

# Computer Games Laboratory

TUM I15, Kick-off



# Instructors

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# Course Goals

1. Learn central elements of modern computer game design and programming
2. Design & implement your own game project
3. Reinforce CS and graphics knowledge
4. Practice “soft skills” and project management

# Adopted from: ETH GPL

<https://graphics.ethz.ch/teaching/gamelab14/home.php>



Acknowledgements: M. Gross, B. Sumner, S. Heinzle, ...

# Course Goals

- Capstone course: cumulative knowledge transferred to task of creating video game



# Prerequisites

- Strong interest in computer graphics and game tech
- Ideally, intro/advanced courses in computer graphics
- Ability and interest to work in teams
- Some artistic skills can help
- Time & motivation

# Course Elements

- Lectures: background & basics, structure
- Milestones: delivery deadlines, documentation
- Presentations: get feedback, track progress

# Grading

- We will track your performance
- Project plays most important role
  - Each of you: private summary of own contributions
- **Criteria:**
  - Technical complexity of project
  - Project plan and milestones met
  - Assignments
  - Presentations
  - Teamwork
  - Creativity



# Resources

- Main Website:
  - <https://www.in.tum.de/cg/teaching/> -> Semester -> Computer Games Laboratory
  - Schedule
  - Project structure / assignments
  - Lecture slides
- Wiki
  - <https://wiki.tum.de/display/gameslab2022summer/Home>
  - Edit access after forming groups

# Book

<http://www.gamedesignworkshop.com/>



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# Project Structure



# Teams

- 3-4 Students per team
- Every member should contribute equally
- Considerations
  - Interests
  - Skills
  - Working hours
  - Meeting locations...

# “Design & implement your game”

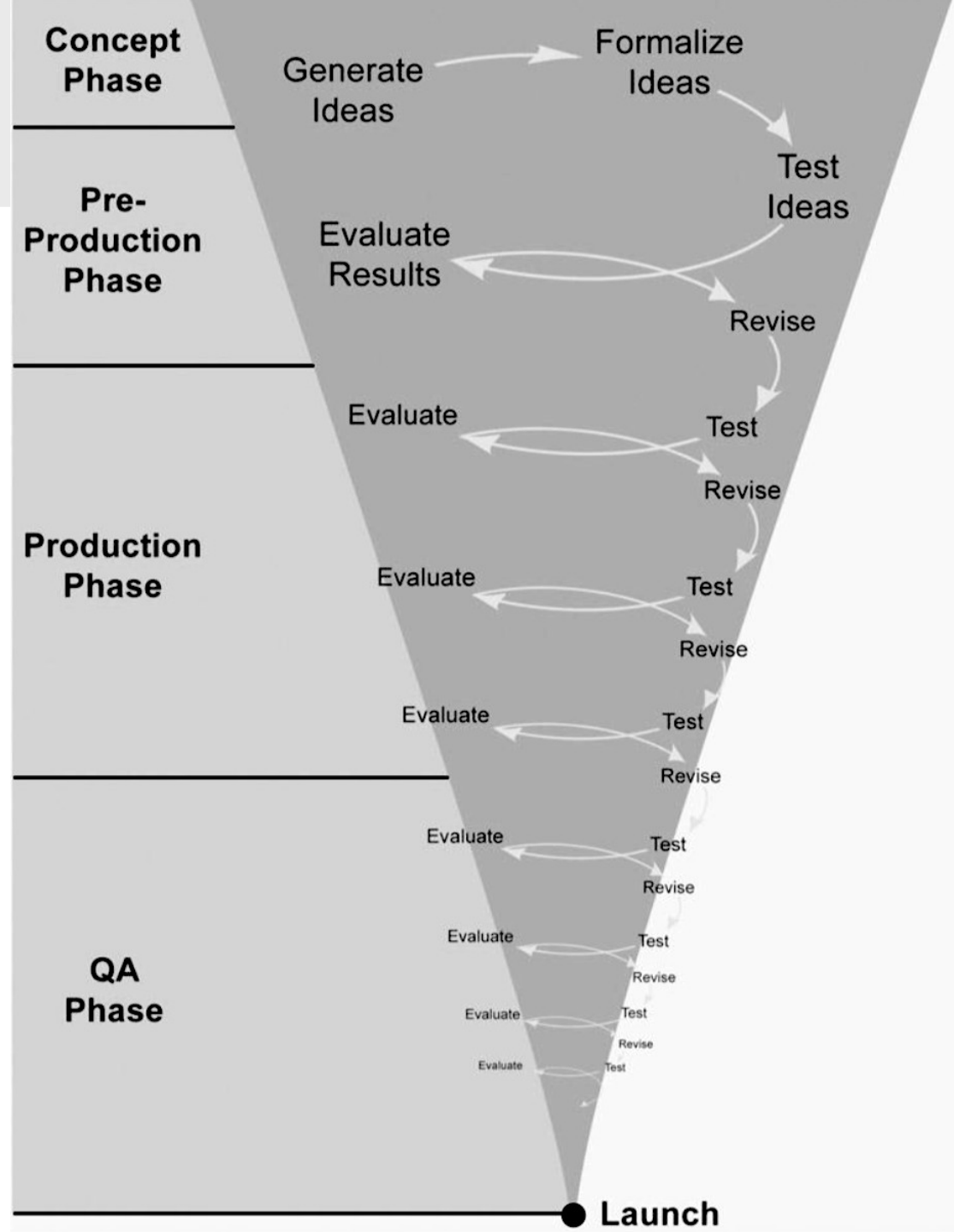
- But ... that's very challenging!
- Detailed project management
  - Software engineering principles
  - Written project document
    - Actual idea/game documentation
    - Progress & timeline
  - Presentations / demos
  - Critiques, mutual feedback

