

RECOMMENDED PLAN OF STUDY
 MASTER'S DEGREE PROGRAMME
 N1041A040006 – IS (EN) – INTELLIGENT TRANSPORT SYSTEMS
 (IN ENGLISH LANGUAGE
 WITH POSSIBILITY OF DOUBLE DEGREE STUDY)

1st semester – IS (EN)

Guarantee of study programme: *Doc. Ing. Bc. Tomáš TICHÝ, Ph.D. MBA*

Compulsory courses	Code	Range	Credits	Completion	tutor
ITS Mathematical tools	11MAI	2 + 2	4	z, zk	<i>Příkryl</i>
Traffic Flow Theory*	12TDP	2 + 1	3	z, zk	<i>Příbyl</i>
<i>or</i>	<i>or</i>				<i>or</i>
Electronic systems in modern vehicles *	16ESDP				<i>Bouchner</i>
<i>or</i>	<i>or</i>				<i>or</i>
Modern techniques of safety control of moving railway vehicles*	20MZZ				<i>Leso</i>
Vehicles within ITS	16DITS	2 + 2	4	z, zk	<i>Bouchner</i>
Geographical, information, localization and navigation systems	20GINS	3 + 3	6	z, zk	<i>Hrubeš</i>
Telematic systems and their design	20TSJ	3 + 2	6	z, zk	<i>Hrubeš</i>
Technology and Security of Sensor Networks	23TBSS	2 + 0	2	kz	<i>Jirovský</i>
Master project 1 for study programme IS	**XN1S	0 + 4	5	z	
Number of hours per week		28			
Number of credits		30			
Number of examinations		5			
Number of graded assessments		1			
Number of assessments		6			
Elective courses: (not included in the sum of credits)					
Foreign Language – English 1	15JIA1	0 + 2		z	<i>Olehlová</i>
Foreign Language – French 1	15JIF1	0 + 2		z	<i>Veselková</i>
<i>or</i>	<i>or</i>				<i>or</i>
Foreign Language – German 1	15JIN1				<i>Štikarová</i>
<i>or</i>	<i>or</i>				<i>or</i>
Foreign Language – Russian 1	15JIR1				<i>Michlová</i>
<i>or</i>	<i>or</i>				<i>or</i>
Foreign Language – Spanish 1	15JIS1				<i>Hricsina Puškinová</i>

* One of the courses „Traffic Flow Theory“ [12TDP; 2 + 1; 3; z, zk; Příbyl], „Electronic systems in modern vehicles“ [16ESDP; 2 + 1; 3; z, zk; Bouchner] or „Modern techniques of safety control of moving railway vehicles“ [20MZZ; 2 + 1; 3; z, zk; Leso] must be chosen with the consent of the project leader according to the student project focus.

1st semester – IS (EN)**(study plan at Linköpings universitet in case of double degree study in Sweden)****Guarantee of study programme:***Doc. Ing. Bc. Tomáš TICHÝ, Ph.D. MBA*

Compulsory courses	Code	Range	Credits	Completion	tutor
Optimization	TNK053	1,5+4,5	6	z, zk	<i>Liu</i>
Geographical Information Systems for Transportation	TNK055	3 + 3	6	z, zk	<i>Häll</i>
Traffic Safety Management	TNK091	2+1+3	6	kz,kz,kz	<i>Al-Haji</i>
Positioning Systems	TNK106	2 + 4	6	z, zk	<i>Gundlegård</i>
Transport and Logistics Systems	TNK112	2+2+2	6	kz,kz,kz	<i>Lundgren</i>
Number of hours per week		30			
Number of credits		30			
Number of examinations		3			
Number of graded assessments		6			
Number of assessments		3			

2nd semester –IS (EN)

Guarantee of study programme:

Doc. Ing. Bc. Tomáš TICHÝ, Ph.D. MBA

Compulsory courses	Code	Range	Credits	Completion	tutor
C-ITS Systems	14CITS	3 + 3	6	z, zk	Lokaj
Microsimulation Models*	14MIM	0 + 3	3	kz	Krčál
or	or	nebo		or	or
Simulation and HMI*	16SHMI	2 + 1		z, zk	Novotný
or	or	nebo		or	or
ITS - R* **	20ITSR	2 + 1		z, zk	Leso
Programming and modelling	14PAM	2 + 2	4	z, zk	Fábera
Data processing	14PD	2 + 4	6	z, zk	Jeřábek
Computer Aided Project Management	14PPRP	0 + 2	2	kz	Kalika
Safety and reliability of ITS Systems	20BITS	2 + 1	3	kz	Tichý
Master project 2 for study programme IS	**XN2S	0 + 4	6	z	
Number of hours per week		28			
Number of credits		30			
Number of examinations		3 / 4			
Number of graded assessments		3 / 2			
Number of assessments		4 / 5			
Elective courses: (not included in the sum of credits)					
Foreign Language – English 2	15JIA2	0 + 2		z	Olehlová
Foreign Language – French 2	15JIF2	0 + 2		z	Veselková
or	or				or
Foreign Language – German 2	15JIN2				Štikarová
or	or				or
Foreign Language – Russian 2	15JIR2				Michlová
or	or				or
Foreign Language – Spanish 2	15JIS2				Hricsina Puškinová

* One of the courses „Microsimulation Models“ [14MIM; 0 + 3; 3; kz; Krčál], „Simulation and HMI“ [16SHMI; 2 + 1; 3; z, zk; Novotný] or „ITS - R“ [20ITSR; 2 + 1; 3; z, zk; Leso] must be chosen with the consent of the project leader according to the student project focus.

** The course „ITS - R“ [20ITSR; 2 + 1; 3; z, zk; Leso] is not allowed to choose before successfully completing the course „Modern techniques of safety control of moving railway vehicles“ [20MZZ; 2 + 1; 3; z, zk; Leso].

2nd semester – IS (EN)**(study plan at Linköpings universitet in case of double degree study in Sweden)****Guarantee of study programme:***Doc. Ing. Bc. Tomáš TICHÝ, Ph.D. MBA*

Compulsory courses	Code	Range	Credits	Completion	tutor
Logistics Networks and Transports <i>or</i>	TNK099 <i>or</i>	1+2+3 <i>or</i>	6	z, z, kz <i>or</i>	<i>Engevall</i> <i>or</i>
Smart Cities	TNK115	2+2+2		z, z, zk	<i>Pappas</i>
Logistics Resource Planning	TNK100	1 + 5	6	z, zk	<i>Waldemarsson</i>
Mobile Communication and Networks	TNK110	1+2+3	6	z, z, zk	<i>Pappas</i>
Internet of Things <i>or</i>	TNK116 <i>or</i>	2 + 4 <i>or</i>	6	kz, kz	<i>Angelakis</i> <i>or</i>
Traffic Theory and Simulation	TNK119	3 + 3			<i>Olstam</i>
Transport Demand Forecasting	TNK118	2 + 4	6	z, zk	<i>Rydergren</i>
Number of hours per week		30			
Number of credits		30			
Number of examinations		3 / 4			
Number of graded assessments		3 / 2			
Number of assessments		6			

3rd semester – IS (EN)**Guarantee of study programme:***Doc. Ing. Bc. Tomáš TICHÝ, Ph.D. MBA*

