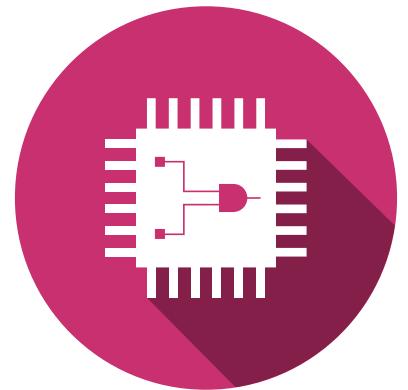


Introduction Course Embedded Systems (SEm) IND



Silvan Zahno / François Corthay

Degree program Systems Engineering
Specialization Infotronics – Embedded Systems



Course Objective

Interpretieren Sie die Spezifikationen eines einfachen digitalen Systems und entwerfen Sie die Schaltung, die diese Funktion erfüllt.

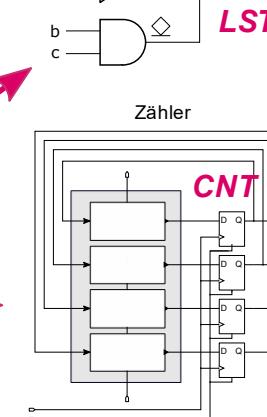
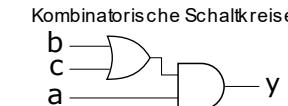
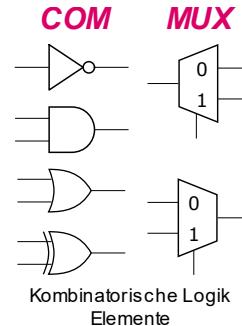
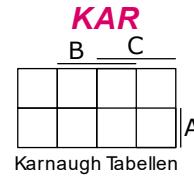
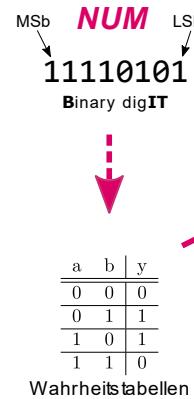
Dies bedeutet:

- Methodische Grundlagen: Semesterbeginn
- Einfaches System: Ende des Semesters

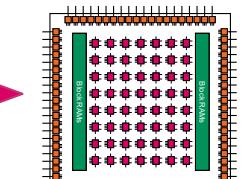
Course content



Pflichtenheft

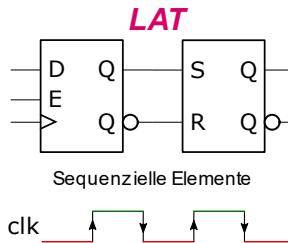
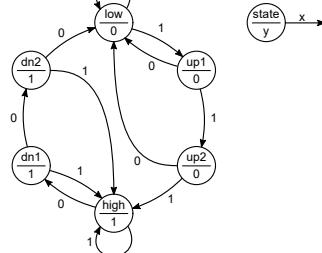


FPGA

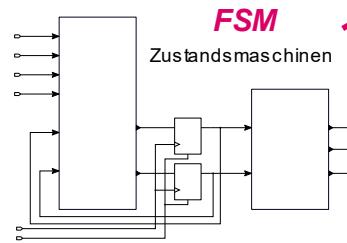


Zustandstabellen

Q_A	Q_B	Q_A^+	Q_B^+
0	0	1	0
0	1	0	0
1	0	1	1
1	1	0	1

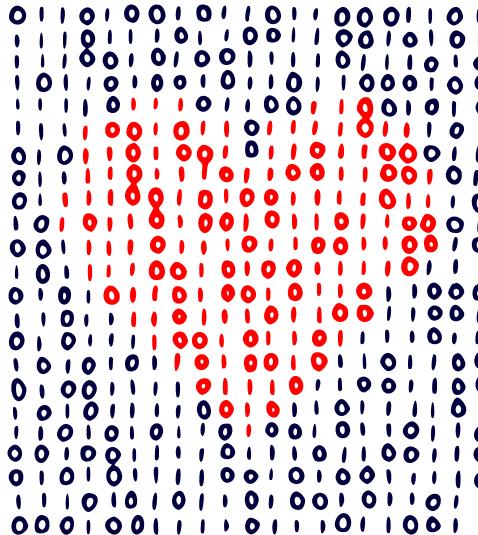


clk



MET

Witz



There are 10 types of people in this world. Those who understand binary and those who don't.

Es gibt 10 Arten von Menschen auf dieser Welt. Diejenigen, die das Binäre verstehen und diejenigen, die es nicht verstehen.