# Organization

- Project structure document (written by us)
- Detailed project notebook (written by you)
- All written documents in the course Wiki
- Written assignments due Sundays at 23:59
- Presentations in class on Mondays at 14:15

# Iterative Design

- Keep game on track





# Milestones

1. Game idea pitch
2. Formal proposal & prototype
3. Interim demo
4. Alpha release
5. Playtesting
6. Final presentation!

# Milestone #1

- **Game description**
  - Describe essential design elements
  - Sketches, storyboards, or other visuals
  - Highlight and justify design choices
- **Development schedule**
  - Layered task breakdown
  - Timeline & milestones
- **Assessment**
  - Strengths, appeal, criteria for success...

# Development Schedule

- **Functional Minimum**
  - Just enough to call it a game...
- **Your Low Target**
  - The least possible to feel “ok”
- **Your Desired Target**
  - This is what you’re aiming for
- **Your High Target**
  - If things go extremely well
- **Your Extras**
  - Things you know won't fit, maybe for later...

# Development Schedule

Task	Description	Who	Hrs	Actual
1	Brainstorm design	All	4	8
2	Character modeling	Stan	12	26
3	Camera control	Kyle	6	
4	Prepare presentation	All	6	
5	Explosion effect	Kenny	12	

# Development Schedule

Task	Wk1	Wk2	Wk3	Wk4		Wk5	Wk6	Wk7	...
1	A				Part 3 Due				
2		L	L						
3			T						
...									

