

## **SURVEY PAPER (1 EC)**

Course Code 202100256 – Part of Module 11

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### **Aim**

The aim of the Survey paper is to practice discussing scientific literature relevant to a given research question. Ideally, this question is the Bachelor thesis research question, thus preparing for the Bachelor thesis. This is strictly speaking not necessary. The student can reuse parts of the survey paper in the Bachelor thesis report.

### **Learning goals**

- Based on a research question, the student can find and comprehend scientific literature relevant to the topic
- The student can write a short survey paper based on the literature

### **Assessment**

Your Bachelor thesis supervisor (the responsible staff member (assistant/associate or full professor) of your group) will assess the survey as sufficient or insufficient. In the latter case you will get the chance to submit an improved survey (based on the feedback) for a second assessment. Details below.

### **Expected output: Survey paper**

The output of this assignment is a short survey paper. “Survey” and “short” are in a way contradictory, as survey papers can be very exhaustive in terms of the considered aspects in a particular area of research and the number of references. This is not what we expect from you.

Select roughly 2 papers needed for a general understanding of the research topic and roughly 2 papers close(r) to the research question. The 2+2 partitioning depends on your topic, and you are free to vary this as long as it helps you to understand the research questions.

You have to write two pages of a double column IEEE formatted paper, including references. It should include an abstract, short introduction to the context, problem and research question, related work (in which you discuss the papers) and a conclusion.

Summarize the contents and conclusions of the papers, describe the relationship between the papers, and the relevance for the BSc project. Try to use your own words as much as possible as it helps you to understand the contents. It is allowed to cite text verbatim, but only to a limited extent and use quotation marks when doing so.

## Assignment – regular version, connected to your Bachelor thesis

Please follow the steps below. The steps may be different in the field of your topic, e.g. in design-based or biomedical projects. Please discuss with your supervisor(s) and change if appropriate.

1. Find a chair for your research, see [here for contacts](#). A staff member must be Bachelor thesis supervisor, and there may be a day-to-day supervisor (PhD student or post-doc)
2. Select an assignment. Formulate the underlying research question based on the assignment and have your Bachelor thesis supervisor approve this. The research question may deviate from your Bachelor thesis project due to changing insight, time-lapse, etc. **Deadline** to find the assignment is in week 3 (**22 Feb 2023**).
3. Select the papers you want to read and have your Bachelor thesis supervisor approve this.
4. Read the papers and make a draft version of your short survey paper.
5. Ask your Bachelor thesis supervisor to give feedback on the draft.
6. Make the final version. The Bachelor thesis supervisor either approves or disapproves it.
7. In case of approval, the supervisor will email your 'pass' to [module11-ee@utwente.nl](mailto:module11-ee@utwente.nl).
8. In case of failure, you have a single opportunity to improve the paper.
9. In case of a second failure, you need to redo the non-standard version of this assignment.

## Already finished M12? – non-standard version, not connected to your Bachelor thesis

Due to various reasons it may happen that you cannot connect this assignment to your Bachelor thesis. In this case, please follow the steps as before: you must write a survey paper about 4 papers. Contact a staff member (assistant/associate or full professor) who is willing to provide a research question or design goal. This must be different from your BSc thesis subject.

## Practical guidelines

- For [students who follow the survey paper as integral part of M11](#), the **deadline** will be **31 March 2023**.
- Students who follow the survey paper as a separate unit (not as integral part of M11) must agree with the supervisor on a deadline about 6 weeks after starting the survey paper
- All students must hand in whatever they have on the deadline.
- Thesis supervisors are asked to send their assessment (pass/fail) and feedback to the student within 10 working days.
- Thesis supervisors should also email the pass/fail to [module11-ee@utwente.nl](mailto:module11-ee@utwente.nl).
- In case of a fail, the student will get 10 working days after receiving the feedback to improve the paper. This is a single opportunity.

## Late submission of the survey paper

- Students who receive a 'fail' after submitting their paper **X** days after the deadline, will get **(10-X)** work days for revisions after receiving the feedback to improve the paper.
- Students who hand in their revised survey paper after the revision deadline will receive a definitive 'fail' and must redo the entire assignment for a different project.

## Background M11 & M12

The last two modules of the Bachelor Electrical Engineering prepare you for several important aspects of your future work: being able to design and implement an electronic system, to both work alone and as a member of a team, and setup and answer a (scientific) research question through a controlled cycle shown below.

1. Context and problem statement
2. Research question or design goal
3. Literature research
4. Experimental setup and execution
5. Presentation and analysis of results
6. Discussion of results
7. Conclusion, including answers to the research question, and future work

This structure resembles a typical research paper; many other structures and versions exist. The steps may be different in the field of your topic, e.g. in design-based projects. Also, it tends to be an iterative process as a research question can be refined based on the outcome of experiments.

The output of this cycle is a scientific product, like a paper, report or thesis. In a typical Bachelor thesis, the context and the problem are specified upfront and the research question or design goal will also be determined to a large or even full extent as Bachelor assignments are often rooted in ongoing research programs within a chair.

One of the aspects that clearly links the professional design team effort approach in Module 11 to the scientific individual effort in Module 12, is reading scientific literature to discover, use and build upon what already has been done in the context of the problem you want to address. Reading early will save you time later as you are better equipped during the project execution phase.

**Estimated effort (1 EC = 28 hours)**

	hours
Lecture	2
Searching group/project	4
Literature search	4
Reading <u>±</u> 4 papers x 2hours/paper	8
Writing 2 pages	10
<b>Total</b>	<b>28</b>

- Hours are estimates
- Do not get lost in details while reading
- Discuss with supervisor if reading takes too long