Compulsory courses	Code	Range	Credits	Completion	tutor
Mathematical Methods for Data Analysis	11MMAD	3 + 3	6	z, zk	<i>Nagy</i>
Quality and reliability in area of transportation means and systems*	16KSD	2 + 1	3	z, zk	<i>Machan</i>
<i>or</i>	<i>or</i>				<i>or</i>
Computer aided railway traffic control*	20PRZP				<i>Leso</i>
<i>or</i>	<i>or</i>				<i>or</i>
Telematics in Public Transport*	20TVHD				<i>Langr</i>
Application of ITS in Urban Engineering	20AIMI	3 + 3	6	z, zk	<i>Tichý</i>
System engineering	20SYIN	4 + 2	6	z, zk	<i>Vičková</i>
Evaluation and Economics of ITS	20HEI	2 + 1	3	kz	<i>Kopecký</i>
Master project 3 for study programme IS	**XN3S	0 + 4	6	z	
Number of hours per week		28			
Number of credits		30			
Number of examinations		4			
Number of graded assessments		1			
Number of assessments		5			
Elective courses: (not included in the sum of credits)					
Foreign Language – English 3	15JIA3	0 + 2		z	<i>Olehlová</i>
Foreign Language – French 3	15JIF3	0 + 2		z	<i>Veselková</i>
<i>or</i>	<i>or</i>				<i>or</i>
Foreign Language – German 3	15JIN3				<i>Štikarová</i>
<i>or</i>	<i>or</i>				<i>or</i>
Foreign Language – Russian 3	15JIR3				<i>Michlová</i>
<i>or</i>	<i>or</i>				<i>or</i>
Foreign Language – Spanish 3	15JIS3				<i>Hricsina</i> <i>Puškinová</i>

* One of the courses „Quality and reliability in area of transportation means and systems“ [16KSD; 2 + 1; 3; z, zk; Machan], „Computer aided railway traffic control“ [20PRZP; 2 + 1; 3; z, zk; Leso] or „Telematics in Public Transport“ [20TVHD; 2 + 1; 3; z, zk; Langr]] must be chosen with the consent of the project leader according to the student project focus.

3rd semester – IS (EN)**(study plan at Linköpings universitet in case of double degree study in Sweden)****Guarantee of study programme:***Doc. Ing. Bc. Tomáš TICHÝ, Ph.D. MBA*

Compulsory courses	Code	Range	Credits	Completion	tutor
Project Management	TEI091	3 + 3	6	z, zk	<i>Magnusson</i>
Planning of Public Transportation and Railway Traffic	TNK098	2 + 4	6	kz, kz	<i>Peterson</i>
Analysis of Communication and Transport Systems	TNK103	6	6	kz	<i>Rydergren</i>
Data Analytics for Smart Cities	TNK117	2+2+2	6	z, kz, zk	<i>Pappas</i>
Traffic State Estimation, Prediction and Control	TNK120	3 + 3	6	kz, kz	<i>Ekström</i>
Number of hours per week		30			
Number of credits		30			
Number of examinations		2			
Number of graded assessments		6			
Number of assessments		2			

4th semester – IS (EN)**Guarantee of study programme:***Doc. Ing. Bc. Tomáš TICHÝ, Ph.D. MBA*

Compulsory courses	Code	Range	Credits	Completion	tutor
Master Thesis for study programme IS	**XNDS	0 + 16	16	z	
Master project 4 for study programme IS	**XN4S	0 + 8	10	z	
Training course for study programme IS*	**XPXS	0 + 4	4	z	
Number of hours per week		28			
Number of credits		30			
Number of examinations		0			
Number of graded assessments		0			
Number of assessments		3			
Elective courses: (not included in the sum of credits)					
Foreign Language – English 4	15JIA4	0 + 2		z	<i>Olehlová</i>
Foreign Language – French 4	15JIF4	0 + 2		z	<i>Veselková</i>
<i>or</i>	<i>or</i>				<i>or</i>
Foreign Language – German 4	15JIN4				<i>Štikarová</i>
<i>or</i>	<i>or</i>				<i>or</i>
Foreign Language – Russian 4	15JIR4				<i>Michlová</i>
<i>or</i>	<i>Or</i>				<i>or</i>
Foreign Language – Spanish 4	15JIS4				<i>Hricsina</i>
					<i>Puškinová</i>

* The course „Training course for study programme IS“ [**XPXS; 0 + 4; 4; z; –] students complete during the studies according to the student project and the established rules with the consent of the project leader.