



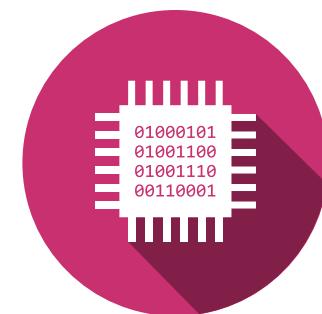
Digitales Design (DiD)

Einführung

IND

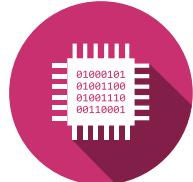
Studiengang Systemtechnik
Studiengang Energie und Umwelttechnik
Studiengang Informatik und Kommunikationssysteme

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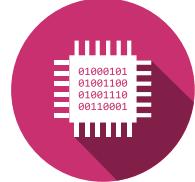
ISC Module 1. Jahr

<https://www.hevs.ch/media/document/20/plan-etude-isc-v1-02.pdf>



	<i>Vorlesungen</i>	<i>Stunden</i>	<i>Credits</i>
	Semester 1	32	28
	Lineare Algebra 1	4	4
	Analysis 1	6	5
	Kommunikation 1	2	2
	Ethik und Rechtespekte	2	2
	Sprachen 1	4	3
	Imperative Programmierung	8	7
	<i>Digitale Technik</i>	6	5
1. Jahr	Semester 2	36	32
	Lineare Algebra 1	4	4
	Analysis 2	6	5
	<i>Computerarchitektur</i>	4	3
	Kommunikation 2	2	2
	Sicherheitbewusstsein	4	3
	Sprachen 2	4	3
	Objektorientierte Programmierung	8	6
	Netzwerke	4	6
	Projekt 1		
			Summer school

Ziel des Modules



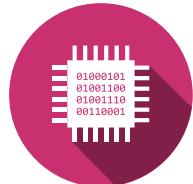
Das funktionale Pflichtenheft eines einfachen Systems interpretieren (C) und es digital darstellen können (A).

Die Grundprinzipien des digitalen Designs nach den vorgeschlagenen Methoden anwenden (A).

Die daraus abgeleitete logische Funktion realisieren (A)

Validieren des erstellten digitalen Designs anhand von Simulations- und Testmethoden (J)

Inhalt des Kurses



Pflichtenheft

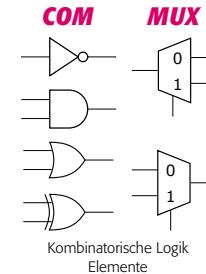
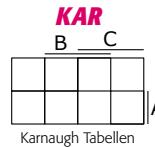
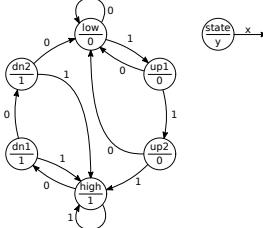
MSb **NUM** LSb
11110101
Binary dig IT

		a	b	y
		0	0	0
		0	1	1
		1	0	1
		1	1	0

Wahrheitstabellen

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

Zustandstabellen

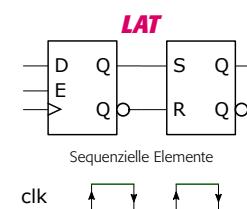


$$y = a(b + c) = ab + ac$$

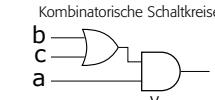
Polynomiale Gleichungen

$$Q_0^+ = \overline{Q_0}$$

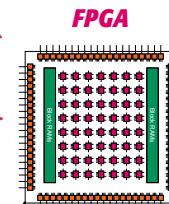
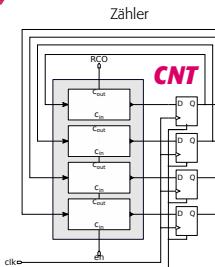
$$Q_1^+ = Q_0 \oplus Q_1$$



