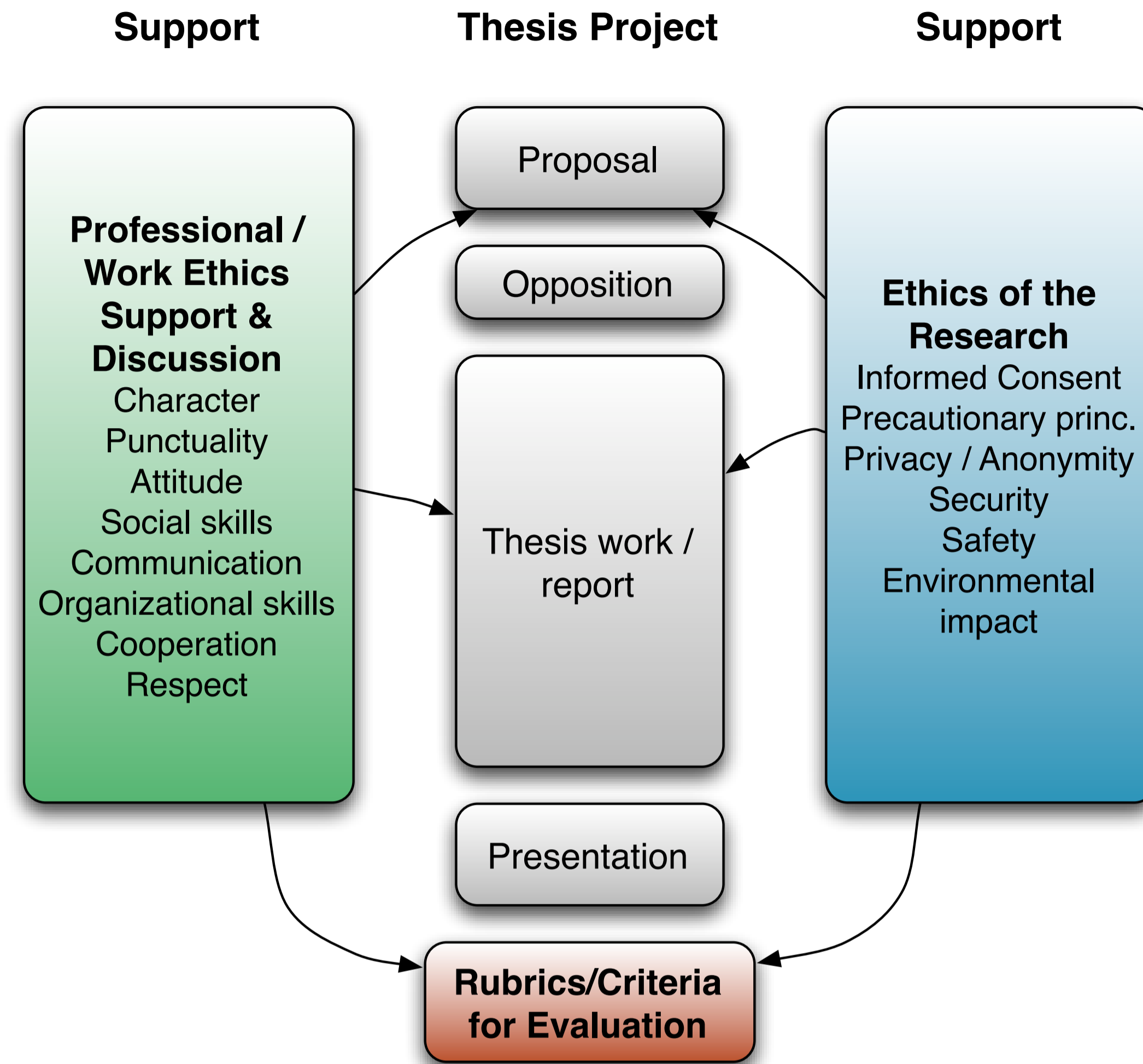


# Professional & Ethical Issues in Software Engineering Curricula

## Experiences from a Swedish Academic Context

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Criteria	Superior	Good	Fair	Minimal
Timeliness (Project)	Student(s) have kept continuous contact during the work and have been on time both to meetings and in sending deliverables.	Student(s) have mostly sent deliverables on agreed dates. With only a few exceptions student(s) have been on time to meetings and reported continuously on their progress.	Student(s) have been late to meetings or in sending deliverables in a way that have hampered the process. The advisor had to prompt the students with questions about the status of the work.	Student(s) have a serious problem with keeping agreed to meeting and deadlines. Advisor have not been able to get a picture of the status of the work during the project.
Balance (Project)	A well-balanced collaboration where both students have a good grasp of all parts of the work.	A balanced collaboration where both students have a grasp of the whole work even though they have focused on slightly different parts.	A collaboration where both students have contributed equally to the work even if they have worked more independently on different parts.	An imbalanced collaboration where one student have contributed more than the other. Stronger students name: X
Ethical issues (Thesis)	Ethical issues analysed and discussed in report and have been fully addressed in design and execution of research.	Ethical issues addressed in research but only partly analysed and discussed in thesis.	Ethical issues only partly addressed in research and discussion is lacking.	Ethical issues not considered at all.

Course element	Content
Lecture 1	Getting Started, Course Preliminaries, Identifying Moral Issues
Lecture 2	Analysis of Ethical Arguments, Philosophical Foundations of Ethics, Ethical Relativism, Absolutism and Pluralism
Lecture 3	The Ethics of Conscience, Ethical Egoism, The Ethics of Duty, The Ethics of Respect
Lecture 4	Utilitarianism, The Ethics of Rights, The Ethics of Justice
Lecture 5	The Ethics of Character, Ethics and Gender
Lecture 6	<i>Safety, Security (Guest lecture)</i>
Lecture 7	Privacy and Civil Liberties, In-class activity: case studies
Lecture 8	Environmental ethics, In-class activity: case studies
Lecture 9	Social context of profession
Workshop 1	Professional and ethical responsibilities: codes of ethics
Lecture 10	Risks in Engineering and Science, Risks and liabilities of safety-critical systems, Precautionary Principle
Lecture 11	<i>Industrial experiences (Guest lecture)</i>
Workshop 2	Intellectual property, Internet, Computer Crime - Case studies
Workshop 3	Oral presentations of students projects/papers
Workshop 4	Course wrap-up and discussion

## Summary:

- Grad course on “Professional Ethics in Engineering”
  - Combined undergraduate & PhD level course
    - Lectures + Guest lectures (industry)
    - Discussions with roleplay
    - Seminars
  - Paper (Undergrad: Short essay | PhD: Research paper)
- Given for 6 consecutive years
- Positive experiences:
  - Active students in discussions, seminars & research
  - Papers focused on ethical aspects published
  - Ethical discussion sections in theses
- Support for Professional & Ethics issues in Master theses
  - Support material in text & video
  - Discussion on ethical issues:
    - at start of thesis projects (for proposal)
    - during thesis work (in writing report)
- Rubrics to evaluate professional & ethical aspects
- Students positive, Faculty thinks it takes extra resources