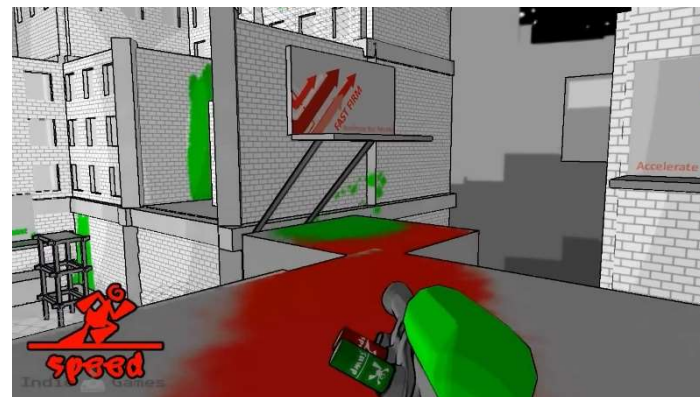# Spieleentwicklung

Spiele 3D

Goal of the lecture

- Implement a number of **game prototypes**

- Understand underlying concepts
  - 3d computer graphics (Rendering Pipeline, Cameras, …)
  - Game mathematics, physics, mechanics

- Working with a game engine (Unity 3D)

LVA structure

	Month 1				Month 2				Month 3				Month 4			
1st Part	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
2nd Part	T	C	P	C	T	C	P	C	T	C	P	C	T	C	P	C
	Game 1				Game 2				Game 3				Game 4			

L … theory lecture

T … tutorials

C … coaching/working (tutors/myself)

P … play testing

Theory Lecture – Content

- Game concept and design

- 3D graphics (engine internals)
  - Rendering Pipeline
  - Geometry and transformations
  - Cameras
  - Lighting
  - Texturing
  - Visibility

- Collision Detection

- Physics and animation

Tutorials

- Series of Unity tutorials given by the tutors
  - Today: introduction to Unity
  - Each tutorial will
    - sketch different game types
    - explain parts of Unity needed for that kind of game

Coaching/Working

- Inbetween tutorials
  - **You** will work on **small prototype** games
  - **Play-testing** of prototype
    - Details at first play-testing

Todo

- Form teams of 1-2 person(s)

- Implement 4 small game prototypes
  - Game play is important
  - Not models or sounds

Why 4 prototypes – not 1 big one?

- One big project
    - Lost in details
    - Planning overhead
- People work years in dozens of games till first release
    - Here you already made 4 ;-)
- More versatile
    - Different game plays
    - Different theory (type of collisions, lighting, …)
- We want you to experiement
    - Try out stuff
    - Easier in small projects

If you want to do a big project

- Excellent!

- Possible with/without team
  - Informatikprojekt (5ects), MD projekte (5, 10, 15 ects)
  - Fachbereichsprojekt Spiele (3 or 5 ects)
  - Bachelor thesis (15 ects)
  - Master (xxx ects)

Grading

- Time spent on project

- Active participation in coaching/working blocks

- Outcome at play-testing

Unity 3D game engine

- Dominant game engine (45%)

- Can do much without extensive programming

- Many resources online – look them up!

- Tutors will give case study talks

Unity 3D unity3d.com/learn/tutorials

TOPICS

Interface & Essentials (22)	2D Game Creation (26)
Scripting (76)	Best Practices (12)
Graphics (43)	Physics (27)
Audio (12)	Animation (18)
User Interface (UI) (31)	Mobile & Touch (6)
Navigation (7)	Tips (19)
Ads & Analytics (9)	Virtual Reality (8)
Multiplayer Networking (18)	

Unity 3D unity3d.com/learn/tutorials

PROJECTS

Roll-a-ball tutorial (9)
New? Start here.

Space Shooter tutorial (19)
Blast some Asteroids!

Survival Shooter tutorial (12)
They mostly come at night..

Tanks tutorial (8)
2-players, 1 keyboard, Tank vs Tank.

2D Roguelike tutorial (14)
Procedural level Survive-em-up!

Procedural Cave Generation tutorial (9)
Let's get spelunking.

2D UFO Tutorial (9)
New? Want to make 2D games? Start here.

Let's Try Assignments (12)
Learn to create single game mechanics.

Resources

- Github (goo.gl/pFsdx2)
  - Slides
  - Tutorials

- goo.gl/PUvaAG
  - Commented links on games and computer graphics

- All Game Relevant Events (and more)
  - Google calendar goo.gl/SySLwF

- Moodle
  - Deliverable/project upload
  - Forums for questions