

MSE Redesign

Kick-Offs phase 3

Zurich, 20.11.2019
Lucerne, 25.11.2019



1. Aims Kick Off

- Overview of MSE-Redesign and current working status
- Integration of the module groups into the redesign process
- Tasks for module groups of new modules or modules to be adapted (new module descriptions, module descriptions to be revised)
- Introduction into "Moodle" (MSE platform)
- Clarification of open questions

1. Agenda

- 1) Welcome, Aims KickOff
- 2) MSE-Redesign
 - Concept MSE-Redesign
 - Implementation process
 - Project organisation
- 3) Tasks module groups
 - Aims phase 3
 - Assignment
 - Process and timeline
- 4) Moodle
 - Online tool module descriptions
 - Consultation process MSE redesign
- 5) Questions
- 6) Further procedure
- 7) A.O.B, Thanks

2. MSE-Redesign

- Aims of MSE-Redesign
 - Distinct profiles to make the internal MSE structure and external communication more transparent
 - Link the centralised theoretical study part to the decentralised specialisation
 - Simplification of the structure
 - Management of small “fields of education” (small profiles)

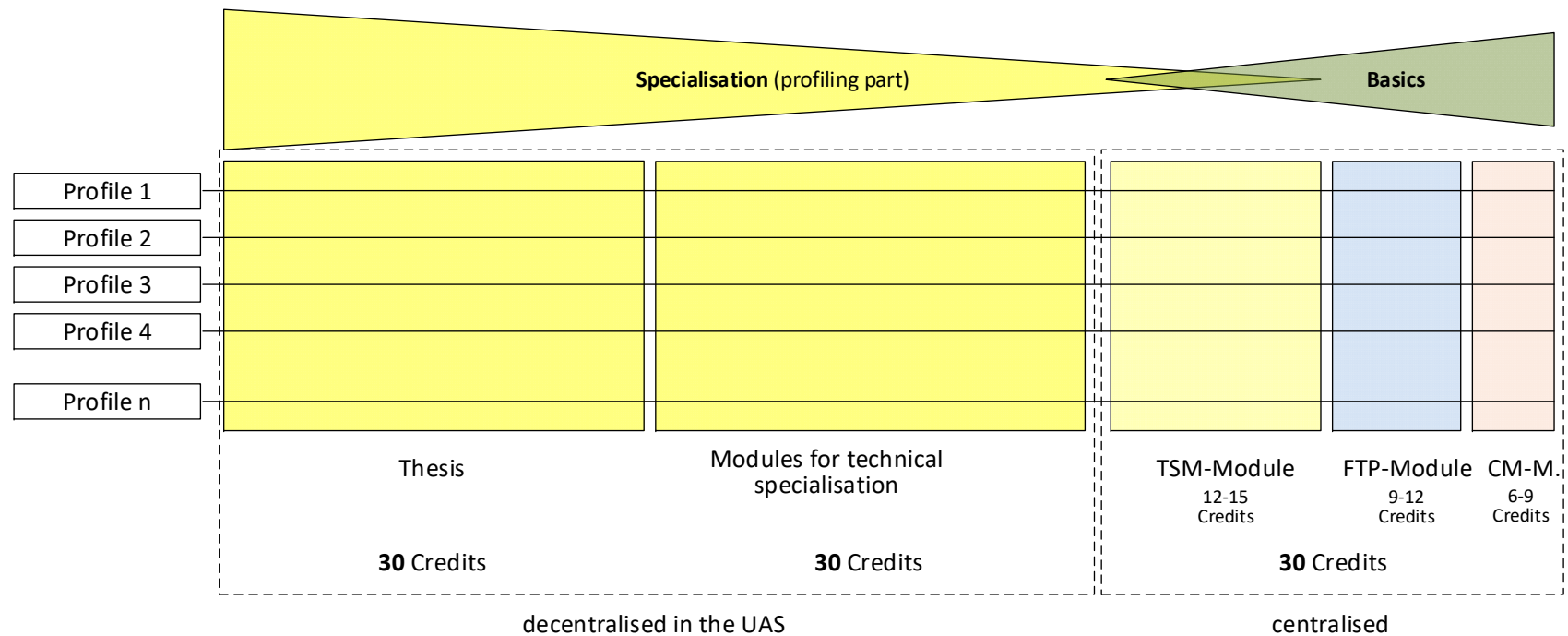
2. MSE-Redesign

- Concept overview MSE-Redesign
 - New structure of the MSE = “Profiles” (discipline of study)
 - MRUs replaced by “Profiles at the UAS”
 - Specialisation by decentralised study offer
 - Theory modules provide theoretical bases
 - Individual studies with “lot size 1”

- Changes during project process: "Regionalisation"
(modules can be different at 3 central locations)

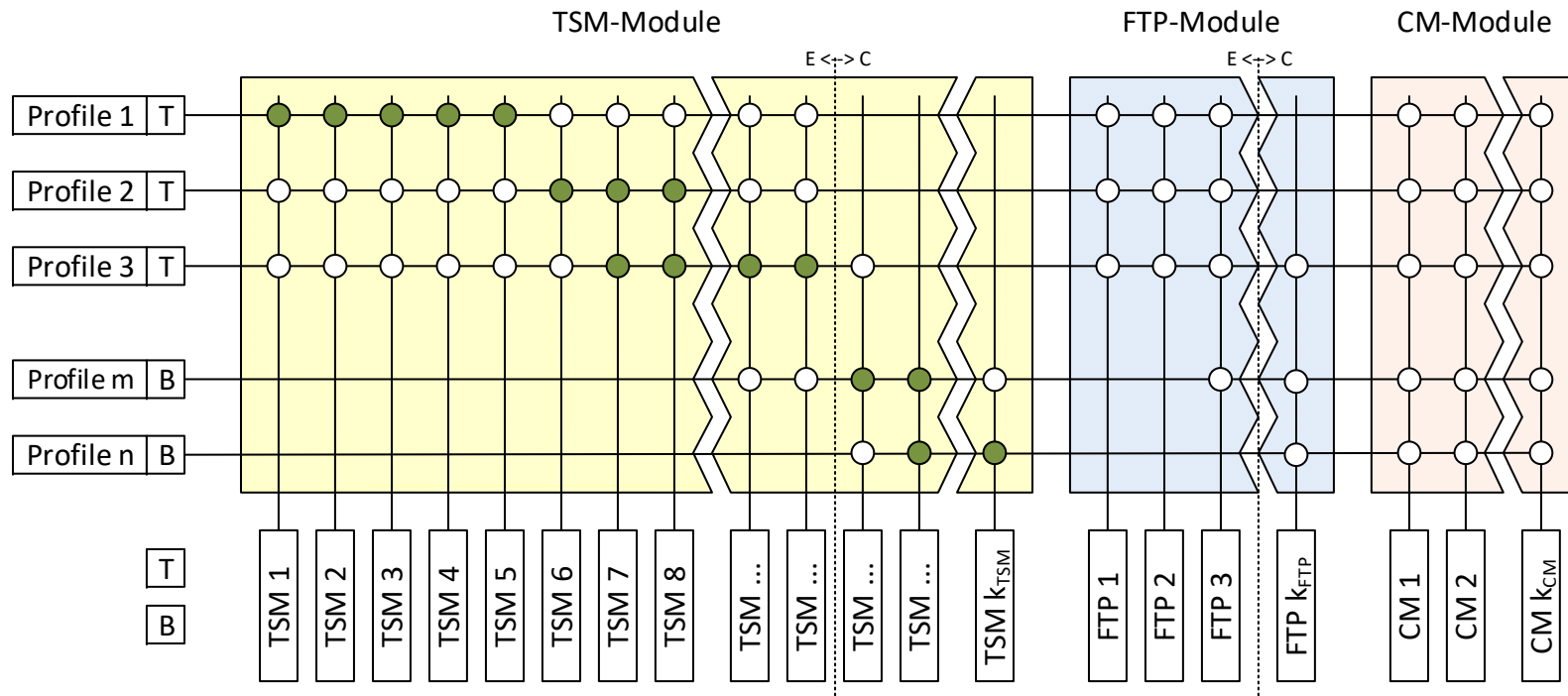
2. MSE-Redesign

- Basic structure of the MSE: module blocks and their meaning



2. MSE-Redesign

■ Basic principles of linking of profiles and central Theory Modules



● Recommended modules (belong to own profile)

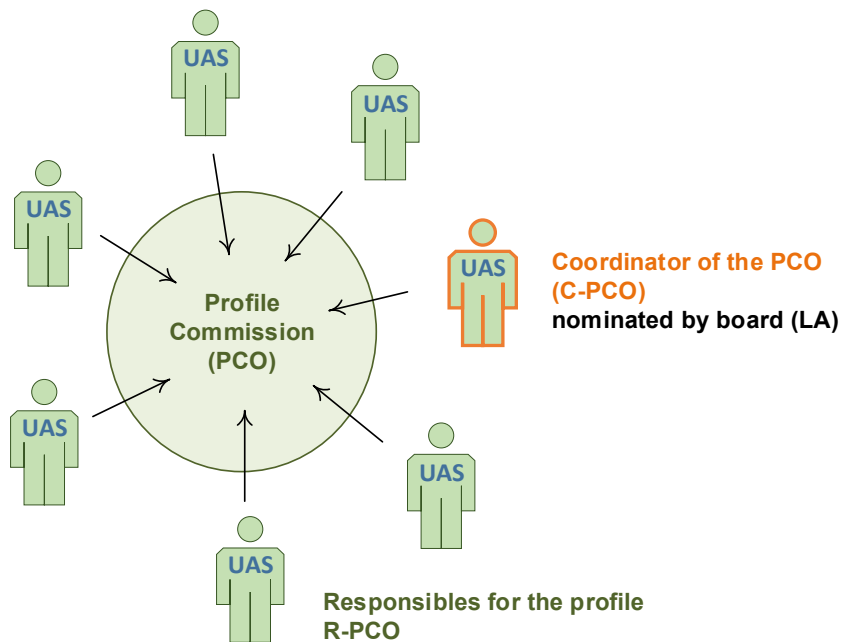
○ Further modules (belong to other profiles)

E <-> C Fields of education: Engineering and Information Technologies <-> Construction and Planning

