Appendix A

Course schedule for the part-time combined study programme Electrical Engineering

Please note: The German version of this document is the legally binding version. The English translation provided here is for information purposes only.

First semester	ECTS	SCH	L	ST	E	Р	Classroom
							teaching
Fundamentals of Electrical Engineering	5	4	2	-	1	1	24
Mathematics I	5	4	2	-	2	-	16
Physics I	5	4	2	ı	2	-	16
Materials of Electrical Engineering	5	4	2	1	1	1	24
Totals	20	16	8	ı	6	2	80
Second semester	ECTS	SCH	L	ST	Ε	Р	Classroom
							teaching
Fundamentals of Electrical Engineering II		4	2	-	1	1	24
Mathematics II	5	4	2	-	2	-	16
Physics II	5	4	2	-	1	1	24
Technical English	5	4	2	-	2	-	16
Totals	20	16	8	-	6	2	80
Third semester	ECTS	SCH	L	ST	Е	Р	Classroom
	_		_				teaching
Fundamentals of Energy Technology	5	4	2	-	2	-	16
Mathematics III	5	4	2	-	2	-	16
Electronics	5	4	2	-	2	-	16
Metrology	5	4	2	-	1	1	24
Totals	20	16	8	-	7	1	72
Fourth semester	ECTS	SCH	L	ST	E	Р	Classroom
			_				teaching
Electrical Machines	5	4	2	-	1	1	24
Mathematics IV	5	4	2	-	2	-	16
Industrial Management	5	4	2	-	2	-	16
Computer Science	5	4	2	-	2	-	16
Totals	20	16	8	-	7	1	72
Fifth semester	ECTS	SCH	L	ST	E	Р	Classroom
Applied Computer Science	5	4	2		2		teaching 16
						_	
Power Systems	5	4	2	-	2	-	16
Control Engineering	5	4	2	-	1	1	24
Efficient Illumination Technology	5	4	2	-	2	-	16
Totals	20	16	8	-	7	1	72
Sixth semester	ECTS	SCH	L	ST	E	Р	Classroom teaching
Automation Systems	5	4	2	-	1	1	24
Energy Systems	5	4	2	-	2	-	16
Power Electronics	5	4	2	-	1	1	24
Elective Project	5	4	2	-	2	-	16
Totals	20	16	8	-	6	2	80
L	1	l .					

Seventh semester	ECTS	SCH	L	ST	E	Р	Classroom teaching
Product Risk Management	5	4	2	-	2	-	16
Power Drive Technology	5	4	2	-	1	1	24
Compulsory Elective Module I	5	4	2			-	
Compulsory Elective Module II	5	4	2			-	
Totals	20	16					
Eighth semester	ECTS	SCH	L	ST	E	P	Classroom teaching
Project Management	5	4	2	-	2	-	16
Renewable and Conventional Power	5	4	2	-	1	1	24
Compulsory Elective Module III	5	4	2	-	2	-	16
Compulsory Elective Module IV	5	4	2	-	2	-	16
Totals	20	16					64
Ninth semester	ECTS	SCH	L	ST	E	P	Classroom teaching
Quality Management	5	4	2	-	1	1	24
Bachelor Thesis	12	-	-	-	-	-	-
Colloquium	3	-	-	-	-	-	-
Totals	20	4	2	-	1	1	24

 $^{^{\}star}$ The extent of classroom teaching can be found in the respective compulsory elective modules.

Legend:

L	= 100% study materials	+ 0% classroom teaching
ST and E	= 50% study materials	+ 50% classroom teaching
Р	= 0% study materials	+ 100% classroom teaching

Focus: Further Education	ECTS	SCH	L	ST	E	Р	Classroom teaching
CEM I: Diagnosis and Support	5	4	2	-	1	1	24
CEM II: Vocational Education I and Vocational Field Practical	5	4	-	1	2	-	16
CEM III: Didactics of Technology	5	4	2	ı	1	1	24
CEM IV: Vocational Education II	5	4	2	-	1	1	24
Totals	20	16	6	-	5	3	88

Focus: Energy and Automation Technology	ECTS	SCH	L	ST	E	Р	Classroom teaching
CEM I: Modern Energy Policy	5	4	2	-	2	-	16
CEM II: Thermodynamics	5	4	2	-	1	1	24
CEM III: Mechatronic Systems	5	4	2	-	2	-	16
CEM IV: High-Voltage Technology	5	4	2	-	2	-	16
Totals	20	16	8	-	7	1	72

Additional module for the focus on further education: General Didactics and Orientation Practical

Appendix B	

Module catalogue

for the bachelor's degree study programme in Electrical Engineering (part-time combined studies) of the Faculty of Engineering and Mathematics

Please note: The German version of this document is the legally binding version. The English translation provided here is for information purposes only.

As of: 19 January 2021

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Ident numb	ification per:	Workload:	Credits:	Stud	y semeste	er:	Frequency offer	of the	Durati	ion:	
4078		125 h	5	Supp	olementar ule	У	Annual (Winter)		1 semester Self-study		
1	Course:		Planned group s	sizes	Scope		· · · · · · · · · · · · · · · · · · ·		Self-stu	Self-study	
							/ classroom	m teaching			
	Lecture		60 students		0	SCH	0	h	0	h	
	Tuition in	n seminars	30 students		0	SCH	0	h	0	h	
	Exercise		20 students		2	SCH	16	h	3	h	
	Practical	or seminar	15 students		0	SCH	106	h	0	h	
	Supervise	ed self-study	60 students		0	SCH	0	h	0	h	
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058		125 h	5	5th se	m.		Annual (Winter)		1 sem	ester
	Course:		Planned group s	izes	Scope	;	Actual c	ontact time	Self-stu	ıdy
	Lecture		60 students		2	SCH	0	m teaching h	62.5	h
		seminars	30 students		0	SCH	0	h	02.3	h
	Exercise		20 students		2	SCH	16	h	46.5	h
		or seminar	15 students		0	SCH	0	h	0	h
	Supervise	ed self-study	60 students		0	SCH	0	h	0	h
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Powe	er Drive Te	echnology							ATT	
Identi numb	fication	Workload:	Credits:	Study	semeste	er:	Frequency offer	of the	Durati	ion:
4066	CI.	125 h	5 7th se		7th sem.		Annual (Winter)		1 sem	ester
1	Course:		Planned group si	zes	Scope		Actual c	ontact time	Self-stu	ıdy
	Lecture		60 students		2	SCH	0	h	62.5	h
	Tuition in	seminars	30 students		0	SCH	0	h	0	h
	Exercise		20 students		1	SCH	8	h	38.5	h
	Practical of	or seminar	15 students		1	SCH	16	h	0	h
	Supervise	d self-study	60 students		0	SCH	0	h	0	h
3	terms of c	control technological	completely select c gy. They can dete e technical realisation	rmine th	e optima	al contro	oller parame	ters of a cas	scade stru	icture in the
5	Mechanica of controll Selection of Position-s Determina and their a	led electric driv of suitable mac peed-torque cas ation of the cont analogue and di	requirements on the es hine - converter conscade structure and troller parameters with gital realisation lectrical drive technical	mbination its contr with the l	ons ol descr	iption (I	Laplace trans	form)		
4	Forms of t	teaching:								
	Learning t	units for self-stu	ıdy, classroom eve	nts in the	e form o	f exercis	ses and pract	icals		
5		on requirement	s:							
	Formal:	-								
	Content:	-								
6		assessment:								
			ral examination							
7			of credit points: and course assessi	mant						
0						22)				
8			e (in the following art-time combined							
9			or the final grade:	studies)	(D.Diig.)	,, 				
			sum of credits of the	e graded	module	s accord	ing to RPO-	BA §32		
10	Module co	oordinator:								
		ng. habil. Klaus	s Hofer							
11	Other info	rmation:								

	ification Workload: Credits:							Duration:			
ldenti numb		Workl	oad:	Credits:	Study	semeste	er:	Frequency offer	of the	Durat	ion:
4025		125 h		5	6th se	em.		Annual (Summer)		1 sem	ester
1	Course:		P	lanned group s	sizes	Scope		/	ontact time n teaching	Self-stu	ıdy
	Lecture		6	0 students		2	SCH	0	h	62.5	h
	Tuition in	semina	rs 3	0 students		0	SCH	0	h	0	h
	Exercise		2	0 students		1	SCH	8	h	38.5	h
	Practical	or semin	ar 1	5 students		1	SCH	16	h	0	h
	Supervise study	d self	6	0 students		0	SCH	0	h	0	h
2	Learning	outcome	s/competer	nces:					l l		
3	automatic	n tasks.									
	Design an	d structi	re of autor	mation systems	S						
	_		ic controll	-							
			ation syste								
	Process v										
			new deve	lopments							
4	Forms of Learning	-		, classroom ev	ents in the	e form o	f exercis	ses and pract	icals		
5	Participat	ion requi	rements:								
	Formal:	•	-								
	Content:		-								
6	Forms of										
				or project work	ζ.						
7				credit points:							
				d course assess							
8				n the following							
				time combined		(B.Eng.));				
9	_		_	he final grade:					D 4 000		
	Percentag			of credits of the	ne graded	module	s accord	ing to RPO-	BA §32		
					_						
10	Module c	oordinate	or:								
10	Module con N. N. Other info										

Bach	nelor Thesis	s							BA	
Ident	ification per:	Workload:	Credits:	Study	semeste	er:	Frequency offer	of the	Durati	ion:
1291		300 h	12	9th se	m.		each seme	ster	1 sem	ester
1	Course:		Planned group s	izes	Scope		Actual c time / cla teaching		Self-stu	ıdy
	Lecture		60 students		0	SCH	0	h	300	h
	Tuition in	seminars	30 students		0	SCH	0	h	0	h
	Exercise		20 students		0	SCH	0	h	0	h
	Practical of	or seminar	15 students		0	SCH	0	h	0	h
	Supervise	d self-study	60 students		0	SCH	0	h	0	h
2	After succepractice-o	riented task fro	petences: eting the bachelor om their special sub s, using scientific n	ject area	, both in	the subj	ect-specific	details and		sent a
3	with a des	scription and ex	independent scient planation of its sol	tific work	from th	ne subjec	t area of the	respective	study pro	gramme
	empirical combinati	investigation of on of these is p	ional problems wit r through conceptu ossible.	h an eng	ineering	characte	r. It can also	o be carried	out throu	ne igh an
4	combinati	investigation o on of these is p	r through conceptu	h an eng	ineering	characte	r. It can also	o be carried	out throu	ne igh an
4	Forms of	investigation o on of these is p	r through conceptu	h an eng	ineering	characte	r. It can also	o be carried	out throu	ne igh an
4 5	Forms of Written co	investigation o on of these is p	r through conceptu ossible. n faculty tutoring	h an eng	ineering	characte	r. It can also	o be carried	out throu	ne igh an
	Forms of Written co	investigation of on of these is put teaching:	r through conceptu ossible. n faculty tutoring	h an eng	ineering	characte	r. It can also	o be carried	out throu	ne igh an
	Forms of Written co Participati Formal:	investigation of on of these is puteaching: composition with ion requirements	r through conceptu ossible. n faculty tutoring	h an eng al or desi	neering gn tasks	characte s or throu	r. It can als	o be carried	out throu	ne igh an
	Forms of Written co Participati Formal: Content: Forms of	teaching: composition with ion requirement Coordassessment:	r through conceptu possible. In faculty tutoring ts:	h an eng al or desi	neering gn tasks	characte s or throu	r. It can als	o be carried	out throu	ne igh an
5	Forms of Written co Participati Formal: Content: Forms of Bachelor	teaching: composition with ion requirement Coordassessment:	r through conceptuossible. n faculty tutoring ts:	h an eng al or desi	neering gn tasks	characte s or throu	r. It can als	o be carried	out throu	ne igh an
5	Forms of Written content: Formal: Content: Forms of Bachelor Prerequisi	teaching: composition with ion requirement Coord coassessment: thesis	r through conceptuossible. n faculty tutoring ts: dinated topic from	h an eng al or desi	neering gn tasks	characte s or throu	r. It can als	o be carried	out throu	ne igh an
5 6 7	Forms of Written content: Formal: Content: Forms of Bachelor Prerequisi	teaching: composition with conrequirement consessment: thesis te for the award xamination pass	r through conceptuossible. n faculty tutoring ts: dinated topic from d of credit points:	the stude	neering gn tasks nt's spec	charactes or throu	r. It can als	o be carried	out throu	ne igh an
5	Forms of Written contents Formal: Content: Forms of Bachelor Prerequising Module examplication Electrical	teaching: composition with ion requirement composition with ion re	r through conceptuossible. n faculty tutoring ts: dinated topic from d of credit points: s le (in the following part-time combined	the stude	nt's spec	charactes or throu	er. It can also	o be carried lation of exi	out throu	ne igh an
5 6 7 8	Forms of Written content: Formal: Content: Forms of Bachelor Prerequisi Module examplication Electrical combined	teaching: composition with ion requirement: thesis te for the award xamination passon of the modul Engineering (p studies) (B.Engineering to contact the significant contact t	r through conceptuossible. In faculty tutoring ts: Idinated topic from Id of credit points: Is le (in the following part-time combined g.);	the stude	nt's spec	charactes or throu	er. It can also	o be carried lation of exi	out throu	ne igh an
5 6 7	Forms of Written or Participate Formal: Content: Forms of Bachelor Prerequisi Module examplication Electrical combined Importance	teaching: composition with con requirement con assessment: thesis tte for the award axamination pass on of the modul Engineering (p studies) (B.En ce of the grade to	r through conceptuossible. n faculty tutoring ts: dinated topic from d of credit points: s le (in the following part-time combined	the stude	nt's spec	charactes or throu	ect area	o be carried lation of exi	out throu	ne igh an
5 6 7 8	Forms of Written or Participate Formal: Content: Forms of Bachelor Prerequisi Module example Electrical combined Important percentage	teaching: composition with ion requirement corresponds to the service of the award axamination passes on of the modul Engineering (p studies) (B.Engre of the grade to	n faculty tutoring ts: dinated topic from d of credit points: s le (in the following part-time combined g.); for the final grade:	the stude	nt's spec	charactes or throu	ect area	o be carried lation of exi	out throu	ne igh an
5 6 7 8	Forms of Written contents Formal: Content: Forms of Bachelor Prerequisis Module example Electrical combined Importance percentage Module contents	teaching: composition with con requirement con assessment: thesis tte for the award axamination pass on of the modul Engineering (p studies) (B.En ce of the grade to	r through concepturossible. In faculty tutoring ts: dinated topic from d of credit points: s le (in the following lart-time combined g.); for the final grade: sum of credits of the	the stude	nt's spec	charactes or throu	ect area	o be carried lation of exi	out throu	ne igh an

1 Co Lea Tui Exx Pra Suj stu 2 Lea Stu • • • • • • • • • • • • • • • • • • •	pourse: ecture nition in exercise ractical of pervise udy earning udents: undo resp syst mot are a educ can histo	outcomes/comerstand vocation ective subject ematically refives for their cable to identification as a prodescribe the storical, education ecepts, subject ipline of educ	Planned group 60 students 30 students 15 students 60 students 60 students 60 students conal education as a reas and research areas and research flect on exemplary own career path. By the requirements of tructures and formational and legal france areas and research cational science,	a sub-disc h fields fro practical of section of the vomework.	Scope 0 0 0 2 0 ipline of om each of experience any and second occational	SCH SCH SCH SCH SCH education other and ces in the	classroon 0 0 16 80 0 mal science, explain the workplace	h h h h are able to cem in contex and thereby	at. also exar	h h h h h ah the mine
Lea Tui Example 1 Example 2 Lea Stu Supstitu Stu A Foi Lea Foi Co 6 Foi Wr 7 Pre Mo	ecture uition in xercise ractical of actical	or seminar d self outcomes/comerstand vocative subject ematically refives for their cable to identification as a prodescribe the storical, education as a produce to identification of the storical of the st	Planned group 60 students 30 students 15 students 60 students 60 students conal education as a tareas and research experiences: the requirements of the requirements	a sub-disc h fields fro practical of s for comp ntext. ns of the vo-	Scope 0 0 0 2 0 ipline of om each of experience any and second occational	SCH SCH SCH SCH SCH SCH school education	(Winter) actual co classroor 0 0 16 80 o al science, explain the workplace ucators and	h h h h h are able to com in contex and thereby	Self-stu 0 0 29 0 distinguis ct. also exar	h h h h h h al
Lea Tui Example 1 Example 2 Lea Stu 3 Co 4 Foi Lea Foi Co 6 Foi Wr 7 Pre Mo	ecture uition in xercise ractical of actical	or seminar d self outcomes/comerstand vocation ective subject ematically refives for their or able to identify cation as a pro- describe the si- orical, education ecepts, subject ipline of educ	60 students 30 students 20 students 15 students 60 students npetences: conal education as a tareas and research elect on exemplary own career path. Sy the requirements of the properties of the students of the students and form the state of	a sub-disc h fields fro practical of s for comp ntext. ns of the vo mework.	o o o o o o o o o o o o o o o o o o o	SCH SCH SCH SCH SCH SCH school education	classroon 0 0 16 80 0 mal science, explain the workplace	h h h h h are able to com in contex and thereby	0 0 0 29 0 0 distinguis ct. vocation.	h h h h h and
Tui Exo Pra Sup stu 2 Lea Stu 4 Foo Lea Foo Co 6 Foo Wr 7 Pre Mo	pervise udy earning udents: underesp syst mot are a educe can histo	or seminar d self outcomes/comerstand vocation ective subject ematically refives for their or able to identify cation as a pro- describe the si- orical, education ecepts, subject ipline of educ	30 students 20 students 15 students 60 students npetences: conal education as a areas and research elect on exemplary own career path. Sy the requirements of the properties of the state o	h fields from practical of star compensation. It is of the volume work.	o o o o o o o o o o o o o o o o o o o	SCH SCH SCH SCH SCH education other and ces in the	0 16 80 0 nal science, explain the workplace	h h h are able to come in contex and thereby	0 29 0 0 distinguis ct. valso exar	h h h h h and
Tui Exo Pra Sup stu 2 Lea Stu 4 Foi Co 6 Foi Wr 7 Pre Mo	pervise udy earning udents: underesp syst mot are a educe can histo	or seminar d self outcomes/comerstand vocation ective subject ematically refives for their or able to identify cation as a pro- describe the si- orical, education ecepts, subject ipline of educ	30 students 20 students 15 students 60 students npetences: conal education as a areas and research elect on exemplary own career path. Sy the requirements of the properties of the state o	h fields from practical of star compensation. It is of the volume work.	o o o o o o o o o o o o o o o o o o o	SCH SCH SCH SCH SCH education other and ces in the	0 16 80 0 nal science, explain the workplace	h h h are able to come in contex and thereby	0 29 0 0 distinguis ct. valso exar	h h h h h and
Pra Suj stu 2 Lea Stu	pervise udy earning udents: underesp syst mot are a educ can histo	d self outcomes/com erstand vocation ective subject ematically refives for their of able to identification as a pro- describe the si- orical, education ecepts, subject ipline of educ	15 students 60 students npetences: onal education as a areas and research lect on exemplary own career path. The requirements of the requirements of the requirements and form the remaining and legal france areas and research areas and research	h fields from practical of star compensation. It is of the volume work.	ipline of om each of experience any and second	SCH SCH education other and ces in the school ed	al science, explain the workplace	h h are able to come in contex and thereby	distinguis	h h h the mine
Pra Suj stu 2 Lea Stu	pervise udy earning udents: underesp syst mot are a educ can histo	d self outcomes/com erstand vocation ective subject ematically refives for their of able to identification as a pro- describe the si- orical, education ecepts, subject ipline of educ	15 students 60 students npetences: onal education as a areas and research lect on exemplary own career path. The requirements of the requirements of the requirements and form the remaining and legal france areas and research areas and research	h fields from practical of star compensation. It is of the volume work.	ipline of om each of experience any and second	SCH SCH education other and ces in the school ed	al science, explain the workplace	h h are able to come in contex and thereby	distinguis	h h h the mine
stu 2 Lea Stu 4 For Co 6 For Wr 7 Pre Mo	earning udents: undo resp syst mot are a educ can histo	outcomes/comerstand vocation ective subject ematically refives for their cable to identification as a prodescribe the storical, education ecepts, subject ipline of educ	onal education as a tareas and research connection exemplary own career path. By the requirements of the session in this constructures and form tonal and legal france areas and research	h fields from practical of star compensation. It is of the volume work.	ipline of om each of experience any and socational	education other and ces in the school ed	nal science, explain the workplace ucators and	are able to come in contex and thereby	distinguis at. also exar	th the mine
2 Lea Stu	earning udents: underts: underts: syst mot are a educ can histo	erstand vocation ective subject ematically refives for their calle to identify cation as a prodescribe the storical, education ecepts, subject ipline of educ	onal education as a areas and research lect on exemplary own career path. By the requirements of the constructures and formal and legal france areas and research	h fields from practical of star compensation. It is of the volume work.	om each of experience any and so ocational	other and ces in the school ed	explain the workplace ucators and	em in contex and thereby I understand	at. also exar	mine al
4 For Lea For Co 6 For Wr 7 Pre Mc	Con	cepts, subject		h fields of						
Least For For For Wr Pre Mc Mc	Obje of V Con Proc	ET tributors and a cesses of (voca	ures and systems or roles in the VET systemational) pedagogic	system	ational E	ducationa				
For Co 6 For Wr 7 Pre Mo	earning		study, classroom s	sessions in	the form	of exerci	ises			
Wr 7 Pre Mo	ormal:	ion requireme - -	nts:							
Mo	ritten ez		oral examination							
o An	odule e	xamination pa								
Ele	ectrical mbined	Engineering (studies) (B.E.		ed studies)	-		nical Engino	eering (part-	-time	
			e for the final grade e sum of credits of		d module	s accordi	ng to RPO-	BA §32		
	rcentag									
11 Oth	odule co	oordinator: Ing. Thorsten	Lunamann							

