Vak: Research Skills — credits: 2

Vakcode	ELVH17ARESS
Naam	Research Skills
Studiejaar	2022-2023
ECTS credits	2
Taal	Engels
Coördinator	P.M. Gomes Lourenco

Werkvormen	Hoorcollege Individueel Opdracht Practicum / Training
Toetsen	Research Skills - Opdracht

Leeruitkomsten

At the end of this study unit your are able to:

- find scientific articles that are relevant to a given topic by using a search engine;
- explain the conclusion(s) and goal(s) of the research in a given scientific article by summarizing part of the article;
- enforce arguments, verify or falsify a statement by using references to scientific articles at the correct point in a text in a consistent format;
- write experimentals in such a way that others that were not present and do not know about the experiment can repeat the following procedure and arrive at the same results:
  - Machine type and manufacturer
  - Pre-treatment of samples
  - Measurement details
  - Analysis of the results
- keep a lab journal that includes details of all experiments that are performed so all people involved in the research understood what was done;
- present results and observations depending on the type and amount of result:
  - Graphs
  - Tables
  - Written sentences
- compare found results with results found in literature to determine whether something is expected or not and come up with a reasonable explanation why things are different by using references and differences in experimental procedures;
- write a conclusion that answers the original research question and explains all (most) observations;
- write an abstract that includes the research question, experimental design and conclusions in 5-10 sentences;
- extract information about special sensors by reading selected scientific articles;
- Understand some of the latest techniques applied in research on sensor technology by reading selected scientific articles;
- find and compare at least 3 scientific articles on a given topic to enhance critical thinking and draw conclusions;
- explain the principles and potential applications of modern research on sensor technology in a selected scientific article to an audience of semi-specialist.s

Inhoud

In this study unit you will learn how to properly write a scientific article based on your research. We will use your project as input for this article. The following topics will be addressed:

- Reading articles
- Referencing
- Posing a research question
- Doing/writing experiments
- Getting/writing results
- Writing a discussion
- Writing conclusionsWriting an abstract

Next to how to write a scientific article we will also discuss state-of-the-art sensors. These sensors are often not on the market yet, but still in a proof of concept phase in various laboratories all over the world. You will receive a relevant and modern scientific article in which a special sensor is investigated and explained. It is your task to present the contents of this article (in groups of 2-3 students) to the rest of the class. For passing this course, you are going to receive a grade for the summary of your article (50%) and a grade for your presentation (50%). Delivery of all parts of the article, attendance and co-assesing are conditional.

Opgenomen in opleiding(en)

Exchange Technology to Innovate (autumn)
Elektrotechniek Major Sensor Technology
Minor Technology to Innovate

School(s)

Instituut voor Engineering

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