Title	GameDev Tips & Tricks - (C#,C++)
Cluster Title PO 07 To be filed by focus managers s.u.	
Cluster Title PO 2012 To be filed by focus managers s.u.	
Cluster Title PO 2014 To be filed by focus managers s.u.	Game Development

Date of first course event / first organizational meeting with students*****/ Room	24.10.22 18:00	F17/103	NN
kind of room if not indicated above	online	Seminarraum	Labor

Belegung über OBS
05.10. - 10.10.2022 14:00

Course Data	credit points				5 credit points
	workload/semester				125-150 h
	presence/week on average**				4 SWS
	Group size according to cnw				
	Min. size				8 students

				weekday of course	MON/WED
	frequency of course-events	weekly		bi-weekly	blocked
	prospective timeframe**** (Block = 90 min)	Block 1 **8:30**		Block 2 10:15	Block 3 12:00
		Block 4 **14:15**		Block 5 16:00	Block 6 **17:45** x
	course language			English x	German
	suitable for students of course/focus			**DM**	**AG** x
				IMD	**MP**
				SMP	**ER** x
				OJ/WJ/OK	**KMI** x

Content(s): (check one or more)	Design		Informatics / Technology x	Economy / Business	Culture
Time frame in case of blocked event	11 Sessions: 24.9., 26.9., 31,10, , 2.11. 7.11.,9.11,14.11,16.11,21.11,23.11,28.11.22, 5.12.22 18:00 – 21:00				

Course Portrait	
Lecturer(s) Name(s)	Thomas Valentin Klink
Lecturer(s) email	thomask@crytek.com
Contact Prof. @ fbmd	Tilmann.kohlhaase@h-da.de
Teaching Method	lecture / lecture + seminar x / seminar / project
Course Contents	**GameDev Tips & Tricks** Over the last years I have given electives on game engine development and the internal workings of frequently used, but not often understood concepts like networking, multithreading or serialization. During these electives a lot of topics came up that I deemed interesting to talk

about but would not fit within the context of the electives I was giving. With this elective I want to talk about a pool of topics that all by themself would not warrant their
own elective but combined could make for an interesting amalgamation of hands-on experience
and general programming tips that can make your everyday work easier.
Some topics we will take a look at:
- Code Reflection
The ability to let code inspect code is powerful but it doesn't happen often that we see an
actual real world example of this. For this I will demonstrate how code reflection can be
used to mitigate boilerplate code and even improve performance sometimes
- Effective Debugging
When do we attach a debugger to an application? What can we do with it? What is a
crash dump? When should we resort to simple logging? What are data breakpoints?
What are unit tests? Debugging games can be a very complicated and broad topic but I
want to give some insight into more effective debugging of games
- Optimization
There are endless ways of achieving better performance in your games so I want to give
some general purpose tips on effective use of data structures in code and more widely
known techniques such as object pooling
- Tool Development
Writing your own tools is fun and can often lead to substantially less work on your hand.
There is this saying that by spending hours on writing a tool you can save minutes of
doing it by hand but while this can be the case, quickly throwing together a functional
tool can be a good time saver under the right circumstances.
I already have a good amount of topics I can cover but if you have ideas yourself that you
always wanted answered but that you did not know how to approach, feel free to send me a
message and perhaps we can talk about it in this elective as well.
Prerequisites: General interest in programming, general understanding of C# is mandatory,
understanding of C++ in addition is a bonus

Type of Exam	homework		work+presentation		paper			
Milestones if known								
		Examination						
		Examination / Presentation						
End of Elective								

Suitability	beginner course intermediate course advanced course
Preconditions	Prerequisites: General interest in programming, general understanding of C# is mandatory, understanding of C++ in addition is a bonus
Info about lecturer (especially if guest)	Valentin Klink is Senior Gameplay Programmer at Crytek
Other information	

* 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: er = Expanded Realities , 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 15.10.2018 there has to be a first organisational meeting to finalize the application process

Elective Start: 17.10.2022
Chrismas 24.12.-8.1.23 (due to the short semester there might be some flexibel lecturing during this period.,)
Electives End 10.2.2023 (Examinations could be scheduled after this date if necessary)

Please upload in Moodle Course!