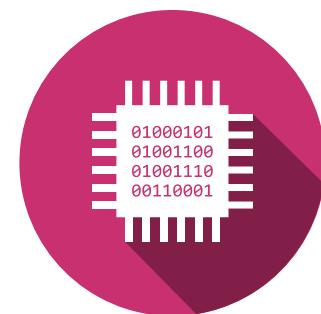




Conception numérique (DiD) Introduction IND

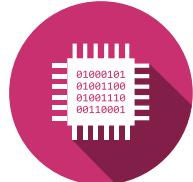
Filière Systèmes industriels
Filière Energie et techniques environnementales
Filière Informatique et systèmes de communications

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Christophe Bianchi christophe.bianchi@hevs.ch
François Corthay francois.corthay@hevs.ch



ISC Module 1. Jahr

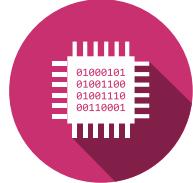
<https://www.hevs.ch/media/document/20/plan-etude-isc-v1-02.pdf>



Cours	Heures	Crédits
Semestre 1	32	28
Algèbre linéaire 1	4	4
Analyse 1	6	5
Communication 1	2	2
Ethique et aspects juridiques	2	2
Langues 1	4	3
Programmation impérative	8	7
<i>Systèmes numériques</i>	6	5
Semestre 2	36	32
Algèbre linéaire 2	4	4
Analyse 2	6	5
<i>Architecture des ordinateurs</i>	4	3
Communication 2	2	2
Intro. à la sécurité	4	3
Langues 2	4	3
Programmation objet	8	6
Réseaux	4	6
Projet 1	Summer school	3

1ère année

But du cours



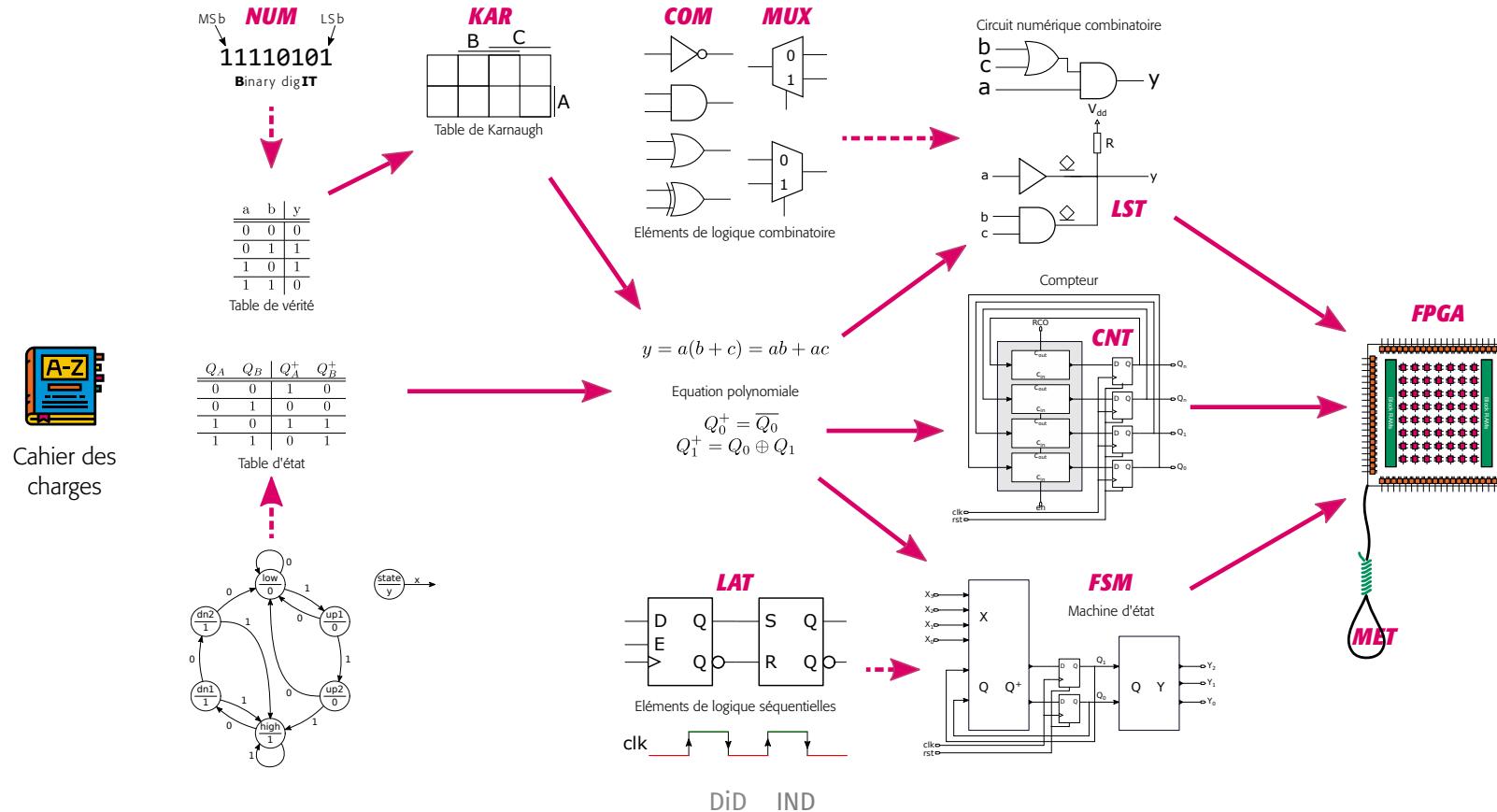
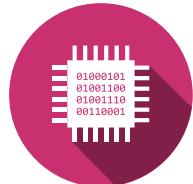
Savoir interpréter le cahier des charges fonctionnel d'un système simple (C) et le représenter sous forme numérique (A)