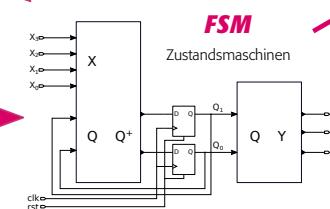
DiD IND



LST

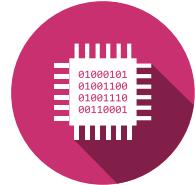


FPGA



MET

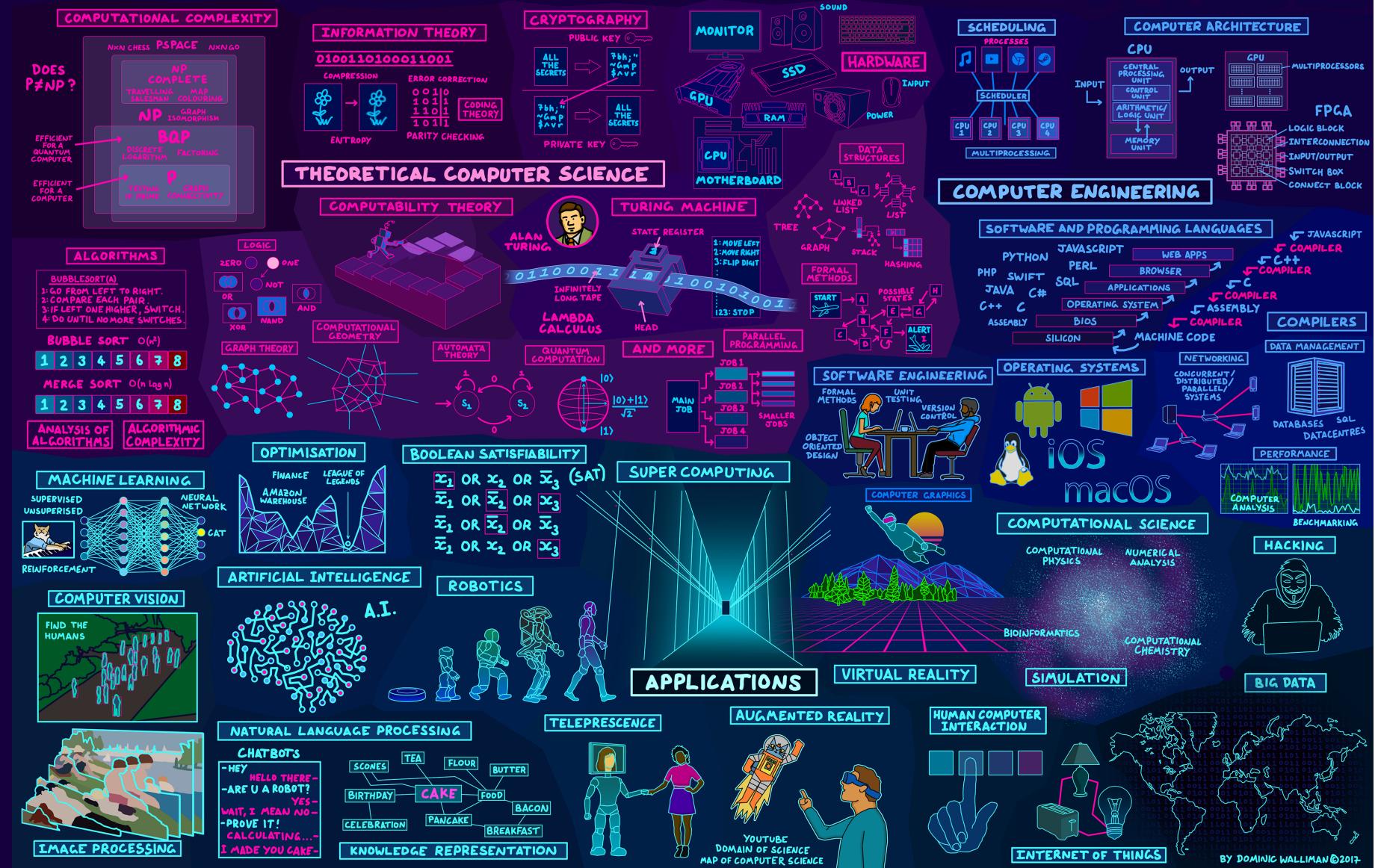
Witz



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

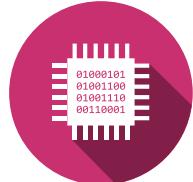
Es gibt 10 Arten von Menschen auf dieser Welt. Diejenigen, die das Binäre verstehen und diejenigen, die es nicht verstehen.