2. MSE-Redesign

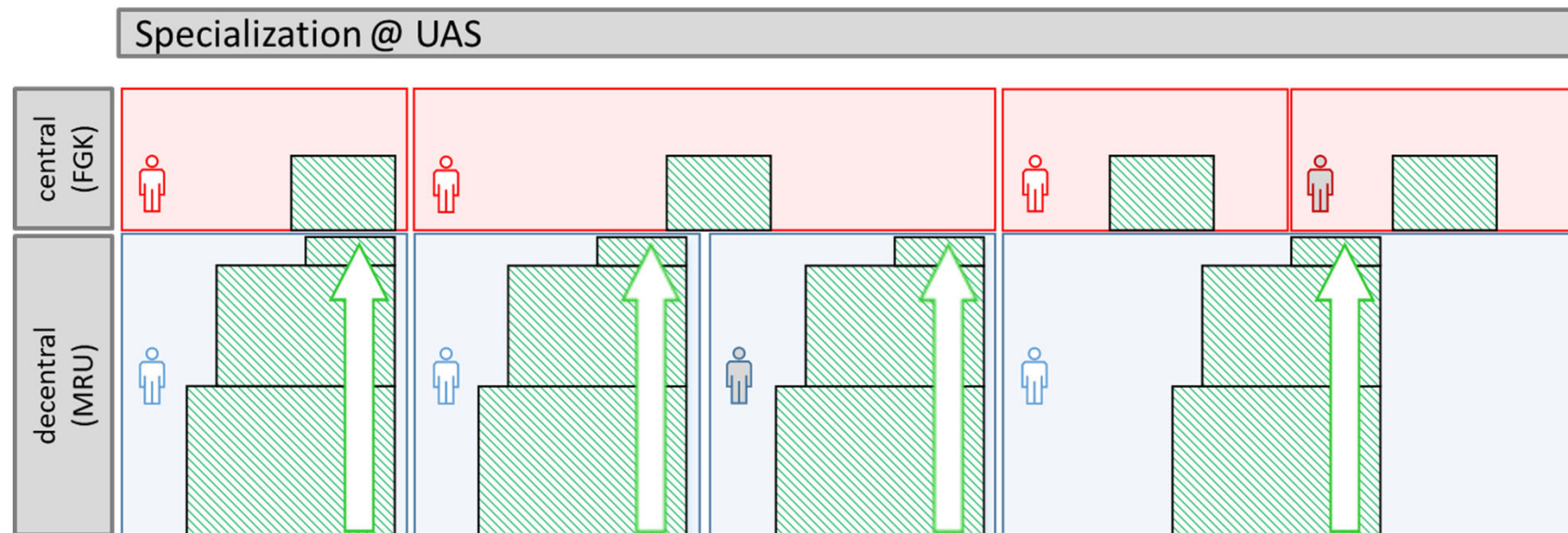
■ New: Profiles

- Profile replaces 3 elements: Fachgebiet, Teilfachgebiet, Kompetenzfeld
- Profile Commission (PCO) is responsible for a profile
- PCO = all Responsibles for a profile (R-PCOs) per University of Applied Sciences (UAS)



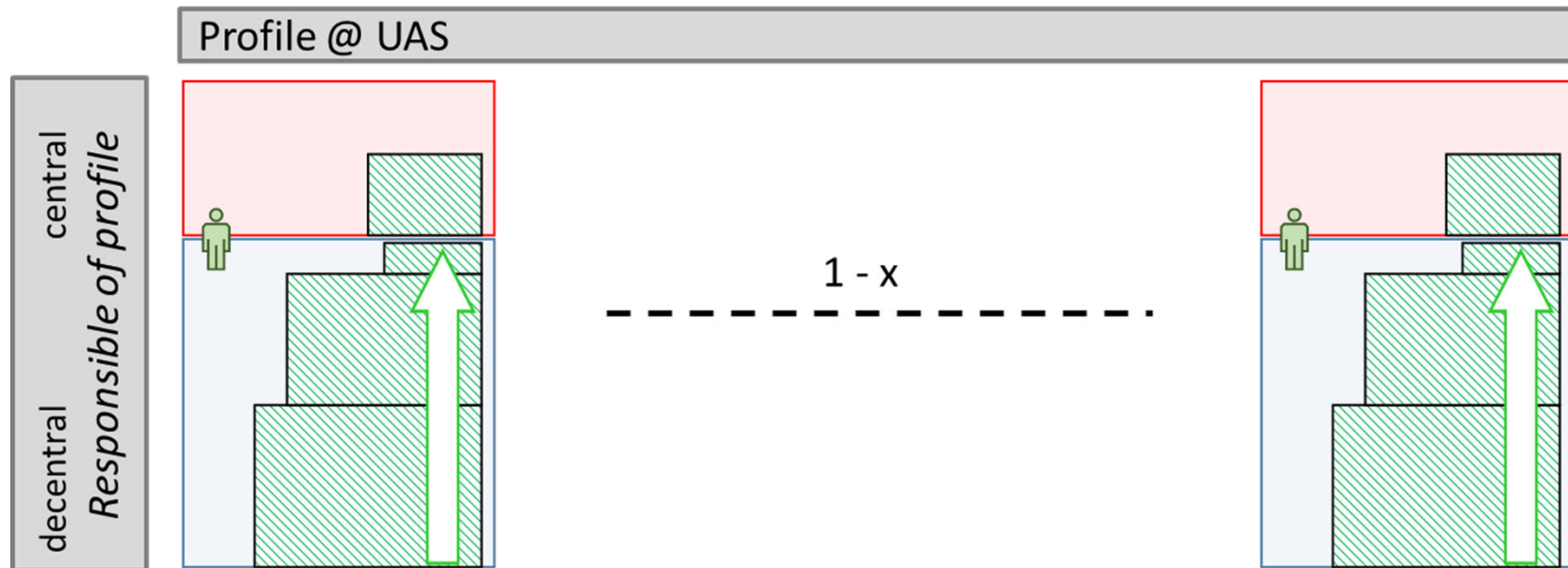
2. MSE-Redesign

- Responsibles of MRU and commissions of specialisation (FGK)
2- n persons



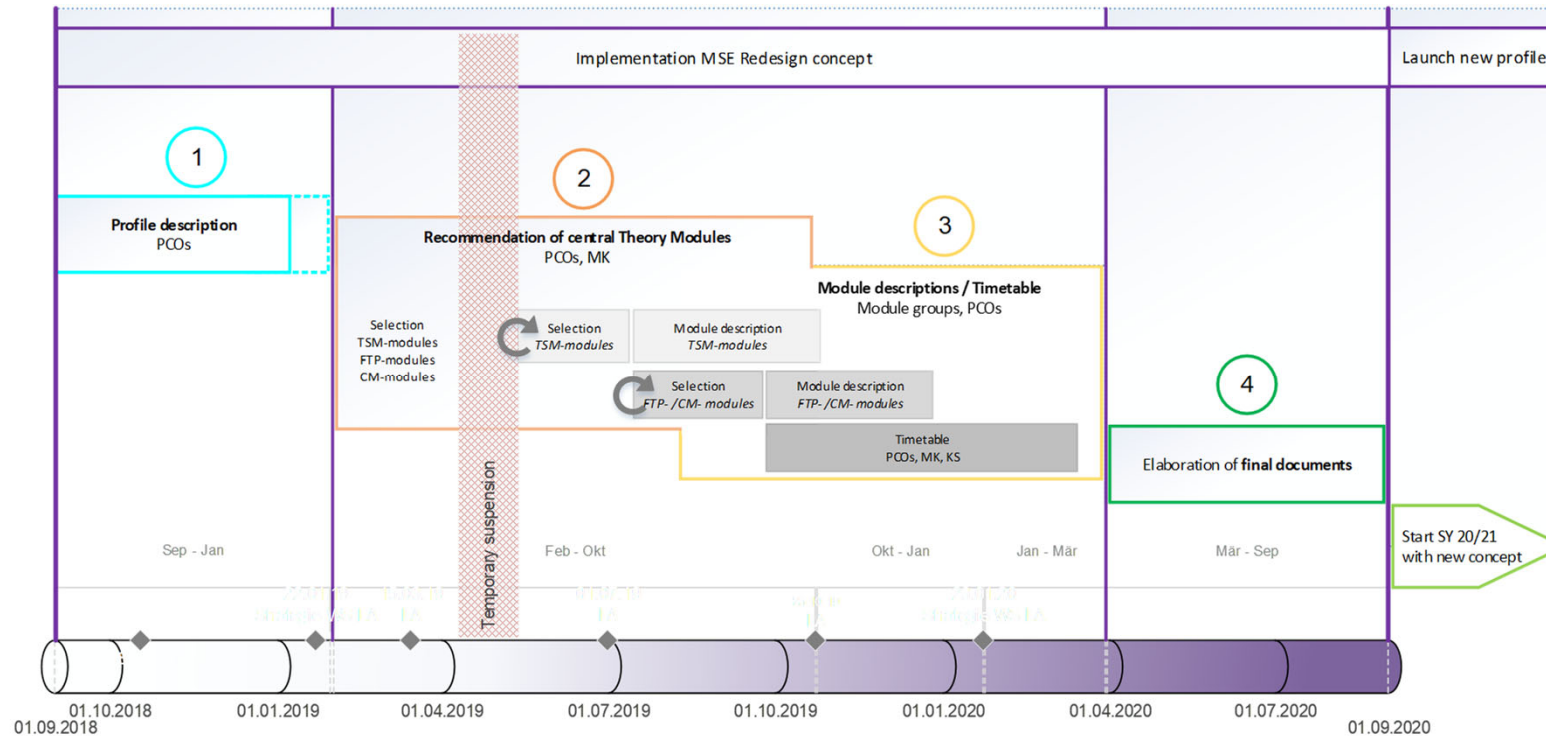
2. MSE-Redesign

- One responsible for profile per UAS (R-PCO) = member of PCO
1 person



2. MSE-Redesign

■ Implementation process: 4 phases



- ✓ Phase 1: profile description
- ✓ Phase 2: selection TSM modules per profile per location
- ✓ Phase 2: selection FTP / CM module portfolio per location
- Phase 3: module descriptions → Offer published
- Phase 4: elaboration final documents

2. MSE-Redesign

■ Implementation process:

		SJ 18/19 HS 18/19	FS 19	SJ 19/20 HS 19/20	FS 20	SJ 20/21 HS 20/21	FS 21
Existing	In charge Central: Fachgebiet commission Decentral: Head of MRU						
NEW	Building MSE according Redesign Central: Profile Commissions Decentral: Responsible of Profile						
	In charge Central: Profile Commissions Decentral: Responsible of Profile						
Students	Students Probably interim solutions for full time students starting FS 20			Semester 1	Semester 2 S 1	Semester 3 S2	S 3

Legend

	Start NEW concept Redesign
	Existing organization
	New organization after Redesign
	Full time students Semester 1-3

2. MSE-Redesign

- Results - phase 1: profile descriptions

- 14 Profile descriptions

Name of the Profile	Short code
Business Engineering	BE
Civil Engineering	CE
Computer Science	CS
Data Science	DS
Electrical Engineering	EIE
Energy and Environment	EnEn
Mechanical Engineering	ME
Mechatronics and Automation	MA
Medical Engineering	Med
Small Profiles	
Aviation	Avi
Building Technologies	BT
Geomatics	Geo
Photonics	Pho
Raumentwicklung und Landschaftsarchitektur	ReLa

2. MSE-Redesign

■ Results – phase 2:

➤ TSM modules

- Selection per profile per location region D & region I
- General offer region F without profile allocation

➤ FTP modules

- Overview FTP modules on offer over all regions
- Selection per profile per location region D

➤ CM modules

- Overview CM modules on offer over all regions
- Selection per profile per location region D

First selection TSM Modules

Legend

It is currently not possible to say which modules will be deleted definitively (transitional period)

			central locations		
			Lausanne	Lugano	Zürich
Modules	Code	Name			
76	CM_CompPro	Management of Complex Processes	E	x	x
78	CM_Entrepr	Unternehmensführung und Entrepreneurship	E	x	x
79	CM_Ethics	Ethik und Unternehmensverantwortung	E	x	
80	CM_GlobMark	Global Markets and Intercultural Competence	E	x	
81	CM_InnChang	Innovations- und Changemanagement	E	x	x
82	CM_PrivLaw	Privacy and Law	E	x	x
83	CM_QRM	Quality and Risk Management	A	x	x
IX	CM_AdvProjMgmt	Advanced Project Management	E	x	
X	CM_InnoLEAN	Innovation and Lean	E		x
XI	CM_IntSust	Integrated Sustainable Management of Production Systems	E	x	
CN3		Smart Services	N		x
CN4		Technology Management (TSM 101)	N		x
CN7		Scientific Writing and Presenting	N		x
CN9		Sustainable development	N		x
			7	4	10

