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Faculty of Health, Science and Technology

Computer Science

**Syllabus**

**Writing in Science and Technology**

**Course code:** 7DAV013

**Course Title:** Writing in Science and Technology
 Vetenskapligt skrivande i natur- och teknikvetenskap

**Subject**: Computer Science

**Credits:** 5 ECTS

**Degree Level:** Doctoral

**Course approval**

The syllabus was approved by the Faculty of Health, Science and Technology

31 May 2023 and valid from the autumn semester of 2023 at Karlstad University.

**Language of instruction**

Teaching is in English.

**Prerequisites and selection**

Admitted to research education in a doctoral program in science and technology. The course is primarily for research education students admitted at Karlstad University, and secondarily for research education students admitted at other universities.

**Learning outcomes**

After completing the course, the research education student should know the following:

* give an authoritative account of the general structure of a scientific article,
* demonstrate expert knowledge in a delimited area of the research field and present it to the group,
* present the method used in their study authoritatively and with clarity,
* write a scientific text in an effective, concise, and clear way.
* formulate views on the structure of a scientific text in other research areas than their own,
* suggest improvements to a scientific text,
* identify and discuss the ethical aspects of a scientific text, and

adopt a constructive approach to the result of a peer-review process.

**Course content**

The course is based on lectures on general aspects of scientific texts and a seminar series in which doctoral students review each other’s research-related texts. The lectures are given by senior researchers who present aspects of research texts in their respective disciplines. The students cooperate on texts, manuscripts, and assignments. Students develop skills in giving and taking comments on their own and others’ research, orally and in writing.

**Reading list**

Texts to be discussed are chosen by the doctoral students in consultation with the main supervisor or the examiner.

**Examination**

Assessment is based on the student’s oral and written presentations and contributions to other texts.

**Grades**

One of the grades, Fail (U) or Pass (G), is awarded in the course examination.

**Quality assurance**

A written evaluation is carried out after the course. The result of the evaluation is collated by *The Higher Education* Ordinance, Chapter 1, § 14.

**Course Certificate**

A course certificate is issued on request.

## **Goal matrix**

Goals that, after completing the course, are fulfilled for the doctoral or licentiate degree are marked with an X.

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|   | **Doctoral** |  |   |   |   | **Licentiate** |   |
|   | **Knowledge and understanding** |  |   |   |   | **Knowledge and understanding** |   |
| 1a |  - demonstrate broad knowledge and systematic understanding of the research field and |  |   |   | 1a | demonstrate knowledge and understanding in the field of research including |   |
| 1b | advanced and up-to-date specialised knowledge in a limited area of this field, and |  |  X |   | 1b | current specialist knowledge in a limited area of this field as well as |  X |
| 1c | familiarity with research methodology in general and the methods of the specific field of research in particular. |  |  X |   | 1c | specialised knowledge of research methodology in general and the methods of the specific field of research in particular |  X |
|   | **Competence and skills** |  |   |   |   | **Competence and skills** |   |
| 2a |  - demonstrate capacity for scholarly analysis and synthesis as well as |  |  X |   | 2a | demonstrate the ability to identify and formulate issues with scholarly precision critically, autonomously and creatively and to |  X |
| 2b | to review and assess new and complex phenomena, issues and situations autonomously and critically |  |  X |   | 2b | plan and use appropriate methods to undertake a limited piece of research and other qualified tasks within predetermined time frames in order to contribute to the formation of knowledge |  X |
| 3a |  - demonstrate the ability to identify and formulate issues with scholarly precision critically, autonomously and creatively, and to |  |  X |   | 2c | as well as to evaluate this work |  X |
| 3b | plan and use appropriate methods to undertake research and other qualified tasks within predetermined time frames and to review and evaluate such work |  |  X |   | 3a | demonstrate the ability in both national and international contexts to present and discuss research and research findings in speech and writing and in dialogue with the academic community and |  X |
| 4 |  - demonstrate through a dissertation the ability to make a significant contribution to the formation of knowledge through his or her own research |  |   |   | 3b | society in general |   |
| 5a |  - demonstrate the ability in both national and international contexts to present and discuss research and research findings authoritatively in speech and writing and in dialogue with the academic community and |  |  X |   | 4 | demonstrate the skills required to participate autonomously in research and development work and to work autonomously in some other qualified capacity. |  X |
| 5b | society in general |  |   |   |   |   |   |
| 6 |  - demonstrate the ability to identify the need for further knowledge and |  |  X |   |  |   |   |
| 7 |  - demonstrate the capacity to contribute to social development and support the learning of others both through research and education and in some other qualified professional capacity. |  |   |   |  |   |   |
|   | **Judgement and approach** |  |   |   |  | **Judgement and approach** |   |
| 8a |  - demonstrate intellectual autonomy and disciplinary rectitude as well as |  |  X |   | 5 | demonstrate the ability to make assessments of ethical aspects of his or her own research |  X |
| 8b | the ability to make assessments of research ethics, and |  |  X |   | 6 | demonstrate insight into the possibilities and limitations of research, its role in society and the responsibility of the individual for how it is used |  X |
| 9 |  - demonstrate specialised insight into the possibilities and limitations of research, its role in society and the responsibility of the individual for how it is used. |  |  X |   | 7 | demonstrate the ability to identify the personal need for further knowledge and take responsibility for his or her ongoing learning. |  X |