Map of Computer Science



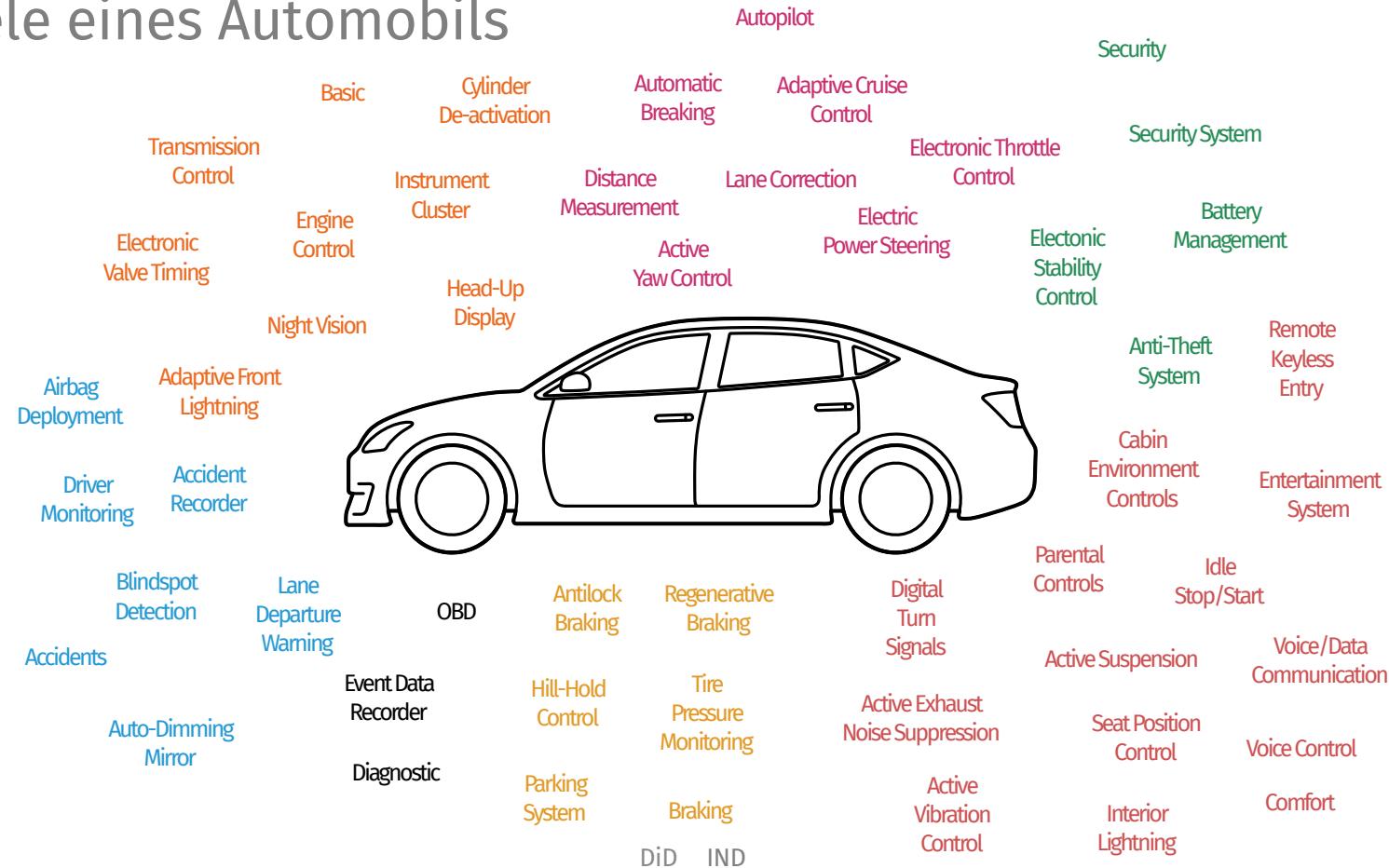
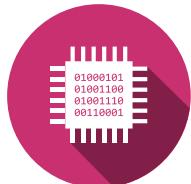
Numerische Elektrotechnik