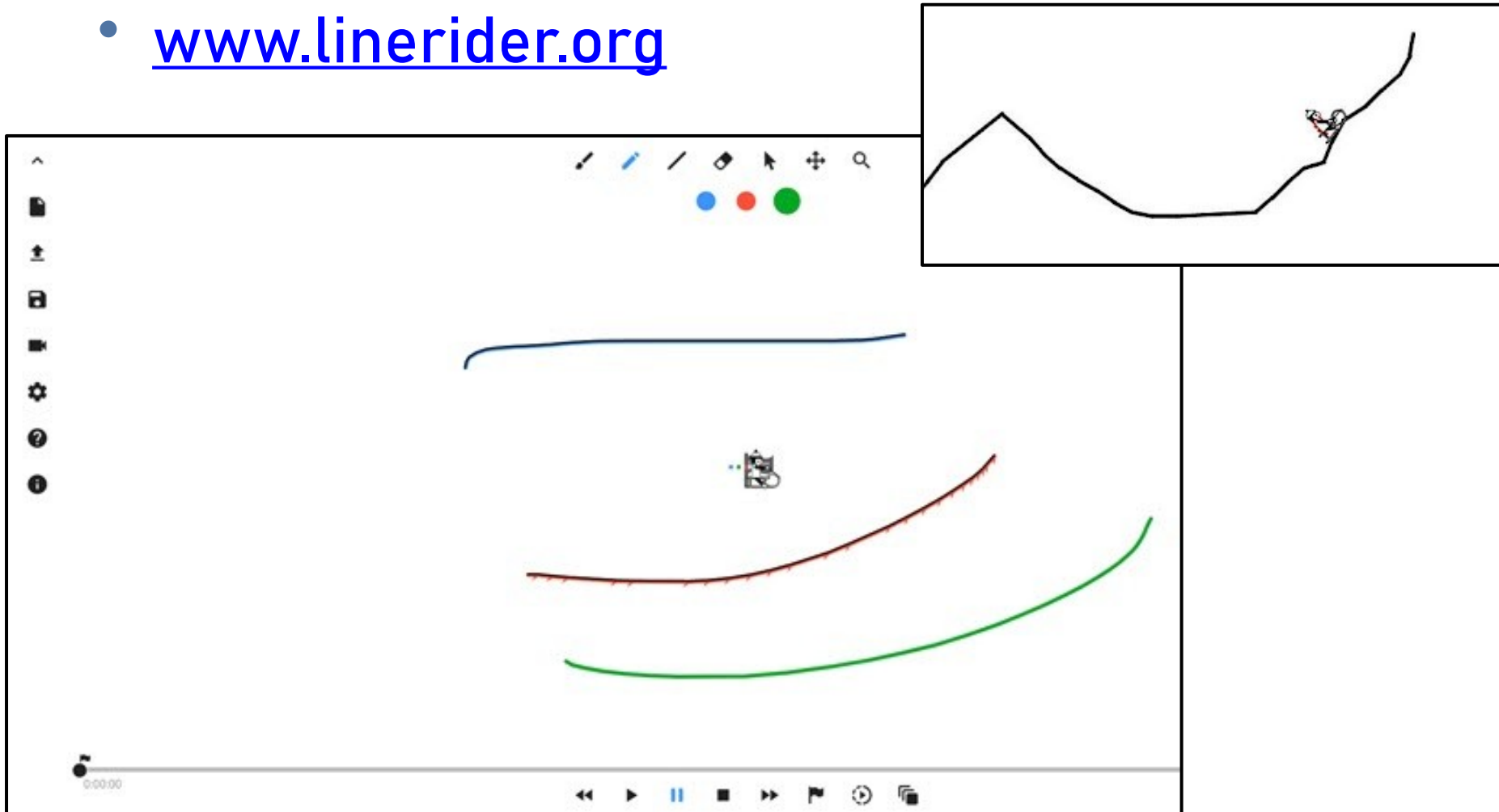
# Advice

# Think Small!

- Do one thing well
- Make game stand out!
- Better than doing lots of stuff half-way

# Example

- [www.linerider.org](http://www.linerider.org)



# Big Idea Sheet

- Keeps project focused, common ground





# Big Idea Sheet



# Further Inspiration

- Previous course instances
- <https://store.steampowered.com/>
- [experimentalgameplay.com](http://experimentalgameplay.com)
- <https://www.etc.cmu.edu/projects/experimentalgameplay/games.php>

