Hes·so VALAIS WALLIS
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Hochschule für Ingenieurwissenschaften

Conception numérique (DiD)

Introduction

IND

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

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ISC Module 1. Jahr

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

	Cours	*Heures*	*Crédits*
1ère année	**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
	Systèmes numériques	*6*	*5*
	Semestre 2	**36**	**32**
	Algèbre linéaire 2	4	4
	Analyse 2	6	5
	Architecture des ordinateurs	*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

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

Autopilot
Security
Basic
Cylinder De-activation
Automatic Breaking
Adaptive Cruise Control
Security System
Transmission Control
Electronic Throttle Control
Instrument Cluster
Distance Measurement
Lane Correction
Engine Control
Electric Power Steering
Battery Management
Electronic Valve Timing
Active Yaw Control
Electonic Stability Control
Head-Up Display
Night Vision
Anti-Theft System
Remote Keyless Entry
Airbag Deployment
Adaptive Front Lightning
Cabin Environment Controls
Driver Monitoring
Accident Recorder
Entertainment System
Parental Controls
Idle Stop/Start
Blindspot Detection
Lane Departure Warning
OBD
Antilock Braking
Regenerative Braking
Digital Turn Signals
Accidents
Active Suspension
Voice/Data Communication
Event Data Recorder
Hill-Hold Control
Tire Pressure Monitoring
Active Exhaust Noise Suppression
Seat Position Control
Auto-Dimming Mirror
Voice Control
Diagnostic
Parking System
Braking
Active Vibration Control
Interior Lightning
Comfort

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 -

Data source: Wikipedia (wikipedia.org/wiki/Transistor_count)
OurWorldinData.org – Research and data to make progress against the world’s largest problems.

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ISC Organisation

- Cours ($2^{Heures}/_{Semaine}$)
- Labore ($4\,^{Heures}/_{Semaine}$)
- Projet (Display $\approx 3 - 5\ Semaine$)
- Examen
  - 22.11.2024 10h10 – 11h45

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

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

- Selon descriptif de module
- Obligatoire 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

Organisation

Professeurs

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Organisation

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Serveurs et fichiers

Informatique et systèmes de communication

- **Moodle ISC Learn**
  - 102.1 – Digital design
  - Password: *welcome*

INFORMATIONS DU MODULE - MODULINFORMATIONEN

MODULE DID - KURS DID

Le module "102 Architecture materielle" est composé des deux cours suivants: 102.1 Systèmes numériques et 102.2 Architecture des ordinateurs.

Vous trouverez tous les documents de cours sur le repo Git.

Das Modul "102 Materielle Architektur" besteht aus den beiden folgenden Kursen: 102.1 Digitale Systeme und 102.2 Computerarchitektur.

Alle Kurs
Reposito

- **Microsoft Teams**
  - 24_ISC_Car
  - Access Code: **ih8wehx**

QUESTIONS

CAN BE ASKED BY ANYONE ANYTIME

WHY ARE THERE MIRRORS ABOVE BEDS
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 SVCHOST·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
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 AREN'T THERE DINOSAUR GHOSTS

WHY HAVE DINOSAURS NO FUR
WHY DO IGUANAS DIE

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 IS YKK ON ALL ZIPPERS

WHY ARE THERE WEEKS
WHY DO I FEEL DIZZY

WHY IS THERE A SWARM OF ANTS
WHY IS THERE PILEGRIM
WHY AREN'T ECONOMISTS RICH
WHY DO AMERICANS CALL IT SOCCER
WHY ARE MY EARS RINGING
WHY IS 42 THE ANSWER TO EVERYTHING
WHY CAN'T NOBODY ELSE LIFT THORS HAMMER
WHY IS MARVIN ALWAYS SO SAD

WHY IS THERE LAVA

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 DOGS AFRAID OF FIRE
WHY IS THERE NO KING IN ENGLAND

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 FEMALE NAMES

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 IS LIFE SO

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

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 IS THERE HELL IF GOD

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

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 2*B | $\overline{2*B}$

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