Appliquer les principes de base de la conception numérique selon les méthodologies proposées (A)

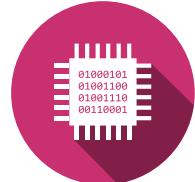
Réaliser la fonction logique qui en découle (A)

Valider la conception numérique réalisée selon les méthodologiques de simulation et de test (J)

Contenu du cours



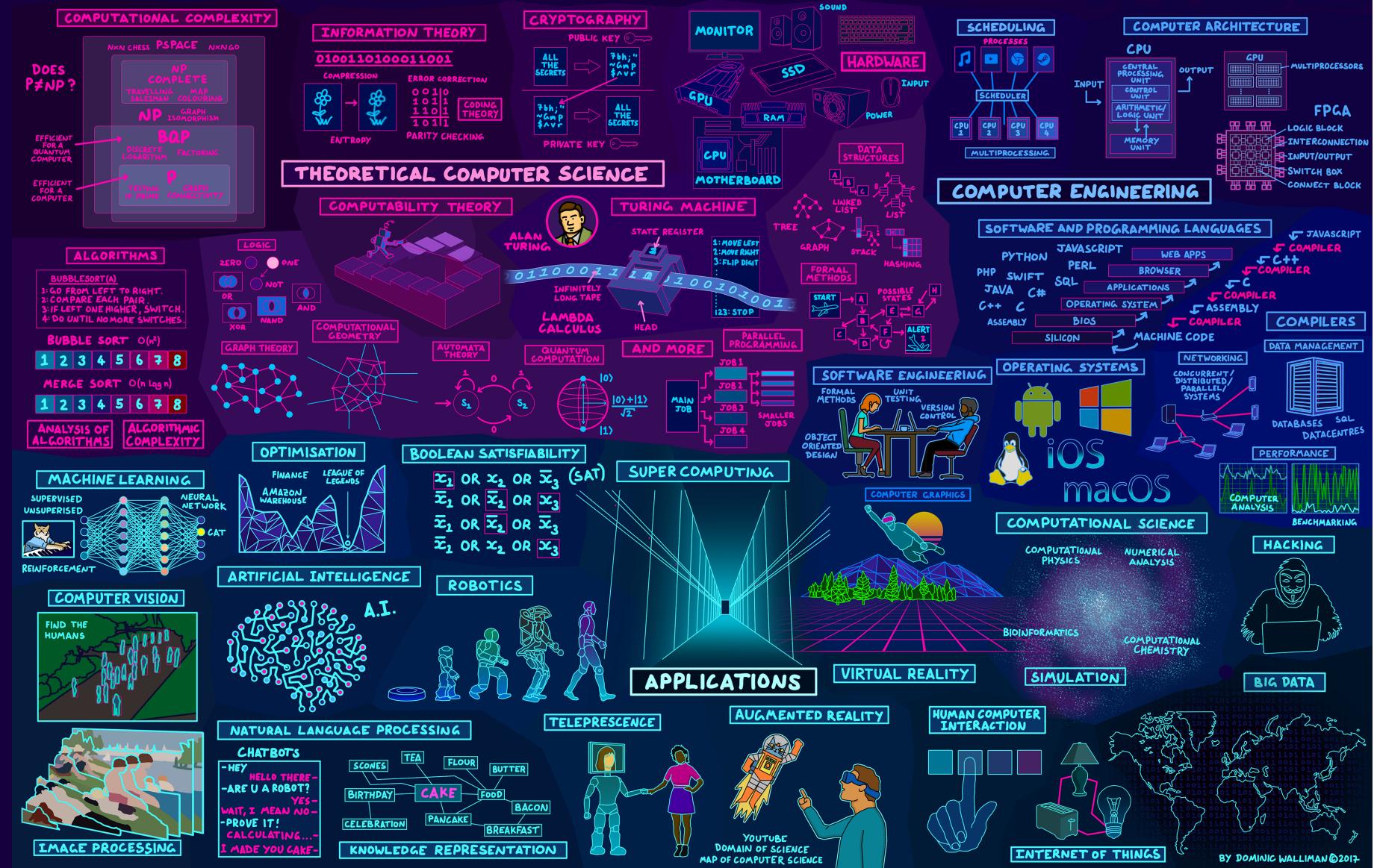
Blague



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

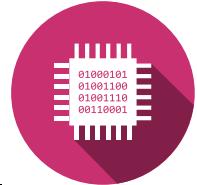
Il y a 10 types de personnes dans ce monde. Ceux qui comprennent le binaire et ceux qui ne le comprennent pas.

