Architectural Computer Generated Imagery

Course schedule, requirements and design brief

Armin Hess, Winter 2020 & Summer 2021

Welcome!

I am curious to see your inventions and the progress you make within the next year within studios and my course - of course.

Due to the corona situation and the experiences from the last years I unfolded the schedule over two terms. Those who do not comply with this idea please come back to me. There is also no frontal lecturing, class-tutorials etc… We will mostly relate to online tutorials small group sessions or individual conventions (t.b.n.).

The following pages are more or less the basis for the course. Background information, references, tutorial recommendations whatever comes up during the course you may find separated on our website (**ddplab.com**).
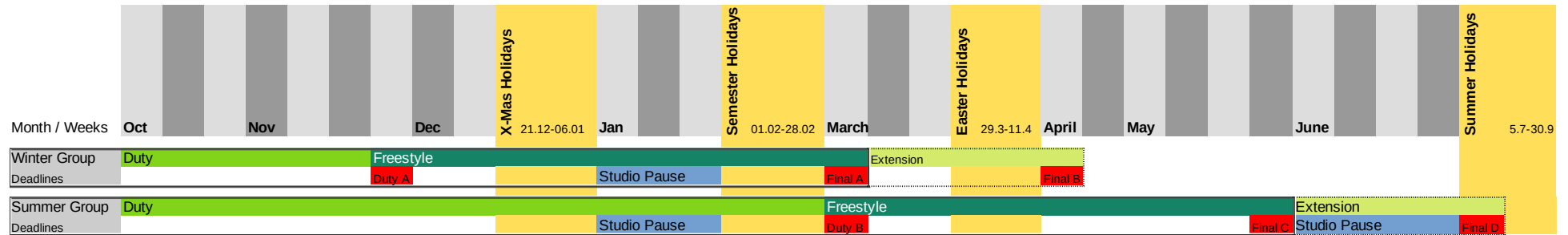The way we work is to follow some tutorials to learn the basics of Blender first, when done you can right-up start with your individual project.

How can we communicate?

- Meeting in person is the easiest way to work together. So the main meeting will be on Mondays from 10-12h.
- We will split the lecture time into to **2 slots from 10-11h and 11-12h**. Therefore you need to register in advance (sheet on my office door room 130)
- **You can always meet me** individually when I am around (mostly Mo and Tue), on Tuesdays at least I have a "Sprechstunde" from 10-12h.
- In case you can not show up in school we will arrange Zoom-Meetings with small groups.
- **I can not reply to individual questions per mail**. You just can send mails for submitting you work!
- You do not need to show up without questions or material to show.

Schedule:

- We run two courses (Winter and summer) for 2020/20201.
- Requirements and course outline are the **same for both courses**.
- **Group „Winter "** applies for students already registered&accepted via Base.
- **Group „Summer "** officially starts after 28.Feb. 2012 but people can start working right-up now.
- As soon as you have access to the „Base" **please register** for the summer course.

Month / Weeks	**Oct**		**Nov**		**Dec**	X-Mas Holidays 21.12-06.01	**Jan**	Semester Holidays 01.02-28.02	**March**	Easter Holidays 29.3-11.4	**April**	**May**	**June**	Summer Holidays 5.7-30.9

Winter Group — Duty · Freestyle · Extension
Deadlines — Duty A · Studio Pause · Final A · Final B

Summer Group — Duty · Freestyle · Extension
Deadlines — Studio Pause · Duty B · Final C · Studio Pause · Final D

Deadlines (!!):

Winter Course:
Duty A (Task 1&2): 01.December 2020 24.00h
Final A (Project submission): 02. March 2021 24.00h
Final B (Project submission): 13. April 2021 24.00h

Summer Course:
Duty B (Task 1&2: 02). March 2021 24.00h
Final C (Project submission): 25. May 2021 24.00h
Final D (Project submission): 05. July 2021 24.00h

General Requirements:

To complete the course you need to successfully work out 2 Tasks **(Basics)** and develop a project **(Project)**.

Evaluation criteria in order (80% Your Project, 20% Basics):

– Individuality and uniqueness of the work.
– Effort and quality of planning and conceptualization.
– Handling of the brief.
– Effort to experimentation, adaptation to failures.
– Progress made during the course regarding handling of the software.
– Visual quality of the work
– Technical skills not achieved during the course.

Basics

The duty consists of two technical tasks to get into Blender.
Both tasks need to be worked out and be approved before proceeding with your main project.
Approving means: You show me what you have done and prove your technical skills with Blender (physical meeting)
To complete the first part (duty) you hand in you work (.Blend files in images) of both tasks per mail. Meet the deadline.

Project

This is Your project, Your creativity, Your style your way of doing it. I will support you where needed, but try to give you enough freedom for your work (within the topic hopefully). Even though I need to evaluate your work, therefore i need to accompany your creative process. This means i need to see you at least two times before delivery. Once to clarify your intentions, to help you to plan your process, and at least once to comment/negotiate before completion! You hand in your final project (images, animation whatsoever), per mail. Marks are done around 1 Week after submission deadlines (and not in between!)

To be clear: No hand in/delivery without prior negotiation/consultation. This applies for Basics and the Project !

Design brief

This year will focus (again) on the REAL!- so less spectacle more seriousness please! - Not really - what is REAL anyhow?

But seriously the idea for this year: **Hands On!** No cheap talk, no theories about AI, Color models, simulation techniques, latest VFX in Feature Movies, Plugin repositories, Cycles vs. Redshift, why Houdini is huge... Costs so much time but for what benefit?