	cational Ed	ucation II							BPD2	2
Iden num	tification ber:	Workload:	Credits:	Stud	y semeste	er:	Frequency offer	of the	Durati	ion:
4048	3	125 h	5	8th s	em.		Annual (Summer)		1 sem	ester
1	Course:		Planned group	sizes	Scope		Actual c / classro teaching		Self-stu	ıdy
	Lecture		60 students		2	SCH	0	h	62.5	h
	Tuition in	n seminars	30 students		0	SCH	0	h	0	h
	Exercise		20 students		1	SCH	8	h	38.5	h
	Practical	or seminar	15 students		1	SCH	16	h	0	h
	Supervis	ed self-study	60 students		0	SCH	0	h	0	h
2	Students:	a critically reflect earch on the base their own profest ognise interface ching research. able to derive value oretically sound able to describ- ted on the frame	petences: ct on and classify content of their level of their level of their sion-specific field the stone general and survocational education of manner, taking in the process of determination of transform it didaged.	knowled, , ubject-rel on issues ato accou- veloping of an appr	ge. In thi ated dida or proble nt existin a teachin	s contex ctics in ms and g criteri g-learni	the context of to deal with a of academ ng scenario,	over possible of VET research them in a sy ic work,	e research arch and	desiderata
3	ResCondesAct	nciples of acade search objects, a ncept of practic sign of teaching tion orientation	research questions e or action research					-		priented
3	PrintResCondesAct	nciples of acade search objects, a ncept of practic sign of teaching tion orientation	research questions e or action research	h to explo	ore own t	eaching	, learning fie	eld and comp		priented
	 Print Res Condes Act Forms of Learning 	nciples of acade search objects, a ncept of practic sign of teaching tion orientation Teaching: units for self-section requiremen	research questions e or action research , tudy, classroom ev	h to explo	ore own t	eaching	, learning fie	eld and comp		riented
4	 Print Res Condes Act Forms of Learning Participa Formal: 	nciples of acade search objects, a ncept of practic sign of teaching tion orientation teaching: units for self-se	research questions e or action research , tudy, classroom ev	h to explo	ore own t	eaching	, learning fie	eld and comp		riented
5	 Printer Reserve Condess Action Forms of Learning Participa Formal: Content: 	nciples of acade search objects, incept of practic sign of teaching tion orientation Teaching: units for self-stion requirements	research questions e or action research , tudy, classroom ev	h to explo	ore own t	eaching	, learning fie	eld and comp		priented
4	 Printer Reserve Condess Act Forms of Learning Participa Formal: Content: Forms of 	nciples of acade search objects, incept of practice sign of teaching tion orientation Teaching: units for self-stion requirements	research questions e or action research , tudy, classroom ev	h to explo	ore own t	eaching	, learning fie	eld and comp		riented
5	 Printer Reserve Condess Accorder Forms of Learning Participa Formal: Content: Forms of Term paper Prerequise 	nciples of acade search objects, a ncept of practic sign of teaching tion orientation Teaching: units for self-s tion requirement	research questions e or action research tudy, classroom ev hts:	ents in th	ore own t	eaching	, learning fie	eld and comp		riented
4567	 Print Res Condes Act Forms of Learning Participa Formal: Content: Forms of Term paper Prerequisis Module of 	nciples of acade search objects, a ncept of practic sign of teaching tion orientation teaching: units for self-s tion requirement	research questions e or action research , tudy, classroom ev nts: ssment rd of credit points: ss and course asses	ents in the	ne form o	eaching f exercis	, learning fie	eld and comp		riented
5	 Printer Reserve Condess Action Forms of Learning Participa Formal: Content: Forms of Term paper Prerequise Module of Application Electrical 	nciples of acade search objects, incept of practic sign of teaching tion orientation Teaching: units for self-stion requirement	tudy, classroom events: ssment rd of credit points: ss and course asses ale (in the following part-time combined)	ents in the	ne form o	eaching f exercis	ses and pract	eld and comp	petence-o	riented
4 5 7 8	 Printer Reserve Condess Action Forms of Learning Participa Formal: Content: Forms of Term paper Prerequise Module of Application Electrical combined 	nciples of acade search objects, ancept of practic sign of teaching tion orientation teaching: units for self-stion requirement	tudy, classroom events: ssment rd of credit points: ss and course asses ale (in the following part-time combined ag.);	ents in the	ne form o	eaching f exercis	ses and pract	eld and comp	petence-o	riented
4567	Prine Res Condess Act Forms of Learning Participal Formal: Content: Forms of Term paper Prerequise Module & Application Electrical combined Important.	nciples of acade search objects, incept of practic sign of teaching tion orientation Teaching: units for self-strong requirements	tudy, classroom events: ssment rd of credit points: ss and course asses ale (in the following part-time combined)	ents in the	rogramm (B.Eng.)	eaching f exercis es) o; Mecha	ses and pract	eld and comp	petence-o	riented
4 5 7 8	Print Res Condess Act Forms of Learning Participal Formal: Content: Forms of Term paper Prerequise Module of Application and Percentage Module of Mod	reciples of acade search objects, incept of practic sign of teaching tion orientation. Teaching: units for self-storm requirements of the modulation of the modulation of the grade ge based on the coordinator:	tudy, classroom events: ssment rd of credit points: ss and course asses le (in the following part-time combined ng.); for the final grade: sum of credits of t	ents in the	rogramm (B.Eng.)	eaching f exercis es) o; Mecha	ses and pract	eld and comp	petence-o	riented
4 5 6 7 8	Prin Res Condess Act Forms of Learning Participa Formal: Content: Forms of Term paper Prerequise Module of Application and Percentage Module of Prof. Dr.	nciples of acade search objects, incept of practic sign of teaching tion orientation. Teaching: units for self-stion requirements of the award examination passion of the modul Engineering (Jd studies) (B.Erice of the grade ge based on the	tudy, classroom events: ssment rd of credit points: ss and course asses le (in the following part-time combined ng.); for the final grade: sum of credits of t	ents in the	rogramm (B.Eng.)	eaching f exercis es) o; Mecha	ses and pract	eld and comp	petence-o	priented

Diag	nosis and	Support							DF	
Identi numb	fication er:	Workload:	Credits:	Study	semeste	er:	Frequency offer	of the	Durat	ion:
4045		125 h	5	7th se	m.		Annual (Winter)		1 sem	ester
1	Course:		Planned group s	sizes	Scope		Actual c / classro teaching		Self-stu	ıdy
	Lecture		60 students		2	SCH	0	h	62.5	h
	Tuition in seminars Exercise		30 students		0	SCH	0	h	0	h
	Exercise Practical or seminar Supervised self-study		20 students		1	SCH	8	h	38.5	h
			15 students			SCH	16	h	0	h
			60 students	0	SCH	0	h	0	h	
	pediacco kno their of e und diffi refe lear are: asse have	e a basic knowle agogical action ount empirical to we teaching feat rown learning xploration for te erstanding of re- erentiate selector rences from the ning. able to show the ess its conseque e a critical under	dedge and understate and can assess and findings. Some selevant to lear biographical experience and learning in the concessarch-based learning theories are different theories are importance of concess, especially for erstanding of the ast knowledge of ind	arning and riences. In text of the ning as a c s from each. In the properties r the designments	e the signal can refut this core oriental lidactic ch other occass, the orientang of condividuous districts of condividuous condividuous condividuous districts orientangen of condividuous condividuous can refut condividuous condividuous can refut can refut condividuous can refut condividuous can refut	nificance nection to ntext, the tion pra concept and are ney deve	their significe ey reflect on ctical interns for higher e also able to belop their ow the vocation ce-oriented ed heterogene	ance against and/or iden ship and dev ducation. justifiably p on initial und al education examinations ity in learning	t the back tify poss elop a fin coint out a derstanding a system a s.	taking into aground of able objects est basic application ag of and to
3	ResObsCon	ics of diagnosti earch methodol ervation and as npetence orient	c competence of te logical principles of ssessment errors, po- ation, competence eterogeneity in lea	of observa rofessiona -oriented	tion, obs al teachi examina	servations ng percentions,	n and assess eption, learn	ment tools,		
4		units for self-st	udy, classroom ev	ents in the	e form o	f exercis	ses and pract	icals		
		ion requiremen	ts:							
5										
5	Formal:	-								
	Content:	-								
6	Content: Forms of	assessment:								
6	Content: Forms of Written or	assessment: r oral examinat	ion, course assessr	nent						
	Content: Forms of Written or Prerequisi	assessment: r oral examinat ite for the awar	ion, course assessed of credit points: s and course assess							

	Electrical Engineering (part-time combined studies) (B.Eng.); Mechanical Engineering (part-time combined studies) (B.Eng.);
9	Importance of the grade for the final grade:
	Percentage based on the sum of credits of the graded modules according to RPO- BA §32
10	Module coordinator:
	Prof. DrIng. Thorsten Jungmann
11	Other information:
	-

lani	tification	Workload:	Credits:	Study	samasta		Eroguanav	of the	Durati	on:
	nncanon ber:	worktoad:	Credits:	Study	semeste	er:	Frequency offer	or the	Duran	on:
1061		125 h	5	5th se	m.		Annual		1 sem	ester
							(Winter)			
	Course:		Planned group s	sizes	Scope		Actual control / classroom teaching	-	Self-stu	dy
	Lecture		60 students		2	SCH	0	h	62.5	h
	Tuition in	seminars	30 students		0	SCH	0	h	0	h
	Exercise		20 students		2	SCH	16	h	46.5	h
		or seminar	15 students		0	SCH	0	h	0	h
	Supervise	ed self-study	60 students		0	SCH	0	h	0	h
	_	basic photome	-							
	Light sou									
	Thermal	radiators (incan	stic values of lamp descent and haloge	en lamps)						
			essure and high-pr							
	Light-em Luminair		organic and organ	ıc iigni-ei	nitting o	liodes)				
		of light control								
			and principles (e.g	. indoor a	nd outdo	oor lumi	naires)			
	Lighting	design using sin	nulation programs							
		t light control	g		_					
	Energy co		cording to applica	ble standa	ards					
4		U	udy classroom ses	eione in f	ha form	of ever	icac			
4			•	810113 111 1	IIC 101111	OI CACIO	1803			
		Learning units for self-study, classroom sessions in the form of exercise Participation requirements:								
	Formal:	-								
	Content:									
5	Content:	- assessment:								
5	Content: Forms of Written e	xamination or o	oral examination							
5	Content: Forms of Written e Prerequis	xamination or o	d of credit points:							
5	Content: Forms of Written e Prerequis Module e	xamination or o ite for the award xamination pass	d of credit points:							
5	Content: Forms of Written e Prerequis Module e Applicati	xamination or o ite for the aware xamination pass on of the modul	d of credit points: s le (in the following		_					
5 6 7	Content: Forms of Written e Prerequis Module e Applicati Electrical	xamination or o ite for the award xamination pass on of the modul Engineering (p	d of credit points: s le (in the following art-time combined	l studies)	_					
77 88	Content: Forms of Written e Prerequis Module e Applicati Electrical	xamination or of the for the award xamination passon of the modul Engineering (pee of the grade to the grade	d of credit points: s le (in the following	l studies)	(B.Eng.));	ling to RPO-	BA §32		
5 6 7	Content: Forms of Written e Prerequis Module e Applicati Electrical Important Percentag	xamination or of ite for the award xamination passon of the modul Engineering (page of the grade to ge based on the stoodynamics).	d of credit points: s le (in the following art-time combined for the final grade:	l studies) he graded	(B.Eng.));	ling to RPO-	BA §32		

	trical Macl	nines							ELM	
Ident numl	rification ber:	Workload:	Credits:	Study	semeste	er:	Frequency offer	of the	Durat	ion:
4054		125 h	5	4th se	m.		Annual (Summer)		1 sem	ester
1	Course:		Planned group s	sizes	Scope		Actual control / classroot teaching		Self-stu	ıdy
	Lecture		60 students		2	SCH	0	h	62.5	h
	Tuition in	seminars	30 students		0	SCH	0	h	0	h
	Exercise		20 students		1	SCH	8	h	38.5	h
	Practical	or seminar	15 students		1	SCH	16	h	0	h
	Supervise	ed self-study	60 students		0	SCH	0	h	0	h
	circuit dia They will	ngrams, pointer be able to desi	and the mathemati diagrams and locu gn electrical mach os between the elec	is curves of ines for m	of electr nore com	ical mach plex driv	nines and trave systems a	ansformers. and recognis		
			perties of electrical	1 machine	s direct	current n	nachines tr	ancformere	three-ph:	
	Small and Laborator Measurer Short-circ	I special motors ry exercises: nent of the char cuit and no-load	modern control and a for precision enginateristics of a DC acteristics of a DC measurement of a facteristics of a threa	d regulation incering a comment of the comment of t	on meth nd infor mer	ods for el mation te	lectrical ma echnology		tinee piid	ise
4	Small and Laborator Measurer Short-circ Measurer	I special motors by exercises: nent of the char ouit and no-load nent of the char	s for precision enginates for precision enginates for a DC measurement of a	d regulation incering a comment of the comment of t	on meth nd infor mer	ods for el mation te	lectrical ma echnology		unec più	ise
4	Small and Laborator Measurer Short-circ Measurer Forms of	I special motors y exercises: nent of the charcuit and no-load nent of the charcteaching:	s for precision enginates for precision enginates for a DC measurement of a	d regulation ineering a comment of the comment of t	on meth nd infor mer asynchro	ods for el	lectrical ma echnology chine	chines	mee pii	ase
	Small and Laborator Measurer Short-circ Measurer Forms of Learning	I special motors y exercises: nent of the charcuit and no-load nent of the charcteaching:	acteristics of a DC measurement of a racteristics of a three udy, classroom ever	d regulation ineering a comment of the comment of t	on meth nd infor mer asynchro	ods for el	lectrical ma echnology chine	chines	mee pii	ase
	Small and Laborator Measurer Short-circ Measurer Forms of Learning	I special motors y exercises: nent of the char cuit and no-load nent of the char teaching: units for self-st	acteristics of a DC measurement of a racteristics of a three udy, classroom ever	d regulation ineering a comment of the comment of t	on meth nd infor mer asynchro	ods for el	lectrical ma echnology chine	chines	unec più	ase
	Small and Laborator Measurer Short-circ Measurer Forms of Learning	I special motors y exercises: nent of the char cuit and no-load nent of the char teaching: units for self-st	acteristics of a DC measurement of a racteristics of a three udy, classroom ever	d regulation ineering a comment of the comment of t	on meth nd infor mer asynchro	ods for el	lectrical ma echnology chine	chines	unec più	ase
5	Small and Laborator Measurer Short-circ Measurer Forms of Learning Participat Formal: Content:	I special motors y exercises: nent of the char cuit and no-load nent of the char teaching: units for self-st	acteristics of a DC measurement of a racteristics of a three udy, classroom ever	d regulation ineering a comment of the comment of t	on meth nd infor mer asynchro	ods for el	lectrical ma echnology chine	chines	unec più	ase
5	Small and Laborator Measurer Short-circ Measurer Forms of Learning Participat Formal: Content: Forms of Written e	I special motors ry exercises: nent of the char cuit and no-load nent of the char teaching: units for self-st ion requiremen - assessment: xamination or o	s for precision enginacteristics of a DC measurement of a racteristics of a through the company of the company	d regulation ineering a comment of the comment of t	on meth nd infor mer asynchro	ods for el	lectrical ma echnology chine	chines	unec più	ase
5	Small and Laborator Measurer Short-circ Measurer Forms of Learning Participat Formal: Content: Forms of Written e Prerequis	I special motors ry exercises: nent of the char cuit and no-load nent of the char teaching: units for self-st ion requiremen assessment: xamination or of ite for the award	s for precision enginacteristics of a DC measurement of a facteristics of a three udy, classroom events:	d regulation incering a comment of the comment of t	on meth nd infor mer asynchro	ods for el	lectrical ma echnology chine	chines	unec più	ase .
5 6 7	Small and Laborator Measurer Short-circ Measurer Forms of Learning Participat Formal: Content: Forms of Written e Prerequis Module e Application	I special motors ry exercises: nent of the char cuit and no-load nent of the char teaching: units for self-st ion requiremen - assessment: xamination or of ite for the awar xamination pass on of the modul	acteristics of a DC measurement of a racteristics of a three acteristics of a DC acteristics of a three acteristics	d regulation incering a comment a transformee-phase a comment a transformee sment g study pr	on meth nd infor mer asynchro e form o	onds for elemation to mation to mati	lectrical ma echnology chine	chines	unec più	ase
4 5 6 7 8 9	Small and Laborator Measurer Short-circ Measurer Forms of Learning Participat Formal: Content: Forms of Written e Prerequis Module e Applicative Electrical Importance	I special motors ry exercises: nent of the char cuit and no-load nent of the char teaching: units for self-st ion requiremen - assessment: xamination or of ite for the awar xamination pass on of the modul Engineering (poe of the grade)	acteristics of a DC measurement of a facteristics of a three lands acteristics of a DC lands acteristics of a lands acteristics of a three lands acteristics acteristic	d regulation of regulation of the control of the co	on method informer asynchrose form of the control o	ods for el mation to onous ma f exercise (ees)	lectrical ma echnology chine es and pract	icals		ase
77	Small and Laborator Measurer Short-circ Measurer Forms of Learning Participat Formal: Content: Forms of Written e Prerequis Module e Application Electrical Importance	I special motors ry exercises: nent of the char cuit and no-load nent of the char teaching: units for self-st ion requiremen - assessment: xamination or of ite for the awar xamination pass on of the modul Engineering (poe of the grade)	s for precision enginacteristics of a DC measurement of a facteristics of a three acteristics of a DC acteristics of a DC acteristics of a three acteristics of a DC acteristics of a three	d regulation of regulation of the control of the co	on method informer asynchrose form of the control o	ods for el mation to onous ma f exercise (ees)	lectrical ma echnology chine es and pract	icals		ase
5 6 7 8	Small and Laborator Measurer Short-circ Measurer Forms of Learning Participat Formal: Content: Forms of Written e Prerequis Module e Application Electrical Importance Percentag	I special motors by exercises: nent of the charcuit and no-load nent of the charcuit and relation of the charcuits for self-st ion requiremen	s for precision enginacteristics of a DC measurement of a facteristics of a three acteristics of a DC acteristics of a three acteristics of a	d regulation of regulation of the control of the co	on method informer asynchrose form of the control o	ods for el mation to onous ma f exercise (ees)	lectrical ma echnology chine es and pract	icals		ase

