

Creating Games

ART & CS 107 Spring 2011 Schedule

Revised April 28, 2011; the schedule adapts to your interests throughout the semester.

Lecture:	TR	9:55 – 11:10pm	WCMA & TPL 113	Hyperlinks <u>underlined</u> . Chapter reading is in McGuire and Jenkins, <u><i>Creating Games</i></u> , A K Peters 2008.
Lab:	Thu.	1 – 4 pm	TCL 312b & TCL 217	
Office hours: (107)	Wed	9 – 10 am	TCL 308	
(General)	Mon.	1:15 – 2:15 pm	TCL 308	

...and by request!

“Homework” is solo. “Projects” are for assigned teams. “Play” means at least two hours of gameplay and a one- or two-paragraph discussion of some aspect of the game, with a full citation. All written work must be typed. All non-programming work is due in hardcopy at the beginning of lecture on the days listed.

TUESDAY	THURSDAY
<div style="border: 1px solid black; display: inline-block; padding: 2px;">Feb 1st</div>	<div style="border: 1px solid black; display: inline-block; padding: 2px;">3rd</div> <p style="margin-top: 5px;"><i>Thursday Schedule, on Wednesday 2/2/11</i></p> <p>INTRODUCTION (<i>TPL 113</i>)</p> <ul style="list-style-type: none"> • Minigame exercise • Content, mechanics, and technology • Course policies • Scholarly conduct <p>LAB (<i>TCL 312b</i>)</p> <ul style="list-style-type: none"> • What are games? • How games are made • <i>The Settlers of Catan</i> • Static evaluation <p>Read: Ch. 2</p>
<p>8th</p> <p style="color: #A52A2A;">Homework Due: 2.7.{1, 3, 4, 7, 8}</p> <p>COMPOSITION (<i>WCMA</i>¹)</p> <ul style="list-style-type: none"> • 2D composition tools <ul style="list-style-type: none"> – Motion > silhouette > value > color – Framing and the rule of thirds – Opposition and visual lines – Aspect • Creating depth <ul style="list-style-type: none"> – Occlusion – Linear perspective – Hard and soft shadows – Atmospheric perspective • Sketching composition exercise <p>(Game Index, Painting Index)</p> <p>Read: Ch. 12</p>	<div style="border: 1px solid black; display: inline-block; padding: 2px;">10th</div> <p style="margin-top: 5px;">Play:</p> <ul style="list-style-type: none"> • <i>The Settlers of Catan</i> (board) or <i>Citadels</i> (board) • <i>Uncharted 2</i> (PS3), <i>Bioshock 2</i> (Xbox 360), or <i>Burnout Paradise</i> (Xbox 360) <p>COLOR (<i>WCMA</i>)</p> <ul style="list-style-type: none"> • Composition exercise • Design language • EM spectrum • Saturation/chroma; hue; value/tonne • Color constancy <p>LAB (<i>TCL 312b</i> → <i>TCL 217</i>)</p> <ul style="list-style-type: none"> • Drawing is seeing • <i>Dominion</i> • Selecting palettes • Analyzing games w/ Photoshop <p>(Game Index, Painting Index, Villon, Albers)</p> <p>Read: Ch. 3</p>

¹You can only write in pencil in WCMA for the safety of the artwork.

