

Electrical Engineering and Information Engineering

also relevant for: Industrial Engineering (sub-area electrical engineering)

Course: Electrical Engineering, Information Engineering

Group of courses: Engineering

Provided by: Prof. Dr.-Ing. Kira Kastell

Last edit: Prof. Dr.-Ing. Kira Kastell, July 2018

Table of contents

Course objectives	2
Teaching content/subject-specific gender studies content	2
Integration of gender studies content into the curriculum	2
Degree Stage	3
Basic Literature/Recommended Reading	3
Journals	3

Course objectives:

Students should become familiar with the basic theories and empirical findings of subject-related women's and gender studies. They should recognise the significance of the category gender particularly with regard to theory of design and user interfaces and be able to involve this aspect in their planning work. Students should be made aware of the different approaches and needs that occur during problem-solving, and learn how to recognise the advantages and disadvantages of single-sex, mixed and intercultural study/work groups.

Gender equality must include various aspects that contribute to diversity sensitivity: relevance to practical application, interdisciplinarity, occupational relevance, interculturality, language skills, diversity of teaching and learning methods, sustainability, technology assessment, (female) role models and enabling contact with (especially female) professionals.

Teaching content/subject-specific gender studies content:

The requirements placed on engineers are becoming increasingly varied. Not only do they have to think about what the product they are developing is supposed to do, they also have to bear in mind during production what an acceptable price for the end product will be, given its area of application. Furthermore, they have to be capable of presenting their development to the public for consultation. Engineers have to react to customer requirements in order to ensure financial success, particularly in application-oriented product development. Students should therefore learn that it is important to consider the target customer segment already at development stage and that the share of female customers taking decisions and making investments is constantly increasing. Women and men often have different approaches to problems and contribute different solutions and creative ideas. Aside from this, the two groups tend to focus on different functionalities.

The curriculum as a whole can profit from the fact that women often have a strong interest in cross-disciplinary, integrated and interdisciplinary approaches.

Integration of gender studies content into the curriculum:

A gender module can only be realised as part of the basic studies curriculum, as the subject field is highly diversified at later stages. It is recommended to integrate gender aspects into existing teaching modules to enhance holistic thinking. The most suitable courses are those dealing with product development in the broadest sense (hardware and software) and theory of design. Gender issues can also be integrated as an additional perspective at the end of any teaching session that does not deal solely with theory. Looking at the people involved in the development of the subject and their biographies will reveal that they have come from different contexts and that there have been several women among them.

Faculty members should take gender issues into account when planning their lectures and seminars, making sure they use both male and female forms of address and avoiding examples and illustrations with only men in them. Particularly in examples and illustrations, it is important that men and women are not only shown in gender-typical roles, but consciously used to challenge the general role perception. It should be argued that the minority situation of women is regionally diverse and often has historical reasons in order to challenge the prevailing stereotypes of women lacking aptitude.

As the previous point implies, students should also be taught how to work successfully in culturally diverse and gender-mixed groups.

Holistic thinking can be supported by interdisciplinary modules or courses that combine different areas within the degree. One example is the project seminar in which cross-course content, group work, project management and practical elements are combined. The project seminar may start with a unit on gender using specific examples from electrical engineering, which should then be put into practice during class (e.g. loudspeaker modulation for low and high voices and effects on everyday use). Focusing on diversity and individuality may help to reduce prejudices regarding gender issues. Students are different in many ways, and gender is just one aspect. The different educational biographies of students offer a good opportunity to integrate these and other dimensions into discussions and project work.

Technology assessment and societal relevance as well as problem-based learning and high practical relevance provide good starting points for taking gender and diversity issues into account. Thus, different perspectives and interests can be introduced without directly questioning stereotypes. At the same time, diversity is allowed and understood as enriching the discussion. Teamwork strengthens many skills required in professional life and at the same time offers the opportunity to make the individual strengths of the participants visible.

Degree Stage:

The above content should be taught in the first half of the Bachelor's degree course. In the (international) Master's degree course, it can be continued and extended by aspects such as internationalisation and intercultural collaboration.

Basic Literature/Recommended Reading:

- Augustin, Silke (2013): Genderaspekte in Lehrveranstaltungen der MINT-Studiengänge? - Es funktioniert! Lehrkonzepte und Handlungsempfehlungen für die universitäre Lehre.
http://www.komm-mach-mint.de/content/download/11516/126045/file/131106_WS3_Genderaspekte_in_der_MINT-Lehre.pdf
- Deja, Christine; Jansen-Schulz, Bettina (Hg.) (2010): Integratives Gendering – „Ich würde ja gern, aber ich frage mich, wie!“. Best Practice aus dem Genderberatungsprojekt 2010 in den technischen Fakultäten der Fachhochschule Hannover.
https://www.gffz.de/fileadmin/user_upload/LAKOF/maschbau/Broschuere_Integratives_Gendering.pdf
- Ihlen, Susanne (2013): Handlungsempfehlungen für Gender-Aspekte in der Elektrotechnik, Informationstechnik und Informatik. Dialog MINT-Lehre. Mehr Frauen in MINT-Studiengänge Ein Projekt des Ministeriums für Wissenschaft, Forschung und Kunst Baden-Württemberg.
<https://material.kompetenzz.net/dialog-mint-lehre-mehr-frauen-in-mint-studiengaenge.html>
- Ministerium für Wissenschaft, Forschung und Kunst Baden-Württemberg (Hg.) (2017): Dialog MINT-Lehre. Mehr Frauen in MINT-Studiengänge. Handlungsempfehlungen zur Integration von Gender in der MINT-Lehre. Abschlussbericht und Transferkonzept. Unter Mitarbeit von Susanne Ihlen.
- Steinbach, Jörg; Jansen-Schulz, Bettina (Hg.) (2009): Gender im Experiment. Gender in experiences : ein Best-Practise-Handbuch zur Integration von Genderaspekten in

naturwissenschaftliche und technische Lehre. Berlin: Univ.-Verl. der TU Berlin Uni.-Bibliothek.

- Tobies, Renate (Hg.) (2008): "Aller Männerkultur zum Trotz". Frauen in Mathematik, Naturwissenschaften und Technik. [2., aktualisierte und erw. Aufl.]. Frankfurt/Main [u.a.]: Campus-Verl.
- Weiss Sampietro, Theresia; Ramsauer, Nadja (2008): Gendergerechte technische Fachhochschulstudiengänge. Ein Entwicklungsprojekt in den Studiengängen Elektrotechnik, Unternehmensinformatik und Biotechnologie der Zürcher Hochschule für Angewandte Wissenschaften. Winterthur (Beiträge zur nachhaltigen Entwicklung, Nr. 9).
<https://digitalcollection.zhaw.ch/handle/11475/114>
- Weiss Sampietro, Theresia; Ramsauer, Nadja (2009): Gendergerechte Fachhochschulstudiengänge - Wege zur Umsetzung in der Elektrotechnik, Unternehmensinformatik und Biotechnologie. In: Anita Thaler und Christine Wächter (Hg.): Geschlechtergerechtigkeit in Technischen Hochschulen - theoretische Implikationen und Erfahrungen aus Deutschland, Österreich und Schweiz. 1. Aufl. München: Profil-Verl. (Technik- und Wissenschaftsforschung, 55).

Journals:

- ADA-MENTORING - Fachzeitschrift für Mentoring und Gender Mainstreaming in Technik und Naturwissenschaften | [Website](#)