	er Systems									ELN	
ldent	ification ber:	Workload:		Credits:	Study	semeste	er:	Frequency offer	of the	Durati	ion:
4059		125 h		5	5th se	m.		Annual (Winter)		1 sem	ester
1	Course:		Pla	nned group siz	zes	Scope		Actual control / classroot teaching		Self-stu	ıdy
	Lecture		60	students		2	SCH	0	h	62.5	h
	Tuition in	seminars	30	students		0	SCH	0	h	0	h
	Exercise		20	students		2	SCH	16	h	46.5	h
	Practical	or seminar	15	students		0	SCH	0	h	0	h
	Supervise	ed self-study	60	students		0	SCH	0	h	0	h
	Learning outcomes/competences: The students know the calculation methods for calculating electrical networks and can ap calculate the load flow for a specific task. They can analyse symmetrical and non-symmetreat them mathematically.										
	treat them mathematically. Contents: Standardisation to related network data (per unit values) Calculation of energy transmission systems and networks Network protection and control technology Operation of electrical supply networks Network regulation Symmetrical short-circuit currents										
	Network i Symmetri Symmetri Treatmen	regulation cal short-circuical cal component t of unbalances	t curr								
1	Network in Symmetric Symmetric Treatment Star point	regulation cal short-circui cal component t of unbalances treatment	t curr								
1	Network is Symmetric Symmetric Treatmen Star point Forms of	regulation cal short-circui cal component t of unbalances treatment	t curr	ents	ions in t	he form	of exerc	cises			
	Network Symmetri Symmetri Treatmen Star point Forms of Learning Participat	regulation cal short-circui cal component t of unbalances treatment teaching:	t curres	ents	ions in t	he form	of exerc	cises			
	Network Symmetri Symmetri Treatmen Star point Forms of Learning Participat Formal:	regulation cal short-circui cal component t of unbalances treatment teaching: units for self-st	t curres	ents	ions in t	he form	of exerc	cises			
5	Network Symmetri Symmetri Treatmen Star point Forms of Learning Participat Formal: Content:	regulation ical short-circui ical component t of unbalances treatment teaching: units for self-st ion requiremen	t curres	ents	ions in t	he form	of exerc	cises			
5	Network Symmetri Symmetri Treatmen Star point Forms of Learning Participat Formal: Content: Forms of	regulation ical short-circuital components t of unbalances treatment teaching: units for self-st ion requiremen - assessment:	udy, c	ents classroom sessi	ions in t	he form	of exerc	cises			
4 5 6	Network Symmetri Symmetri Treatmen Star point Forms of Learning Participat Formal: Content: Forms of Written e Prerequis	regulation ical short-circuital components tof unbalances treatment teaching: units for self-st ion requiremen assessment: xamination or cite for the awar	udy, cts:	ents classroom sessi	ions in t	he form	of exerc	cises			
5	Network is Symmetric Symmetric Symmetric Treatmen Star point Forms of Learning Participat Formal: Content: Forms of Written e. Prerequis Module e Application	regulation ical short-circuit ical component it of unbalances it treatment teaching: units for self-st ion requiremen - assessment: xamination or of ite for the awar xamination pas on of the modulical short-circuit	udy, cts:	classroom sessi	study pr	ogramm	es)	cises			
5 5 7	Network Symmetri Symmetri Symmetri Treatmen Star point Forms of Learning Participat Formal: Content: Forms of Written e Prerequis Module e Applicatic Electrical	regulation ical short-circuit ical component t of unbalances treatment teaching: units for self-st ion requiremen - assessment: xamination or of ite for the awar xamination pas on of the modu Engineering (p	udy, cts:	classroom session camination redit points: the following some combined some	study pr	ogramm	es)	cises			
5	Network Symmetri Symmetri Treatmen Star point Forms of Learning Participat Formal: Content: Forms of Written e Prerequis Module e Applicative Electrical Importance	regulation ical short-circuit ical component it of unbalances it treatment teaching: units for self-st ion requiremen - assessment: xamination or of ite for the awar xamination pas on of the modulical short-circuit	udy, c udy, c tts:	classroom session sess	study pr	ogramm (B.Eng.)	es)		· BA §32		
5 7 3	Network Symmetri Symmetri Treatmen Star point Forms of Learning Participat Formal: Content: Forms of Written e. Prerequis Module e Application Electrical Important Percentage	regulation ical short-circuit ical component t of unbalances treatment teaching: units for self-st ion requiremen - assessment: xamination or of ite for the awar xamination pas on of the modul Engineering (poe of the grade	udy, c udy, c tts:	classroom session sess	study pr	ogramm (B.Eng.)	es)		· BA §32		
5 6 7	Network Symmetri Symmetri Treatmen Star point Forms of Learning Participat Formal: Content: Forms of Written e. Prerequis Module e Application Electrical Important Percentage	regulation ical short-circuit ical component it of unbalances it reatment iteaching: units for self-st ion requiremen - assessment: xamination or content ite for the awar xamination pas on of the modu Engineering (poe of the grade ite based on the	udy, c t curre s s udy, c tts:	classroom session sess	study pr	ogramm (B.Eng.)	es)		· BA §32		

Elect	tronics								ELK	
Ident	ification er:	Workload:	Credits:	Study	semeste	er:	Frequency offer	of the	Durat	ion:
4052		125 h	5	3rd se	em.		Annual (Winter)		1 sem	ester
1	Course:		Planned group s	izes	Scope	;	Actual c / classro teaching		Self-stu	ıdy
	Lecture		60 students		2	SCH	0	h	62.5	h
	Tuition in	seminars	30 students		0	SCH	0	h	0	h
	Exercise		20 students		2	SCH	16	h	46.5	h
	Practical of	or seminar	15 students		0	SCH	0	h	0	h
	Supervise study	d self	60 students		0	SCH	0	h	0	h
	characteri They und	stics, curves and	ysical properties models and verif circuits of the ab them for faults.	y the pos	sible app	olication	s of diodes,	bipolar and	MOSFE'	Γ transistors.
3	Rectifier of Voltage sign of Voltage in Bipolar tr. Design, of Voltage sign, of Voltage sign, of Voltage appropriate of Voltage appropria	circuits tabiliser with Z-o nultiplier ansistor perating principl tabilisation and o point stabilisati ct transistor perating principl polications	nodels, characteri diode e, types, characte constant current so on and AC voltag e, types, characte as switches in sw	ristic cur ource wit e amplifi ristic cur	ves, moc h bipola er ves, moc	del paran r transist del paran	tor		C and A	c
4	Forms of Learning	-	dy, classroom ses	sions in t	he form	of exerc	cises			
5	Participat: Formal: Content:	ion requirements	3:							
6	Forms of	assessment:								
7	Prerequisi	xamination or or ite for the award xamination pass	of credit points:							
8	Application	on of the module	e (in the following							
9	Importanc	ce of the grade for	or the final grade: um of credits of the				ling to RPO-	- BA §32		

LIICI	gy System	s							ESY	
Ident numb	ification per:	Workload:	Credits:	Study	semeste	er:	Frequency	of the	Durati	ion:
4073		125 h	5	6th se	em.		Annual (Summer)		1 sem	ester
1	Course:		Planned group si	zes	Scope		Actual c / classro teaching		Self-stu	ıdy
	Lecture		60 students		2	SCH	0	h	62.5	h
	Tuition in	seminars	30 students		0	SCH	0	h	0	h
	Exercise		20 students		2	SCH	16	h	46.5	h
	Practical of	or seminar	15 students		0	SCH	0	h	0	h
	Supervise	d self-study	60 students		0	SCH	0	h	0	h
	competen	, -								
	0 1 1									
3	Contents:									
3	Design an	d structure of d	ecentralised energy	supply	systems					
3	Design an Selected of	nd structure of d combined heat a	nd power plants		systems					
3	Design an Selected of Virtual po	nd structure of d combined heat a lower plants with	nd power plants control and regula		systems					
3	Design an Selected of Virtual po Smart grid	nd structure of d combined heat a lower plants with ds and micro gri	nd power plants control and regula		systems					
	Design an Selected of Virtual po Smart grid Energy an	nd structure of decombined heat a power plants with ds and micro grand load manager	nd power plants control and regula		systems					
4	Design an Selected of Virtual po Smart grid Energy an Forms of	ad structure of d combined heat a ower plants with ds and micro grad load manager teaching:	nd power plants control and regula	ntion			ises			
4	Design an Selected of Virtual po Smart grid Energy an Forms of Learning	ad structure of d combined heat a ower plants with ds and micro grad load manager teaching:	nd power plants control and regula ids ment systems	ntion			ises			
4	Design an Selected of Virtual pos Smart grid Energy an Forms of Learning Participat: Formal:	ad structure of d combined heat a ower plants with ds and micro gri ad load manager teaching: units for self-stu	nd power plants control and regula ids ment systems	ntion			ises			
4 5	Design an Selected of Virtual por Smart grid Energy and Forms of Learning Participate Formal:	ad structure of decombined heat a cower plants with ds and micro grad load manager teaching: units for self-structure ion requirement	nd power plants control and regula ids ment systems	ntion			ises			
	Design and Selected of Virtual post Smart grid Energy and Forms of Learning Participate Formal: Content: Forms of	ad structure of decombined heat a cower plants with ds and micro grad load manager teaching: units for self-structure ion requirement	nd power plants a control and regula ids ment systems ady, classroom sess is:	sions in t	he form		ises			
4 5	Design an Selected of Virtual positions of Energy and Forms of Learning Participate Formal: Content: Forms of Written on	ad structure of decombined heat a cower plants with ds and micro grad load manager teaching: units for self-structure ion requirement	and power plants a control and regula ids ment systems ady, classroom sess is:	sions in t	he form		ises			
4 5	Design an Selected of Virtual por Smart gride Energy and Forms of Learning Participate Formal: Content: Forms of Written of Prerequisit	ad structure of decombined heat a combined heat a cower plants with ds and micro grad load manager teaching: units for self-structure ion requirement	and power plants a control and regular ids ment systems ady, classroom sess s: on or combination of credit points:	sions in t	he form		ises			
4 5 6 7	Design an Selected of Virtual por Smart gride Energy and Forms of Learning Participate Formal: Content: Forms of Written of Prerequisity Module experience of Selection Preservation Preser	ad structure of decombined heat a combined heat a cower plants with ds and micro grad load manager teaching: units for self-structure ion requirement	and power plants a control and regular ids ment systems ady, classroom sess s: on or combination of credit points:	sions in t	he form	of exerc	ises			
4 5 6 7	Design an Selected of Virtual por Smart gride Energy are Forms of Learning Participate Formal: Content: Forms of Written of Prerequisis Module examplicated	ad structure of decombined heat a combined heat a cower plants with ds and micro grid load manager teaching: units for self-striction requirement	and power plants a control and regula ids ment systems ady, classroom sess s: on or combination I of credit points:	examina	he form	of exerc	ises			
4 5	Design an Selected of Virtual por Smart gride Energy are Forms of Learning Participate Formal: Content: Forms of Written of Prerequisity Module examplication Electrical	ad structure of decombined heat a cower plants with ds and micro grid load manager teaching: units for self-striction requirement	and power plants a control and regular ids ment systems ady, classroom sess s: on or combination d of credit points: see (in the following)	examina	he form	of exerc	ises			
4 5 6 7 8	Design and Selected of Virtual por Smart gride Energy are Forms of Learning Participate Formal: Content: Forms of Written of Prerequisis Module examplication Electrical Importance	ad structure of decombined heat a combined heat a cower plants with ds and micro grid load manager teaching: units for self-striction requirement	and power plants a control and regular dds ment systems ady, classroom sess s: on or combination d of credit points: see (in the following art-time combined)	examina study pr studies)	tion ogramm (B.Eng.)	of exerc		BA §32		
4 5 7 8	Design and Selected of Virtual por Smart gride Energy are Forms of Learning Participate Formal: Content: Forms of Written of Prerequisis Module examplication Electrical Important Percentage	ad structure of decombined heat a combined heat a cower plants with ds and micro grid load manager teaching: units for self-striction requirement	and power plants a control and regular dds ment systems addy, classroom sess s: on or combination d of credit points: se (in the following part-time combined for the final grade:	examina study pr studies)	tion ogramm (B.Eng.)	of exerc		· BA §32		
4 5 6 7 8 9	Design an Selected of Virtual por Smart gride Energy are Forms of Learning Participate Formal: Content: Forms of Written of Prerequisis Module end Application Electrical Importance Percentage	ad structure of decombined heat a combined heat a cower plants with ds and micro grid load manager teaching: units for self-striction requirement	and power plants a control and regular dds ment systems addy, classroom sess s: on or combination d of credit points: se (in the following part-time combined for the final grade:	examina study pr studies)	tion ogramm (B.Eng.)	of exerc		- BA §32		

Rene	ewable and	l Conventiona	l Power						EKE	
ldent numl	rification ber:	Workload:	Credits:	Study	/ semeste	er:	Frequency offer	of the	Durati	on:
4068		125 h	5	8th se	em.		Annual (Summer)		1 sem	ester
1	Course:		Planned group s	sizes	Scope		Actual control / classroot teaching		Self-stu	dy
	Lecture		60 students		2	SCH	0	h	62.5	h
	Tuition in	n seminars	30 students		0	SCH	0	h	0	h
	Exercise		20 students		1	SCH	8	h	38.5	h
	Practical	or seminar	15 students		1	SCH	16	h	0	h
	Supervise	ed self-study	60 students		0	SCH	0	h	0	h
3	Contents:	le energy suppl	V							
	Use of re	newable energy	sources							
4	Forms of		its							
•		U	tudy, classroom eve	ents in th	e form o	f exercis	es and pract	icals		
5	Participat	tion requiremen	ts:							
-	Formal:									
		-								
	Content:									
	Forms of	assessment:								
5	Forms of Written o	assessment: or oral examinat	ion or combination	ı examina	ation					
5	Forms of Written of Prerequis	assessment: or oral examinat ite for the awar	ion or combination		ation					
5 7	Forms of Written of Prerequise Module e	assessment: or oral examinat ite for the awar examination pas	ion or combination d of credit points: s and course assess	sment		as)				
5 7	Forms of Written of Prerequisi Module e Applicati	assessment: or oral examinatite for the awar examination passon of the modu	ion or combination d of credit points: s and course assess le (in the following	sment g study pr	rogramm					
5 7 3	Forms of Written of Prerequis Module e Applicati Electrical	assessment: or oral examinatite for the awar examination passon of the module Engineering (p	ion or combination of of credit points: as and course assess le (in the following part-time combined	sment g study pr l studies)	rogramm					
5 7 8	Forms of Written of Prerequist Module et Applicati Electrical Importan	assessment: or oral examinat ite for the awar examination pas on of the modul Engineering (p	ion or combination d of credit points: s and course assess le (in the following	sment g study pr l studies)	rogramm (B.Eng.));	ing to RPO-	· BA §32		
6 7 8	Forms of Written of Prerequis Module e Applicati Electrical Importan Percentag	assessment: or oral examinat ite for the awar examination pas on of the modul Engineering (p	ion or combination d of credit points: as and course assess le (in the following part-time combined for the final grade:	sment g study pr l studies)	rogramm (B.Eng.));	ing to RPO-	BA §32		
7 8	Forms of Written of Prerequis Module e Applicati Electrical Importan Percentag	assessment: or oral examinatite for the awar examination passon of the modul Engineering (page of the grade ge based on the	ion or combination d of credit points: as and course assess le (in the following part-time combined for the final grade: sum of credits of the	sment g study pr l studies)	rogramm (B.Eng.));	ing to RPO-	BA §32		
66 77 88 99	Forms of Written of Prerequision Module e Application Electrical Important Percentage Module of Prof. Dr	assessment: or oral examinatite for the awar examination passon of the modul Engineering (page of the grade ge based on the	ion or combination d of credit points: as and course assess le (in the following part-time combined for the final grade: sum of credits of the	sment g study pr l studies)	rogramm (B.Eng.));	ing to RPO-	· BA §32		