Anwendungsbereiche



Numerische Elektrotechnik

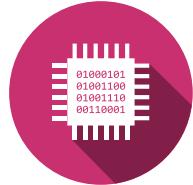
Beispiele eines Automobils



Numerische Elektrotechnik

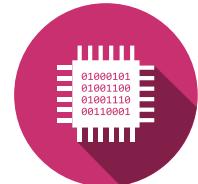
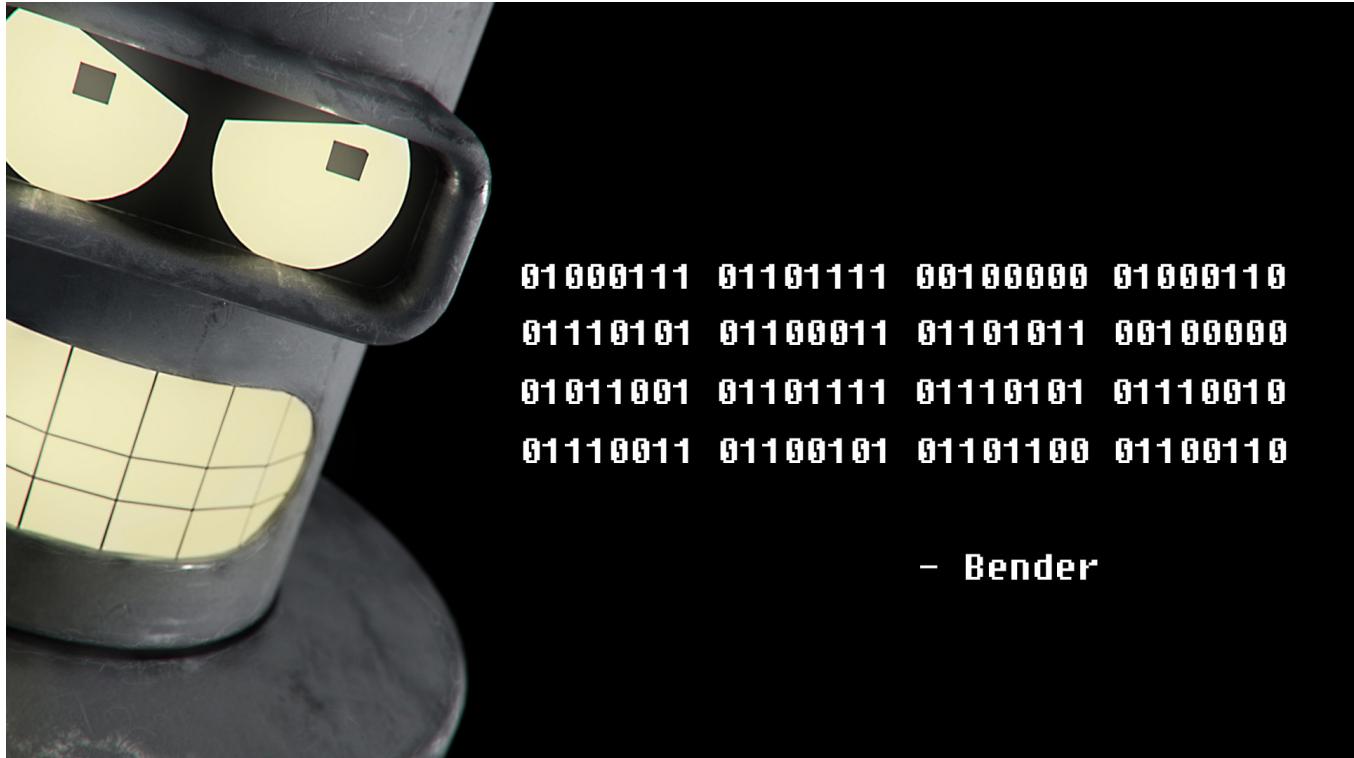
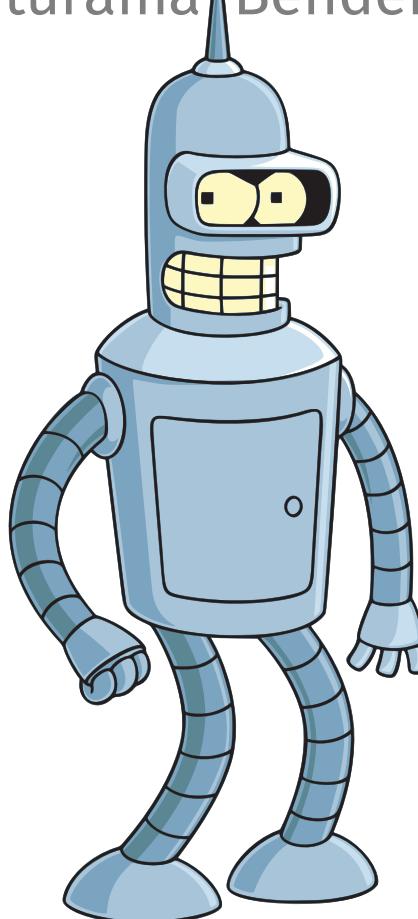
Ariane 5

