## Elective Course Description Summer Term 2022

### Title
Procedural World Construction

### Cluster Title
- **PO 07**: To be filed by focus managers s.u.
- **PO 2012**: To be filed by focus managers s.u.
- **PO 2014**: To be filed by focus managers s.u.

### Date of first course event / first organizational meeting with students**** / Room
- 25.04.22 14:15 F17/103 evtl im Wechsel online
- **Room**: Hörsaal

### Course Data
- **credit points**: 5
- **workload/semester**: 125-150 h
- **presence/week on average****: 4 SWS
- **Group size according to cnw**: 8 students
- **Course Language**: English x German
- **suitable for students of course/focus**: DM AG IMD MP SMP IW (BA) OJ/WJ/OK I X

### Course Contents
The elective is targeting Tech Artists and Programmers. A lot of games featuring large areas and worlds or have a level generator to create mass of content in no time. Also, for some animations, we need a lot of assets to fill the background. This is often assembly line work and would be a waste of creative work time for Artists.

In this elective, we will cover how to develop such worlds and content generators. After a short introduction to general Procedural Content Generation (PCG), we will learn how terrain systems work and also try to program our own landscape generator and dungeon generator in Unity. We will learn how Plants, Trees and other vegetation is automatically created and...

### Course Portrait

<table>
<thead>
<tr>
<th>Lecture(s) Name(s)</th>
<th>Prof. Stephan Jacob</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture(s) email</td>
<td><a href="mailto:stephan.jacob@h-da.de">stephan.jacob@h-da.de</a></td>
</tr>
<tr>
<td>Contact Prof. @ fbmd</td>
<td></td>
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</tbody>
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- **Teaching Method**: lecture lecture + seminar seminar project

- **Course Contents**: Design Informatics / Technology Economy / Business Culture
what techniques, methods and applications exists. (e.g. In Houdini) We will also learn how Citys, Buildings, Textures and even NPS, Quests or Names can be completely generated.

Disclaimer: Although about 50% of the course will be dry theory - we will write actual code and create stuff! Both Programmers and Artists are welcome, but a basic understanding in coding will be very useful, also PCG code and methods needs more of a mathematical understanding than gameplay code. The elective is therefore targeted towards Tech Artists and programmers. We will be using Unity and Houdini.

<table>
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<tr>
<th>Type of Exam</th>
<th>homework</th>
<th>work+presentation</th>
<th>x</th>
<th>paper</th>
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Milestones if known

*Examination*  
Exam / Presentation

End of Elective

Suitability Intermediate student course

Preconditions Some understanding of either tech-art or programming principles, as well as proficiency with Unity game engine.

Info about lecturer (especially if guest)

Other information

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* According to our examination law, the course titles have to be matched to a given catalogue with common course titles. This title will appear in the Transcript of Record and the Bachelor Certificate. Field has to be filed by Focus Managers, all clusters can be found below

** The official presence-time is 3 SWS for the whole semester. As the elective period is condensed to 12 weeks instead of 16 weeks, the presence time for the electives is 4 SWS.

*** Courses and focal points: dm = Digital Media, oj = Online Journalismus; wj = Wissenschaftsjournalismus, blank field = please insert appropriate course. (check as many as apply)

**** Block 1 = 8.30 - 10.00 Uhr, Block 2 = 10.15 - 11:45 Uhr, Block 3 = 12.00 - 13.30 Uhr, Block 4 = 14.15 - 15.45 Uhr, Block 5 = 16.00 - 17.30 Uhr, Block 6 = 17.45 - 19.15 Uhr

***** In case that the course does not start in the first week 6.10.2014 there has to be a first organisational meeting to finalize the application process

Elective Start: 19.4.22

Holy Days: 26.5., 6.6., 16.6.2022

Please upload in Moodle Course!