	etrical Engi	neering i							GET1	L
	tification ber:	Workload:	Credits:	Study	semeste	er:	Frequency offer	of the	Durati	ion:
1084	1	125 h	5	1st se	m.		Annual (Winter)		1 sem	ester
	Course:		Planned group s	sizes	Scope		Actual control / classroom teaching		Self-stu	ıdy
	Lecture		60 students		2	SCH	0	h	62.5	h
	Tuition in	n seminars	30 students		0	SCH	0	h	0	h
	Exercise		20 students		1	SCH	8	h	38.5	h
	Practical	or seminar	15 students		1	SCH	16	h	0	h
	Supervise	ed self-study	60 students		0	SCH	0	h	0	h
3	Contents		can understand th						,	
,		nd seminar:								
			electrical engineeri	nσ						
		es, four poles	decurear engineerr	ng.						
		on of electrical	circuits							
		nt circuits								
	•		direct current netw	orles						
		on of electrical		VOLKS						
			ic flow field, static		netic fie	ld				
		atic field, electr			netic fie	ld				
	Electrosta Practicals Voltage s	atic field, electr s: source	ic flow field, static		netic fie	ld				
	Electrosta Practicals Voltage s Temperat	atic field, electras: source ture-dependent	ic flow field, static		netic fie	ld				
4	Electrosta Practicals Voltage s Temperat Magnetic	atic field, electres: source ture-dependent secircuit	ic flow field, static		netic fie	ld				
1	Electrosta Practicals Voltage s Temperat Magnetic Forms of	atic field, electres: source ture-dependent ecircuit teaching:	ic flow field, station	onary mag			or and most	icala		
1	Electrosta Practicals Voltage s Temperat Magnetic Forms of	atic field, electres: source ture-dependent ecircuit teaching:	ic flow field, static	onary mag			es and pract	icals		
•	Electrosta Practicals Voltage s Temperal Magnetic Forms of Learning Participal	atic field, electres: source ture-dependent ecircuit teaching:	resistance udy, classroom ev	onary mag			es and pract	icals		
•	Electrosta Practicals Voltage s Temperal Magnetic Forms of Learning Participal Formal:	atic field, electres: source ture-dependent ecircuit teaching: units for self-st	resistance udy, classroom ev	onary mag			es and pract	icals		
5	Electrosta Practicals Voltage s Temperal Magnetic Forms of Learning Participal Formal: Content:	atic field, electres: source toure-dependent : circuit teaching: units for self-st	resistance udy, classroom ev	onary mag			es and pract	icals		
5	Electrost: Practicals Voltage s Temperal Magnetic Forms of Learning Participal Formal: Content: Forms of	atic field, electres: source ture-dependent : circuit teaching: units for self-st tion requiremen - assessment:	resistance udy, classroom ev	onary mag			es and pract	icals		
5	Practicals Voltage's Temperal Magnetic Forms of Learning Participal Formal: Content: Forms of Written e	atic field, electrics: source ture-dependent tecircuit teaching: units for self-st tion requiremen	resistance udy, classroom events:	onary mag			ses and pract	icals		
5	Electrosta Practicals Voltage s Temperal Magnetic Forms of Learning Participal Formal: Content: Forms of Written e Prerequis	atic field, electrics: source ture-dependent tecircuit teaching: units for self-st tion requirement	resistance udy, classroom events:	ents in the			es and pract	icals		
5	Electrosta Practicals Voltage s Temperal Magnetic Forms of Learning Participal Formal: Content: Forms of Written e Prerequis Module e	atic field, electrical secures ture-dependent secure teaching: units for self-station requirement	resistance udy, classroom events: d of credit points: s and course assess	ents in the	e form of	f exercis	es and pract	icals		
5 6 7 8	Electrosta Practicals Voltage s Temperal Magnetic Forms of Learning Participal Formal: Content: Forms of Written e Prerequis Module e Applicati	atic field, electrics: source ture-dependent teaching: units for self-st tion requiremen	resistance udy, classroom events:	ents in the	e form of	f exercis	es and pract	icals		
5 7 8	Electrosta Practicals Voltage s Temperal Magnetic Forms of Learning Participal Formal: Content: Forms of Written e Prerequis Module e Applicati Electrical	atic field, electris: source ture-dependent teaching: units for self-st tion requiremen	resistance udy, classroom events: d of credit points: s and course assessed (in the following	ents in the	e form of	f exercis	es and pract	icals		
5 6 7	Electrosta Practicals Voltage s Temperat Magnetic Forms of Learning Participal Formal: Content: Forms of Written e Prerequis Module e Applicati Electrical Importan	atic field, electris: source ture-dependent ecircuit teaching: units for self-st tion requiremen	resistance udy, classroom events: d of credit points: s and course assessed (in the following part-time combined)	ents in the	ogramm (B.Eng.)	es)				
5 5 7	Electrosta Practicals Voltage s Temperat Magnetic Forms of Learning Participal Formal: Content: Forms of Written e Prerequis Module e Applicati Electrical Importan Percentag	atic field, electris: source ture-dependent ecircuit teaching: units for self-st tion requiremen	resistance udy, classroom events: d of credit points: s and course assesses the (in the following poart-time combinect for the final grade: sum of credits of the combine th	ents in the	ogramm (B.Eng.)	es)				

Elec	trical Engi	neering II							GET2	2
dent	ification per:	Workload:	Credits:	Study	semeste	er:	Frequency offer	of the	Durat	ion:
4015		125 h	5	2nd s	em.		Annual (Summer)		1 sem	ester
1	Course:	•	Planned group s	sizes	Scope		Actual c / classro teaching		Self-stu	ıdy
	Lecture		60 students		2	SCH	0	h	62.5	h
	Tuition in	seminars	30 students		0	SCH	0	h	0	h
	Exercise		20 students		1	SCH	8	h	38.5	h
	Practical	or seminar	15 students		1	SCH	16	h	0	h
	Supervise	ed self-study	60 students		0	SCH	0	h	0	h
2	Learning	outcomes/com	petences:			I	-			ı
			xplain and calculate and three-phase system		erties of	f electron	magnetic fie	lds. They ca	ın calcula	ite, measi
3	Contents:									
	Lecture a	nd seminar:								
	The time-	varying electro	magnetic field							
		ge and AC curr	-							
			rent calculation							
			ernating current							
	Symmetri	ical three-phase	e systems							
	Power an	d energy with s	ymmetrical load							
	Practicals		•							
	Modellin	g of real passiv	e components							
		ristics of AC cir								
	Symmetri	ical/unbalanced	three-phase netwo	ork						
1	Forms of		•							
	Learning	units for self-st	tudy, classroom eve	ents in the	e form o	f exercis	ses and pract	ticals		
5	Participat	ion requiremen	its:							
	Formal:	-								
	Content:	-								
5	Forms of	assessment:								
		xamination								
7	Prerequis	ite for the awar	d of credit points:							
			s and course assess							
3			le (in the following							
		0 0 1	part-time combined		(B.Eng.));				
)	_	_	for the final grade: sum of credits of the		module	s accord	ling to RPO-	- BA §32		
10	Module c	oordinator:								
	Prof. Dr	Ing. Jens Haub	rock							
1	Other info									
	_									

Fund	amentals o	of Energy Tec	hnology						GETI	ζ
Identi numb	fication er:	Workload:	Credits:	Study	semeste	er:	Frequency offer	of the	Durati	on:
4051		125 h	5	3rd se	em.		Annual (Winter)		1 sem	ester
1	Course:		Planned group s	sizes	Scope		Actual co / classroo teaching		Self-stu	ldy
	Lecture		60 students		2	SCH	0	h	62.5	h
	Tuition in	seminars	30 students		0	SCH	0	h	0	h
	Exercise		20 students		2	SCH	16	h	46.5	h
	Practical of	or seminar	15 students		0	SCH	0	h	0	h
	Supervise	d self-study	60 students		0	SCH	0	h	0	h
	present an		cribe and analyse rical generators an ystems.							
3	High-volt Design of Power tra	transmission a	system ent transmission nd distribution net distribution equipm							
4	Forms of	teaching:	udy, classroom ses	ssions in t	he form	of exerc	ises			
5	Participat: Formal: Content:	ion requirement	ts:							
	Forms of	accecement.								
6			ral examination							
	Written ex Prerequisi	xamination or o	ral examination d of credit points:							
7	Written ex Prerequisi Module ex Application	xamination or o ite for the award xamination pass on of the modul	d of credit points: s e (in the following	• •	_					
6 7 8 9	Written ex Prerequisi Module ex Application Electrical Importance	xamination or of the for the award xamination passon of the modul Engineering (poe of the grade for	d of credit points:	studies)	(B.Eng.));	ing to RPO-	BA §32		
7	Written ex Prerequisi Module ex Application Electrical Importance Percentag	xamination or of the for the award xamination passon of the modul Engineering (poe of the grade for	d of credit points: s e (in the following art-time combined for the final grade: sum of credits of the final grade)	studies)	(B.Eng.));	ing to RPO-	· BA §32		

High	-Voltage T	echnolo	ogy							HAS	Γ
Ident	ification	Worklo	oad:	Credits:	Study	semeste	er:	Frequency offer	of the	Durati	ion:
4083		125 h		5	8th se	m.		Annual (Summer)		1 sem	ester
1	Course:		P	lanned group si	izes	Scope		(Self-stu	ıdy
	Lecture		6	0 students		2	SCH	0	h	62.5	h
	Tuition in	seminar		0 students		0	SCH	0	h	0	h
	Exercise		2	0 students		2	SCH	16	h	46.5	h
	Practical of	or semina		5 students		0	SCH	0	h	0	h
	Supervise	d self-stu	idy 6	0 students		0	SCH	0	h	0	h
2	as explain they can e	nts are al and ana xplain th y and hig	ole to pres lyse the in e structure	nces: ent the basics o terrelationships e of an insulatio direct current t	s, strengtl on system	n and str n. With r	ess of ar	n insulating i both high-v	material systolitage three	tem. Furt -phase cu	hermore, irrent
3	IntroCaloBasiInsuHigl	oduction culation of cs of high lating many nating many nating many national tage	to high-voor electric h-voltage aterial sys	ation of high vooltage testing te- fields insulation techn tems in high-vorrent technology	chnology nology oltage equ	,	S				
4	Forms of	_									
				, classroom sess	sions in t	he form	of exerc	cises			
5	Participati Formal:	on requi	rements:								
	Content:										
6	Forms of	assessme	nt:								
Ü	Written or	oral exa	mination	or project work							
7	_			credit points:							
	Module ex			1 6 11							
8	~ ~			n the following time combined		-					
9				the final grade:	studies)	(D.Elig.,	,				
9	_			of credits of th	e graded	module	s accord	ling to RPO-	BA §32		
10	Module co										
	Prof. Dr			3							
11	Other info	rmation:									

Indus	strial Man	agement							IBL	
ldenti numb	fication er:	Workload:	Credits:	Study	semeste	er:	Frequency offer	of the	Durat	ion:
4018		125 h	5	4th se	em.		Annual (Summer)		1 sem	ester
1	Course:	,	Planned group	sizes	Scope		Actual c / classro teaching		Self-stu	ıdy
	Lecture		60 students		2	SCH	0	h	62.5	h
	Tuition in	seminars	30 students		0	SCH	0	h	0	h
	Exercise		20 students		2	SCH	16	h	46.5	h
	Practical	or seminar	15 students		0	SCH	0	h	0	h
	Supervise	ed self-study	60 students		0	SCH	0	h	0	h
,	Students	outcomes/com are able to erstand the eco	petences:	nships wi	thin indu	strial co	ompanies.			
	carrassemakadd	y out investme ess the relevand te rational deci	ent calculations using the of key performate sions to solve prob functions and solve	ng both si nce indica blems in a	mple sta ator syste ccordanc	tic and or ems for e	dynamic met evaluating d he company	ifferent areas 's objectives		
3	industrial Objective Operation Materials Production	are taught the bar management. of the industrial organisation management:	n: Process and orga Materials, purchas :: Production plann	inisationa	l structur	re, proje nning/qu	ct managem	ent ing, warehou	ise mana	gement
<u> </u>	Overview Cost type Financing Key figur	and investments of controlling teaching:	counting ccounting, cost un nts ng							
			tudy, classroom se	ssions in	the form	of exerc	cises			
5	Formal:	ion requiremen	ıts:							
	Content:	-								
i		assessment:	oral examination							
			rd of credit points:							
	Module e	xamination pas	SS	a atr1		22)				
	Electrical		tle (in the following part-time combined in its part-time combined in		_		anical Engin	eering (part-	time	
)	Importan	ce of the grade	for the final grade sum of credits of t		l module	s accord	ling to RPO-	- BA §32		
10		oordinator:								
. 0										
11	Prof. Dr Other info	Ing. Michael F	Fahrig							

Con	puter Scie	nce							INFO	01
Ident numl	ification per:	Workload:	Credits:	Study	semeste	er:	Frequency	of the	Durati	ion:
4057		125 h	5	4th se			Annual (Summer)		1 sem	
1	Course:		Planned group si	zes	Scope		Actual control / classroot teaching		Self-stu	ıdy
	Lecture		60 students		2	SCH	0	h	62.5	h
	Tuition in	seminars	30 students		0	SCH	0	h	0	h
	Exercise		20 students		2	SCH	16	h	46.5	h
	Practical of	or seminar	15 students		0	SCH	0	h	0	h
	Supervise	ed self-study	60 students		0	SCH	0	h	0	h
	computer	science.		-		describe				
3	Contents: Contents: Digi The Dea	ital computer: Sory and practice	Structure/component e of imperative/propriate development	cedural p	orogramı	ces ming e.g.		-		
3	Contents: Contents: Digi The Dea	ital computer: Sory and practice ling with appro	e of imperative/pro- priate development	cedural p tools gr	orogrami aphic aid	ces ming e.g.	sign, e.g. pr	-		
	Contents: Contents: Digi The Dea data Fini	ital computer: Sory and practice ling with approastructures and te automata and teaching:	e of imperative/proc priate development algorithms I formal languages	cedural process tools grawith a v	orogrami aphic aid	ces ming e.g ds for de ontrol en	sign, e.g. pr	-		
1	Contents: Contents: Digi The Dea data Fini Forms of Learning	ital computer: Sory and practice ling with appro structures and te automata and teaching: units for self-st	e of imperative/pro- priate development algorithms I formal languages udy, classroom sess	cedural process tools grawith a v	orogrami aphic aid	ces ming e.g ds for de ontrol en	sign, e.g. pr	-		
1	Contents: Contents: Digi The Dea data Fini Forms of Learning Participat	ital computer: Sory and practice ling with approastructures and te automata and teaching: units for self-stion requirement	e of imperative/pro- priate development algorithms I formal languages udy, classroom sess	cedural process tools grawith a v	orogrami aphic aid	ces ming e.g ds for de ontrol en	sign, e.g. pr	-		
1	Contents: Contents: Digi The Dea data Fini Forms of Learning Participat Formal:	ital computer: Sory and practice ling with approact structures and te automata and teaching: units for self-strion requirements	e of imperative/pro- priate development algorithms I formal languages udy, classroom sess	cedural process tools grawith a v	orogrami aphic aid	ces ming e.g ds for de ontrol en	sign, e.g. pr	-		
1	Contents: Contents: Digi The Dea data Fini Forms of Learning Participat Formal: Content:	ital computer: Sory and practice ling with approastructures and te automata and teaching: units for self-strion requirements	e of imperative/pro- priate development algorithms I formal languages udy, classroom sess	cedural process tools grawith a v	orogrami aphic aid	ces ming e.g ds for de ontrol en	sign, e.g. pr	-		
1	Contents: Contents: Digion The Deadata Fini Forms of Learning Participat Formal: Content: Forms of	ital computer: Sory and practice ling with approximate automata and teaching: units for self-strion requirements assessment:	e of imperative/pro- priate development algorithms d formal languages udy, classroom sess ts:	cedural procedural pro	orogrami aphic aid	ces ming e.g ds for de ontrol en	sign, e.g. pr	-		
14 55	Contents: Contents: Digi The Dea data Fini Forms of Learning Participatt Formal: Content: Forms of Written or	ital computer: Sory and practice ling with approximate automata and teaching: units for self-stion requirement	e of imperative/pro- priate development algorithms I formal languages udy, classroom sess ts:	cedural procedural pro	orogrami aphic aid	ces ming e.g ds for de ontrol en	sign, e.g. pr	-		
1	Contents: Contents: Digi The Dea data Fini Forms of Learning Participat Formal: Content: Forms of Written of Prerequisi	ital computer: Sory and practice ling with approximate automata and teaching: units for self-stion requirement	e of imperative/pro- priate development algorithms d formal languages udy, classroom sess ts:	cedural procedural pro	orogrami aphic aid	ces ming e.g ds for de ontrol en	sign, e.g. pr	-		
5	Contents: Onigi The Dea data Fini Forms of Learning Participati Formal: Content: Forms of Written or Prerequisi Module e: Application	ital computer: Sory and practice ling with appropriate automata and teaching: units for self-stion requirement - -	e of imperative/pro- priate development algorithms d formal languages udy, classroom sess ts:	cedural particles tools grawith a visions in t	orogrami aphic aid iew to co	ces ming e.g ds for de ontrol en of exerc	sign, e.g. pr	-		
4 5 5 7	Contents: Onigi The Dea data Fini Forms of Learning Participate Formal: Content: Forms of Written or Prerequisi Module e: Application	ital computer: Sory and practice ling with appropriate automata and teaching: units for self-strice ion requirement - -	e of imperative/propriate development algorithms I formal languages udy, classroom sess ts: ion or project work d of credit points: s le (in the following part-time combined	cedural particles tools grawith a visions in t	orogrami aphic aid iew to co	ces ming e.g ds for de ontrol en of exerc	sign, e.g. pr	-		
4 5 7	Contents: Contents: Digi The Dea data Fini Forms of Learning Participate Formal: Content: Forms of Written of Prerequise Module et Applicatio Electrical	ital computer: Sory and practice of the grade for the grad	e of imperative/pro- priate development algorithms d formal languages udy, classroom sess ts:	study pr	orogramm aphic aid iew to co	ces ming e.g ds for de ontrol en of exerc es)	sign, e.g. pr	ogramme fl		
4 5 7 3	Contents: Contents: Digi The Dea data Fini Forms of Learning Participate Formal: Content: Forms of Written of Prerequise Module ex Application Electrical Important Percentag	ital computer: Sory and practice of the grade it ge based on the story and practice or a structures and te automata and teaching: units for self-striction requirements in requirements it for the award xamination passes on of the modul Engineering (poe of the grade it ge based on the story and practice or the structure of the grade it ge based on the structure of the grade it ge based on the structure of the grade it ge based on the structure of the grade it ge based on the structure of the grade it ge based on the structure of the grade it gets a structu	e of imperative/propriate development algorithms of formal languages udy, classroom sessits: ion or project work of of credit points: sele (in the following part-time combined for the final grade:	study pr	orogramm aphic aid iew to co	ces ming e.g ds for de ontrol en of exerc es)	sign, e.g. pr	ogramme fl		
3 4 5 7 7 8 9	Contents: Contents: Digi The Dea data Fini Forms of Learning Participat: Formal: Content: Forms of Written or Prerequisi Module ex Application Electrical Importance Percentag	ital computer: Sory and practice of the grade for the grad	e of imperative/propriate development algorithms of formal languages udy, classroom sessits: ion or project work of of credit points: s le (in the following lart-time combined for the final grade: sum of credits of the	study pr	orogramm aphic aid iew to co	ces ming e.g ds for de ontrol en of exerc es)	sign, e.g. pr	ogramme fl		