https://youtu.be/PK_yguLapgA



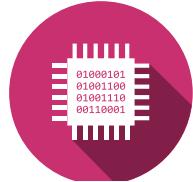
Numerische Elektrotechnik

Futurama Bender

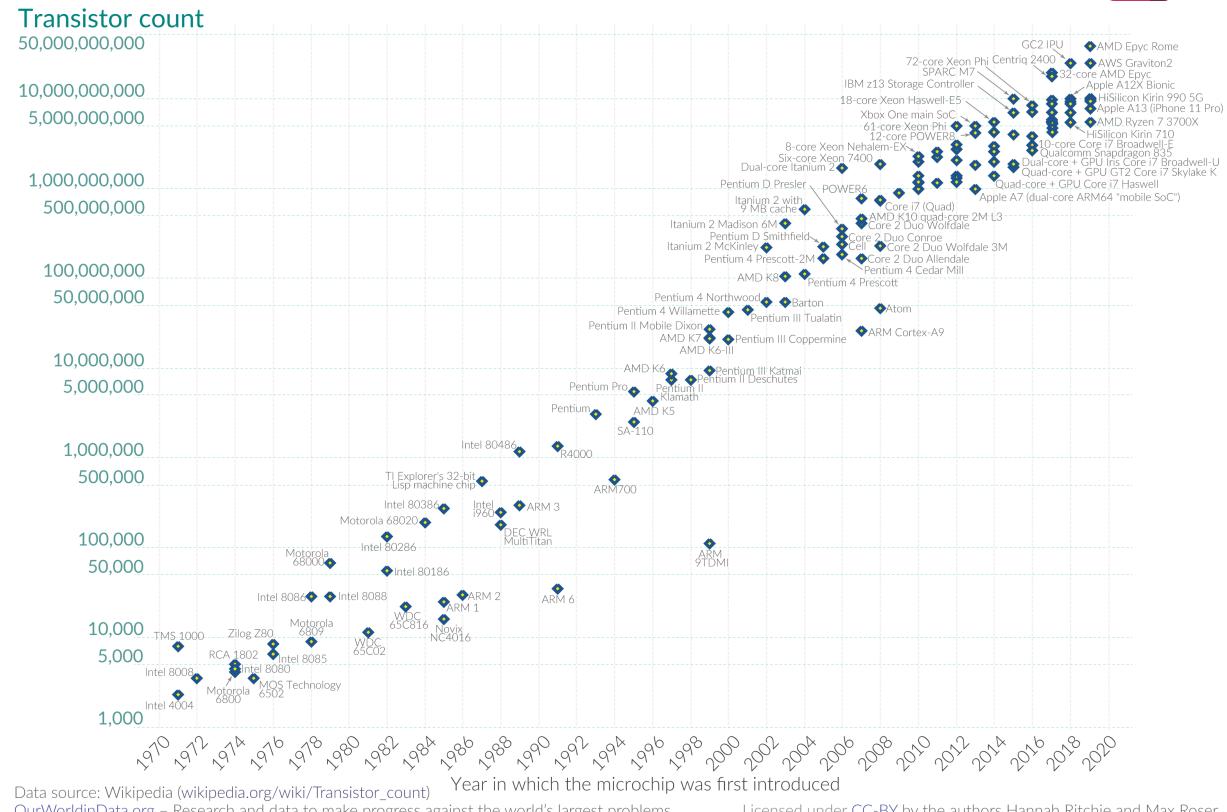


Numerische Elektrotechnik

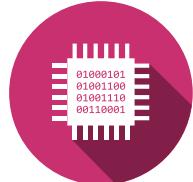
Moore's Law



*Number of transistors double
every two years
- Gordon Moore -*



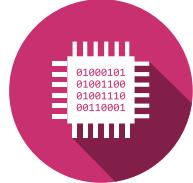
ISC Organisation



- Kurs ($2^{Stunden/Woche}$)
- Labore ($4^{Stunden/Woche}$)
- Projekt (Display $\approx 3 - 5$ Wochen)
- Prüfung
 - 8.11.23 10h10 – 11h45

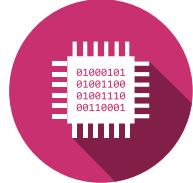
	Fallsemester (ElN)			Springsemester (CAr)		
Evaluation	Exa 1	Project	Exa Sem	Exa 1	Project	Exa Sem
Coefficient	0.5	0.5	1	0.5	0.5	1
Semestergrade	1		1	1		1