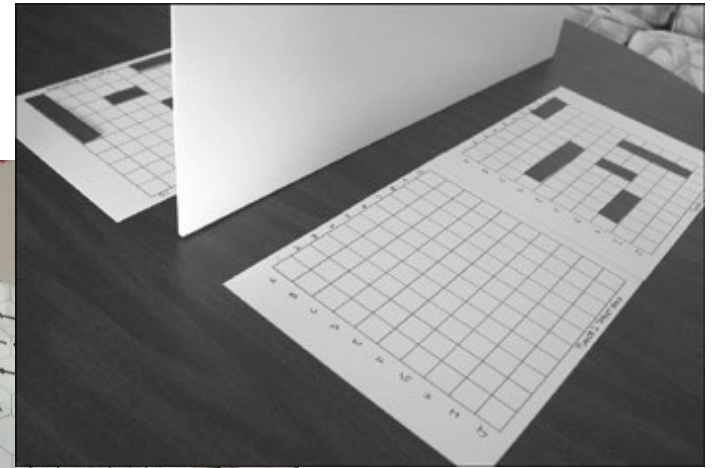
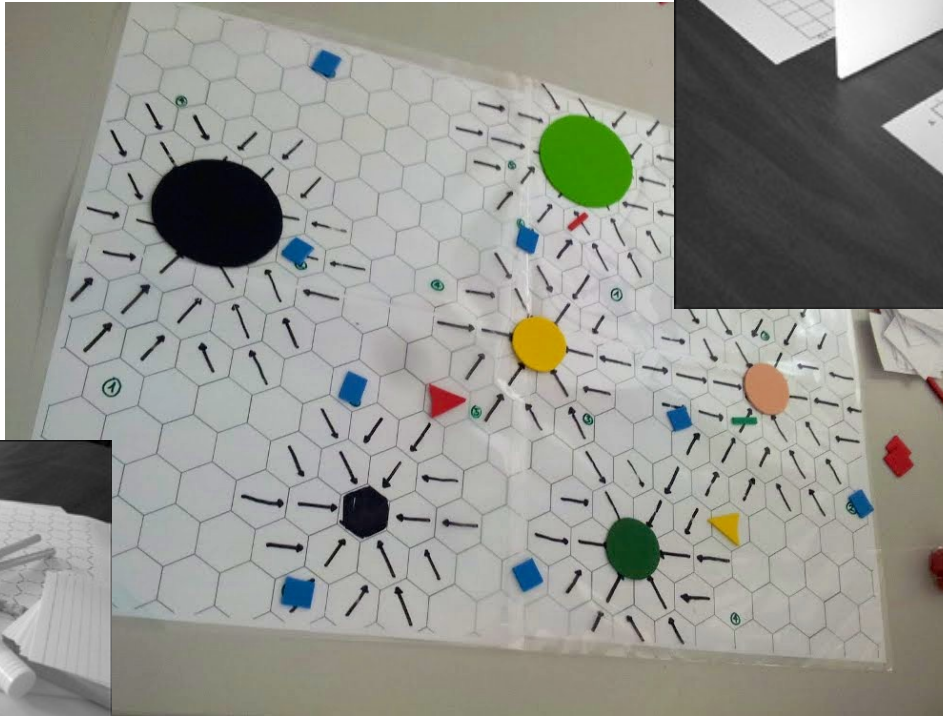
Temperature			
 <p>fiery pursuit by TJ Jackson</p> <p>You're a flame on a heat-sensitive board. Keep on moving around to avoid burning holes, and collect bonuses.</p> <p>Downloads: exe zip Post-mortem</p>	 <p>Ice Fishing (MiniGreenSquid) Click To Start By Phillip Williams</p> <p>Catch fish with nothing but a magnifying glass by melting snow into icicles and then dropping the icicles to hit the fish below.</p> <p>Downloads: exe zip Post-mortem</p>	 <p>Save the Penguins by SJML</p> <p>Create ice for the penguins to walk on and lead them to safety.</p> <p>Downloads: exe zip Post-mortem</p>	 <p>Updraft by SJML</p> <p>Navigate a paper airplane through a house using sources of heat.</p> <p>Downloads: exe zip Post-mortem</p>
Airflow			
 <p>BUGGY PATH by SJML</p> <p>Stop ants from walking off with your cookies by blowing them away with a hair dryer.</p> <p>Downloads: exe zip Post-mortem</p>	 <p>FLOW CONTROL by SJML</p> <p>Maneuver the balls around the maze to the colored squares in order to get points. Move the balls by manipulating the maze and controlling the air flow.</p> <p>Downloads: exe zip Post-mortem</p>	 <p>SECONDHAND SMOG by SJML</p> <p>Use a cloud's wind to avoid and blow away evil smog clouds.</p> <p>Downloads: exe zip Post-mortem</p>	 <p>TRADEWINDS by SJML</p> <p>Blow a ship around the sea through buoys, avoiding sharks. Can be played with a microphone or a mouse.</p> <p>Downloads: exe zip Post-mortem</p>