Learning software like Blender takes time, a lot of time, also time we don' t have. So what can we learn? Maybe: Start with the basics: Modeling! Not great not fancy at all, not procedural, and anyhow we know Rhino already! But what if modeling was more intuitive, more like squeezing, pushing, extruding, shifting, like working with clay, not always extruding from floor-plans. Blender can do this. Take a Cube and then squeeze it push it, extrude it give it the form you want. Yes i know. You do it with Cinema, Max, Maya, Sketchup, Modo, Houdini. Why Blender then?

Blender became an outstanding piece of software, really outstanding. It is not the geeky „wanna be like" Software developed by some weird Linux Geeks any more. Blender is more dynamic, fresh, powerful than many other DCC packages these days. And it is GNU/GPL, means Open Source. Means also you can get it running wherever whenever you need it, you can modify it as you want, you can influence and support its development, you can expect the developers to listen to your needs and ideas.

And its not an online service driven by major corporation charging money from their clients on a monthly basis!

So: **Hands On!** Get Blender running and start right up with modeling (Maybe some basics first).

The duty phase consist of two Tasks, both about Quad-Modeling. How can you apply the tools, also look for other tutorials, and learn the shortcuts! At least some basic ones, makes working so much faster and intuitive! When you know the basics already you can go more in detail or start with Advanced modeling techniques like Hard-Ops e.g.

As soon as you are done with the Basic tasks come back to me, I want to see what you plan for your main project. The main project is more freestyle, maybe an improvisation on the theme? References are welcome! Whats the idea behind it? Are there certain techniques (besides modeling) you want to get into? It is good to outline an idea before you start. Ok. and before you press the Render button the last time for the course, you come back to me so I can give some final comments.

Task 1 – Modeling of an Animal in Low-Poly style

Procedure:

01. For the „very" beginners you can start up with these tutorials from **Grant Abbitt**:
Part 1: https://youtu.be/7MRonzqYJgw there are 4 follow ups, nice to see but not everything is needed so far.

02. When you are confident with the Basics, we can start with the first „real" model. This time we follow a tutorial from Grant Abbitt (again) and model a so called Low-Poly animal. The „Giraffe" is a nice tutorial to start with, when you know the techniques please go for a **different animal**. Different but not totally different (so lets say a fish is not so good). Therefore download views as images. At https://www.dimensions.com you find views and measures (2-3 views are enough). Now you can model with the same principles like in the „Giraffe" Tutorial. Finally we apply a basic material (just one color) setup lighting and a base, maybe do a composition of a family.

Bonus: You can do an isometric game tile, a small squared landscape (~10*10m), build some extra elements (whatever you like: trees bushes, a building, a lake…) but try it with the same technique, and add your animals! For rendering please use Evee (image size ~2500k)

The Giraffe tutorial: https://www.youtube.com/watch?v=6mT4XFJYq-4

Requirements:

- Get Blender running on your computer.
- Become confident with the basic interfaces of the software (3D View, outliner, Properties)
- Work with basic primitives, use transforms (move, rotate scale).
- Orientation in 3D, setup of a Camera and a light source.
- Get an understanding of Low-Poly modeling, what are the advantages vs. CAD-style modeling?
- Get confident with basic modeling techniques: loop cuts, insets, extrusions.
- Get confident with basic mesh manipulates in edit mode: manipulations on vertex, edge, face level.
- Apply basic materials (no maps)
- Render output in Evee.

Task 2 – Modeling Texturing and rendering of a wooden chair

Procedure:

This time we go with a tutorial from **Andrew Price** from Blender Guru. He shows us how to unlock the Quad style/subdivision modeling. We do it in the same way like in Task 1. Start with the tutorial and when confident with the techniques go for a similar type (not the same! Also no 3d downloaded one please!) There are plenty of resources in the web. When done with modeling also apply basic Texturing and materials. Put it somewhere, at least on a floor, maybe into a small room?, render it. I want to see your .Blend files! Done.

Here is the tutorial page: https://www.youtube.com/watch?v=Hf2esGA7vCc

Bonus: Why not design a space around and assemble it with a table, make something like a dining room? Go for a simple room with a window and try to render with Cycles. How does Cycles compare to Evee?

Requirements:

- Improve your skills in Low-Poly modeling.
- Extend you abilities to work with non flat surfaces.
- Use the subdivision modifier to control your geometry.
- Use edge-loops to control the roundness of corners.
- Advanced Materials – Build an extended shader via shading nodes.
- UV-Editing – learn the Basics of UV-Edting.
- Evee vs. Cycles Reasons to change from Evee to cycles.
- Render output in Evee or Cycles.
- Show me your work including .Blend file!

Your Project:

Here is the beginning of your story:

The huge door in front of me slowly opens opens up and ...

Background

The moment we get exposed to a new space we tend re-evaluate our options for further actions. How fast can read the constitution of the space in the moment of exposition? How do we perceive the space? Do we think the space is save, can we enter the space at all? What are the options for further actions? - Lots of these considerations are the basis for Game-Level layouts , but also in architecture these moments of surprise, confusion overwhelming feelings play an important role for design decisions.

Miriam Bellard researches in this field of perceptual psychology, mainly for advising game designers. See her lecture from the GDC 2019, it might give you some new insights, and maybe your can relate your work some of these ideas.

Lecture Environment Design as Spatial Cinematography: https://www.gdcvault.com/play/1025736/Environment-Design-as-Spatial-Cinematography

Requirements:

- ...Continue with the narrative and describe what's behind the door. Describe the space in a few! Words.
- Make some sketches or find visual references describing your intentions.
- Follow your concept and define your ideas in 3D.
- Work it out as you like, technically constructed, sketchy, chaotic, hyper real... feel free to express you in your own style!
- The result will be some kind of imagery, a short animation was nice of course!