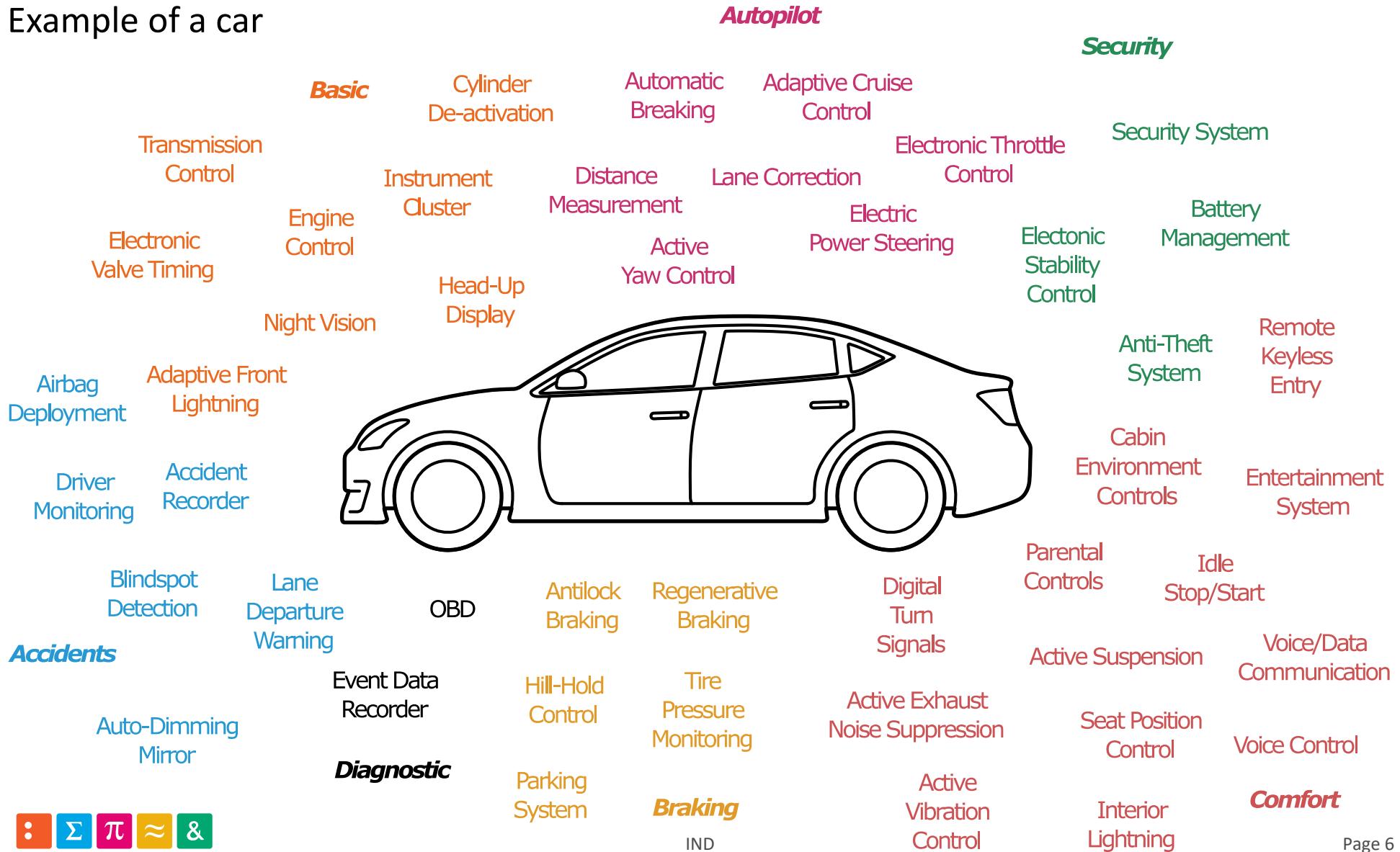
Embedded Systems

Application areas



Embedded Systems

Example of a car



Numerics in practice

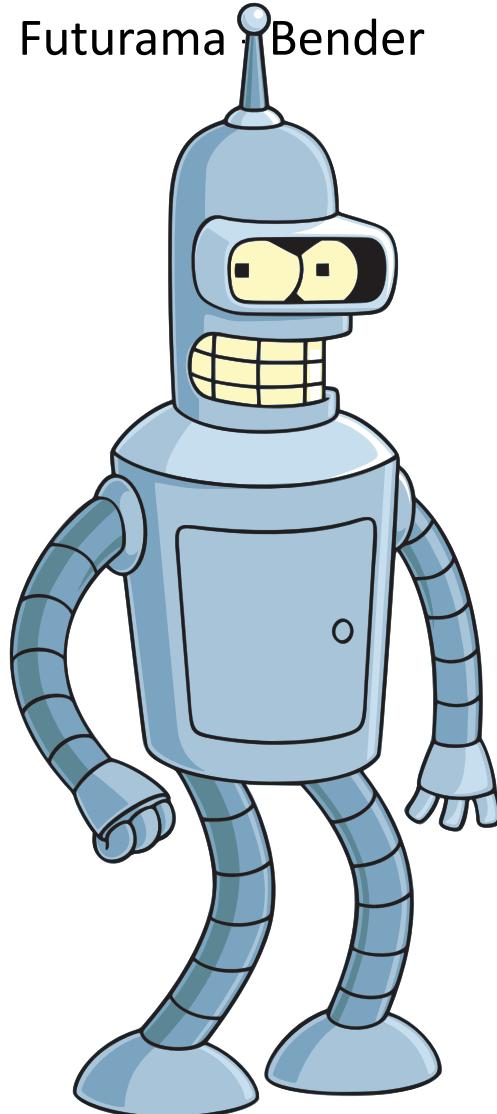
Ariane 5



https://youtu.be/PK_yguLapgA

Embedded Systems

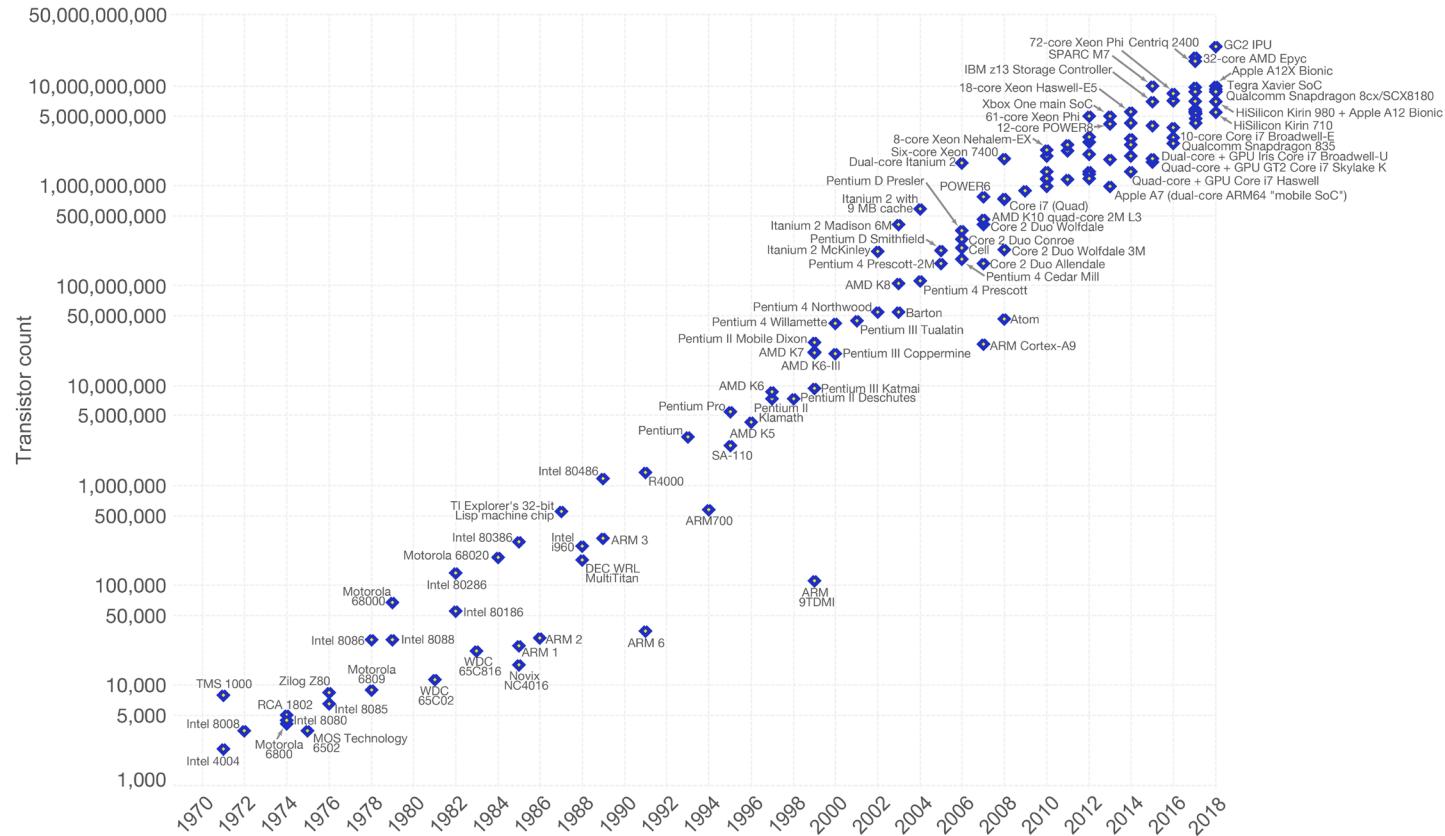
Futurama · Bender



https://youtu.be/_4TPIwwHM8Q

Embedded Systems

Moore's Law



Organization

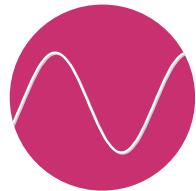
- Course ($4 \text{ Stunden}/\text{Woche}$)
- Laboratory ($4 \text{ Stunden}/\text{Woche}$)
- Prüfung