Collo	oquium								KOL	
Identi numb	fication er:	Workload:	Credits:	Study	semeste	er:	Frequency offer		Durat	ion:
1290		75 h	3	9th se	em.		each seme	ster	1 sem	ester
1	Course:		Planned group s	izes	Scope		Actual continue / classifications	assroom	Self-stu	ıdy
	Lecture		60 students		0	SCH	0	h	75	h
	Tuition in	seminars	30 students		0	SCH	0	h	0	h
	Exercise		20 students		0	SCH	0	h	0	h
	Practical of	or seminar	15 students		0	SCH	0	h	0	h
	Supervise	d self-study	60 students		0	SCH	0	h	0	h
	related for justify the	undations, its	students show that the interdisciplinary cores. Students can criticate.	nnections	and its	extra-sul	bject-related	references	orally and	d to
3	Contents:									
	thesis acco	ording to the	ements the master the topic are used in writing the							nvironme
4	Forms of	teaching:								
•	Oral exam	_								
5	Participati	ion requirem	ents:							
	Formal:	mu	modules of the study	mpleted.	nme mus	st be suc	cessfully co	mpleted. Th	he bachelo	or thesis
	Content:		atment of the bachel	or thesis						
6		assessment: nination for a	maximum duration of	of 75 mir	nutes					
7	Prerequisi Passed co		ard of credit points:							
8	Application Electrical	on of the mod	lule (in the following (part-time combined	• •	•		anical Engin	eering (part	t-time	
9	Importanc	e of the grad	e for the final grade: the sum of credits of the		l module	s accord	ling to RPO-	- BA §32		
10		oordinator: Ing. Michael	Fahrig							
11	Other info									
11	o and info									

	er Electron	ics							LEE	
Ident numb	ification er:	Workload:	Credits:	Study	semeste	er:	Frequency offer	of the	Durati	ion:
4064		125 h	5	6th se	em.		Annual (Summer)		1 sem	ester
1	Course:		Planned group s	izes	Scope	;	Actual c / classro teaching		Self-stu	ıdy
	Lecture		60 students		2	SCH	0	h	62.5	h
	Tuition in	seminars	30 students		0	SCH	0	h	0	h
	Exercise		20 students		1	SCH	8	h	38.5	h
		or seminar	15 students		1	SCH	16	h	0	h
	•	d self-study outcomes/comp	60 students		0	SCH	0	h	0	h
	They have conditions successful create pov	e knowledge of s for the interfer I completion of wer balances.	appliances to thre electromagnetic co ence-free interacti the module, the st	ompatibil on of mi	lity (EM cro- and	C) and c power e	an therefore lectronics ir	present and a structured	explain I manner	. After
3	B6) Rectifier, Efficienci Control, p Three-pha Grid-frien Monolithi (power ch Innovative decentrali	inverter, convertes, harmonics (inverter) and consection and consection with I dily power convection of power powers (inverte before the converte	ommutatorless, line feer and four-quade Fourier), power ca polling of power el GBT frequency co ferters with power fer electronics (ence cation for power el agement	rant operal lculation ectronic of converters factor co ergy) and	ation s compone (space v ontrol (Pl microel	ents vector market FC) ectronical	odulation) s (informatio	on) on one se	emicondo	uctor chip
4	Forms of Learning		ıdy, classroom eve	ents in the	e form o	f exercis	es and pract	icals		
5	Participati Formal: Content:	ion requirement	s:							
6	Forms of	assessment: xamination or o	ral examination							
	Prerequisi	ite for the award	of credit points:	ment						
7	Module ex				ooromm	ies)				
	Application	on of the modul	e (in the following art-time combined							
7 8 9	Application Electrical Important	on of the modul Engineering (pose of the grade f	e (in the following art-time combined for the final grade: sum of credits of the	studies)	(B.Eng.));	ing to RPO-	- BA §32		
8	Application Electrical Important Percentag	on of the modul Engineering (pose of the grade f	art-time combined or the final grade: um of credits of th	studies)	(B.Eng.));	ing to RPO-	- BA §32		

	nematics I								MAT	1
Ident numb	ification per:	Workload:	Credits:	Study	semeste	er:	Frequency offer	of the	Durati	on:
4002		125 h	5	1st se	m.		Annual (Winter)		1 sem	ester
1	Course:		Planned group s	sizes	Scope		Actual c / classro teaching		Self-stu	dy
	Lecture		60 students		2	SCH	0	h	62.5	h
	Tuition in	n seminars	30 students		0	SCH	0	h	0	h
	Exercise		20 students		2	SCH	16	h	46.5	h
	Practical	or seminar	15 students		0	SCH	0	h	0	h
	Supervise	ed self-study	60 students		0	SCH	0	h	0	h
2	Learning	outcomes/comp	petences:		l .			I		
_	U		h the different nun	nher range	es as we	ll as the	hasics of se	t theory and	element	ary logic
			ne the solution sets							
	The stude	ents know the ba	asics of real number al functions and the and can apply it t	er sequend eir charac	ces and i	nfinite s propertie	eries. They es. In additio	are familiar on, they mas	with real	functions
3	Contents: Basic fea		unges, set theory, e	lementary	logic, i	nequalit	ies			
	represent	ation, basic arit	sian number plane hmetic operations, umber sequences, p	exponent	iation, r	oot extra it value	of a sequence	ogarithmic of ce, infinite so	perations eries, con	vergence
	Real function and Special futrigonome Different	continuity of re unctions: Integra etric functions	al functions, fractions fractions, fractions,	onal funct	ions, ex	ponentia	l functions,	_	unctions,	
4	Real function limit and Special futrigonome Different: L'Hospita	continuity of re unctions: Integrateric functions ial calculus: Dif al, curve discuss teaching:	al functions al functions, fraction ferential quotient, ion	onal funct	ions, ex	ponentia	ll functions,	_	unctions,	
	Real function limit and Special for trigonomer Different L'Hospita	continuity of re unctions: Integrated etric functions ial calculus: Difal, curve discuss teaching: units for self-st	al functions al functions, fraction ferential quotient, ion udy, classroom ses	onal funct	ions, ex	ponentia	ll functions,	_	unctions,	
4 5	Real function limit and Special for trigonome Different L'Hospita Forms of Learning Participat	continuity of re unctions: Integrateric functions ial calculus: Dif al, curve discuss teaching:	al functions al functions, fraction ferential quotient, ion udy, classroom ses	onal funct	ions, ex	ponentia	ll functions,	_	unctions,	
	Real function limit and Special futrigonome Different L'Hospita Forms of Learning Participat Formal:	continuity of re unctions: Integretric functions ial calculus: Difal, curve discuss teaching: units for self-station requiremen	al functions al functions, fraction ferential quotient, ion udy, classroom ses	onal funct	ions, ex	ponentia	ll functions,	_	unctions,	
5	Real function limit and Special futrigonome Different L'Hospita Forms of Learning Participat Formal: Content:	continuity of reunctions: Integretric functions ial calculus: Difal, curve discuss teaching: units for self-stion requiremen	al functions al functions, fraction ferential quotient, ion udy, classroom ses	onal funct	ions, ex	ponentia	ll functions,	_	unctions,	
	Real function limit and Special futrigonome Different L'Hospita Forms of Learning Participat Formal: Content: Forms of	continuity of reunctions: Integretic functions ial calculus: Dital, curve discuss teaching: units for self-stion requiremen - assessment:	al functions al functions, fraction ferential quotient, ion udy, classroom sests:	onal funct	ions, ex	ponentia	ll functions,	_	unctions,	
5	Real function limit and Special for trigonomy Different L'Hospital Forms of Learning Participatt Formal: Content: Forms of Written e	continuity of reconctions: Integrateric functions ial calculus: Difal, curve discuss teaching: units for self-station requiremen - assessment: xamination or continuity of requirements.	al functions al functions, fraction ferential quotient, ion udy, classroom ses	onal funct	ions, ex	ponentia	ll functions,	_	unctions,	
5 6 7	Real function limit and Special for trigonome Different L'Hospita Forms of Learning Participat Formal: Content: Forms of Written e Prerequis Module e	continuity of reconctions: Integrateric functions ial calculus: Difal, curve discuss teaching: units for self-station requiremen	al functions al functions, fraction ferential quotient, ion udy, classroom ses ts: oral examination d of credit points:	onal funct	derivation	ponentiann, specia	ll functions,	_	unctions,	
6	Real function in the state of t	continuity of reunctions: Integretic functions ial calculus: Did al, curve discuss teaching: units for self-station requirement	al functions al functions, fraction ferential quotient, ion udy, classroom sests: oral examination d of credit points: s le (in the following part-time combined	onal funct	he form	ponentiann, specianof exercises	al functions,	rules techni	unctions,	
5 6 7	Real function in the content of the	continuity of result continuity of result continuity of result continuity. Integrietric functions ial calculus: Difful, curve discuss teaching: units for self-station requirement	al functions al functions, fraction al functions, fraction ferential quotient, ion udy, classroom sests: oral examination d of credit points: s le (in the following part-time combined g.); for the final grade:	rules of d	he form ogramm (B.Eng.)	of exerces); Mecha	al functions, al derivation sises	rules techni	unctions,	
5 6 7 8	Real function in the content of the	continuity of respective continuity of respective continuity of respective continuity. Integrited the continuity of the	al functions al functions, fraction ferential quotient, ion udy, classroom sests: oral examination d of credit points: s le (in the following part-time combined g.);	rules of d	he form ogramm (B.Eng.)	of exerces); Mecha	al functions, al derivation sises	rules techni	unctions,	
5 6 7 8	Real functional functions and Special functions of the trigonome different L'Hospital Forms of Learning Participate Formal: Content: Forms of Written e Prerequise Module e Application Electrical combined Important Percentage Module c	continuity of resunctions: Integrateric functions ial calculus: Difal, curve discuss teaching: units for self-station requirement	al functions al functions, fraction al functions, fraction ferential quotient, ion udy, classroom sests: oral examination d of credit points: s le (in the following part-time combined g.); for the final grade:	rules of d	he form ogramm (B.Eng.)	of exerces); Mecha	al functions, al derivation sises	rules techni	unctions,	
5 6 7 8	Real functional functions and Special functions of the trigonome different L'Hospital Forms of Learning Participate Formal: Content: Forms of Written e Prerequise Module e Application Electrical combined Important Percentage Module c	continuity of resunctions: Integrateric functions ial calculus: Difal, curve discuss teaching: units for self-station requiremen	al functions al functions, fraction al functions, fraction ferential quotient, ion udy, classroom sests: oral examination d of credit points: s le (in the following part-time combined g.); for the final grade:	rules of d	he form ogramm (B.Eng.)	of exerces); Mecha	al functions, al derivation sises	rules techni	unctions,	

Math	nematics II									MAT	2
Ident	ification er:	Workl	oad:	Credits:	Study	semeste	er:	Frequency offer	of the	Durat	ion:
4006		125 h		5	2nd se	em.		Annual (Summer)		1 sem	ester
1	Course:			Planned group si	zes	Scope		Actual control / classroot teaching	_	Self-stu	ıdy
	Lecture			60 students		2	SCH	0	h	62.5	h
	Tuition in	seminar	rs :	30 students		0	SCH	0	h	0	h
	Exercise			20 students		2	SCH	16	h	46.5	h
	Practical of	or semin	ar	15 students		0	SCH	0	h	0	h
	Supervise	d self-st	udy	60 students		0	SCH	0	h	0	h
2	The stude	re famil of integrants know the to app	iar with pal calculu the basicoly them i	ower series and to an can integra concepts of vecin geometric continear equation sy	te real fu tor calcu texts. Th	inctions ilus, mas	using th	ne techniques various arith	s covered. metic operat	tions with	h vectors
3	Contents:										
	Integral ca integral ca Vector cal product, s Linear alg	alculus: I alculus, I culus: V par prod ebra: Ca al form,	Definite a pasic or make of the control of the cont	behaviour, proper and indefinite into master integrals, in erations, scalar proper representation with matrices, mandan method, sol	egrals, in ntegration roduct, nof geom- natrix pro-	ntegration n methor-dimens etric related	n rules, nods, applional vectionship atrionship	ication of in ctor space, le os presentation	tegral calcul inear depend of linear sys	lus dency, ve stems of e	
4	Forms of	teaching	:								
				y, classroom sess	sions in t	he form	of exerc	cises			
5	Participati	on requi	rements:								
	Formal:		-								
	Content:		-								
6	Forms of a			examination							
7	Prerequisi	te for th	e award o	of credit points:							
8	Module ex			in the following	etudy ne	Ogramm	es)				
o	Electrical	Enginee	ring (part	time combined		-		nnical Engin	eering (part-	-time	
9	combined			the final grade:							
9	•		_	n of credits of the	e graded	module	s accord	ling to RPO-	BA §32		
10	Module co										
	Sabine Lü										
11	Other info	rmation	:								
	-										

Matl	nematics II	Ι							MAT	3
dent	rification per:	Workload:	Credits:	Study	semeste	er:	Frequency offer	of the	Durat	ion:
4009		125 h	5	3rd se	em.		Annual (Winter)		1 sem	ester
1	Course:		Planned group s	sizes	Scope		Actual control / classroom teaching		Self-stu	ıdy
	Lecture		60 students		2	SCH	0	h	62.5	h
	Tuition in	seminars	30 students		0	SCH	0	h	0	h
	Exercise		20 students		2	SCH	16	h	46.5	h
	Practical	or seminar	15 students		0	SCH	0	h	0	h
	Supervise	ed self-study	60 students		0	SCH	0	h	0	h
2	The stude linear diff equations The stude	ferential equation with constant on the best feet of the constant of the best feet of the constant of the best feet of the constant of the con	with ordinary diffons with constant c	oefficient of severa	ts. They	are able es.	to set up an	d solve line	ar differe	ntial
3	Contents:									
	theorem, inhomoge Functions Partial an	fundamental sy eneous equation s of several vari	nations: Dgl. 1 orderstems, exponential and systems of linear ables: Definition a tiability, gradient a	theorem, equation rea, limit	charact s with co value ar	eristic ed onstant c nd contin	quation, oscionests outty,	illations, sp	ecial solu	tion of tl
4	Forms of									
			tudy, classroom ses	ssions in t	he form	of exerc	eises			
5	Participat Formal:	ion requiremen	its:							
	Content:	Mast	ery of the learning	content o	f the mo	dules M	[athematics]	I and Mathe	matics II	
6		assessment:								
7	Prerequis	ite for the awar	oral examination of of credit points:							
8		xamination pas	s le (in the following	study pr	ooramm	es)				
o	Electrical		part-time combined	• •	•		nical Engin	eering (part	-time	
9	Importan	ce of the grade	for the final grade: sum of credits of the		module	s accord	ing to RPO-	BA §32		
10		oordinator:								
	L Sabine Li	ike M.Sc.								
11	Other info									

Matl	nematics I	V							MAT	' 4
Ident numb	ification per:	Workload:	Credits:	Study	semeste	er:	Frequency offer	of the	Durati	ion:
4055		125 h	5	4th se	m.		Annual (Summer)		1 sem	ester
1	Course:		Planned group s	sizes	Scope		Actual control / classroot teaching		Self-stu	ıdy
	Lecture		60 students		2	SCH	0	h	62.5	h
	Tuition in	seminars	30 students		0	SCH	0	h	0	h
	Exercise		20 students		2	SCH	16	h	46.5	h
	Practical	or seminar	15 students		0	SCH	0	h	0	h
	Supervise	ed self-study	60 students		0	SCH	0	h	0	h
2	Learning	outcomes/comp	etences:							
	The stude	ents know the ba	ney are familiar wind it is is is so of the Laplace it is a fact that is a fact t	e transfor	m and it	s advant	ages in appl	ication. In a		hey
2	The stude are able to	ents know the ba o solve different	sics of the Laplac	e transfor	m and it	s advant	ages in appl	ication. In a		hey
3	Contents: Fourier tr	ents know the ba to solve different eries ansform	sics of the Laplac	e transfor	m and it	s advant	ages in appl	ication. In a		hey
	The stude are able to Contents:	ents know the bate of solve different of solve diff	sics of the Laplac	e transfor	m and it	s advant	ages in appl	ication. In a		hey
	Contents: Fourier services Fourier tr Laplace tr Forms of Self-study	ents know the base of solve different of solve diff	isics of the Laplac tial equation syste	e transfor ms with th	m and it	s advant	ages in appl place transf	ication. In a		hey
3 4 5	Contents: Fourier so Fourier tr Laplace tr Forms of Self-study	ents know the bate of solve different of solve diff	isics of the Laplac tial equation syste	e transfor ms with th	m and it	s advant	ages in appl place transf	ication. In a		hey
4	Contents: Fourier se Fourier tr Laplace tr Forms of Self-stud Participat Formal:	ents know the base of solve different of solve diff	isics of the Laplac tial equation syste	e transfor ms with th	m and it	s advant	ages in appl place transf	ication. In a		hey
5	Contents: Fourier services forms of Self-study Participatt Formal: Content:	eries eries eransform reaching: y in the form of ion requirement	isics of the Laplac tial equation syste	e transfor ms with th	m and it	s advant	ages in appl place transf	ication. In a		hey
4	Contents: Fourier se Fourier tr Laplace tr Forms of Self-study Participat Formal: Content: Forms of	eries	isics of the Laplac tial equation syste	e transfor ms with th	m and it	s advant	ages in appl place transf	ication. In a		hey
5	Contents: Fourier se Fourier tr Laplace tr Forms of Self-study Participat Formal: Content: Forms of Written e	ents know the base of solve different series ansform teaching: y in the form of ion requirement	learning letters, cl	e transfor ms with th	m and it	s advant	ages in appl place transf	ication. In a		hey
5	Contents: Fourier services Fourier traplace trap	ents know the base of solve different series ansform teaching: y in the form of ion requirement	learning letters, cl	e transfor ms with th	m and it	s advant	ages in appl place transf	ication. In a		hey
4 5 6	Contents: Fourier se Fourier tr Laplace tr Forms of Self-study Participat Formal: Content: Forms of Written e Prerequis Module e Application	eries sansform teaching: y in the form of ion requirement: xamination ite for the award xamination passon of the module	learning letters, class: d of credit points: s e (in the following	lassroom	m and it	in the fo	ages in appl place transf	ication. In a		hey
5 6 7	Contents: Fourier services Fourier traplace trap	eries sansform teaching: y in the form of ion requirement: xamination ite for the award xamination passon of the modul Engineering (p.	learning letters, class: d of credit points: see (in the following art-time combined)	lassroom	m and it	in the fo	ages in appl place transf	ication. In a		hey
5 5 7	Contents: Fourier services Fourier tr Laplace tr Forms of Self-study Participat Formal: Content: Forms of Written e Prerequis Module e Applicative Electrical Importance	eries eries eries eriansform teaching: y in the form of ion requirement - assessment: xamination ite for the award xamination pass on of the modul Engineering (poe of the grade f	learning letters, class: d of credit points: s e (in the following	lassroom	m and it he help of deaching ogramm (B.Eng.)	in the fo	ages in appl place transf	ication. In a orm.		hey
14 55 77 73 8	Contents: Fourier services fourier traplace trap	eries eries eries eriansform teaching: y in the form of ion requirement - assessment: xamination ite for the award xamination pass on of the modul Engineering (poee of the grade f	learning letters, class: I of credit points:	lassroom	m and it he help of deaching ogramm (B.Eng.)	in the fo	ages in appl place transf	ication. In a orm.		hey
5	Contents: Fourier services fourier tr. Laplace tr. Forms of Self-study Participat Formal: Content: Forms of Written e Prerequis Module e Application Electrical Important Percentag	eries eries eries eransform ransform teaching: y in the form of ion requirement - assessment: xamination ite for the award xamination pass on of the modul Engineering (p	learning letters, class: I of credit points:	lassroom	m and it he help of deaching ogramm (B.Eng.)	in the fo	ages in appl place transf	ication. In a orm.		hey

