

# **Methods Training**

## Scholarship, Posters and Thesis

(English)

Dr. Karl N. Kirschner

Spring 2019

Day	Date	Session	Topic
1	13-02-2019	Morning (9:00 – 12:00)	Introduction
1	13-02-2019	Morning	Scholarship and research
1	13-02-2019	Morning	Taking notes
1	13-02-2019	Afternoon (13:00 – 15:30)	Posters
1	13-02-2019	Afternoon	Intro to Linux, desktop, command line
1	13-02-2019	Afternoon (15:30 – 18:00)	Personal working time (poster)
2	14-02-2019	Morning	Citations
2	14-02-2019	Morning	Literature searching and bibtex files
2	14-02-2019	Morning	Reference management (Citavi and Jabref)
2	14-02-2019	Afternoon	Inkscape & (Python3 ?)
2	14-02-2019	Afternoon	Personal working time (poster)
3	15-02-2019	Morning	Research questions and hypotheses
3	15-02-2019	Morning	Writing your thesis and personal time line
3	15-02-2019	Morning	FAQ thesis, LATEX
3	15-02-2019	Afternoon	Personal working time (poster)
17-02-2019		Night (21:00)	Final PDF uploaded to LEA
4	18-02-2019	Morning 9:00	Poster PDF must be delivered to printshop
4	18-02-2019	Morning (1 hr)	FAQ thesis
4	18-02-2019	Morning 10:00	Library seminar
4	18-02-2019	Afternoon	Significant figures and rounding
4	18-02-2019	Afternoon	Python3
5	19-02-2019	Morning	Ethics, Course evaluations
5	19-02-2019	Morning	Poster Advertisement
5	19-02-2019	Afternoon	Poster presentation
??-??-2019		08:00-11:00	Poster Session at the Niehl training center

# **Questions or comments from last lecture(s)?**

**German and English Thesis Examples and Template:**

[https://gitlab.com/k.n.kirschner/H-BRS\\_Thesis\\_Template.git](https://gitlab.com/k.n.kirschner/H-BRS_Thesis_Template.git)

## **FAQ About Thesis:**

LEA → EMT-Studieninfos → Prüfungen → FAQ →  
Häufige Fragen zu Prüfungsangelegenheiten →  
Prüfungsinformationen für alle EMT-Studiengänge: →  
Fragen zur Abschulssarbeit und zum Kolloquium

Bib-Cloud – <https://www.h-brs.de/en/bib/cloud-storage-keep-your-files-safe-bibcloud>

# Ethics

## Two approaches for working

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- Medicine - "First do no harm"

"Primum non nocere" ca. 17th century

Modified Hippocratic oath 1847-present

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- Silicon Valley - "It's much easier to apologize than to get permission"  
("Do it now, ask for forgiveness later.")

US Navy Rear Admiral Grace Hopper and pioneering computer scientist (popularized the phrase at LFC in 1982)

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# Ethics

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## Ethics Definition:

- 1 the discipline (i.e. field) dealing with what is good vs. bad, and with moral duty and obligation
  - 2 a set of moral principles; a theory or system of moral values (i.e. right and wrong)
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Ethics is not solely defined by any of the following:

- feelings
- religion
- science
- **culturally excepted norms**
- law

M. C. f. A. E. Santa Clara University. [A Framework for Ethical Decision Making](#).

[https:](https://www.scu.edu/ethics/ethics-resources/ethical-decision-making/a-framework-for-ethical-decision-making/)

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Methods Training \(English\)](https://www.scu.edu/ethics/ethics-resources/ethical-decision-making/a-framework-for-ethical-decision-making/>. Accessed: 2018-01-02</a></p></div><div data-bbox=)

## Ethics origin

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- Childhood upbringing – parents shape what is right and wrong
- Later life experiences
- Religious beliefs (supernaturalism) – Ten Commandments
- Codes of Ethics published by professional societies / businesses
- Discussion with others
- Thinking about ethical dilemmas
- Development of civilizations
  - Socrates – man is naturally good (bad actions are due to ignorance)
  - Code of Hammurabi – "eye for an eye"
  - Pythagoras (Pythagorean theorem) – vegetarianism
  - Hobbes – society (law, developed by more powerful people) provides justice (man is naturally at war with everyone else)
- Emerges as a human phenomenon (Darwin)

G. L. Head. [Where our ethics come from.](#)

International Risk Management Institute, March 2006.