 - 20 Oktober 8h15 bis 10h (S1f) - 10h bis 11h45 (E1f und SE1d)
 - 1 Dezember 8h15 bis 10h (S1f) - 10h bis 11h45 (E1f und SE1d)

	Herbstsemester			Semester Prüfung	Frühlingssemester	Analog Prüfung
Bewertung	Prüf 1 Num	Prüf 2 Num	Projekt	Num	Siehe mit Analog Professor	Analog
Koeffizient	0.3	0.3	0.4	1		1
Note	1 (Durchschnitt)			1	1 (Durchschnitt)	1

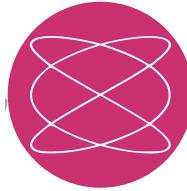
General cooperation

- Course attendance is mandatory
 - Only teachers can give an exemption
 - In case of more absences, inform HR
- Notes are indispensable
- Exercises must be done at home
 - Personal work is very important
- Punctuality
- Use of cell phones
 - Prohibited in class \Rightarrow use the breaks
- Eating and drinking
 - Forbidden in class \Rightarrow use the breaks

Laboratory



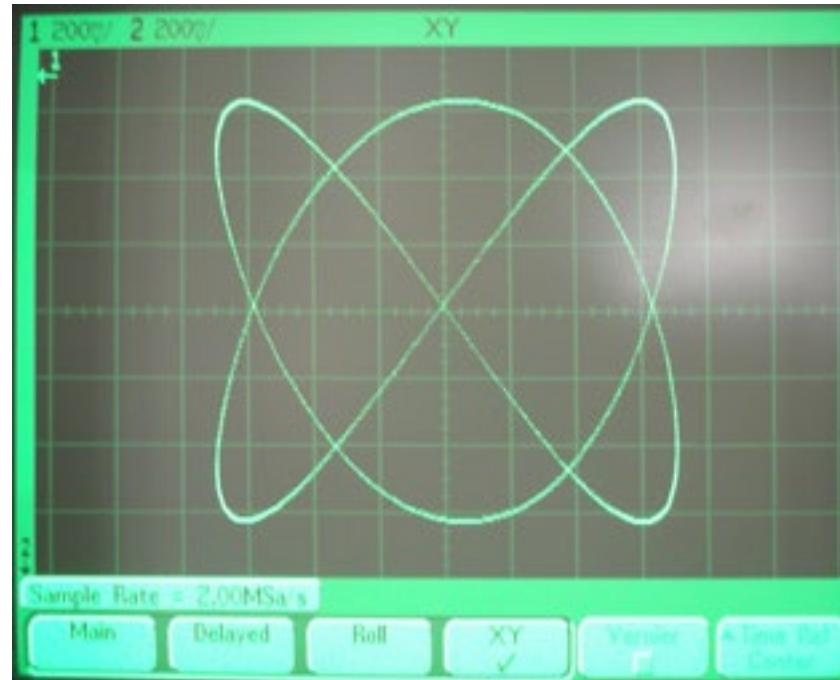
Signals



Lissajou



AMBA



Organization

Professors



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Zahno Silvan (ZaS)
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Email: silvan.zahno@hevs.ch
Tel: +41 58 606 88 07