TUESDAY	THURSDAY
<p>15th 5</p> <p>Homework Due: Three Sketches</p> <p>TEXT & TEXTURE (WCMA)</p> <ul style="list-style-type: none"> • Game art roles • Font characteristics • Non-photorealistic rendering • Start <u>Design Language</u> (a.k.a. Content Mod) project <p>(<u>Painting Index</u>, <u>Slides</u>)</p> <p>Read: Ch. 11</p>	<p>17th 6</p> <p>Homework Due: 3.9.{2, 3, 8}, 11.4.{1, 6}</p> <p>Play:</p> <ul style="list-style-type: none"> • <i>Indigo Prophecy</i> (PS2/PC) or <i>Heavy Rain</i> (PS3) • <i>Agricola</i> (board) <p>PERSPECTIVE (WCMA)</p> <ul style="list-style-type: none"> • Orthographic • Isometric • Linear • Multi-perspective • Geometric basis <p>Read: Ch. 4</p> <p>Lab Session: <i>No Lab</i></p>
<p>22nd</p> <p><i>Short guest lecture from 10:30 am - 11:00 am by John Stomberg. Prof. McGuire out of town.</i></p> <p>Read: Jordan, <u>Closing the Loop</u>, <i>Gamasutra</i>, Feb 1, 2011</p>	<p>24th 7</p> <p>Project Due: Design Language</p> <p>Homework Due: 4.5.{1, 2, 6}</p> <p>Play:</p> <ul style="list-style-type: none"> • <i>Dante's Inferno</i> (Xbox 360) or <i>Wet</i> (Xbox 360) • <i>Odin's Ravens</i> or <i>Equate</i> <p>CHARACTER (WCMA)</p> <ul style="list-style-type: none"> • Portraying character • Violence • Sexuality • Games as art <p>LAB (TCL 312b)</p> <ul style="list-style-type: none"> • Social issues • Building an engine • Strategic play • <i>Dominion</i> and <i>Citadels</i> • Start <u>Acquisition Proposal</u> project <p>Read: Ch. 19</p>
<p>Mar 1st 8</p> <p>THE GAME DESIGN DOCUMENT</p> <ul style="list-style-type: none"> • Revision / Critique • Minimod exercise • GDD structure • Mechanics • Scientific publishing <p>Read: Ch. 5</p>	<p>3rd 9</p> <p>Homework Due: 5.20.{2, 8}</p> <p>Project Due: Acquisition Proposal</p> <p>STRATEGIC THOUGHT I</p> <ul style="list-style-type: none"> • State • Decision trees • Algorithms • Search • Strategy vs. Tactics <p>LAB (TCL 312b)</p> <ul style="list-style-type: none"> • <i>Pente</i> exhibition • Static evaluation revisited • MINIMAX • Computability • <i>Carcassonne</i>

TUESDAY		THURSDAY	
8th	10	10th	11
Play: <ul style="list-style-type: none"> • <i>Borderlands</i> (Xbox 360/PC) or <i>Valkyria Chronicles</i> (PS3) or <i>Fallout 3</i> (PC/PS3/Xbox360) or <i>Age of Empires II</i> (PC) • <i>Stone Age</i> or <i>Agricola</i> • ...and write up in <u>proposal format</u> STRATEGIC THOUGHT II <ul style="list-style-type: none"> • Game Theory • Dominant strategies • Mixed strategies • The Prisoner's Dilemma • Public goods • Start <u>Mechanics Mod</u> project Read: Ch. 7		Homework Due: (Optional!) 7.10.{2, 3, 4, 7, 8} CHOICE <ul style="list-style-type: none"> • Statistics and probability • Generating random numbers • Outcome trees • Combining probabilities • Expected value • Variance LAB (TCL 312b) <ul style="list-style-type: none"> • Experiment design • Graphs • State Machines • How to make: cards, boards, instructions, pieces (laser cutter demo in the shop!) 	
15th	12	17th	13
ROB GALLERANI Guest lecture from Rob Gallerani of Vicarious Visions, industry veteran of over 20 titles including <i>Guitar Hero: On Tour</i> , <i>Spider-Man 3</i> , <i>Batman Begins</i> , and <i>Tony Hawk's American Sk8land</i> . Play: <ul style="list-style-type: none"> • <i>Zack & Wiki</i> (Wii) or <i>Ratchet and Clank Future</i> (PS3) or <i>Super Mario Galaxy 2</i> (Wii) or <i>Batman: Arkham Asylum</i> (Xbox 360) • <i>Puerto Rico</i> or <i>Powergrid</i> Read: Ch. 8		Project Due: Mechanics Mod PROJECT PRESENTATIONS Each group will give a 10-minute presentation on their mod, methodology, and results. We'll then analyze our development process in a "post-mortem." What went right? What went wrong? How can we be more effective...or efficient? Keep in mind that our true goal is learning, not producing games! Read: Ch. 9	
22nd		24th	
<i>Spring Break</i>		<i>Spring Break</i>	
29th		31st	
<i>Spring Break</i>		<i>Spring Break</i>	
Apr 5th	14	7th	15
MECHANICS <ul style="list-style-type: none"> • Recognizing mechanics • Refining our development process • Form <u>Balance Mod</u> teams • Rapid-brainstorm topics • Note upcoming deadlines, light vs. heavy weeks! Read: Ch. 10		Homework Due: (Optional) 8.11.10, 9.9.{1,6,8,13} PROBABILITY REVISITED <ul style="list-style-type: none"> • Probability exercise • Programming teaser LAB (TCL 217) <ul style="list-style-type: none"> • Review & critique course schedule • Create Balance mod schedules • Processing Setup • Welcome to Processing! <u>calculator.pde, print_histogram.pde, draw_histogram.pde</u> Optional: LUIS VON AHN (<i>8pm Wege</i>) The inventor of <u>reCAPTCHA</u> describes how he turns big problems into bite-size engaging tasks. Read: Processing for Visual Artists, Ch. 1-2	