[Online; accessed 09-01-2018]

## Why is ethics important?

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- Ethics (meta, ideal, shared principles) and morality (personal, subjective) forms the basis of society.
- Values are essential in collaborative work – "trust, accountability, mutual respect, and fairness"
- The public's sense of trustworthiness (e.g. in government, scientist, car manufacturers)
- Human rights issues (e.g. refugees)

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[https:](#)

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## Ethical Issue - In your opinion

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**What are some everyday/personal ethical situations that you come across?**

## Ethical Issue, or Not?

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- Driving - "cut ahead" of cars that have been waiting in a long line?
  
- Having a hidden agenda when talking to people  
(versus being transparent)
  
- "Bystander Effect"  
(you are less likely to offer help if others are present)

## Ethical Issue, or Not?

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- Animal treatment - do we give animals "rights?"
- New Year's Eve fireworks
  - DE: €137 million, ca. 15.5% of particulate auto matter per year<sup>a</sup>
- Use of plastic
  - 2017: 6.3 billion tons of waste, 0.6 billion is recycled<sup>b</sup>
  - cloths: microplastics from washing (1.7 grams/wash) released into domestic waste water<sup>c</sup>
- Starting a business that increases waste (e.g. quality vs cheap products; wood versus plastic)

a. Deutsche Umwelthilfe:

<https://www.dw.com/en/germanys-new-years-eve-fireworks-ruining-air-quality/a-46894887>

b. <https://www.nationalgeographic.com/magazine/2018/06/plastic-planet-waste-pollution-trash-crisis>

c. <https://www.theguardian.com/environment/2016/jun/20/microfibers-plastic-pollution-oceans-patagonia-synthetic-clothes-microbeads>



Photo by Tyler Lastovich on Unsplash

# Modern Ethical Breach: Morandi Bridge Collapse, Italy 2018

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Salvatore1991 via commons.wikimedia.org

- A cable-stayed bridge with concrete enclosed cables
- 43 people died
- Preliminary investigation, collapse due to
  - poor design (if 1 element failed, the rest would fail)
  - questionable building practices (material)
  - insufficient maintenance

<https://www.engineering.com/BIM/ArticleID/17517/Italys-Morandi-Bridge-CollapseWhat-Do-We-Know.aspx>

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## Additional examples of modern ethical breaches

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- 1998 paper that links autism and vaccinations – responsible parties include scientist and media
- 2012-2015: Volkswagen, BMW and Daimler (via European Research Association for Environment) emission testing on monkeys and humans
- Dieselgate and Volkswagen's cheating emissions tests in 2015 – “Made in Germany”
- 2017/18 Apple and Samsung's intentional slowing of old cell phones
- 2016 – now: Trump

A. Wakefield, S. Murch, A. Anthony, J. Linnell, D. Casson, M. Malik, M. Berelowitz, A. Dhillon, M. Thomson, P. Harvey, A. Valentine, S. Davies, and J. Walker-Smith. Retracted: Ileal-lymphoid-nodular hyperplasia, non-specific colitis, and pervasive developmental disorder in children.

*The Lancet*, 351(9103):637–641, 1998 T. E. of *The Lancet*. Retraction – ileal-lymphoid-nodular hyperplasia, non-specific colitis, and pervasive developmental disorder in children.

*The Lancet*, 375(9713):445, 2010

## Diesel Ban in Inner City - Any Ethical Considerations?

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- Diesel fuel - higher NO<sub>2</sub>, higher particulates, lower CO<sub>2</sub> versus petrol
- Diesel cars were encouraged for years (e.g. EU's 1998 Acea agreement to reduce CO<sub>2</sub>) - diesel is taxed less
- DUH strongly advocated for diesel ban
- DUH's Juergen Resch said a ban will help accelerate the shift to electric cars
- However, it has already led to higher sales in petrol cars
- Toyota donates €10,000-99,999 to DUH (total budget €8.3 million)
- Toyota is the leader in hybrid drives

**Are their ethical issues to be considered?**



Photo by Rob Wingate on Unsplash

## Ethical situations that you might face as a student

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- Academic honesty: cheating on tests, plagiarizing text/data, not citing, illegally downloading materials

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- Usage of your personal internet/social data – is your data private or public

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- Usage of your personal internet/social data – is your data private or public
- Job applications/interview: exaggerating abilities or accomplishments

How about the following situations:

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- Not showing up for a scheduled interview.

L. Winkler. [Facilitating College Students' Ethical Decision-Making in the Job Search](#).  
[https://associationdatabase.com/aws/NCDA/pt/sd/news\\_article/5432/\\_PARENT/layout\\_details/false](https://associationdatabase.com/aws/NCDA/pt/sd/news_article/5432/_PARENT/layout_details/false), February 2008.