Mec	chatronic S	ystems							MES	Y
Identification number:		Workload:	Credits:	Stud	Study semester:		Frequency of the offer		Duration:	
4085		125 h	5	8th s	8th sem.		Annual (Summer)		1 semester	
1	Course:		Planned group si	Planned group sizes			Actual contact time / classroom teaching		Self-study	
	Lecture		60 students		2	SCH	0	h	62.5	h
	Tuition in seminars		30 students		0	SCH	0	h	0	h
	Exercise		20 students		2	SCH	16	h	46.5	h
	Practical or seminar		15 students		0	SCH	0	h	0	h
	Supervised self-study		60 students		0	SCH	0	h	0	h
	The students are able to consistently and systematically develop complex mechatronic and automated systems themselves and to subject them to an orderly development process. They are able to fully apply the knowledge acquired during their studies to the development of mechatronic an automated systems in an everyday business environment.									
3	Contents:	:								
3	Structure mechatro Modulari Control ty Control a Developr Planning/ Concretis Realisatio	and function of onic and automa isation of machi ypes urchitecture ment of a mecha /conception sation/Modelling on/commissioni	ne types and units atronic and automat g/Simulation ng using appropriat	ed syste	m		eir special f	eatures, desi	gn guide	lines for
4	Structure mechatro Modulari Control ty Control a Developr Planning/ Concretis Realisatio Documer Forms of	and function of onic and automa isation of machi ypes urchitecture ment of a mecha /conception sation/Modelling on/commissioni ntation and prese	ted systems ne types and units atronic and automat g/Simulation ng using appropriat	ed syste te design	m 1 method	s		eatures, desi	gn guide	lines for
	Structure mechatro Modulari Control ty Control a Developr Planning, Concretis Realisatic Documer Forms of Learning Participat Formal:	and function of onic and automa isation of machi ypes urchitecture ment of a mecha /conception sation/Modelling on/commissioni ntation and prese	ted systems ne types and units atronic and automat g/Simulation ng using appropriate entation udy, classroom sess	ed syste te design	m 1 method	s		eatures, desi	gn guide	lines for
4	Structure mechatro Modulari Control ty Control a Developr Planning, Concretis Realisatio Documer Forms of Learning Participat Formal: Content:	and function of pnic and automa isation of machi ypes urchitecture ment of a mecha/conception sation/Modelling on/commissionintation and pressite teaching: units for self-st tion requiremen	ted systems ne types and units atronic and automat g/Simulation ng using appropriate entation udy, classroom sessessessessessessessessessessessesses	ed syste	m 1 method	s		eatures, desi	gn guide	lines for
4 5	Structure mechatro Modulari Control ty Control a Developr Planning, Concretis Realisatio Documer Forms of Learning Participat Formal: Content: Forms of Written of Prerequis	and function of price and automatics and automatics and automatics and automatics and automatics and automatics are	ted systems ne types and units atronic and automat g/Simulation ng using appropriate entation udy, classroom sessess ts: ion or project work d of credit points:	ed syste	m 1 method	s		eatures, desi	gn guide	lines for
4 5	Structure mechatro Modulari Control to Control a Developr Planning/ Concretis Realisation Documer Forms of Learning Participate Formal: Content: Forms of Written of Prerequis Module e Applicati	and function of price and automatic and automatic and automatic station of machic sypes architecture ment of a mechal /conception sation/Modelling on/commissionintation and present teaching: units for self-station requirement	ted systems ne types and units atronic and automat g/Simulation ng using appropriate entation udy, classroom sessess ts: ion or project work d of credit points:	ed syste te design	m method the form	s of exerc		eatures, desi	gn guide	lines for
4 5 6	Structure mechatro Modulari Control ty Control a Developr Planning/ Concretis Realisation Documer Forms of Learning Participate Formal: Content: Forms of Written of Prerequise Module e Application Electrical Important	and function of price and automatic and a mechal and present and present and present assessment: The properties of the award and automatic and automatic and automatic and present and automatic and present and automatic and	ted systems ne types and units atronic and automat g/Simulation ng using appropriate entation udy, classroom sessess ts: ion or project work d of credit points: s le (in the following	ed syste te design sions in study p studies)	m method the form rogramm (B.Eng.)	of exerce	cises		gn guide	lines for
4 5 6 7 8	Structure mechatro Modulari Control ty Control a Developr Planning/ Concretis Realisatio Documer Forms of Learning Participat Formal: Content: Forms of Written of Prerequis Module e Applicati Electrical Importan Percentag	and function of price and automatic and a mechal and present and present and present assessment: The properties of the award and automatic and automatic and automatic and present and automatic and present and automatic and	ted systems ne types and units atronic and automat g/Simulation ng using appropriate entation udy, classroom sessess ts: ion or project work d of credit points: s le (in the following part-time combined for the final grade:	ed syste te design sions in study p studies)	m method the form rogramm (B.Eng.)	of exerce	cises		gn guide	lines for

Met	rology								MST	
lden num	tification ber:	Workload:	Credits:	Study	Study semester: 3rd sem.		Frequency of the offer Annual (Winter)		Duration: 1 semester	
1053	;	125 h	5	3rd se						
l	Course:		Planned group sizes		Scope		Actual contact time / classroom teaching		Self-study	
	Lecture		60 students		2 SCH		0 h		62.5 h	
	Tuition in	seminars	30 students		0	SCH	0	h	0	h
	Exercise		20 students		1	SCH	8	h	38.5	h
	Practical	or seminar	15 students		1	SCH	16	h	0	h
	Supervised self-study		60 students		0	SCH	0	h	0	h
	The students have acquired knowledge of measurands and units of measurement as well as knowledge and action competence for measuring electrical quantities and are able to classify these in the context. They can record non-electrical quantities electronically. They have skills in the assessment of dynamic processes, as well as in the overall assessment of error and accuracy. The students can create measurement reports.									
						curacy.	The student	s can create		
3	Contents: Measured Measuren Dynamic Electrical Oscillosco	quantities and nent errors in sta- behaviour and r quantities and tope	units of measurem ationary systems model description heir measurement	ent	or und und	ceuracy.	The student	s can create		
3	Contents: Measured Measuren Dynamic Electrical Oscillosco Digital m Forms of	quantities and nent errors in state behaviour and a quantities and to pope etrology teaching:	ationary systems nodel description	ent methods						
1	Contents: Measured Measuren Dynamic Electrical Oscillosco Digital m Forms of Learning Participat Formal:	quantities and nent errors in state behaviour and a quantities and to pope etrology teaching:	ationary systems model description heir measurement udy, classroom eve	ent methods						
i	Contents: Measured Measuren Dynamic Electrical Oscillosco Digital m Forms of Learning Participat Formal: Content:	quantities and nent errors in state behaviour and requantities and tope etrology teaching: units for self-state ion requirement -	ationary systems model description heir measurement udy, classroom eve	ent methods						
1	Contents: Measured Measuren Dynamic Electrical Oscillosco Digital m Forms of Learning Participat Formal: Content:	quantities and ment errors in state behaviour and requantities and tope etrology teaching: units for self-state ion requirement - - -	ationary systems model description their measurement ady, classroom events:	ent methods						
5	Contents: Measured Measuren Dynamic Electrical Oscillosco Digital m Forms of Learning Participat Formal: Content: Forms of Written es	quantities and nent errors in stable haviour and requantities and tope etrology teaching: units for self-station requirement	ationary systems model description heir measurement udy, classroom eve	ent methods						
5	Contents: Measured Measured Dynamic Electrical Oscillosce Digital m Forms of Learning Participat Formal: Content: Forms of Written e. Prerequis Module e	quantities and nent errors in stable haviour and requantities and tope etrology teaching: units for self-station requirement	ationary systems model description their measurement ady, classroom eve as: ral examination d of credit points: s and course assess	ent methods ents in the	e form of	f exercise				
	Contents: Measured Measuren Dynamic Electrical Oscillosce Digital m Forms of Learning Participat Formal: Content: Forms of Written e Prerequis Module e Application	quantities and nent errors in stabehaviour and requantities and tope etrology teaching: units for self-station requirement - - -	ral examination d of credit points: s and course assess e (in the following	ent methods ents in the	e form of	f exercise				
4 5 7 3	Contents: Measured Measured Dynamic Electrical Oscillosce Digital m Forms of Learning Participat Formal: Content: Forms of Written es Prerequis Module e Application Electrical	quantities and nent errors in stabehaviour and requantities and tope etrology teaching: units for self-station requirement	ral examination d of credit points: s and course assess e (in the following art-time combined	ent methods ents in the	e form of	f exercise				
1 5 7	Contents: Measured Measured Dynamic Electrical Oscillosco Digital m Forms of Learning Participat Formal: Content: Forms of Written e: Prerequis Module e Applicatic Electrical	quantities and ment errors in stable behaviour and requantities and tope etrology teaching: units for self-station requirement: -	ral examination d of credit points: s and course assess e (in the following	ent methods ents in the	ogramm (B.Eng.)	es)	es and pract	icals		
5 7 3 3	Contents: Measured Measured Dynamic Electrical Oscillosce Digital m Forms of Learning Participat Formal: Content: Forms of Written e Prerequis Module e Application Electrical Important Percentag	quantities and ment errors in stable behaviour and requantities and tope etrology teaching: units for self-station requirement: -	rationary systems model description their measurement ady, classroom events: ral examination of of credit points: a and course assesse (in the following art-time combined for the final grade:	ent methods ents in the	ogramm (B.Eng.)	es)	es and pract	icals		

Mod	ern Energy	Policy								MEP	0
Ident numb	ification per:	Worklo	oad:	: Credits:		Study semester:		Frequency of the offer		Duration:	
4082		125 h		5	7th se	7th sem.		Annual (Winter)		1 semester	
1	Course:			Planned group sizes		Scope		Actual contact time / classroom teaching		Self-study	
	Lecture			60 students		2 SCH		0 h		62.5	h
	Tuition in seminars		s :	30 students		0	SCH	0	h	0	h
	Exercise			20 students		2	SCH	16	h	46.5	h
	Practical of	or semina	ır	15 students		0	SCH	0	h	0	h
	Supervise	Supervised self-study		60 students		0	SCH	0	h	0	h
2	Learning outcomes/competences: After completing the module, students will be able to • engage in a discourse on current energy policy issues and discuss them in the group. • develop a strategic concept. • present technical projects to the public. • evaluate the consequences of technology politically. • successfully manage discussions and information.										
3	Contents: Treatment of technical energy projects, e.g. e-mobility • Wind energy projects • Solar energy use • Biomass and agriculture • Water and wastewater management Legal framework of energy policy, e.g. • EU framework on energy efficiency • National and EU law on the energy industry										
4	Structures of the energy industry and trade flows Forms of teaching:										
•		Learning units for self-study, classroom sessions in the form of exercises									
5	Participation requirements:										
	Formal:										
Content: -											
6	Forms of assessment: Term paper										
7	Prerequisite for the award of credit points:										
8	Module examination pass Application of the module (in the following study programmes)										
	Electrical	Electrical Engineering (part-time combined studies) (B.Eng.);									
9	Importance of the grade for the final grade:										
Percentage based on the sum of credits of the graded modules according to RPO BA §32									BA §32		
10	Module coordinator:										
				k / DrIng. Mar	tin Stötze	er					
11	Other information:										
	Suppleme	ntary lite	rature de	pending on the t	topic						

Phys	sics I								PH1		
dent	ification per:	Workload:	Credits:	Study	semeste	er:	Frequency offer	of the	Durat	ion:	
1081		125 h	5	1st se	m. Annual (Winter)				1 semester		
-	Course:		Planned group s	sizes	Scope		/ classro	Actual contact time / classroom teaching			
	Lecture		60 students		2	SCH	0	h	62.5	h	
	Tuition in	n seminars	30 students		0	SCH	0	h	0	h	
	Exercise		20 students		2	SCH	16	h	46.5	h	
	Practical or seminar		15 students		0	SCH	0	h	0	h	
	Supervise	ed self-study	60 students		0	SCH	0	h	0	h	
	The stude	e these to each of ents have initial	experience in reco	ognising p	roblem i	interrela	tionships an	d in the met	hods of s	olving	
		questions and p	problems independ	ently and	are also	able to	present and	explain then	1.		
.	Contents	:			are also	able to	present and	explain then	1.		
	Contents Physical Basic con Kinemati Newtonia Work and Conserva Laws of i Mechanic	: quantities: Nota ncepts of mecha ics: Translation an mechanics: M d energy ttion laws of en	ation, rules, unit sy unics and rotation Mass, force, momen ergy, momentum, a	stems	ment of i	inertia, t					
	Contents Physical Basic con Kinemati Newtonia Work and Conserva Laws of i Mechanic Basic con	quantities: Notancepts of mechanics: Translation an mechanics: Median energy ation laws of energy ation laws of energing actions of liquids and energy of fluid references of fluid references.	ation, rules, unit sy unics and rotation Mass, force, momen ergy, momentum, a d gases at rest nechanics	stems ntum, mo	ment of	inertia, t	orque, angu				
ŀ	Contents Physical Basic cor Kinemati Newtonia Work and Conserva Laws of i Mechanic Basic cor Forms of Learning	quantities: Notancepts of mechanics: Translation an mechanics: Medical energy ation laws of enempact and capts of fluids and ancepts of fluid refeaching:	ation, rules, unit sy unics and rotation Mass, force, momen ergy, momentum, a d gases at rest nechanics	stems ntum, mo	ment of	inertia, t	orque, angu				
	Contents Physical Basic con Kinemati Newtonia Work and Conserva Laws of i Mechanic Basic con Forms of Learning Participa	equantities: Notancepts of mechanics: Translation an mechanics: Moderney attion laws of entimpact and fluids and meepts of fluid reaching: units for self-station requirements.	ation, rules, unit sy unics and rotation Mass, force, momen ergy, momentum, a d gases at rest nechanics	stems ntum, mo	ment of	inertia, t	orque, angu				
	Contents Physical Basic con Kinemati Newtonia Work and Conserva Laws of i Mechanic Basic con Forms of Learning Participa Formal:	quantities: Notancepts of mechanics: Translation an mechanics: Medical energy ation laws of enempact and capts of fluids and ancepts of fluid refeaching:	ation, rules, unit sy unics and rotation Mass, force, momen ergy, momentum, a d gases at rest nechanics	stems ntum, mo	ment of	inertia, t	orque, angu				
	Contents Physical Basic con Kinemati Newtonia Work and Conserva Laws of i Mechanic Basic con Forms of Learning Participa Formal: Content:	quantities: Notancepts of mechanics: Translation an mechanics: Medical denergy attion laws of entimpact cs of liquids and neepts of fluid retaching: units for self-station requirements	ation, rules, unit sy unics and rotation Mass, force, momen ergy, momentum, a d gases at rest nechanics	stems ntum, mo	ment of	inertia, t	orque, angu				
	Contents Physical Basic con Kinemati Newtonia Work and Conserva Laws of i Mechania Basic con Forms of Learning Participa Formal: Content: Forms of	quantities: Notancepts of mechanics: Translation an mechanics: Medical energy attion laws of energy attion laws of energe of liquids and encepts of fluid recepts of fluid recepts of self-settion requirements of teaching:	ation, rules, unit sy unics and rotation Mass, force, momen ergy, momentum, a d gases at rest nechanics	stems ntum, mo	ment of	inertia, t	orque, angu				
	Contents Physical Basic con Kinemati Newtonia Work and Conserva Laws of i Mechania Basic con Forms of Learning Participa Formal: Content: Forms of Written e	quantities: Notancepts of mechanics: Translation an mechanics: Modern and mechanics: Modern and mechanics of liquids and mechanics of fluid recepts of fluid recepts of fluid recepts of requirement	ation, rules, unit sy unics and rotation Mass, force, momen ergy, momentum, a d gases at rest nechanics tudy, classroom ses	stems ntum, mo	ment of	inertia, t	orque, angu				
	Contents Physical Basic cor Kinemati Newtonia Work and Conserva Laws of i Mechania Basic cor Forms of Learning Participa Formal: Content: Forms of Written e Prerequis	quantities: Notancepts of mechanics: Translation an mechanics: Modern and mechanics: Modern and the second and	ation, rules, unit sy unics and rotation Mass, force, momen ergy, momentum, a d gases at rest nechanics tudy, classroom ses tudy, classroom ses tudy of credit points:	stems ntum, mo	ment of	inertia, t	orque, angu				
	Contents Physical Basic cor Kinemati Newtonia Work and Conserva Laws of i Mechania Basic cor Forms of Learning Participal Formal: Content: Forms of Written e Prerequis Module e Applicati	quantities: Notacepts of mechanics: Translation an mechanics: Median denergy ation laws of encimpact and compact and compact are found in the following of the median denergy assessment: assessment: examination passion of the modules:	ation, rules, unit syunics and rotation Mass, force, momen ergy, momentum, a d gases at rest nechanics tudy, classroom ses tts:	stems ntum, morangular m	ment of somentur	of exerces	orque, angu				
	Contents Physical Basic cor Kinemati Newtonia Work and Conserva Laws of i Mechania Basic cor Forms of Learning Participal Formal: Forms of Written e Prerequis Module e Applicati Electrical	quantities: Notacepts of mechanics: Translation an mechanics: Median denergy ation laws of energy ation laws of energy ation laws of fluid recepts of fluid rec	ation, rules, unit syunics and rotation Mass, force, momen ergy, momentum, a d gases at rest nechanics tudy, classroom ses tts:	stems ntum, morangular m ssions in t	ment of somentur	of exerces	orque, angu				
	Contents Physical Basic con Kinemati Newtonia Work and Conserva Laws of i Mechanic Basic con Forms of Learning Participar Formal: Content: Forms of Written e Prerequis Module e Applicati Electrica Importan	quantities: Notancepts of mechanics: Translation an mechanics: Modern and mechanics of fluid received and mechanics are seasing and mechanics. The seasing are seasing and mechanics are seasing and mechanics are seasing and mechanics are seasing and mechanics. The seasing are seasing and mechanics are seasing and mechanics are seasing and mechanics are seasing and mechanics. The seasing are seasing and mechanics are seasi	ation, rules, unit syunics and rotation Mass, force, momen ergy, momentum, a d gases at rest nechanics tudy, classroom ses tts:	stems ntum, morangular m ssions in t	ment of a commenture of the form ogramm (B.Eng.)	of exerces)	orque, angu	lar momentu			
	Contents Physical Basic con Kinemati Newtonia Work and Conserva Laws of i Mechanid Basic con Forms of Learning Participa Formal: Content: Forms of Written e Prerequis Module e Applicati Electrica Importan Percentag	quantities: Notancepts of mechanics: Translation an mechanics: Modern and mechanics of fluid received and mechanics are seasing and mechanics. The seasing are seasing and mechanics are seasing and mechanics are seasing and mechanics are seasing and mechanics. The seasing are seasing and mechanics are seasing and mechanics are seasing and mechanics are seasing and mechanics. The seasing are seasing and mechanics are seasi	ation, rules, unit synics and rotation Mass, force, moment ergy, momentum, a d gases at rest nechanics tudy, classroom ses tus: d of credit points: ss le (in the following part-time combined for the final grade:	stems ntum, morangular m ssions in t	ment of a commenture of the form ogramm (B.Eng.)	of exerces)	orque, angu	lar momentu			
	Contents Physical Basic con Kinemati Newtonia Work and Conserva Laws of i Mechanic Basic con Forms of Learning Participa Formal: Content: Forms of Written e Prerequis Module e Applicati Electrica Importan Percentag	quantities: Notancepts of mechanics: Translation an mechanics: Moderney attion laws of entimpact cs of liquids and neepts of fluid recepts of	ation, rules, unit synics and rotation Mass, force, momen ergy, momentum, a d gases at rest nechanics tudy, classroom sen ets: d of credit points: ss le (in the following part-time combinect for the final grade: sum of credits of t	stems ntum, morangular m ssions in t	ment of a commenture of the form ogramm (B.Eng.)	of exerces)	orque, angu	lar momentu			

