			Mode of Delivery			Proposed Moocs					
				Theory	Practical	Tutorial	Offline #	Online	Blended						
CC 5	Database Programming	GAM(T) 301	6	4	0	0	✓			As per MAKAUT Notification					
		GAM 391		0	2	0									
CC 6	Fundamentals of Data Structure using C	GAM(T) 302	6	4	0	0	✓				As per MAKAUT Notification				
		GAM 392		0	2	0									
CC 7	Graphics Programming and Animation using OpenGL	GAM(T) 303	6	4	0	0	✓					As per MAKAUT Notification			
		GAM 393		0	2	0									
GE 3	Students will have to select from the GE Basket		6						✓				As per MAKAUT Notification		
SEC 1	Mobile database skills	GAM 354	2	0	2	0	✓							As per MAKAUT Notification	
<b>Semester Credits</b>			<b>26</b>												As per MAKAUT Notification

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**4th Semester**

Subject Type	Course Name	Course Code	Credit Points	Credit Distribution			Mode of Delivery			Proposed Moocs
				Theory	Practical	Tutorial	Offline #	Online	Blended	
CC 8	Design & Analysis of Algorithm using Advanced Data Structure	GAM(T) 401	6	4	0	0	✓			As per MAKAUT Notification
		GAM 491		0	2	0				
CC 9	Game Development	GAM(T) 402	6	4	0	0	✓			
		GAM 492		0	2	0				
CC 10	Mobile Application Development	GAM(T) 403	6	4	0	0	✓			
		GAM 493		0	2	0				
GE 4	Students will have to select from the GE Basket		6						✓	
SEC 2	Python Programming	GAM 455	2	0	2	0	✓			
<b>Semester Credits</b>			<b>26</b>							

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**5th Semester**

SubjectType	Course Name	Credit Points	Credit Distribution			Mode of Delivery			Proposed Moocs
			Theory	Practical	Tutorial	Offline	Online	Blended	
CC 11	Game AI	6	4	2	0	✓			As per MAKAUT Notification
<b>GAM 501 &amp; 591</b>									
CC 12	Computer Vision & Pattern Recognition	6	4	2		✓			
<b>GAM 502 &amp; 592</b>									
DSE 1 (Any One) <b>GAM-503</b>	A. Cloud Computing B. Information & Coding Theory C. Information Security	6	5	0	1			✓	
DSE 2 (Any One)									
<b>GAM-504A</b>	A. Introduction to Data Science	6	5	0	1			✓	
<b>GAM-504B &amp; GAM-594B</b>	B. Introduction to AI and Machine Learning	6	4	2					
<b>GAM-504C</b>	C. Digital Image Processing	6	5	0	1				
<b>SemesterCredits</b>		<b>24</b>							

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**6th Semester**

Subject Type	Course Name	Credit Points	Credit Distribution			Mode of Delivery			Proposed Moocs
			Theory	Practical	Tutorial	Offline	Online	Blended	
CC 13	Rigging & Animation for Games	6	4	2	0	✓			As per MAKAUT notification
<b>GAM 601 &amp; 691</b>									
CC 14	Virtual & Augmented Reality	6	4	2	0	✓			
<b>GAM 602 &amp; 692</b>									
DSE 3 (Any one)- GAM 681 (A)	Minor Project	6	1	5	0			✓	
DSE 3- GAM 681 (B)	Internship-I	6	1	5	0				
DSE 4(Any one) - GAM 682 (A)	Major Project	6	1	5	0				
DSE 4- GAM 682 (B)	Internship- II	6	1	5	0			✓	
<b>Semester Credits</b>		24							
<b>Total</b>		140							

**Note:** Minor/Major Project/Internship- (Students have to engage in a full length/capstone project with a pre-specified Internal Guide (faculty member) throughout the semester). Industry collaboration is highly encouraged in case of Internship. (At least two-three times progress needs to be checked and evaluation needs to be done through PCA.) It will be followed by a report submission and viva as part of University examination.