

Guidelines concerning ethics and academic honesty for 9th term research projects and Masters theses

These types of research works are to be conducted according to the same ethical standards that would apply for professional researchers in the field, and failure to follow these ethical standards may in the worst case lead to accusations of cheating and/or failure to pass the course in question.

The following are examples of unethical conduct:

- a) **Plagiarism:** Presenting somebody else's text or findings as your own. One example would be usage of material from obtained sources (e.g., web or paper documents) without giving proper references to these sources, or directly quoting source material in your report without properly marking such passages as quotations. Another example would be reuse of somebody else's code (even if it was freely available open source code) in your prototype, without acknowledging that such reuse took place.
- b) **Unfair/unacknowledged assistance:** One example would be buying your report from a web agency, another to have a friend write some chapters or perform part of the underlying work (e.g., coding, statistical analysis) rather than doing it yourself, and without acknowledging that this work was done by somebody else.
- c) **Multiple submission / dishonest reuse of own material:** Generally, it is not acceptable to submit for a project report or Masters thesis material that you have already earned study points for in another context, whether at the NTNU or at another educational institution. For instance, if you previously got a Masters degree at another university, it would be unreasonable to reuse that Masters thesis and thus earn double credit for the same work, and the same applies, e.g., to the prospect of reusing in a project report material that you also got credit for as a term paper in a previous or parallel lecture course.
- d) **Fabrication:** The typical example of fabrication would be faking or altering empirical data (for instance from experiments) to make them fit your hypothesis. Other examples: pretending to have performed tests, interviews or other investigations that really did not take place, faking or altering output traces from software prototypes or simulations that actually failed to run as expected, citing non-existent sources, contriving non-existent quotes, etc.
- e) **Unauthorized collection and disclosure of sensitive or confidential material:** If you come across confidential material in the course of your research, you must take care not to disclose this in any way (neither in your report nor during the research) unless consent is given from the owner of the material. This may be particularly important if you cooperate with companies. If your research includes collection of personal information from people, you may be required to file an application to NSD to obtain permission for the project, such an application must be sent at least 30 days before the data collection begins, cf. http://www.nsd.uib.no/personvern/forsk_stud/skjema.html
- f) **Research with harmful effects,** either in the sense that the end product is dangerous, or that procedures followed during the research may be harmful to people, property, or environment. The classical example would be experiments with human subjects, where it should be ensured that these are not harmful to the participants. Even if most experiments where participants try out new ICT products or ICT engineering techniques might not have any likely effects of serious harm, less severe consequences should also be taken into account. For instance, if students participate in an experiment in the context of a course (e.g., as part of a compulsory exercise in that course), alternative treatments should not have an impact on the students' grades (since

otherwise, it would be unfair for students who received the poorest treatment). Also, one should be careful to avoid the situation that the pedagogical value of the exercise is sacrificed in favour of, e.g., statistical significance or easy coding of the results. In our field, it is also important to consider potential harm caused to or by ICT systems, and one example of unethical conduct might be to undertake development of software that you know or suspect will be used for harmful purposes, or to release into a production context an ICT artefact that has not been sufficiently quality assured. If you are performing research on computer viruses or other malware, you must take extreme care not to release such malware outside the experimental sandbox or make it available to potential computer criminals.

There are national committees for ethics in research, cf. <http://www.etikkom.no/>, whose web pages can be consulted for further information, and who can also be contacted if in doubt about the ethics of a research project (but the natural first contact for discussion would be your supervisor). For most projects within ICT, the guidelines from the committee for science and technology research would be most relevant, cf. <http://www.etikkom.no/retningslinjer/nent> -- they also have a checklist for research ethics, <http://www.etikkom.no/retningslinjer/sjekklister>. In some cases your research might also be such that information from the other committees (Medical Research, Social Research) could be relevant.

The IEEE Code of Ethics <http://www.ieee.org/portal/pages/iportals/aboutus/ethics/code.html> and the ACM Code of Ethics <http://www.acm.org/about/code-of-ethics> are also useful guidelines for your research efforts, as well as for your future career as an ICT professional.