Modulegrade	5/9			4/9		

Allgemeine Zusammenarbeit



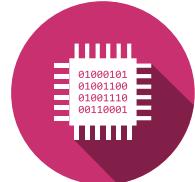
- Die Anwesenheit im Unterricht ist Pflicht.
 - Nur die Lehrer können eine Befreiung erteilen
 - Bei längere Absenz => Information an den Studiengangsverantwortlichen
- Unbedingt Notizen machen, vor allem bei Beispielen und Übungen
- Zusätzliche Übungen müssen zu Hause gemacht
 - Eigene Arbeit unerlässlich
- Verwendung von Mobiltelefonen
 - Verboten im Unterricht Pausenzeiten nutzen
- Essen und Trinken im Unterricht
 - Im Unterricht verboten

Nachhilfe

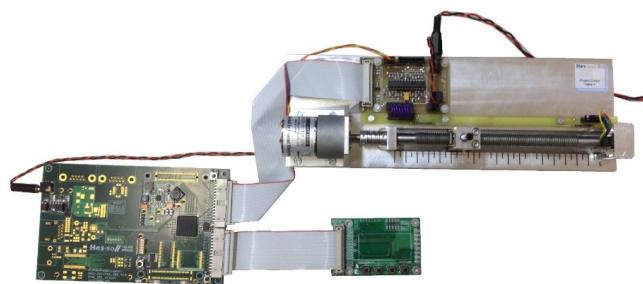


- Empfohlen bis zur ersten Prüfung, in der Ihr Niveau festgestellt wird.
- Eine ausgezeichnete Gelegenheit, Übungen zu machen