Organization

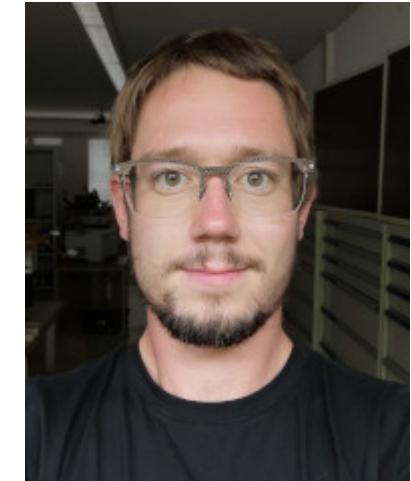
Collaborators



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Server and files

Systems engineering

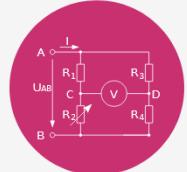
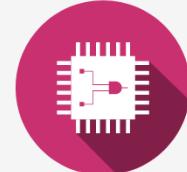
Moodle Cyberlearn

- <https://cyberlearn.hes-so.ch/course/index.php?categoryid=65>
- 21_HES-SO-VS_2131_Electricité / Elektrotechnik
- Password: *welcome*

20_HES-SO-VS_2131_ELECTRICITÉ / ELEKTROTECHNIK

INFORMATIONS DU MODULE / MODULINFORMATIONEN

**BASES MÉTIER - ELECTRICITÉ
FACHSPEZIFISCHE GRUNDLAGEN - ELEKTROTECHNIK**

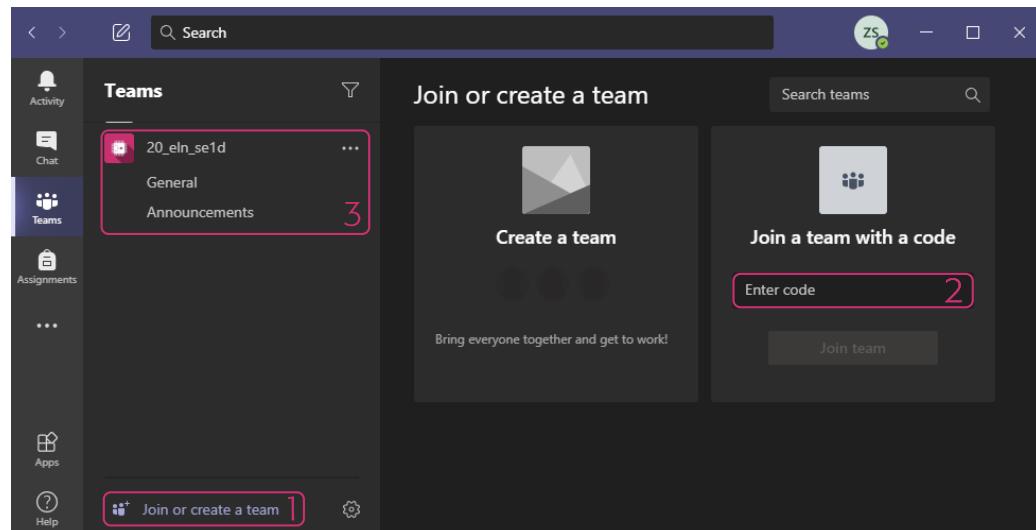



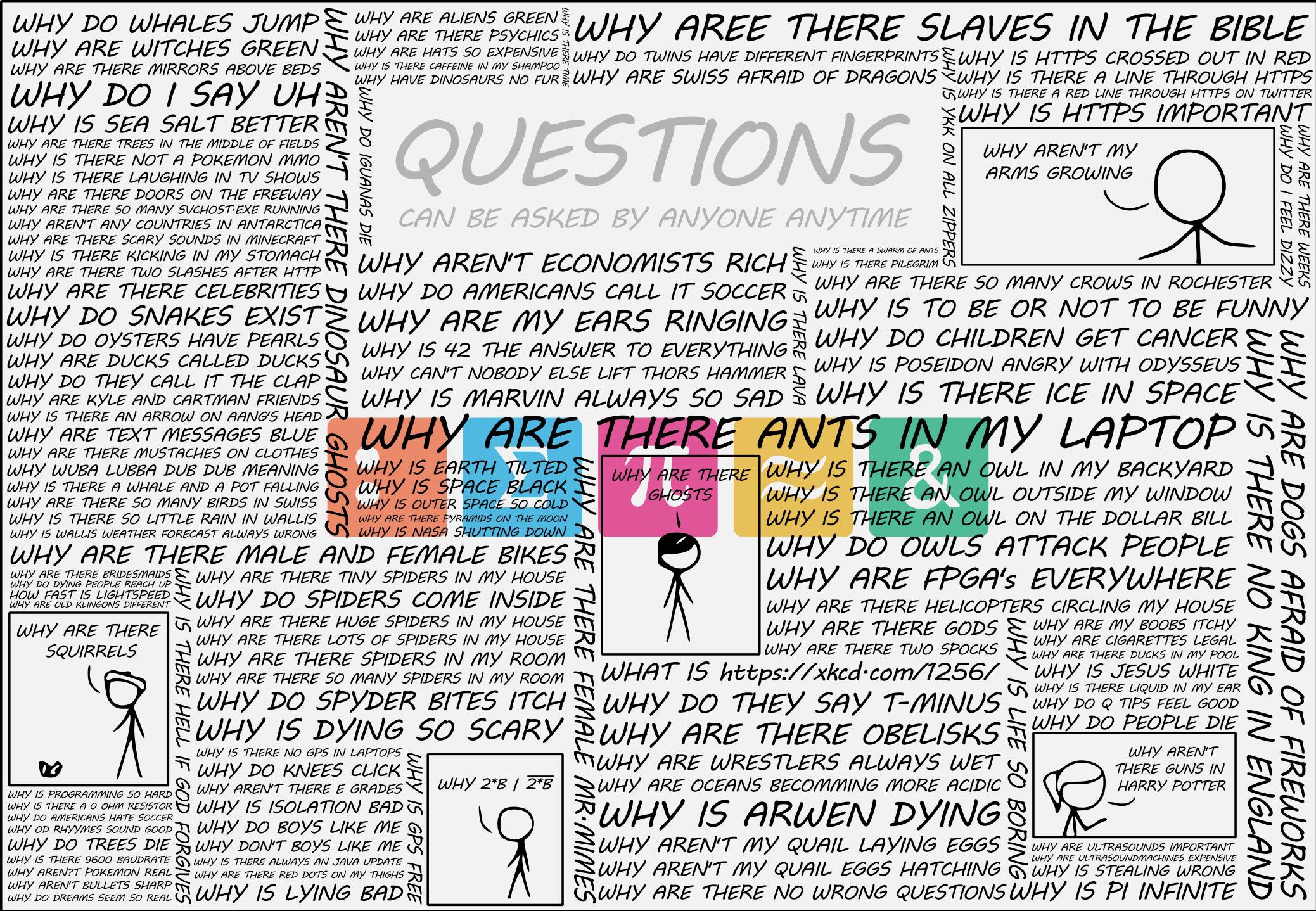
