

## Subject title: Design of Metallic Bridges

Basic information on the subject	
Academic unit:	Faculty of Civil Engineering
Subject title:	Design of Metallic Bridges
Level:	MSc
Subject status:	Elected
Year of studies:	Second year
Number of classes per week:	1+2
Credits - ECTS:	6
Time / location:	According to time table
Teacher:	Prof.Asoc.Dr Cene Krasniqi Mr.Sc. Ali Sh Muriqi
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<b>Course description:</b>	<p>Course :”Design of metallic bridges” includes: in general lecture hours handle with themes of “Bridges” part , with analysis of design specifications and details..</p> <p>Exercises part deals with the design of a given bridge example including : variants for execution, constructive systems, bridge construction with deck, deck girders, main girders, different connections; technical description; static calculation, dimensions calculation of the appropriate bridge, calculation of supports and completion of constructive details drawings. Completion of design of preparation in factory, way of transport and plan of assemblage, testing of the object, monitoring and maintenance.</p>
<b>Course objectives:</b>	Object of study: mainly to apply knowledge from lecture and exercise parts for designing (main design draw up) buildings with typical forms and systems.
<b>Expected learning outcomes:</b>	<p>After completion of this course, students have capacity:</p> <ol style="list-style-type: none"> <li>1. Depending on the needs, to be able to take active part in the designing group.</li> <li>2. To know and to be able to establish the bridge position in relation to obstacle.</li> <li>3. To establish the bridge geometry (one or more than one span ) in relation to obstacle, traffic and perspective for determined time.</li> <li>4. For those given data to choose the adequate system of bridge, thus to establish the type of deck, beams of deck, main girders and other elements.</li> <li>5. And to compile the static and dimensions calculations with necessary details for execution.</li> </ol>

Workload that falls on the student (shall correspond with Student Learning Outcomes)			
Activity	Teaching hours	Day/Week	total
Lectures	1	15	15
Theory / Laboratory work / Exercises	3	15	45
Practical work			
Consultation with the teacher	1	14	14
Field work	2	4	8
Test, seminar paper			
Home work	1	9	9
Individual learning (in the library or at home)	2	15	30
Preparing for the final exam	2	10	20
Evaluation time (test, quiz, final exam)	2	2	4
Projects, presentations, etc.	1	5	5
<b>Total</b>			<b>150</b>
<b>Teaching methods:</b>	<i>lecture, seminar work for each student, group and independent discussion for student design.</i>		
<b>Evaluation methods:</b>	<p><i>For evaluation should be taken into account: percentage of participation, partial/intermedial estimation for final estimation.</i></p> <p><i>One of estimation method is as follows:</i></p> <p><b>frequent presence: 10%</b>  <b>participation in site visit 5%</b>  <b>seminar work 15%</b>  <b>Final exam 70%</b>  <b>Total 100%final).</b></p>		
<b>Basic literature:</b>	<p>1.A.Vokshi, A. Muriqi-- Konstruksionet e urave metalike (dispense)  2.B.Çeku,P. Çerepi,E.Gjadri-- Ura dhe tunele 3.Drago Horvatić--Spregnute konstrukcije- Çelik Beton</p>		
<b>Additional literature:</b>	<p>Wai- Fah Chen,Lian Duan --  Bridge Engineering Handbook  Sukhen Chatterjee--The Design of Modern Steel Bridges</p>		

<b>Curriculum development</b>	
<b>Week</b>	<b>Lecture title</b>
<i>Week 1:</i>	<i>Bridge structure</i>
<i>Week 2:</i>	<i>Classification of bridges (system and orientation spans)</i>
<i>Week 3:</i>	<i>Bridge width (in relation to rotation and wind influence)</i>
<i>Week 4:</i>	<i>Open and close decks for railway bridges and decks for highway bridges.</i>
<i>Week 5:</i>	<i>Transversal and longitudinal deck girders.</i>
<i>Week 6:</i>	<i>Profile of the bridge and profile of the obstacle</i>
<i>Week 7:</i>	<i>Completion of variants for execution and comparison of these variants.</i>
<i>Week 8:</i>	<i>Loads in bridges and completion of practical examples.</i>
<i>Week 9:</i>	<i>Movable loads in bridges affected by bending.</i>
<i>Week 10:</i>	<i>Method of design of orthotropic slab.</i>
<i>Week 11:</i>	<i>Main girders with different forms and systems, calculation, construction and mounting of them.</i>
<i>Week 12:</i>	<i>Calculation of composite construction.</i>
<i>Week 13:</i>	<i>Constructive details of main girders.</i>
<i>Week 14:</i>	<i>Calculation of supports.</i>
<i>Week 15:</i>	<i>Partial continuation elements (in factory), fitter continuation elements (in situ) and their assemblage</i>

<b>Academic Policies and Code of Conduct</b>
<i>Professor quote criterium of presence to lecture and exercise, in particular participation and cooperation during exercise and discipline rules; silence during lesson, turn off cellular, entrance in class in time,...etc.)</i>