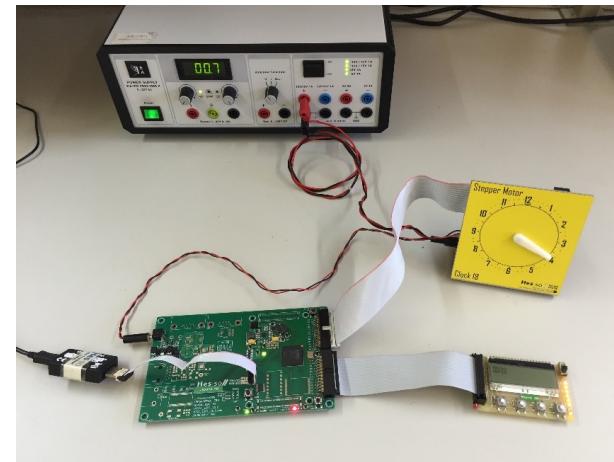
Semesterprojekt Systemtechnik



Cursor

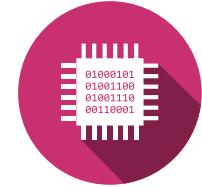
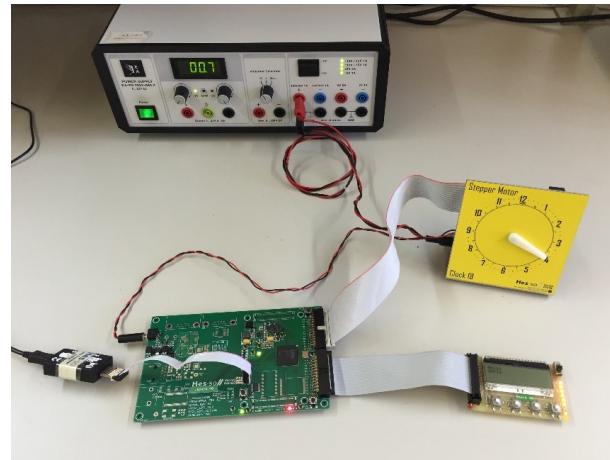
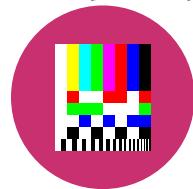


Chrono



Semesterprojekt Informatik und Kommunikationssysteme

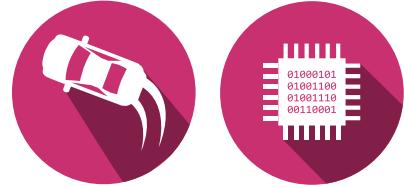
Display



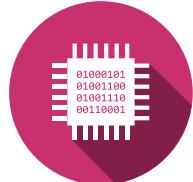
Summerschool Kart

SS1 2017

<https://www.youtube.com/watch?v=g6lU2NDZub8>



Organisation Professoren



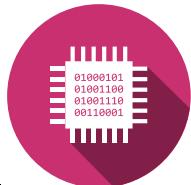
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Organisation

Mitarbeiter



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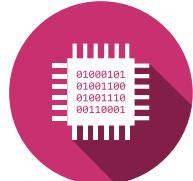
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Server und Dateien

Informatik und Kommunikationssysteme



- **Moodle Cyberlearn**
 - 102.1 – Digital design
 - Password: *welcome*

Ter somestre
102.1 - Digital design
0 étudiant-e-s | Dernière mise à jour août 2023
Silvan Zahno
01001000
01100101
01110110
01110011
Donné en : 1ère année
Périodes hebdomadaires : 6
Semestre: Automne

À propos du cours

Le monde digital est celui composé par des 0 et des 1. dès lors, comment à partir de ces deux nombres est-il possible de réaliser des calculs ? Comment fait un processeur pour exécuter des instructions ? Quels sont les éléments logiques qui le composent et comment sont-ils agencés ? Quel est donc le rapport entre les bits et la logique digitale ? Ces quelques questions illustrent les contenus abordés dans ce module dans lequel vous apprendrez à structurer les portes logiques et les éléments de mémoire pour réaliser au final un processeur complet.

Ce cours comprend :

- Devoirs
- Forums
- Ressources

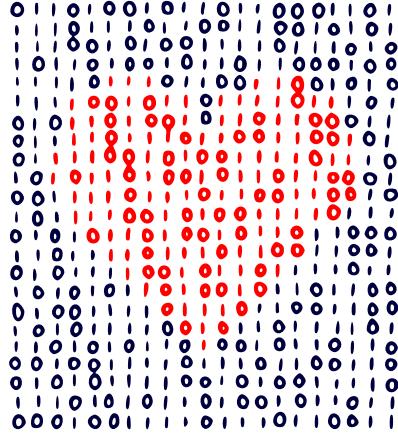
- **Microsoft Teams**
 - 23_SYND_Car
 - Access Code: **w4ic7u1**

Activity
Chat
Teams
Assignments
...
Apps
Help
Join or create a team
Search teams
20_eln_se1d
General
Announcements
...
Join or create a team
Create a team
Join a team with a code
Enter code 2
Join team

