Version: 180501, Document owner: Associate dean of doctotal programmes, ASP: 150907						Mandatory MoT						MD PS ProWOOD					OOD Other activities that may contribute to qualitative target fulfilment																
	ISP#	Qualitative targets, degree of doctor	Theory of Science and Research Methodology	Information Literacy and Scholarly Communication Basic communication and teaching	Industrial Product Realisation	Corrosion and surface protection Mathematical Modeling of Casting	Maurematical Modelling of Casting Casting	Metallurgy, Solidification and Modeling of Cast Iron Aluminium	Computer Systems for Automated Engineering Design	Production Systems	Research Methodology, advanced	ion (Lr	Product platforms (11H and Production2030) Academic writing seminar Innovation and competiveness in the wood-working in	the Graduate	Active in seminars within the own subject area Active in seminars in other subject areas	Present Work in Progress (WiP)	sent Research Pro	Review and discuss RP/manuscript Attend and reflect at RP-seminars (own subject area)	reflect at RP-seminars reflect at closing semir	and	d reflect at	Write paper as main author	ē	Review paper Review literature and compile state-of-the-art (SOTA)	Participate at conferences (national and international) Participate at symposiums	Write research applications	Review research applications Participate in commisions for society/company	Spend time at company/other university	Particpipate in projects with companies Disseminate results to society	Active in development at Scool of Engineering Active in development of the Graduate School	Teaching first and second cycle	bupervise otner Write kappa	Review manuscript to kappa Present and defend thesis
anding	ш1	demonstrate broad knowledge and systematic understanding of the research field as well as advanced and up-to-date specialised knowledge in a limited area of this field, and																															
lerst	#1	1.1 demonstrate broad knowledge and systematic understanding of the research field (industrial product realisation)	х		х							x	x	<b>x</b>	х	×	x	х	x	х				x	x x			;	x		x >	κx	x
oun F		1.2 advanced and up-to-date specialised knowledge in a limited area of this field (current third-cycle subject area)				х	х	х	хх	x		х	х		х	х	х	хх	х		Х	х	х	х х	х	х			хх		хх	( x	х
dge and		demonstrate familiarity with research methodology in general and the methods of the specific field of research in particular.																															
owle	#2	2.1 demonstrate familiarity with research methodology in general	х	х		х	х	х						х	х	х	х	х	х	х				х								х	х
Ā		2.2 familiarity with the methods of the specific field of research in particular	х			х	x	х	хх		х				х	х	х	хх	x		×	( x	x :	x x								х	х
		demonstrate the capacity for scholarly analysis and synthesis as well as to review and assess new and complex phenomena, issues and situations autonomously and critically,																															
	#3	3.1 capacity for scholarly analysis and synthesis											х						х	Х												х	Х
		3.2 capacity to review and assess new and complex phenomena, issues and situations autonomously and critically											х	:		х	х		х	Х				х								х	
		demonstrate the ability to identify and formulate issues with scholarly precision critically, autonomously and creatively, and to plan and use appropriate methods to undertake research and other qualified tasks within predetermined time frames and to review and evaluate such work,																															
	#4	4.1 ability to identify and formulate issues with scholarly precision critically, autonomously and creatively	Х		Х	х	Х	х х			Х	х	х	:		х	Х				×	X	Х			х			44	4		Х	Х
		4.2 ability to plan and use appropriate methods to undertake research and other qualified tasks within predetermined time frames	5 x			х	х	х х	Ш		х	x	х			х	х				×	x	х			х			x			х	x
		4.3 ability to review and evaluate such work	Х			Х	Х	ХХ	<b>—</b>		Х	Х	X X					Х						х х		44	Х		44	4	4	44	X
skills		demonstrate through a dissertation the ability to make a significant contribution to the formation of knowledge through his or her own research																															
ce and	#5	5.1 demonstrate through a dissertation the ability to make a significant contribution to the formation of knowledge through his or her own research											х																				х
Competen		demonstrate the ability in both national and international contexts to present and discuss research and research findings authoritatively in speech and writing and in dialogue with the academic community and society in general																								Ш				$\perp$			
	#6	6.1 demonstrate the ability in both national and international contexts to present and discuss research and research findings authoritatively in speech and in dialogue with the academic community and society in general		х	х									x	x	x									х	/ I			х		x		х
		6.2 demonstrate the ability in both national and international contexts to present and discuss research and research findings authoritatively in writing and in dialogue with the academic community and society in general		х	х								х		х						×	x	х			П			x			х	
	д-	demonstrate the ability to identify the need for further knowledge, and																															
	#7	7.1 demonstrate the ability to identify the need for further knowledge,			Х		Х	Х				х		х	х	х х			х	Х	х	Х	х									х	Х
		demonstrate the capacity to contribute to social development and support the learning of others both through research and education and in some other qualified professional capacity.																															
	#8	8.1 demonstrate the capacity to contribute to social development, both through research and education and in some other qualified professional capacity																									x	x x		хх	x		
		8.2 demonstrate potential to support the learning of others, both in the field of research and education and in other qualified professional capacity		Х																							х	х		x x	x x		
nd approach	#9	demonstrate intellectual autonomy and disciplinary rectitude as well as the ability to make assessments of research ethics, and																															
	,,,	9. 1 demonstrate intellectual autonomy and disciplinary rectitud	Х		$oxed{oxed}$					+	Х	(									Х	Х	х х					Х				41	
nd a		9.2 demonstrate the ability to make assessments of research ethics,	Х								X	(											Х			+			44		+	#	
ment a	ш.	demonstrate specialised insight into the possibilities and limitations of research, its role in society and the responsibility of the individual for how it is used.																												$\perp$			
ndge	#10	10.1 demonstrate specialised insight into the possibilities and limitations of research  10.2 demonstrate specialised insight into the role of research in society	X		H		Х	Х	$\vdash$	+	X X			X		+	X				x X	Х	х	+		X		X			X	X	X
_ =		10.3 demonstrate specialised insight into the responsibility of the individual for how it is used.	х		H						×	(					х				x							x				х	х

## Explanations

Courses in common: mandatory courses for all the three research areas at the School of Engineering

MoT=materials and manufacturing

MD=machine design

PS=production systems

Courses are offered within the graduate school Industrial product realisation and ProWOOD

All courses are available for all doctoral students