Scheme of Studies BS Computer Science (Specialisation in Gaming & Animation)

First Year

Fall Semester					Spring Semester				
Course Code	Course Title	Th	Pr	Total	Course Code	Course Title	Th	Pr	Total
CT-175	Programming Fundamentals	3	1	4	CS-251	Logic Design & Switching Theory.	3	1	4
CT-174	Fundamentals of Information Technology	2	1	3	CT-162	Discrete Structures.	3	0	3
EA-104	Functional English	3	0	3	CT-260	Object Oriented Programming.	3	1	4
PH-122	Applied Physics.	3	1	4	MT-171	Differential & Integral Calculus	3	0	3
ES-205	Islamic Studies. OR	2	0	2	ES-105	Pakistan Studies. OR	2	0	2
ES-209	Ethical Behaviour.				ES-127	Pakistan Studies. (For Foreigners)			
MT-001	Mathematics-1 (Pre-Medical)	-	-	NC	MT-002	Mathematics-2 (Pre-Medical)	-	-	NC

Second Year

Fall Semester					Spring Semester				
Course Code	Course Title	Th	Pr	Total	Course Code	Course Title	Th	Pr	Total
CT-159	Data Structure Algorithms & Applications.	3	1	4	CS-252	Computer Architecture & Organization.	3	1	4
MT-227	Differential Equations.	3	0	3	CT-261	Database Management Systems.	3	1	4
EA-115	Academic Reading and Writing	3	0	3	EA-218	Business Communication	2	1	3
EA-219	Professional Ethics	2	0	2	MT-272	Linear Algebra & Geometry.	3	0	3
CT-xxx	GA Elective - I	2	1	3	EC-209	Financial & Cost Accounting.	3	0	3
					EA-200	Community Service	-	-	NC

Third Year

Fall Semester					Spring Semester				
Course Code	Course Title	Th	Pr	Total	Course Code	Course Title	Th	Pr	Total
CT-xxx	GA Elective - II	3	0	3	CT-xxx	GA Elective - III	3	0	3
CT-379	Game Programming	3	1	4	CT-381	Modeling and Animation	1	2	3
MT-331	Probability & Statistics	3	0	3	CT-382	Game Design and Development	3	1	4
CT-363	Design & Analysis of Algorithms	3	0	3	CT-383	Design of AR and VR Applications	1	2	3
CT-365	Software Engineering	3	0	3	CT-353	Operating Systems	3	1	4
CT-380	Regulations & Ethics in Gaming Industry	2	0	2	EA/ES-xxx	Foreign Language - I	-	-	NC

Final Year									
Fall Semester						**Spring Semester**			
Course Code	**Course Title**	**Credit Hours**			**Course Code**	**Course Title**	**Credit Hours**		
		Th	**Pr**	**Total**			**Th**	**Pr**	**Total**
CT-xxx	GA Elective - IV	3	0	3	CT-xxx	GA Elective - V	3	0	3
CT-361	Artificial Intelligence & Expert Systems	3	1	4	MG-481	Entrepreneurship.	3	0	3
CT-376	Computer Communication Networks	3	1	4	CT-404	Motion Capture and Digital Animation	3	1	4
CT-409	Mobile Application Development	2	1	3	CS-428	Parallel & Distributed Computing	3	1	4
CT-499	Computer Science Project.	-	3	3	CT-499	Computer Science Project.	0	3	3
EA/ES-xxx	Foreign Language - II	-	-	NC					

Elective- I Courses	
CT-263	Object Oriented Analysis & Design
CT-264	Programming for Artificial Intelligence
CT-368	Fundamentals of Data Science
CT-266	Fundamentals of Cybersecurity
CT-267	Fundamentals of Game Development

Elective- II Courses	
CT-384	Graphics Design
CT-364	Theory of Automata & Formal Languages

Elective- III Courses	
CT-385	Art for Games
CT-386	Story Boarding and Previsualization
CT-387	Video Games and Creative Writing

Elective- IV Courses	
CT-401	Web 3D Programming
CT-402	Multicore and GPU Programming
CT-403	Blockchain Technologies

Elective- V Courses	
CT-405	Software Security
CT-406	Metaverse and its Applications
CT-407	Human Computer Interaction
CT-408	Interactive Games and Audio

Foreign Language - I Courses	
EA-220	Chinese Language - I
EA-231	Turkish Language - I
EA-224	German Language - I
EA-226	French Language - I
ES-221	Arabic Language - I

Foreign Language - II Courses	
EA-221	Chinese Language - II
EA-232	Turkish Language - II
EA-225	German Language - II
EA-227	French Language - II
ES-222	Arabic Language - II