WHY DO I SAY UH
WHY IS SEA SALT BETTER
WHY ARE THERE TREES IN THE MIDDLE OF FIELDS
WHY IS THERE NOT A POKEMON MMO
WHY IS THERE LAUGHING IN TV SHOWS
WHY ARE THERE DOORS ON THE FREEWAY
WHY ARE THERE SO MANY SVHOST-EXE RUNNING
WHY AREN'T ANY COUNTRIES IN ANTARCTICA
WHY ARE THERE SCARY SOUNDS IN MINECRAFT
WHY IS THERE KICKING IN MY STOMACH
WHY ARE THERE TWO SLASHES AFTER HTTP
WHY ARE THERE CELEBRITIES
DINOSAUR GHOSTS
WHY DO SNAKES EXIST
WHY DO OYSTERS HAVE PEARLS
WHY ARE DUCKS CALLED DUCKS
WHY DO THEY CALL IT THE CLAP
WHY ARE KYLE AND CARTMAN FRIENDS
WHY IS THERE AN ARROW ON AANG'S HEAD
WHY ARE TEXT MESSAGES BLUE
WHY ARE THERE MUSTACHES ON CLOTHES
WHY WUBA LUBBA DUB DUB MEANING
WHY IS THERE A WHALE AND A POT FALLING
WHY ARE THERE SO MANY BIRDS IN SWISS
WHY IS THERE SO LITTLE RAIN IN WALLIS
WHY IS WALLIS WEATHER FORECAST ALWAYS WRONG

WHY ARE THERE MALE AND FEMALE BIKES
WHY ARE THERE BRIDESMAIDS
WHY DO DYING PEOPLE REACH UP
HOW FAST IS LIGHTSPEED
WHY ARE OLD KLINGONS DIFFERENT
WHY ARE THERE SQUIRRELS
IS THERE HELL IF GL
WHY ARE THERE TINY SPIDERS IN MY HOUSE
WHY DO SPIDERS COME INSIDE
WHY ARE THERE HUGE SPIDERS IN MY HOUSE
WHY ARE THERE LOTS OF SPIDERS IN MY HOUSE
WHY ARE THERE SPIDERS IN MY ROOM
WHY ARE THERE SO MANY SPIDERS IN MY ROOM
WHY DO SPYDER BITES ITCH
WHY IS DYING SO SCARY
WHY IS THERE NO GPS IN LAPTOPS
WHY DO KNEES CLICK
WHY AREN'T THERE E GRADES
WHY 2*B / 2*B

WHY HAVE DINOSAURS NO FUR
WHY ARE SWISS AFRAID OF DRAGONS
WHY IS THERE A LINE THROUGH HTTPS
WHY IS THERE A RED LINE THROUGH HTTPS ON TWITTER
WHY IS HTTPS IMPORTANT
WHY ARE THERE WEEKS
WHY DO I FEEL DIZZY
WHY AREN'T MY ARMS GROWING
WHY ARE THERE SO MANY CROWS IN ROCHESTER
WHY IS TO BE OR NOT TO BE FUNNY
WHY DO CHILDREN GET CANCER
WHY IS POSEIDON ANGRY WITH ODYSSEUS
WHY IS THERE ICE IN SPACE
WHY ARE THERE ANTS IN MY LAPTOP
WHY IS EARTH TILTED
WHY IS SPACE BLACK
WHY IS OUTER SPACE SO COLD
WHY ARE THERE PYRAMIDS ON THE MOON
WHY IS NASA SHUTTING DOWN
WHY ARE THERE GHOSTS
WHY IS THERE AN OWL IN MY BACKYARD
WHY IS THERE AN OWL OUTSIDE MY WINDOW
WHY IS THERE AN OWL ON THE DOLLAR BILL
WHY DO OWLS ATTACK PEOPLE
WHY ARE FPGA's EVERYWHERE
WHY ARE THERE HELICOPTERS CIRCLING MY HOUSE
WHY ARE THERE GODS
WHY ARE THERE TWO SPOCKS
WHY ARE MY BOOBS ITCHY
WHY ARE CIGARETTES LEGAL
WHY ARE THERE DUCKS IN MY POOL
WHY IS JESUS WHITE
WHY IS THERE LIQUID IN MY EAR
WHY DO Q TIPS FEEL GOOD
WHY DO PEOPLE DIE
WHAT IS <https://xkcd.com/1256/>
WHY DO THEY SAY T-MINUS
WHY ARE THERE OBELISKS
WHY ARE WRESTLERS ALWAYS WET
WHY ARE OCEANS BECOMMING MORE ACIDIC
WHY AREN'T THERE GUNS IN HARRY POTTER



Hes·so // VALAIS
WALLIS



Haute Ecole d'Ingénierie
Hochschule für Ingenieurwissenschaften

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