
dpe
DEPARTMENT
PETROLEUM
ENGINEERING
Information Summit
Preparation
Master Class 2017
26.01.2017 ▪ Department Petroleum Engineering
MONTAN
UNIVERSITÄT

Overview

- PE students select elective group
  – Reservoir, Drilling, Production
- Master Class 2017 curriculum - elective groups
- Pre-requisites for master classes
- Key elements of a master class
- Guidelines: Code of Conduct, Examination Guidelines, DPE Master Class Concept

MSc – Reservoir Engineering

		WS			SS		
MSc	Year 1	APE	CMPI	PM	PAFD	IFDP	LRP
		FIS	GM	CCM	RSP	RSM I	GDP
		HSE	ABG	PE	EOR	RCM	RE 2:C
		WRG	WP	*			
		30 ECTS			28 ECTS		
	Year 2	RE 2:U	RM	RE 2:S			
		RSM II	SCAL	NA			
		FDP					
		25 ECTS					

Legend

- IV
- VO
- UE
- SE
- PS
- EX

* Can be completed upfront as elective courses in the BSc

List of Abbreviations – Reservoir Engineering

ABG	Advanced Borehole Geophysics	WP	Well Placement	RSM I	Reservoir Simulation Methods I: Basics
APE	Advanced Petroleum Economics	WRG	Wellbore Reservoir Geomechanics	RSP	Reservoir Simulation Practical
CCM	Computational Continuum Mechanics	IFDP	Introduction to Field Development Project	FDP	Field Development Project
CMPI	Crisis Management in the Petroleum Industry	LRP	Literature Review Project DE/PROD/RES/AGS	NA	Nodal Analysis
FIS	Formation Impairment and Stimulation	PAFD	Practical Aspects of Field Development	RE 2:S	Reservoir Engineering 2: Storage, Sequestration and Geothermal Energy
GM	Geomodeling	EOR	Enhanced Oil Recovery	RE 2:U	Reservoir Engineering 2: Unconventional Resources
HSE	Health, Safety and Environment	RCM	Reservoir Characterization and Modeling	RM	Reservoir Management
PE	Petroleum Exploration	GDP	Geostatistics & Data Processing	RSM II	Reservoir Simulation Methods II: Advanced Concepts
PM	Project Management for PE	RE 2:C	Reservoir Engineering 2: Advanced Concepts for Conventional Resources	SCAL	Special Core Analysis

MSc - Drilling Engineering

		WS			SS		
MSc	Year 1	APE	CMPI	PM	PAFD	IFDP	LRP
		FIS	GM	CCM	WCE	OT	ADT
		HSE	ABG	PE	MC	WTO	
		WRG	WP	*			
		30 ECTS			27 ECTS		
	Year 2	MCMA	WC	WCFL			
		WCML	DPEP	WCPS			
		AWMA	FDP				
		26 ECTS					

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List of Abbreviations – Drilling Engineering

ABG	Advanced Borehole Geophysics	WP	Well Placement	WTO	Well Testing Operations
APE	Advanced Petroleum Economics	WRG	Wellbore Reservoir Geomechanics	AWMA	Advanced Well Monitoring and Analysis
CCM	Computational Continuum Mechanics	ADT	Advanced Drilling Technology	DPEP	Drilling Process Evaluation and Planning
CMPI	Crisis Management in the Petroleum Industry	IFDP	Introduction to Field Development Project	FDP	Field Development Project
FIS	Formation Impairment and Stimulation	LRP	Literature Review Project DE/PROD/RES/AGS	MCMA	Measurement Control. Monitoring and Analysis
GM	Geomodeling	MC	Metallurgy and Corrosion for PE	WC	Well Control
HSE	Health, Safety and Environment	OT	Offshore Technology	WCFL	Well Construction Fluids Lab
PE	Petroleum Exploration	PAFD	Practical Aspects of Field Development	WCML	Well Construction Mechanical Lab
PM	Project Management for PE	WCE	Well Construction Equipment	WCPS	Well Construction Problems and Solutions

