

Course name: Architecture 2

Course Code: FGA2.AR2-02

Academic year: 2013 – 2014

Lecturer(s): Martin Walker

Number of EC's: 4

Situational Factors:

This course relates to Course AR1 in Year 2 and builds on course TX1 in Year 1. TX1 provides the basic "Photoshop" skills used in AR2, and AR1 is the basis for AR2, where the AR1 project is textured and rendered.

Students have limited access to rendering equipment, and provision is to be made to allow fair shared access to the hardware via the used of an online "Booking System"

Relation to the industry:

This project is designed to mimic the type of environment designed for realistic game cinematics, architectural visualisation and motion pictures. It is also aimed to provide a solid appreciation of the use of (digital) photography and cinematic camera work ,and its intrinsic links to 3D CGi

Course description:

AR2 is designed as the second part of a group of courses that teach world-building skills to 3D artists. This class deals with creating "life-like" textures from photographic reference, and the manipulation and editing of these images to create photo-realistic imagery. Students are then expected to create a photorealistic HD animation (approx 30-45 seconds)

Competencies:

- A2. Pipeline design: Students will be challenged to represent a highly optimized self-contained realistic environment. This will require solving technical problems related to pipeline design.
- A3. Production Design: Students will be challenged to represent a highly optimized self-contained realistic environment. This will require solving aesthetic problems related to pipeline design.
- A5. Advanced modeling: The finished model will incorporate advanced UV editing.
- A6. Texturing. The finished model will be texture mapped to a photo-realistic level.

Course learning objectives:

- Appreciation of the importance and challenges of creating tile-sets of textures for terrain and architectural objects.
 - Class Review of results
 - Demonstrate and discuss weak, medium and strong examples.

- Basic to intermediate use of digital photography for application to texture creation
 - Demonstrate complete workflow of photograph>editing>digital manipulation>application in 3D scene.

- Ability to generate an apply photo-realistic texture maps (diffuse/colour,)
 - Textures to be supplied and critiqued for
 - Likeness
 - Efficiency
 - Colour / Saturation balance

- Ability to generate visual accurate effect maps (bump/normal, opacity, displacement)
 - Textures to be supplied and critiqued for
 - Visual accuracy
 - Efficiency
- Understanding and appreciation of how to create visual informative and pleasing camera paths.
 - Linear In/out tangencies
 - Informative and logical placement and timings
- Render a complete scene using basic knowledge of Vray using the custom “skylight” lighting rig.
- Compile a professional presentation using video production software.

Number of Hours:

- A 2 hour workshop every week.

Teaching Method:

- Lectures on digital photography, observation of materials, colour correction, tileset manufacturing,
- Guided work in class on projects
- Frequent in-class group critiques

Assessment & Deadlines:

- Project 1: Architectural Fly Through 100% (Friday 18th April 2014)

Retake Deadlines

- Project 1: Architectural Fly Through 100% (Friday 4th July 2014)

Deliverables

This should be a 40-60 second HD format video. (The format is at your discretion). The final animation should feature well chosen camera passes, post processed (graded / colour corrected) scenes, and a degree of post-editing. Keep in mind that the challenge of this assignment is to create a "work of art" rather than an "architectural visualisation". The architecture and context has to be accurate and true, but the mood and ambience is for you as an artist to evoke into your product

The final animation must be uploaded to either Vimeo or YouTube and a link submitted via a .txt/.doc document on the DVD mentioned below

ALSO, all assets should be placed on DVD (3D models, textures and rendered still sequences). This DVD should be named with ID number and Student name and placed in my pigeon hole

Grading criteria:

1. Participation
 - a. Present and active during group critiques in class.
 - b. Available to work during workshops and to take advice.
2. Project:
 - a. If complete, the project will not receive less than 5.
 - b. If incomplete, the project will be downgraded heavily, depending on the nature of the prominence of missing parts or objects. Normally an incomplete project will not receive more than a 4.
 - c. If the likeness to the target environment is weak, the maximum grade allowed is a 6
 - d. If the level of detail is low, the maximum grade is a 7.
 - e. The maximum grade is limited to a 10.
 - f. The minimum grade for a delivered project is 1.
 - g. Undelivered projects will not receive a grade.

General note on grading of project: A passing grade requires a complete project. A high grade requires a very good or excellent likeness and a high level of craftsmanship.

- Participation 10%
- Project: 90%

Attendance policy:

Attendance is obligatory at all workshops. There is no way to make up or recreate a group critique outside of class, nor are lecture notes provided to students as complete as a full lecture due to questions that may be asked and answered there.

Literature:

Computer Graphics for Artists 2: Environments and Characters by Andrew Paquette, Springer UK 2009

Architectural Photography by Adrian Schulz, RockyNook - 2009. ISBN 978-1-933952-43-7

Materials needed:

- The current release of Maya
- A recent release of Photoshop
- A Wacom Tablet (or equivalent)
- A computer compatible with Maya
- Access to a camera (preferably DSLR)

Schedule*:

| AR2: Environment building | Class Notes | Demonstration | Activity | Homework |
|---------------------------------|--|---|---|--|
| Week 1 | Overview / Basics of texture creation | Show examples film/games/class | Begin collecting and editing textures | Devise a library of necessary textures. Use p/holders if necessary |
| Week 2 | Creation and Manipulation of photographs for texture creation | Show examples from earlier years, compare to nearby terrain | Manipulation of textures for use in real-time work | Manipulate colour map textures for real-time apps |
| Week 3 | Architectural and Built Environment Extracting specular and bump information | Observation artificial and natural materials used in construction | Manipulation of architectural textures for use in real-time work. Creation of normal and specular maps | Generate specular and normal maps from colour maps info |
| Week 4 | Rendering an external environment scene | Demonstration of V-Ray 2.0 | Implementation of V- Ray. Sun systems, photometric lighting, GI solutions etc | Devise camera paths, and lighting rig. Appreciation of shadow placement |
| Week 5 | Study of infrastructure / highway materials | Look at various examples of interesting materials and finishes | Manipulation of infrastructure textures for use in real-time work | Use class advise to tweak out environment textures |
| Week 6 | Google SketchUp | | | Complete texturing of planting and "soft finishes" |
| Week 7 | Natural Landscape / Planting | Nat FX and terrain subdivision | Texturing of planting and "soft finishes" | |

*Changes may be made to this schedule as appropriate