TUESDAY		THURSDAY	
12th	16	14th	17
Play: <ul style="list-style-type: none"> • <i>Apples to Apples</i> or • <i>Pit</i> or • <i>Once Upon A Time</i> or • <i>Robo Rally</i> MAKING RULES IN PROCESSING <ul style="list-style-type: none"> • Creating state with variable declarations • Conditional rules with IF • Repeated rules with WHILE • Review mod schedules + progress <u>draw_histogram2.pde</u> Read: Ch. 6		GAME TECHNOLOGY <ul style="list-style-type: none"> • Creating the “main loop” • A plan for <i>Rock-Paper-Scissors</i> LAB (TCL 217) <ul style="list-style-type: none"> • Implementing <i>Rock-Paper-Scissors</i> • 2:30 pm: Conversation with John Carmack Edwards of indie developer thatgamecompany (<i>fIow</i>, <i>Flower</i>, and <i>Journey</i> for PS3) <u>Histogram1d6.pde</u> , <u>Histogram2d6.pde</u> , <u>ProcessingCheatSheet.pdf</u> Read: Processing for Visual Artists, Ch. 3	
19th	18	21st	19
Project Due: Balance Mod DEBUGGING (meet in TCL 217) <ul style="list-style-type: none"> • Syntax vs. logical errors • Debugging is experimenting • <code>System.out.println</code> • Visualizing state 		Play: <ul style="list-style-type: none"> • <i>Left 4 Dead 2</i> in coop mode (Xbox 360, or your PC, or Gfx Lab by appt.) or • <i>Alien Swarm</i> (your Steam PC, or Gfx Lab by appt.) or • <i>Battlestar Galactica</i> or • <i>Pandemic</i> or • <i>Shadows Over Camelot</i> COOPERATIVE GAMES <ul style="list-style-type: none"> • Puzzles (e.g., <i>Pandemic</i>, <i>Rush Hour</i>) • Traitors (e.g., <i>Lord of the Rings</i>, <i>Red November</i>, <i>Shadows Over Camelot</i>, <i>BSG</i>) • <i>Space Alert</i> and real time LAB (TCL 217) <ul style="list-style-type: none"> • Implementing <i>Tic-Tac-Toe</i> Read: Ch. 21	
26th	20	28th	21
FINAL PROJECT PREPRODUCTION <ul style="list-style-type: none"> • Form Final Project teams • Final project topics • Final project schedules Read: (Optional) Ch. 13		Homework Due: GDD outlines with 1-page project proposals DYNAMICS <ul style="list-style-type: none"> • A physics simulator • Collision detection • Elastic collision response LAB (TCL 217) <ul style="list-style-type: none"> • Refine schedules • Implement <i>Pong</i> Read: (Optional) Ch. 14	
May 3rd	22	5th	23
Homework Due: (Optional) 13.5.{2,3,8}, 14.3.{2,3} Play: <ul style="list-style-type: none"> • Any previously assigned game that you haven't played FINAL PROJECT WORK (ANALYSIS)		Homework Due: 5-minute Team Presentation PRACTICE PRESENTATIONS <ul style="list-style-type: none"> • Each team presents • Critiques and feedback LAB (TCL 217) <ul style="list-style-type: none"> • How Microsoft Kinect and PS3 Move work • Extending <i>Pong</i> with computer vision: <i>Pong Move</i> 	

TUESDAY	THURSDAY
<p>10th 24</p> <p>FINAL PROJECT WORK (POLISH)</p>	<p>12th 25</p> <p>PRESENT FINAL PROJECTS</p> <p>Project Due: Final Project</p> <p>No morning lecture!</p> <p>LAB (<i>TCL 312</i>→<i>common room</i>, guests welcome)</p> <ul style="list-style-type: none"> • 10-minute project presentations in TCL 312 • Course evaluations • ≈1:30pm, playing our games & refreshments in the common room • End early at 3pm