Map of Computer Science



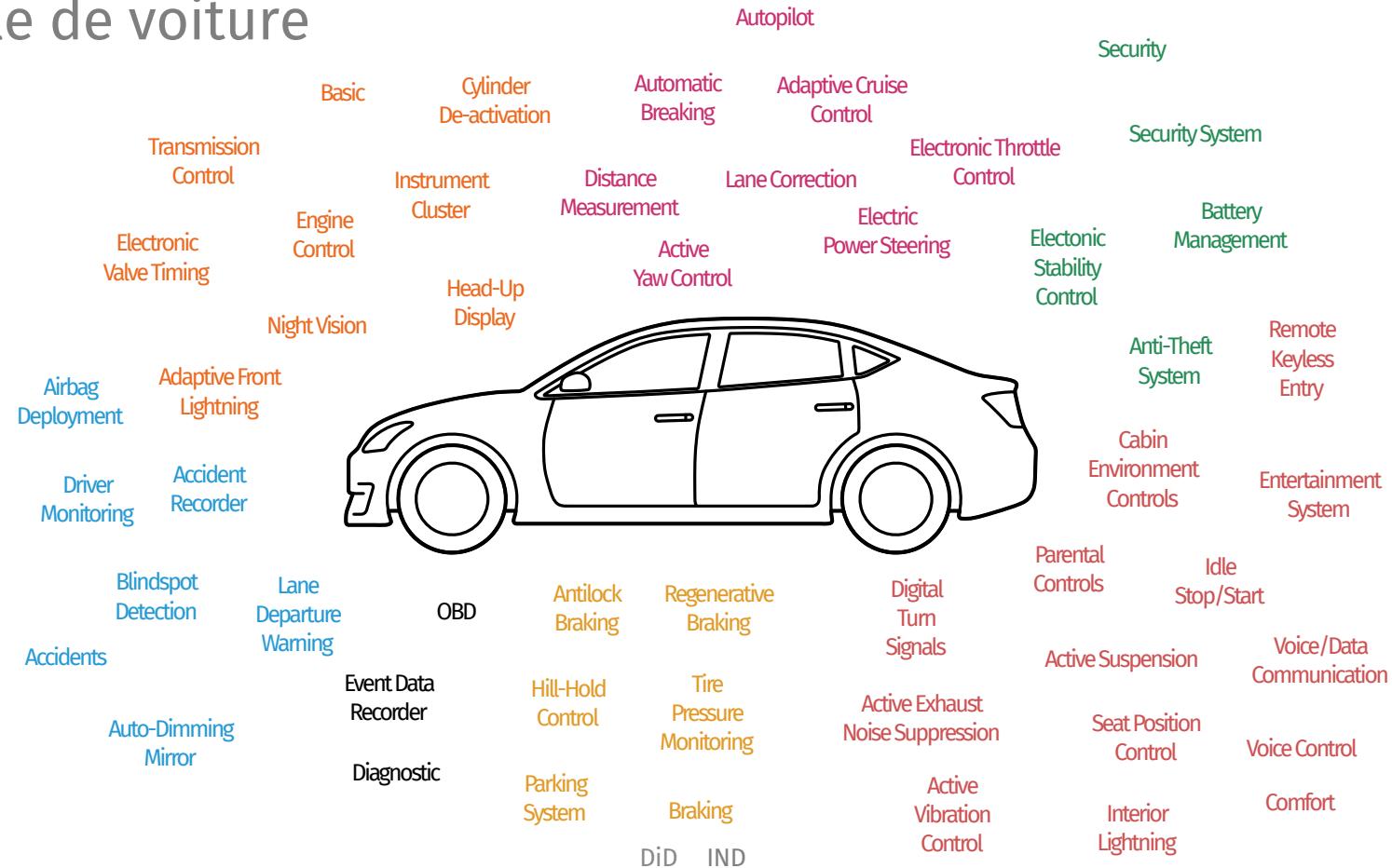
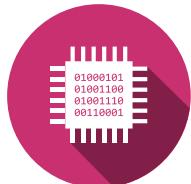
Electronique numérique

