

CSE3541/5541: Computer Game and Animation Techniques (Autumn 2021)							
Week	Date	Day	Topics	Computer Animation: Algorithms ... Readings	Essential Mathematics ... Readings	Mathematics for 3D Game Programming ... Readings	AI for Games Readings
1	25-Aug	W	Introduction ; Course overview				
	27-Aug	F	History of animation and games, Linear algebra review	Ch. 1			
2	30-Aug	M	Linear algebra review	Appendix B	Ch. 1+2	Ch. 2 + 3	
	1-Sep	W	Computer graphics pipeline Unity Intro				
	3-Sep	F	3D object modeling + Meshes 2D modeling transformations and matrices	Ch. 2	Ch. 3	Ch. 1 + 4	
3	6-Sep	M	Labor Day (No Class)				
	8-Sep	W	3D modeling transformations and matrices	Ch. 2	Ch. 3	Ch. 1 + 4	
	10-Sep	F	Scene modeling and scene graphs Procedural model creation - terrain and mazes				
4	13-Sep	M	Procedural model creation - terrain and mazes				
	15-Sep	W	Rendering and animation loops				
	17-Sep	F	Rendering and animation loops				
5	20-Sep	M	Numerical integration Physically based animation	Appendix B Ch. 7		Ch. 13	
	22-Sep	W	Physically based animation	Ch. 7			
	24-Sep	F	Physics - forces Collision detection	Ch. 7	Ch. 11 + 12		
6	27-Sep	M	Collision detection and response	Ch. 7	Ch. 11 + 12	Ch. 12	
	29-Sep	W	Physically based animation review				
	1-Oct	F	Physically based animation review				
7	4-Oct	M	Behavior based animation	Ch. 11			Ch. 3
	6-Oct	W	Behavior based animation	Ch. 11			Ch. 3
	8-Oct	F	Pathfinding				Ch. 4
8	11-Oct	M	Pathfinding				Ch. 4
	13-Oct	W	Behavior based animation review				
	15-Oct	F	Autumn Break (No Class)				
9	18-Oct	M	Behavior based animation review				
	20-Oct	W	Interpolation	Ch. 3			
	22-Oct	F	Interpolation and curve fitting	Ch. 3	Ch. 9	Ch. 11	
10	25-Oct	M	Interpolation and curve fitting	Ch. 3	Ch. 9	Ch. 11	
	27-Oct	W	Interpolation and rotation representations	Ch. 3	Ch. 9		
	29-Oct	F	Deformation using interpolation	Ch. 4	Ch. 10		
11	1-Nov	M	Deformation using interpolation				
	3-Nov	W	Kinematic linkages and Hierarchical modeling	Ch. 5			
	5-Nov	F	Kinematic linkages and Hierarchical modeling	Ch. 5			
12	8-Nov	M	Interpolation review				
	10-Nov	W	Interpolation Review	Ch. 8		Ch. 15	
	12-Nov	F	Fluids	Ch. 8		Ch. 15	
13	15-Nov	M	Cloth and human figure animation	Ch. 6			
	17-Nov	W	Motion capture	Ch. 6			
	19-Nov	F	Plant modeling	Ch. 12			
14	22-Nov	M	Real time rendering topics		Ch. 5-8	Ch. 7 + 8	
	24-Nov	W	Thanksgiving break (No class)				
	26-Nov	F	Thanksgiving break (No class)				
15	29-Nov	M	Photo realistic rendering topics			Ch. 6	
	1-Dec	W	Game development case studies and game design				
	3-Dec	F	Perception, design, human factors, and visualization				
16	6-Dec	M	Specialized hardware for graphics and games				
	8-Dec	W	Specialized hardware for graphics and games				
Finals week							