E Existing Theory Module can be used without any changes
 A Adaptation of existing Theory Module is necessary
 N New Theory Module is required

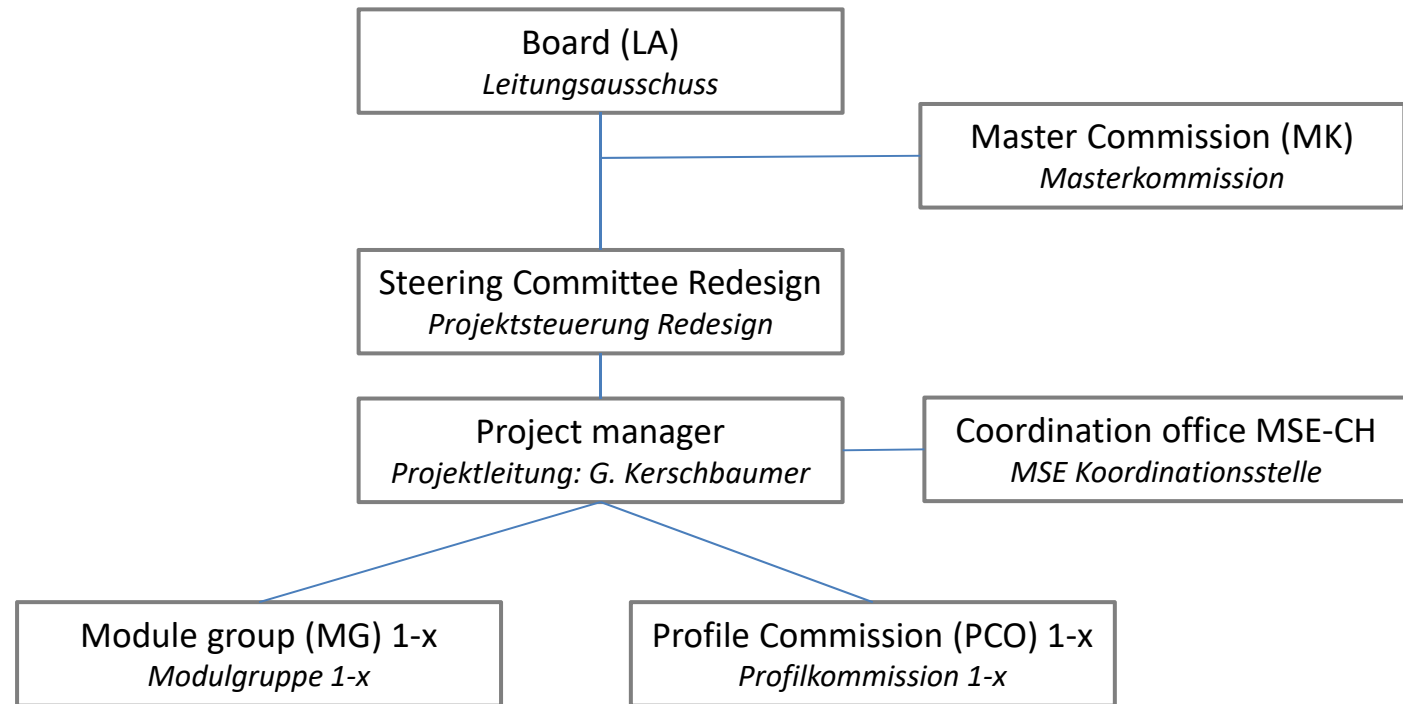
			central locations		
			Lausanne	Lugano	Zürich
Modules	Code	Name			
59	FTP_AppStat	Applied Statistics and Data Analysis	E	x	x
60	FTP_CompAlg	Numerical Analysis and Computer Algebra	E	x	x
61	FTP_Cryptool	Cryptography and Coding Theory	E	x	x
62	FTP_Energy	Energy, Production, Consumption and Management	E	x	x
63	FTP_EnvPlan	Raumplanung, Bau- und Umweltecht	E	x	x
65	FTP_Life	Lebenszyklusmanagement von Infrastrukturen	E		x
66	FTP_Optimiz	Optimization	E		x
67	FTP_OrdDiff	Ordinary Differential Equations and Dynamical Systems	E	x	x
68	FTP_ParDiff	Partial differential equations in engineering applications	E	x	x
69	FTP_Physics	The Physics of Materials and Engineering Devices	E	x	x
70	FTP_StatPlan	Planungsmethoden	E		x
71	FTP_StochMod	Stochastic Modeling	E		x
72	FTP_Tensors	Vectors and Tensors in Engineering Physics	E		x
73	FTP_TheoComp	Theoretical Computer Science	E		x
95	FTP_PredMod	Predictive Modeling	E		x
FN1		Physics on micro and nano scale	E		x
FN2		Algorithms (TSM 5)	N		x
FN4		Digital Image TSM 18	N		x
FN6		Machine Learning (TSM 90)	N		x
FN6		Multiphysics (TSM 38)	N		x
FN8		ModSim: Modeling Simulation and Optimization (existing SUPSI)	N	x	
FN9		AppAlg: Approximation algorithms (existing SUPSI)	N	x	
FN10		AdvAlgoDS: Advanced Algorithms and Data Structures (existing SUPSI)	N	x	
FN11		Biology, physiology and anatomy for engineers	N	x	
FN12		AdvMachL: Advanced Machine Learning	N	x	
			7	7	19

E Existing Theory Module can be used without any changes
 N New Theory Module is required

➤ see annex assignment / Moodle

2. MSE-Redesign

- Project organisation



R-MG's can contact PL:

Gabriele Kerschbaumer | mse-redesign@hsr.ch | 055 222 4398 ([MSE-Redesign](#))

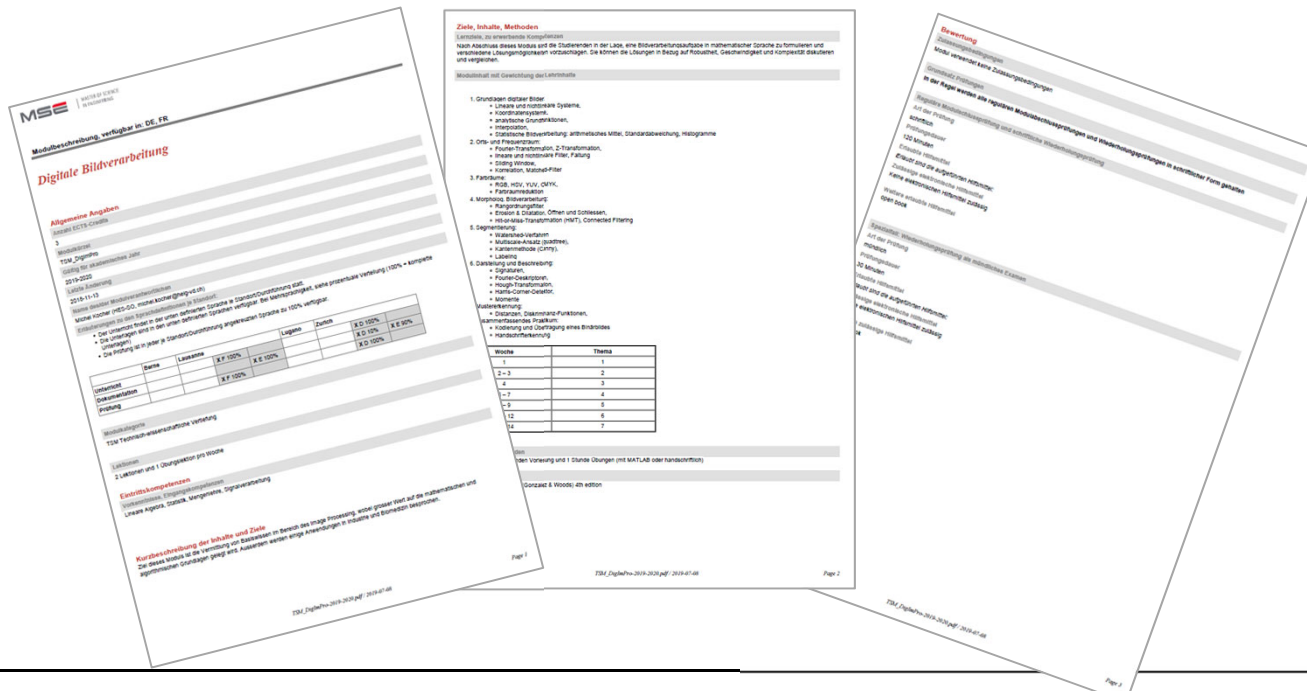
Coordination office MSE-CH | mse.ch-@hsr.ch | 055 222 4399 ([Moodle](#))

Questions



3. Task module groups

- Aims phase 3 "module descriptions"
 - Uniform module description for each central module
 - Coordination between module description and profile description
 - Module descriptions correspond to common MSE-CH standards
 - Availability of each module description on "msengineering.ch"



3. Task module groups

■ Tasks

- Module groups compile module descriptions
- Different categories of revision requirements

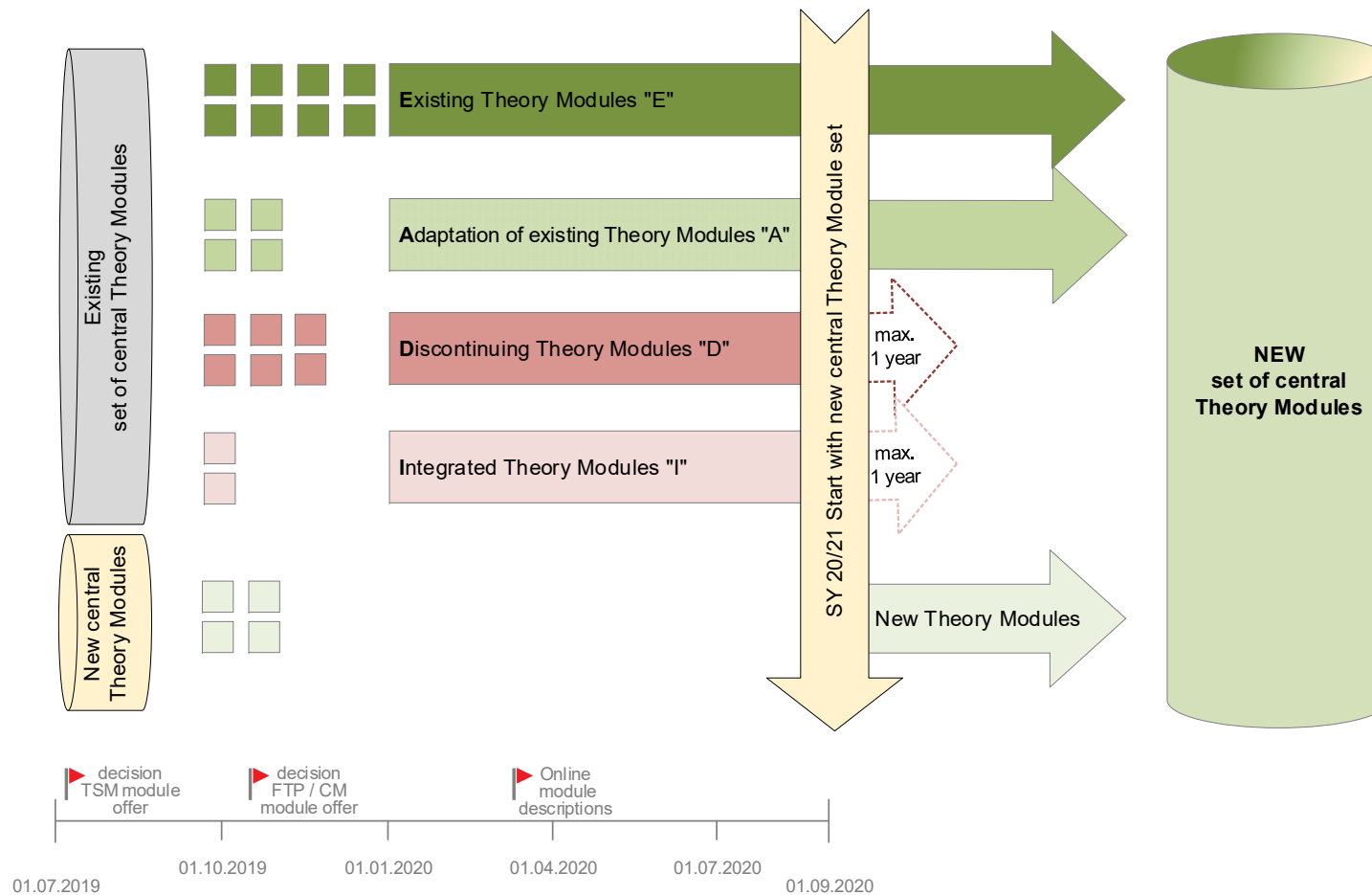
E	Existing Theory Module can be used without any changes
A	Adaptation of existing Theory Module is necessary
N	New Theory Module is required
I	Integration of some contents in other module is required
D	Discontinuing Theory Module