Domaines d'application



Electronique numérique

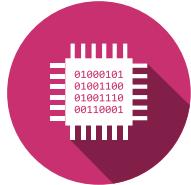
Exemple de voiture



Electronique numérique

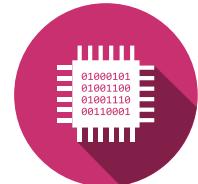
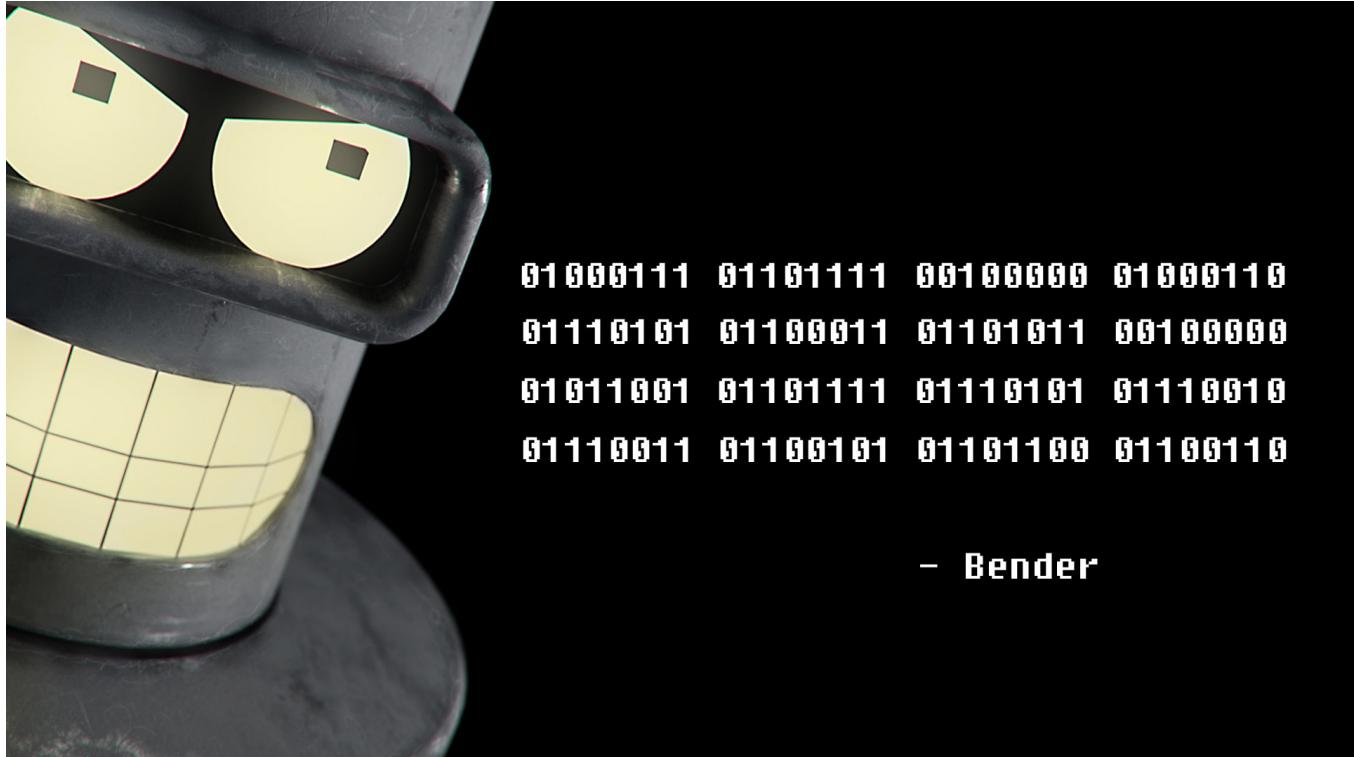
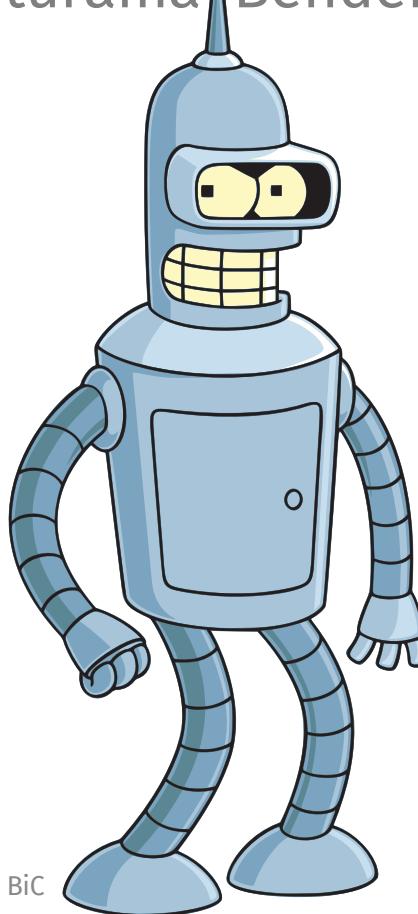
Ariane 5