MSc – Petroleum Production Engineering

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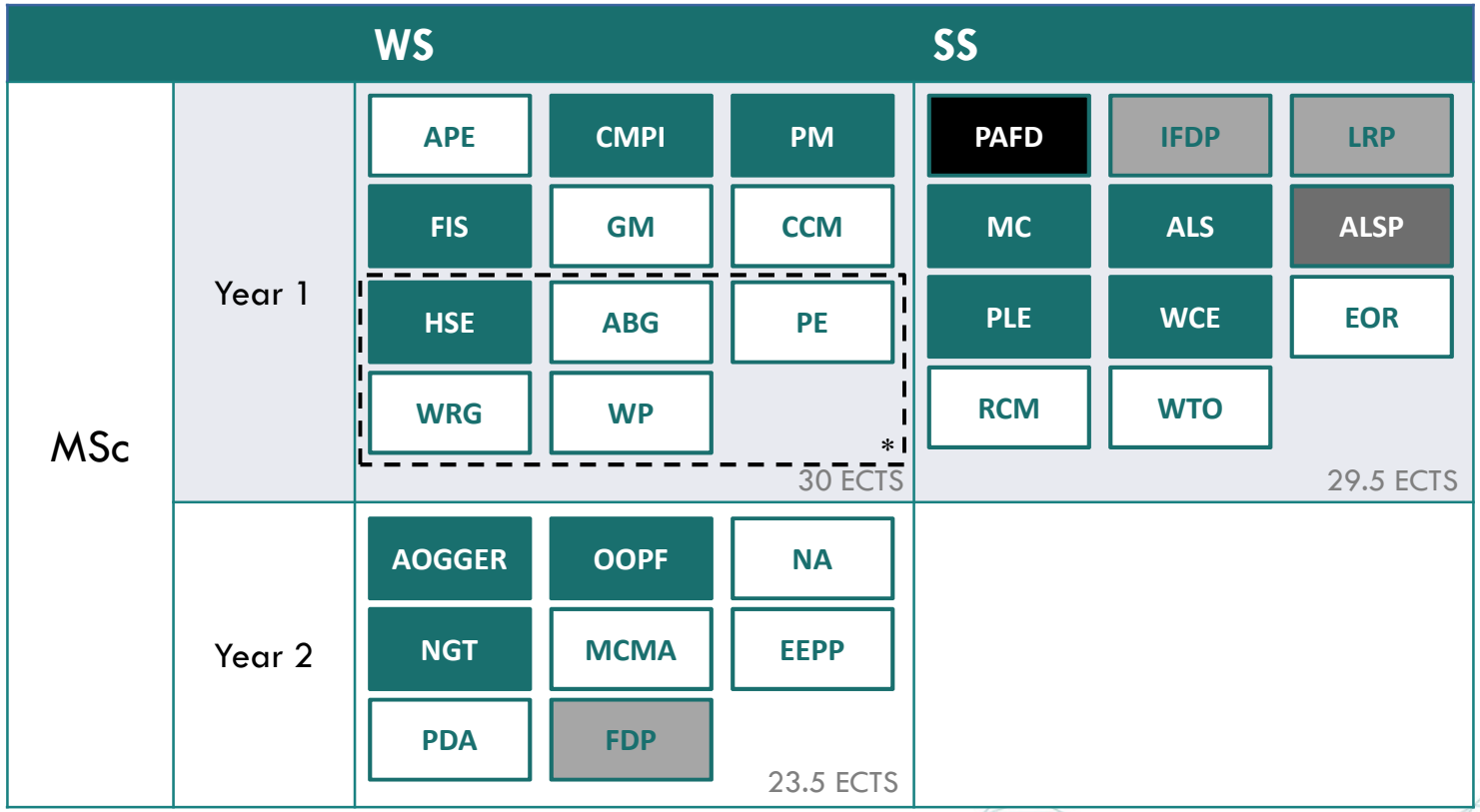