- **New** modules: elaboration of new module description (first time)
- **Adapted** modules: revision of existing module description (exists on moodle)

- Task MSE-Redesign phase 3 concerns module groups of "N" or "A" (partly "I")
- All existing modules of today can revise current module description voluntarily

3. Task module groups

- Module descriptions for new set of central Theory Modules



3. Task module groups

- New set of central Theory Modules is based on selection of PCOs
 - FTP modules on offer for all regions for AY 20/21

Modules			revision requirements	central locations		
Nr.	Code	Name		Lausanne	Lugano	Zurich
59	FTP_AppStat	Applied Statistics and Data Analysis	E	x	x	x
60	FTP_CompAlg	Numerical Analysis and Computer Algebra	E	x		x
61	FTP_CryptCod	Cryptography and Coding Theory	E	x		x
62	FTP_Energy	Energy: Production, Consumption and Management	E	x		x
63	FTP_EnvPlan	Raumplanungs-, Bau- und Umweltrecht	E	x		x
65	FTP_Life	Lebenszyklus-Management von Infrastrukturen	E			x
66	FTP_Optimiz	Optimization	E			x
67	FTP_OrdDiff	Ordinary Differential Equations and Dynamical Systems	E	x	x	x
68	FTP_PartDiff	Partial differential equations in engineering applications	E			x
69	FTP_Physics	The Physics of Materials and Engineering Devices	E	x		
70	FTP_StatPlan	Planungsmethodik	E			x
71	FTP_StochMod	Stochastic Modelling	E			x
72	FTP_Tensors	Vectors and Tensors in Engineering Physics	E			x
73	FTP_TheoComp	Theoretical Computer Science	E			x
95	FTP_PredMod	Predictive Modelling	E			x
FN1		Physics on micro and nano scale	N			x
FN2		Algorithms (TSM_5)	N			x
FN4		Digital Image TSM_18	N			x
FN5		Machine Learning (TSM_90)	N			x
FN6		Multiphysics (TSM_38)	N			x
FN8		ModSim_Modelling Simulation and Optimisation (existing SUPSI)	N		x	
FN9		ApprAlg_Approximation algorithms (existing SUPSI)	N		x	
FN10		AdvAlgDS_Advanced Algorithms and Data Structures (existing SUPSI)	N		x	
FN11		Biology, physiology and anatomy for engineers	N		x	
FN12		AdvMachLe_Advanced Machine Learning	N		x	
				7	7	19

E Existing Theory Module can be used without any changes
N New Theory Module is required

- 26 different FTP modules on offer
- 11 "new modules": 4 converted TSM to FTP modules; 5 "SUPSI" modules integrated in mse offer; 2 modules with new content

Note: Decision pending, if HES-SO offers the 4 converted modules in the category FTP or TSM for the AY 20/21

3. Task module groups

- New set of central Theory Modules is based on selection of PCOs
 - FTP modules region D per profile
 - Profiles that recommended module give contentual-release

FTP module portfolio region D starting AY 2021			Existing/new modules	Field of study													
Nr.	Code	Name		E	C	E	E	E	E	E	E	E	E	C	C	E	C
59	FTP_AppStat	Applied Statistics and Data Analysis	m	regional choice D (Zu)	regional choice D (Zu)	regional choice D (Zu)	regional choice D (Zu)	regional choice D (Zu)	regional choice D (Zu)	regional choice D (Zu)	regional choice D (Zu)	regional choice D (Zu)	regional choice D (Zu)	regional choice D (Zu)	regional choice D (Zu)	regional choice D (Zu)	regional choice D (Zu)
60	FTP_CompAlg	Numerical Analysis and Computer Algebra	m	Priority Region D	Priority Region D	Priority Region D	Priority Region D	Priority Region D	Priority Region D	Priority Region D	Priority Region D	Priority Region D	Priority Region D	Priority Region D	Priority Region D	Priority Region D	Priority Region D
61	FTP_CryptCod	Cryptography and Coding Theory	m	E 2	E 1					E 1		E 2				E 1	
62	FTP_Energy	Energy: Production, Consumption and Management	m														
63	FTP_EnvPlan	Raumplanungs-, Bau- und Umweltrecht	m														
65	FTP_Life	Lebenszyklus-Management von Infrastrukturen	m	E 1	E 1												
66	FTP_Optimiz	Optimization	m	E 1	E 1												
67	FTP_OrdDiff	Ordinary Differential Equations and Dynamical Systems	m		E 2												
68	FTP_PartDiff	Partial differential equations in engineering applications	m		E 1												
70	FTP_StatPlan	Planungsmethodik	m														
71	FTP_StochMod	Stochastic Modelling	m			E 2	E 2										
72	FTP_Tensors	Vectors and Tensors in Engineering Physics	m														
73	FTP_TheoComp	Theoretical Computer Science	m														
95	FTP_PredMod	Predictive Modelling	m			E 1											
FN1		Physics on micro and nano scale	N	E 1			E 1										
FN2		Algorithms (existing TSM Nr. 5 TSM Alg)	N					N 2									
FN4		Digitale Bildverarbeitung (existing TSM Nr. 18 TSM DigmPro)	N			N 1											
FN5		Machine Learning (existing TSM Nr. 90 TSM MachLe)	N				N 1	N 1									
FN6		Multiphysics Modeling and Simulation (existing TSM Nr. 38 TSM_Multiply)	N					N 1									
			19	4	4	4	4	4	4	4	4	4	4	4	4	4	2

- 19 different FTP modules on offer in region D
- 5 "new modules" => redesign
 - 4 converted TSM to FTP modules
 - 1 new module in mse offer

3. Task module groups

- New set of central Theory Modules is based on selection of PCOs
 - CM modules on offer for all regions for AY 20/21

			revision requirements	central locations		
				Lausanne	Lugano	Zurich
Modules						
Nr.	Code	Name				
76	CM_ComplPro	Management of Complex Processes	E	x		x
78	CM_Entrepr	Unternehmensführung und Entrepreneurship	E	x		x
79	CM_Ethics	Ethik und Unternehmensverantwortung	E	x		x
80	CM_GlobMark	Global Markets and Intercultural Competence	E	x		
81	CM_InnChang	Innovations- und Changemanagement	E	x		x
82	CM_PrivLaw	Privacy and Law	E	x		x
83	CM_QRM	Quality and Risk Management	A	x	x	x
IX	CM_AdvProjMgmt	Advanced Project Management	E		x	
X	CM_InnoLEAN	Innovation and Lean	E		x	
XI	CM_IntSust	Integrated Sustainable Management of Production Systems	E		x	
CN3		Smart Services	N			x
CN4		Technology Management (TSM 101)	N			x
CN7		Scientific Writing and Presenting	N			x
CN9		Sustainable development	N			x
				7	4	10
E	Existing Theory Module can be used without any changes					
A	Adaptation of existing Theory Module is necessary					
N	New Theory Module is required					

- 14 different CM modules on offer in region D
- 4 "new modules" and 1 "adapted module" => redesign
 - 1 converted TSM to CM module
 - 3 new modules in mse offer

3. Task module groups

- New set of central Theory Modules is based on selection of PCOs
 - CM modules region D per profile
 - Profiles that recommended module give contentual-release

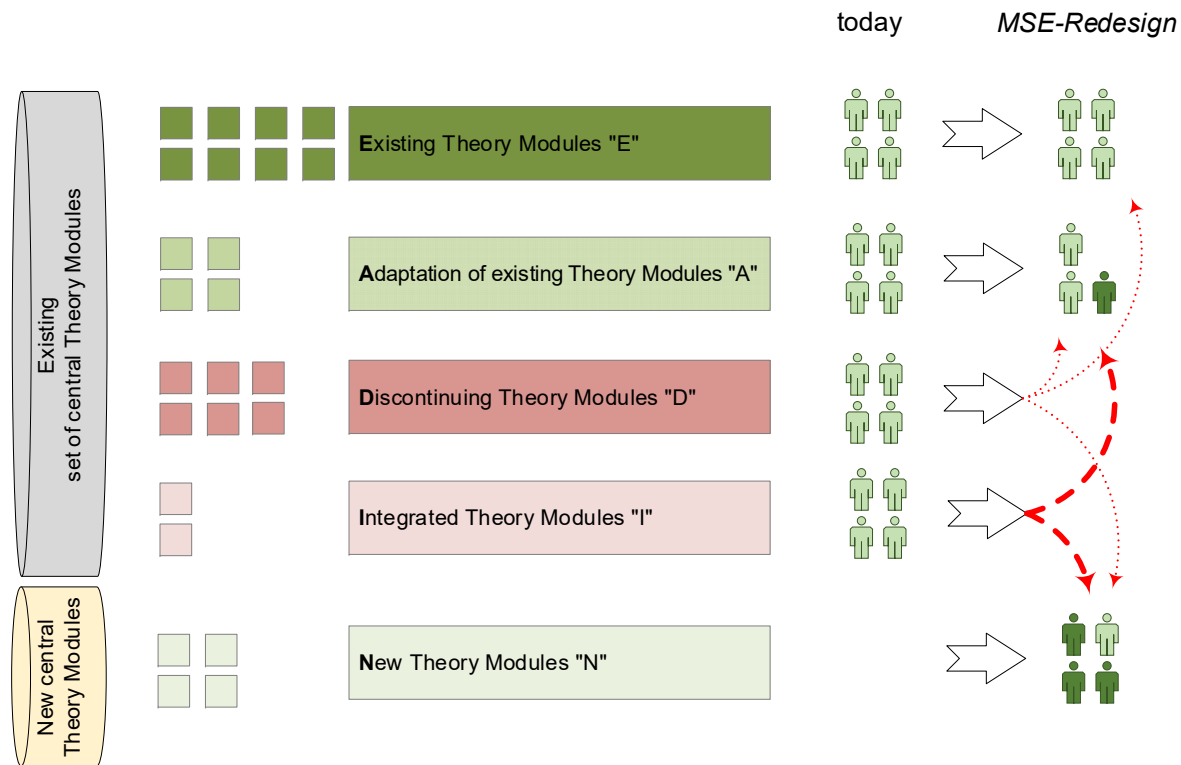
CM module portfolio region D starting AY20/21			
Nr.	Code	Name	Existing / new modules
76	CM_CompPro	Management of Complex Processes	E
78	CM_Entrepr	Unternehmensführung und Entrepreneurship	E
79	CM_Ethics	Ethik und Unternehmensverantwortung	E
81	CM_InnChang	Innovations- und Changemanagement	E
82	CM_PrivLaw	Privacy and Law	E
83	CM_QRM	Quality and Risk Management	A
CN3		Smart services	N
CN4		Technology Management (existing TSM_Nr. 101 TSM TechMgmt)	N
CN7		Scientific Writing and Presenting	N
CN9		Sustainable development	N
			10