https://youtu.be/PK_yguLapgA



Electronique numérique

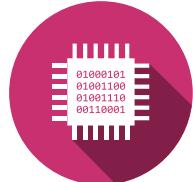
Futurama Bender



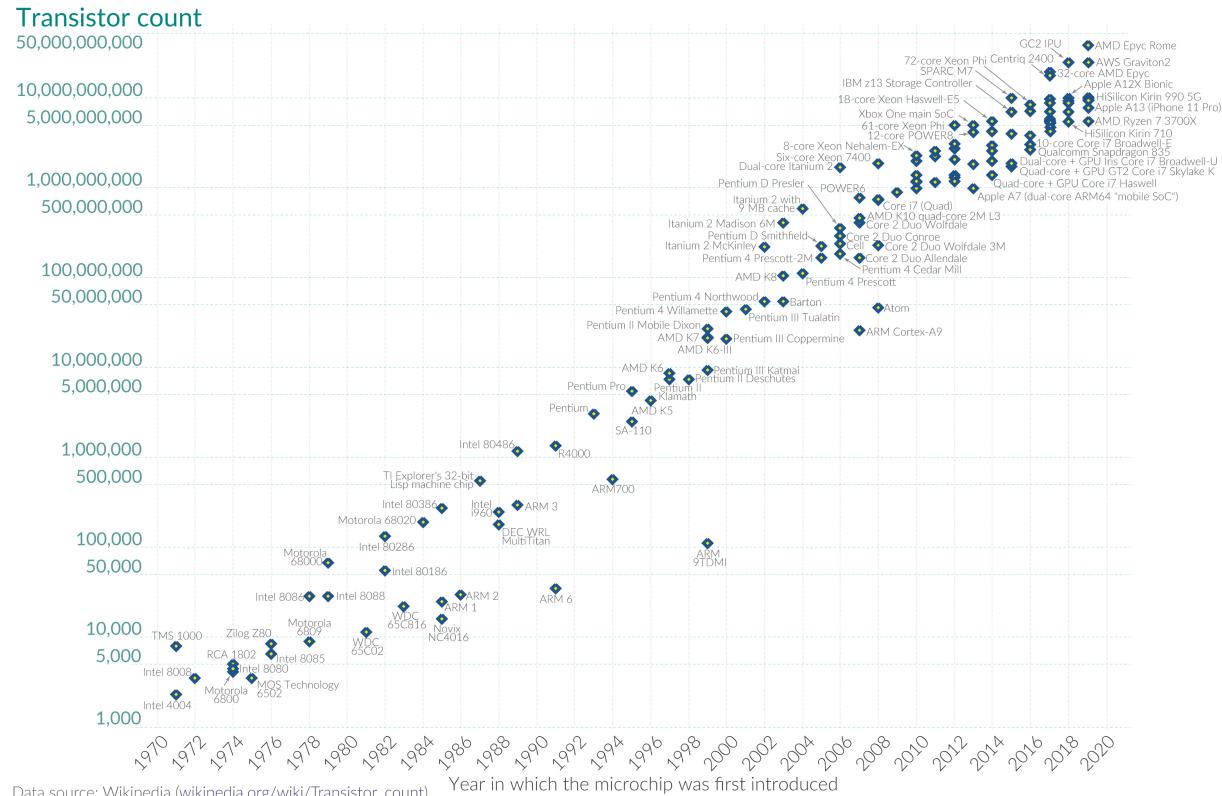
https://youtu.be/_4TPlwwHM8Q

Electronique numérique

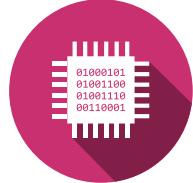
Moore's Law



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



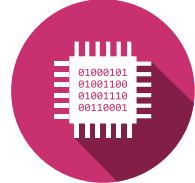
ISC Organisation



- Cours ($2^{Heures/Semaine}$)
- Labore ($4^{Heures/Semaine}$)
- Projet (Display $\approx 3 - 5$ Semaine)
- Examen
 - 8.11.23 10h10 – 11h45

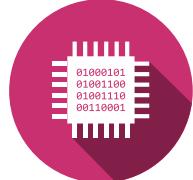
	Semestre d'automne (ElN)			Semestre de printemps (CAr)		
Evaluation	Exa 1	Project	Exa Sem	Exa 1	Projet	Exa Sem
Coefficient	0.5	0.5	1	0.5	0.5	1
Note	1 (Moyenne)		1	1 (Moyenne)		1

Coopération Générale



- Présence au cours obligatoire
 - Seuls les professeurs peuvent donner une dispense
 - Si absentéisme grandissant ⇒ information au RF
- Prise de notes indispensable, notamment en cas d'exemples et exercices
- Exercices complémentaires à faire à la maison
 - Travail personnel indispensable
- Utilisation des téléphones mobiles
 - Interdit en classe ⇒ utiliser le temps des pauses
- Nourriture et boisson en classe
 - Interdit en classe