# Milestones

1. Game idea pitch
- 2. Formal proposal & prototype**
3. Interim demo
4. Alpha release
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# Physical Prototype

- Finish design chapter
- Test core gameplay



# Milestones

1. Game idea pitch
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- 4. Alpha release**
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# Interim & Alpha

- Interim report
  - Finished layer 2, well into layer 3
  - Functional minimum completed!
  - Report & demo
- Alpha release
  - Principle design long complete
  - Coding almost complete
  - “Freeze” version for play testing

# Milestones

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- 6. Final presentation!**

# Final Stages

- Playtesting
  - Give your game to friends & relatives
  - Take notes & make interviews
  - Another chapter...
- Final presentation
  - Present your journey & results
  - Conclusion chapter, and video



# Milestone Dates

- Groups formed (Apr. 27th)
- Game idea pitch (May. 5th)
- Formal proposal & prototype (May 23rd)
- Interim demo (June 13th)
- Alpha release (June 27th)
- Playtesting (July 11th)
- Final release (July 25th)

# Re-cap Milestone #0

- Form teams
- Carefully (!) read project structure document

# Re-cap Milestone #1

- Read project structure document - really!
- Include this year's theme
- Game pitch presentations (aim for "exactly" 10 min)
- Critiques from everyone! (due one week later)

# Project Structure Document

- Make sure to follow instructions
- Detailed deliverables
- Especially for milestones 1 & 2

# Project Critiques

- Get feedback from “outsiders”
- Be constructive...
- Not used for grading!

# Forming Groups

- If you already have a group - great...
- If not - stay behind, top priority
- Email us by Wednesday!
  - One mail per group
  - Name, matr.no., e-mail
  - All group members in CC

# Platform

- No restrictions on development platform!
- But - technical contribution has to be clear
- If unsure, talk to us...



# Game Theme

- 9 out of 10 designers agree:

***“Narrowing focus and imposing limits expands creativity immensely.”***

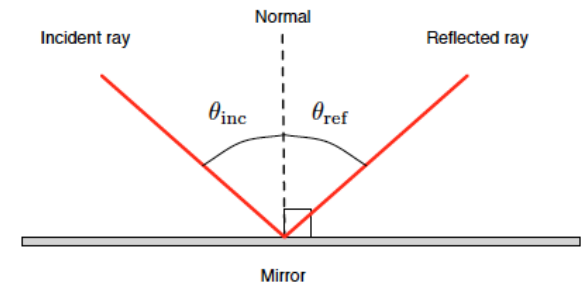
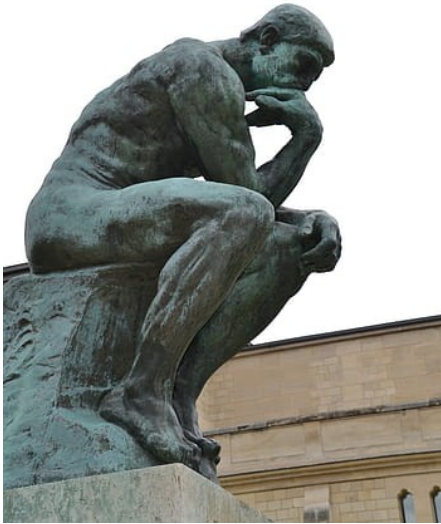
- Starting point for visual design
- Avoid stereotypes & cliches
- Justify your design decisions against theme



# Previous Themes

- Alien
- Historic Places & Events
- Large vs. Small
- The Seasons
- Together
- High Contrast
- Artificial Intelligence

# Reflection



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