Field of study														
E	C	E	E	E	E	E	E	E	E	E	C	C	E	C
Business Engineering (BE)	Civil Engineering (CE)	Computer Science (CS)	Data Science (DS)	Electrical Engineering (EIE)	Energy and Environment (EnEn)	Mechanical Engineering (ME)	Mechatronics and Automation (MA)	Medical Engineering (Med)	Aviation (Avi)	Building Technologies (BT)	Geomatics (Geo)	Photonics (Pho)	Urban & Landscape Arch (ReLa)	
regional choice D (Zu)	regional choice D (Zu)	regional choice D (Zu)	regional choice D (Zu)	regional choice D (Zu)	regional choice D (Zu)	regional choice D (Zu)	regional choice D (Zu)	regional choice D (Zu)	regional choice D (Zu)	regional choice D (Zu)	regional choice D (Zu)	regional choice D (Zu)	regional choice D (Zu)	regional choice D (Zu)
Priority Region D	Priority Region D	Priority Region D	Priority Region D	Priority Region D	Priority Region D	Priority Region D	Priority Region D	Priority Region D	Priority Region D	Priority Region D	Priority Region D	Priority Region D	Priority Region D	Priority Region D
		E 1		E 2	E 2	E 1	E 1		E 1	E 2		E 1		
	E 1	E 2		E 2				E 2	E 2		E 1		E 2	E 1
E 1			E 2			E 1	E 2	E 2		E 1	E 1	E 1	E 1	
	E 2	E 1	E 1				A 1	A 1	A 1		E 2			E 2
N 2			N 1											
N 1				N 1										
				N 1									N 1	
					N 1			N 1		N 1			N 1	
3	3	3	3	3	3	3	3	3	3	3	3	3	3	3

- 10 different CM modules on offer in region D
- 4 "new modules" and 1 "adapted module" => redesign
 - 1 converted TSM to CM module
 - 3 new modules in mse offer

3. Task module groups

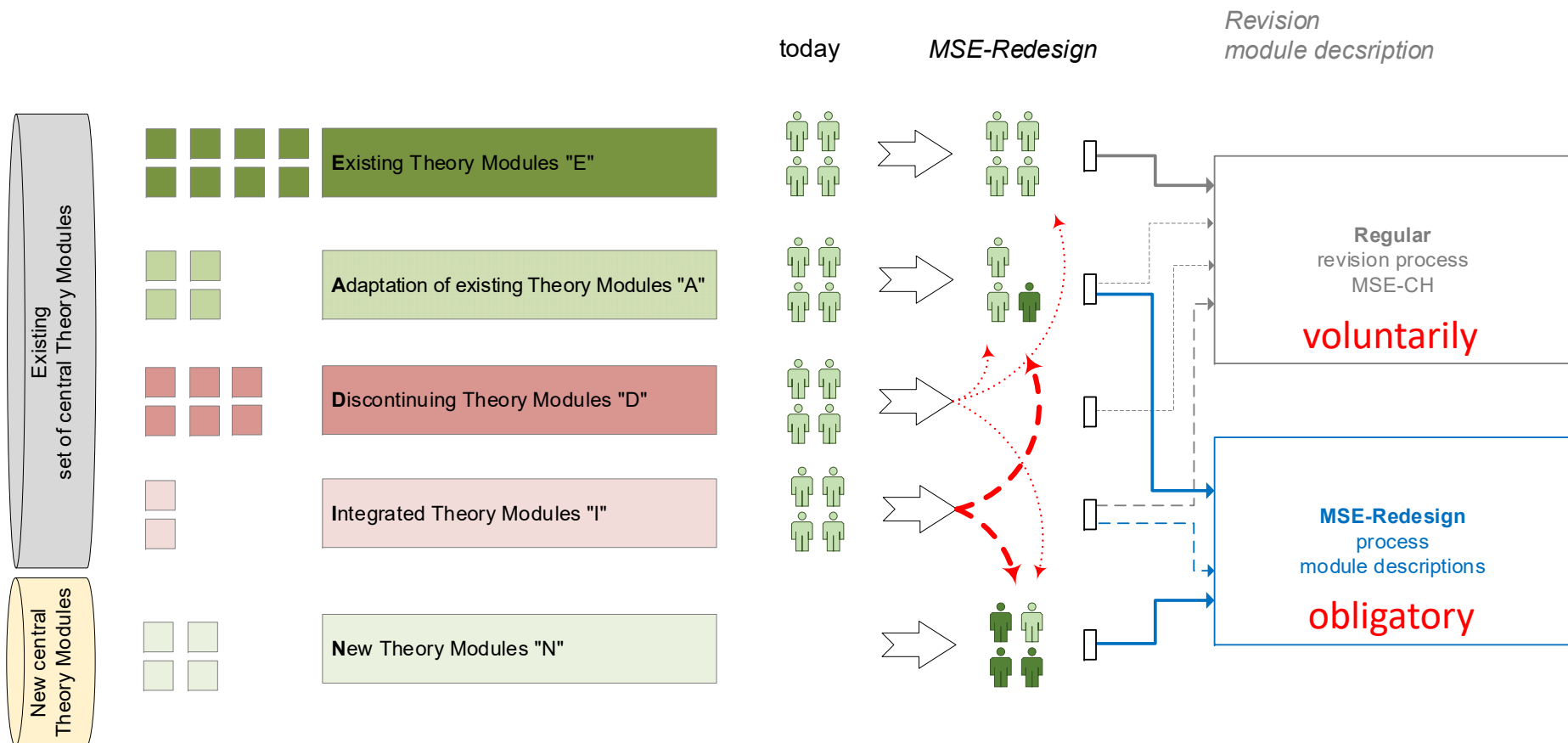
- Changes in the module groups (MGs)



- New module groups for new modules
- Integration module "I" in modules "A" or "N" (content / persons => self organisation)
- All nominations are done by MK

3. Task module groups

- Revision process module descriptions
 - Different processes: regular revision MSE-CH vs. **MSE-Redesign process**



3. Task module groups

Documents

- Profile descriptions: 14 profile descriptions (assignment, Moodle > module descriptions > information)
- Module list MSE-Redesign (TSM modules with E, A, I, N or no selection)
- Module specifications for "N" and "A" modules (requirements by the PCOs: aims, content-keywords, pre-requisites)
- Coordination tool on Moodle (explanation M. Röthlin)

<p>Data Science</p> <p>Fields of education: Engineering and information technology</p> <p>1. Professional qualification</p> <p>Professional career outline</p> <p>Professional data scientists are contributing to the design, development and deployment of so-called data products or data pipelines in enterprises and public institutions. The analysis of current occupational profiles in Switzerland is showing that Data Science involves three pillars of activities. The first one can be summarized by the term data engineering that involves the collection, preparation, storage and processing of enterprise data using relational databases and big data and more often including big data environments. The second pillar of activities is data analysis that involves the use of statistical methods and machine learning including deep learning and natural language processing to build models to describe and learn from data in support business decisions. The third one can be called data science and covers the organization, the deployment and management of data pipelines involved in data products and services to solve specific business problems while meeting requirements in terms of service level, data security, ethical and legal aspects. Figure 1 below illustrates the positioning of the Data Science profile at the new section of these three pillars.</p> <p>Professional skills</p> <p>Students graduating in "MSc Data Scientist" will have developed interdisciplinary professional skills that can be described according to the three areas of activities of Figure 1:</p> <p>Data Analysis</p> <ul style="list-style-type: none"> Applying statistical methods to describe and explore data as well as to draw conclusions from data subject to random variations. Using data mining, machine learning and deep learning to build data-driven models. Planning and controlling design of experiments that follow state-of-the-art procedures for building and evaluating usable models and interpretable results. <p>Data Engineering</p> <ul style="list-style-type: none"> Organizing the collection and sourcing of application-related data from heterogeneous origins such as industrial IoT sensors, structured relational databases, unstructured distributed data, big data, media and online streaming data flows. Planning and engineering the storage of both data using the adequate tools and resources that meet application constraints such as bandwidth, latency and security. Developing applications able to process data streams, extract features and apply models on it. <p>Data Services</p> <ul style="list-style-type: none"> Building data products, understanding business needs in terms of data pipelines able to turn analytics into real-time business insights and actions. Organizing the data pipeline and the execution of data services respecting service level agreements. Understanding non-technical constraints related for example to ethics, privacy, security and safety while processing data in enterprises and public institutions, as well as organizing data services to meet such constraints. <p><small>* An analysis of job profile descriptions on sites such as www.jobs.ch was performed, as well as interviews of data scientist currently active in the economic sector in Switzerland.</small></p> <p><small>Approved LA 22, January 2019 / valid as of 07/2021 / Approved version 1.0</small></p> <p><small>Page 1 from 3</small></p>	
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Profile Description

			central locations			
			Lausanne	Lugano	Lausanne	Zürich
Modules	N	Code	Name			
60FTP-AppStat	E		Applied Statistics and Data Analysis	x	x	
60FTP-CompAlg	E		Numerical Analysis and Computer Algebra	x	x	
61FTP-CryptCod	E		Cryptography and Coding Theory	x	x	
62FTP-Energy	E		Energy: Production, Consumption and Management	x	x	
63FTP-EmpPlan	E		Humanities, Risk and Uncertainty	x	x	
64FTP-Inf	E		Information Management and Infrastructure	x	x	
65FTP-Optim	E		Optimization	x	x	
66FTP-PartDiff	E		Partial differential Equations and Dynamical Systems	x	x	
67FTP-PartDiff	E		Partial differential equations in engineering applications	x	x	
68FTP-Physics	E		The Physics of Materials and Engineering Devices	x	x	
69FTP-SupPlan	E		Planning methods	x	x	
70FTP-SpecMod	E		Stochastic Modeling	x	x	
71FTP-Tensors	E		Vectors and Tensors in Engineering Physics	x	x	
72FTP-TheoComp	E		Theoretical Computer Science	x	x	
60FTP-ProdMod	E		Predictive Modeling	x	x	
FN1	N		Physics on micro and nano scale	x	x	
FN2	N		Algorithms (TSM 5)	x	x	
FN3	N		Digital Image TSM 10	x	x	
FN4	N		Machine Learning (TSM 9)	x	x	
FN5	N		Mathematics (TSM 3)	x	x	
FN6	N		Modeling Simulation and Optimisation (existing SUPSI)	x	x	
FN7	N		Applied Approximation algorithms (existing SUPSI)	x	x	
FN8	N		Advanced Advanced Algorithms and Data Structures (existing SUPSI)	x	x	
FN9	N		Biology, physiology and anatomy for engineers	x	x	
FN10	N		Artificial Intelligence and Machine Learning	x	x	
FN11	N		Artificial Intelligence and Machine Learning	x	x	
FN12	N		Artificial Intelligence and Machine Learning	x	x	
				7	7	19

Module list

MASTER OF SCIENCE
IN ENGINEERING

MSE Redesign - Assignment Phase 2
Annex D -Template «Modules specifications»

Module name: Applied Heat Transfer

Module code (if applicable): TN11

Adaptation of existing Theory Module: ☐

New Theory Module: ☒

Category Theory Module

TSM-Module ☒

FTP-Module ☐

CM-Module ☐

Planned Central Location for Theory Module

Zurich ☒

Lugano ☐

Lausanne ☐

Bern ☐

Others (e.g. local profiles):

Pre-requisites

Basic knowledge of thermodynamics and fluid dynamics

Aims

The basic theories of heat transfer by conduction, convection and thermal radiation are presented. However, this study-unit focuses on solving practical heat transfer problems in different fields of engineering such as architectural and HVAC engineering, mechanical and process engineering, electrical as well as environmental engineering.