Identi numbo 4050	Course: Lecture Tuition in	Workload: 125 h	Credits:	Study 2nd se	semeste	er:	Frequency	of the	Durati	ion:
	Lecture	125 h		2nd se			Frequency of the offer		Duration:	
1	Lecture		D1 1		em.		Annual (Summer)		1 sem	ester
			Planned group s	sizes	Scope	;			Self-stu	ıdy
	Tuition in		60 students		2	SCH	0	h	62.5	h
	Exercise		30 students		0	SCH	0	h	0	h
-	Exercise		20 students		1	SCH	8	h	38.5	h
	Practical of	or seminar	15 students		1	SCH	16	h	0	h
-	Supervised self-study 60 students 0 SCH 0 h							h	0	h
2	Looming	outcomes/comp	estanges:		<u> </u>					
	The stude Students a have mast	nts recognise pare familiar with	know the terms or roblem contexts and the skills of simple nalysis of measure cal course.	nd can sol	ve techr mentatio	nical que on and th	estions indep ne presentati	on of measu		
3	waves (ma Thermody processes Geometric	athematical des ynamics: physic cal optics (refle	asic concepts of o cription, standing al quantities of the ction and refraction, diffraction, pola	waves, in ermodyna on, imagin	terferen mics, ga	ce, refra as laws,	ction, diffra	ction, Doppl	er effect)	
	Г С	. 1:								
4	Forms of	-	1 1		C		1 .			
	Learning	units for self-sti	ıdy, classroom ev	ents in the	e form o	f exercis	ses and pract	icals		
5	Particinati	ion requirement	·S.							
9	Formal:	-								
ŀ	Content:	-								
6	Forms of	assessment:								
	Written ex	kamination								
7	Prerequisi	te for the award	d of credit points:							
			and course asses							
8			e (in the following							
			art-time combined		(B.Eng.);				
9	-	-	for the final grade: sum of credits of t		module	s accord	ling to RPO-	MA §32		
10		oordinator:								
	Prof. Dr. rer. nat. Sonja Schöning									
11	Other information: In the practical course, the students carry out a select Mathematical Pendulum Inclined Plane					xperime	nts from the	following c	atalogue	

Calorimetry
Focal length of thin lenses
Dispersion at the prism

umb	ification									
1067	er:	Workload:	Credits:	Study	semeste	er:	Frequency offer	of the	Durat	ion:
		125 h	5	5 7th sem.			Annual (Winter)		1 semester	
I	Course:		Planned group	sizes	Scope		/	ontact time n teaching	Self-stu	ıdy
	Lecture		60 students		2	SCH	0	h	62.5	h
	Tuition in seminars		30 students		0	SCH	0	h	0	h
	Exercise		20 students		2	SCH	16	h	46.5	h
	Practical or seminar		15 students		0	SCH	0	h	0	h
	Supervise	ed self-study	60 students		0	SCH	0	h	0	h
	technical products and develop instruments for risk minimisation for these products and evaluate the success of the measures introduced under technical and business management aspects.									
3	Contents:									
		s/ risk identifica								
		•	and risk ranking							
		of technical risk								
			es of risk managen		alamman	t avala				
			gement into the pro and documentation		eiopinen	i cycle				
4	Forms of		runa accumentati	011						
	Learning	units for self-st	udy, classroom ses	ssions in t	he form	of exerc	cises			
5	Participat	ion requiremen	ts:							
	Formal:	-								
	Content:	-								
6		assessment:								
			ion or term paper							
7	_		d of credit points:							
)	Module examination pass Application of the module (in the following study programmes)									
3			ert-time combined		-		nical Engin	parina (nort	time	
				i studies)	(D.Ellg.	, wiech	uncai Eligin	cering (part-	ume	
)	combined studies) (B.Eng.); Importance of the grade for the final grade:									
-	Percentage based on the sum of credits of the graded modules according to RPO- BA §32									
		1' 4								
10	Module c		enzfeier-Hellkamp							

	Manage	ement							PM	
Identific number:		Workload:	Credits:	Stud	y semeste	er:	Frequency offer	of the	Durat	ion:
4029		125 h	5	5 8th sem.			Annual (Summer)		1 semester	
1 0	Course:		Planned group s	sizes	Scope		Actual contact time / classroom teaching		Self-study	
I	ecture		60 students		2	SCH	0	h	62.5	h
Т	Cuition in	seminars	30 students		0	SCH	0	h	0	h
E	Exercise		20 students		2	SCH	16	h	46.5	h
P	Practical of	or seminar	15 students		0	SCH	0	h	0	h
S	Supervise	ed self-study	60 students		0	SCH	0	h	0	h
	descent the land the l	cribe the proces basis of networ ly the elementa lain the specific y understand h	n a given process-os sand schedule pla k plans. ry technical vocab cs of team building ow to motivate one portance of busines	nning wi ulary reg and projeself and	th netwo arding priject mana teams su	rk plans oject or gement ccessful	and draw upganisation a	nd project m	nanageme	ent.
T T n	Contents: The basics and practical application of project management are presented Terms and definition, aspects of problem-solving and decision-making processes, project organisation and promanagement Project phases and planning systems (project preparation, project planning, project implementation, project completion) Project management in the organisational structure Tools of project management Project management as a management tool Social, technical and methodological competence Innovation and change management Self-management Target tracking and project controlling							and project		
c P T P S II S	Project m Cools of p Project m Social, tec nnovations Self-mana Carget tra	nases and plann on) anagement in the project manages anagement as a chnical and me in and change in agement cking and project	he organisational s ment n management tool thodological comp nanagement	tructure				ct implemer	ntation, p	
c P P T S S II S T T	Project m Fools of p Project m Social, tec nnovatio Self-mana Farget tra Forms of Learning	nases and plann on) anagement in the project management as a chnical and me n and change n agement cking and project teaching: units for self-st	he organisational s ment a management tool thodological comp nanagement ect controlling	tructure	ation, pro	oject pla	nning, proje	ct implemer	ntation, p	
C	Project m Fools of project m Foocial, technological, technological Forms of Corms of Cearning Participat	nases and plann on) anagement in the project management as a chnical and men and change in agement acking and project teaching: units for self-station requirement -	he organisational s ment a management tool thodological comp nanagement ect controlling	tructure	ation, pro	oject pla	nning, proje	ct implemer	ntation, p	
C P P T P S S III S S T T F F C C 6 F F C C	Project m Fools of project m Fools, technovation of the control of	nases and plann on) anagement in the project management as a chnical and men and change in agement acking and project teaching: units for self-station requirement assessment:	he organisational s ment a management tool thodological comp nanagement ect controlling tudy, classroom ses	etence	ation, pro	oject pla	nning, proje	ct implemer	ntation, p	
C P P T T P S S I I S T T F C C C 7 P P	Project m Fools of p Project m Focial, technovation Self-mana Forms of Learning Participat Formal: Forms of Dral exan Prerequisi	nases and plann on) anagement in the project management as a chnical and men and change in an agement cking and project teaching: units for self-stion requirement	he organisational s ment n management tool thodological comp nanagement ect controlling tudy, classroom ses its:	etence	ation, pro	oject pla	nning, proje	ct implemer	ntation, p	
C P P T P S S I I S S T T S S P F C C C P P R M M 8 A F E	Project m Cools of p Project m Cools of p Project m Cocial, tec nnovatio Gelf-mana Carget tra Corms of Learning Cormal: Content: Corns of Dral exam Prerequisi Module e Applicatic Electrical	nases and plann on) anagement in the project management as a chnical and men and change in agement cking and project teaching: units for self-station requirement	he organisational s ment n management tool thodological comp nanagement ect controlling audy, classroom ses tts: n paper or project v d of credit points: s le (in the following part-time combined	tructure etence essions in work	the form	of exerce	cises			

	Percentage based on the sum of credits of the graded modules according to RPO- BA §32
10	Module coordinator:
	Prof. DrIng. Michael Fahrig
11	Other information:
	-

Qual	ity Manago	ement								QMN	1
	Identification Workload: number:			Credits: Study semester:			Frequency offer	of the	Durat	ion:	
4033				5	9th se	m.		Annual (Winter)		1 sem	ester
1	Course:		Pl	anned group siz	es	Scope		Actual c / classro teaching		Self-stu	ıdy
	Lecture		60	students	2 SCH			0	h	62.5	h
	Tuition in	seminars	30 students		0	SCH	0	h	0	h	
	Exercise		20	students		1	SCH	8	h	38.5	h
	Practical or seminar		15	15 students		1	SCH	16	h	0	h
	Supervised self-study		60	students		0	SCH	0	h	0	h

2 Learning outcomes/competences:

Students are able to:

- assess the differences between the various QM systems.
- introduce and audit QM systems.
- introduce UM and AS systems.
- shape customer loyalty within the framework of a QM system.
- apply the continuous improvement process and OM methods.

Furthermore, the students have knowledge that enables them to:

- apply the statistical methods dealt with appropriately to technical tasks in order to
 obtain and evaluate information from data material, prepare decisions under
 uncertain conditions, check the suitability of technical processes.
- present the results obtained from statistical investigations; and
- assess them with regard to correctness and significance.

3 Contents:

The students work out the basics of quality management (QM) and its importance in the company for customer satisfaction.

Basic concepts of quality management:

Quality, audit, error, corrective action

Standardisation of quality management systems:

DIN EN ISO 9001:2000, ISO/TS 16949:2002, QS-9000, VDA 6.1

Process-oriented quality management system:

Measurement of processes with key figures, introduction of the QM system, documentation, electronic QM system, internal auditing of QM systems

Environmental management and occupational health and safety management systems

Customer orientation

Continuous improvement process

QM methods

Basic concepts of probability theory:

Random experiments and events, probability space (relative frequency, the probability measure, Laplace experiments, statistical probability), conditional probability (definition of conditional probability, tree diagrams, total probability and Bayesian formula, independent events), Bernoulli experiments and Bernoulli chains

Methods of statistics:

Descriptive statistics (basic terms, empirical frequency distribution, class formation for samples, characteristics of samples, frequency distribution of two-dimensional samples, covariance and correlation coefficient, straight regression), evaluative statistics (sample size and confidence interval, estimations of parameters, testing of hypotheses)

4 Forms of teaching:

Learning units for self-study, classroom events in the form of exercises and practicals

5 Participation requirements:

	Formal:	-							
	Content:	-							
6	Forms of assessment:								
	Written exam or c	ombination exam							
7	Prerequisite for th	e award of credit points:							
	Module examinati	ion pass and course assessment							
8	Application of the	module (in the following study programmes)							
	Electrical Enginee	ering (part-time combined studies) (B.Eng.); Mechanical Engineering (part-time combined							
	studies) (B.Eng.);								
9	Importance of the	grade for the final grade:							
	Percentage based	on the sum of credits of the graded modules according to RPO- BA §32							
10	Module coordinat	or:							
	Prof. DrIng. Pro	f. h.c. Lothar Budde							
11	Other information:								
	-								

Con	trol Engine	ering							RGT	
Ident numl	ification per:	Workload:	Credits:	Study	semeste	er:	Frequency offer	of the	Durati	on:
4060		125 h	5	5th se	em.		Annual (Winter)		1 semester	
1	Course:		Planned group siz	zes	Scope		Actual control / classroot teaching	ontact time om	Self-stu	ldy
	Lecture		60 students		2	SCH	0	h	62.5	h
	Tuition in	seminars	30 students		0	SCH	0	h	0	h
	Exercise		20 students		1	SCH	8	h	38.5	h
	Practical of	or seminar	15 students		1	SCH	16	h	0	h
	Supervise	d self-study	60 students		0	SCH	0	h	0	h
	completion of the module, the students are able to analyse empirical and model-based designs of single controls as well as to classify them in the technical context. Contents: Basic concepts of control engineering									
3	Basic con	cepts of contro						1.0		
3	Basic con Description Properties	cepts of control on and analysis of single-loop	l engineering of linear, time-inva control loops in the ntrol loops using roo	time an	d freque	ency don	nain		domain	
4	Basic con Description Properties	cepts of contro on and analysis s of single-loop single-loop co	of linear, time-inva- control loops in the	time an	d freque	ency don	nain		domain	
	Basic con Description Properties Design of	cepts of contro on and analysis s of single-loop single-loop co teaching:	of linear, time-inva- control loops in the	time an	d freque and freq	ency don uency c	nain haracteristic	methods	domain	
1	Basic com Description Properties Design of Forms of Learning Participati	cepts of contro on and analysis s of single-loop single-loop co teaching:	of linear, time-inva control loops in the ntrol loops using roo udy, classroom ever	time an	d freque and freq	ency don uency c	nain haracteristic	methods	domain	
4	Basic com Description Properties Design of Forms of Learning Participati	cepts of contro on and analysis s of single-loop single-loop co teaching: units for self-st	of linear, time-inva control loops in the ntrol loops using roo udy, classroom ever	time an	d freque and freq	ency don uency c	nain haracteristic	methods	domain	
4	Basic com Description Properties Design of Forms of Learning Participati Formal: Content:	cepts of contro on and analysis s of single-loop single-loop co teaching: units for self-st ion requiremen	of linear, time-inva control loops in the ntrol loops using roo udy, classroom ever	time an	d freque and freq	ency don uency c	nain haracteristic	methods	domain	
4	Basic com Description Properties Design of Forms of Learning Participati Formal: Content: Forms of	cepts of control on and analysis of single-loop conteaching: units for self-stion requirement	of linear, time-inva control loops in the ntrol loops using roo udy, classroom ever ts:	time an	d freque and freq	ency don uency c	nain haracteristic	methods	domain	
5	Basic com Description Properties Design of Forms of Learning Participati Formal: Content: Forms of Written ex	cepts of control on and analysis s of single-loop r single-loop conteaching: units for self-st ion requiremen	of linear, time-inva control loops in the ntrol loops using roo udy, classroom ever ts:	time an	d freque and freq	ency don uency c	nain haracteristic	methods	domain	
5	Basic com Description Properties Design of Forms of Learning Participati Formal: Content: Forms of Written ex Prerequisi	cepts of contro on and analysis s of single-loop r single-loop co teaching: units for self-st ion requiremen assessment: xamination or co ite for the awar	of linear, time-inva control loops in the ntrol loops using root udy, classroom ever ts:	time an	d freque and freq	ency don uency c	nain haracteristic	methods	domain	
	Basic com Description Properties Design of Forms of Learning Participati Formal: Content: Forms of Written ex Prerequisi Module ex Application	cepts of contro on and analysis s of single-loop single-loop co teaching: units for self-st ion requiremen	of linear, time-inva control loops in the introl loops using root udy, classroom ever ts: oral examination d of credit points: s and course assessrile (in the following states)	nent study pr	d freque and freq e form o	ency don uency c	nain haracteristic	methods	domain	
5 6 7	Basic com Description Properties Design of Forms of Learning Participati Formal: Content: Forms of Written ex Prerequisi Module ex Application Electrical	cepts of contro on and analysis s of single-loop r single-loop co teaching: units for self-st ion requiremen	of linear, time-inva control loops in the introl loops using root udy, classroom ever ts: oral examination d of credit points: s and course assess le (in the following part-time combined state of the combined state of t	nent study pr	d freque and freq e form o	ency don uency c	nain haracteristic	methods	domain	
5 6 7	Basic com Description Properties Design of Forms of Learning Participate Formal: Content: Forms of Written ex Prerequisi Module ex Application Electrical Importance	cepts of contro on and analysis s of single-loop single-loop co teaching: units for self-st ion requiremen - assessment: xamination or co ite for the awar xamination pas on of the modul Engineering (poe of the grade)	of linear, time-inva control loops in the introl loops using root udy, classroom ever ts: oral examination d of credit points: s and course assessrile (in the following states)	nent study pr	ogramm (B.Eng.)	ency don uency c f exercis	nain haracteristic	methods	domain	
4 5 7 8 9	Basic com Description Properties Design of Forms of Learning Participate Formal: Content: Forms of Written ex Prerequisi Module ex Application Electrical Importance Percentag Module co	cepts of contro on and analysis s of single-loop single-loop co teaching: units for self-st ion requiremen - assessment: xamination or co ite for the awar xamination pas on of the modul Engineering (poe of the grade)	of linear, time-inva control loops in the ntrol loops using root udy, classroom ever ts: oral examination d of credit points: s and course assess le (in the following part-time combined of the final grade:	nent study pr	ogramm (B.Eng.)	ency don uency c f exercis	nain haracteristic	methods	domain	
5 6 7	Basic com Description Properties Design of Forms of Learning Participate Formal: Content: Forms of Written ex Prerequisi Module ex Application Electrical Importance Percentag	cepts of contro on and analysis s of single-loop single-loop co teaching: units for self-st ion requiremen - assessment: xamination or co ite for the awar xamination pas on of the modul Engineering (poe of the grade e based on the	of linear, time-inva control loops in the ntrol loops using root udy, classroom ever ts: oral examination d of credit points: s and course assess le (in the following part-time combined of the final grade:	nent study pr	ogramm (B.Eng.)	ency don uency c f exercis	nain haracteristic	methods	domain	

Dida	ctics of Te	chnology							TDD	
Ident numb	ification per:	Workload:	Credits:	Study	y semeste	er:	Frequency offer	of the	Durati	ion:
4047		125 h	5	8th se	em.		Annual (Summer)		1 semeste	
1	Course:		Planned group s	izes	Scope		Actual control / classrooteaching		Self-stu	ıdy
	Lecture		60 students		2	SCH	0	h	62.5	h
	Tuition in	seminars	30 students		0	SCH	0	h	0	h
	Exercise		20 students		1	SCH	8	h	38.5	h
		or seminar	15 students		1	SCH	16	h	0	h
	_	d self-study	60 students	0	SCH	0	h	0	h	
2	_	outcomes/comp are able to	etences:							
			£. 41 1.: - 4:				.e			: : 41
			fy the objectives, occupations in the					education	and train	ing in the
			ement and evaluate			_	,			
	• syst	ematise the met	hods and media sp	ecific to	technolo	gy lesso	ons,			
	 systematise the methods and media specific to technology lessons, select and use them in a way that is appropriate to the content and the target group, 									
	• incorporate subject-specific features of mechanical engineering and electrical engineering into didactic									
	concepts,									
			-							
		-	lated content in a l	_			y and to trar	sform it did	lactically,	,
	• sele	ct suitable form	s of examination a	nd justif	y the sele	ection.				
3	Contents:									
			vocational special	lisations	(e.g. lear	ning fie	ld concept ii	n mechanica	ıl and	
		engineering occ	cupations) ds and media (e.g.	mlannin a	of toodb	ina and	laamina mu		alam aalu	ina
		in activity-orie		praiming	or teach	ing and	learning pro	cesses, prot	oleili-soiv	nig
			cation, presentation	n and lea	rning tec	hnology	7 ,			
			ındards, frameworl					ant German	federal s	tate (NRW)
4	Forms of	teaching:								
	Learning	units for self-st	udy, classroom eve	ents in th	e form o	f exercis	ses and pract	icals		
5		ion requirement	ts:							
	Formal:	-								
	Content:	-								
6	Performati	assessment:								
7			d of credit points:							
•	•		s and course assess	ment						
8	Application	on of the modul	e (in the following	study pı						
		Engineering (p studies) (B.Eng	art-time combined g.);	studies)	(B.Eng.)	; Mecha	nical Engin	eering (part	-time	
9			for the final grade:							
	_		sum of credits of th	ne gradeo	d module	s accord	ling to RPO-	BA §32		
10		oordinator:								
		Ing. Thorsten Ju	ungmann							
11	Other info	ormation:								
	-									