Le module "Bases métier" (BaM, code 213) est composé des deux cours suivants: Electricité (Ele, code 2131) et Mécanique 1 (Mec1, code 2132).
 Le cours Electricité est divisé en deux parties: électricité numérique (EIN) et électricité analogique (EIA).

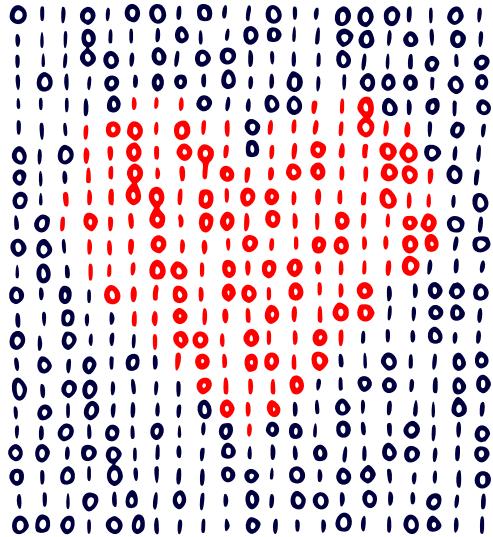
Das Modul "Fachspezifische Grundlagen" (BaM, Code 213) umfasst zwei Vorlesungen: Elektrotechnik (Ele, Code 2131) und Mechanik 1 (Mec1, Code 2132).
 Die Vorlesung Elektrotechnik ist in zwei geteilt: numerische Elektrotechnik (EIN) und analoge Elektrotechnik (EIA).

Microsoft Teams

- 21 eln zas
- Access Code: **cd8axp5**
- Channels
 - Announcements
Nachrichten der Modulleitung
 - General - Klassenchat







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