Content (keywords)

Students shall learn how to solve practical engineering problems in the field of heat transfer. Contents of module with emphasis on teaching content

- Introduction to Conduction
- One- and Two-Dimensional, Steady-State Conduction
- Transient Conduction
- Introduction to Convection
- External and Internal Flow
- Free Convection
- Boiling and Condensation
- Heat Exchangers
- Radiation: Processes and Properties / Exchange Between Surfaces

Proposal for members for the module group (voluntary)

Prof. Dr. Heinrich Manz, heinrich.manz@hs-lu.ch

MSE / KGA | 08.02.2019

Module specification for a "New module (N)"

MSE

MASTER OF SCIENCE
IN ENGINEERING

20.11.19 | 25.11.19

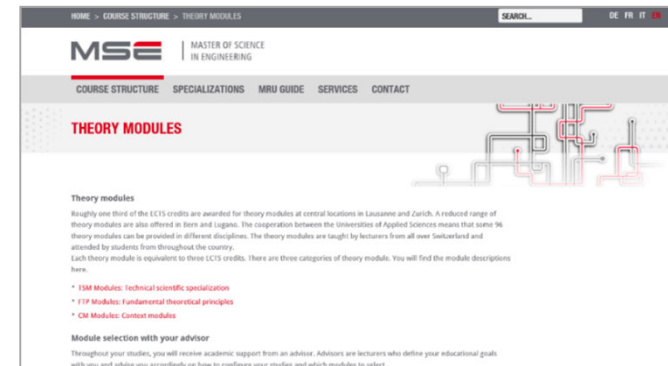
KickOffs MGs

26

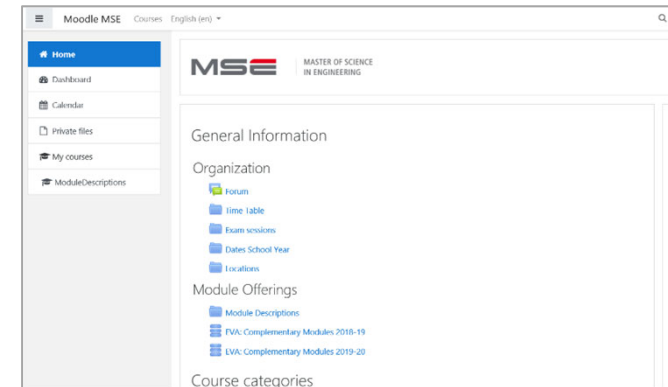
3. Task module groups

■ Conditions

- One uniform module description
- Online template on Moodle
- One public platform
(Moodle > elaboration, mseengineering > publication)
- Teaching: maximum of 2 lecturers per location
- Conceptual specifications
 - Theory modules aim to **broaden knowledge**
 - Theory modules are **independent**; they don't build upon each other
 - Theory modules are **taught at central locations**
 - Classes are held in **regular classrooms**
 - Each theory module belongs to a **category: TSM, FTP, CM**
 - Each theory module counts **3 ECTS**
 - **2** lecture period, **1** tutorial period
 - **Lecture** periods are **unlimited** regarding the **size of class**
 - **Tutorial** periods have a **limited class** size up to 35 (otherwise sequential period)
 - **Final exam** written, **120 minutes**



mseengineering.ch



Moodle for MSE

3. Task module groups

■ Conditions

■ Language

- Module description in language(s) tuition is given
 - Can be a location-specific profile language, but content remains identical (1 identical description)
 - Central modules are mainly taught in English
- Brief historical reference

- LA-decision 2016: expansion of modules that are held in English
- All modules are 100% English per AY 20/21 in BEP, EE, ICT & InT
- Exceptions: region F & "field of education Planning and Construction"

■ Consequences



- TSM modules region F & "field of education Planning and Construction": language(s) tuition is given (French, German)
- FTP & CM modules: refer to several profiles => language is in principle English
[Exception: module exclusively recommended by profiles of "field of education Planning and Construction"](#)

➤ MK decision CM modules on offer AY 20/21 region D and I

- [All modules on offer taught in English](#)
- [Title and content of module description in English](#)

➤ Translation-help: upon request (mse-ch@hsr.ch)

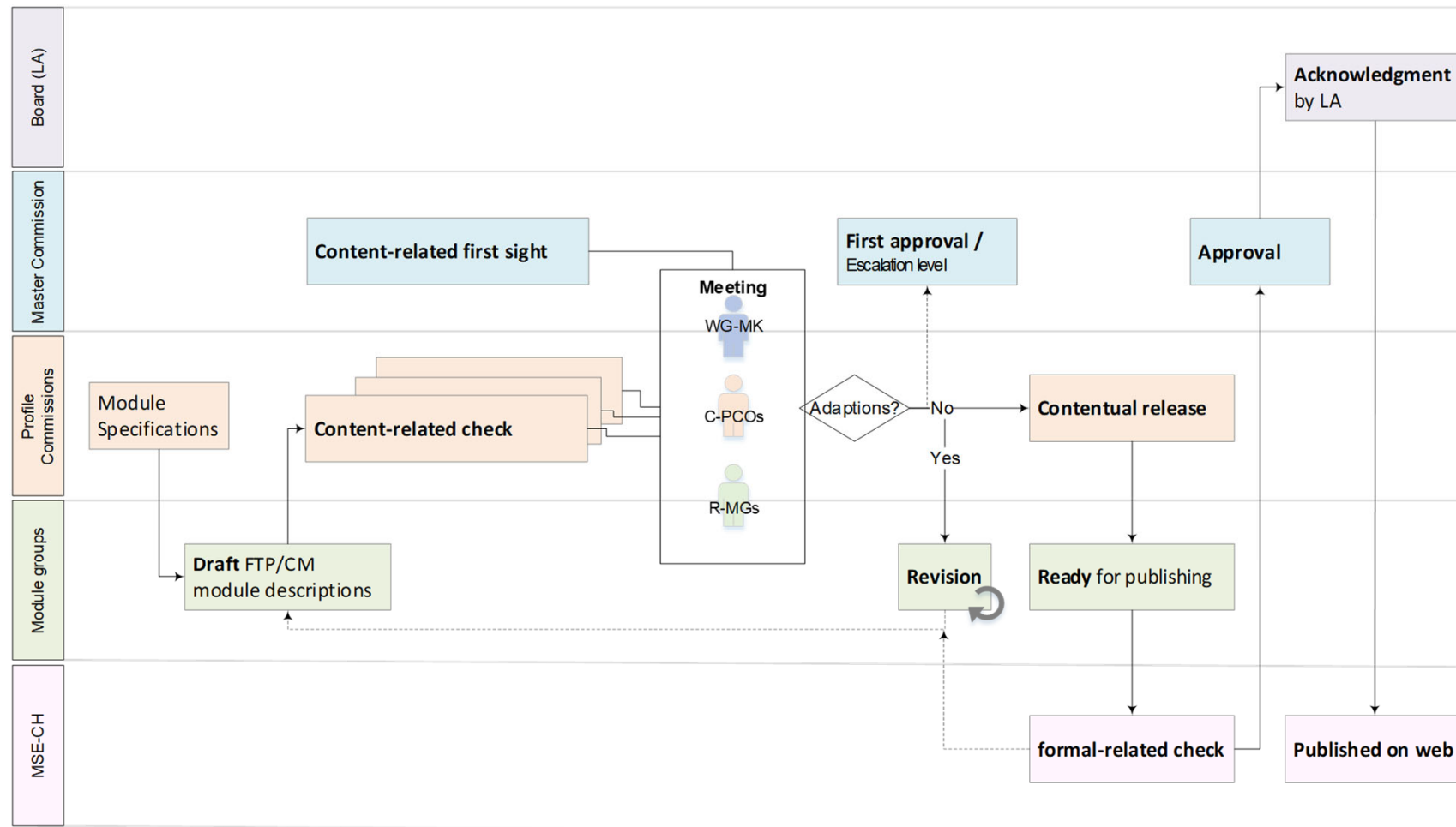
Ausbau englischsprachige Module Standorte Zürich und Bern
Zeitlicher Ablauf der Umstellung auf Englisch Standorte Zürich und Bern:

	SJ 16/17	SJ 17/18	SJ 18/19	SJ 19/20	
BEP		100% Englisch	100% Englisch	100% Englisch	Deutsch  Englisch 
EE				100% Englisch	
ICT				100% Englisch	
InT				100% Englisch	
CEBT					
GEO					
SDLA					

LA-decision: all modules in English - "Timeline implementation"


3. Task module groups

- Procedure and deadlines **FTP / CM** modules ("N" & "A")



3. Task module groups

- Planned procedure and deadlines FTP, CM modules

What	Who	from	by
Kick-Off FTP / CM modules	Person responsible for MG (R-MG)	20/25. November 2019	
Draft FTP / CM module descriptions & request translation <i>incl. report PL / C-PCO</i>	MG R-MG	20./25.11.2019	06.01.2020
Content-related check <i>incl. report PL / R-MG</i>	PCOs / MK C-PCO	06.01.2020	20.01.2020
 Compilation feedback per module & submission to PL	R-MG	20.01.2020	30.01.2020
Dispatch compilations feedback all modules	PL	30.01.2020	03.02.2020
1. Meeting R-MGs, C-PCOs, working group MK	R-MG, C-PCO, working group MK, PL	<i>tbd CW 6 (03. – 07.02.2020)</i>	
First approval MK	MK	18.02.2020	
Revision FTP / CM module descriptions (incl. translation) <i>incl. report PL / MSE-CH</i>	MG / MSE-CH (on request) R-MG	11.02.2020	20.02.2020
2. Meeting R-MGs, C-PCOs, working group MK	R-MG, C-PCO, working group MK, PL	<i>tbd CW 9 (24 – 28.02.2020)</i>	
Finalisation, ready for publishing	R-MG	28.02.2020	05.03.2020
Final control , proofreading	MSE-CH	05.03.2020	10.03.2020
Approval Master Commission	MK	10.03.2020	
Acknowledgment by board (LA)	LA	23.03.2020	
Publication	MSE-CH	1. April 2020	

- Content-related check in terms of accordance with the profile / module specifications / module portfolio
- R-MG is responsible for module description
- Formal-related check in terms of "common standards MSE-CH"
- MK finally approves FTP and CM module descriptions

Questions



4. Moodle

■ Working with Moodle as **R-MG**

1) Log in with Switch-AAI-Login in moodle

The image shows two screenshots related to Moodle login. The top screenshot is the Moodle homepage for the Master of Science in Engineering (MSE). It features a header with the MSE logo and the text 'MASTER OF SCIENCE IN ENGINEERING'. The main content area is divided into sections: 'Allgemeine Hinweise', 'Organisation' (with links to Forum, Stundenplan, Prüfungssessionen, Semesterdaten, and Standorte), 'Modulangebot' (with links to Modulbeschreibungen, EVA: Ergänzende Veranstaltungen 2018-19, and EVA: Ergänzende Veranstaltungen 2019-20), and 'Kursbereiche'. On the right side, there is a 'Login AAI' section with a dropdown menu for 'Anmelden über:' set to 'HSR - Hochschule für Technik Rapperswil', a checkbox for 'Auswahl für die laufende Webbrowser Sitzung speichern', and an 'Anmelden' button. Below this is a welcome message: 'Willkommen auf der Moodle-Plattform des Master of Science in Engineering. Diese Seite wurde zwecks Vereinfachung des Unterrichtsbetriebs in den zentralen Modulen eingerichtet. Hier werden für jedes Modul Unterrichtsunterlagen abgelegt, die von den angemeldeten Studierenden bezogen werden'.