Tech	nical Engl	ish							TEN	G
Identi	ification er:	Workload:	Credits:	Study	semeste	er:	Frequency	of the	Durat	ion:
4026		125 h	5	2nd o	r 6th ser	n.	Annual (Summer)		1 sem	ester
1	Course:		Planned group siz	zes	Scope		Actual c / classro teaching	ontact time om	Self-stu	ıdy
	Lecture		60 students		2	SCH	0	h	62.5	h
	Tuition in	seminars	30 students		0	SCH	0	h	0	h
	Exercise		20 students		2	SCH	16	h	46.5	h
	Practical of	or seminar	15 students		0	SCH	0	h	0	h
	Supervise	d self-study	60 students 0			SCH	0	h	0	h
2	Learning	outcomes/comp	etences:							
	 Learning outcomes/competences: Expertise: The students acquire an extended active language competence at the upper B2 lev They have a sound specialist vocabulary of Technical English and can combine it with Busine English terminology relevant to their profession. Social competence: they develop sensitivity to differences in intercultural communication especially in English-speaking business environment. Methodological competence: They are able to skim specialist texts for essential information a present them shortly and concisely both in speaking and in writing. They establish with contexts and make a critical assessment. 							n Business nunication, nation and		
	au	rsonal compet thentic English	tence: They shown sources.	w Engl	ish flu	ency ar	nd a pro-a	ctive appro	oach to	managing
3	Contents:	_		_						
			vely participate i							
	op	erations; dime	gineering-relevan nsions and shape							
	_	stems and Indu	•							
		• 1	erdisciplinary sk ng projects; desig	, .	•	_	_		_	technical
4	Forms of			<u> </u>		<u> </u>				
			g / individual and	group	work, e	tc. / ser	nester proj	ect (Assigr	nment)	
5	_	ion requirements		201						
	Formal:		lar attendance (70					Juromas - D	ofono	`
	Content:	Frame	sh language compework for Langua	petence ages)	: Б2.1 (accord	ing to the E	uropean R	ererence	•
6	Forms of	assessment:		ر- <u>ن</u>						
		ion examination								
7	_		of credit points:							
0			t and written exa			22)				
8	Application of the module (in the following study programmes) Electrical Engineering (part-time combined studies) (B.Eng.); Mechanical Engineering (part-time									
9		studies) (B.Eng	g.); or the final grade:							
7	_	-	um of credits of the	e graded	module	s accord	ling to RPO-	BA §32		
10		oordinator:								
4.5		nelia Biegler-K	önig							
11	Literatur	Other information: Literature will be announced at the beginning of the course. Textbook, additional materials, intranet self-study courses								

between petrol and diesel engines; explain the difference between 2-stroke and 4-stroke engines. * solve simple problems of heat transfer. Contents: The thermodynamic and material basics for technical energy conversions and transfers as well as the basics f questions of rational energy conversion are taught. Thermodynamic basics: Open, closed, confined, homogeneous, heterogeneous and adiabatic systems, syste boundary, thermal, specific and molecular state variables, processes, ideal gas, thermal equation of state First law of thermodynamics: Heat, work, enthalpy, internal energy, power, specific heat capacity, law of conservation of energy Second law of thermodynamics: Irreversibility, dissipation, entropy Reversible changes of state: Application of the thermal equation of state, application of the first and second I for reversible isobaric, isothermal, isochoric, isentropic and polytropic changes of state, p/v diagram Real fluids: p/v/T-, log p/h-, T/s- and h/s-diagram for real fluids, two-phase area, boiling line, dew line, saturated and superheated steam, steam content, steam pressure, boiling temperature Circular processes: supercritical and subcritical process, ideal comparative process (Joule, Clausius Rankine) isentropic, Carnot and thermal efficiency, internal combustion engines, diesel and petrol engines, gas turbine in the Joule process, course of processes in p/v, log p/h, T/s and h/s diagrams Structure and function of an internal combustion engine; diesel and petrol engine; 2-stroke and 4-stroke engin Heat transfer: Heat conduction, natural and forced convection, heat transfer, heat transmission, heat radiation heat carrier Forms of teaching: Learning units for self-study, classroom events in the form of exercises and practicals Participation requirements: Formal: - Participation requirements: Formal:	Course: Planned group sizes Scope Actual contact time Self-stud	The	modynam	ics							TDY	
Course: Planned group sizes Scope	Course:			Workload:	Credits:	Study	y semeste	er:		of the	Durati	ion:
Lecture 60 students 2 SCH 0 h 62.5 h Tuition in seminars 30 students 0 SCH 0 h 62.5 h Exercise 20 students 1 SCH 8 h 38.5 h Practical or seminar 15 students 1 SCH 8 h 38.5 h Practical or seminar 15 students 1 SCH 16 h 0 h 0 h Supervised self-study 60 students 0 SCH 0 h 0 h 0 h Supervised self-study 60 students 0 SCH 0 h 0 h 0 h Supervised self-study 60 students 0 SCH 0 h 0 h 0 h Supervised self-study 60 students 0 SCH 0 h 0 h 0 h Learning outcomes/competences: Students are able to: apply basic thermodynamic concepts safely and simplify thermodynamic problems. set up and solve mass and energy balances. assess energy conversions. apply and distinguish between laws for ideal and real fluids. calculate and evaluate idealised circular processes. explain the structure and function of an internal combustion engine; explain thermodynamic difference between petrol and diesel engines; explain the difference between 2-stroke and 4-stroke engines. Solve simple problems of heat transfer. Contents: The thermodynamic and material basics for technical energy conversions and transfers as well as the basics of questions of rational energy conversion are taught. Thermodynamic basics: Open, closed, confined, homogeneous, heterogeneous and adiabatic systems, syste boundary, thermal, specific and molecular state variables, processes, ideal gas, thermal equation of state First law of thermodynamics: Heat, work, enthalpy, internal energy, power, specific heat capacity, law of conservation of energy Second law of thermodynamics: Heat, work, enthalpy, internal energy, power, specific heat capacity, law of conservation of energy Second law of thermodynamics: Heat, work, enthalpy, internal energy, power, specific heat capacity, law of conservation of energy Second law of thermodynamics: Heat, work, enthalpy, internal energy, power, specific heat capacity, law of conservation of energy Second law of thermodynamics: Heat, work, enthalpy, internal energy, power, specific heat capacity, law of conservation of energy Second law of t	Lecture 60 students 2 SCH 0 h 62.5 Tuition in seminars 30 students 0 SCH 0 h 62.5 Exercise 20 students 1 SCH 8 h 38.5 Practical or seminar 15 students 1 SCH 8 h 38.5 Practical or seminar 15 students 1 SCH 16 h 0 Supervised self-study 60 students 0 SCH 0 h 0 0 Supervised self-study 60 students 0 SCH 0 h 0 0 Learning outcomes/competences: Students are able to: apply basic thermodynamic concepts safely and simplify thermodynamic problems. set up and solve mass and energy balances. assess energy conversions. apply and distinguish between laws for ideal and real fluids. calculate and evaluate idealised circular processes. explain the structure and function of an internal combustion engine; explain thermodynamic differ between petrol and diesel engines; explain the difference between 2-stroke and 4-stroke engines. solve simple problems of heat transfer. Contents: The thermodynamic and material basics for technical energy conversions and transfers as well as the ba questions of rational energy conversion are taught. Thermodynamic basics: Open, closed, confined, homogeneous, heterogeneous and adiabatic systems, boundary, thermal, specific and molecular state variables, processes, ideal gas, thermal equation of state First law of thermodynamics: Heat, work, enthalpy, internal energy, power, specific heat capacity, law conservation of energy Second law of thermodynamics: Irreversibility, dissipation, entropy Reversible changes of state: Application of the thermal equation of state, py'd diagram Real fluids; py/T-1, go ph-1. T/s- and Ns-diagram for real fluids, two-phase area, boiling time, dew line, saturated and superheated steam, steam content, steam pressure, boiling temperature Circular processes: supercritical and subcritical process, ideal comparative process (Joule, Clausius Rar isentropic, Carnot and thermal efficiency, internal combustion engines, diesel and petrol engines, gas tu in the Joule process, course of processes in p/s, log p/h, T/s and h/s diagrams Structure and function of an i	014		125 h	5	5th o	or 7th ser	n.	(Winter)		1 sem	ester
Tuition in seminars 30 students 0 SCH 0 h 0 h 0 h Exercise 20 students 1 SCH 8 h 38.5 h Practical or seminar 15 students 1 SCH 8 h 38.5 h Supervised self-study 60 students 0 SCH 16 h 0 h 0 h Supervised self-study 60 students 0 SCH 0 h 0 h 0 h Learning outcomes/competences: Students are able to: • apply basic thermodynamic concepts safely and simplify thermodynamic problems. • set up and solve mass and energy balances. • assess energy conversions. • assess energy conversions. • apply and distinguish between laws for ideal and real fluids. • calculate and evaluate idealised circular processes. • explain the structure and function of an internal combustion engine; explain thermodynamic difference between petrol and diesel engines; explain the difference between 2-stroke and 4-stroke engines. • solve simple problems of heat transfer. Scontents: The thermodynamic and material basics for technical energy conversions and transfers as well as the basics of questions of rational energy conversion are taught. Thermodynamic basics: Open, closed, confined, homogeneous, heterogeneous and adiabatic systems, syste boundary, thermal, specific and molecular state variables, processes, ideal gas, thermal equation of state First law of thermodynamics: Heat, work, enthalpy, internal energy, power, specific heat capacity, law of conservation of energy Second law of thermodynamics: Irreversibility, dissipation, entropy Reversible changes of state: Application of the thermal equation of state, application of the first and second I for reversible isobaric, isothermal, isotheric, lastorice and polytropic changes of state, p/v diagram Real fluids: p/v/T-, log p/h-, T/s- and h/s-diagram for real fluids, two-phase area, boiling line, dew line, saturated and superheated steam, steam content, steam pressure, boiling temperature Circular processes: supercritical and subscribical process, ideal comparative process (Joule, Clausius Rankine) isentropic, Carnot and thermal efficiency, internal combustion engines, diesel and	Tuition in seminars 30 students 0 SCH 0 h 0 h 0 SCH Sexercise 20 students 1 SCH 8 h 38.5 Practical or seminar 15 students 1 SCH 16 h 0 SCH 16 h		Course:		Planned group si	izes	Scope		Actual c	om	Self-stu	ıdy
Tuition in seminars 30 students 0 SCH 0 h 0 h 0 h Exercise 20 students 1 SCH 8 h 38.5 h Practical or seminar 15 students 1 SCH 8 h 38.5 h Practical or seminar 15 students 1 SCH 16 h 0 h 0 h Supervised self-study 60 students 0 SCH 0 h 0 h 0 h Learning outcomes/competences: Students are able to: • apply basic thermodynamic concepts safely and simplify thermodynamic problems. • set up and solve mass and energy balances. • assess energy conversions. • apply and distinguish between laws for ideal and real fluids. • calculate and evaluate idealised circular processes. • explain the structure and function of an internal combustion engine; explain thermodynamic difference between petrol and diesel engines; explain the difference between 2-stroke and 4-stroke engines. • solve simple problems of heat transfer. Contents: Contents: The thermodynamic and material basics for technical energy conversions and transfers as well as the basics of questions of rational energy conversion are taught. Thermodynamic basics: Open, closed, confined, homogeneous, heterogeneous and adiabatic systems, syste boundary, thermal, specific and molecular state variables, processes, ideal gas, thermal equation of state First law of thermodynamics: Heat, work, enthalpy, internal energy, power, specific heat capacity, law of conservation of energy Second law of thermodynamics: Irreversibility, dissipation, entropy Reversible changes of state: Application of the thermal equation of state, application of the first and second I for reversible isobaric; solthermal, isochoric, isentropic and polytropic changes of state, p/v diagram Real fluids: p/v/T-, log p/h-, T/s- and h/s-diagram for real fluids, two-phase area, boiling line, dew line, saturated and superheated steam, steam content, steam pressure, boiling temperature Circular processes: supercritical and subcritical process, ideal comparative process (Joule, Clausius Rankine) isentropic, Carnot and thermal efficiency, internal combustion engines, diesel and petrol engines, gas tu	Tuition in seminars 30 students 0 SCH 0 h 0 h 0 Exercise 20 students 1 SCH 8 h 38.5 Practical or seminar 15 students 1 SCH 16 h 0 SUpervised self-study 60 students 1 SCH 16 h 0 SUpervised self-study 60 students 0 SCH 0 h 0 h 0 Examing outcomes/competences: Students are able to: • apply basic thermodynamic concepts safely and simplify thermodynamic problems. • set up and solve mass and energy balances. • assess energy conversions. • apply and distinguish between laws for ideal and real fluids. • calculate and evaluate idealised circular processes. • explain the structure and function of an internal combustion engine; explain thermodynamic differ between petrol and diesel engines; explain the difference between 2-stroke and 4-stroke engines. • solve simple problems of heat transfer. Contents: The thermodynamic and material basics for technical energy conversions and transfers as well as the baquestions of rational energy conversion are taught. Thermodynamic basics: Open, closed, confined, homogeneous, heterogeneous and adiabatic systems, boundary, thermal, specific and molecular state variables, processes, ideal gas, thermal equation of state First law of thermodynamics: Heat, work, enthalpy, internal energy, power, specific heat capacity, law conservation of energy Second law of thermodynamics: Irreversibility, dissipation, entropy Reversible changes of state: Application of the thermal equation of state, application of the first and see for reversible isobaric, isothermal, isochoric, isentropic and polytropic changes of state, p/v diagram Real fluids: p/vT-, log p/h-, T/s- and h/s-diagram for real fluids, two-phase area, boiling line, dew line, saturated and superheated steam, steam content, steam pressure, boiling temperature Circular processes: supercritical and subcritical process, ideal comparative process (Joule, Clausius Rar isentropic, Carnot and thermal efficiency, internal combustion engines, diesel and petrol engines; 2-stroke and 4-stroke Heat transfer: Heat conduction, natural and forced convect		Lecture		60 students		2	SCH	0	h	62.5	h
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Learning units for self-study, classroom events in the form of exercises and practicals Participation requirements: Formal: -	Learning units for self-study, classroom events in the form of exercises and practicals Participation requirements: Formal: -		boundary First law conserval Second la Reversibl for revers Real fluid saturated Circular isentropid in the Jou Structure Heat tran	of thermal, speci- of thermodyna- tion of energy aw of thermody- le changes of st sible isobaric, is ds: p/v/T-, log p and superheate processes: supe c, Carnot and that ale process, cou- and function of sfer: Heat cond	ific and molecular s mics: Heat, work, en namics: Irreversibil ate: Application of sothermal, isochoric o/h-, T/s- and h/s-dia dd steam, steam controritical and subcrittermal efficiency, in rese of processes in p f an internal combus	tate vari nthalpy, lity, dissi- the therry, isentro agram for tent, stea- ical produternal co- p/v, log p stion engates	ables, pro- internal ipation, e ipation, e i	energy, entropy tion of s polytrop tids, two ure, boil al compa on engine and h/s d sel and p	ideal gas, the power, spectate, applicatic changes of phase area, ing temperaturative procees, diesel and liagrams petrol engine	tion of the fi f state, p/v of boiling line ture ss (Joule, Cl d petrol engine t; 2-stroke ar	ion of state acity, laver and set aliagram et aliagram	econd la econd la e, ankine), turbines
Formal: -	Formal: -		Learning	units for self-s		ents in th	e form o	f exercis	ses and pract	icals		
		5		tion requiremen	its:							
	Content: -											

Forms of assessment:

Written examination or oral examination

7	Prerequisite for the award of credit points:
	Module examination pass and course assessment
8	Application of the module (in the following study programmes)
	Electrical Engineering (part-time combined studies) (B.Eng.); Mechanical Engineering (part-time combined studies) (B.Eng.);
9	Importance of the grade for the final grade:
	Percentage based on the sum of credits of the graded modules according to RPO- BA §32
10	Module coordinator:
	Prof. DrIng. Jürgen Hermeler
11	Other information:
	-

	tive Projec	t							Comp	oulsory ve
Identification number:		Workload:	Credits:	Study semester:		Frequency of the offer		Duration:		
4044		125 h	5	5th or	or 6th sem.		each semester		1 semester	
1	Course:		Planned group sizes		Scope		Actual contact time / classroom teaching		Self-study	
	Lecture		60 students		2	SCH	0	Н	62.5	h
	Tuition in	seminars	30 students		0	SCH	0	Н	0	h
	Exercise		20 students		2	SCH	16	Н	46.5	h
Practical		or seminar	15 students		0	SCH	0	Н	0	h
	Supervised self-study		60 students		0	SCH	0	Н	0	h
2	Learning outcomes/competences:									
	They can break down a complex question into subtasks for processing and combine the subtasks again in a meaningful way at the end. They are able to independently research, evaluate and select information on the topic and make it usable for the research question. They can select suitable technical methods to carry out necessary experiments, series of measurements, examinations, etc. They can justify the steps of their actions in a meaningful way and document and present their results appropriately to an audience.									
3	Contents:									
	Basics of project management Project planning Timing Cooperation and division of tasks in the team Independent processing of a technical task with time, economic and production-related specifications Documentation techniques Presentation techniques									
		ion techniques								
1										
4	Presentati Forms of Learning	teaching: units for self-st	tudy, classroom se	ssions in t	he form	of exerc	cises			
	Presentati Forms of Learning Participat	teaching:		ssions in t	he form	of exer	cises			
	Forms of Learning Participat Formal:	teaching: units for self-st		ssions in t	he form	of exer	cises			
5	Forms of Learning Participat Formal: Content:	teaching: units for self-st ion requiremen		ssions in t	he form	of exerc	cises			
i	Forms of Learning Participat Formal: Content: Forms of	teaching: units for self-st ion requiremen assessment:	its:	ssions in t	he form	of exerc	cises			
; ;	Presentation Forms of Learning Participat Formal: Content: Forms of Project w	teaching: units for self-st ion requiremen assessment: ork, presentation	on	ssions in t	the form	of exerc	cises			
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