

*Joint Curriculum*

# Master of Science in Research in Computer and Systems Engineering

Participating Institutions: TU-Ilmenau (Germany) and KNRTU-KAI (Kazan, Russia)

Duration of Study: 2 years

Place for Study: 1<sup>st</sup>, 2<sup>nd</sup> semesters at KNRTU-KAI, 3<sup>rd</sup> semester – at TU Ilmenau. 4<sup>th</sup> semesters – at KNRTU-KAI or TU Ilmenau

## 1<sup>st</sup> semester

Module	ECTS	Russian FGOS credits of the Module	Contact Hours	Individual Work Hours	Exams	Total Student Workload	Cert	University
Control Engineering	5	4	36	72	36	144	Exam	KNRTU
Theoretical Computer Science	5	3	36	72	-	108	Test	KNRTU
Decision making theory/Neural networks	5	4	48	60	36	144	Exam CW	KNRTU
Computer systems	5	5	48	96	36	180	Exam CGW	KNRTU
Modern problems of computer science and engineering [Research skills Seminar I]	1	3	36	72	-	108	Test	KNRTU
Information systems	5	3	36	36	36	108	Exam	TUII
<b>Research work [Research Skills Seminar II]</b>	<b>3</b>	<b>9</b>	-	-	-	<b>324</b>		<b>KNRTU</b>
Total	29	31	240	408	144	1116		

## 2<sup>nd</sup> semester

Module	ECTS	Russian FGOS credits of the Module	Contact Hours	Individual Work Hours	Exams	Total Student Workload	Cert	University
Intelligent systems	5	2	48	24	-	72	Test CGW	KNRTU
Software & Systems Engineering	5	5	48	96	36	180	Exam	
Mobile Communications Networks	5	4	36	72	36	144	Exam	TUII
Parallel Programming	5	5	48	96	36	180	Exam CW	KNRTU
Systems simulation with Matlab/Statistical Data Analysis	5	4	48	60	36	144	Exam CW	KNRTU
German language courses ( <b>elective</b> )	(1)	(1)	12	24		36	Test	KNRTU
<b>Research work [Group studies]</b>	<b>6</b>	<b>9</b>				<b>324</b>		<b>KNRTU</b>
Total	31	29	240	372	144	1080		

## 3<sup>rd</sup> semester

Module	ECTS	Russian FGOS credits of the Module	Contact hours	Individual work hours	Exams	Total student workload	Cert	University
Systems Optimization	5	4	60	48	36	144	Exam	TU Ilmenau
Research Project	10	3	40	68	-	108	Test CW	TU Ilmenau
Systems Security/Complex Embedded Systems/UMTS Networks/Advanced database systems	5	5	50	94	36	180	Exam	TU Ilmenau
Systems Security/Complex Embedded Systems/UMTS Networks/Advanced database systems	5	5	50	94	36	180	Exam	TU Ilmenau
<b>Research work</b>	<b>3</b>	<b>12</b>				<b>432</b>		<b>TU Ilmenau</b>
Total	28	29	200	304	108	1044		

4<sup>th</sup> semester

Module	ECTS	Russian FGOS credits of the Module	Contact hours	Individual work hours	Cert	Total student workload	University
Pedagogical Practice	2	3		108		108	KNRTU or TU Ilmenau
Research Practice (Master thesis 1)	15	16		576		576	KNRTU or TU Ilmenau
Master thesis preparation and defense (Master thesis 2)	15	12		432		432	KNRTU or TU Ilmenau
Total	32	31		1116		1116	

\*) subject to modifications and amendments

On Behalf of TU-Ilmenau

12. FEB. 2014

Prof. Peter Scharff  
Rector



On behalf of KNRTU-KAI

Prof. Albert Gilmutdinov  
Rector



Prof. Dr. Igor Anikin  
Coordinator of the MSc Program

Prof. Kai-Uwe Sattler  
Coordinator of the MSc Program