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List of Abbreviations – PPE

ABG	Advanced Borehole Geophysics	WRG	Wellbore Reservoir Geomechanics	PLE	Pipeline Engineering
APE	Advanced Petroleum Economics	IFDP	Introduction to Field Development Project	RCM	Reservoir Characterization and Modeling
CCM	Computational Continuum Mechanics	LRP	Literature Review Project DE/PROD/RES/AGS	FDP	Field Development Project
CMPI	Crisis Management in the Petroleum Industry	MC	Metallurgy and Corrosion for PE	MCMA	Measurement Control. Monitoring and Analysis
FIS	Formation Impairment and Stimulation	PAFD	Practical Aspects of Field Development	AOGGER	Advanced Oil, Gas and Geothermal Energy Recovery
GM	Geomodeling	WCE	Well Construction Equipment	EEPP	Energy Efficiency in Petroleum Production
HSE	Health, Safety and Environment	WTO	Well Testing Operations	NA	Nodal Analysis
PE	Petroleum Exploration	ALS	Artificial Lift Systems	NGT	Natural Gas Technology
PM	Project Management for PE	ALSP	Artificial Lift Systems Practical	OOPF	On- and Offshore Production Facilities
WP	Well Placement	EOR	Enhanced Oil Recovery	PDA	Production Data Analysis

Pre-requisites and recommendations

- **Pre-requisite for the Master Study Program PE:**
  Bachelor degree + potential supplementary courses

- **Pre-requisite for the master study lectures according to PE curriculum**

- **Strong recommendation:**
  - Finalize the 1st semester of the master program PE before enrolling for the master class
  - Approved master thesis proposal in December 2017 to graduate in June 2018

Key Elements of a Master Class 2017 (1)

- **Novel way to teach master students in a focused way within one year**
- **Three master classes offered – Reservoir, Drilling, Production**
- **Integrated lectures**
  - Imparting of new concepts – lecturing
  - Deepening knowledge – practicing
  - Application to engineering problems – project work
- **Lecture specific additional support – on demand, group approach**

Key Elements of a Master Class 2017 (2)

- **Each master class student has its workspace and locker for the one year of the master class** (refundable deposit of 60 EURO)
- **Master class covers Semesters 2 and 3 of the Master Study Program PE**
- **Special Case - students attending selected lectures**
  - Students with > 4 master semesters
  - Students with individual curricula
  - Foreign exchange students
- **Target number of students per master class: 25**

Master Class 2017

An exemplary integrated lecture of 3 ECTS, 75 hours workload

- **Preparation Phase, 10% workload (7,5 h)**
  - Preparation of required skills and knowledge – self-study
  - Self assessment, not graded but successful completion can add up to 10% of the achievable grade
- **Lecturing and Practical Phase (67,5 h, example on the next slide)**
  - Theory units are combined with practical ones in one block
  - 28-30h lectures and practicals
  - 37,5-39,5 self-study, group study, …
- **Evaluation phase**
  - While integrated lectures students are assessed continuously (e.g. 2 tests, 15% of total grade each)
  - Application oriented project work (20% of grade)
  - Final exam (50% of grade)

Master Class 2017

An exemplary integrated lecture of 3 ECTS, 75 hours workload

	Week 1							Week 2						
	M	T	W	T	F	S	S	M	T	W	T	F	S	S
9 am – 12 pm	Self-Assessment Introduction	2	2					Test 1	2	2				
		1	1						1	1				
1 pm – 4 pm		3	3						3	3				

	Week 3							Week 4						
	M	T	W	T	F	S	S	M	T	W	T	F	S	S
9 am – 12 pm	Test 2	2										Final Exam		
		1												
1 pm – 4 pm		3										Project Presentation & Defence		

Key

New Concepts – Theory Lectures (hr)
Deepening Knowledge – Practicals (hr)
Free Practice / Project Work
Test / Examination
Project Presentation & Defence

Guidelines for Master Class 2017

- **Master Class Concept**
- **DPE Code of Conduct**
- **DPE Examination Guidelines**

- **Available at secretaries**
- **Communicated to master students via email**

Feedback

- **Schedule**
- **DPE Guidelines**
- **Selection of elective group**

- **Students to provide feedback to the students representatives by February 3rd 2017**