The bottom screenshot is the Switch-AAI login form. It has the HSR logo and the text 'HSR HOCHSCHULE FÜR TECHNIK RAPPERSWIL HSR Fachhochschule Ostschweiz'. The title is 'SWITCHaaI'. Below the title, it says 'Sie sind dabei auf diesen Dienst zuzugreifen: Moodle MSE'. The login form includes fields for 'Benutzername' and 'Passwort', a checkbox for 'Löschen die frühere Einwilligung zur Weitergabe Ihrer Informationen an diesen Dienst.', and an 'Anmeldung' button. At the bottom, there are links: '> Passwort vergessen?', '> Um ein neues Passwort zu erstellen, gehen Sie bitte zu', and '> Hilfe benötigt?'.

4. Moodle

■ Working with Moodle as R-MG

2) Choose respective course "Redesign Academic Year 2020-21 NEW FTP and CM Modules"

The screenshot shows the Moodle MSE interface. On the left sidebar, the course "REDESIGN Academic Year 2020-21 NEW FTP and CM Modules" is highlighted with a red circle. In the main content area, the breadcrumb trail "Dashboard / Meine Kurse / ModuleDescriptions / REDESIGN Academic Year 2020-21 NEW FTP and CM Modules" is visible. Below this, there are several links and a section titled "REDESIGN Academic Year 2020-21 NEW FTP and CM Modules" which is also circled in red. A red arrow points from this section to the table below.

Klick for list of module descriptions

=> All new / adapted FTP & CM modules are listed

The screenshot shows a table of module descriptions. The table has columns for "Modultitel", "Modulkürzel", "Interne Nummer", "ECTS", "Letzte Änderung", "Modulverantwortliche/r", "Zugehörigkeit", "canBeDiscussed", "isReady", "OPernA", and "PDF". The table lists several modules, including "Physics on micro and nano scale", "A) FTP_AdvMachLe Advanced Machine Learning (USI module 6 ECTS)", "SAMPLE FTP Module Description", "FTP_AdvAlgS (Advanced Algorithms and Data Structures)", "FTP_ApprAlg Approximation algorithms", "FTP_ModSim Modelling Simulation and Optimisation", "Biology, physiology and anatomy for engineers", "Smart services", "Scientific Writing and Presenting", and "Sustainable development".

	Modultitel	Modulkürzel	Interne Nummer	ECTS	Letzte Änderung	Modulverantwortliche/r	Zugehörigkeit	canBeDiscussed	isReady	OPernA	PDF
<input type="checkbox"/>	Physics on micro and nano scale	FN1	FN1	3		Rudolf Buser	(MK)	<input type="checkbox"/>	<input type="checkbox"/>	undefined	PDF
<input type="checkbox"/>	A) FTP_AdvMachLe Advanced Machine Learning (USI module 6 ECTS)	FN12	FN12	3			(MK)	<input type="checkbox"/>	<input type="checkbox"/>	undefined	PDF
<input type="checkbox"/>	SAMPLE FTP Module Description	FN13	FN13	3	2019-11-16	Michael Rothlin	(MK)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Ohne Hilfsmittel	PDF
<input type="checkbox"/>	FTP_AdvAlgS (Advanced Algorithms and Data Structures)	FN10	FN10	3			(MK)	<input type="checkbox"/>	<input type="checkbox"/>	undefined	PDF
<input type="checkbox"/>	FTP_ApprAlg Approximation algorithms	FN9	FN9	3			(MK)	<input type="checkbox"/>	<input type="checkbox"/>	undefined	PDF
<input type="checkbox"/>	FTP_ModSim Modelling Simulation and Optimisation	FN8	FN8	3		Andrea-Emilio Rizzoli	(MK)	<input type="checkbox"/>	<input type="checkbox"/>	undefined	PDF
<input type="checkbox"/>	Biology, physiology and anatomy for engineers	FN11	FN11	3		Alessandro Piatelli	(MK)	<input type="checkbox"/>	<input type="checkbox"/>	undefined	PDF
<input type="checkbox"/>	Smart services	CN3	CN3	3		Jürg Meierhofer	(MK)	<input type="checkbox"/>	<input type="checkbox"/>	undefined	PDF
<input type="checkbox"/>	Scientific Writing and Presenting	CN7	CN7	3		Patrick Studer	(MK)	<input type="checkbox"/>	<input type="checkbox"/>	undefined	PDF
<input type="checkbox"/>	Sustainable development	CN9	CN9	3		Henrik Nordborg	(MK)	<input type="checkbox"/>	<input type="checkbox"/>	undefined	PDF

4. Moodle

■ Working with Moodle as **R-MG**

3) Activate the **editing mode** (cog wheel at the end of the page)

4) **Edit the module description** in consultation with the module group

Note: only Responsible for module has editing rights

REDESIGN PCO
Raumentw &
Landschaftsarch (Rela)

REDESIGN Academic
Year 2020-21 NEW FTP
and CM Modules

Academic Year 2020-21
REGULAR PROCESS

Academic Year 2019-20

Academic Year 2018-19

Dashboard

Startseite

Kalender

Meine Dateien

Meine Kurse

Listenansicht Einzelansicht Suche Eintrag hinzufügen Export Vorlagen Felder Vorlagentexte

1 2 3 4 5 6 7 8 9 10 ... 16 »

Modultitel Englisch Deutsch Französisch

Physics on micro and
nano scale

Allgemeine Angaben

Anzahl ECTS-Credits 3

Modulkürzel FN1

Interne Nummer FN1

Moodle User ID des Modulverantwortlichen User ID (ganzzahlig), sofern User in Moodle vorhanden 4141

Name des/der Modulverantwortlichen Vorname(n) Nachname(n) Rudolf Buser

E-Mail-Adresse des/der Modulverantwortlichen

Nur setzen, wenn oben keine Moodle User ID gesetzt wurde oder die angezeigte E-Mail-Adresse anders als die in Moodle sein soll

FH des/der Modulverantwortlichen FHO

Letzte Änderung Datum der letzten (substantiellen) Änderung, Format YYYY-MM-DD

Freigabe zur Prüfung

Bedeutung: Ich als MV bestätige, dass der Inhalt dieser Modulbeschreibung nun für die Prüfung ausserhalb der Modulgruppe freigegeben ist.

Freigabe zur Veröffentlichung

Bedeutung: Ich als MV bestätige, dass der Inhalt dieser Modulbeschreibung mit der Modulgruppe abgestimmt ist und gebe hiermit die Modulbeschreibung für das kommende Schuljahr frei.

Responsible for this text: Rudolf Buser

Kommentare (0)

PDF Preview

4. Moodle

■ Working with Moodle as **R-MG**

- 5) You can **export a PDF** version after saving the current state of the module description
- 6) **Release** the module descriptions **for review** by PCO/ MK
- 7) Note: update the modification **date manually**

The screenshot displays the Moodle module description form. At the top, there is a header bar with the text "Letzte Änderung Datum der letzten (substantiellen) Änderung, Format YYYY-MM-DD". Below this, there are two main sections: "Freigabe zur Prüfung" (Release for examination) and "Freigabe zur Veröffentlichung" (Release for publication). Each section has a "Bedeutung" (Meaning) field and a "Freigabe" (Release) checkbox. The "Freigabe zur Prüfung" section is highlighted in light blue, and the "Freigabe zur Veröffentlichung" section is highlighted in yellow. A red circle highlights the "PDF Preview" button in the center of the form. Below the form, there is a "Dokumentstatus" (Document status) section with a "Letzte Änderung" (Last change) field and a "Freigabe zur Prüfung" (Release for examination) checkbox. The "Freigabe zur Prüfung" checkbox is highlighted with a red circle and labeled "1st revision". The "Freigabe zur Veröffentlichung" checkbox is highlighted with a red circle and labeled "final release MGs". At the bottom of the form, there are two buttons: "Sichern und anzeigen" (Save and display) and "Abbrechen" (Cancel).

Letzte Änderung Datum der letzten (substantiellen) Änderung, Format YYYY-MM-DD

Freigabe zur Prüfung

Bedeutung: Ich als MV bestätige, dass der Inhalt dieser Modulbeschreibung nun für die Prüfung ausserhalb der Modulgruppe freigegeben ist.

Freigabe zur Veröffentlichung

Bedeutung: Ich als MV bestätige, dass der Inhalt dieser Modulbeschreibung mit der Modulgruppe abgestimmt ist und gebe hiermit die Modulbeschreibung für das kommende Schuljahr frei.

PDF Preview

Responsible for this text: Rudolf Buser]

► Kommentare (0)

Dokumentstatus

Letzte Änderung
Datum der letzten
(substantiellen) Änderung,
Format YYYY-MM-DD

Freigabe zur Prüfung ☐ Bereit 1st revision

Bedeutung: Ich als MV bestätige, dass der Inhalt dieser Modulbeschreibung nun für die Prüfung ausserhalb der Modulgruppe freigegeben ist.

Freigabe zur Veröffentlichung ☐ Bereit final release MGs

Bedeutung: Ich als MV bestätige, dass der Inhalt dieser Modulbeschreibung mit der Modulgruppe abgestimmt ist und gebe hiermit die Modulbeschreibung für das kommende Schuljahr frei.

Sichern und anzeigen Abbrechen

4. Moodle

■ Working with Moodle as **R-MG**

8) **Upload** pdf into respective forum

- Forum: serves for content-related check
- Each "N" & "A" module has a "thread"
- **Note:** notification about thread activities can be activated / deactivated individually for each thread

The screenshot shows the Moodle interface. On the left is a sidebar with a tree view of forums. The main content area shows a forum titled "REDESIGN Academic Year 2020-21 NEW FTP and CM Modules". A red circle highlights a link in the forum description: "REDESIGN NEW FTP and CM Modules: Content-Related Check". Below this, another screenshot shows the "REDESIGN NEW FTP and CM Modules: Content-Related Check" forum page. It displays a list of threads with columns for "Thema", "Begonnen von", "Antworten", "Letzter Beitrag", and "Erstellt".

