

## SEN9110 Simulation Masterclass

### Instruction for term papers

The expected output is a paper, structured as a journal paper, which gives a literature overview of the topic you are studying. The expected length of the paper is 10-15 pages. The papers that are provided for you on the course website serve as a starting set only: you are expected to search yourself for more papers relating to the subject. Good resources to do so within TU Delft are:

- Scopus paper database, Web of Science paper database, IEEE database, JSTOR database, accessible via <http://www.library.tudelft.nl/collecties/databases/>
- Google Scholar, accessible via <http://scholar.google.com> (be careful for quality, though)
- E-journals with full PDF papers, accessible via <https://tudelft.on.worldcat.org/atoztitles/search#journal>
- Papers of the Winter Simulation Conferences, via <http://www.informs-sim.org/>
- Books in our library, via <http://www.library.tudelft.nl>

Mayer<sup>1</sup> lists the following properties and functions of a review article:

- A critical, constructive analysis of the literature in a specific field through summary, classification, analysis, comparison. In general, be *very* critical on what you read.
- A scientific text relying on previously published literature or data. New data from the author's experiments are not presented. A small running example can help, though.
- The function of a review article is to organize literature, to evaluate literature, to identify patterns and trends in the literature, to synthesize literature, and *to identify research gaps and recommend new research areas*. In other words, add an interesting angle to the paper!

Structure your review article as a scientific paper with a title, authors, introduction, body of the paper, conclusions, and references. Use the APA style (7<sup>th</sup> edition) for your references.

In your paper, address at least a **historical** overview of the topic (it is always useful to see when a certain method was introduced), and a **thematic** overview of the topic (find one or more crosscutting themes by which you can organize the literature). Take the following aspects into account, where depending on your topic, not all aspects need to be there of course:

- make sure you relate the paper to simulation and modeling (time-indexed generative data);
- focus on the discrete-event, agent-based and continuous worldviews relating to your topic;
- connect your topic to these different worldviews (don't have to be all three);
- often, human behavior or actor behavior is an interesting crosscutting theme;
- look for and use formal definitions, define all your terms in the paper, and use references;
- in a scientific (review) paper opinions don't count -- reflection can be done in the discussion;
- focus on the methodological aspects, use example projects to illustrate but don't make the examples dominate your paper (the majority of the simulation papers address examples)
- see if you can identify different 'schools of thought' around the topic (often visible from disjoint clusters of authors, chronological differences, terminology differences).

The paper has to be handed in in week 7 of the class, and a brief 10-minute summary presentation for discussion has to be prepared for the week 8 classes. Three time slots for discussing your progress with the supervisor are available in weeks 3, 5, and 7 of the class.

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<sup>1</sup> P. Mayer (2009). Guidelines for writing a Review Article. Retrieved from: [http://www.plantscience.ethz.ch/education/Masters/courses/Scientific\\_Writing](http://www.plantscience.ethz.ch/education/Masters/courses/Scientific_Writing)