

PLAN I PROGRAM NASTAVE / COURSE SYLLABUS	
Nazivpredmeta:	<b>SPECIJALNE KONSTRUKCIJE</b>
Course title:	<b>SPECIAL BUILDING CONSTRUCTIONS</b>

Šifrapredmeta / Course code	Status predmeta / Course type	Semestar / Semester	ECTS kredita / ECTS credits	Fond časova / Number of classes
7.1.	<b>obavezan / required</b>	<b>VII</b>	<b>4.0</b>	<b>2P+1V+1L</b>

<b>Studijski program:</b>	ARHITEKTURA. Akademske studije Dužina trajanja: 10 semestara i 300 kredita.
<b>Study programme:</b>	ARCHITECTURE. Academic studies Duration: 10 semesters and 300 credits.

**Uslovljenostdrugipredmetima:**

Nema uslovljenosti.

**Prerequisites:**

No prerequisites.

**Ciljeviizučavanjapredmeta:**

Kroz ovaj kurs se kroz urbanu geografiju i naučni pristup tretira tematika gradova Crne Gore od njihovog postanka pa zaključno sa današnjim vremenom.

**Course aims:**

In this course through the urban geography and scientific approach treats the theme of Montenegrin towns of their origin and until the present time.

**Predmetnastavnik – Lecturer /  
Saradnici u nastavi– Teaching assistants**

GF\_1 nastavnik

AF\_2 saradnika

**Metodenastave i savladavanjegradiva:**

Predavanja, vježbe, konsultacije. Semestralni rad.

**Teaching methods and learning activities:**

Lectures, tutorial and consultations. Semester work.

**SADRŽAJ PREDMETA:**

Pripremna nedjelja	Priprema i upis semestra.
I nedjelja	Razvoj konstruktivnih sistema u arhitekturi. Klasifikacija, principi konstruisanja, metode izbora sistema.
II nedjelja	Gredni sistemi. Oblikovanje (puni, rešetkasti, zidni, okvirni i prednapregnuti sistemi).
III nedjelja	Gredni roštilji. Ortogonalne i neortogonalne mreže, vešanje i podupiranje kosim elementima.
IV nedjelja	Lučni sistemi. Oblikovanje lukova promjenljivih preseka, lukova od montažnih elemenata.
V nedjelja	Okvirni sistemi. Neprednapregnuti i prednapregnuti okviri. Sklopovi sa dijafragmama.
VI nedjelja	Analiza izvedenih visokih objekata i objekata velikih raspona. Obavezan prilog Semestralnom projektu.
VII nedjelja	KOLOKVIJUM I
VIII nedjelja	Viseće konstrukcije. Neprednapregnute i prednapregnute kablovske konstrukcije i konture
IX nedjelja	Viseće konstrukcije na kružnim i poligonalnim osnovama, otvorene i zatvorene mreže i šatori.
X nedjelja	Specijalne konstrukcije: Tensegriti konstrukcije.

**SUBJECT CONTENT:**

Preliminary week	Preparation and enrollment of semester.
1 <sup>st</sup> week	The development of structural systems in architecture. Classification, principles of construction, method of election systems.
2 <sup>nd</sup> week	Beam systems. Shaping (Full, grid, wall, frame and prestressed systems).
3 <sup>rd</sup> week	Beam grills. Orthogonal and orthogonal nets, hanging and supporting with pitched elements.
4 <sup>th</sup> week	Arched systems. Shaping variable cross-section arches, arches made of prefabricated elements.
5 <sup>th</sup> week	Frame systems. Non prestressed and prestressed frames. Assemblies with diaphragms.
6 <sup>th</sup> week	Analyzes of the high buildings and large span structures. Mandatory contribution per semester project.
7 <sup>th</sup> week	1 <sup>st</sup> TEST (colloquium)
8 <sup>th</sup> week	Hanging construction. Non prestressed and prestressed cable structures and contours.
9 <sup>th</sup> week	Hanging structures of circular and polygonal, open and closed networks and tents.
10 <sup>th</sup> week	Special structures: Tensegrity structures.

	Razvlace konstrukcije. Pneumaticke konstrukcije.
XI nedjelja	Trodimenzionalni sistemi. Štapasti sistemi u dva, tri i četiri pravca, čvorne veze.
XII nedjelja	Razvoj prostornih struktura. Klasifikacija, principi konstruisanja, metode izbora sistema.
XIII nedjelja	Geometrijske osnove prostornih struktura. Platonovi i Arhimedovi poliedri.
XIV nedjelja	KOLOKVIJUM II
XV nedjelja	Završni ispit.
XVI nedjelja	Ovjera semestra i upis ocjena.
XVII nedjelja	
XVIII-XXI nedjelja	Dopunska nastava i popravni ispitni rok.

	Stretching structure. Pneumatic structures.
11 <sup>th</sup> week	Three-dimensional systems. Stick systems of two, three or four directions, the nodal connections.
12 <sup>th</sup> week	The development of spatial structures. Classification, principles of construction, method of election systems.
13 <sup>th</sup> week	Geometrical basis of spatial structures. Plato and Archimedes polyhedron.
14 <sup>th</sup> week	2 <sup>nd</sup> TEST (colloquium)
15 <sup>th</sup> week	FINAL EXAM.
16 <sup>th</sup> week	Verification of the semester and mark enrollment.
17 <sup>th</sup> week	
18 <sup>th</sup> -21 <sup>st</sup> week	Additional lessons and exam term.