Accessed: 2018-01-02 D. G. Jensen. [Job search ethics: The good, the bad, and the ugly](#).  
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## How about the following situations:

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- Not showing up for a scheduled interview.
- Accepting a job (e.g. prior to graduation), but you continue a job search for a better job (i.e. staying on the job market)?
  - "Accepting one job, verbally or in written form, and then going to other interviews or remaining open to other offers will not be seen as acting faithful to your earlier commitment. It is the highest of ethical breaches."

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- Increasing your current salary when asked by a recruiter.

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## Personal professional reflection

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**What ethical issues have you been or might be faced with in regards to your professional career?**

## An engineer's conflict of interest with their employer

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An engineer for a company is aware of design flaws/safety issues about a product. The company decides to ignore what the engineer says, and goes forward with the product.

**What do you do?**

## Whistle-blowing in companies / government

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**Whistleblower** – “a person who exposes any kind of information or activity that is deemed illegal, unethical, or not correct within an organization that is either private or public.”

Whistleblowing may cause significant effects on one career and financial stability.

**Is whistleblowing ethical or unethical.  
(Support your thoughts.)**

J. Kreiner, A. Flores, and S. Krishnamurthy. [Ethical issues facing engineers and their profession.](#)  
*In Proceedings of the International Conference on Engineering Education and Research "Progress Through Partnership". VSB-TUO, 2004* W. Contributors. [Whistleblower — Wikipedia, the free encyclopedia, 2017.](#)  
[Online; accessed 08-01-2018]

# Company structure

## Whistle Blowing

### Organizational Factors That Inhibit Internal Reporting



Unavailable resources (ombuds, hotline, etc.)

Hostile or unethical organizational culture

Toxic leadership

Lack of organizational justice

Volmer, A. F., Aquilino, R. V., and Clegg, B. (2008). Business Ethics Quarterly.

### Creating an Ethical Culture

Implement structures and policies that visibly protect and incentivize internal reporting



Make ethics part of the core organizational values



Leaders must be active listeners and role-models of integrity



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### Additional indicators of an ethical company

- Company makes clear expectations of what is okay and not okay (e.g. ethical code, employee handbook)
- Leaders' language and conduct are ethical
- Corrective feedback is given to employees (collaborating rather than punishing)
- Ethics training for leaders
- Advice for ethical situations (e.g. literature)
- Confidential reporting system
- Diversity and inclusion
- Donations

W. Contributors. *Organizational ethics* — Wikipedia, the free encyclopedia, 2017.

EthicalSystems.org. *Whistle blowing*, 2019.  
[Online; accessed 08-01-2018]

[Online; accessed 08-01-2018] [www.forbes.com](http://www.forbes.com). How much do a company's ethics matter in the modern professional climate?, 2017.

## Ethical companies

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- Ford
- Volvo
- Delphi
- T-mobile
- Henkel AG & Co KGaA
- Aldi
- Precious Woods Group

[www.ethisphere.com](http://www.ethisphere.com). *World's most ethical companies honorees, 2017.*  
[Online; accessed 08-01-2018]

## Closing quotes

## Engineering ethics and your responsibility

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“Everything that engineers do affects the society and its development and, occasionally, the consequences of these actions are not fully thought out, not anticipated, or not fully understood, but the results are undesirable just the same.”

“Engineers are the people who are responsible for the safety of the general public, they are responsible for making engineering decisions consistent with the safety, health and welfare...”

“Of course, engineers are citizens, and they have the same right to voice their opinions as other citizens. However, once someone identifies himself or herself as an engineer, he or she puts on a mantle of careful analysis and objectivity, which should not be misused. This is a heavy burden and, unfortunately, it is frequently not accepted.”

J. Kreiner, A. Flores, and S. Krishnamurthy. Ethical issues facing engineers and their profession.  
In *Proceedings of the International Conference on Engineering Education and Research "Progress Through Partnership"*. VSB-TUO, 2004 J. F. Ahearne. Energy, engineering, and ethics.  
In *Emerging Technologies and Ethical Issues in Engineering: Papers from a Workshop, October 14-15, 2003*,  
page 67. National Academies Press, 2004

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- [2] W. Contributors. Organizational ethics — Wikipedia, the free encyclopedia, 2017. [Online; accessed 08-01-2018].
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- [4] EthicalSystems.org. Whistle blowing, 2019. [Online; accessed 08-01-2018].
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- [13] www.forbes.com. How much do a company's ethics matter in the modern professional climate?, 2017. [Online; accessed 08-01-2018].