



## On the „Topics“, the essence of the course

We have used our first two meetings developing some feeling for what we could do here. With our time, our being together, our hearts, our brains. We must now bring this to an end, to decisions.

The intention is that we deal seriously with algorithmic aspects of digital images. A bit of theory, some programming. I encourage you to embark on such a journey, even though it will not be trivial. I am curious myself where such an effort can take us. We should stand together, help each other, keep an open mind, dig into some technical and formal details to see how this feels, what it does to us, how we can still keep in touch with the great topics that we believe are so wonderful. If we do this, we will all gain, however different our personal experience may be.

Some take the course just out of interest, with no intent to collect credit points. Please, when you do so, engage in some of the hard work, nevertheless. I promise to pay much attention to your learning progress, but we must all be aware of the different directions we may pull.

If you take the course for credit, you should be aware of the relation between meeting hours and number of credit points: it is not usual that you can gain 6 credits for only 2 hours of weekly meeting time. I expect a substantial amount of work from you, during the time of formal meetings and after (towards the final presentations). The form of our work will be lectures, exercises, tests, reading assignments, group work, oral presentations, program development, and written essays.

To recall the conditions for credit, they are:

- 1. You join one of the topical groups we build. You contribute actively to their work and results. These results should be a short critical summary of your findings from the internet (written), combined with an oral presentation of those findings. You should try to derive a generative design contribution to a website or brochure documenting the course work. This more substantial work is to be presented at the final meeting.*
- 2. You hand in solutions to the occasional assignments (four or five).*
- 3. You answer the anonymous short tests in class that will be given as surprise.*

Five topics have been identified to be interesting to you. I have brought them into a timely sequence. We now need names attached to the topics. You will then, as a group(!), start immediately into researching your topic. Your goals are to provide a first summary of your findings, and to present it orally and in writing. Furthermore, you must define a personal development and design of an aspect of your topic. I hope, the following notes help a bit to get into your topics as groups and individuals.

<b>Topic</b>	<b>Dates</b>	<b>Question</b>	<b>Participants</b>
A. Raytracing of 3D scenes	26 April 3 May	How does a scene get into the computer? How does light? What does simple raytracing achieve? And recursive raytracing? Visibility, intersection	Qingteng Chang Jan Wieferrich
B. Rasterizing graphic elements (straight line, polygon area, anti-aliasing)	10 May 17 May	What is the task of rasterization? How is it done algorithmically? How to improve aesthetic quality?	
C. Image formats and compression	31 May 7 June	How much storage space do images need? How can this be reduced? What are important formats? What are their features?	Andree Neumann
D. Color theories and systems	14 June 21 June	What are the most important color theories? What are the relevant ones for digital images? How are they put into systems? How can one system be transformed into another?	Niklas Werner Ivan Yanev Shengsheng Zhu
E. The process of generative design	28 June 5 July	What is the designer's role today, what is the algorithm doing? Generative design, art, and aesthetics! John Maeda, Casey Reas	

Each of our five topics should have two names or more of students who take responsibility for it. Each time we should do at least one detailed algorithmic exercise. We also need a general understanding of the important questions. And some exchange about typical application system features, a bit deeper than the naive „user“.