### Opterećenjestudenata:

<b>Nedjeljno</b>	
<b>4.0 kredita x 40/30 = 5 sati i 33 minuta</b>	
<b>Struktura:</b> 2 sata predavanja 2 sat računskih vježbi 1 sat i 33minutasamostalno gradnja, uključujući konsultacije	
<b>U toku semestra</b>	
<b>Nastava i završni ispit:</b> (5 sati i 33 min) x 16 = <b>88 sati i 48min</b>	
<b>Neophodne pripreme</b> prije početka semestra (administracija, upis, ovjera) 2 x (5 sati i 33 minuta) = <b>11 sati i 6 minuta</b>	
<b>Ukupno opterećenje za predmet</b> 4.0x30 = <b>120 sati</b>	
<b>Dopunski rad:</b> 20 sati i 6 minuta	
<b>Struktura opterećenja:</b> 88 sati i 48 min. (Nastava) + 11 sati i 6 min. (Priprema) + 20 sati i 6 min. (Dopunski rad) = 120 sati	

### Student workload:

<b>Weekly</b>	
<b>4.0 credits x 40/30 = 5 hours and 33 minutes</b>	
<b>Structure:</b> 2 hours of lectures 2 hours of tutorial 1 hours and 33minutes of individual work, including consultations	
<b>During the semester</b>	
<b>Teaching and the final exam:</b> (5 hours and 33 min) x 16 = <b>88 hours and 48 minutes</b>	
<b>Necessary preparations</b> before the start of the semester (administration, registration, certification) 2 x (5 hours and 48min) = <b>11 hours and 6 minutes</b>	
<b>Total hours for the course:</b> 4.0x30 = <b>120 hours</b>	
<b>Additional hours:</b> 20 hours and 6 minutes	
<b>Structure of workload:</b> 88 hours and 48 min (lectures)+ 11 hours and 6 min (preparation) + 20 hours and 6 min (Additional hours) = 120 hours	

### Literatura / Literature:

-	Za ovaj kurs ne postoji određena literatura ,jer je ova oblast malo izucavana. Većinom će se koristiti monografije koje su publikovane za Crnogorske gradove. (spisak ostale literature biće prilogu)
-	For this course there is not a certain literature, as this area is much studied. Most courses will use the monographs that are published in the Montenegrin town. (List of other literature would be attached)

### Oblici provjere znanja i ocjenjivanje:

* Uredno pohađanje nastave :	od 3.0 – 6.0 poena
- Seminarari radovi 2x1 :	maksimum 20 poena
- I i II kolokvijum :	maksimum 35 poena
- Završni ispit :	maksimum 49 poen
** Prelazna ocjena se dobija ako student ostvarinajmanje 51 poen.	

### Forms of Assessment:

* Regular attendance of classes:	3.0-6.0 points
- Seminar works 2x1:	maximum 20 points
- 1 <sup>st</sup> and 2 <sup>nd</sup> test:	maximum 35 points
- Final exam:	maximum 49 points
** Passing grade is obtained if the student achieved at least 51 points.	

### Očekivani ishodi učenja:

Očekuje se da student, nakon položenog ispita Specijalne konstrukcije:
1. Poznaje konstruktivne sisteme i sposoban je da procijeni i odabere adekvatno konstruktivno rješenje, kao i odgovarajuće rješenje materijalizacije, u skladu sa arhitektonskim projektom;
2. Ima sposobnost da sintezno koristi znanje iz konstruktivne i građevinske tematike, kao i poznavanje aktuelnih tehnologija, u procesu projektovanja.

### Expected learning outcomes:

It is expected that the student after passing the exam Special structures:
1. Has knowledge of the constructive systems and is able to evaluate and choose appropriate constructively a constructive solution, as well as the appropriate solution materialization, in accordance with the architectural design;
2. Has the ability to synthetically uses the knowledge of the constructive and special topics, as well as knowledge of current technology in the design process.

### Metode za ocjenu kvaliteta i obezbjeđivanje željenih rezultata učenja:

Kontrola od strane Univerziteta, kontrola nastavnog procesa od strane Fakulteta, spisak prisustva studenata, analize stepena prolaznosti (sistem upravljanja kvalitetom u skladu sa ISO 9001).
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### Methods for assessing the quality and ensuring preferred learning outcomes:

Control by the University, the control of the teaching process by the faculty, the list of presence of students, analysis of the degree of transience (quality management system in accordance with ISO 9001).
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### Napomena:

### Admonishment:

Nastava se izvodi za grupu do 45 studenata.  
Dodatne informacije o predmetu mogu se dobiti kod predmetnog nastavnika, šefa studijskog programa i kod prodekana za nastavu.

Classes are held for a group of 45 students.  
Further information about the subject can be obtained from the course teacher, Head of the study programme and Vice Dean for Education.