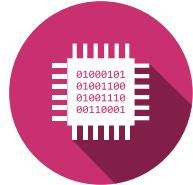
Appui



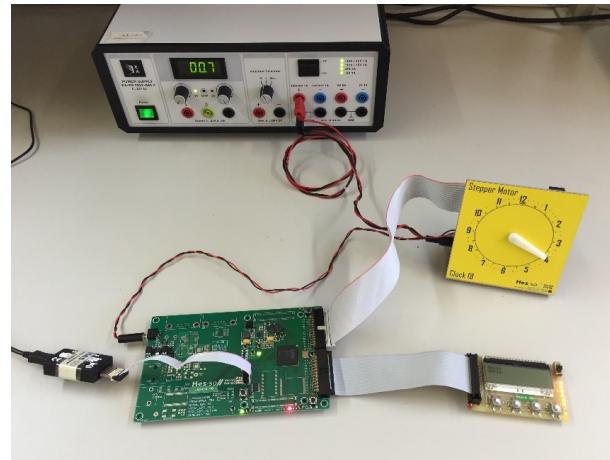
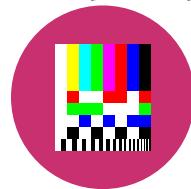
- Conseillé jusqu'au premier examen qui permet de connaître votre niveau
- Une excellente occasion de faire des exercices

Projet de semestre

Informatique et systèmes de communication



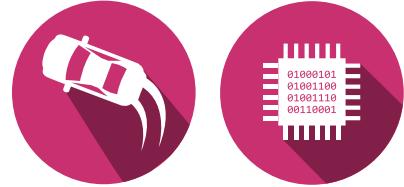
Display



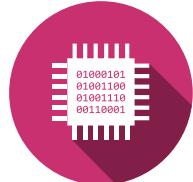
Summerschool Kart

SS1 2017

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



Organisation Professeurs



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Organisation

Collaborateurs



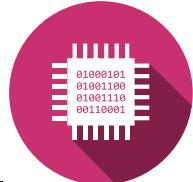
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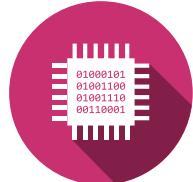


Rémy Borgeat (BoR)
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Email: remy.borgeat@hevs.ch
Tel: +41 58 606 92 20



Serveurs et fichiers

Informatique et systèmes de communication



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

The screenshot shows a Moodle course page for '102.1 - Digital design'. The course summary includes:

- Ter semestre: 1er semestre
- Code: 01001000
- Titre: 102.1 - Digital design
- 0 étudiant-e-s
- Dernière mise à jour: août 2023
- Donné en: 1ère année
- Périodes hebdomadaires: 6
- Semestre: Automne

On the right, there is a vertical column of binary numbers: 01001000, 01100101, 01110110, and 01110011.

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

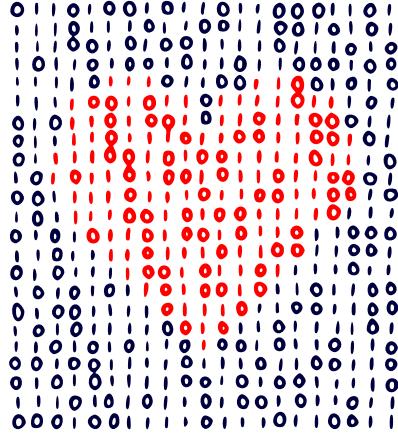
- **Microsoft Teams**
 - 23_SYND_Car
 - Access Code: **w4ic7u1**

The screenshot shows the Microsoft Teams application interface. On the left, a sidebar lists 'Activity', 'Chat', 'Teams', 'Assignments', and 'Apps'. The main area shows a team named '20_eln_se1d' with 'General' and 'Announcements' channels. To the right, there are two sections: 'Join or create a team' with a 'Create a team' button and a 'Join a team with a code' section where the code 'w4ic7u1' is entered. A message at the bottom says 'Bring everyone together and get to work!'. A pink button at the bottom left says 'Join or create a 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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