Thema	Begonnen von	Antworten	Letzter Beitrag	Erstellt
☆ SAMPLE Module Discussion	Michael (Admin) Rothlin	5	Michael Rothlin Sat, 16. Nov 2019, 11:49	Tue, 12. Nov 2019, 10:07
☆ FN1: Physics on micro and nano scale	Michael (Admin) Rothlin	0	Michael (Admin) Rothlin Tue, 12. Nov 2019, 10:13	Tue, 12. Nov 2019, 10:13
☆ CN9: Sustainable development	Michael (Admin) Rothlin	0	Michael (Admin) Rothlin Thu, 14. Nov 2019, 14:10	Thu, 14. Nov 2019, 14:10
☆ CN7: Scientific Writing and Presenting	Michael (Admin) Rothlin	0	Michael (Admin) Rothlin Thu, 14. Nov 2019, 14:10	Thu, 14. Nov 2019, 14:10
☆ CN4: Technology Management (ex TSM_101)	Michael (Admin) Rothlin	0	Michael (Admin) Rothlin Thu, 14. Nov 2019, 14:10	Thu, 14. Nov 2019, 14:10
☆ CN3: Smart services	Michael (Admin) Rothlin	0	Michael (Admin) Rothlin Thu, 14. Nov 2019, 14:10	Thu, 14. Nov 2019, 14:10

"threads"

4. Moodle

■ Working with Moodle as R-MG

9) Compilation of feedbacks

- Discussion in forum (can) serve as a bases for meeting (pdf)
- R-MGs compile all feedbacks; extract forum discussion as pdf or separate document
- All members can write in forum => recommendation: C-PCOs and R-MGs "voice of group"
- Note: annotated pdf's by "reply advanced" can be added

The screenshot displays a Moodle forum interface. On the left is a sidebar menu with categories like 'REDESIGN PCO' and 'Academic Year'. The main forum area shows a thread titled 'SAMPLE Module Discussion' by Michael Rothlin. It includes a post from Michael Rothlin dated 12. November 2019, 10:07, and a reply from Hugo Hase dated 16. November 2019, 11:44. An overlay window titled 'Your reply' is open, showing a text editor with a rich text toolbar and a 'Files' section at the bottom. A blue arrow points from the text 'Advanced reply' to the 'Files' section in the reply form. The 'Files' section shows a file named 'Files' with a maximum size of 500KB and a maximum of 9 attachments.

4. Moodle

■ Working with Moodle as PCO

- FTP and CM workflow is different to TSM moodle revision process
- Revised pdf was put into forum (respective "thread")
- C-PCOs and MK-members can use pdf for internal discussions & create annotated pdf
- **Feedback needs to be written / uploaded into forum-thread PCO by PCO**
 - Carefully! All members can write into forum-thread (no access-limitation)
 - Recommendation: only C-PCOs and R-MGs communicate ("voice of groups")
 - Should be used as input for consolidation meetings
 - **Note: annotated pdf's by "reply advanced" can be added**

The screenshot displays a Moodle forum interface. On the left is a sidebar with a list of folders: 'REDESIGN PCO Mechanical Engineering (ME)', 'REDESIGN PCO Medical Engineering (Med)', 'REDESIGN PCO Geomatics (Geo)', 'REDESIGN PCO Photonics (Pho)', 'REDESIGN PCO Raumentw & Landschaftsarch (ReLa)', and 'REDESIGN Academic Year 2020-21 NEW FTP and CM Modules' (which is highlighted in blue). The main content area shows a forum thread titled 'SAMPLE Module Discussion' by Michael (Admin) Röthlin, dated Tuesday, 12. November 2019, 10:07. The post text says: 'See module description [here](#) (working copy). For putting up specific versions of the module description for discussion, simply post a PDF export of the document in the thread.' Below this is a reply titled 'Re: SAMPLE Module Discussion' by Michael Röthlin, dated Saturday, 16. November 2019, 11:41. The reply text says: 'Dear module description reviewers. Please find attached our proposal for module SAMPLE. Best regards. Module Group SAMPLE.' and includes a PDF attachment icon and the filename 'FN13-2020-21.pdf'. At the bottom, another reply is partially visible, titled 'Re: SAMPLE Module Discussion' by Hugo Nase, dated Saturday, 16. November 2019, 11:44. On the right side of the forum posts, there are links for 'Dauerlink' and 'Urspr'.

4. Moodle

■ Working with Moodle as PCO

- Note: notification about thread activities can be activated / deactivated individually for each thread

REDESIGN NEW FTP and CM Modules: Content-Related Check

Bemerkungen: Sie können die Benachrichtigungen ein- und ausschalten

Neues Thema hinzufügen

Thema	Begonnen von	Antworten	Letzter Beitrag ↓	Erstellt
☆ SAMPLE Module Discussion	Michael (Admin) Röthlin	5	Michael Röthlin Sat, 16. Nov 2019, 11:49	Tue, 12. Nov 2019, 10:07
☆ FN1: Physics on micro and nano scale	Michael (Admin) Röthlin	0	Michael (Admin) Röthlin Tue, 12. Nov 2019, 10:13	Tue, 12. Nov 2019, 10:13
☆ CN9: Sustainable development	Michael (Admin) Röthlin	0	Michael (Admin) Röthlin Thu, 14. Nov 2019, 14:10	Thu, 14. Nov 2019, 14:10
☆ CN7: Scientific Writing and Presenting	Michael (Admin) Röthlin	0	Michael (Admin) Röthlin Thu, 14. Nov 2019, 14:10	Thu, 14. Nov 2019, 14:10
☆ CN4: Technology Management (ex TSM_101)	Michael (Admin) Röthlin	0	Michael (Admin) Röthlin Thu, 14. Nov 2019, 14:10	Thu, 14. Nov 2019, 14:10
☆ CN3: Smart services	Michael (Admin) Röthlin	0	Michael (Admin) Röthlin Thu, 14. Nov 2019, 14:10	Thu, 14. Nov 2019, 14:10
☆ FN12: FTP_AdvMachLe Advanced Machine Learning (USI module)	Michael (Admin) Röthlin	0	Michael (Admin) Röthlin Thu, 14. Nov 2019, 14:09	Thu, 14. Nov 2019, 14:09
☆ FN11: Biology, chemistry and systems for engineers	Michael (Admin) Röthlin	0	Michael (Admin) Röthlin Thu, 14. Nov 2019, 14:09	Thu, 14. Nov 2019, 14:09

5. Questions

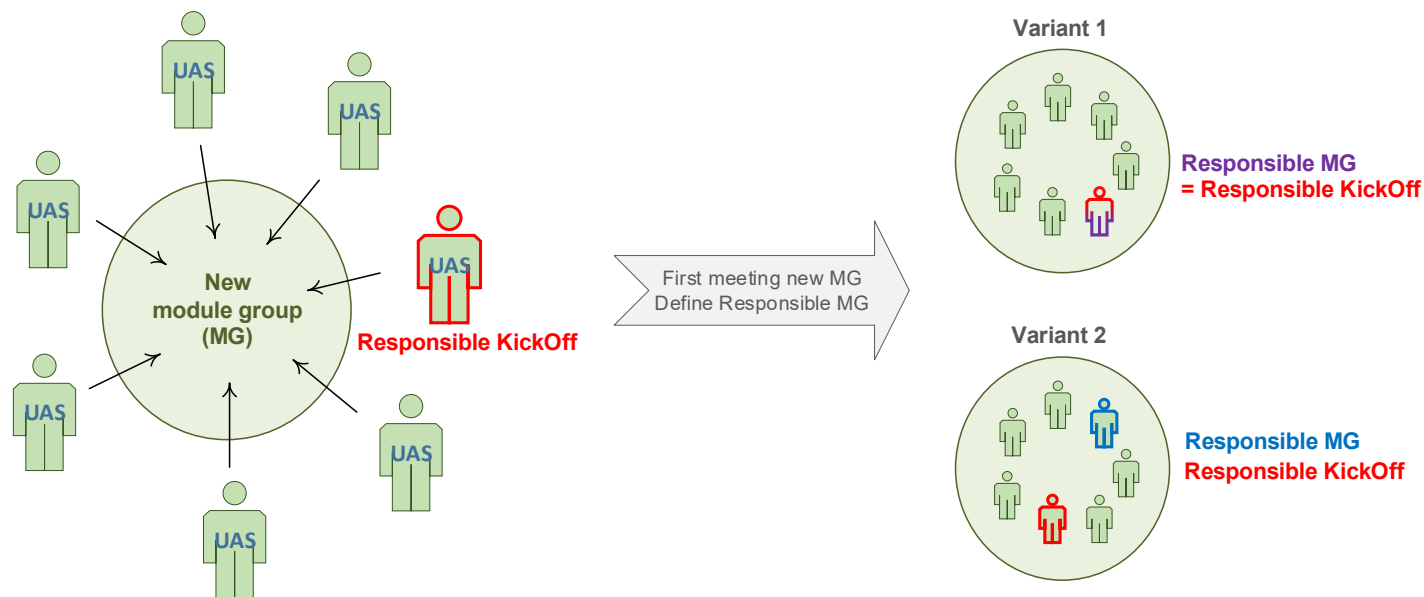


6. Further procedure

■ Next steps

■ New modules ("N"):

- Module group constitutes itself and defines a responsible for the module group (R-MG)
Note: check whether the content adjustment requires a change in the module group ("I" module group)
- R-MG informs MSE-CH & MSE-Redsign until **16.12.2019** (mse-ch@hsr.ch, mse-redesign@hsr.ch)
Nomination R-MG & possible changes in module groups (until then R-Kick-Off is contact person/Moodle!)
- Start elaboration of module description; first submission FTP / CM-Modules: **06.01.2020**



6. Further procedure

- Next steps
 - Modules to be adapted ("A"):
 - Module group checks if integration of module-content / module-group members are required
 - Changes: R-MG informs MSE-CH and MSE-Redsign **until 16.12.2019**
assumption: no change in the responsibility for the module
 - Start elaboration of module description; first deadline FTP / CM-Modules: **06.01.2020**

6. Further procedure

■ Next steps

- Modules regular revision process (all modules on offer today)
 - MSE-CH will inform you as usual about the regular revision process and deadlines
 - Voluntary revision!

MSE | MASTER OF SCIENCE
IN ENGINEERING **Guide for Regular Module Description Updates**

Contents

1	General Principles	1
2	Edition Process Step by Step	2
3	Further Tips & Tricks for Editors.....	6

1 **General Principles**

- Module descriptions are published on the MSE Website msengineering.ch
- There is one module description per module which is binding throughout Switzerland.
- The content of the module description must be coordinated with the entire module group.
- The responsible of a module is in charge of the update (content, control, release) of the module description via online template on Moodle.
- The module description is published in the languages in which the lessons are held.
e.g. language of instruction Lausanne = French; Zurich = English
-> Module description available in English and French

The content of different language versions must be identical.

- Module descriptions of TSM modules are subject to review by the relevant profile commission(s) (PCOs)
- Module descriptions of CM and FTP modules are subject to review by the master commission (overlaps, redundancies) and PCOs.

7. A.O.B., Thanks

- Any other business?
- Thank you for your attention

