

### DESCRIPTION OF A STUDY COURSE – SYLLABUS

<b>Title of a course</b>	Railroad Transport Safety System				
<b>Head of course</b>	PhD Ivica Barišić, College Professor				
<b>Study programme</b>	Specialist professional graduate study Railroad Transport				
<b>Status of a course</b>	Obligatory				
<b>Year of study</b>	2.	<b>Semester</b>	III	<b>ECTS credits</b>	7
<b>Teaching plan (L + E + S+ Pr)</b>	2+0+2+0				
<b>Goals of a course</b>					
Familiarity with safety factors, their importance and impact on improving railway safety. Defining security problems and how to solve them by using modern technical achievements.					
<b>Conditions for enrolling course</b>					
No conditions					
<b>Learning outcomes on a level of a study programme which includes course</b>					
<p>Outcome 2: Apply international, European and national legislation in the implementation of technological and service processes in the field of railroad transport.</p> <p>Outcome 4: Offer solutions for transport system planning based on sustainable development principles.</p> <p>Outcome 7: Select information technology and software to address specific transport system problems.</p> <p>Outcome 10: Offer solutions for increasing railroad transport safety.</p> <p>Outcome 11: Manage organizational systems in railroad transport.</p> <p>Outcome 12: Manage communication and collaboration processes in different social groups in the field of transport.</p>					
<b>Expected learning outcomes on a level of a course</b>					
<ol style="list-style-type: none"> <li>1. Analyse the state of railroad transport safety in the Republic of Croatia and evaluate the impact of individual factors</li> <li>2. Recommend measures to improve the state of safety at railroad crossings</li> <li>3. Establish measures for securing railroad stations and open tracks.</li> <li>4. Evaluate process automation options for improving railroad transport safety level.</li> <li>5. Research and present a selected topic from the field of railroad transport safety.</li> </ol>					
<b>Content of a course</b>					
Analysis of safety and reliability in rail transport. Measures to be taken to improve rail transport safety. Human factor in rail transport safety. Influence of occupational environment and working area on transport safety. Railway vehicles safety elements. Railway infrastructure control and maintenance. Modern warning-safety devices. Safety at railway-road crossings. Control information systems in railway transport. Trains automatic control system.					
<b>Teaching modes</b>	<input checked="" type="checkbox"/> lectures <input type="checkbox"/> auditory exercises <input checked="" type="checkbox"/> seminars and workshops <input type="checkbox"/> distance learning <input type="checkbox"/> field classes		<input checked="" type="checkbox"/> individual assignments <input type="checkbox"/> multimedia and network <input type="checkbox"/> laboratory <input type="checkbox"/> supervisor's work <input type="checkbox"/> other _____		
<b>Comments</b>					
<b>Students' obligations</b>					
Fulfil obligations in accordance with the Rules of Study and Rules on the assessment of students.					
<b>Grading, evaluation and monitoring of students' work continuously during lectures and exams</b>					
Grading is based upon evaluation of course's learning outcomes' adoption. Grading is performed continuously during lectures and/or during exam, in compliance with the provisions of Regulation on the assessment of					

students.

**Continuous check-up:**

Outcomes	Pre-exam I	Pre-exam 2	Seminar work	Threshold	Max
Outcome 1	20%			10%	20%
Outcome 2	20%			10%	20%
Outcome 3		20%		10%	20%
Outcome 4		25%		12,5%	25%
Outcome 5			15%	7,5%	15%
Percentage of ECTS	2,8	3,15	1,05		
<b>Total</b>	<b>40%</b>	<b>45%</b>	<b>15%</b>	<b>50%</b>	<b>100%</b>

A student has passed the exam if he has acquired a percentage of credits for each learning outcome higher or equal to defined threshold.

**Exam term:**

Outcomes	Written exam	Oral exam	Max
Outcome 1	10%	10%	20%
Outcome 2	10%	10%	20%
Outcome 3	10%	10%	20%
Outcome 4	15%	10%	25%
Outcome 5	10%	5%	15%
Percentage of ECTS	3,85	3,15	
<b>Total</b>	<b>55%</b>	<b>45%</b>	<b>100 %</b>

A student has passed the exam if he has acquired a percentage of credits for each learning outcome higher or equal to defined threshold.

**Grading:**

A student has passed the exam if he has acquired at least 50% of anticipated credits of a specific learning outcome.

If a student has passed learning outcomes of all courses, the accomplished credits (percentages) of all passed learning outcomes are being added, while the final grade is defined upon following table:

Range of credits (percentages)	Numerical grade	ECTS grade
90,00 – 100,00	Excellent (5)	A
75,00 – 89,99	Very good (4)	B
60,00 – 74,99	Good (3)	C
50,00 – 59,99	Sufficient (2)	D
0,00 – 49,99	Insufficient (1)	F

**Obligatory literature**

1. Lecture Notes Railway Traffic Safety System, prepared by: dr.sc. Ivica Barišić - lecture part - working material
2. Hirnig, S: Osnove sigurnosti željezničkog prometa, skripta, Veleučilište u Rijeci, 2017.

**Additional literature**

1. Zakon o sigurnosti i interoperabilnosti željezničkog sustava (NN 82/13, NN 18/15)
2. Zakon o željeznici NN 94/13, 148/13, 73/17



